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LOYOLA UNIVERSITY OF CHICAGO

AN EVALUATION OF A SCHOOL-BASED DRUG PREVENTION
PROGRAM AT THE ELEMENTARY LEVEL

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

DEPARTMENT OF PSYCHOLOGY

BY

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CHICAGO, ILLINOIS

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CHAPTER 1
INTRODUCTION

Overview

The use and abuse of drugs is prevalent in high schools and is becoming increasingly popular with younger children (Bradley, 1988; "Drug Use Continues," 1989). Research suggests that there is a rise in the number of elementary school children using alcohol and other drugs, particularly marijuana (Narak, 1987; Oetting & Beauvais, 1990). With the average age at which American youth first try drugs steadily declining, it is evident that drug education/prevention is no longer the exclusive province of the secondary school system. In an attempt to stem the tide of alcohol and drug use among students, prevention researchers and educators are focusing more of their efforts on young children at the elementary level.

Athletes Against Drugs, a Chicago-based not-for-profit organization committed to combating substance abuse among youth, has developed a school-based drug prevention program targeted at students in their formative elementary years. In order to reduce substance abuse among youth, the Fitness and Career Awareness Program (FCAP) focuses on revitalizing the students' physical and mental health through drug and

health education, physical fitness, self-esteem enhancement, adoption of positive role models, and encouragement of career mindedness. Thus, the program targets the social-psychological factors promoting substance abuse with the intent of providing students with general skills and knowledge that have a broad application for healthful living.

The FCAP was implemented in nine Chicago public elementary schools in October, 1992. While new prevention strategies such as the FCAP appear to be promising, evaluation must be a critical, on-going component of prevention education if children are to be provided with the most effective programs (English & Austin, 1989). A recent meta-analysis of evaluations of drug prevention programs turned up only four studies for elementary grades that were suitable for analysis (Bangert-Drowns, 1988). One purpose of the present study was to evaluate the effectiveness of the FCAP.

There has been relatively little research focused on childhood or preadolescent predictors of subsequent drug involvement. Although the average age at which young people begin experimenting with drugs has been steadily declining (Bernard, Fafoglia, & Perone, 1987; Bradley, 1988; Needham, 1987), the majority of studies assessing the precipitating factors of drug use have concentrated on adolescents. Thus, in addition to determining the effectiveness of the FCAP,

the present study also examined: the predictors of drug use and drug use intentions among elementary students, the nature of the shifts in drug attitudes and susceptibility to peer pressure as students progress through the elementary grades, the factors associated with the initiation of drinking behavior, and the correlates and predictors of students' educational aspirations and academic motivation.

Review of the Drug Prevention/Education Literature

An assessment of the need for drug prevention programs at the elementary school level. The high proportion of young people who use and abuse alcohol and other drugs is one of the most serious problems facing our nation today. The United States has the undesirable distinction of ranking first among all industrialized nations in the number of young people using illicit drugs (Hooper, 1988). The abuse of these substances puts young people at risk for serious health, social, and academic consequences. Unfortunately, there is an increasing national trend of substance abuse among young people who are experimenting with drugs at an earlier age than ever before (Bradley, 1988; Drug Use Continues, 1989; Needham, 1987). The average age at which American children first use drugs has reached its lowest point ever, 12.5 years for alcohol and 11.8 years for marijuana (Needham, 1987). Over the last decade, the percentage of sixth graders using drugs has tripled (Bennett, 1986). The use of alcohol, marijuana and

cigarettes escalates rapidly during sixth and seventh grades (Benard, Fafoglia, & Perone, 1987). A recent (1987) national Weekly Reader survey of 136,000 elementary school students found that among fourth graders, 41% reported "some to a lot" of pressure to use cigarettes; 34% reported pressure to use wine coolers; and 24% reported pressure to use crack or cocaine. As with other drugs, reported pressure to use rose with each grade: 68% of seventh to twelfth graders reported pressure to use cigarettes, 66% to use wine coolers, and 33% to use cocaine.

Given the increasing popularity of drug use and abuse among younger children, the initiation of alcohol and drug prevention programs at the elementary school level is imperative. A primary reason for the early initiation of prevention programs is that once children become introduced to drugs, the program becomes rehabilitation rather than prevention (Richardson, 1985). Moreover, the earlier the age of initiation into drug use, the greater the probability that there will be more involvement with drugs in the future, and the likelihood of discontinuing use is diminished (Falck & Craig, 1988; Narak, 1987).

Most serious social problems affecting young people inevitably surface on the school grounds. While schools have not created the drug problem, they are faced with its deleterious consequences. Drug use can have a negative impact on learning and many of the principal factors that

contribute to learning such as memory, sensory perception, motivation, practice and reward (Rosiak, 1987). Furthermore, according to a 1984 staff report from Educational Research Services (ERS), the worst type of discipline problem is the use of alcohol and drugs by students. A school will certainly be unable to fulfill its primary responsibility of creating an environment conducive to learning if students are engaged in drug use. Since the use of alcohol and drugs has been increasing among school-age youth, students should be provided with an instructional program aimed at assisting them to incorporate sound attitudes, values and behaviors regarding drug use into their daily patterns of living. School is often the dominant social setting for children, providing them the opportunity to make friends, exercise choices and form values (Bradley, 1988). The data from several national surveys indicate that the elementary school is the place to begin such an attack on drug and alcohol abuse (Bradley, 1988; Campbell & Swanchak, 1982).

Historical overview of recent prevention strategies.

While the use of a school setting for educational programs designed to reduce the use of alcohol and other drugs has been a fairly stable prevention strategy since the mid 1960s, program content has varied considerably with time. The first prevention approach that was adopted in the late 1960s focused on providing specific information about substances and their effects. This approach was based on

the knowledge-attitude-behavior model which assumed that users simply did not know that drug use was unhealthy, and that an increase in such knowledge would deter students from using substances. The resulting programs were quite effective in increasing students' knowledge, but the increase in knowledge did not consistently produce the desired results on attitudes toward drug use and subsequent drug using behaviors (English & Austin, 1989; Falck & Craig, 1988). Part of the reason why most knowledge-based programs did not succeed in reducing substance use is the fact that substance use is related to a variety of factors (e.g., curiosity, rebellion, rite of passage, boredom) other than the absence of knowledge about the consequences of drug use.

During the 1970s, prevention efforts adopted an affective approach that shifted the focus from factual information regarding drugs to person-level variables. That is, preventionists targeted the relationship between drug use and variables such as low self-esteem, poor decision making skills, stress and poor communication skills (English & Austin, 1989). Although the affective programs may have changed students' attitudes about drugs and improved their ability to make decisions and communicate, their level of drug use did not decrease (English & Austin, 1989; Polich, Ellickson, Reuter, & Kahan, 1984). The failure of such programs has been primarily attributed to the lack of opportunity for students to learn how to use their new

skills in the context of drugs.

The 1970s also saw the development of an alternative activities approach to drug prevention. Programs utilizing this approach focused on involving students in activities such as community service, athletics, music, and art. The assumption underlying these programs was that youth turned to drug use because they were not involved in positive activities that meet the same needs as drugs such as personal growth, excitement, risk-taking and relief from boredom (English & Austin, 1989). Although these programs generally succeeded in developing students' interest in healthful activities, the connection between the alternate activities and reduction in drug use was never firmly established.

Another popular approach in the 1970s was testimonials of ex-addicts regarding the "certain hell that awaits the habitual user" (Sagor, 1987). The potential danger with this approach is that students may internalize the message that "the tough can survive, speak at schools, and make money as a result" (Richardson, 1985).

An examination of the psychosocial approach to drug prevention: pioneering work of Richard Evans. More sophisticated psychosocial strategies began to emerge late in the 1970s. The early work in this area was pioneered by Richard Evans and his colleagues (1978; 1981) at the University of Houston. Evans expanded the traditional

knowledge-based approach to smoking prevention through the application of social psychological principles. That is, Evans' program attempted to combat the important social forces that might lead adolescents to smoke (i.e., peer pressure, parent modeling and media pressure).

The content of Evans' program was largely shaped by McGuire's social inoculation theory, with additional theoretical bolstering from persuasive communications theory (McGuire, 1969) and social learning theory (Bandura, 1977). Delivery of the program involved three interrelated modes: (1) a set of videotaped situations in which peer models confronted social pressures to smoke; (2) discussion and role play sessions designed to reinforce, clarify and personalize the messages delivered through the videotapes; and (3) posters placed throughout the school to assist students in retaining information.

Evaluations of Evans' program have yielded somewhat equivocal results. That is, large scale evaluation efforts turned up encouraging initial effects, but long-term outcomes were less promising and somewhat difficult to interpret due to methodological problems (Evans, Rozelle, Maxwell, Raines, Dill, Guthrie, Henderson, & Hill, 1981; Flay, 1985). However, the innovative theoretical foundation on which the program was based has influenced the development of more recent psychosocial prevention programs.

Contemporary applications of the psychosocial approach.

The programs that developed out of the work of Evans' and his colleagues can be categorized into three types: social influence interventions (Arkin, Roemhild, Johnson, Luepker, & Murray, 1981; Flay, Ryan, Best, Brown, Kersell, d'Avernas, & Zanna, 1985; Lando, 1985; Murray, Johnson, Luepker, & Mittlemark, 1984), social and personal competencies training programs (Botvin, Eng, & Williams, 1980; Glasgow & McCaul, 1985; Schinke & Gilchrist, 1983), and cognitive development programs (Bush & Iannotti 1985; Leventhal, Fleming, & Glynn, 1988).

The social influence approaches stem directly from Evans' initial work and focus primarily on smoking prevention. The majority of these approaches concentrate on one or more aspects of (a) teaching students about social influences to smoke, (b) providing them with behavioral skills with which to resist those influences and (c) correcting their perceptions of social norms (Flay, 1985).

Social and personal skills approaches draw largely upon social learning theory (Bandura, 1977) and problem behavior theory (Jessor & Jessor, 1977). From this perspective, substance use is conceptualized as a socially learned purposive and functional behavior which results from the interaction of social-environmental, personal and behavioral factors (Forman & Linney, 1991). Programs developed under this approach assume that youth use substances in order to

attain a variety of pleasing benefits including enhanced self-esteem, self definition and regulation of negative affect (Botvin, 1987). Thus, these programs attempt to improve students' general personal and social competence, thereby reducing potential motivations to engage in drug use (Botvin & Wills, 1985). The Life Skills Training (LST) program (Botvin, Eng, & Williams, 1980) has been one of the most studied social and personal skills training programs. The LST program focuses on five components (i.e., knowledge, decision-making, anxiety management, social skills training, self improvement) designed to facilitate the development of generic life/coping skills as well as skills and knowledge more specifically related to resisting social influences to use drugs (Botvin, 1983). Evaluation of the program has turned up some promising findings. Students exposed to the peer-led program showed a statistically significant decrease in cigarette smoking and marijuana use as compared with those students exposed to the teacher-led and control groups.

The cognitive developmental approach to prevention is based on a stage model of smoking acquisition (Hirschman, Leventhal, & Glynn, 1984; Leventhal, Fleming, & Glynn, 1988). According to this approach becoming a smoker involves a series of developmental steps that progresses from initiation to maintenance. Leventhal (1988) developed a prevention program based on this approach that attempts to

alter the way information is processed and smoking experienced at each developmental step. This program is designed to be used in conjunction with refusal skills training. A major emphasis is placed on changing the labels and interpretations of the bodily sensations young people experience when they begin to smoke so that their initial experimentation with cigarettes confirms the view that smoking is harmful. This notion of labeling ambiguous physical sensations has its roots in social psychological research that shows the importance of individual's cognitive labeling of their physical states (Schachter & Singer, 1962). Leventhal's program also addresses the motivations behind cigarette smoking (e.g., social compliance, affect regulation, self-definition) by providing information designed to change the symbolic meaning of smoking vis-a-vis the needs to which the students are responding (Glynn, Leventhal, & Hirschman, 1985). Initial evaluations of this program have shown a significant decrease in the number of students smokers at a 6-month follow-up, compared with control conditions (Hirschman & Leventhal, 1989).

Finally, Jaccard, Turrisi, and Wan (1990) advocate a behavioral decision making approach to the formation of programs involving social actions such as drug prevention. As the name suggests, Jaccard's approach focuses on the processes people engage in when deciding whether to perform a given behavior. More specifically, behavioral decision

theory concentrates on a series of eight activities that a person may engage in during the decision making process: problem recognition, goal identification, option generation/identification, information search, assessment of option information, choice process, behavioral transition, and post decision evaluation. Behavioral decision theory stresses the importance of not only persuading people to decide to perform a behavior, but also getting them to enact that behavior. That is, programs should consider the impact of such factors as habit, ability, and memory on the process that determines whether a behavioral decision will be translated into an actual behavior. One caution this approach points out that is particularly relevant to drug prevention efforts at the elementary level is that the target audience may already be inclined to make the advocated decision (i.e., not to use drugs). In such a case, the program should focus on helping students carry out their decisions rather than solely attempting to influence the decision (Jaccard et al., 1990).

A Review of Several Drug Prevention Programs Implemented at the Elementary School Level

There are many prevention programs being implemented at the elementary level that utilize the psychosocial approach discussed above. One such program that has received national recognition is D.A.R.E., or Drug Abuse Resistance Education. DARE is a substance abuse education program

taught by uniformed officers. The purpose of the program is to equip fifth and sixth grade students with the skills needed to make decisions, solve problems and resist peer pressure. Research results reported from several states show that the DARE program provides children with information and skills that maximize their potential for adopting healthful, drug-free habits (Pellow & Jengeleski, 1991).

The Here's Looking at You (HLAY) alcohol education program was selected as a model program by NIAAA and has been disseminated in several areas throughout the United States. The HLAY program is based on the assumptions that alcohol-related problems among young people will decrease if they (1) have a greater degree of self-esteem; (2) are better able to cope with life's problems; (3) have current facts about alcohol and alcoholism; and (4) are more skilled at handling interpersonal relationships (Kim, 1988). Separate HLAY curriculum kits for the elementary, junior high, and high school grades have been developed. Thus far the evaluation findings which have been reported from several different sites are mixed.

The I'm Special Program (ISP) consists of a nine-session, one-session per week curriculum directed at third or fourth graders. The ISP is based upon ideas drawn from the growth-oriented, social control and social learning theories. Reflecting upon these theories, the mission of

the ISP is to reduce or delay the onset of drug use by helping the child to develop a sense of self-worth, social skills and effective group cooperation skills. Findings from a long-term evaluation of the ISP showed a significant reduction in alcohol and drug use among the ISP recipients compared to the non-recipients. These effects continued to manifest themselves for approximately four years following program completion (Kim, McLeod, & Shantzis, 1990).

Another program that has been field tested in rural and urban schools in Canada is Tuning In To Health: Alcohol and Other Drug Decisions (TITH). The purpose of the TITH program is to reduce problems associated with drugs by helping students to understand: (1) what drugs are; (2) the effects of drugs on the body; (3) the factors that influence people to use or not use drugs; (4) decision-making as a way to deflect influences that promote drug use; and (5) alternatives to drug use (Ambtman, Madak, Koss & Strople, 1990). The program spans grades two to nine. An evaluation of the TITH program revealed a positive impact among second through sixth grade urban students. Mixed results, however, were obtained for students in rural schools.

As evidenced in the above descriptions, there is a fair amount of overlap in the techniques used in many school-based drug prevention programs. This overlap stems in part from the fact that the different prevention approaches on which the programs are based share many of the same elements

Table 1

Content Areas Stressed by Several of the Major Approaches to Drug Use Prevention

| <u>CONTENT AREAS</u> | <u>PREVENTION APPROACHES</u> | | | | | | |
|--|------------------------------|-----------|----------|-----------|-----------|------------|-----------|
| | <u>RT</u> | <u>AO</u> | <u>T</u> | <u>AA</u> | <u>SI</u> | <u>SPS</u> | <u>CD</u> |
| Knowledge About Drugs | X | | X | | X | X | X |
| Attitude Change | X | X | X | | X | X | X |
| Provision of Alternative Activities | | | | X | | | |
| Social Skills Training | | X | | X | X | X | X |
| Anxiety Management | | X | | | | X | X |
| Refusal Skills | | X | | | X | X | |
| Corrections of Social Norm of Drug Use | | | | | X | | |
| Role Modeling | | | | | X | X | |
| Peer Teachers | | | | | X | X | |
| Testimonies of Ex-Addicts | X | | X | | | | |
| Information about Social Influences | | | | | | X | |
| Decision Making Skills | | X | | | | X | |
| Self-Esteem Enhancement | | X | | | X | X | X |
| Cognitive Labeling of Physical Reactions | | | | | | | X |

KEY: RT=Rational Theory; AO=Affective Only; T=Testimonial; SI=Social Influence; SPS=Social and Personal Skills; CD=Cognitive Development.

in common. Table 1 illustrates the major areas of focus for several of the most frequently researched approaches to the prevention of drug use.

Description of the Fitness and Career Awareness Program

Athletes Against Drugs' FCAP has a psychosocial foundation and contains several of the components outlined in Table 1. In order to reduce substance abuse among youth, the FCAP focuses on revitalizing the students' physical and mental health through drug and health education, physical fitness, self-esteem enhancement, adoption of positive role models, and encouragement of career mindedness. Thus, the programs' approach targets the social-psychological factors promoting substance abuse with the intent of providing students with general skills and knowledge that have a broad application for healthful living.

Figure 1 illustrates the program theory that underlies the FCAP. Program theory makes explicit the often implicit set of cause-and-effect relationships that produce the rationale for the nature of a particular treatment (Scheirer, 1987). To facilitate a better understanding of the program theory depicted in Figure 1, the content and objectives of the major components of the FCAP are briefly summarized below according to the intended area of impact.

Substance abuse education. Several of the program's components are designed to increase student knowledge about substances and the consequences of their use.

| <u>PROGRAM ACTIVITIES</u> | <u>PROGRAM OBJECTIVES</u> | <u>INTERMEDIATE OUTCOMES</u> | <u>DISTAL OUTCOMES</u> |
|--|--|--|---|
| * Curriculum Lessons in drug prevention ---> * Role Model Speakers | Supplement Classroom Instructions with Substance Abuse Education ----> | Increase Students' Knowledge About the Consequences of Drug Use -----> Cultivate an anti-Drug Abuse Attitude | Prevent the Initiation of Drug Use |
| * Curriculum Lessons in health/fitness * Sports Clinic ----> * Health/Nutrition Seminars | Supplement Classroom Instructions with Materials on Health/ Fitness/Nutrition ----> | Increase Students' Knowledge About Proper Nutrition & Fitness Develop Students Interest in Sports/ Exercise ----> | Increase Students' Selection of Nutritional Foods Enhance Students' Physical Fitness |
| * Curriculum Lessons in career awareness/goal setting/self-esteem enhancement ----> * Career Days/Role Model Speakers * Corporate Site Visit | Provide Program Activities Related to the Promotion of Academic Achievement/ Career Awareness/ Self-Esteem Enhancement ----> | Broaden Students' Knowledge About Career Options -----> Help Students Develop a Commitment to Achieving Success Through Education ----> | Strengthen Students' Perception of the Relationship b/w Work & Education Have Students set Education & Caree Goals |
| * Parent Workshops ----> | Inform Parents about Nutrition/Drug Prevention/Health/ Fitness ----> | Increase Parental Participation in their Child's Education and Development ----> | Prevent the Initiation of Drug Use Increase Students' Academic Motivation |
| * Community Projects ----> | Provide Avenue for Community Involvement ----> | Provide Students with Productive Activities To Participate in ----> | Increase Students' Activity Level Enhance Students' Self-Esteem |

Figure 1. Illustration of the program theory underlying the Fitness and Career Awareness Program

(1) Curriculum lessons: Accurate information about substances and their short and long term effects are disseminated in three 40-minute sessions.

(2) Role model speakers: Through a discussion of their life experiences, the role model speakers provide students with information pertaining to the negative consequences of drug use. These two components, in conjunction with the other facets of the program, could help to cultivate a healthy attitude regarding drug use, and prevent and/or decrease the actual use of substances by students.

Promotion of health and fitness. In addition to providing accurate information about drugs, there is a need to instill the value of good personal health at an early age (Bennett, 1986). There are several activities incorporated in the FCAP that address this need.

(1) Curriculum lessons: Students receive three 40-minute periods of instruction on health and fitness topics.

(2) Sports clinic: The sports clinic was designed to introduce students to the fundamentals of a variety of sports (e.g., tennis, golf, basketball). Each student is provided with the opportunity to participate in the sporting activity. During the clinic, member athletes not only try to develop the students' interest in the sport, but they also stress the importance of remaining drug free and keeping a healthy mind and body.

(3) Health nutrition seminars: A speaker from the

Chicago Department of Health provides the students with nutritional information and stresses the importance of making healthy food choices.

Together these three program components serve as a buttress to substance abuse prevention by encouraging students to strive for healthy bodies, a goal which precludes the use of substances.

Promotion of Academic Achievement and Self-Esteem Enhancement. Several of the FCAP components are designed to help students understand the relationship between the skills learned in school and the preparation for life and work. These components stress the importance of achieving through education and help aid in the development of a positive self-concept.

(1) Curriculum lessons: Students are provided with three 40-minute sessions on career awareness, self-esteem and goal setting.

(2) Career days/Role model speakers: This component consists of two to four speakers addressing the class for 30 minutes each. The content of the speakers' discussions center around their educational path, the skills involved in their work and any of their life experiences they wish to share with the students. The underlying theme of the messages stresses the importance of remaining drug free and staying in school in order to succeed and have a productive life.

(3) Corporate site visit: This component involves taking the students to a job site in order to expose them to the actual working environment. They receive a tour of the organization and learn about the different jobs that are performed there.

Parental participation. Parents have been pinpointed as the strongest prevention influence on youth 8 to 12 years old (Macro Systems, 1986). Research suggests that children are more likely to engage in problem behavior if their parents engage in such behavior (Jessor, 1982; Kandel & Yamaguchi, 1985). Recognizing the power of parental influence, the FCAP tries to get parents involved via the parental workshop.

(1) Parent workshops: During the workshop, health and social service professionals inform parents on issues regarding diet, nutrition, drug use prevention, fitness and health. Parents are also provided with materials to reinforce fitness and career awareness (e.g., family health programs, family fitness programs, alternative activities for families with school-aged children). Overall, the workshops are designed to serve as a forum where parents can be informed about what they can do at home to reinforce the drug prevention message.

Community involvement. Students spend a considerable amount of time outside of the school environment. Consequently, programs that extend beyond the school to

include and utilize families, peers, media, older adults and community agencies offer youth a better chance at being drug free. Implementation of the FCAP involves numerous links to the community and completion of a community project.

(1) Community linkages: The program utilizes various professionals (e.g., corporate workers, coaches, athletes) and volunteers from the community to assist in the implementation of several key program components (e.g., corporate site visit, sports clinic, role model speakers).

(2) Community projects: The FCAP provides for involvement of the general community in the vicinity of each school by way of the community project. Students choose a project within their community (e.g., removing graffiti, cleaning up a park) and work together to accomplish the goals put forth. This component provides students with a means by which they can improve their community and their self-concept.

Thus, the components of the FCAP collectively target the social-psychological factors promoting substance abuse with the intent of providing students with general skills and knowledge that have a broad application for healthful living.

Role of Attitudes/Beliefs in Drug Prevention for Elementary Level Students

For many programs similar to the ones described above, the ultimate criterion of effectiveness lies in the

reduction or prevention of drug use. For children at the elementary level, drug behavior patterns have not yet been or are just beginning to be formed. Behavior and attitudes surrounding a newly adopted behavior tend to be supportive of each other. For example, in their longitudinal study of adolescent behavior, Jessor and Jessor (1977) found that an initial shift in attitudes toward favoring alcohol use preceded actual usage outside of the home. Initial use was then followed by a further shift in attitudes favoring use. These findings are in line with Festinger's theory of Cognitive Dissonance, which postulates that if attitudes are contradictory to one's behavior, the ensuing cognitive dissonance will force either a change in attitude or a change in behavior. However, even when people perform behaviors that run counter to their attitude, certain conditions must be present if dissonance is to be aroused. That is, a person must feel that he or she exercised free choice in committing the behavior in question and was aware that the behavior would lead to some negative consequences for which he or she would be held responsible (Petty & Cacioppo, 1981).

In the absence of these conditions, self-perception theory (Bem, 1967) provides an alternative explanation for attitude change. According to self perception theory, when people fail to find a reasonable external explanation for their behavior, they may look for an internal one (i.e.,

attitudes), suggesting that people also change their attitudes from observation of their own behaviors.

Shifts in drug attitudes and susceptibility to peer pressure as students mature. Previous research suggests that pivotal changes occur in children's attitudes regarding alcohol and other substances between the ages of 10 and 14 (Aitken, 1978; Jahoda & Cramond, 1972). That is, children's attitudes toward drugs tend to be negative at the age of eight through 10 and become increasingly more pro-drug by age 11 to 12 years (Pisano & Rooney, 1988). This shift in attitude may be indicative of a starting point which may lead to progressively more pro-drug attitudes. These changes in attitudes coincide very closely with the increasing importance of peer companionship over parental guidance (Stone, Miranne, & Ellis, 1979). Taken together, these shifts suggest that as peer influence grows and attitudes become more pro-drug, use will begin or increase. This transitional stage of development marks an especially appropriate time to intervene in an attempt to avert potential future abuse. Students' attitudes toward drugs and their ability to resist drug-related peer pressure were compared across grade level in order to see if the shifts documented in previous research are evident in this sample. To shed further light on the development of students' drug-related views, current and intended future drug use behavior were also examined by grade level.

An investigation of the predictors of alcohol initiation in elementary students. Even if a prevention program succeeds in changing a student's attitude toward drugs and drug use (i.e., student's attitude shifts from pro- to anti-drug), the real payoff comes when the new anti-drug attitude guides the student's behavior. That is, when confronted with a drug using situation, the youth acts in accordance with his or her anti-drug attitude and does not engage in drug use.

One model of the process by which attitudes guide behavior is Fishbein and Ajzen's (1975) theory of reasoned action. The theory of reasoned action posits an expectancy value formulation of attitudes. Fishbein and Ajzen (1975) write:

A person's attitude toward an object can be estimated by multiplying his evaluation of each attribute associated with the object by his subjective probability that the object has that attribute, and then summing the products for the total set of beliefs. Similarly, a person's attitude toward a behavior can be estimated by multiplying his evaluation of each of the behavior's consequences by his objective probability that performing the behavior will lead to that consequence, and then summing the products for the total set of beliefs. (p. 223)

According to the theory of reasoned action, a person's

intention to perform (or not perform) a behavior is the best predictor of his or her subsequent behavioral acts. Behavioral intentions to perform an act are predicted from a person's attitude toward the specific act and their normative beliefs about the act. The relative importance of the attitudinal and normative factors as determinants of intention is reflected in the weights assigned to each factor. Thus, prevention programs aimed at the attitude (or normative) component will be effective in changing behavior only for people who have a large weight for that component (Ajzen, 1971). Fishbein (1980) also noted that when attempting to predict habitual behaviors such as drug use, predictions may sometimes be improved by measuring intentions (and/or the underlying attitudes and subjective norms) with respect to all of the person's alternative courses of action. Although some of the specifics of the theory of reasoned action have been disputed, its basic framework has proven successful in accounting for a wide variety of behaviors (Ajzen & Fishbein, 1980; Sheppard, Hartwick, & Warshaw, 1988).

As illustrated in Figure 1, the FCAP utilizes curriculum lessons in drug prevention and role model speakers in an attempt to cultivate an anti-use attitude among students, which should in turn lead to negative intentions toward drug use. The FCAP also attempts to help students develop interest in and favorable attitudes toward

several other areas such as school achievement, health, fitness and self-esteem. These efforts are designed to further contribute to students' formation of negative drug use intentions.

An investigation of the factors associated with the initiation of alcohol use was chosen for study because alcohol is a popular gateway or entry drug among children and adolescents (Drug Use Continues, 1989; Oetting & Beauvais, 1990) and it has not received as much recent attention as its gateway counterpart, cigarettes. Furthermore, young people are unlikely to use drugs such as marijuana and cocaine unless they have had some experience with the gateway drugs (Alder & Kandel, 1981). The implication of such a pattern of progression from entry-level drug use (e.g., alcohol and/or cigarettes) to illegal drug use among youth is that prevention of early involvement with gateway drugs may be efficacious in reducing the probability of future illicit drug use. Thus, a better understanding of the factors that lead to the initiation of alcohol use will aid program developers in their efforts to prevent the early initiation of such substance use, thereby deterring or delaying the potential onset of further drug use.

Evans and his colleagues (1988) pointed out the importance of systematically investigating the process

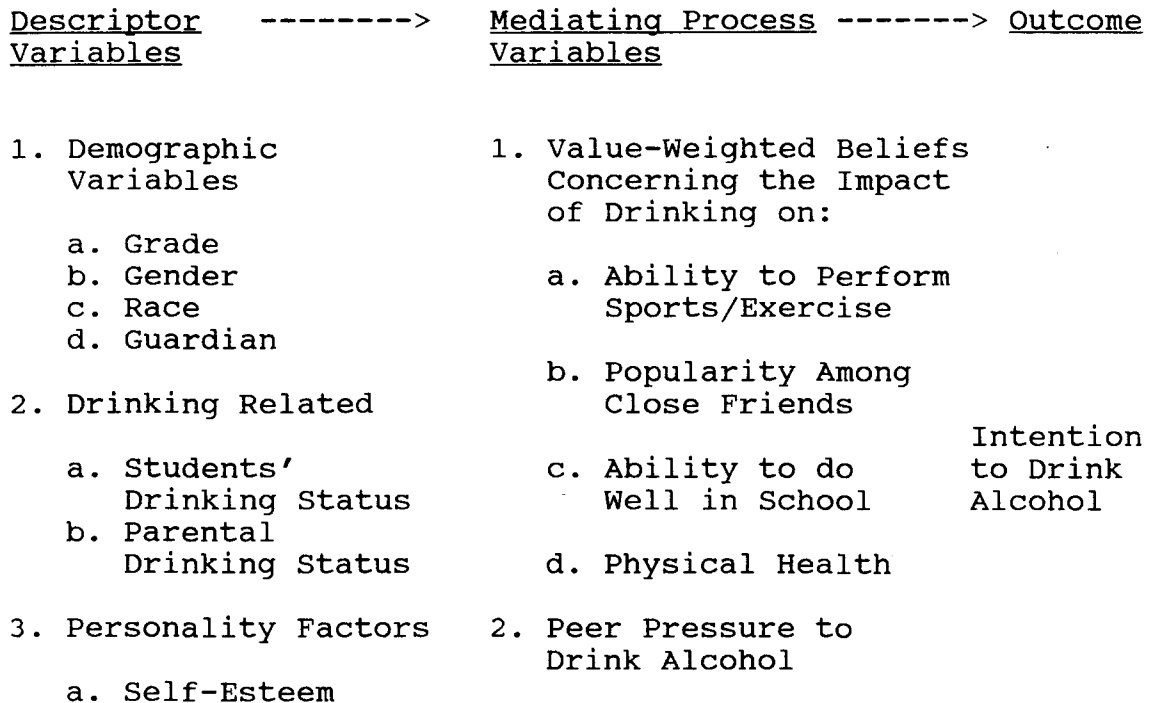


Figure 2. Model of a descriptor-mediator-outcome chain for preadolescent intentions to drink alcohol

behind a behavior or intention rather than concentrating exclusively on descriptor-outcome relationships. That is, distinguishing between descriptor and mediating process variables facilitates an orderly investigation of a process, acknowledging that descriptors do not directly influence outcomes. An example of a possible descriptor-mediator-outcome chain which may underlie the process of drinking initiation is illustrated in Figure 2.

Descriptive variables refer to demographic, personality and environmental variables that characterize individuals and their environments. Although descriptor variables may

be causally related to an outcome, their impact is felt only as they influence the process through mediating process variables (Evans, Dratt, Raines, & Rosenberg, 1988). Mediating process variables are the intervening constructs (e.g., cognitions, perceptions, beliefs) that link descriptive variables to the outcomes of interest. In accordance with the theory of reasoned action (Fishbein & Ajzen, 1975), drinking intention may be conceptualized as the immediate determinant of future drinking behavior. Since the majority of elementary-age students do not exhibit frequent drinking behavior (Pisano & Rooney, 1988), students' intentions to drink alcohol represents a more viable outcome variable.

Although a systematic examination of the process underlying the initiation of alcohol use is a worthy endeavor, the present data probably do not have sufficient power to adequately test a process model. Consequently, the present investigation was focused on determining the factors which contribute to preadolescent intentions to engage in alcohol use, rather than examining the process by which such factors may operate. The variables used to predict students' drinking intentions were as follows: demographic variables (i.e., age, gender, race, guardian status), drinking-related variables (i.e., student drinking status, parental drinking status), self-esteem, students' value-weighted beliefs regarding the consequences associated with

drinking and students' ability to resist peer pressure to drink.

The discovery of factors which predict students' intentions to use alcohol may aid in the future development of a reliable model of the process underlying drug use initiation. Furthermore, a better understanding of the factors which predict future use behaviors will help program planners decide which areas to target in their prevention efforts. It should be noted, however, that a prevention program may not be able to influence all of the variables that predict students' future drug use intentions.

Therefore, in the interpretation of results, a distinction was made between program variables and non-program variables. The program variables are factors that receive direct and explicit focus in the FCAP (e.g., drug knowledge, drug attitudes, self esteem). The non-program variables, on the other hand, did not receive explicit attention in the program and are mostly demographic characteristics or extrapersonal influences (e.g., race, parents, peers).

An Examination of the Correlates and Predictors of Educational Aspiration and Academic Motivation at the Elementary Level

While most school-based drug prevention education programs targeted at the elementary level attempt to cultivate a healthy attitude toward substance use, few include components designed to promote academic and career

aspirations. However, the concentration on academic motivation, career awareness and goal setting is thought by many preventionists to be a crucial component of drug prevention programs, even at the elementary level. A study conducted by Jessor and Jessor (1978) in the Colorado public schools concluded that "the best predictor of drug taking was the value students placed upon education and the expectation of success through education." Furthermore, non-users tend to report higher overall grades, fewer absences and cut classes, higher academic aspirations, more interest in school work and stronger feelings of its importance (Paulson, Coombs, & Richardson, 1990).

Although career education may not seem pertinent to the immediate concerns of the elementary child, it is at this level where fundamental behavioral patterns, habits, attitudes and skills are learned. A career awareness program initiated at the elementary level can capitalize on these formative years by demonstrating to the children the relationship between the skills learned in school and the preparation for life and work. The development of positive attitudes regarding work and education can also be initiated at this level (Evans, Dobson, & Sebbs, 1976; Gillet, 1981; Paulovitis, 1980). The present study examined the impact of a fairly extensive career awareness sub-program on elementary level children. That is, an attempt was made to determine whether children of this age are receptive to

information regarding their future career and educational plans.

Within the field of psychology, the notion of achievement motivation has been studied from an expectancy value perspective. McClelland and Atkinson's (1960) motive-based achievement model makes use of this expectancy value approach to understand and predict achievement behavior. According to this model, people high in need achievement are more likely to engage in tasks which "test" their abilities, while people low in need achievement tend to avoid tasks that test their abilities (Shaw & Costanzo, 1982). A person high in need achievement is typically high in the motive to achieve success and low in the motive to avoid failure. Conversely, someone low in need achievement is often characterized by a lower motivation to achieve success and a higher motivation to avoid failure. In order to determine the strength of motivation to perform a specific achievement task, achievement motive is combined multiplicatively with expectation that the act in question will lead to an incentive and the value of that incentive (Atkinson & Feather, 1966). The achievement behavior exhibited by a person in a given situation is the sum of approach (motive to achieve success X subjective probability of success X incentive value of success) and avoidant (motive to avoid failure X subjective probability of failure X incentive value of failure) tendencies. Individuals who approach

success have a tendency to prefer tasks of moderate difficulty (i.e., where probability of success and probability of failure are close to .50), whereas individuals who avoid failure prefer either very easy or very difficult tasks.

The motive-based achievement model and the theory of reasoned action both take an expectancy value approach to the formulation of their perspectives. That is, they both use a multiplicative combination of an individual's subjective probability that an event or consequence will occur and the value of that event in order to determine the person's subsequent behavior. The theory of reasoned action goes on to compute a weighted sum of a person's attitude and subjective norm in order to predict behavioral intention and ultimately the behavioral act itself. The motive-based achievement model, on the other hand, first combines the person's expectancy, value and motive strength for success and failure separately, and then takes the sum of the two products to directly determine achievement behavior without systematically incorporating intention.

Although the ideas put forth in McClelland and Atkinson's model were not directly tested, they helped to guide the present investigation of students' academic motivations and educational aspirations. This study examined the contribution of such factors as level of academic motivation, value placed on school performance and

degree of career awareness in determining students' level of educational aspirations. In keeping with the focus of the FCAP, there was also an examination of the role drug-related variables (i.e., current use behavior, intentions to use, beliefs, knowledge) played in determining a students' level of academic motivation.

Minority Issues

While the need for prevention for all youth is clearly evident, that need may be even more acute for minority youth. Unfortunately, there is a relative lack of drug research specifically on minorities and even less on minority youth (Hanson, 1985; Welte & Barnes, 1987; Wright & Watts, 1988). A longitudinal study of California adolescents from four ethnic groups (Caucasian, African-American, Hispanic, and Asian-American), revealed no significant differences between Caucasians and Hispanics in level of alcohol use across five years time. African-Americans and Asian-Americans demonstrated consistently lower use levels than Hispanics or Caucasians (Newcomb, Maddahian, & Bentler, 1986). Most national drug surveys show that, in general among children and adolescents, Native Americans show the highest drug use rates, particularly reservation youth. Asian-Americans or African-Americans are reported as having the lowest rates of use with Mexican-American and Caucasian youth higher (Oetting & Beauvais, 1990).

Much of the current body of research on minority

substance use has focused on rural youth, while neglecting much needed investigation of questions concerning substance use and urban minority youth - youth who are often at high risk for substance abuse problems (Harper, 1988). A study of urban black youth in St. Louis found that Black youth often grew up in heavy-drinking families and neighborhoods where they tended to acquire an attitude toward heavy drinking and a pre-disposition to alcohol related problems. In a survey of 1095 youth (93% black, 51% female, 49% male) in Washington D.C. on the topic of drug and alcohol use, Dawkins (1981) found that these urban youth (a) drank more at night, during weekends, and on holidays; (b) took their first drink between the ages of 11 and 15; (c) were likely to receive their first drink either from friends at a party or from parents; (d) were very likely to drink in a group or with another person; and (e) drank primarily for the expressed reason of celebrating an occasion or having a "good time."

Compared to the general population, ethnic and racial minority youth experience higher risks of factors known to be associated with drug abuse (e.g., poverty, school failure, family problems, and involvement in the criminal justice and social welfare systems). Epidemiologic survey data indicate that racial/ethnic minorities, especially those from lower socioeconomic urban areas, are overrepresented in treatment programs and drug-related

emergency hospital admissions (Austin, 1988). Urban minority youth thus have a greater chance of residing under conditions that are conducive to promoting abuse, as predicted by the risk-factor approach. Adding urgency to the problem, they are one of the fastest growing segments of the American population (Hanson, 1985; Trimble, Padilla, & Bell, 1987; Wright & Watts, 1988). The setting in which the FCAP was implemented provided the unique opportunity to expand our current knowledge base regarding the attitudes and substance use patterns of urban minority youth at the elementary level.

Summary

Substance use among youth is a serious problem with consequences felt at all levels of society. Comprehensive prevention programs like the FCAP that attack drug and alcohol abuse at the elementary level are clearly prudent. Even though such new prevention strategies appear to be more effective than their predecessors, the field of substance abuse prevention is still in its infancy. In order to determine the efficacy of new prevention efforts, evaluation must be a critical on-going component of prevention education (English & Austin, 1989). In addition to the evaluation of the effectiveness of the FCAP, the present study also examined: the predictors of drug use and drug use intentions among elementary students, the nature of the shifts in drug attitudes and susceptibility to peer pressure

as students progress through the elementary grades, the factors associated with the initiation of drinking behavior, and the correlates and predictors of students' educational aspirations and academic motivation.

CHAPTER 2

METHOD

Sample Description

Eleven elementary schools in the Chicago Public School system were selected to participate in the FCAP at the recommendation of the director of the Bureau of Community Resource Programs, Chicago Public Schools, to reflect Chicago's racial, economic and cultural diversity. Of the 11 treatment schools originally selected, two dropped out prior to the start of the FCAP. One additional school was selected to serve as a comparison school.

There were 1371 students pretested in the Fall of 1992; 1223 from the remaining nine treatment schools and 148 from the comparison school. Each student was assigned a unique identification code to enable matching of the pretest and posttest questionnaires. Posttest information was obtained from 1025 students in the Spring of 1993; 894 from the treatment group and 131 from the comparison group. Through the student identification code and demographic information, 708 of the respondents (i.e., 593 from the treatment group and 115 from the comparison group) were successfully linked from pretest to posttest.

Sample attrition was greater in the treatment group (51.5%) than in the comparison group (22.3%) for primarily three reasons: (a) one treatment school dropped out of the program mid-year (n=258); (b) one treatment school failed to return any posttests (n=201); and (c) another treatment school had only one teacher who returned pretests, thereby rendering the majority (75.8%) of returned posttests unmatchable. The other major reasons for sample attrition in both groups were: (a) students transferring out of school; (b) students transferring from one classroom to another; (c) absence of students during either the pretest or posttest questionnaire administration; or (d) inability to link pretest and posttest questionnaires based on identification codes and demographic information.

Of the 708 students for whom complete information was obtained, 48% are male. The students ranged in age from 8 to 14 years, with a mean age of 10.3 years. The majority of the respondents are African-American (63.3%), followed by Hispanic (29.5%) then Caucasian (6.2%). Students were divided almost equally among the fourth (33%), fifth (37%) and sixth (30%) grade levels. Approximately half (48%) of the students lived with both of their parents. Of the remaining respondents, 31% lived with only one parent and 12% lived with one parent and one step-parent. A breakdown of demographic information by school for the matched sample (N=708) is presented in Table 2.

In order to ascertain whether respondents exaggerated their self-reported use of substances, a question was asked about the ever-use of a fictitious drug named "psychaline." Of the 708 matched respondents only eight (1%) of the FCAP students and none of the comparison students reported ever using the fictitious substance at pretest, and only seven (1%) of the FCAP students and one (< 1%) of the comparison students indicated ever-use at the posttest. Similar results have been obtained in other studies where the use of a fictitious drug was examined (Kandel, 1975; Oetting & Beauvais, 1990; Petzel, Johnson, & McKillip, 1973; Whitehead & Smart, 1972). Furthermore, numerous studies (e.g., Akers, Massey, Clark, & Lauer, 1983; Cooper, Sobell, Sobell, & Maisto, 1981; O'Malley, Bachman, & Johnson, 1983; Rachel, Guess, Hubbard, Maisto, Cavanaugh, Waddell, & Benrud, 1980) have evaluated self-reports of drug use and found them to be a reliable instrument for collecting data and arriving at conclusions. Respondents who endorsed use of the fictitious drug at either pretest or posttest (n=15) were eliminated from subsequent analyses in which self-reported drug use was a variable.

Sixty-two (82%) of the 76 FCAP teachers administered pretest questionnaires, and 52 (68%) administered posttest questionnaires. All seven of the comparison school teachers administered both the pretest and posttest questionnaires. Of those FCAP teachers who participated in the posttest, 35

Table 2

Demographic Information by School for the Matched Sample (N=708)

| | SCHOOL 1 (n=117) | SCHOOL 2 (n=148) | SCHOOL 3 (n=101) | SCHOOL 4 (n=55) |
|------------------------|---------------------|---------------------|---------------------|--------------------|
| <u>GENDER</u> | | | | |
| Male | 49.6% | 51.4% | 49.5% | 54.5% |
| Female | 50.4% | 48.6% | 50.5% | 45.5% |
| <u>RACE</u> | | | | |
| White | 0% | 2.0% | 0% | 0% |
| Black | 100.0% | 14.2% | 98.0% | 96.4% |
| Hispanic | 0% | 82.4% | 1.0% | 3.6% |
| Asian | 0% | 0% | 1.0% | 0% |
| Other | 0% | .7% | 0% | 0% |
| <u>AGE</u> | | | | |
| < 9 | 0% | 0% | 0% | 1.8% |
| 9 | 14.9% | 17.6% | 13.0% | 23.6% |
| 10 | 27.2% | 34.5% | 32.0% | 54.5% |
| 11 | 30.7% | 37.8% | 39.0% | 18.2% |
| 12 | 23.7% | 8.1% | 15.0% | 1.8% |
| > 12 | 3.5% | 2.1% | 1.0% | 0% |
| <u>PARENT</u> | | | | |
| Lives w/ both parents | 29.7% | 67.4% | 26.3% | 37.0% |
| Lives w/ one parent | 46.8% | 20.1% | 34.3% | 37.0% |
| Lives w/ parent & step | 9.9% | 9.0% | 17.2% | 5.6% |
| Lives w/ relative | 10.8% | 2.1% | 15.2% | 9.3% |
| Lives in foster home | .0% | 0% | 0% | 3.7% |
| Other | 2.7% | 1.4% | 7.1% | 7.1% |
| <u>GRADE</u> | | | | |
| 4th | 26.5% | 23.0% | 19.8% | 45.5% |
| 5th | 27.4% | 43.9% | 36.6% | 49.1% |
| 6th | 46.2% | 33.1% | 43.6% | 5.5% |

Table 2 (Continued)

| <u>Demographic Information by School for the Matched Sample (N=708)</u> | | | | |
|---|--------------------|--------------------|--------------------|---------------------------------|
| | SCHOOL 5 (n=21) | SCHOOL 6 (n=72) | SCHOOL 7 (n=79) | COMPARISON SCHOOL (n=115) |
| <u>GENDER</u> | | | | |
| Male | 42.9% | 40.3% | 43.0% | 46.1% |
| Female | 57.1% | 59.7% | 57.0% | 53.9% |
| <u>RACE</u> | | | | |
| White | 0% | 55.6% | 1.3% | 0% |
| Black | 100.0% | 26.4% | 3.8% | 100.0% |
| Hispanic | 0% | 13.9% | 93.7% | 0% |
| Asian | 0% | 2.8% | 1.3% | 0% |
| Other | 0% | 1.4% | 0% | 0% |
| <u>AGE</u> | | | | |
| < 9 | 4.8% | 0% | 0% | 0% |
| 9 | 66.7% | 20.8% | 31.6% | 16.7% |
| 10 | 28.6% | 48.6% | 49.4% | 39.5% |
| 11 | 0% | 26.4% | 17.7% | 30.7% |
| 12 | 0% | 4.2% | 1.3% | 11.4% |
| > 12 | 0% | 0% | 0% | 1.8% |
| <u>PARENT</u> | | | | |
| Lives w/ both parents | 33.3% | 76.4% | 79.7% | 26.3% |
| Lives w/ one parent | 42.9% | 12.5% | 11.4% | 48.2% |
| Lives w/ parent & step | 4.8% | 8.3% | 6.3% | 21.1% |
| Lives w/ relative | 4.8% | 1.4% | 1.3% | 4.1% |
| Lives in foster home | 4.8% | 0% | 0% | 0% |
| Other | 9.5% | 1.4% | 1.3% | 0% |
| <u>GRADE</u> | | | | |
| 4th | 100.0% | 26.4% | 51.9% | 34.8% |
| 5th | 0% | 50.0% | 35.4% | 34.8% |
| 6th | 0% | 23.6% | 12.7% | 30.4% |

(67%) returned completed teacher evaluation forms. An evaluation form was received from at least one teacher in each of the FCAP schools that participated in posttest administration.

Materials

Student questionnaire. The pen-and-paper evaluation instrument was constructed based on a careful reading of the prevention literature and consultation with the program developers. It was designed to be administered by the teachers and completed in one class period. Prior to pretesting, the Student Questionnaire was pilot tested on five students from grades four through six. The questionnaire was also reviewed by at least one teacher/administrator at each grade level. Student and teacher feedback were then used to revise the questionnaire as necessary. The information obtained via the Student Questionnaire is described below.

Questionnaire scales. Twelve scales were used.

Self-Reported Drug Use is a seven-item scale designed to reveal the drug use patterns of the students and was measured on seven-points ranging from "never" to "more than once a day." The substances included were: alcohol, tobacco, cocaine, marijuana, inhalants, and an other substance (e.g., diet pills, sleeping pills) category. A question asking about frequency of use of a fake drug (i.e., "psychaline") was also included as a check on respondents'

consistency. Higher scores on this scale indicate more frequent drug usage.

The Drug Knowledge¹ scale contained 7 items with three response alternatives: "true," "false" and "don't know." Higher scores on this scale reflect greater knowledge about the consequences of drug use.

Beliefs about the Negative Effects of Drugs¹ is a seven-item Likert-type scale measured on five points, ranging from "strongly agree" to "strongly disagree." A high overall score indicates a belief that using drugs is detrimental to one's social, emotional and physical well-being.

The Decisions Against Drugs scale consisted of four short stories which involve a drug-related problem. The respondent must choose one of four alternative solutions to the problem. The alternatives are ranked on a 4-point scale ranging from the most pro-drug solution to the most anti-drug solution. A higher score on this scale indicates a non-use decision making style.

Peer Pressure Resistance Scale is a four-item scale that taps a person's tendency to resist or succumb to peer pressure to engage in various forms of drug use. Responses are measured on a five-point range from "definitely yes" to

¹ Items contained in this scale were partially adapted from: IOX Assessment Associates, (1988). Drug abuse education: Program evaluation handbook. Culver City, CA: IOX Assessment Associates.

"definitely no." The "I don't know" response option was recoded as the midpoint of the scale. High scores on this scale reflect the ability to resist negative drug-related peer pressure.

Future Intentions Not to Use Drugs is a four-item scale designed to assess a person's intentions toward using drugs in the future. Responses are measured on a five-point range from "definitely yes" to "definitely no." The "I don't know" response option was recoded as the midpoint of the scale. The higher the score, the more a person intends not to use drugs in the future.

Nutrition Knowledge² is a seven-item scale designed to assess one's knowledge about proper nutrition. The higher the score on this scale, the more knowledgeable one is about proper nutrition.

Nutritional Behavior is a five-item scale that taps the nutritional value of the food choices one makes. A higher score on this scale indicates more nutritional eating habits.

The Academic Motivation scale contains three items designed to tap the extent to which one is motivated to perform well in school. The items are measured on five-points ranging from "never" to "always." Higher scores on

² Items contained in this scale were partially adapted from: Berenson, G. (1987). Measuring knowledge of children regarding health: Preliminary technical reports for the heart smart tests. Bethesda, MD: National Heart, Lung and Blood Institute.

this scale indicate greater motivation to perform well in school.

Educational Aspiration is a one item measure that assesses the level of education one aspires to complete. The item has six response options ranging from "eighth grade" to "4 years of college." Higher scores on this scale reflect greater educational aspirations.

Student Activity is a three-item scale that taps the extent to which one participates in a variety of activities (e.g., sports, youth clubs, extracurricular activities) and has four response alternatives ranging from "never" to "6 or more times a month." A higher score on this scale indicates greater involvement in activities.

Self Esteem is a 13-item scale that was partially adapted from the Coopersmith Self-Esteem Inventory short form (Coopersmith, 1967) and was measured on 3-points varying from "never" to "always." Higher scores on this scale reflect higher self-esteem.

The information on the reliabilities of these scales is presented in Table 3. Although some of the reliabilities were lower than one would ideally want, constraints on the time available for administration precluded the use of additional items to increase reliability. The reliabilities of the two knowledge scales (i.e., drug knowledge, nutritional knowledge) may have been attenuated due to guessing. In general, the obtained reliabilities were

Table 3
Internal Consistency of Scales: Cronbach's Alpha

| Scale | Pretest Alpha (N) | Posttest Alpha (N) |
|--|----------------------|-----------------------|
| Self-Reported Drug Use | .34 (1371) | .51 (1025) |
| Drug Knowledge Scale | .55 (1371) | .51 (1025) |
| Beliefs About the Negative Effects of Drugs | .65 (1371) | .70 (1025) |
| Decisions Against Drugs | .57 (1333) | .69 (1025) |
| Peer Pressure Resistance | .83 (1371) | .83 (1025) |
| Future Intentions Not to Use Drugs | .70 (1371) | .66 (916) |
| Nutrition Knowledge | .35 (1333) | .41 (1022) |
| Nutrition Behavior | .49 (1371) | .46 (1025) |
| Academic Motivation | .41 (1371) | .46 (1025) |
| Activity Level | .48 (1368) | .50 (1025) |
| Self-Esteem | .60 (1177) | .67 (1025) |

judged to be satisfactory for the types of analyses conducted here (i.e., those based on group means rather than on the prediction or interpretation of scores for individuals) (Nicewander & Price, 1978).

Value-weighted beliefs concerning the consequences of drinking alcohol. As part of the investigation concerning the factors associated with drinking initiation, students were asked to rate the expected consequences of drinking on their ability to perform sports/exercise, popularity among

close friends, ability to do well in school and physical health. This four-item Likert-type scale is measured on five-points ranging from "strongly agree" to "strongly disagree." Higher scores on these items reflect a stronger belief that negative consequences are associated with drinking alcohol. Students were also asked to rate the extent to which each consequence is important to them along a four-point Likert-type scale ranging from one "not at all important" to four "very important." The two ratings are combined multiplicatively yielding four value-weighted beliefs concerning the consequences of drinking alcohol. These value-weighted beliefs served as dependent variables in the investigation of the factors associated with drinking initiation.

In addition to the variables described above, the Student Questionnaire was also used to collect information regarding students' rationales for drug use, the extent to which students have thought about their future careers, the type of jobs students want in the future, students' knowledge of the amount of education necessary to attain certain jobs, and background characteristics (e.g., age, gender, race/ethnicity, guardian status).

Student evaluation form. The Student Evaluation Form was used to obtain program related feedback from the students who participated in the FCAP. The Evaluation Form was divided into three parts: (1) FCAP Component Checklist -

students were asked to indicate which of the FCAP events they liked; (2) FCAP Effectiveness Rating Scale - students were asked to rate six items concerning the extent to which they felt that the FCAP made an impact on them in the areas of drug use, health/fitness and career awareness on a five-point scale ranging from "strongly agree" to "strongly disagree," with higher scores indicating stronger student perception of program effectiveness; and (3) Open-Ended Suggestions - students were asked to comment on any changes or additions they think should be made to the content of the FCAP.

Teacher evaluation form. Each FCAP teacher was asked to fill out an evaluation form at the conclusion of the program. The form consisted of a number of closed-ended items inquiring about program effectiveness, program components found beneficial, comparison of FCAP to other drug prevention programs and an indication of whether the program should be continued next year. Teachers were also asked to list any comments or suggestions they had about the FCAP.

Evaluation Design and Procedures

The evaluation design employed was a pre- and post-test with a comparison group. In this design, both the treatment and comparison groups were measured by the Student Questionnaire which was administered by teachers before the implementation of the FCAP in the Fall of 1992 and again at

the conclusion of the program in the Spring of 1993. Prior to each testing session, the teachers received a letter from the program staff which provided an explanation of procedures for maintaining standardized testing conditions and the importance of protecting the privacy of the students as they completed the questionnaires. Prior to questionnaire administration, students were informed that their answers would be kept in confidence and would not be graded. To help ensure proper understanding of the questions by all students teachers read the questionnaire aloud to the students.

After the completion of each program event involving the students, an event implementation form was filled out by the teacher and/or the event facilitator. This form was used to monitor the pattern of program implementation in each of the school sites. Event information such as date, duration, attendance, and the occurrence of any unusual incidents was noted on each form.

At the end of program implementation, FCAP teachers were asked to complete the teacher evaluation form which assessed their perceptions of various aspects of the program. The teacher questionnaires were returned to project staff in sealed envelopes along with the students' completed posttest questionnaires.

CHAPTER 3

RESULTS

Analysis Overview

The results have been divided into ten sections. In the first section, the degree of pretest comparability between the treatment and comparison conditions on all of the major dependent and independent variables is addressed. The extent and implications of sample attrition are examined in the second section. The implementation fidelity of the FCAP is the subject of the third section. A series of analyses designed to assess the effectiveness of the FCAP are contained in the fourth section. In the fifth section student and teacher impressions of the FCAP are summarized. Discriminate function analyses were conducted in the seventh and eighth sections in order to identify the factors which distinguish students who use drugs and those who abstain, and students who intend to use drugs and those who do not intend to use drugs, respectively. The role drug attitudes/beliefs play in the area of drug prevention among elementary students is examined in the ninth section. Finally, the correlates and predictors of students' educational aspirations and academic motivation are investigated in the tenth section.

Pretest Comparability

Several analyses were conducted to assess whether significant differences existed between the matched members of the treatment and comparison groups prior to the implementation of the FCAP. These tests examined demographic and self-reported drug use variables as well as all of the scaled items. The results are reported in Tables 4 and 5.

As shown in Table 4, both the treatment and comparison groups had nearly identical distributions for gender and age. The treatment group had a higher percentage of Caucasian and Hispanic students, and a correspondingly lower percentage of African-American students compared to the comparison group. The treatment group also has a higher percentage of students who lived with both parents, and a correspondingly lower percentage of students who lived with only one parent than students in the comparison group. The value of the chi-square by condition is statistically significant for both race and guardian status; thus, each variable will be used as a control factor when appropriate in subsequent analyses.

A MANOVA was used to examine self-reported drug use scores in order to determine the pretest comparability of the two conditions. No significant differences emerged for any of the major categories of drugs measured thereby

Table 4
Pretest Comparability between Treatment and Comparison
Conditions on Demographic Information

| DEMOGRAPHIC VARIABLES | Treatment (N=593) | Comparison (N=115) |
|--|----------------------|-----------------------|
| GENDER | | |
| Male | 48.2% | 51.8% |
| Female | 51.8% | 53.9% |
| RACE $\chi^2(5, N=708) = 79.68; p<.0001$ | | |
| Caucasian | 7.4% | 0% |
| African-American | 56.2% | 100% |
| Hispanic | 35.2% | 0% |
| Asian | 0.7% | 0% |
| Other | 0.5% | 0% |
| AGE | | |
| <9 | 0.4% | 0% |
| 9 | 20.7% | 16.7% |
| 10 | 37.8% | 39.5% |
| 11 | 29.2% | 30.7% |
| 12 | 10.0% | 11.4% |
| >12 | 1.4% | 0.9% |
| GUARDIAN STATUS $\chi^2(5, N=708) = 41.62; p<.0001$ | | |
| Lives w/ both parents | 51.9% | 26.3% |
| Lives w/ one parent | 27.9% | 48.2% |
| Lives with one parent & a step-parent | 9.7% | 21.1% |
| Lives with a non-parental relative | 6.6% | 4.4% |
| Lives in a foster home | .5% | 0% |
| Other | 3.4% | 0% |
| GRADE | | |
| 4th | 32.2% | 34.8% |
| 5th | 37.9% | 34.8% |
| 6th | 29.8% | 30.4% |

indicating a high degree of comparability in self-reported drug use between conditions at the pretest (see Table 5).

Table 5
Pretest Comparability between Treatment and Comparison
Conditions on Self-Reported Drug Use and Scaled Items

| | <u>Treatment</u> (N=579) | | <u>Comparison</u> (N=114) | |
|--|-----------------------------|-------------|------------------------------|-------------|
| SELF-REPORTED DRUG USE | <u>Mean</u> | <u>(SD)</u> | <u>Mean</u> | <u>(SD)</u> |
| Tobacco | 1.07 | (.48) | 1.04 | (.39) |
| Alcohol | 1.30 | (.74) | 1.28 | (.88) |
| Marijuana | 1.01 | (.13) | 1.05 | (.56) |
| Inhalants | 1.26 | (.90) | 1.13 | (.71) |
| Cocaine/Crack | 1.01 | (.26) | 1.05 | (.56) |
| | <u>Treatment</u> (N=541) | | <u>Comparison</u> (N=102) | |
| SCALES | <u>Mean</u> | <u>(SD)</u> | <u>Mean</u> | <u>(SD)</u> |
| Peer Pressure Resistance | 4.80 | (.48) | 4.79 | (.54) |
| Future Intentions Not to Use Drugs | 4.53 | (.61) | 4.45 | (.68) |
| Beliefs About the Negative Effects of Drugs | 4.08 | (.66) | 4.05 | (.69) |
| Drug Knowledge | 4.60 ^a | (1.47) | 4.12 ^a | (1.26) |
| Decisions Against Drugs | 3.78 ^a | (.32) | 3.67 ^a | (.26) |
| Academic Motivation | 4.50 ^b | (.72) | 4.68 ^b | (.63) |
| Educational Aspiration | 5.54 | (1.06) | 5.67 | (.90) |
| Nutrition Knowledge | 2.46 | (1.54) | 2.25 | (1.15) |
| Activity Level | 2.56 | (.81) | 2.61 | (.65) |
| Nutrition Behavior | 3.30 | (.67) | 3.28 | (.65) |
| Self-Esteem | 2.12 | (.28) | 2.13 | (.23) |

^a $p < .001$; ^b $p < .01$

The overall MANOVA computed to determine the comparability of the treatment and comparison conditions with respect to the scaled items was statistically significant. As shown in Table 5, there were no significant initial differences between conditions on the peer pressure resistance, future intentions not to use drugs, beliefs about negative effects of drugs, nutrition knowledge, nutritional behavior, activity level and self-esteem scales. A significant difference was found on three of the scales: drug knowledge, decisions against drugs and academic motivation. The treatment group has more drug-related knowledge and a greater tendency to make anti-drug decisions than the control group. While the control group has a higher level of academic motivation compared to the treatment group.

Attrition Analyses

Attrition is a notable threat to the validity of prevention research (Hansen, Collins, Malotte, Johnson, & Fielding, 1985). The following analyses were conducted to determine if any potential bias may have been introduced to the study as a result of differential attrition.

Differences between those missing and those present at posttest. There was no differential attrition by gender ($\chi^2(1, N=1371)=.43, n.s.$), or guardian status ($\chi^2(5, N=1344)=8.14, n.s.$) at the follow-up. There was differential attrition by ethnic background at posttest

($\chi^2(5, N=1360)=155.45, p < .0001$). Asian students (95.7%) were most likely to drop out between pretest and posttest, followed in descending order by Caucasian (66.4%), African-American (42.9%) and Hispanic (36.7%) students. Therefore, this study's results are weighted more toward African American and Hispanic students. It should be noted, however, that the elevated rate of attrition among the Asian students is reflective more so of the small number of Asian students at the pretest than a substantial loss of Asian respondents. Differential attrition also occurred by grade level ($\chi^2(2, N=1348)=15.31, p < .001$) with sixth graders most likely not to be found at follow-up (55.2%). Fourth and fifth grade students had approximately equal rates of dropout between pre- and post-test (45.6% and 43.0%, respectively). Finally, there were no significant pretest differences between followed and non-followed subjects on self-reported drug use scores.

Differences in rates of attrition. There was differential attrition by condition. There was greater attrition among those in the treatment condition (51.5%) than among those in the comparison condition (22.3%); $\chi^2=47.14, p < .0001$). As mentioned earlier, the higher percentage of attrition in the treatment condition was primarily due to the loss of one school mid-program and the failure of another school to return any posttest materials. Among the seven treatment schools that completed both

pretest and posttest materials, the attrition rate ranged from a high of 37.1% to a low of 11.5%, with a median of 15.5%.

Condition by attrition status interaction. If differences in rates of attrition by condition are disproportionately high among those at greatest risk for drug use, the internal validity of the study may be compromised. Interactions between condition by attrition status on tobacco, alcohol, marijuana, inhalants and "other" substances were used to test for differences in pretest substance use of dropouts among the two conditions. There were no significant condition by attrition status interaction effects for any of the drug use items, suggesting no tendency for higher risk subjects to be lost to follow up. Interactions between condition and attrition status on each of the scaled items were used to test for differences in pretest scores of dropouts among conditions. Again, there were no significant condition by attrition status interaction effects for any of the scales, suggesting no appreciable pretest differences between those missing and those present at posttest on any major dependent variable.

Thus, while there was greater attrition among FCAP students compared with non-FCAP students at the posttest, the threat to internal validity posed by differential attrition appears to be mitigated by the fact that this attrition was not related to substance use or pretest scale

score differences.

Implementation Fidelity

Program implementation was monitored by project staff, and qualitative assessments were made of the extent to which the FCAP was implemented with fidelity to the intervention protocol. The information obtained from the implementation data is briefly summarized below and in Table 6.

Program components implemented during the 1992-1993 school year. The program components implemented with the most consistency were:

(1) Career days/role model speakers: This component consisted of two to four speakers who addressed the class for 30 minutes each. Speakers touched on such topics as: their educational backgrounds, what a typical day is like at their jobs, any obstacles they have encountered and how they overcame them and an explanation of the talents involved in their career. The underlying theme of the message stressed the importance of remaining drug free and in school in order to succeed and have a productive life.

(2) Health nutrition seminars: A speaker from the Chicago Department of Health facilitated this event which provided students with information about the components of a balanced diet and the importance of making healthy food choices.

(3) Sports clinics (tennis and basketball): Each of the sports clinics was designed to introduce the students to

the fundamentals of the sport in question. The presentations were facilitated by member athletes (e.g., Zina Garrison-Jackson, Catrina Adams, Pam Shriver, Jackie Joyner-Kersey, Bob Love) who tried to cultivate the students' interest in the sport. In addition, each of the member athletes spoke to the students about their life experiences and the importance of remaining drug free and keeping a healthy mind and body.

(4) Corporate site visit: This component involved taking the students to a job site (e.g., Copy-More) in order to expose them to the actual working environment. They received a tour of the organization and learned about the different jobs that were performed there. This was a hands-on presentation and they could ask whatever questions they liked. Wendell Davis, a local professional football player, accompanied the students on the visit and talked to them about how to set goals and the importance of remaining drug free in order to achieve them. Due to scheduling difficulties, a corporate site visit was conducted at only one school.³

Program components not implemented during the 1992-1993 school year. The remaining program components were not implemented for one of two reasons: (a) time/budgetary constraints; and (b) determination that the component was

³ The students in this school do not appear in the final posttest sample because no posttest questionnaires were returned from the school.

Table 6
FCAP Events Implemented at Each Treatment School

| SCHOOL ID# | FCAP EVENTS IMPLEMENTED |
|-----------------------|---|
| School 1 | Health/Nutrition Seminars; Career Days/Role Model Presentations |
| School 2 | Career Days/Role Model Presentations |
| School 3 | Sports Clinic (Basketball); Health/Nutrition Seminars; Career Days/Role Model Presentations |
| School 4 | Health/Nutrition Seminars; Career Days/Role Model Presentations |
| School 5 | Health/Nutrition Seminars; Career Days/Role Model Presentations |
| School 6 | Sports Clinic (Tennis) |
| School 7 | Health/Nutrition Seminars; Career Days/Role Model Presentations |
| School 8 ⁴ | Corporate Site Visit; Health/Nutrition Seminars; Career Days/Role Model Presentations |

either not needed or infeasible to implement.

(1) Curriculum units: The curriculum package is composed of three units (e.g., drug prevention, health/fitness, career awareness and goal setting) each consisting of three 40-minute sessions. The curriculum was developed during the 1992-1993 school year in cooperation with DePaul University and was not completed until late in the school year. Therefore, it was not possible to administer the curriculum in the 1992-1993 school year. The

⁴ School 8 did not return any posttest materials; therefore, it is not part of the N=708 matched sample.

curriculum is still an integral part of the FCAP and was tested in an AAD sponsored summer youth leadership program in 1993. Evaluation components have also been developed and are ready for use with each part of the curriculum.

(2) Parent workshops: In the past, the parent workshops have been conducted by facilitators from the Chicago Board of Education. With the changes in the organizational structure of the Chicago Public Schools, this service is no longer available through the school system. AAD did not have the lead time necessary to find facilitators that could conduct the workshops on a voluntary basis. The parent workshops are thought to be an important part of the FCAP and program staff are currently working on building linkages to obtain volunteer facilitators. If this does not work out, they will incorporate the expense of parent workshop facilitators into their budget.

(3) Community project: Resources were not available to get the community projects underway in the 1992-1993 school year. However, it is still a valued part of the FCAP and program staff are currently working on setting up projects for students to work on next year.

(4) Health screenings: After speaking with school officials it was learned that the elementary students are required to have basic health screenings. Consequently, since the school system was already providing health screenings, this component was dropped from the FCAP.

(5) Fitness clinic: The main themes and objectives of the fitness clinic are covered in the curriculum and sports clinic. Therefore, it was determined that the time and expense required to conduct the event, coupled with the difficulty of finding additional volunteers and facilitators, did not warrant the retention of the component.

(6) Drug prevention speakers: The information provided in this component is similar to what is delivered through the curriculum and role model speaker presentations. This fact, in conjunction with the difficulty of securing para-professionals to facilitate the event on a voluntary basis, resulted in this component being dropped from the FCAP.

(7) Youth leadership (junior athletes against drugs): The main theme of this component - promoting youth leadership so that peers can exert a positive non-use influence on each other - is intense in nature. Therefore, this component has been removed from the FCAP package and placed into a more focused summer program that involves a much smaller number of students.

It should also be noted that the comparison school received several programs during the 1992-1993 school year that were designed to promote academic achievement, perfect attendance and resistance to drug/gang involvement. Communication with the school staff indicated that approximately seven of these programs were administered to

the students. However, information on the extent of implementation of each of these programs during the study year was not available.

Program Effectiveness

Outcome differences: treatment versus comparison group.

Outcome differences between the treatment and comparison groups on the scale measures were assessed using a repeated measures multivariate analysis of variance (MANOVA) with testing period (i.e., pretest/posttest) as the within factor and group assignment (i.e., treatment/comparison) as the between factor. Thus, any differential change over time will be reflected in the interaction term.

The multivariate interaction term (Testing Period X Group Assignment) did not reach statistical significance, indicating no overall differences between the two groups overtime on the scaled measures. The small posttest differences between the treatment and control group exhibited throughout Table 7 clearly signify why the MANOVA did not achieve statistical significance. This is a disappointing result; however, given the amount of time that passed between the surveys and the fact that only select components of the FCAP were implemented perhaps it is understandable. Ceiling effects could also play a part. In general, preteens already hold a negative attitude toward drugs and many have not yet initiated use, even of the so-called licit drugs. Interventions that target this group

Table 7
Pretest and Posttest Scale Means and Standard Deviations for
 the Treatment and Comparison Groups

| <u>SCALES</u> | <u>Treatment</u> (N=541) | | <u>Comparison</u> (N=102) | |
|--|-----------------------------|-----------|------------------------------|-----------|
| | <u>Mean</u> | <u>SD</u> | <u>Mean</u> | <u>SD</u> |
| Drug Use Behavior | | | | |
| Pretest | 1.15 | .29 | 1.08 | .26 |
| Posttest | 1.21 | .32 | 1.07 | .13 |
| Drug Knowledge | | | | |
| Pretest | 4.81 | 1.48 | 3.89 | 1.41 |
| Posttest | 4.92 | 1.30 | 4.44 | 1.13 |
| Beliefs About Negative Effects of Drugs | | | | |
| Pretest | 4.18 | .64 | 4.17 | .68 |
| Posttest | 4.32 | .64 | 4.09 | .69 |
| Decisions Against Drugs | | | | |
| Pretest | 3.82 | .28 | 3.71 | .20 |
| Posttest | 3.83 | .31 | 3.80 | .18 |
| Peer Pressure Resistance | | | | |
| Pretest | 4.82 | .41 | 4.88 | .32 |
| Posttest | 4.76 | .54 | 4.90 | .32 |
| Future Intentions Not to Use Drugs | | | | |
| Pretest | 4.54 | .53 | 4.41 | .78 |
| Posttest | 4.45 | .59 | 4.35 | .55 |
| Nutritional Knowledge | | | | |
| Pretest | 2.71 | 1.42 | 2.57 | 1.38 |
| Posttest | 2.47 | 1.23 | 2.50 | 1.42 |
| Nutritional Behavior | | | | |
| Pretest | 3.36 | .66 | 3.34 | .67 |
| Posttest | 3.33 | .76 | 3.33 | .61 |
| Academic Motivation | | | | |
| Pretest | 4.51 | .66 | 4.71 | .58 |
| Posttest | 4.42 | .72 | 4.67 | .57 |
| Educational Aspirations | | | | |
| Pretest | 5.54 | 1.06 | 5.53 | 1.03 |
| Posttest | 5.72 | .74 | 5.61 | 1.02 |
| Activity Level | | | | |
| Pretest | 2.61 | .80 | 2.75 | .77 |
| Posttest | 2.62 | .55 | 2.81 | .65 |
| Self-Esteem | | | | |
| Pretest | 2.11 | .30 | 2.14 | .30 |
| Posttest | 2.16 | .23 | 2.22 | .25 |

are best viewed as attempts to slow the rate at which students fall away from these ceilings as they age.

Focused contrasts: treatment versus comparison groups.

In addition to the overall comparisons between the treatment and comparison schools, separate repeated measures MANOVAs were conducted to examine two sets of more focused contrasts between the comparison school and (a) the treatment schools more closely matched with the comparison school in terms of demographics and community location (i.e., School 1, School 3, School 4); and (b) the treatment school with the highest level of FCAP implementation (i.e., School 3). These analyses were designed to provide a more sensitive test of program effectiveness. Here again, testing period served as the within factor and group assignment as the between factor with any differential change overtime being reflected in the interaction term. No statistically significant interaction effects emerged for either the demographic-based comparisons or the implementation-based comparison. The means and standard deviations for the scaled measures for the demographic-based and implementation-based comparisons are presented in Tables 8 and 9, respectively.

Maturation Analyses. Since students in three grade levels (i.e., fourth, fifth, sixth) participated in the present study, it is feasible that any posttest improvement may be due to maturation rather than the program itself.

Table 8
Pretest and Posttest Scale Means and Standard Deviations for
 the Comparison School and the Treatment Schools Most Similar
 to the Comparison School in Demographic Make-up

| <u>SCALES</u> | School 1 (N=101) | | School 4 (N=52) | | Comparison (N=102) | |
|--|---------------------|-----------|--------------------|-----------|-----------------------|-----------|
| | <u>Mean</u> | <u>SD</u> | <u>Mean</u> | <u>SD</u> | <u>Mean</u> | <u>SD</u> |
| Drug Use Behavior | | | | | | |
| Pretest | 1.16 | .32 | 1.19 | .35 | 1.08 | .26 |
| Posttest | 1.17 | .23 | 1.14 | .29 | 1.07 | .13 |
| Drug Knowledge | | | | | | |
| Pretest | 4.62 | 1.40 | 5.25 | 1.14 | 3.89 | 1.41 |
| Posttest | 4.72 | 1.35 | 5.17 | .94 | 4.44 | 1.13 |
| Beliefs About Negative Effects of Drugs | | | | | | |
| Pretest | 3.92 | .67 | 4.33 | .56 | 4.17 | .68 |
| Posttest | 4.07 | .76 | 4.13 | .74 | 4.09 | .69 |
| Decisions Against Drugs | | | | | | |
| Pretest | 3.71 | .48 | 3.79 | .23 | 3.71 | .20 |
| Posttest | 3.81 | .36 | 3.58 | .50 | 3.80 | .18 |
| Peer Pressure Resistance | | | | | | |
| Pretest | 4.68 | .54 | 5.00 | .00 | 4.88 | .32 |
| Posttest | 4.73 | .47 | 4.67 | .61 | 4.90 | .32 |
| Future Intentions Not to Use Drugs | | | | | | |
| Pretest | 4.54 | .59 | 4.31 | .61 | 4.41 | .78 |
| Posttest | 4.34 | .62 | 4.38 | .61 | 4.35 | .55 |
| Nutritional Knowledge | | | | | | |
| Pretest | 2.30 | 1.17 | 2.67 | 1.30 | 2.57 | 1.38 |
| Posttest | 2.72 | 1.61 | 2.50 | 1.88 | 2.50 | 1.42 |
| Nutritional Behavior | | | | | | |
| Pretest | 3.23 | .73 | 3.37 | .43 | 3.34 | .67 |
| Posttest | 3.06 | .70 | 2.95 | .75 | 3.33 | .61 |
| Academic Motivation | | | | | | |
| Pretest | 4.81 | .31 | 4.54 | .89 | 4.71 | .58 |
| Posttest | 4.57 | .52 | 4.42 | .88 | 4.67 | .57 |
| Educational Aspirations | | | | | | |
| Pretest | 5.63 | .85 | 5.33 | 1.30 | 5.53 | 1.03 |
| Posttest | 5.61 | .88 | 5.25 | 1.55 | 5.61 | 1.02 |
| Activity Level | | | | | | |
| Pretest | 2.57 | .71 | 2.33 | .67 | 2.75 | .77 |
| Posttest | 3.23 | .73 | 2.78 | .19 | 2.81 | .65 |
| Self-Esteem | | | | | | |
| Pretest | 2.17 | .29 | 2.03 | .35 | 2.14 | .30 |
| Posttest | 2.21 | .27 | 2.10 | .39 | 2.22 | .25 |

Table 9
Pretest and Posttest Scale Means and Standard Deviations for
the Comparison School and the Treatment School with the
Highest Level of FCAP implementation

| <u>SCALES</u> | School 3 (N=95) | | Comparison (N=102) | |
|--|--------------------|-----------|-----------------------|-----------|
| | <u>Mean</u> | <u>SD</u> | <u>Mean</u> | <u>SD</u> |
| Drug Use Behavior | | | | |
| Pretest | 1.14 | .32 | 1.08 | .26 |
| Posttest | 1.19 | .35 | 1.07 | .13 |
| Drug Knowledge | | | | |
| Pretest | 4.13 | 1.67 | 3.89 | 1.41 |
| Posttest | 5.13 | 1.32 | 4.44 | 1.13 |
| Beliefs About the Negative Effects of Drugs | | | | |
| Pretest | 4.02 | .72 | 4.17 | .68 |
| Posttest | 4.26 | .55 | 4.09 | .69 |
| Decisions Against Drugs | | | | |
| Pretest | 3.80 | .28 | 3.71 | .20 |
| Posttest | 3.84 | .28 | 3.80 | .18 |
| Peer Pressure Resistance | | | | |
| Pretest | 4.89 | .29 | 4.88 | .32 |
| Posttest | 4.81 | .50 | 4.90 | .32 |
| Future Intentions Not to Use Drugs | | | | |
| Pretest | 4.56 | .48 | 4.41 | .78 |
| Posttest | 4.68 | .42 | 4.35 | .55 |
| Nutritional Knowledge | | | | |
| Pretest | 2.18 | 1.43 | 2.57 | 1.38 |
| Posttest | 2.20 | 1.32 | 2.50 | 1.42 |
| Nutritional Behavior | | | | |
| Pretest | 3.27 | .64 | 3.34 | .67 |
| Posttest | 3.26 | .60 | 3.33 | .61 |
| Academic Motivation | | | | |
| Pretest | 4.50 | .69 | 4.71 | .58 |
| Posttest | 4.60 | .50 | 4.67 | .57 |
| Educational Aspirations | | | | |
| Pretest | 5.53 | 1.18 | 5.53 | 1.03 |
| Posttest | 5.85 | .53 | 5.61 | 1.02 |
| Activity Level | | | | |
| Pretest | 2.70 | .76 | 2.75 | .77 |
| Posttest | 2.96 | .67 | 2.81 | .65 |
| Self-Esteem | | | | |
| Pretest | 2.11 | .27 | 2.14 | .30 |
| Posttest | 2.19 | .31 | 2.22 | .25 |

However, the maturation threat is not viable in this case because there were no significant differences between the treatment and comparison groups overtime. Just to be certain, a repeated measures MANOVA was conducted with testing period (i.e., pretest/posttest) and grade level (i.e., 4th, 5th, 6th) as the within factors and group assignment (i.e., treatment/comparison) as the between factor. The dependent variables in this case were all of the scaled measures. Neither the 3-way interaction term (Testing period X Grade X Group), the two-way interaction term (Grade X Time) nor the main effect of Grade level reached statistical significance; thereby indicating that maturation was not a threat to the internal validity of this study.

Participant Evaluations. At the conclusion of the FCAP in the Spring of 1993, feedback was collected from the FCAP students and their teachers. This information was collected for primarily two reasons: (a) to see if participants felt the FCAP was beneficial; and (b) to obtain any suggestions concerning possible program improvements. Student and teacher reactions were examined separately.

(1) Student impressions: Students were asked to answer six questions regarding the ways in which the FCAP affected them. Their responses to each of the questions are presented in Table 10. The large majority of the students felt that they benefitted from the program in several ways.

Table 10

Treatment Students' Evaluations of the Extent to Which They Felt the Fitness and Career Awareness Program (FCAP) had an Effect on Them (N=515-524)

| | <u>STUDENTS' LEVEL OF AGREEMENT</u> | | | | |
|---|-------------------------------------|--------------|------------------|-----------------|--------------------------|
| | <u>Strongly Agree</u> | <u>Agree</u> | <u>Uncertain</u> | <u>Disagree</u> | <u>Strongly Disagree</u> |
| <u>AREA EFFECTED BY FCAP</u> | | | | | |
| Ability to Say No to Drugs | 72.9% | 10.9% | 3.4% | 1.1% | 11.6% |
| Ability to See a Relationship Between School and Work | 42.3% | 38.8% | 12.8% | 2.3% | 3.7% |
| Increased Knowledge about Proper Diet and Nutrition | 20.0% | 32.2% | 32.8% | 9.5% | 5.4% |
| Decided Not to Use Drugs | 75.0% | 10.7% | 3.7% | 3.3% | 7.4% |
| Increased Knowledge about Different Types of Jobs | 39.0% | 35.3% | 17.0% | 4.6% | 4.1% |
| Decided to Exercise on a Daily Basis | 33.5% | 36.8% | 20.6% | 5.2% | 3.9% |

Based on the students' assessments, the FCAP was most effective in improving their ability to say "no" to drugs and in further bolstering their intentions not to use drugs in the future. Ironically, the same two items also had the largest percentage of students who strongly disagreed with the presence of program effects. Crosstabulations revealed that male students and fourth grade students were more inclined to feel that the program neither improved their ability to say "no" to drugs nor made them decide not to use drugs. There were no large differences between those who agreed and those who disagreed about program effectiveness on any of the major dependent variables.

Many students also provided written feedback indicating that they would like to participate in more events sponsored by the FCAP. Moreover, the majority of the events listed by the students (e.g., sports, trips to businesses, more speakers, information about youth groups) are incorporated in the comprehensive version of the FCAP. Thus, it appears as if this type of student audience is quite receptive to the teachings of the FCAP.

(2) Teacher impressions: Sixty-seven percent of the FCAP teachers who administered and returned student posttest questionnaires, completed teacher evaluation forms. Thus, interpretation of the results presented below should be qualified by the fact that not all teachers' opinions are represented.

Overall, teachers responded very positively to the FCAP, with 46% assigning the program an effectiveness rating of "excellent," and 30% a rating of "good." Teachers commented favorably on several aspects of the program, particularly the role model speakers. Some of these comments included: "the role model speakers were excellent and were well received by the students"; "students responded to the speakers in a way that showed they were learning"; "role model speakers were interesting and motivated the students".

Approximately two-thirds (66.7%) of the teachers rated the FCAP as "better" or "somewhat better" than other drug prevention programs in which they have been involved. Moreover, a large majority of teachers (94%) expressed interest in having the FCAP continue in their school next year. Teachers' felt that the FCAP addresses important issues that are pertinent to the students' well-being. As one teacher put it, "I think the FCAP is an excellent program because it is very informative, and information-awareness is always a weapon."

Approximately half of the teachers provided constructive suggestions for improving the program. In most cases the teachers were expressing an interest in involving their students in more of the FCAP activities. Some of the other suggestions offered by the teachers were: "provide students with reinforcement activities to complete after

presentations," "allow time for small group discussions" and "provide more time for individual students to express their views and experiences on subjects."

On the whole, the information provided by the teachers indicates that they too are receptive to the FCAP and would be supportive of the implementation of the comprehensive program package.

Pretest/Posttest Correlational Analyses: An Investigation of Relationships Among Dependent Variables

Although the MANOVAs used to assess overall program effectiveness did not reach statistical significance, the FCAP may still have produced some effects. An alternative way of trying to determine the effects of a program is to examine any marked changes in the correlations among the dependent variables from pretest to posttest. In other words, if there is a substantial change in the correlation between two dependent variables (e.g., drug use and self-esteem) at pretest and the correlations between those same two variables at posttest, we may be able to learn something about the process occurring as a result of the program. Bear in mind that this is not a question of program effectiveness (i.e., whether the students changed toward the desired outcomes of the program), but rather a question of what effects might be due to the program.

The correlational relationships between pretest and posttest variables for both conditions are displayed in

Tables D-1 and D-2, respectively. The majority of the changes in the correlations among the dependent variables from pretest to posttest were not large in magnitude for either the treatment or comparison group. Furthermore, after using Bonferroni's correction (i.e., $.05/132$) to control for experimentwise error, none of the correlations for either group reached the necessary significance level (i.e., $.0004$) to be considered more than just a chance finding. Thus, it would not be advisable to draw specific conclusions about possible program effects based on these data. Perhaps if the measures used were more reliable and the dependent variables more highly correlated with one another, something informative would have been observed. Those changes, in turn, may have provided some hints about the processes occurring as a result of the program.

The within group correlations between pretest and posttest scores of the main dependent variables were also examined in order to provide some further insight into how the program effected the relationships between variables that were supposed to be connected (e.g., drug use and peer pressure resistance). High correlations between pre and post scores indicate consistency in the results. That is, respondents are moving up (or down) together on the scaled measures. Low correlations, however, indicate that some individuals are going up on the scaled measures, some are going down and some are remaining the same.

The correlations between pretest and posttest scores of the main dependent variables are presented in Tables D-3 and D-4 for the treatment and comparison groups, respectively. Although there are a few moderately high correlations between pre and post scores, the majority of the correlations are fairly small in magnitude for both groups. The low correlations are probably due to the low reliabilities of some of the measures and incomplete program implementation.

Non-Scaled Measures: Drug Use Rationales and Career Awareness Questions

The questions which addressed students' drug use rationales and their level of career awareness were not computed as scales because the response options were categorical in nature. Each group of questions will be discussed separately below.

Students' drug use rationales. Drug use rationales are the reasons people give for using drugs - what they tell themselves and others about where, when and why drugs are used. These cognitions can be very important. If a young person believes that drugs are used at parties or with friends, then a party or contact with friends may suggest drug use.

When is it Okay for a Young Person to Drink Alcohol?

As shown in Table 11, the large majority of students in both the treatment and comparison groups believed that it was

Table 11
Drug Use Rationales: "When is it Okay for Someone Your Age
to Drink Alcohol?"

| | <u>Treatment</u> (N=593) | <u>Comparison</u> (N=115) |
|--|-----------------------------|------------------------------|
| <u>Percent of Students</u> <u>Endorsing the Situation^a</u> | | |
| SPECIAL OCCASION | | |
| Pretest | 27.3% | 36.5% |
| Posttest | 37.6% | 36.5% |
| WITH PARENTS | | |
| Pretest | 11.1% | 17.4% |
| Posttest | 10.8% | 8.7% |
| AT A PARTY | | |
| Pretest | 5.2% | 6.1% |
| Posttest | 9.6% | 8.7% |
| WITH FRIENDS | | |
| Pretest | 2.5% | 3.5% |
| Posttest | 3.2% | 0.9% |
| TO FEEL GOOD | | |
| Pretest | 1.5% | 1.7% |
| Posttest | 1.3% | 3.5% |
| TO RELAX | | |
| Pretest | 1.7% | 2.6% |
| Posttest | 2.5% | 4.3% |
| NEVER | | |
| Pretest | 75.4% | 64.3% |
| Posttest | 68.5% | 60.0% |

^a The column totals exceed 100% because respondents were allowed to check more than one response.

"never" okay for someone their age to drink alcohol.

However, there were still a number of students who felt that drinking alcohol was appropriate in certain situations.

Drinking on a special occasion was the situation endorsed by

the largest percentage of students from both groups at pretest and posttest. The other situations most frequently endorsed by all students involved drinking with parents or at a party. There were slight fluctuations in the number of students endorsing each situation from pretest to posttest. However, practically speaking the changes observed were not large enough to suggest either beneficial or harmful program effects.

Among students in the treatment group, there were a few differences in the situations deemed appropriate for alcohol consumption according to ethnic background and grade level. As shown in Table 12, Caucasian students were more likely to think that drinking on a special occasion or drinking with their parents were acceptable behaviors than either Hispanic or African-American students. Likewise, considerably more Hispanic and African-American students than Caucasian students indicated that it was "never" acceptable for someone their age to drink alcohol.

The opinion that it is never okay for a young person to drink alcohol was also more widely shared among the students in the lower grade levels compared to those in the upper grade levels (see Table 13). Similarly, as one moves up in grade level, there appears to be a steady increase in the percentage of students who think that drinking alcohol on special occasions is acceptable for someone their age.

Table 12

"When is it Okay for Someone Your Age to Drink Alcohol?" : A Breakdown by Ethnic Background for the Treatment Group (N=593)

Percent of Students Endorsing the Situation

| | <u>CAUCASIAN</u> | <u>AFRICAN AMERICAN</u> | <u>HISPANIC</u> | <u>df</u> | <u>X²</u> | <u>p</u> |
|------------------|------------------|-----------------------------|-----------------|-----------|----------------------|----------|
| SPECIAL OCCASION | | | | | | |
| Pretest | 56.8% | 21.0% | 32.1% | 2 | 30.93 | .0001 |
| Posttest | 47.7% | 33.6% | 42.1% | 2 | 9.09 | .10 |
| WITH PARENTS | | | | | | |
| Pretest | 27.3% | 6.0% | 16.3% | 2 | 26.81 | .0001 |
| Posttest | 18.2% | 6.6% | 16.3% | 2 | 15.91 | .01 |
| AT A PARTY | | | | | | |
| Pretest | 2.3% | 5.1% | 6.2% | 2 | 1.59 | .90 |
| Posttest | 4.5% | 8.7% | 12.4% | 2 | 4.28 | .51 |
| WITH FRIENDS | | | | | | |
| Pretest | 0.0% | 3.3% | 1.9% | 2 | 2.45 | .78 |
| Posttest | 0.0% | 4.2% | 2.4% | 2 | 3.21 | .67 |
| TO FEEL GOOD | | | | | | |
| Pretest | 0.0% | 1.8% | 1.4% | 2 | .97 | .96 |
| Posttest | 0.0% | 1.5% | 1.4% | 2 | .77 | .98 |
| TO RELAX | | | | | | |
| Pretest | 0.0% | 2.1% | 1.4% | 2 | 1.30 | .93 |
| Posttest | 0.0% | 1.8% | 4.3% | 2 | 4.71 | .45 |
| NEVER | | | | | | |
| Pretest | 52.3% | 78.1% | 75.1% | 2 | 16.26 | .001 |
| Posttest | 50.0% | 72.4% | 66.0% | 2 | 13.05 | .02 |

Table 13

"When is it Okay for Someone Your Age to Drink Alcohol?" : A Breakdown by Grade for the Treatment Group (N=593)

Percent of Students Endorsing the Situation

| | <u>FOURTH</u> | <u>FIFTH</u> | <u>SIXTH</u> | <u>df</u> | <u>X²</u> | <u>p</u> |
|------------------|---------------|--------------|--------------|-----------|----------------------|----------|
| SPECIAL OCCASION | | | | | | |
| Pretest | 16.2% | 31.1% | 34.5% | 2 | 18.01 | .0001 |
| Posttest | 22.5% | 40.0% | 50.8% | 2 | 32.32 | .0001 |
| WITH PARENTS | | | | | | |
| Pretest | 7.9% | 13.8% | 11.3% | 2 | 3.67 | .16 |
| Posttest | 7.3% | 11.1% | 14.1% | 2 | 4.44 | .11 |
| AT A PARTY | | | | | | |
| Pretest | 2.6% | 7.1% | 5.6% | 2 | 4.30 | .12 |
| Posttest | 7.9% | 11.1% | 9.6% | 2 | 1.26 | .53 |
| WITH FRIENDS | | | | | | |
| Pretest | 0.5% | 4.0% | 2.8% | 2 | 5.15 | .08 |
| Posttest | 0.5% | 4.0% | 5.1% | 2 | 6.90 | .03 |
| TO FEEL GOOD | | | | | | |
| Pretest | 1.0% | 1.8% | 1.7% | 2 | .42 | .81 |
| Posttest | 1.0% | 1.8% | 1.1% | 2 | .51 | .78 |
| TO RELAX | | | | | | |
| Pretest | 1.0% | 2.2% | 1.7% | 2 | .86 | .65 |
| Posttest | 0.0% | 4.4% | 2.8% | 2 | 8.37 | .02 |
| NEVER | | | | | | |
| Pretest | 84.8% | 73.3% | 67.8% | 2 | 15.16 | .001 |
| Posttest | 79.9% | 68.0% | 57.1% | 2 | 21.61 | .0001 |

There were differences at posttest between grade levels concerning the acceptability of drinking with friends or drinking to relax. The former situation was endorsed more by fifth and sixth grade students than it was by fourth grade students. While the latter situation was most frequently endorsed by fifth graders, followed by sixth graders with no fourth graders finding drinking to relax acceptable.

Overall, the majority of students feel that it is never appropriate for a young person to drink alcohol. This "never use" sentiment was most strongly endorsed by the African-American and Hispanic students and by students in the lower grade levels.

Why do Young People Take Drugs? As shown in Table 14, the drug use rationales endorsed by most students were "friends want them to", "to fit in" and "to feel grown up." Thus, students seem to believe that drugs are used as a result of pressure from peers and the desire to fit in and feel more grown up. Furthermore, the percentage of students endorsing these drug use rationales remained fairly constant from pretest to posttest, suggesting that implementation of the more comprehensive version of the FCAP should attempt to concentrate on better equipping students with the skills needed to resist peer influences to use drugs. Finally, a further probe into the nature of the "other reasons" category for drug use may provide some helpful information.

Table 14
Drug Use Rationales: "Why do People Your Age Take Drugs?"

| <u>Percent of Students</u> <u>Endorsing the Situation^a</u> | <u>Treatment</u> (N=593) | <u>Comparison</u> (N=115) |
|--|-----------------------------|------------------------------|
| PERSONAL CURIOSITY | | |
| Pretest | 23.9% | 10.4% |
| Posttest | 28.0% | 18.3% |
| FRIENDS WANT THEM TO | | |
| Pretest | 46.4% | 40.9% |
| Posttest | 52.6% | 44.3% |
| TO FEEL GROWN UP | | |
| Pretest | 41.5% | 38.3% |
| Posttest | 47.2% | 33.9% |
| TO DISOBEY PARENTS | | |
| Pretest | 15.7% | 20.9% |
| Posttest | 14.3% | 13.0% |
| TO RELAX | | |
| Pretest | 24.3% | 20.0% |
| Posttest | 30.4% | 24.3% |
| TO ESCAPE | | |
| Pretest | 14.7% | 5.2% |
| Posttest | 13.7% | 6.1% |
| TO FIT IN | | |
| Pretest | 40.8% | 33.0% |
| Posttest | 49.6% | 34.8% |
| OTHER REASONS | | |
| Pretest | 32.9% | 34.8% |
| Posttest | 36.6% | 38.3% |

^a The column totals exceed 100% because respondents were allowed to check more than one response.

Here again, students differed on their rationales for drug use based on a number of demographic characteristics. Among students in the treatment group, there were some differences by ethnic background and gender. First, as

shown in Table 15, Caucasian students were more likely than either Hispanic or African-American students to think people used drugs to satisfy personal curiosity and to escape. Caucasian students were also more likely to think that drugs were used to help people "fit in" than either Hispanic or African-American students.

As far as gender is concerned (see Table 16), female students in the treatment group were consistently more likely than male students to endorse the following drug use rationales at both pretest and posttest: personal curiosity, friends want them to, to feel grown up, to disobey parents, to escape and to fit in with friends.

There were also several differences in the drug use rationales endorsed among treatment and comparison group students at different grade levels. As shown in Table 17, fifth and sixth grade students in the treatment group were more inclined than the fourth grade students to feel that people used drugs because their friends want them to or in an attempt to fit in. At posttest, students in the treatment group were also more inclined to think that drugs were used to relax or to escape as grade level increased. Fourth and sixth grade students, however, were more likely to believe that drugs were used to disobey parents than the fifth grade students.

At pretest, fifth grade students in the comparison group were more likely to feel that drugs were used to help

Table 15

"Why do People Your Age Take Drugs?": A Breakdown by Ethnic Background for the Treatment Group (N=593)Percent of Students Endorsing the Situation

| | <u>CAUCASIAN</u> | <u>AFRICAN AMERICAN</u> | <u>HISPANIC</u> | <u>df</u> | <u>X²</u> | <u>p</u> |
|----------------------|------------------|-----------------------------|-----------------|-----------|----------------------|----------|
| PERSONAL CURIOSITY | | | | | | |
| Pretest | 54.5% | 17.1% | 27.8% | 2 | 39.48 | .0001 |
| Posttest | 45.5% | 20.1% | 35.9% | 2 | 27.37 | .0001 |
| FRIENDS WANT THEM TO | | | | | | |
| Pretest | 56.8% | 43.5% | 48.8% | 2 | 7.41 | .19 |
| Posttest | 68.2% | 54.7% | 45.9% | 2 | 9.49 | .09 |
| TO FEEL GROWN UP | | | | | | |
| Pretest | 43.2% | 40.5% | 42.1% | 2 | 2.83 | .73 |
| Posttest | 40.9% | 48.3% | 45.9% | 2 | 4.38 | .50 |
| TO DISOBEY PARENTS | | | | | | |
| Pretest | 15.9% | 15.6% | 15.8% | 2 | .83 | .98 |
| Posttest | 13.6% | 15.0% | 13.4% | 2 | 3.20 | .67 |
| TO RELAX | | | | | | |
| Pretest | 56.8% | 39.3% | 39.2% | 2 | 7.88 | .16 |
| Posttest | 77.3% | 54.4% | 35.4% | 2 | 36.38 | .0001 |
| TO ESCAPE | | | | | | |
| Pretest | 29.5% | 10.2% | 18.2% | 2 | 19.63 | .001 |
| Posttest | 22.7% | 10.2% | 16.7% | 2 | 10.95 | .05 |
| TO FIT IN | | | | | | |
| Pretest | 56.8% | 39.3% | 39.2% | 2 | 7.88 | .16 |
| Posttest | 77.3% | 54.4% | 35.4% | 2 | 36.38 | .0001 |
| OTHER REASONS | | | | | | |
| Pretest | 31.8% | 33.3% | 33.5% | 2 | 3.52 | .62 |
| Posttest | 18.2% | 38.1% | 38.3% | 2 | 13.38 | .02 |

Table 16

"Why do People Your Age Take Drugs?": A Breakdown by Gender Background for the Treatment Group (N=593)

Percent of Students Endorsing the Situation

| | <u>MALE</u> | <u>FEMALE</u> | <u>df</u> | <u>X²</u> | <u>p</u> |
|----------------------|-------------|---------------|-----------|----------------------|----------|
| PERSONAL CURIOSITY | | | | | |
| Pretest | 22.7% | 25.1% | 1 | .45 | .50 |
| Posttest | 23.1% | 32.6% | 1 | 6.62 | .01 |
| FRIENDS WANT THEM TO | | | | | |
| Pretest | 38.5% | 53.7% | 1 | 13.91 | .0001 |
| Posttest | 46.2% | 58.6% | 1 | 9.25 | .002 |
| TO FEEL GROWN UP | | | | | |
| Pretest | 37.4% | 45.3% | 1 | 3.77 | .05 |
| Posttest | 40.6% | 53.4% | 1 | 9.83 | .001 |
| TO DISOBEY PARENTS | | | | | |
| Pretest | 12.2% | 18.9% | 1 | 4.96 | .03 |
| Posttest | 12.6% | 16.0% | 1 | 1.37 | .24 |
| TO RELAX | | | | | |
| Pretest | 21.7% | 26.7% | 1 | 2.04 | .15 |
| Posttest | 30.4% | 30.3% | 1 | .01 | .97 |
| TO ESCAPE | | | | | |
| Pretest | 9.8% | 19.2% | 1 | 10.51 | .001 |
| Posttest | 14.3% | 13.0% | 1 | .21 | .64 |
| TO FIT IN | | | | | |
| Pretest | 34.6% | 46.6% | 1 | 8.77 | .003 |
| Posttest | 44.1% | 54.7% | 1 | 54.71 | .01 |
| OTHER REASONS | | | | | |
| Pretest | 32.3% | 33.6% | 1 | .13 | .72 |
| Posttest | 33.2% | 39.7% | 1 | 2.71 | .10 |

Table 17

"Why do People Your Age Take Drugs?" : A Breakdown by Grade for the Treatment Group (N=593)

Percent of Treatment Students
Endorsing the Situation

| | <u>FOURTH</u> | <u>FIFTH</u> | <u>SIXTH</u> | <u>df</u> | <u>X²</u> | <u>p</u> |
|----------------------|---------------|--------------|--------------|-----------|----------------------|----------|
| PERSONAL CURIOSITY | | | | | | |
| Pretest | 26.7% | 24.4% | 20.3% | 2 | 2.09 | .35 |
| Posttest | 29.3% | 28.4% | 26.0% | 2 | .54 | .76 |
| FRIENDS WANT THEM TO | | | | | | |
| Pretest | 37.2% | 49.8% | 52.0% | 2 | 9.79 | .01 |
| Posttest | 29.3% | 28.4% | 26.0% | 2 | .54 | .76 |
| TO FEEL GROWN UP | | | | | | |
| Pretest | 38.7% | 40.9% | 45.2% | 2 | 1.63 | .44 |
| Posttest | 46.6% | 47.1% | 48.0% | 2 | .08 | .96 |
| TO DISOBEY PARENTS | | | | | | |
| Pretest | 16.8% | 10.2% | 21.5% | 2 | 9.72 | .01 |
| Posttest | 16.8% | 12.9% | 13.6% | 2 | 1.38 | .50 |
| TO RELAX | | | | | | |
| Pretest | 18.3% | 27.1% | 27.1% | 2 | 5.44 | .07 |
| Posttest | 24.6% | 29.3% | 37.9% | 2 | 7.80 | .02 |
| TO ESCAPE | | | | | | |
| Pretest | 16.2% | 13.3% | 14.7% | 2 | .69 | .71 |
| Posttest | 9.4% | 13.8% | 18.1% | 2 | 5.84 | .05 |
| TO FIT IN | | | | | | |
| Pretest | 37.2% | 39.6% | 46.3% | 2 | 3.42 | .18 |
| Posttest | 40.3% | 51.1% | 57.6% | 2 | 11.36 | .003 |
| OTHER REASONS | | | | | | |
| Pretest | 29.8% | 34.7% | 33.9% | 2 | 1.21 | .55 |
| Posttest | 30.9% | 37.3% | 41.8% | 2 | 4.81 | .09 |

Table 18

"Why do People Your Age Take Drugs?" : A Breakdown by Grade for the Comparison Group
(N=115)

Percent of Comparison Students
Endorsing the Situation

| | <u>FOURTH</u> | <u>FIFTH</u> | <u>SIXTH</u> | <u>df</u> | <u>X²</u> | <u>p</u> |
|----------------------|---------------|--------------|--------------|-----------|----------------------|----------|
| PERSONAL CURIOSITY | | | | | | |
| Pretest | 7.5% | 7.5% | 17.1% | 2 | 2.42 | .30 |
| Posttest | 22.5% | 7.5% | 25.7% | 2 | 4.89 | .09 |
| FRIENDS WANT THEM TO | | | | | | |
| Pretest | 30.0% | 45.0% | 48.6% | 2 | 3.10 | .21 |
| Posttest | 37.5% | 42.5% | 54.3% | 2 | 2.22 | .33 |
| TO FEEL GROWN UP | | | | | | |
| Pretest | 27.5% | 50.0% | 37.1% | 2 | 4.31 | .12 |
| Posttest | 20.0% | 45.0% | 37.1% | 2 | 5.81 | .05 |
| TO DISOBEY PARENTS | | | | | | |
| Pretest | 20.0% | 25.0% | 17.1% | 2 | .72 | .70 |
| Posttest | 20.0% | 13.3% | 14.3% | 2 | 4.06 | .13 |
| TO RELAX | | | | | | |
| Pretest | 12.5% | 30.0% | 17.1% | 2 | 4.08 | .13 |
| Posttest | 20.0% | 15.0% | 40.0% | 2 | 6.96 | .03 |
| TO ESCAPE | | | | | | |
| Pretest | 10.0% | 0.0% | 5.7% | 2 | 4.07 | .13 |
| Posttest | 7.5% | 5.0% | 5.7% | 2 | .23 | .89 |
| TO FIT IN | | | | | | |
| Pretest | 22.5% | 52.5% | 22.9% | 2 | 10.50 | .01 |
| Posttest | 25.0% | 40.0% | 40.0% | 2 | 2.59 | .27 |
| OTHER REASONS | | | | | | |
| Pretest | 32.5% | 35.0% | 37.1% | 2 | .18 | .91 |
| Posttest | 45.0% | 37.5% | 31.4% | 2 | 1.47 | .48 |

people fit in and feel grown up than were fourth or sixth grade students (see Table 18). Finally, sixth graders in the comparison group were more likely to believe that drugs were used to escape than either fourth or fifth graders.

Overall, it appears as if Caucasian and upper level students were more inclined to endorse escape and relaxation as reasons why their peers engage in drug use. Older students also had a tendency to view drug use as the result of peer pressure and the desire to fit in. Finally, the majority of all of the drug use rationales were more readily endorsed by female students than by male students (p 's < .05).

Career awareness questions. As indicated in Table 19, at pretest the majority of students in both the treatment group (70.3%) and the comparison group (84.3%) reported thinking a lot about the kind of job they would like when they are older. The most popular career choices for the treatment students were: lawyer, athlete, teacher, doctor and policeman. While the most frequently endorsed careers among the comparison students were: policeman, lawyer, athlete, teacher and hairdresser. There was also a fair number of students from both groups whose choice was the "other" category. In addition, a large percentage of students in both groups knew the amount of education required to perform the jobs of their choice. Thus, it appears as if these students had already put some thought

Table 19

Career Interest Expressed by Students in the Treatment and Comparison Groups

Have you ever thought about the kind of job you would like to have in the future?

| | <u>Treatment</u> (N=593) | | <u>Comparison</u> (N=115) | |
|---------------|-----------------------------|-------------|------------------------------|-------------|
| | <u>Pre</u> | <u>Post</u> | <u>Pre</u> | <u>Post</u> |
| Yes, a lot | 70.3% | 74.7% | 84.3% | 85.8% |
| Yes, a little | 22.5% | 20.6% | 12.2% | 10.6% |
| No | 7.3% | 4.7% | 3.5% | 3.5% |

What type of job would you like when you grow up?

| | <u>Treatment</u> (N=593) | | <u>Comparison</u> (N=115) | |
|----------------|-----------------------------|-------------|------------------------------|-------------|
| | <u>Pre</u> | <u>Post</u> | <u>Pre</u> | <u>Post</u> |
| Fireman | 1.4% | 0.5% | 0.9% | 0.9% |
| Teacher | 12.9% | 8.8% | 11.3% | 11.9% |
| Athlete | 12.7% | 15.4% | 13.9% | 12.8% |
| Nurse | 5.6% | 5.1% | 6.1% | 7.3% |
| Doctor | 8.4% | 9.3% | 6.1% | 7.3% |
| Secretary | 3.1% | 3.5% | 0.9% | 0.9% |
| Mechanic | 0.5% | 1.1% | 0.9% | 1.8% |
| Hairdresser | 2.2% | 1.6% | 7.0% | 8.3% |
| Policeman | 7.9% | 7.9% | 15.7% | 13.8% |
| Truck Driver | 0.9% | 0.5% | 0.0% | 0.0% |
| Factory Worker | 1.1% | 1.1% | 0.0% | 0.0% |
| Homemaker Only | 0.2% | 0.4% | 0.0% | 0.0% |
| Lawyer | 17.4% | 18.4% | 21.7% | 12.8% |
| Architect | 2.5% | 1.9% | 1.7% | 0.9% |
| Pilot | 0.9% | 0.5% | 1.7% | 0.9% |
| Seamstress | 0.0% | 0.0% | 0.0% | 0.0% |
| Carpenter | 1.3% | 1.1% | 0.0% | 0.9% |
| Salesperson | 0.4% | 0.2% | 0.0% | 0.0% |
| Artist | 6.8% | 4.6% | 4.3% | 4.6% |
| Other | 13.8% | 18.4% | 7.8% | 16.5% |

Percent of Students who Knew the Amount of Required Education for the Career of their Choice.

| | <u>Treatment</u> (N=593) | <u>Comparison</u> (N=115) |
|----------|-----------------------------|------------------------------|
| Pretest | 78.1% | 93.5% |
| Posttest | 81.8% | 85.2% |

into their future career plans at pretest.

Although the number of students who had thought about their future careers and were aware of the educational requirements for those careers did not increase substantially from pretest to posttest, the FCAP at least seems to be reinforcing the students' pre-existing positive motives. This type of reinforcement may help prevent students from becoming discouraged as they progress through school.

Discriminating Factors for Drug Use

Discriminant function analyses were conducted to identify the factors which distinguish those elementary students who were abstainers and those who reported some level of drug use. The grouping or dependent variable was students' level of self-reported drug use behavior which was broken down into two categories: no self-reported drug use and some self-reported drug use. Since the prevalence of drug use in this sample was low, students were grouped into the "some use" category if they had indicated the use of drugs at least once. Prior research was utilized to select the following independent variables that were used in the analyses: beliefs about negative effects of drugs scale, drug knowledge scale, peer pressure resistance scale, future intentions not to use drugs scale, decision against drugs scale, academic motivation scale, educational aspirations scale, self-esteem scale, age, gender, race, grade and

guardian status.

Prior to analysis, all of the categorical variables (i.e., gender, race, guardian status) were dummy coded. Since the variables that appear to be most important in distinguishing drug users and nonusers are uncertain, particularly at the elementary level, stepwise variable selection procedures were utilized. Separate discriminant analyses were conducted for combined drug use, tobacco use, alcohol use and inhalant use. Individual analyses were not conducted for marijuana use and cocaine use because too few students had engaged in either behavior. Since the repeated measures MANOVA for program effectiveness was not significant and there were no statistically significant differences between the two conditions on any of the major independent variables at posttest, the treatment and comparison groups were combined to yield a larger sample size for the discriminant analyses. Thus, the results reported below are based only on the posttest data.

The standardized discriminant function coefficients and group means and standard deviations for significant independent variables for each type of drug use are presented in Tables 20 through 23. As shown in Table 20, for the combined drug use scale the variable with the greatest discriminating power was future intentions not to use drugs. The more a student intended to use drugs, in the future, the greater the probability of the student being a

Table 20
Discriminant Analysis with Drug Use - No Drug Use as the
Dependent Variable (Nonuser n=312; User n=189)

| Independent Variable | Group | Mean/SD | Standardized Coefficient |
|------------------------------------|---------|-----------|--------------------------|
| Future Intentions Not to Use Drugs | Nonuser | 4.62/.50 | -.76 ^a |
| | User | 4.25/.59 | |
| Academic Motivation | Nonuser | 4.64/.53 | -.39 ^a |
| | User | 4.34/.78 | |
| Educational Aspirations | Nonuser | 5.57/.96 | .22 ^a |
| | User | 5.59/1.05 | |
| Gender | Nonuser | N/A | -.21 ^a |
| | User | N/A | |
| Self-Esteem | Nonuser | 2.20/.30 | -.21 ^a |
| | User | 2.12/.29 | |

Multivariate Statistics: $\chi^2(5, N=501) = 74.49; p < .0001$
 Canonical Correlation=.37
 Percent of Group Cases Correctly Classified=66.1%

^a F to include significant at .0001.

drug user. The next most discriminating variable was students' level of academic motivation. Students' with lower levels of academic motivation were more likely to be drug users. Summarizing the remaining results of the discriminant analysis, males were more likely to be drug users than females and student with lower self-esteem were more likely to use drugs than students with higher levels of self-esteem. The tendency for drug users to have slightly higher educational aspirations than abstainers was an

Table 21
Discriminant Analysis with Some Tobacco Use - No Tobacco Use
as the Dependent Variable (Nonuser n=469; User n=35)

| Independent Variable | Group | Mean/SD | Standardized Coefficient |
|------------------------------------|---------|------------|--------------------------|
| Peer Pressure Resistance | Nonuser | 4.84/.39 | -.49 ^a |
| | User | 4.14/.95 | |
| Frequency of Alcohol Use | Nonuser | 1.35/.73 | .42 ^a |
| | User | 2.34/.1.00 | |
| Self-Esteem | Nonuser | 2.18/.29 | -.20 ^a |
| | User | 2.99/.40 | |
| Frequency of Marijuana Use | Nonuser | 1.01/.20 | .21 ^a |
| | User | 1.20/.47 | |
| Decisions Against Drugs | Nonuser | 3.84/.25 | -.20 ^a |
| | User | 3.59/.62 | |
| Future Intentions Not to Use Drugs | Nonuser | 4.52/.53 | -.16 ^a |
| | User | 3.85/.72 | |

Multivariate Statistics: $\chi^2(6, N=504) = 112.36$; $p < .0001$
 Canonical Correlation=.45
 Percent of Group Cases Correctly Classified=87.6%

^a F to include significant at .0001.

unexpected finding.

A slightly different set of discriminator variables emerged when students' self-reported drug use behaviors were examined separately by drug. As indicated in Table 21, the two variables with the greatest discriminating power for tobacco use were peer pressure resistance and frequency of alcohol use. That is, the more susceptible a student felt to peer pressure to use drugs, the greater the probability of the student using tobacco. As suggested by the gateway

theory of drug use, students who used alcohol on a more frequent basis were also more likely to use tobacco than were less frequent drinkers. Similarly, students who used marijuana were more likely to use tobacco than were students who did not use marijuana. Students with a low self-esteem and pro-drug decision making style were more likely to use tobacco than students with either a higher self-esteem or anti-use decision making style. Finally, students with stronger intentions to use drugs in the future were more likely to presently use tobacco than students' with less future intent to use drugs.

The variable best able to distinguish drinkers from abstainers was students' future drug use intentions - the stronger the intentions, the greater the probability of the student being a drinker (see Table 22). The next most discriminating variables were amount of tobacco use and level of academic motivation. Students who used tobacco were more likely to also use alcohol than students who did not use tobacco. While students with lower levels of academic motivation were more likely to drink than students with higher levels of academic motivation. The last two discriminating variables were amount of marijuana used and educational aspirations. That is, marijuana users were more likely to use alcohol than non-marijuana users. Here again, those with higher educational aspirations were more likely to be drinkers than those with lower aspirations.

Table 22

Discriminant Analysis with Some Alcohol Use - No Alcohol Use as the Dependent Variable (Nonuser n=363; User n=143)

| Independent Variable | Group | Mean/SD | Standardized Coefficient |
|------------------------------------|---------|-----------|--------------------------|
| Future Intentions Not to Use Drugs | Nonuser | 4.60/.51 | -.59 ^a |
| | User | 4.18/.61 | |
| Frequency of Tobacco Use | Nonuser | 1.02/.16 | .37 ^a |
| | User | 1.28/.73 | |
| Academic Motivation | Nonuser | 4.62/.55 | -.37 ^a |
| | User | 4.27/.80 | |
| Frequency of Marijuana Use | Nonuser | 1.00/.00 | .27 ^a |
| | User | 1.10/.44 | |
| Educational Aspirations | Nonuser | 5.56/1.00 | .26 ^a |
| | User | 5.65/.96 | |

Multivariate Statistics: $\chi^2(5, N=506) = 98.15; p < .0001$
 Canonical Correlation=.42
 Percent of Group Cases Correctly Classified=70.6%

^a F to include significant at .0001.

The final discriminant analysis for drug use behaviors concerns students' use of inhalants (see Table 23). In the case of inhalants, the variable with the greatest discriminating power was the frequency of tobacco use - the more frequent the use, the greater the probability of the student being an inhalant user. Summarizing the remaining results of the discriminant analysis, students with lower self-esteem were more likely to use inhalants than students with higher self-esteem. Students who engaged more

Table 23
Discriminant Analysis with Some Inhalant Use - No Inhalant Use as the Dependent Variable (Nonuser n=451; User n=51)

| Independent Variable | Group | Mean/SD | Standardized Coefficient |
|----------------------------|---------|-----------|--------------------------|
| Frequency of Tobacco Use | Nonuser | 1.06/.28 | .58 ^a |
| | User | 1.35/.99 | |
| Self-Esteem | Nonuser | 2.19/.29 | -.35 ^a |
| | User | 2.05/.32 | |
| Frequency of Marijuana Use | Nonuser | 1.02/.21 | .32 ^a |
| | User | 1.12/.38 | |
| Drug Knowledge | Nonuser | 4.88/1.29 | -.27 ^a |
| | User | 4.43/1.20 | |
| Frequency of Alcohol Use | Nonuser | 1.38/.76 | .24 ^a |
| | User | 1.74/.93 | |

Multivariate Statistics: $\chi^2(5, N=502) = 36.49$; $p < .0001$
 Canonical Correlation=.27
 Percent of Group Cases Correctly Classified=76.3%

^a F to include significant at .0001.

frequently in marijuana and alcohol use were also more likely to use inhalants than less frequent users of marijuana or alcohol. Finally, students with less knowledge about the consequences of drug use were more likely to use inhalants than the more knowledgeable students.

Looking across all four of the discriminant analyses a few patterns become apparent. First, there seems to be some support for the gateway theory of drug use. That is, a common factor distinguishing users and nonusers of any one

particular drug (e.g., tobacco, alcohol, inhalants) was the frequency with which the individual used other drugs. The more frequently students engaged in the use of one drug, the greater the probability that the student also used other drugs. Another common discriminating factor was students' intentions to use drugs in the future. Not surprisingly, current users had stronger intentions to use drugs in the future than did nonusers. Summarizing the other common discriminators, students with low self-esteem and/or academic motivation were more likely to use drugs than students with higher levels of self-esteem and/or academic motivation. However, the nonusers had lower educational aspirations compared to the users.

On an individual drug basis, peer pressure resistance was a powerful discriminating factor, with users reporting less ability to resist peer pressure compared to non-users. The discriminating ability of drug knowledge was apparent only for the analysis involving inhalant use. Students with less knowledge of drugs were more inclined to use inhalants than the more knowledgeable students. This finding is not surprising because several of the items comprising the drug knowledge scale concerned the consequences of inhalant use.

Discriminating Factors for Future Intentions to Use Drugs

The large majority of elementary students in this sample have yet to initiate drug use behaviors.

Consequently, it becomes particularly important during this transitional time to examine the behavioral intentions students are developing concerning future drug use. Discriminant function analyses were conducted to identify the factors which distinguish elementary students who intend to use drugs in the future and those students who do not share such intentions.

The grouping or dependent variable for these analyses consisted of two categories: no intentions to use drugs in the future (i.e., scores of 4 "probably not" and 5 "definitely not" on the recoded drug use intention items) and at least some level of intention to use drugs in the future (i.e., scores of 1 "definitely yes" and 2 "probably yes" on the recoded drug use intention items). Students who checked the "I don't know" response option were omitted from these analyses. The independent variables used in the analyses were: beliefs about negative effects of drugs scale, drug knowledge scale, peer pressure resistance scale, future intentions not to use drugs scale, decisions against drugs scale, academic motivation scale, educational aspirations scale, self-esteem scale, age, gender, race, grade and guardian status.

Prior to analysis, all of the categorical variables (i.e., gender, race, guardian status) were dummy coded. Since the variables that appear to be most important in distinguishing those who intend to use drugs and those who

do not intend to use drugs are uncertain, particularly at the elementary level, stepwise variable selection procedures were utilized. Separate discriminant analyses were conducted for combined drug use intention and intentions to use tobacco and alcohol. Individual analyses were not conducted for intended use of marijuana because too few students had indicated a desire to perform that behavior. Since the repeated measures MANOVA for program effectiveness was not significant and there were no statistically significant differences on any of the major independent variables at posttest between the two conditions, the treatment and comparison groups were combined to yield a larger sample size for the discriminant analyses. Thus, the results reported below are based only on posttest data.

The standardized discriminant function coefficients and group means and standard deviations for significant independent variables for each type of drug investigated are presented in Tables 24 through 26. As shown in Table 24, for the combined drug use intention scale the variable with the greatest discriminating power was peer pressure resistance. Students who indicated a greater susceptibility to peer pressure, were more likely to intend to use drugs in the future than students who felt better equipped to resist peer pressure. The next most discriminating variable was students' self-reported drug use behavior - the more frequently a student engaged in drug use, the greater the

Table 24
Discriminant Analysis with Future Intentions to Use - Not to Use Drugs as the Dependent Variable (No Intent n=239; Intent n=87)

| Independent Variable | Group | Mean/SD | Standardized Coefficient |
|---|-----------|----------|--------------------------|
| Peer Pressure Resistance | No Intent | 4.95/.21 | .81 ^a |
| | Intent | 4.38/.78 | |
| Frequency of Drug Use | No Intent | 1.08/.20 | -.36 ^a |
| | Intent | 1.35/.45 | |
| Beliefs About the Negative Effects of Drugs | No Intent | 4.34/.63 | .20 ^a |
| | Intent | 4.26/.70 | |
| Grade Level | No Intent | 4.84/.79 | -.16 ^a |
| | Intent | 5.14/.70 | |

Multivariate Statistics: $\chi^2(4, N=326) = 107.85; p < .0001$
 Canonical Correlation=.53
 Percent of Group Cases Correctly Classified=81.9%

^a F to include significant at .0001.

probability of the student using drugs in the future.

Students who did not believe as strongly in the negative effects of drugs were more likely to intend to use drugs in the future. Finally, students in higher grade levels reported being more inclined to use drugs in the future than students in the lower grade levels.

A slightly different set of discriminator variables emerged when students' intentions to use tobacco and alcohol were examined separately. As indicated in Table 25, the variable with the greatest discriminating power for intended

Table 25
Discriminant Analysis with Future Intentions to Use - Not to Use Tobacco as the Dependent Variable (No Intent n=364; Intent n=32)

| Independent Variable | Group | Mean/SD | Standardized Coefficient |
|----------------------------|-----------|-----------|--------------------------|
| Peer Pressure Resistance | No Intent | 4.91/.29 | .88 ^a |
| | Intent | 4.05/.86 | |
| Academic Motivation | No Intent | 4.59/.58 | .17 |
| | Intent | 4.00/1.00 | |
| Decisions Against Drugs | No Intent | 3.85/.24 | .14 ^a |
| | Intent | 3.58/.56 | |
| Frequency of Marijuana Use | No Intent | 1.02/.14 | -.13 ^a |
| | Intent | 1.09/.39 | |
| Frequency of Alcohol Use | No Intent | 1.32/.69 | -.14 ^a |
| | Intent | 2.06/1.29 | |
| Gender | No Intent | N/A | .11 ^a |
| | Intent | N/A | |
| Educational Aspirations | No Intent | 5.61/.94 | .11 ^a |
| | Intent | 5.06/1.44 | |

Multivariate Statistics: $\chi^2(7, N=396) = 147.43$; $p < .0001$
 Canonical Correlation=.56
 Percent of Group Cases Correctly Classified=89.4%

^a F to include significant at .0001.

use of tobacco was peer pressure resistance. Similar to the results found with the combined drug use intention scale, students who indicated a greater susceptibility to drug-related peer pressure, were more likely to intend to use tobacco in the future than those students who felt better able to resist drug-related pressure from their peers. The

next most discriminating variable was students' level of academic motivation. The students with a lower level of academic motivation were more likely to intend to use tobacco than students' with higher levels of academic motivation.

Summarizing the remaining results of the discriminant analysis, students with a lower tendency to make decisions against drugs were more likely to intend future tobacco use than students who were more apt to use an anti-drug decision making style. The more frequently students engaged in alcohol and marijuana use, the greater the probability that those students intended to use tobacco in the future. Males were more likely to intend future tobacco use than females. Finally, those students with lower educational aspirations were more inclined to report a future intention to use tobacco than students with higher educational aspirations.

The variable most capable of distinguishing students who intended to drink alcohol in the future and those who intended to abstain was peer pressure resistance (see Table 26). The less equipped a student felt to resist peer pressure to use drugs, the greater the probability that the student intended to use alcohol in the future. Students with a lower tendency to utilize an anti-drug decision making style were also more likely to intend future alcohol use than students who engaged in more of an anti-drug decision making style. Contrary to the results of the

Table 26

Discriminant Analysis with Future Intentions to Use - Not to Use Alcohol as the Dependent Variable (No Intent n=273; Intent n=73)

| Independent Variable | Group | Mean/SD | Standardized Coefficient |
|--------------------------|-----------|-----------|--------------------------|
| Peer Pressure Resistance | No Intent | 4.85/.38 | .84 ^a |
| | Intent | 2.94/1.13 | |
| Decisions Against Drugs | No Intent | 3.83/.26 | .36 ^a |
| | Intent | 3.13/.63 | |
| Educational Aspirations | No Intent | 5.56/1.00 | -.23 ^a |
| | Intent | 6.00/.00 | |
| Grade Level | No Intent | 4.94/.78 | -.18 ^a |
| | Intent | 6.00/.00 | |

Multivariate Statistics: $\chi^2(4, N=346) = 106.46; p < .0001$

Canonical Correlation=.45

Percent of Group Cases Correctly Classified=96.1%

^a F to include significant at .0001.

discriminant analyses involving future intent to use tobacco, students with higher rather than lower educational aspirations expressed stronger intentions of using alcohol in the future. This finding may be related to the greater acceptability of alcohol use in our current society compared with that of tobacco use. Finally, students in the sixth grade were more likely to intend to use alcohol in the future than either fourth or fifth grade students.

Across the discriminant analyses for drug use intention, it appears as if peer pressure resistance is the most powerful discriminator of those who intend to use drugs

in the future and those who do not. That is, students who intended to use drugs reported being less able to resist drug-related peer pressure than students who did not intend future drug use. Therefore, if prevention programs can help students become better equipped to resist peer pressure, intentions to use drugs may never develop into actual use.

Current drug use behavior appears to be another important discriminator - the more a student engages in drug use, the greater the probability the student intends to use drugs in the future. Older students were more inclined to report future drug use intentions than were younger students. Students with weaker beliefs in the negative effects of drug use were also more inclined to report future use intentions than students with stronger anti-drug beliefs. Finally, students with more of a pro-drug decision making style were more likely to report intentions to use tobacco and alcohol in the future than students with more of an anti-drug decision making style.

Role of Attitudes/Beliefs in Drug Prevention for Elementary Level Students

Shifts in drug attitudes and susceptibility to peer pressure as students mature. Previous research suggests that pivotal changes occur in children's attitudes regarding alcohol and other substances between the ages of 10 and 14 (Aitken, 1978; Jahoda & Cramond, 1972). That is, children's attitudes toward drugs tend to be negative at the age of

eight through 10 and become increasingly more pro-drug by age 11 to 12 years (Pisano & Rooney, 1988). This shift in attitude may be indicative of a starting point which may lead to progressively more pro-drug attitudes. These changes in attitudes coincide very closely with the increasing importance of peer companionship over parental guidance (Stone, Miranne, & Ellis, 1979).

Students' beliefs about drugs and their ability to resist drug-related peer pressure were compared across grade level in order to see if the shifts documented in previous research are evident in this sample. To shed further light on the development of students' drug-related views, current and intended future drug use behavior were also examined by grade level. Since there were no differences observed between conditions on any of the scaled measures in question at posttest, the treatment and comparison groups were combined for these analyses. A MANOVA was conducted with beliefs about the negative effects of drugs, peer pressure resistance, self-reported drug use and future intentions not to use drugs scales serving as the dependent variables, and grade level serving as the independent variable.

The overall MANOVA was statistically significant. Univariate analyses revealed that there were significant differences between grade levels on all four of the dependent variables. The results of follow-up planned contrasts are presented in Table 27, along with the means

Table 27
Planned Contrasts, Means and Standard Deviations by Grade Level for the Drug Use, Peer Pressure Resistance, Beliefs about the Negative Effects of Drugs and Future Intentions Not to Use Drugs Scales (N=654-697)

| <u>SCALES</u> | <u>GRADE LEVEL</u> | | | <u>SIGNIFICANT CONTRASTS^a</u> |
|--|--------------------|----------------|----------------|--|
| | 4th Mean/SD | 5th Mean/SD | 6th Mean/SD | |
| Drug Beliefs | 4.18/.65 | 4.36/.67 | 4.15/.66 | 4th & 5th 5th & 6th |
| Peer Pressure | 4.87/.41 | 4.77/.49 | 4.67/.64 | 4th & 5th 4th & 6th |
| Drug Use Behavior | 1.10/.23 | 1.18/.34 | 1.21/.32 | 4th & 5th 4th & 6th |
| Drug Use Intent | 4.59/.56 | 4.44/.56 | 4.37/.61 | 4th & 5th 4th & 6th |
| ^a All t-values significant at $p < .01$ | | | | |

and standard deviations of each scale by grade level.

For three of the four scales (i.e., peer pressure resistance, drug use behavior, future intentions not to use drugs) the previously cited trend of students becoming more pro-drug as grade level increases was observed. The most pronounced differences occurred between the fourth and fifth grade students and the fourth and sixth grade students. That is, fifth and sixth grade students reported feeling more susceptible to drug-related peer pressure, more frequent use of drugs and stronger intentions to use drugs in the future than the fourth grade students. A slightly different response pattern emerged across grade level for the beliefs about the negative effects of drugs scale. The

primary differences existed between fourth and sixth grade students and the fifth grade students. That is, there appears to have been weaker beliefs about the negative effects of drugs than prior research suggests among the fourth grade students, a shift toward stronger beliefs in the fifth grade sample, followed by a shift back to weaker beliefs about the negative effects of drugs amongst the sixth grade students.

Although these differences are not that large, considered together they are indicative of a potentially dangerous pro-drug trend which may continue to progress as the students age. Thus, it seems as if the elementary grades are indeed an appropriate place to be teaching drug prevention. However, as we have seen with the present evaluation of the FCAP, prevention programs need to be implemented consistently over a substantial period of time if they are to render their intended effects.

An examination of the intercorrelations among the four dependent variables used in the MANOVA is presented in Table 28 by grade level. Contrary to previous research (Jessor & Jessor, 1977) which suggests that newly adopted behaviors and attitudes tend to be supportive of one another, the drug use behaviors and beliefs about the negative effects of drugs exhibited by the present sample are not strongly supportive of each other at any grade level. The strongest relationship between the two is evident in the fourth grade

Table 28

Intercorrelations by Grade Level between the Drug Use, Peer Pressure Resistance, Beliefs About the Negative Effects of Drugs and Future Intentions Not to Use Drugs Scales (N=654-697)

| GRADE | Drug-DU Use | Drug-DI Intent | Peer-PP Pressure | Drug-DB Beliefs |
|-------|-------------|-------------------|-------------------|-------------------|
| 4th | (n=207-266) | | | |
| DU | 1.00 | -.17 ^b | -.11 ^c | -.23 ^a |
| DI | | 1.00 | .52 ^a | .17 ^b |
| PP | | | 1.00 | .28 ^a |
| DB | | | | 1.00 |
| 5th | (n=240-259) | | | |
| DU | 1.00 | -.37 ^a | -.48 ^a | -.08 |
| DI | | 1.00 | .65 ^a | .10 ^c |
| PP | | | 1.00 | .22 ^a |
| DB | | | | 1.00 |
| 6th | (n=190-209) | | | |
| DU | 1.00 | -.38 ^a | -.47 ^a | -.12 ^c |
| DI | | 1.00 | .64 ^a | .18 ^b |
| PP | | | 1.00 | .31 ^a |
| DB | | | | 1.00 |

^a $p < .001$; ^b $p < .01$; ^c $p < .05$

sample. Thus, it appears as if younger students are slightly more inclined to base their drug use behaviors on their beliefs about the negative effects of drugs. In contrast, there is a stronger correlation between drug use behavior and both future drug use intentions and peer pressure resistance for the fifth and sixth grade students

compared to the fourth grade students. That is, fifth and sixth graders are more inclined than fourth graders to currently use drugs if they have more intentions of using drugs in the future and/or are less able to resist peer pressure to use drugs.

There is a moderately strong relationship between future drug use intentions and peer pressure resistance for all three grade levels. The correlation between beliefs about the negative effects of drugs and peer pressure resistance was significant across all three grade levels as well. The last two sets of correlations highlight the importance of peer pressure at all of the grade levels. That is, students who reported being more inclined to resist peer pressure to use drugs also reported fewer intentions to use drugs in the future and stronger beliefs about the negative effects of drugs.

An investigation of the predictors of alcohol initiation among elementary school students. An examination of the factors predictive of students' intentions to use alcohol was chosen for study because alcohol is a popular gateway or entry level drug among children and adolescents ("Drug Use Continues", 1989; Oetting & Beauvais, 1990) and it has not received as much recent attention as its gateway counterpart, cigarettes. Furthermore, previous research and the discriminant analyses conducted on the present sample indicate that young people are unlikely to use drugs such as

marijuana or cocaine unless they have had some experience with the gateway drugs (Alder & Kandel, 1981). Moreover, alcohol was the most frequently used drug in the present sample. Thus, a better understanding of the factors that lead to the initiation of alcohol use should aid program developers in their efforts to prevent the early initiation of substance use, thereby deterring or delaying the potential onset of further drug use.

First, the bivariate relationships among the predictor variables and drinking intention were examined. Then, in order to obtain a more accurate view of the relationship of predictor variables with drinking intention, a stepwise multiple regression analysis was performed with drinking intention as the criterion variable. In this regression model, the order of variable entry was determined in a stepwise manner with stepwise entry being terminated when no variable could be entered into the model with a coefficient significantly different from zero ($p < .05$). Students' value-weighted beliefs regarding the consequences of drinking alcohol were only collected at posttest. Since there was a statistically significant difference between the treatment and comparison groups on those belief items (Multivariate $F(4,665) = 5.56, p < .001$), separate regression equations were computed for the posttest treatment and comparison samples.

The correlations between each of the independent variables and drinking intention for the treatment and

Table 29
Correlations between Independent Variables and Drinking Intention for the Treatment and Comparison Groups

| Independent Variable | Group | |
|---|----------------------|----------------------|
| | Treatment (N=476) | Comparison (N=82) |
| Grade | -.17*** | .09 |
| Age | -.07 | .08 |
| Gender | .05 | .06 |
| White ^a | -.11** | .. ^b |
| African-American ^a | .16*** | .. ^b |
| Hispanic ^a | -.10** | .. ^b |
| Lives with both parents ^a | -.03 | -.08 |
| Lives with one parent ^a | .03 | .20* |
| Lives with one parent & a stepparent ^a | .02 | -.08 |
| Lives with non-parental relative ^a | -.02 | -.03 |
| Lives in foster home ^a | -.01 | .. ^c |
| Frequency of tobacco use | -.23*** | -.20** |
| Frequency of alcohol use | -.37*** | -.30*** |
| Frequency of marijuana use | -.08 | .01 |
| Frequency of inhalant use | -.08 | .10 |
| Frequency of cocaine use | -.02 | .08 |
| Frequency of other substance use | -.16*** | -.18 |
| Parents drinking behavior | -.26*** | -.41*** |
| Parents drug use behavior | -.06 | -.15 |
| Value-weighted belief - sports | -.02 | .13 |
| Value-weighted belief - popularity | -.17*** | .12 |
| Value-weighted belief - school | -.01 | -.07 |
| Value-weighted belief - health | -.08 | -.11 |
| Ability to resist peer pressure to drink alcohol | .40*** | .55*** |
| Self-Esteem | .07 | .20** |

** p <.01; *** p <.001

^a All of these variables were coded such that a value of 1 indicated membership in this category and a value of 0 indicated non-membership.

^b All students in the comparison group were African-American; consequently there was no variance on the race variables.

^c There were no students in this category.

comparison groups are presented in Table 29. Caucasian

students and Hispanic students in the treatment group had lower scores on the future intention not to drink scale (i.e., increased likelihood of drinking in the future) than the African-American students. Lower scale scores were also significantly related to increasing grade level for treatment group students. On the other hand, living with one parent was related to higher scores on the future intention not to drink scale for the comparison students. Increasing involvement with alcohol, tobacco and "other" substances was associated with more intentions of drinking in the future for students in both groups. The amount of drinking in the child's environment also had an effect on the students in both groups. Stronger intentions to drink in the future were related to greater drinking by parents and weaker resistance to peer pressure to drink. Among the treatment group students, the stronger the belief that drinking decreases one's popularity among close friends, the weaker the intentions to drink in the future. Finally, higher levels of self-esteem among the comparison group students was associated with fewer intentions to drink in the future.

The order of entry of the variable, percent of variance explained, F -values, significance levels and standardized regression coefficients for the final model of the multiple regression analysis for the treatment group are presented in Table 30. The first variable to enter the equation was

Table 30
Hierarchical Multiple Regression Analysis Seeking to Predict
 Intention to Drink Alcohol for the Treatment Sample (N=476)

| Step | Independent Variable | Change in R ² | F of Change | Beta of Variable |
|------|----------------------------------|--------------------------|-------------|------------------|
| 1 | Peer Pressure Resistance | .16 | 112.78**** | .40 |
| 2 | Frequency of Alcohol Use | .06 | 46.64**** | -.26 |
| 3 | Parents' Drinking Behavior | .04 | 31.83**** | -.20 |
| 4 | African-American | .02 | 13.48*** | .13 |
| 5 | Value-Weighted Belief-Popularity | .01 | 9.78** | -.11 |

Adjusted R²=.28

* $p < .05$; ** $p < .01$; *** $p < .001$; **** $p < .0001$

resistance to peer pressure to drink which accounted for 16 percent of the variance in drinking intention. Students were more likely to report intentions of drinking in the future if they felt that they were less able to resist peer pressure to drink. Frequency of drinking was the next variable to enter the equation. Not surprisingly, students had stronger intentions of drinking in the future if they were currently engaged in more frequent drinking behavior. The third variable to enter was the students' perceptions of their parents' use of alcohol. With peer pressure resistance and students' drinking behavior controlled, the more parents drank the stronger the child's intentions to

drink in the future. The African-American variable was next to enter the equation. The African-American students reported less intention of drinking in the future. The final variable to enter was students' value-weighted belief concerning the relationship between drinking alcohol and popularity. That is, the weaker the students' belief that drinking decreases popularity amongst close friends, the stronger their intention to drink in the future. The final model accounted for almost 30 percent of the variance in the treatment students' intentions to drink alcohol.

The fact that the African-American race variable entered the regression analysis of the treatment group raises the possibility that the intercorrelations of the race variable with the other predictor variables may lead to sizeable differences in the Beta values for the other variables. In order to examine this possibility, the treatment group was limited to only African-American students and the regression analysis was repeated. The results of the two regression analyses were the same, thereby indicating that the treatment group need not be limited to just African-American students for these analyses.

The final regression model for the comparison group involved only three significant predictors which accounted for 42 percent of the variance in students' drinking intention (see Table 31). For this group, peer pressure

Table 31
Hierarchical Multiple Regression Analysis Seeking to Predict
 Intention to Drink Alcohol for the Comparison Sample (N=82)

| Step | Independent Variable | Change in R ² | F of Change | Beta of Variable |
|------|----------------------------|--------------------------|-------------|------------------|
| 1 | Peer Pressure Resistance | .30 | 48.66**** | .55 |
| 2 | Parents' Drinking Behavior | .12 | 22.34**** | -.34 |
| 2 | One Parent Guardian Status | .02 | 14.50* | .15 |

Adjusted R²=.42

* $p < .05$; ** $p < .01$; *** $p < .001$; **** $p < .0001$

resistance was the first variable to enter the equation. The students who reported being less able to resist peer pressure to drink reported being more inclined to drink in the future. The second variable to enter was students' perceptions of their parents' use of alcohol. The more parents drank, the stronger the child's intention to drink in the future. The final variable to enter the equation was one parent guardian status. Students who reported living with one parent had weaker intentions of drinking in the future.

Three additional variables (i.e., frequency of alcohol use, frequency of tobacco use, self-esteem) showing significant bivariate relationships with drinking intention, were not significant when variables in the regression equations were controlled. The reason why these variables

did not enter the multivariate analysis is probably related to their correlation with variables that did enter. For example, frequency of alcohol use would not enter when resistance to peer pressure to drink is in the model because of a moderately high correlation between the two ($\underline{r}=-.41$). Frequency of tobacco use was also significantly related to two equation variables which prevented its entry, frequency of students' drinking ($\underline{r}=.41$) and peer pressure resistance ($\underline{r}=-.41$). Similarly, self-esteem was significantly correlated with two of the variables in the equation, parents' drinking behavior ($\underline{r}=-.14$) and peer pressure resistance ($\underline{r}=.14$).

Finally, the distinction between program and non-program related variables may prove informative for program improvement. For the treatment and comparison samples, the results of the multiple regression analyses suggest that concentration on changing and/or promoting anti-use behaviors and resistance to peer pressure to drink alcohol would be the most fruitful avenues to peruse in attempting to cultivate strong intentions not to use alcohol among the students. However, there is one quite powerful non-program related predictor of drinking intention for both groups: parents' use of alcohol. Programs such as the FCAP that contain a parent component may be able to alter parents' behaviors by convincing them of the negative impact that their drinking behavior has on their children.

Unfortunately, this type of a result is probably very unlikely to occur if a parent has a drinking problem; however, one may hope that casual drinkers might lower their rates. The African-American variable is the other non-program related variable that exerts a small amount of influence in the prediction of students' drinking intentions. Overall, it appears as if there are opportunities for the FCAP, if implemented consistently, to have an impact on students' intentions to drink alcohol in the future.

An Examination of the Correlates and Predictors of Educational Aspiration and Academic Motivation at the Elementary Level

While most school-based drug prevention/education programs targeted at the elementary level attempt to cultivate a healthy attitude toward substance use, few include components designed to promote academic and career aspirations. However, the concentration on academic motivation, career awareness and goal setting is thought by many preventionists to be a crucial component of drug prevention programs, even at the elementary level. Although career education may not seem pertinent to the immediate concerns of the elementary-school child, it is at this level where fundamental behavioral patterns, habits, attitudes and skills are learned.

As reported earlier, the students in this population

appeared to be quite receptive to information regarding their future career and educational plans. That is, a large majority of the students from both conditions have not only been thinking about the type of job they would like in the future, they also knew the amount of education required to perform the job of their choice.

Educational aspiration: correlates and predictors.

Since the repeated measures MANOVA for program effectiveness was not significant and there were no statistically significant differences between the two conditions on any of the major independent variables at posttest, the treatment and comparison groups were combined for the following analyses.

The results of analyses examining the bivariate relationships between the predictor variables and level of educational aspiration are presented in Table 32. A higher level of educational aspiration was related to being better able to resist peer pressure, more intentions not to use drugs in the future, stronger beliefs about the negative effects of drugs, more of an anti-drug decision making style and higher levels of self-esteem. Level of educational aspiration was also positively associated with level of academic motivation, degree of importance placed on school performance and the amount of time spent thinking about future career plans. Increased involvement with drugs was negatively related to students' educational aspirations;

Table 32
Correlations between Independent Variables and Level of Educational Aspiration for the Combined Sample (N=544)

| Independent Variable | Educational Aspiration Score |
|---|------------------------------|
| Grade | -.02 |
| Age | -.05 |
| Gender | .08** |
| White ^a | .03 |
| African-American ^a | .03 |
| Hispanic ^a | -.05 |
| Lives with both parents ^a | -.05 |
| Lives with one parent ^a | .05 |
| Lives with one parent & a stepparent ^a | -.01 |
| Lives with relative ^a | .03 |
| Lives in foster home ^a | .03 |
| Frequency of drug use | -.06* |
| Parents drinking behavior | .08* |
| Parents drug use behavior | |
| Peer pressure resistance | .25** |
| Future intentions not to use drugs | .16** |
| Beliefs about the negative effects of drugs | .21** |
| Decisions against drugs | .24** |
| Level of academic motivation | .17** |
| Importance of school performance | .14** |
| Extent of career awareness | .15** |
| Self-esteem | .11** |

* $p < .05$; ** $p < .01$

^a All of these variables were coded such that a value of 1 indicated membership in this category and a value of 0 indicated non-membership.

however, increased parental involvement with alcohol was associated with higher educational aspirations. Gender was the only demographic variable significantly related to students' educational aspirations, with female students having higher levels of educational aspiration than male

students.

The results of the stepwise multiple regression analysis conducted for the purposes of prediction are presented in Table 33. The order of entry of the variable, percent of variance explained, F -values, significance levels and standardized regression coefficients for the final model are presented in this Table. The order of variable entry was determined in a stepwise manner with stepwise entry being terminated when no variable could be entered into the model with a coefficient significantly different from zero ($p < .05$).

The first variable to enter was peer pressure resistance which accounted for only six percent of the variance in level of educational aspiration. Students were more likely to have higher educational aspirations if they felt better able to resist peer pressure to use drugs. Drug beliefs was the second variable to enter. Students with strong beliefs about the negative effects of drugs were more likely to have higher educational aspirations. With peer pressure resistance and drug beliefs controlled, decisions against drugs was the next variable to enter the equation. Students were more likely to have higher educational aspirations if they utilized more of an anti-drug decision making style. The last two variables to enter the equation were degree of career awareness and level of academic motivation, respectively. Students with a high level of

Table 33
Multiple Regression Analysis Seeking to Predict Students' Level of Educational Aspiration (N=544)

| Step | Independent Variable | Change in R ² | F of Change | Beta of Variable |
|------|---|--------------------------|-------------|------------------|
| 1 | Peer Pressure Resistance | .06 | 46.08**** | .25 |
| 2 | Beliefs About Negative Effects of Drugs | .03 | 19.84**** | .16 |
| 3 | Decisions Against Drugs | .02 | 13.81*** | .15 |
| 4 | Extent of Career Awareness | .01 | 8.60** | .11 |
| 4 | Level of Academic Motivation | .01 | 3.92* | .07 |

Adjusted R²=.11

* p < .05; ** p < .01; *** p < .001; **** p < .0001

career awareness and academic motivation were more likely to also have a high level of educational aspiration.

Although this regression analysis suggests some potentially important predictors of educational aspiration, collectively the significant predictor variables only accounted for 11 percent of the variance in students' level of educational aspiration.

Academic motivation: correlates and predictors.

Although the repeated measures MANOVA for program effectiveness was not significant and there were no statistically significant differences between the two

conditions on any of the major independent variables at posttest, for the following analyses involving academic motivation the treatment and comparison groups were analyzed separately because of the initial group differences on the dependent variable at pretest.

The correlations between each of the independent variables and academic motivation for the treatment and comparison groups are presented in Table 34. For the treatment group, a higher level of academic motivation was associated with less involvement with drug use, better ability to resist peer pressure, more intentions not to use drugs in the future, stronger beliefs about the negative effects of drugs, more of an anti-drug decision making style and a higher level of self-esteem. Parental drinking behavior, was also positively associated with level of academic motivation. Educational aspiration, importance placed on school performance and degree of career awareness were all positively related to level of academic motivation.

Among students in the comparison group, a higher level of academic motivation was associated with more intentions not to use drugs in the future and less parental involvement with drugs. Among the students in both groups, younger students and female students reported higher levels of academic motivation than the older students and the male students.

The results of the stepwise multiple regression

Table 34
Correlations Between Independent Variables and Students'
Level of Academic Motivation for the Treatment and
Comparison Groups

| Independent Variable | Group | |
|---|----------------------|----------------------|
| | Treatment (N=466) | Comparison (N=78) |
| Grade | -.14** | .07 |
| Age | -.16** | -.06 |
| Gender | .16** | .16* |
| White ^a | -.02 | .. ^b |
| African-American ^a | .05 | .. ^b |
| Hispanic ^a | -.05* | .. ^b |
| Lives with both parents ^a | -.07 | .09 |
| Lives with one parent ^a | .06 | .04 |
| Lives with one parent & a stepparent ^a | .02 | .01 |
| Lives with relative ^a | .04 | .12 |
| Lives in foster home ^a | -.05 | .. ^c |
| Frequency of drug use | -.11** | -.09 |
| Parents drinking behavior | .12** | -.08 |
| Parents drug use behavior | -.01 | -.25** |
| Peer pressure resistance | .23** | .17* |
| Future intentions not to use drugs | .16** | .18* |
| Beliefs About the Negative Effects of Drugs | .22** | .01 |
| Decision against drugs | .22** | .08 |
| Level of educational aspiration | .19** | .04 |
| Importance of school performance | .21** | .22** |
| Extent of career awareness | .15** | .03 |
| Self-esteem | .21** | .07 |

* $p < .05$; ** $p < .01$

^a All of these variables were coded such that a value of 1 indicated membership in this category and a value of 0 indicated non-membership.

^b All students in the comparison group were African-American; consequently there was no variance on the race variables.

^c There were no students in this category.

analyses for the treatment and comparison groups are presented in Tables 35 and 36, respectively. The order of

entry of the variable, percent of variance explained, F -values, significance levels and standardized regression coefficients for the final model are presented in each table. The order of variable entry was determined in a stepwise manner with stepwise entry being terminated when no variable could be entered into the model with a coefficient significantly different from zero ($p < .05$).

As shown in Table 35, the first variable to enter for the treatment group was peer pressure resistance. Students were more likely to have higher academic motivation if they felt better able to resist peer pressure to use drugs. The second variable to enter was self-esteem. Students with higher self-esteem were more likely to have a higher level of academic motivation. The next variable to enter the equation was the amount of importance placed on school performance. The more important doing well in school was to the student, the more likely was the student to have a higher level of academic motivation. The fourth variable to enter was drug beliefs - the stronger the student's beliefs about the negative effects of drugs, the greater the probability that the student had a high level of academic motivation. Summarizing the remaining results of the analysis, female students were more likely to have higher academic motivation than male students. Students whose parents drank more frequently tended to have higher academic motivation than students whose parents drank less

Table 35
Multiple Regression Analysis Seeking to Predict Students'
Level of Academic Motivation for the Treatment Group (N=466)

| Step | Independent Variable | Change in R ² | F of Change | Beta of Variable |
|------|---|--------------------------|-------------|------------------|
| 1 | Peer Pressure Resistance | .05 | 31.39**** | .22 |
| 2 | Self-Esteem | .03 | 18.56**** | .17 |
| 3 | Importance of School Performance | .03 | 16.90**** | .16 |
| 4 | Beliefs About Negative Effects of Drugs | .02 | 11.74*** | .14 |
| 5 | Gender | .01 | 9.94** | .12 |
| 6 | Parents Drinking Behavior | .01 | 9.51** | .12 |
| 7 | Age | .01 | 9.78** | -.12 |
| 8 | Extent of Career Awareness | .01 | 6.37** | .10 |

Adjusted R²=.17

** p < .01; *** p < .001; **** p < .0001

frequently. Younger students were also more likely to have higher levels of academic motivation than the older students. Finally, students who had thought more about their future career plans were more likely to have higher levels of academic motivation than those students who had put less thought into their future career plans.

Collectively, these eight predictor variables accounted for 17 percent of the variance in students' academic motivation.

By contrast, the final model for the comparison group

involved only two significant predictor variables which accounted for only eight percent of the variance in students' level of academic motivation (see Table 36). For this group, students' perception of their parents' drug use behaviors entered first. The more students perceived their parents to be using drugs, the lower the child's level of academic motivation. The second variable to enter was the amount of importance placed upon school performance. The students who felt that doing well in school was important reported having higher levels of academic motivation.

Thus, it does appear as if this sample of elementary students is receptive to information and activities related to their future educational and career plans. The major predictors of higher levels of educational aspiration were: better ability to resist drug-related peer pressure, stronger beliefs about the negative effects of drugs,

Table 36
Multiple Regression Analysis Seeking to Predict Students' Level of Academic Motivation for the Comparison Group (N=78)

| Step | Independent Variable | Change in R ² | F of Change | Beta of Variable |
|------|----------------------------------|--------------------------|-------------|------------------|
| 1 | Parents Drug Use Behavior | .06 | 7.45** | -.25 |
| 2 | Importance of School Performance | .03 | 4.13* | .19 |

Adjusted R²=.08

* p < .05; ** p < .01

utilization of an anti-drug decision making style, higher level of career awareness and academic motivation.

A slightly different set of predictor variables emerged for students' level of academic motivation. Among the treatment group students, some of the most significant predictors of a higher level of academic motivation were: better ability to resist drug-related peer pressure, high self-esteem, high value placed on school performance and strong beliefs about the negative consequences of drugs. Less parental involvement with drugs and a high value placed on performing well in school emerged as the two significant predictors for comparison group students.

Although the multiple regression analyses accounted for only a modest percentage of variance in both level of educational aspiration and academic motivation, some potentially important predictors were identified. These results suggest that prevention programmers who wish to boost students' level of educational aspiration/academic motivation may want to concentrate on equipping students with the skills necessary to resist drug-related peer pressure, bolster students' beliefs about the negative effects of drugs and convey the importance of doing well in school and planning one's future education/career path.

CHAPTER 4

DISCUSSION

This study was intended to serve a dual purpose: (a) determine the efficacy of the FCAP; and (b) expand the current knowledge base within the area of drug prevention/education research. The latter purpose was specifically focused on an examination of: the predictors of drug use and drug use intentions among elementary students, the nature of the shifts in drug attitudes and susceptibility to peer pressure as students progress through the elementary grades, the factors associated with the initiation of drinking behavior, and the correlates and predictors of students' educational aspirations and academic motivation.

Program Effectiveness Revisited

Although the FCAP was based in contemporary ideas about drug prevention/education, there were no demonstrable effects of the program on the treatment students. The lack of significant differences between the treatment and comparison conditions may be due in part to the amount of time that passed between the pretest and posttest survey administrations, the overall low level of program

implementation and the delivery of drug prevention efforts to the comparison students. Furthermore, preventative effects resulting from programs aimed at elementary-school students may not surface for period of years.

The large majority of the treatment students, however, felt that they benefitted from the FCAP in several ways. Particularly notable is the fact that almost three-quarters of the students strongly felt that they would be able to "say no to drugs" as a result of the FCAP. Students also expressed interest in participating in more events sponsored by the FCAP. This interest was echoed by the teachers surveyed, with an overwhelming majority indicating that they would like to have the program continue in their schools next year. Teachers also provided some constructive ideas regarding ways to improve the FCAP such as allowing more time for small group discussions and providing students with reinforcement activities following presentations.

Preventative interventions such as the FCAP that address the elementary population represent an important initial line of defense against drug use even though drug-specific outcome evaluations may not produce significant results. An important lesson to extract from this evaluation study is the need for intensity and commitment in prevention efforts. For years evaluation researchers have pointed out how unrealistic it is to expect that limited classroom exposure to an anti-drug program would be able to

counter the various messages a student's family, peers and community may convey to him or her (Bernard, Fafoglia, & Perone, 1987). Recognizing the multiple levels of influence that are present in a child's environment, trends in program development are focusing on a more integrated community approach to drug prevention (Kumpfer, Moskowitz, Whiteside, & Klitzner, 1986; Pechacek, 1983; Pentz, Cormack, Flay, Hansen, & Johnson, 1986). Coordinated prevention approaches that fit with the community standards and have locally sanctioned prevention goals are more likely to be successful and to endure (Kumpfer et al., 1986).

This type of broad based approach to prevention coincides with some of the major tenants of social learning theory (Bandura, 1977). Social learning theory contends that behaviors are gradually acquired and shaped as a result of the positive and negative consequences of those behaviors. The probability of a child performing a specific behavior depends upon the past frequency of the behavior and the long- and short-term rewards and punishments that accompany performance of the behavior (Bush & Iannotti, 1985). The reinforcing or punishing consequences necessary to shape and maintain a behavior are provided by parents, teachers, siblings, peers, media figures and others. Therefore, the greater the number of social systems involved in a drug prevention program, the greater the likelihood of positive behavior acquisition and reinforcement.

The FCAP as originally conceived utilizes multiple sources of influence (e.g., peers, parents, teachers, athletes and other potential role models from the local community) from various social systems in the communication of its anti-drug messages. Social psychological research in the area of social influence suggests that multiple sources presenting multiple arguments leads to enhanced processing of the information presented (Petty & Cacioppo, 1981). If multifaceted strategies, such as the FCAP, that attempt to tie school-based programs in with other social systems could be consistently implemented over a period of time, the likelihood of achieving program objectives should be substantially increased.

Project STAR (Student Taught Awareness and Resistance) (Pentz et al., 1986) exemplifies the community-focused approach to drug prevention. The STAR program employs a theory-based curriculum package designed to teach resistance skills to junior high school students. The project has been well received, and involves 15 neighboring communities within the Kansas City Metropolitan area. Parents, media and local community organizations work in conjunction with the school systems to implement the program. The use of psychosocial theories in community-focused program efforts represents what appears to be an up-and-coming strategy in the area of drug prevention and education (Okwumabua, 1990).

Precipitating Factors of Preadolescent Drug Use Intentions and Behaviors

There has been relatively little research focused on childhood or preadolescent predictors of subsequent involvement with drugs. Although the average age at which young people begin experimenting with drugs has been steadily declining (Benard, Fafoglia, & Perone, 1987; Bradley, 1988; Needham, 1987), the majority of studies assessing the precipitating factors of drug use have concentrated on adolescents. Consequently, the present study attempted to identify some of the possible predictors of preadolescent drug use behaviors and intentions.

Factors discriminating drug users and nonusers. A portion of the results from the multivariate analyses discriminating drug users and nonusers can be interpreted within the framework of the gateway theory. Numerous researchers (e.g., Kandel, Kessler & Margulies, 1978; Mills & Noyes, 1984; O'Donnell & Clayton, 1982) have observed that young people often move along a path of drug use that progress from quasi-legal drugs to illegal drugs. That is, initial drug use experiences typically involve alcohol and cigarettes, then progress to marijuana and move later to hard drugs such as cocaine and heroine. It should be pointed out, however, that although later stages of drug use (e.g., using cocaine) are related to drug use behaviors at earlier stages (e.g., smoking cigarettes) not all children

go through all stages (Okwumabua, 1990).

In the present sample, a common factor distinguishing drug users and nonusers of any one particular drug (i.e., tobacco, alcohol, inhalants) was the frequency with which the individual used other drugs. The more frequently students engaged in the use of one drug, the greater the probability that the student also used other drugs. Since the drug use behaviors reported by this sample are limited to the entry level drugs, an actual stepping stone sequence from gateway drug use through hard drug use cannot be established. Although this sequential pattern of use cannot be traced in this present sample, it does appear as if the use of individual drugs are interconnected. Mill and Noyes (1984) found evidence supporting a cumulative pattern of drug use among junior and high school students. Rather than moving from one drug to the next, the user's drug repertoire was expanded to simultaneously include each type of drug previously used.

Even though the present findings are inconclusive, they suggest that a sequential, and possibly cumulative, pattern of drug use may begin forming during the preadolescent years. Thus, it appears as if prevention of early involvement with gateway drugs may be efficacious in reducing the probability of future illicit drug use. Consequently, programs addressing elementary age students should place special emphasis on trying to deter or delay

the use of gateway or entry level drugs.

Although the gateway theory sheds some light on drug use patterns, the decision to engage in the use of a drug is usually related to more than just prior drug use behavior. In the present sample, students' level of academic motivation, educational aspiration and self-esteem consistently emerged as factors that discriminated users and nonusers.

Numerous research studies have found there to be a negative relationship between academic motivation and drug use (Friedman, 1983; Kandel, 1982) and commitment to educational pursuits and drug use (Holmberg, 1985) among junior high and high school students. It is not quite as clear, however, when academic motivation and educational aspiration become predictors of drug use. Previous research speculates that educational factors emerge in importance as predictors of drug use sometime late in elementary school (Hawkins, Lishner, Catalano & Howard, 1985; Kandel, 1982; Spivack, 1983).

The present findings support the predictive ability of academic motivation in the later elementary years, with low levels of academic motivation being associated with drug use. There are conflicting results, however, concerning the predictive ability of educational aspiration. For the combined drug use scale, nonusers had lower educational aspirations than users. However, abstainers from alcohol

had higher educational aspirations compared to drinkers. Furthermore, both users and nonusers had relatively high educational aspirations. Thus, it appears as if commitment to the pursuit of education may be a more stable predictor of drug use for older students with more educational experience than it is for elementary level students.

Self-esteem is a factor that consistently appears in studies involving youth and drug use. Unfortunately, the nature of the findings is not as consistent. That is, positive, negative and null relationships between self-esteem and drug use have been reported. Overall, the majority of studies tend to find a weak correlation between low self-esteem and involvement with drugs. The present study also found there to be a weak correlation between self-esteem and drug use. Students with low self-esteem were more likely to use drugs than students with higher levels of self-esteem.

It also should be pointed out that students' future intentions to use drugs had considerable discriminating power. The more a student intended to use drugs in the future, the greater the probability of the student currently being a drug user. This result is not surprising and lends further support to research studies that have found early involvement with drugs to be predictive of more frequent drug use as the child matures (Fleming, Kellman & Brown, 1982; Kandel, 1982). In other words, the earlier the age of

initiation into drug use, the greater the probability that there will be more involvement with drugs in the future, and the likelihood of discontinuing use is diminished (Falck & Craig, 1988; Narak, 1987).

Contributing factors to students' future drug use intentions. The large majority of elementary students in this sample have yet to initiate drug use behavior. Therefore, it becomes particularly important during this transitional time to examine the behavioral intentions students are developing concerning future drug use. If prevention programs are to successfully nip experimentation with drugs in the bud, the factors contributing to students' future intentions to use drugs may help point the program developers in the correct direction.

Ability to resist drug-related peer pressure was the most powerful discriminator of those who intended to use drugs in the future and those who did not. Students who intended to use drugs reported being less able to resist drug-related peer pressure than students who did not intend future drug use. Compliance with peer pressure to use drugs and association with drug using peers are frequently reported predictors of drug use among adolescents (Forster, 1984; Kandel, 1978). Little research, however, has focused on preadolescent peer associations as possible predictors of subsequent drug use (Hawkins et al., 1985). The present data clearly indicate that peer relations are important

mediators of drug use initiation at the elementary level. Furthermore, a substantial number of respondents believed that people their age use drugs because "friends want them to" or "to fit in."

A better understanding of the role childhood peers may play in predicting adolescent drug use is needed. This area of research may be guided by peer cluster theory (Oetting, Beauvais, Edwards & Waters, 1984). Peer cluster theory emerged as an attempt to determine why peer influence was so important to adolescents and how it was linked with key psychosocial characteristics (Oetting & Beauvais, 1986). Peer cluster theory goes beyond merely acknowledging the important role that peers play in drug use behaviors. Supporters of the theory maintain that: "small, identifiable peer clusters determine where, when and how drugs are used and that these clusters specifically shape attitudes and beliefs about drugs" (Oetting & Beauvais, 1986, p.19). As mentioned above, peer cluster theory also recognizes the importance of psychosocial factors (e.g., social structure, behavior, psychological characteristics, attitudes and beliefs, socialization links) that underlie the operations of the peer clusters. Identification of how such peer clusters develop and interact throughout the elementary years may help program developers to be more successful in their attempts to inoculate youth against early, and possibly later, drug use.

Some of the psychosocial factors identified by the peer cluster theory appeared in this sample as discriminators of students' future intentions to use drugs. Among the social structure factors, grade level and gender emerged as discriminators of drug use intention. Older students were more inclined to report future use intentions than were younger students. While male students had stronger intentions of using tobacco than did female students. Socialization links concerned with a students' connection to school (i.e., academic motivation, educational aspiration) also emerged as discriminating factors of drug use intention. Students with lower levels of academic motivation and/or educational aspiration were more likely to report future intentions to use drugs than students with higher levels of academic motivation and/or educational aspiration. Another discriminator of drug use intent was students' current drug use behaviors. The more a student engaged in drug use, the greater the probability the student intended to use drugs in the future.

Finally, students with weaker beliefs about the negative effects of drugs were more likely to report firmer intentions to use drugs in the future than students with stronger anti-drug beliefs. Perhaps turning students on to exercise and sports at a young age will help to strengthen their beliefs regarding the negative health consequence of drug use, which may, in turn, strengthen their intentions

not to use drugs in the future. One of the underlying themes of the FCAP is the importance of proper nutrition and exercise in order to have a healthy and productive life. An evaluation of the fully implemented version of the FCAP may help determine if promotion of exercise may eventually result in stronger intentions not to use drugs.

It should be noted, however, that the variables identified in this study as discriminators of one's intentions to use drugs do not represent an exhaustive list of the possible predictors of drug use initiation. Overall, the variables studied account for a relatively low percentage of the variance in drug use intention. Furthermore, the knowledge and beliefs students' possessed regarding drugs were virtually without influence in determining students' future intentions to use drugs. Therefore, consideration should be given to other significant predictors of future drug use initiation, including the possibility that pre-program levels of intent may account for much of the variance in post-program levels.

Development of Students' Drug-Related Viewpoints

Previous research suggests that pivotal changes occur in children's attitudes regarding alcohol and other substances between the ages of 10 and 14 (Aitken, 1978; Jahoda & Cramond, 1972; Pisano & Rooney, 1988). These changes in attitudes coincide very closely with the increasing importance of peer companionship over parental

guidance (Stone, Miranne, & Ellis, 1979). Taken together, these shifts suggest that as peer influence grows and attitudes toward drugs become more positive, use will begin or increase.

Consistent with prior research (Aitken, 1978; Pisano & Rooney, 1988), the students surveyed in this study demonstrated a slight pro-drug shift as grade level increased. That is, fifth and sixth grade students reported greater susceptibility to drug-related peer pressure, more frequent use of drugs and stronger intentions to use drugs in the future than the fourth grade students. Students' beliefs about the negative effects of drugs, however, did not follow as clear a transitional pattern across grade level. Fourth and sixth grade students held more pro-drug beliefs than the fifth grade students. Overall, students' gradual falling away from anti-drug ceilings as grade level increased, suggests a potentially dangerous trend which may continue to progress as the students' mature. These results reinforce the importance of beginning drug prevention efforts in the early elementary grades.

An Investigation of the Predictors of Alcohol Initiation by Elementary School Students

As mentioned earlier, the majority of elementary age students, including those in the present sample, have yet to form a consistent pattern of drug use behavior. Therefore, during this period of transition from intention to use, it

is particularly important to examine the early predictors of behavioral intentions concerning future drug use.

The initiation of alcohol use was chosen for study because alcohol is usually one of the first drugs that children and adolescents experiment with ("Drug Use Continues", 1989; Oetting & Beauvais, 1990). Furthermore, as discussed earlier, young people are unlikely to use drugs such as marijuana and cocaine unless they have had some experience with gateway drugs (Alder & Kandel, 1981). Moreover, alcohol was the most frequently used drug in the present sample.

Among the treatment and comparison students, resistance of peer pressure to drink was the variable that accounted for the largest percentage of variance in students' drinking intentions. Students who were more inclined to acquiesce to a peer's offer to drink, had greater intentions of drinking in the future. The drinking related variables (i.e., student drinking behavior, parental drinking behavior) also accounted for the a modest portion of the variance in student drinking intentions. Not surprisingly, the more frequently students reported drinking, the greater their intention to drink in the future. Also, the more a student's parents drank, the stronger the child's intention to drink in the future. Finally, students' beliefs about the consequences of drinking alcohol on popularity level accounted for a small percentage of the variance in the

treatment students' drinking intentions. Treatment students who believed that drinking would positively impact their popularity among close friends had a stronger intention to drink in the future. Peer pressure and modeling may be at least partially responsible for the anticipated positive impact of drinking on being liked by close friends.

The interplay of the various causal factors associated with the behavioral intention to drink alcohol may be partially understood within the context of the stage models of drug use (Flay, d'Avernas, Best, Kersell, & Ryan, 1983; Leventhal et al., 1988). In general, the stage models posit that external social influences (e.g., family, peers) are relatively more important in the early stages of behavioral adoption, whereas internal factors (e.g., attitudes, beliefs) are viewed as more important at the later stages (Chassin, Presson, & Sherman, 1990).

The present findings suggest that prevention planners targeting elementary-school students should incorporate peer techniques (e.g., peer teaching, role-model skits) into their interventions. However, the negative impact that parental drinking has on students' intentions to drink is not as easy to address in school-based prevention programs. Programs such as the FCAP that contain a parent component may be able to alter parents' behaviors by convincing them of the negative impact that their drinking behavior has on their children. Unfortunately, it is often difficult to

find ways to get parents involved in a program on an on-going basis. More research on the parents and guardians of program participants may help program developers to incorporate parents into intervention efforts with more success. Research in this area could address a variety of issues including: parents' preferences regarding program scheduling, location, format and content; parents' attitudes toward adult and child drug use; or parents' perceptions of their children's use, attitudes and knowledge of drugs, and so forth.

The present study identified several potentially important determinants of drinking intention among preadolescents. There is still a need, however, to analyze the process by which predictor variables operate to influence a student's intentions regarding alcohol use. Longitudinal studies that follow students from early elementary school through high school would permit a more thorough investigation of the process underlying drinking initiation.

An Investigation of Career Awareness, Educational Aspiration and Academic Motivation Among Elementary School Student

The relevance of career awareness programs. The FCAP contains several components (e.g., curriculum lessons, role model speakers, career days, corporate site visits) designed to broaden students' career awareness and help them better understand the relationship between the skills learned in

school and preparation for life and work. Although career education may not seem pertinent to the immediate concerns of the elementary child, it is at this level where fundamental behavioral patterns, habits, attitudes and skills are learned. Career education at the elementary level is not designed to force students into an early career choice. Rather, it attempts to provide students with a wide base of experience so that when the time comes the student will be better equipped to make sound education/career decisions.

The results of the present study support the initiation of career awareness programs at the elementary level. The students in this sample appeared to be quite receptive to information regarding their future career and educational plans. A large majority of the students from both conditions had not only been thinking about the type of job they would like in the future, they also knew the amount of education required to perform the job of their choice. Furthermore, program students expressed an interest in attending more career/role model speaker presentations and visiting more businesses. Teachers also indicated that the students were receptive and interested in the speaker presentations: "the role model speakers were excellent and were well received by the students;" "students responded to the speakers in a way that showed they were learning;" "role model speakers were interesting and motivated the students".

Preadolescent predictors of educational aspiration and academic motivation. Career/education awareness programs not only help prepare the students for their work-related future, they also represent another weapon in the fight against drug use. The concentration on academic motivation, career awareness and goal setting is thought by many preventionists to be a crucial component of drug prevention programs, even at the elementary level. A study conducted by Jessor and Jessor (1978) in the Colorado public schools concluded that "the best predictor of drug taking was the value students placed upon education and the expectation of success through education." Furthermore, non-users tend to report higher overall grades, fewer absences and cut classes, higher academic aspirations, more interest in school work and stronger feelings of its importance (Paulson, Coombs, & Richardson, 1990).

As mentioned earlier, the present study found a relationship between students' level of academic motivation and educational aspiration and their drug use behaviors and intentions. Students' with lower levels of academic motivation were more likely to have engaged in and/or intended to engage in drug use than students with higher levels of academic motivation. Students with lower levels of educational aspiration were more likely to intend to use drugs in the future than students with higher educational aspirations. However, educational aspiration was not a

stable discriminator of drug users and nonusers.

Given the potential influence of academic motivation and educational aspiration on drug intentions/use behaviors, it would be helpful to understand more about the factors that predict a student's level of academic motivation and/or educational aspiration. Among the members of the present sample, the strongest predictors of students' level of educational aspiration were peer pressure resistance and drug beliefs. Students were more likely to have a higher level of educational aspiration if they felt better able to resist peer pressure to use drugs and held strong beliefs about the negative effects of drugs.

Prediction of academic motivation involved separate multiple regression analyses for the treatment and comparison conditions because of initial group differences on the academic motivation scale. The strongest predictors of academic motivation for the treatment group were peer pressure resistance, self-esteem and importance of school performance. Students with higher levels of academic motivation felt better able to resist peer pressure to use drugs, had a higher level of self-esteem and placed greater importance on doing well in school than students with lower levels of academic motivation. Only two variables emerged as significant predictors of the comparison students' level of academic motivation: parental drug use behavior and importance of school performance. The more students

perceived their parents to be using drugs, the lower the child's level of academic motivation; while the students who felt that doing well in school was important reported having higher levels of academic motivation.

Although the multiple regression analyses accounted for only a modest percentage of variance in both level of educational aspiration and academic motivation, some potentially important predictors were identified. Drug prevention programmers who wish to boost students' level of educational aspiration may want to concentrate on equipping students with the skills necessary to resist drug-related peer pressure and bolstering their anti-drug beliefs. Improving students' peer pressure resistance skills may also help to increase academic motivation. Enhancement of self-esteem and conveyance of the desire to perform well in school may also have a positive impact on a child's academic motivation. There is still a need, however, for research aimed at better understanding the factors which determine preadolescent educational aspiration and academic motivation.

Limitations of the Present Research

Interpretation of the results of this study should be tempered by a recognition of several limitations. As mentioned earlier, the FCAP was not implemented as originally conceived due to several time and budgetary constraints. Therefore, the present evaluation effort is

not a viable test of the complete FCAP, but rather an examination of a limited version. Thus, another evaluation should be conducted to assess the efficacy of the fully implemented program.

Although this study included students from a number of schools and from several regions of Chicago, the sample consisted predominately of African-American and Hispanic urban students. Considering that there is a relative paucity of drug/prevention research on urban minority youth (Hanson, 1985; Welte & Barnes, 1987; Wright & Watts, 1988), the present study should help further our understanding of a population that is often a risk for substance abuse problems. However, caution is warranted in generalizing this prevention approach and this study's findings to other populations (e.g., rural students, predominately Caucasian students). The generalizability of this study's findings is also tempered by the high rate of attrition from pretest to posttest. Although there was no significant threat of differential attrition on the major dependent variables, the loss of a substantial number of students from pretest to posttest may compromise the external validity of the results.

Another limitation of this study concerns the unit of assignment and the unit of analysis that were used. The unit of assignment to conditions was the school, however, some analyses were conducted at the individual level. This

practice may cause a confounding of potential school differences with treatment effects. This threat to internal validity is often mitigated to some extent by the assignment of two or more units to each condition. In this study, the treatment condition consisted of nine units, but the comparison condition only contained one unit. Although prevention researchers are cognizant of this problem, practical constraints often hinder attempts to solve it.

Another limitation pertains to the use of self-reports by students to determine both their drug use behaviors and those of their parents. As reported earlier, numerous studies (e.g., Akers et al., 1983; Cooper et al., 1981; O'Malley et al., 1983; Rachel et al., 1980) have evaluated self-reports of drug use and found them to be a reliable instrument for collecting data and arriving at conclusions. Furthermore, the present study included a question on the ever-use of a fictitious drug in order to ascertain whether respondents exaggerated their self-reported use of substances. Only one percent of the entire sample reported ever using the fictitious substance and those respondents (N=15) were eliminated from any analyses in which self-reported drug use was a variable. The reliability of the perception and reporting of parental drug use by students is not known. Students' reports may have been contaminated by response bias which may have resulted in some underestimation of parental use levels.

The statistical conclusion validity of this study is threatened by the low reliabilities of some of the measures. Measures of low reliability attenuate the relationships among the variables being measured and diminish the chances of finding true change. In the future, unreliability may be better controlled by using more items per scale and selecting items based on their high intercorrelations.

Another limitation in the area of measurement concerns the reliance on questionnaires alone to gather data. Multiple measurement techniques can yield richer data and allow for more definitive comparisons. Other measurement techniques that evaluation researchers may wish to tap include: interviews, direct observations, archival or institutional records and physical trace measures. Unfortunately, the time and expense often incurred when using these alternative measurement techniques may prohibit many evaluation researchers from taking full advantage of their benefits.

Finally, it should be noted that the correlational nature of the findings does not allow for causal attributions concerning the respective roles of some predictors (e.g., academic motivation, self-esteem, drug beliefs) in preadolescent drug use behaviors and intentions. For example, whether preadolescents use drugs as a result of having a low level academic motivation or whether their use of drugs leads to a low level of academic motivation remains

to be determined. Longitudinal studies that track students over a period of years would be better able to ascertain the proper causal order.

Directions for Future Research

There are two main avenues that the present research may take in the future: (a) further expansion of knowledge in the area of drug prevention/education aimed at preadolescents; and (b) modification of the FCAP to better suit its target population.

Future research for the expansion of knowledge in the area of preadolescent drug prevention. First, in an attempt to further the understanding of just "how" prevention strategies work, a high priority should be given to process analysis in future studies. That is, greater effort should be directed at isolating and measuring the immediate (e.g., gains in knowledge about the consequences of smoking) and mediating effects (e.g., social normative beliefs) of programs, in addition to the behavioral outcomes (e.g., smoking). Determination of how the immediate and mediating effects of a program are linked to final behavioral outcomes could then be more systematically pursued.

Social psychological research and theory may prove helpful in the area of process analysis. For example, previous research has shown that peers tend to be more effective than teachers in disseminating drug-related information and leading group discussions (Botvin, Baker,

Renick, Filazzola, & Botvin 1984; Evans et al., 1981; Flay et al., 1985). The Elaboration Likelihood Model (Petty & Cacioppo, 1981) points out the importance of knowing "how" these findings came to be. Did these findings occur because the peer source was serving as a simple positive cue, or because the peers enhanced attention and processing of the substantive arguments presented. If the former reason is true, the information conveyed by the peers will most likely be forgotten when the peer source is no longer a salient positive cue. However, if the latter reason is true, there is a greater chance that the peer-presented information will be remembered over time (Petty & Cacioppo, 1986).

A focus on process in future studies may also help researchers isolate the "active" ingredients in prevention/education programs. Many prevention efforts based on the psychosocial approach, including the FCAP, contain numerous components. Developing a better understanding of which program components are essential for program success is wise for several reasons. First, students may feel overwhelmed if too many issues are discussed or too many life changes are encouraged. Second, attempting to implement programs that contain numerous components may not leave teachers and/or program personnel with enough time to do a thorough job on any one area (Glasgow & McCaul, 1985). Finally, the more components, the more time and money needed to successfully implement the

program. Therefore, streamlining programs by including just the effective components may help provide more students consistent programming over a longer period of time.

Decomposing programs in order to determine their essential components may be accomplished in small scale, short-term analog studies.

This study suggests that the influence of peers on drug use intentions and behaviors is evident in preadolescent youth. However, the nature of the link between early drug use experiences and peer influence is not well understood. Future research endeavors that examine the complex interactions between a preadolescent and his or her peer group may help us further understand how peer influences may prompt the onset of drug use among youth.

Finally, the prevention field would be well served if all evaluations made a conscientious attempt to monitor and report issues related to the fidelity and completeness of program implementation. First, it is virtually impossible to fairly assess the efficacy of a program without implementation data. Furthermore, program developers may acquire valuable information from implementation data. For example, implementation data may help to highlight areas of a program that could be problematic for school or community personnel to adequately disseminate. Implementation data may also help program planners set a realistic time-line for their programs, thereby preventing the omission of key

elements.

Modification suggestions to improve the FCAP. Since the FCAP was not fully implemented during the 1992-1993 school year, the present evaluation was unable to determine the efficacy of the program as originally conceived. Therefore, at this point, any suggestions to modify the program should be modest in scope.

Perhaps the best approach is to try and act upon some of the teachers' suggestions. First, teachers suggested that students be given more time to talk about their own drug-related experiences. This suggestion could be enacted by having students communicate the beliefs and information they have regarding drug use. This type of elicitation technique prompts students to search their belief systems and may help them to discover that they have little information on which to base their beliefs. Students may then be more inclined to actively search their environment for additional information (Flay et al., 1985). The Waterloo smoking prevention project has successfully used this technique (Flay, 1985). Furthermore, the efficacy of active elicitation of information is consistent with social psychological research showing that self-generated material is processed deeper and remembered better than externally presented material (Petty & Cacioppo, 1981).

Teachers also suggested that more time be allowed for small group discussion and interaction. This

recommendation, coupled with the apparent importance of peer influence, suggests the potential usefulness of role-playing techniques to teach students peer pressure resistance skills. Students engaged in role playing activities generate arguments against using drugs. As mentioned above, active, as opposed to passive, exposure to information tends to result in deeper processing and better retention of that information (Petty & Cacioppo, 1981). Role playing techniques have been successfully used in many psychosocial prevention programs (Botvin & Will, 1985; Evans, 1984; Flay, 1985; Forman & Linney, 1991). Furthermore, a sound understanding of refusal skills is important because students will be more inclined to act on old habits and salient situational cues unless they have the behavioral skills necessary to implement any newly acquired anti-drug beliefs and attitudes that may have been conveyed through a prevention program (Botvin & Wills, 1985).

Finally, the community focus of the FCAP appears to be a future trend in prevention programs. As mentioned earlier, the decision to use drugs is influenced by numerous factors which the school system has limited control over such as, parental behaviors, peer group selection, emotional health and media exposure. Consequently, programs that extend beyond the school to include and utilize families, peers, media, churches and community agencies offer youth a better chance at being drug free. What is now needed is a

method of achieving adequate implementation and ensuring quality control across the many players that participate in a community-focused prevention program.

APPENDIX A
STUDENT QUESTIONNAIRE

QUESTIONNAIRE

1. How old are you in years? _____

2. Circle whether you are a boy or a girl: Boy Girl

3. Circle the grade you are in: 4th 5th 6th

4. Put an X on the line next to the sentence that describes with whom you live?

_____ 1. I live with both of my parents.
_____ 2. I live with only one of my parents.
_____ 3. I live with one parent and a step-parent.
_____ 4. I live with a relative other than my parents.
_____ 5. I live in a foster home.
_____ 6. None of these statements describe with whom I live.

5. Put an X on the line next to your race/ethnicity?

_____ 1. White
_____ 2. Black
_____ 3. Asian
_____ 4. Hispanic
_____ 5. Native-American
_____ 6. Other

DIRECTIONS: For each question below, put an X on the line next to the answer that is true for you.

Section I

6. How often do you use tobacco (cigarettes, chewing tobacco, snuff)?

- 1. Never
- 2. Only once
- 3. A few times a year
- 4. 1 or 2 times a month
- 5. 1 or 2 times a week
- 6. once a day
- 7. more than once a day

7. How often do you drink alcoholic beverages (beer, wine, liquor)?

- 1. Never
- 2. Only once
- 3. A few times a year
- 4. 1 or 2 times a month
- 5. 1 or 2 times a week
- 6. once a day
- 7. more than once a day

8. How often do you use marijuana ("grass", "pot")?

- 1. Never
- 2. Only once
- 3. A few times a year
- 4. 1 or 2 times a month
- 5. 1 or 2 times a week
- 6. once a day
- 7. more than once a day

9. How often do you use psychaline?

- 1. Never
- 2. Only once
- 3. A few times a year
- 4. 1 or 2 times a month
- 5. 1 or 2 times a week
- 6. once a day
- 7. more than once a day

10. How often do you use inhalants (glue, paint, etc)?

- 1. Never
- 2. Only once
- 3. A few times a year
- 4. 1 or 2 times a month
- 5. 1 or 2 times a week
- 6. once a day
- 7. more than once a day

11. How often do you use cocaine or crack?

- 1. Never
- 2. Only once
- 3. A few times a year
- 4. 1 or 2 times a month
- 5. 1 or 2 times a week
- 6. once a day
- 7. more than once a day

12. How often do you use any other types of pills or substances that your doctor did not tell you to use?

- 1. Never
- 2. Only once
- 3. A few times a year
- 4. 1 or 2 times a month
- 5. 1 or 2 times a week
- 6. once a day
- 7. more than once a day

Section II

13. When do you think it is okay for someone your age to drink alcoholic beverages (beer, wine, or liquor)? (You may check more than one).

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> 1. On special occasions | <input type="checkbox"/> 6. To relax |
| <input type="checkbox"/> 2. With parents | <input type="checkbox"/> 7. Never |
| <input type="checkbox"/> 3. At parties | |
| <input type="checkbox"/> 4. With friends | |
| <input type="checkbox"/> 5. To feel good | |

14. Why do most people your age take drugs? (You may check more than one).

- | | |
|--|---|
| <input type="checkbox"/> 1. Personal curiosity | <input type="checkbox"/> 5. To feel relaxed |
| <input type="checkbox"/> 2. Friends want them to | <input type="checkbox"/> 6. Need to escape |
| <input type="checkbox"/> 3. To feel grown up | <input type="checkbox"/> 7. To fit in |
| <input type="checkbox"/> 4. To disobey parents | <input type="checkbox"/> 8. Other reasons |

Section III

15. If some of your friends were drinking alcohol, do you think you might join them?

- _____ 1. Definitely Yes
- _____ 2. Probably Yes
- _____ 3. Probably No
- _____ 4. Definitely No
- _____ 5. I Don't Know

16. If some of your friends were smoking cigarettes, do you think you might join them?

- _____ 1. Definitely Yes
- _____ 2. Probably Yes
- _____ 3. Probably No
- _____ 4. Definitely No
- _____ 5. I Don't Know

17. If some of your friends were using marijuana, do you think you might join them?

- _____ 1. Definitely Yes
- _____ 2. Probably Yes
- _____ 3. Probably No
- _____ 4. Definitely No
- _____ 5. I Don't Know

18. If some of your friends were using crack or cocaine, do you think you might join them?

- _____ 1. Definitely Yes
- _____ 2. Probably Yes
- _____ 3. Probably No
- _____ 4. Definitely No
- _____ 5. I Don't Know

19. When you get older do you think you will drink alcohol?

- _____ 1. Definitely Yes
- _____ 2. Probably Yes
- _____ 3. Probably No
- _____ 4. Definitely No
- _____ 5. I Don't Know

20. When you get older do you think you will smoke cigarettes?
- _____ 1. Definitely Yes
 - _____ 2. Probably Yes
 - _____ 3. Probably No
 - _____ 4. Definitely No
 - _____ 5. I Don't Know
21. When you get older do you think you will use marijuana?
- _____ 1. Definitely Yes
 - _____ 2. Probably Yes
 - _____ 3. Probably No
 - _____ 4. Definitely No
 - _____ 5. I Don't Know
22. When you get older do you think you will use cocaine or crack?
- _____ 1. Definitely Yes
 - _____ 2. Probably Yes
 - _____ 3. Probably No
 - _____ 4. Definitely No
 - _____ 5. I Don't Know
23. Do your parents, or anyone who lives in your home, drink alcohol (beer, wine, liquor)?
- _____ 1. No
 - _____ 2. Yes, a little
 - _____ 3. Yes, a lot
24. Do your parents, or anyone who lives in your home, use drugs (marijuana, cocaine, crack, heroine, or any other illegal drug)?
- _____ 1. No
 - _____ 2. Yes, a little
 - _____ 3. Yes, a lot
25. Do your parents, or anyone who lives in your home, offer or encourage you drink alcohol (beer, wine, or liquor)?
- _____ 1. No
 - _____ 2. Yes, a little
 - _____ 3. Yes, a lot
26. Do your parents, or anyone who lives in your home, offer or encourage you to use drugs (marijuana, cocaine, crack, heroine, or any other illegal drug)?
- _____ 1. No
 - _____ 2. Yes, a little
 - _____ 3. Yes, a lot

DIRECTIONS: Read each story carefully and draw a circle around the letter of the answer you think is best. Choose only one answer for each story.

27. Tom and Bill were playing catch on the school playground. When they were finished they found a pack of cigarettes near the sliding board. What do you think Tom and Bill should do with the cigarettes?
- A. Sell the cigarettes to their friends.
 - B. Smoke a cigarette to see what it is like.
 - C. Give the cigarettes to their teacher.
 - D. Leave the cigarettes on the playground.
28. On her way home from school Lisa met her friend Anne. Anne had a few cans of beer, and asked Lisa if she wanted to drink one. What should Lisa do?
- A. Take the beer from Anne, but only drink a little.
 - B. Tell Anne that she does not want to drink a beer.
 - C. Drink the beer with Anne.
 - D. Take the beer from Anne and try to sell it to someone.
29. On his way home from the store, Mike stopped to talk with his friend Pete. Pete told Mike that he had been selling marijuana to their friends at school. What should Mike do?
- A. Nothing, because it is okay to sell marijuana to your friends.
 - B. Try to buy some marijuana from Pete.
 - C. Tell his teacher or parents that Pete is selling marijuana to his friends at school.
 - D. Nothing, because it is Pete's decision if he wants to sell drugs.
30. One day after school Jill was in her brother's room looking for his headphones so that she could borrow them. When she opened her brother's dresser drawer she found some crack. What should Jill do?
- A. Take the crack so that she can try it with her friends.
 - B. Nothing, because it is her brother's decision if he wants to use drugs.
 - C. Tell her parents that she found crack in her brother's drawer.
 - D. Take the crack and try to sell it to someone at school.

Listed below are some questions about drinking alcoholic beverages such as beer, wine or liquor. Please put an "X" in the box (X) that best describes the answer that is correct for you.

SA=Strongly Agree, A=Agree, U=Uncertain, D=Disagree, SD=Strongly Disagree.

| | SA | A | U | D | SD |
|---|-----|-----|-----|-----|-----|
| DRINKING ALCOHOL..... | | | | | |
| 31. will improve my ability to perform sports/exercise. | () | () | () | () | () |
| 32. decrease my popularity among my close friends. | () | () | () | () | () |
| 33. will improve my ability to do well in school. | () | () | () | () | () |
| 34. will make my body less healthy. | () | () | () | () | () |

PLEASE RATE HOW IMPORTANT THE FOLLOWING THINGS ARE TO YOU PERSONALLY. (VI=Very Important, SI=Somewhat Important, SNI=Somewhat Not Important, NI=Not at All Important).

| | VI | SI | SNI | NI |
|--|-----|-----|-----|-----|
| 35. Being liked by close friends. | () | () | () | () |
| 36. Doing well in school. | () | () | () | () |
| 37. Having a healthy body. | () | () | () | () |
| 38. Being able to perform sports/exercise. | () | () | () | () |

Listed below are 7 ideas about how people might be influenced by using drugs. Read each idea, then put an "X" in the box (X) that best describes the way you feel about the idea.

SA=Strongly Agree, A=Agree, U=Uncertain, D=Disagree, SD=Strongly Disagree

| | SA | A | U | D | SD |
|---|-----|-----|-----|-----|-----|
| 39. Cocaine users have more friends than other people. | () | () | () | () | () |
| 40. People who smoke marijuana don't really hurt anyone. | () | () | () | () | () |
| 41. Using drugs makes people more creative. | () | () | () | () | () |
| 42. Smoking marijuana is a good way to relax. | () | () | () | () | () |
| 43. Cocaine improves a person's ability to do their job. | () | () | () | () | () |
| 44. Regular drug users have a hard time keeping friends. | () | () | () | () | () |
| 45. People who use illegal drugs have a hard time trying to do their daily tasks. | () | () | () | () | () |

Listed below are 7 facts about drugs. Circle the word **TRUE** if you think the fact is true, or the word **FALSE** if you think the fact is false. Circle **DON'T KNOW** if you are not sure if the fact is true or false.

| TRUE | FALSE | DON'T KNOW | |
|-------------|--------------|-------------------|---|
| True | False | Don't know | 46. Marijuana ("pot", "grass") makes it easier for a person to remember things. |
| True | False | Don't know | 47. Cigarettes can damage a person's lungs and heart. |
| True | False | Don't know | 48. When the effects of cocaine ("coke" or "crack") wear off, a person usually feels quite happy. |
| True | False | Don't know | 49. Sharing drug needles makes a person more likely to get the AIDS virus. |
| True | False | Don't know | 50. A person cannot develop a physical need to smoke "crack". |
| True | False | Don't know | 51. Regular, heavy use of inhalants (like glue or paint) may damage a person's brain. |
| True | False | Don't know | 52. Marijuana ("pot", "grass") will always make a person feel happy. |

For each question below, put an X on the line next to the answer that is correct for you.

Section I

53. Have you ever thought about what kind of job you might like to have when you grow up?

1. Yes, a lot.
 2. Yes, a little.
 3. No.

54.a. If you could have any job you wanted, what kind of job would you really like to have when you grow up? Check only one job.

- | | |
|---|---|
| <input type="checkbox"/> 1. Fireman | <input type="checkbox"/> 11. Factory Worker |
| <input type="checkbox"/> 2. Teacher | <input type="checkbox"/> 12. Homemaker Only |
| <input type="checkbox"/> 3. Athlete | <input type="checkbox"/> 13. Lawyer |
| <input type="checkbox"/> 4. Nurse | <input type="checkbox"/> 14. Architect |
| <input type="checkbox"/> 5. Doctor | <input type="checkbox"/> 15. Pilot |
| <input type="checkbox"/> 6. Secretary | <input type="checkbox"/> 16. Seamstress |
| <input type="checkbox"/> 7. Mechanic | <input type="checkbox"/> 17. Carpenter |
| <input type="checkbox"/> 8. Hairdresser | <input type="checkbox"/> 18. Salesperson |
| <input type="checkbox"/> 9. Policeman | <input type="checkbox"/> 19. Artist |
| <input type="checkbox"/> 10. Truck driver | <input type="checkbox"/> 20. Something else |

(What job? _____)

b. How far do you have to go in school to get the job that you would like to have when you grow up?

1. Finish 8th grade
 2. Finish high school
 3. Go to a trade school
 4. Finish college
 5. Don't know

c. In what ways have you heard about the job you would like to have when you grow up? (You may check more than one).

- _____ 1. Someone in my family has that kind of job
- _____ 2. Someone else I know has that kind of job
- _____ 3. I heard about it in school
- _____ 4. I read about it in a book
- _____ 5. I read about it in a newspaper or magazine
- _____ 6. I heard about it on television or the radio
- _____ 7. I saw it in the movies
- _____ 8. Someone told me about it
- _____ 9. Athlete's Against Drugs Program
- _____ 10. I heard about it in some other way

55. Is there anyone you would like to be like when you grow up?

_____ 1. Yes Who is it? _____

Why do you want to be like this person? _____

_____ 2. No

Section II

56. I really try to get good grades in school

- _____ 1. Always
- _____ 2. Most of the time
- _____ 3. Sometimes
- _____ 4. Hardly ever
- _____ 5. Never

57. If I had my way about coming to school, I would come

- _____ 1. Always
- _____ 2. Most of the time
- _____ 3. Sometimes
- _____ 4. Hardly ever
- _____ 5. Never

58. How much time do you spend each day doing homework?

- 1. 0 minutes
- 2. 15-30 minutes
- 3. 30 minutes-1 hour
- 4. 1 hour or more

Section III

59. If you had your choice, how far would you like to go in school?

- 1. Not beyond the 8th grade
- 2. Some high school
- 3. Go to a trade school
- 4. Finish high school
- 5. Some college
- 6. Finish 4 years of college

Draw a circle around the letter of the best answer.

Section I

60. The main job of carbohydrates is to:

- A. Build and repair body tissue.
- B. Aid in digestion.
- C. Regulate body processes.
- D. Provide energy.

61. A food that has a lot of vitamin C is:

- A. A piece of cheese.
- B. A carrot.
- C. An orange.
- D. A peanut.

62. What is the main reason we need to eat protein?

- A. Protein helps the body grow.
- B. Protein give the body energy.
- C. Protein helps keep the body at its normal temperature.
- D. Protein regulates the heart beat.

63. What is the recommended number of servings for you to eat each day?

- | | | |
|------------------------------|-------|----------|
| A. Milk Group | _____ | servings |
| B. Fruit and Vegetable Group | _____ | servings |
| C. Meat Group | _____ | servings |
| D. Grain Group | _____ | servings |

Section II

64. Put an X in the box (X) which describes how many times in the last month you participated in the activities listed below.

How often in the last month have you....

| | Never | 1 or 2 Times | 3 to 5 Times | 6+ Times |
|--|-------|-----------------|-----------------|-------------|
| a. played individual or team sports, like baseball, basketball, or tennis. | () | () | () | () |
| b. participated in extracurricular activities in or out of school (school clubs, sports, youth club, 4-H, scouting). | () | () | () | () |
| c. done a daily fitness program on your own (situps, jumping jacks, stretching). | () | () | () | () |

Section III

Put an "X" on the line next to the answer that best describes how often you eat or drink the foods listed

65. How often do you eat fruits or vegetables?

- _____ 1. Never
- _____ 2. 1 or 2 times a week
- _____ 3. 3 or 4 times a week
- _____ 4. 1 or 2 times a day
- _____ 5. 3 or 4 times a day

66. How often do you eat protein (beef, chicken, pork, peanut butter, beans)?

- _____ 1. Never
- _____ 2. 1 or 2 times a week
- _____ 3. 3 or 4 times a week
- _____ 4. 1 or 2 times a day
- _____ 5. 3 or 4 times a day

67. How often do you eat junk food (potato chips, doughnuts, french fries, cookies)?

- _____ 1. Never
- _____ 2. 1 or 2 times a week
- _____ 3. 3 or 4 times a week
- _____ 4. 1 or 2 times a day
- _____ 5. 3 or 4 times a day

68. How often do you eat carbohydrates (bread, cereal, spaghetti, rice)?

- _____ 1. Never
- _____ 2. 1 or 2 times a week
- _____ 3. 3 or 4 times a week
- _____ 4. 1 or 2 times a day
- _____ 5. 3 or 4 times a day

69. How often do you eat calcium (milk, ice cream, yogurt)?

- _____ 1. Never
- _____ 2. 1 or 2 times a week
- _____ 3. 3 or 4 times a week
- _____ 4. 1 or 2 times a day
- _____ 5. 3 or 4 times a day

Listed below are 13 statements that describe how people feel about themselves.

For each statement, put an X in the box (X) that describes how you usually feel.

Answer all questions.

There are no right or wrong answers.

N=Never, S=Sometimes, A=Always.

| | N | S | A |
|---|---|---|---|
| Example: I'm a hard worker. | | | |
| 70. I often wish I were someone else. | | | |
| 71. I find it very hard to talk in front of the class. | | | |
| 72. There are a lot of things about myself I would change if I could. | | | |
| 73. I can make up my mind without too much trouble. | | | |
| 74. Kids my own age like me. | | | |
| 75. My parents expect too much of me. | | | |
| 76. I have a lot of worries. | | | |
| 77. Kids usually follow my ideas. | | | |
| 78. I don't think I am very good. | | | |
| 79. I feel that I am not as nice looking as most people. | | | |
| 80. If I have something to say, I usually say it. | | | |
| 81. My parents understand me. | | | |
| 82. I often get discouraged in school. | | | |

APPENDIX B
STUDENT EVALUATION FORM

STUDENT EVALUATION FORM

(1) What part(s) of Athlete's Against Drugs' Fitness and Career Awareness Program did you like? (CHECK ALL THAT APPLY).

1. Visit to an office
2. Role model speakers
3. Sports clinic
4. Class lessons on drug prevention
5. Class lessons on health/fitness
6. Class lessons on career awareness
7. Health/Nutrition Seminars
8. Community Project

(2) For each statement below, put an "X" in the box (X) that represents the best answer for you.

SA=Strongly Agree, A=Agree, U=Uncertain, D=Disagree, SD=Strongly Disagree

**AS A RESULT OF ATHLETE'S
AGAINST DRUGS' FITNESS AND
CAREER AWARENESS PROGRAM:**

| | SA | A | U | D | SD |
|---|-----|-----|-----|-----|-----|
| a. I feel that I would be able to say "no" if someone offered me drugs. | () | () | () | () | () |
| b. I can see the relationship between what I learn in school and the working world. | () | () | () | () | () |
| c. I know more about nutrition and proper diet. | () | () | () | () | () |
| d. I have decided not to use drugs. | () | () | () | () | () |
| e. I know about many different types of jobs or careers. | () | () | () | () | () |
| f. I have decided to exercise on a regular basis. | () | () | () | () | () |

(3) What types of events or activities would you like to add to Athlete's Against Drugs' Fitness and Career Awareness Program?

(a) _____

(b) _____

(c) _____

(d) _____

APPENDIX C
TEACHER EVALUATION FORM

TEACHER EVALUATION FORM

Please answer the following questions about Athlete's Against Drugs' Fitness and Career Awareness Program. After you complete the questionnaire, please return it with the student evaluations.

(1) As you perceived the implementation of Athlete's Against Drugs' Fitness and Career Awareness Program (FCAP) in your class, how would you rate its effectiveness with the students involved?

Excellent ____ Good ____ Satisfactory ____ Fair ____ Poor ____

Reasons why you feel this way: _____

(2) Put a check next to the components of the FCAP that you feel were beneficial to the students.

- | | |
|--|---------------------------------------|
| 1. ____ Corporate site visit | 2. ____ Role model speakers |
| 3. ____ Sports clinic | 4. ____ Curriculum on drug prevention |
| 5. ____ Diet/nutrition speakers | 6. ____ Curriculum on health/fitness |
| 7. ____ Curriculum on career awareness | 8. ____ Community Project |
| 9. ____ Parent Workshop | |

(3) Overall, how does the FCAP compare to other drug prevention programs that have been implemented in your class in the past?

The FCAP is:

A lot Better _____ Somewhat Better _____ About the Same _____
Somewhat Worse _____ A lot Worse _____

(4) Do you have any suggestions or recommendations for improvement of the FCAP?

(5) Do you think that the FCAP should be continued in this school next year?

Yes _____ Yes, but with some changes _____
No _____ Uncertain _____

APPENDIX D
CORRELATION TABLES FOR PRETEST
AND POSTTEST SCALE SCORES

Table D-1

Correlations Among the Pretest Scale Scores for the Treatment and Comparison Groups

| | ----- Treatment Group Correlations ^a -----> | | | | | | | | | | | |
|-----|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | DUB | PPR | FDI | DAD | DB | DK | AMA | EA | NK | NB | SAS | SES |
| DUB | 1.00 | -.36 | -.25 | -.17 | -.07 | .04 | -.17 | -.01 | .01 | -.01 | .04 | -.19 |
| PPR | -.01 | 1.00 | .65 | .26 | .22 | .16 | .16 | .08 | .02 | .15 | .04 | .20 |
| FDI | -.24 | .51 | 1.00 | .21 | .13 | .12 | .15 | -.06 | -.01 | .11 | -.03 | .17 |
| DAD | -.23 | .45 | .33 | 1.00 | .27 | .16 | .14 | .19 | .08 | .13 | -.01 | .16 |
| DB | -.04 | .23 | .09 | .08 | 1.00 | .41 | -.04 | .19 | .33 | .09 | .14 | .10 |
| DK | -.03 | .15 | .08 | .01 | .30 | 1.00 | -.04 | .10 | .27 | .07 | .11 | .03 |
| AMA | -.11 | .16 | .09 | .15 | .02 | .08 | 1.00 | .19 | -.10 | .08 | .07 | .24 |
| EA | -.08 | .16 | .12 | .12 | -.03 | .02 | .41 | 1.00 | .10 | .09 | .13 | .08 |
| NK | -.01 | -.02 | .06 | .06 | .15 | -.10 | -.01 | .11 | 1.00 | .15 | .15 | .06 |
| NB | -.19 | -.04 | .03 | -.02 | .07 | .06 | -.01 | .04 | .14 | 1.00 | .25 | .08 |
| SAS | .08 | .17 | -.02 | .06 | .15 | .02 | -.01 | .11 | -.11 | .03 | 1.00 | .16 |
| SES | .01 | .07 | .06 | .04 | -.04 | -.04 | .06 | .13 | .01 | .19 | .18 | 1.00 |
| | <----- Comparison Group Correlations -----> | | | | | | | | | | | |

^a Treatment Group Correlations are Bolded.

KEY: DUB=Drug Use Behavior; PPR=Ability to Resist Peer Pressure to Use Drugs; FDI=Future Intentions Not to Use Drugs; DAD=Anti-Drug Decision Making Style; DB=Beliefs About the Negative Effects of Drugs; DK=Drug Knowledge; AMA=Level of Academic Motivation; EA=Level of Educational Aspirations; NK=Nutritional Knowledge; NB=Nutritional Eating Behaviors; SAS=Level of Student Activity; SES=Self-Esteem.

Table D-2

Correlations Among the Posttest Scale Scores for the Treatment and Comparison Groups

----- Treatment Group Correlations^a ----->

| | DUB | PPR | FDI | DAD | DB | DK | AMA | EA | NK | NB | SAS | SES |
|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|-------------|
| DUB | 1.00 | -.41 | -.37 | -.24 | -.11 | -.11 | -.25 | -.14 | -.01 | .03 | .03 | -.20 |
| PPR | -.50 | 1.00 | .64 | .38 | .28 | .24 | .24 | .27 | .10 | .02 | .06 | .20 |
| FDI | -.17 | .51 | 1.00 | .29 | .17 | .18 | .17 | .18 | .01 | .01 | .03 | .18 |
| DAD | -.34 | .35 | .31 | 1.00 | .30 | .21 | .23 | .26 | .16 | .10 | .09 | .15 |
| DB | -.22 | .18 | -.02 | .11 | 1.00 | .35 | .23 | .24 | .22 | .16 | .21 | .19 |
| DK | -.01 | .02 | .11 | .04 | .14 | 1.00 | .13 | .16 | .17 | .09 | .10 | .12 |
| AMA | -.16 | .18 | .19 | .09 | .01 | .04 | 1.00 | .19 | .01 | .06 | .09 | .22 |
| EA | -.14 | .21 | .10 | .20 | .20 | .06 | .04 | 1.00 | .17 | .11 | .19 | .12 |
| NK | .14 | .03 | -.02 | -.02 | .18 | -.02 | -.02 | .02 | 1.00 | .09 | .18 | .08 |
| NB | .05 | -.07 | .06 | .15 | -.02 | .01 | -.02 | -.01 | .12 | 1.00 | .25 | .07 |
| SAS | .07 | .09 | -.02 | .01 | .19 | .04 | .05 | -.04 | .24 | .06 | 1.00 | .21 |
| SES | -.07 | .19 | .18 | .03 | .06 | .11 | .09 | .17 | .23 | -.02 | .18 | 1.00 |

<----- Comparison Group Correlations ----->

^a Treatment Group Correlations are Bolded.

KEY: DUB=Drug Use Behavior; PPR=Ability to Resist Peer Pressure to Use Drugs; FDI=Future Intentions Not to Use Drugs; DAD=Anti-Drug Decision Making Style; DB=Beliefs About the Negative Effects of Drugs; DK=Drug Knowledge; AMA=Level of Academic Motivation; EA=Level of Educational Aspirations; NK=Nutritional Knowledge; NB=Nutritional Eating Behaviors; SAS=Level of Student Activity; SES=Self-Esteem.

Table D-3

Correlations Among the Pretest and Posttest Scale Scores for the Treatment Group

| | DUB | PPR | FDI | DAD | DB | DK | AMA | EA | NK | NB | SAS | SES |
|-------|------|------|------|------|------|------|------|-----|------|-----|------|------|
| DUB2* | .28 | -.30 | -.25 | -.16 | .01 | -.05 | -.13 | .02 | .03 | .03 | .02 | -.16 |
| PPR2 | -.21 | .43 | .40 | .23 | .16 | .12 | .14 | .17 | .05 | .05 | -.01 | .08 |
| FDI2 | -.21 | .37 | .48 | .11 | .13 | .09 | .13 | .10 | .09 | .02 | .08 | .12 |
| DAD2 | -.06 | .25 | .26 | .26 | .15 | .09 | .07 | .12 | .03 | .05 | -.05 | .10 |
| DB2 | .01 | .27 | .22 | .26 | .37 | .25 | .09 | .16 | .15 | .24 | .07 | .17 |
| DK2 | -.04 | .18 | .12 | .15 | .27 | .28 | .04 | .13 | .13 | .09 | .03 | .14 |
| AMA2 | -.11 | .17 | .15 | .12 | -.01 | -.03 | .36 | .13 | -.01 | .04 | .05 | .21 |
| EA2 | -.03 | .18 | .12 | .15 | .17 | .09 | .11 | .33 | .05 | .10 | .14 | .10 |
| NK2 | .01 | .13 | .07 | .14 | .20 | .19 | -.02 | .05 | .40 | .14 | .06 | .16 |
| NB2 | .04 | .10 | .05 | .04 | .11 | .14 | -.03 | .06 | .11 | .30 | .09 | .15 |
| SAS2 | .04 | .09 | .05 | .04 | .14 | .08 | .06 | .12 | .06 | .19 | .35 | .25 |
| SES2 | -.08 | .15 | .10 | .03 | .11 | .03 | .18 | .07 | .01 | .10 | .17 | .58 |

KEY: DUB=Drug Use Behavior; PPR=Ability to Resist Peer Pressure to Use Drugs; FDI=Future Intentions Not to Use Drugs; DAD=Anti-Drug Decision Making Style; DB=Beliefs About the Negative Effects of Drugs; DK=Drug Knowledge; AMA=Level of Academic Motivation; EA=Level of Educational Aspirations; NK=Nutritional Knowledge; NB=Nutritional Eating Behaviors; SAS=Level of Student Activity; SES=Self-Esteem.

* The 2 indicates posttest variables.

Table D-4

Correlations Among the Pretest and Posttest Scale Scores for the Comparison Group

| | DUB | PPR | FDI | DAD | DB | DK | AMA | EA | NK | NB | SAS | SES |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| DUB2* | .47 | -.13 | -.09 | -.38 | -.12 | -.14 | .14 | -.07 | -.08 | -.01 | -.01 | -.09 |
| PPR2 | -.19 | .31 | .24 | .24 | .16 | -.01 | .20 | -.01 | .13 | -.05 | -.16 | .16 |
| FDI2 | -.10 | .22 | .52 | .21 | .11 | .20 | .10 | -.02 | .17 | .10 | -.03 | .14 |
| DAD2 | -.08 | .22 | .03 | .29 | .26 | .03 | .23 | .04 | .14 | .11 | .02 | .02 |
| DB2 | -.29 | -.05 | -.07 | -.02 | .31 | .14 | -.04 | .14 | .20 | .19 | -.01 | .05 |
| DK2 | -.01 | .14 | .09 | .06 | .29 | .36 | -.10 | -.17 | -.05 | -.07 | .04 | -.09 |
| AMA2 | -.10 | .43 | .27 | .24 | .14 | .20 | .10 | .17 | .02 | -.04 | .08 | -.01 |
| EA2 | -.20 | .09 | .10 | .03 | .10 | -.09 | -.01 | .04 | .13 | .10 | -.08 | -.05 |
| NK2 | -.09 | -.08 | -.01 | .08 | .12 | .01 | -.04 | .14 | .01 | -.03 | .09 | -.06 |
| NB2 | .06 | -.02 | -.02 | .21 | .11 | .04 | -.04 | -.08 | .01 | .25 | .10 | .12 |
| SAS2 | -.17 | .16 | .10 | .13 | .07 | -.06 | -.03 | -.03 | -.23 | -.07 | .11 | .22 |
| SES2 | .16 | -.10 | .01 | -.13 | .06 | .18 | -.12 | .14 | .05 | .05 | .01 | .31 |

KEY: DUB=Drug Use Behavior; PPR=Ability to Resist Peer Pressure to Use Drugs; FDI=Future Intentions Not to Use Drugs; DAD=Anti-Drug Decision Making Style; DB=Beliefs About the Negative Effects of Drugs; DK=Drug Knowledge; AMA=Level of Academic Motivation; EA=Level of Educational Aspirations; NK=Nutritional Knowledge; NB=Nutritional Eating Behaviors; SAS=Level of Student Activity; SES=Self-Esteem.

* The 2 indicates posttest variables.

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