Assessing the Effectiveness of Evaluation Methods Used in Drug Prevention Programs

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LOYOLA UNIVERSITY CHICAGO

ASSESSING THE EFFECTIVENESS OF EVALUATION METHODS
USED IN DRUG PREVENTION PROGRAMS

A THESIS SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
MASTER OF ARTS
DEPARTMENT OF COUNSELING AND EDUCATIONAL PSYCHOLOGY

BY
ANGELA M. UHLENKAMP

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CHAPTER I

INTRODUCTION

Drug use is widespread and prevalent in American society today, becoming a fact of life in middle and high schools (Dratch, 1993). Widespread use of alcohol, cigarettes, and drugs kills more than 500,000 Americans each year ("Substance Abuse is Blamed", 1993). In addition, medical emergencies related to drug use have drastically increased in recent years (Treaster, 1993). Although not all of those who encounter drugs die or are hospitalized, many will become addicted. Once drug abuse occurs it is extremely difficult to treat (Schinke et al., 1991). Death, medical emergencies, addiction, and drug prevalence all warrant a call for more attention to prevention programs.

There is an abundance of drug prevention programs available in schools and communities today. Due to the quantity and versatility of programs, it is critical to determine which programs are the most successful in aiding youth to combat drug abuse. Although procedures for evaluating programs have existed since the onset of programs themselves, there are still no clear answers as to which programs are effective.

The purpose of this thesis is to call attention to the manner in which drug prevention programs are being
evaluated. It is somewhere in the process of evaluation that we have failed to gain a clear picture of programs that are effective and the reason for their success or failure.

Program evaluation is conducted in a way that provides only a final measure, rather than a holistic view of the multiple processes involved and insight into the subjective experience of the participant. Evaluation attempts to measure variables that may not be measurable rather than gaining understanding of what is really valuable about the process of change. Evaluations are not sensitive to the emotional processes individuals endure in order to make changes. Although these processes and other individual characteristics (home environment, family, language, etc.) are difficult to assess, it is not impossible. If evaluation becomes sensitive to individual characteristics and processes it may be better equipped to capture the impact of a program on an individual. Therefore, it may increase the value of program evaluations and the information they are able to yield.

First, it is necessary to look at the goals of program evaluation. What are the reasons we evaluate? It appears that sources, other than the benefit of participants, control evaluation methods. The prevalent evaluation method in the field of drug prevention research is quantitative. This paper examines this accepted standard for its strengths and limitations in providing answers in drug prevention
Although funding for program evaluation appears to dictate the use of quantitative methods, it will be demonstrated that theories or approaches to drug prevention do not. The majority of theories, in fact, are interested in the processes and interactions that are apparent in individuals. In addition, related research in prevention will be examined to see how close we come to answering our question of effectiveness of drug prevention programs. Lastly, a case example will be utilized to emphasize the benefits of a multi-method approach.
CHAPTER II
PROGRAM EVALUATION

Each year millions of dollars are poured into school systems to implement programs for the prevention of substance abuse. The majority of these programs are grant funded which pass through states to local school systems (Dryfoos, 1993). These programs are funded because they are believed to be helpful in the prevention of drug abuse. Most of the programs that are funded are also evaluated. To date, several hundred outcome evaluation studies have been conducted to assess the effects of drug abuse prevention programs (Moskowitz, 1993). This chapter will address the reasons for which we evaluate programs, the role funding plays in evaluation, and where evaluation needs to turn its attention in the future.

Evaluation Rationale

Program evaluation has become as common as the implementation of programs themselves. It appears that every program that receives funding of some sort also requires evaluation. The reasons for evaluation include: accounting for funds received, discovering the best programs, assisting programs in improvement, and learning about side effects of the program (Posavac & Carey, 1992).
Program evaluation was developed because it could not be assumed that all well meaning programs were working (Posavac & Carey, 1992). By conducting evaluations, researchers were attempting to reveal the best methods to prevent drug abuse. The best methods could be uncovered only if evaluations were sensitive to unexpected effects and could assist in improving existing programs.

Role of Funding in Evaluation

Since the majority of programs implemented rely on funding at the state or federal level it is apparent that it would effect evaluation procedures. Foremost, the justification of costs (Posavac & Carey, 1992) place pressure on evaluators. Evaluators strain to present significant results in order to continue to be funded. Because the implementation of programs relies on funding, evaluators feel pressured to report results utilizing state of the art research methods, ignoring whether they are appropriate or feasible for the situation (Moskowitz, 1993). Currently, that means the utilization of quantitative methods. In addition, researchers who prefer to be realistic feel inhibited for fear of not being funded (Moskowitz, 1993). Therefore, researchers may present a proposal that they are unable to fulfill and ultimately end up failing to complete their original intentions. Weisheit (1983) states another effect of funding on evaluation procedures: evaluators focus on narrow goals that are articulated by the developers.
of programs. Focusing on such narrow goals ignores the hidden or unstated program objectives and is insensitive to side effects. Moskowitz (1993) states that institutional pressures lead to unrealistic expectations which undermine the integrity of outcome evaluation research.

It would seem that funding of programs actually inhibits the goals that it sets out to accomplish. Researchers feel compelled to focus on narrow goals which inhibit them from utilizing evaluation methods other than quantitative methods. Ultimately, researchers are blind to side effects, unable to assist in improving programs, and incapable of determining if programs are successful.

**Future Focus of Evaluation**

In addition to overcoming the conflictual nature of funding effecting program evaluation, there appear to be other problems to address. Prevention research of alcohol and other drugs states that evaluation strategies within and across studies are insufficient in determining what sort of programs have what kinds of effects on various populations (Logan, 1991). There is a call for studies that provide insight into the "underlying psychologic factors that contribute to AOD (alcohol and other drugs) as well as the interactive effects of intrapsychic, interpersonal, and socio-environmental factors on user or nonusers of AOD among teens" (Logan, 1991). It is believed that better interventions will result once this information is uncovered.
The goals of program evaluation are not being carried out for two reasons. First, the role that funding plays in evaluation inhibits what is studied and uncovered. Second, there is not enough attention played to the interactive effects of the variables involved; we are attempting to measure one moment in time rather than being open to underlying meanings, side effects, and multiple factors.
CHAPTER III
ALTERNATIVE APPROACHES TO EVALUATION

Up to this point the primary method of collecting data on drug prevention programs has been quantitative in nature. Chapter II highlighted the various reasons for this. In this chapter I will demonstrate why quantitative measures are not enough, what qualitative methods have to offer, and present the combination of qualitative and quantitative as the best method for program evaluation of drug prevention programs.

For the purposes of this discussion the author will use the following definitions of quantitative and qualitative methods: quantitative refers to standardized paper and pencil measures which are administered to groups and are subjected to statistical analysis for hypothesis testing; qualitative refers to individual, subjective narratives gathered for the purpose of gaining patterns that lead to hypothesis generation.

Limitations of Quantitative Methods

Utilizing the immense amount of information that quantitative methods can offer has been a catching phenomena. The United States Bureau of Census has even attempted to measure the quality of life through quantitative measures.
In reality, quantifying experiences are optional (Caws, 1989). For instance, life would survive without quantifying everything we encounter such as age, IQ, and weight (Caws, 1989). Yet, most evaluation programs rely upon quantitative methods first with qualitative methods as optional. While most things can be quantified, there may not be a significant payoff by doing so (Smith, 1989). This is seen very clearly as we try to comprehend the data that has been collected on several prevention programs.

Fielding and Fielding (1986) state that "preferred methods and theoretical orientations have a striking & misrepresenting effect on findings". Other theorists agree, as they state that the use of quantitative methods "reduces social and family processes to numbers" and uses "superficiality to explain complex issues" (Rank, 1992). Sheppard, Goodstadt, & Williamson (1985) describe quantitative results as reflecting what students remember rather than what they have received.

Drawbacks of relying solely upon quantitative methods also become apparent in drug prevention program evaluations. Quantitative measures ignore the value of an individual's characteristics. In addition, these measures lack in revealing why or how a program has or has not achieved significant findings. Finally, using quantitative measures often may result in overestimating the generalizability of results.
Because quantitative measures are aimed at collecting as much information from as many people as possible, they fail to capture important information about the individual. This is because quantitative research relies heavily on averages; individuals who stray from the average score tend to be lost during data analysis. For instance, although a quantitative measure may ask about an individual's peers, family, environment, subjective experiences, language, and culture, the results of the analysis yield the total groups averages in all of these categories.

The nature of a quantitative measure has difficulty capturing the ongoing interactive factors involved in processes and contexts, as it measures one moment in time. This has to do with quantitative measures ignoring the process for individuals or groups. These measurements may be uninterpretable without a key to understand them; the key being the context, language, relationships, etc. that belongs in the interpretation of an individual's responses.

As the quantitative methods are unable to interpret the meaning behind a "moment in time", they are also unable to interpret the significant or lack of significant results. Quantitative methods tend to be oblivious to the good or bad side effects of a program (Posavac & Carey, 1992). For example, a program may not have changed attitudes or behavior, but may have caused participants to think about issues more often, see alternative sources of help, or
remove themselves from negative interactions. A quantitative measure is unable to detect what happened in regard to variables other than those directly measured.

By ignoring the individual's subjective experience we are also creating error in generalizing to the population at large (Fielding & Fielding, 1986; Rank, 1992; Smith, 1989). While quantitative results are often considered the most generalizable, in fact, the prejudice from which a person responds to standard questions may lead to weak validity (Rank, 1992).

Strengths of Qualitative Methods

Qualitative methods are often referred to as "real and deep" (Fielding & Fielding, 1986). They are defined as the processes that are utilized to understand data that are represented by verbal or visual communication and not by numbers (Gilgun, 1992). Qualitative methods were the only methods utilized in the 1920's and 1930's. The current focus on quantitative methods seems to have trivialized the importance of the abundance of information that can be obtained from utilizing qualitative methods.

Qualitative methods are sensitive to the areas that quantitative methods cannot be. Qualitative methods address the individual's subjective experience, are able to capture processes and contexts, and are able to elaborate on why or how a program is effective.

In assessing whether drug prevention programs are
effective it is crucial to consider the multitude of factors that influence a participant's response. One of the benefits of using qualitative methods is that it allows an individual to discuss their experiences while using their own language, atmosphere, and ease in disclosing information (Daly, 1992); whereas quantitative methods require the participant to respond in the language, atmosphere, and ease of disclosure of the researcher (Rank, 1992). The qualitative researcher understands people come from diverse settings, experiences, and appear differently across time (Daly, 1992; Woodhouse & Livingood, 1991). Qualitative methods are sensitive to the idea that people perform the same task in different manners; the same people perform differently on different occasions; and test scores may mean different things for different people (not just different population groups). These differences are attributed to the variance in individuals (Linn, 1989).

A qualitative approach has the ability of not only identifying these factors, but also customizing the evaluation with these factors in mind. Qualitative measures can be sensitive to the various factors that Botvin & Botvin (1992) discuss in their research such as cognitive, attitudinal, social, personality, pharmacological, and developmental.

Another benefit of qualitative methods is that the approach facilitates the examination of interactions,
dynamics, and contexts instead of isolated pieces of a participant's experiences (Daly, 1992). The focus then becomes that each person's experience is equally valuable and unique from another's. The nature of qualitative methods gives us an inside view into the internal processes that are at work, negotiating and developing patterns. The insight into individuals' experiences allows us to view how these experiences in turn affect an individual's choices and attitudes (Daly, 1992).

All of these benefits aid us in obtaining a clearer picture of why and how a program is or is not effective. It is the only approach that is sensitive to the possible side effects on an intervention. Because if we do not allow individuals to speak about what happens, we will not obtain it. We also send message that there experiences must be shaped into the normal curve of others, and that their unique experiences are not valuable.

Benefits of Multi-Methods

The methods of quantitative and qualitative are often viewed as rivals of one another. An examination of drug prevention studies indicates that utilizing both methods is almost nonexistent, yet the benefits of such is abundant. Alemi (1987) perhaps described it best as he stated "Diversity of methods available to evaluation is a sign of healthy science capable of adjusting techniques to the particular situation at hand". It appears that in order to
derive the information we need to evaluate programs, a multi-method approach is the most appropriate.

In combining quantitative and qualitative methods the researcher is achieving the best of both worlds. The benefit of using both methods is that each can do what the other lacks—quantitative can establish patterns through the numbers collected and qualitative can give meaning to the numbers and patterns achieved. Another benefit of utilizing both methods is that the two methods can give one higher confidence in the results obtained.

The first benefit stated refers to the complementary nature of the two approaches. The strengths and weaknesses of quantitative and qualitative methods are opposite of each other (Rank, 1992) allowing each to contribute where the other cannot. Quantitative methods can be used to establish regularities while qualitative methods are relied upon to see the processes that link the variables involved (Rank, 1992). Qualitative methods have the ability to offer alternative explanations of results which can be utilized in designing future prevention. Qualitative methods tend to be more hypothesis generating. Utilizing both methods allows for the awareness of the total significance of findings (Fielding & Fielding, 1986).

The second benefit refers to increasing the accuracy of the results reported by utilizing multiple methods. Several studies elude to the cross-validating effect of using
both quantitative and qualitative methods (eg: Fielding & Fielding, 1986; Posavac & Carey, 1992; Rank, 1992). Confidence can be increased when diverse forms of data support the same conclusions. When one knows two points of reference, one can locate themselves at the intersection to draw an abundance of information (Fielding & Fielding, 1986).

Finally, findings of combining both methods are not always consistent. This allows one to redirect the research process to obtain consistent findings (Rank, 1992); therefore, better addressing the issue of drug prevention research as a whole. It is possible that one method is gaining information on a different level than the other. For instance, a quantitative measure may elicit what participants know are the right answers, whereas qualitative methods may draw out the internal processes that led one to arrive at answers reported.
CHAPTER IV
THEORIES

Why are theories in the field of drug prevention important? Baer, McLaughlin, Burnside, & Pokorny (1988) state that the importance of the theory lies in making us better able to understand adolescent substance abuse and in offering basis for formulating prevention programs. What is a theory? Some theories merely develop rationale for why a person abuses drugs. Other theories take this a step further by outlining what the authors believe will influence drug-taking behavior (prevention theories). It is certain that theory can play a crucial role in developing programs; undiscussed is the role they play in evaluation. The purpose of discussing theories in this paper is to examine whether or not contemporary approaches lend themselves to evaluation by methods other than the traditional quantitative techniques. Overall, theoretical approach does not appear to dictate itself to any kind of evaluation approach, yet we see only quantitative evaluations.

A Selective Review of Approaches

In what follows the basic components of several approaches will be examined. Recognition of internal or subjective processes will be detected, and determination of
whether the approach lends itself to qualitative evaluation methods will be examined.

The presentation of theories are not offered as an exhaustive list. For the purposes of this paper it is necessary only to be aware of the broad array of theories, each valuing different components, yet all relying on quantitative methods of evaluation.

The problem behavior theory developed by Jessor & Jessor recognizes the interaction of attitudes, beliefs, thoughts, genetics and the environment (Schinke, Botvin, & Orlandi, 1991; Schlegel, 1987). The theory postulates that adolescents partake in problem behavior in order to achieve personal goals—to fulfill a need such as coping or fitting in (Schinke et al., 1991). Adolescents conform to the norms of the cultural subgroup with which they identity with (Bruvold & Rundall, 1988). Those adolescents with less coping strategies and skills coupled with greater anxiety are more susceptible to engaging in problem behavior. The application for prevention of substance abuse then becomes that of presenting alternative ways of coping and developing positive interpersonal relationships. In this way a separate intervention does not need to be presented for each problem area that needs to be addressed (Schinke et al., 1991).

The problem behavior theory does not dictate itself to any kind of evaluation approach. It appears that
qualitative methods would be compatible for interpreting results based on this theory. In fact, the theory recognizes the internal processes of teens struggling to fit in, cope, and achieve personal goals all of which are difficult to measure quantitatively. A qualitative approach would be sensitive to the internal processes and be better equipped for teens to share the variables that enable or stop them from fitting in, coping, and achieving personal goals.

Social learning theory developed by Albert Bandura also has implications for prevention of drug abuse (Schinke et al., 1991; Bruvold & Rundall, 1988). The theory states that individuals learn how to behave through modeling and positive reinforcement. People may also assimilate and mirror behavior upon observation and seeing consequences of other's behavior. Vulnerability to social influences is affected by knowledge, attitudes, and beliefs. The theory relies on the individual's self regulation and self control. Prevention tactics utilize peers, media, and siblings to be positive role models. Prevention needs to foster the development of characteristics that are inconsistent with susceptibility to influence. This may include self esteem, assertiveness, personal control, and self confidence (Schinke et al., 1991).

Bandura's theory, although traditionally behavioristic, recognizes components that are difficult to assess by
quantitative methods. For example, self control and self regulation may not be overtly measurable, although they certainly effect the decision making process. Detection of these variables and their impact on decisions could be possible through qualitative means.

The cognitive developmental theory is associated with Piaget's developmental stages. The theory states that the child's cognitive processes are developed and operated within his or her environment and are what comprise the stages of development. That is to say that what peers and family give in the form of language is mediated by a child's perception. Children are believed to apply their own systems of logic. Applications for prevention include assessing cognitive and psychological developmental stages of the population one is studying (Busch & Ianotti, 1985).

This cognitive developmental model values the role that underlying factors are involved in decision making. The theory refers to individual perceptions and systems of logic. Standard quantitative measures are unable to recognize the individuality of a person; therefore, qualitative methods would be more informative.

The health belief model was originally conceived by Rosenstock in 1966. The theory states that valuing health and making rational choices is based on the person's belief that his or her behavior will reduce threats to or improve
one's health status (Busch & Ianotti 1985).

This model also acknowledges internal processes that would be suited for qualitative research. Values, beliefs, and decision making are difficult to measure by quantitative means.

Behavior intention theory developed by Fishbein and Ajzen in 1975 states that intention is the best indicator of behavior. Intention is predicted by one's attitude and subjective norm regarding behavior. Attitude and subjective norm are composed of beliefs about behavior, consequences, and an individual's perception of other's beliefs about a behavior (Busch & Ianotti, 1985). Prevention relies on the idea that information will begin this process (Bruvold & Rundall, 1988).

Since we acknowledge that change in knowledge is an insufficient measure of drug prevention, we turn to the other components of the theory. Subjective norm and individual perception are discussed as good indicators of drug abuse. It seems logical to measure these variables through qualitative methods to gain a clearer understanding of drug abuse.

The developmental model proposed by Rosenberg in 1979 is based around the self esteem of an individual. This theory states that the self esteem is centered around relationships; for the child it is family relationships--for
the adolescent it is peer relationships and social comparisons (Bruvold & Rundall, 1988). There are obvious implications in the application of prevention programs utilizing this model. This theory seems to support the idea that each person would respond differently to an intervention based on the relationships they are involved in. Further, prevention programs may be better based toward family systems and peer relations rather than the individual.

This theory has similar components to the cognitive developmental model discussed in that it is equally receptive of the qualitative methods of evaluation. This theory emphasizes the role of perceived relationships for the individual and the impact they have. A qualitative method, again, is sensitive to the subjective perceptions of individuals.

Smith proposed a theory of drug abuse with implications for prevention in 1980 (Schwartz, 1991). The theory states that a user's perceptions of costs and benefits will determine use or continuance of a drug. This is a rational decision making process. Although perceptions may be wrong, they represent valid concerns for the individual. Therefore, prevention programs need to account for the subjective perceptions of potential and current uses (Schwartz, 1991).

Smith's theory emphasizes the value of the subjective experience and individual perceptions which are difficult to
capture by quantitative methods. Again, this is where qualitative methods has its strengths.

As one can see, there are several theories presented for why a person uses drugs and alcohol and how one might prevent it. There are some areas of overlap, but each theory tends to have distinctive characteristics that separate it from the others.

Interestingly, regardless of the theory ascribed to, the evaluation of a program remains similar. All programs tend to utilize quantitative measures to derive changes in knowledge, attitude, and behavior rather than tapping into the components that theories discuss as important and valuable (e.g., relationships, subjective experiences, individual perceptions, self control and regulation, etc.).

**Approaches Underlying Studies**

We have seen just a brief look at the numerous approaches that apply to drug prevention and how they all lend themselves to qualitative measurement. Now it will be valuable to see how these theories are put into practice in actual prevention programs and the impact they have on evaluation. The difficulty that arises at this point is that the majority of the authors who created the prevention theories did not also conduct research on how the theory can be applied to actual practice.

Are there theories underlying the prevention programs
that are implemented? The question appears simple, however the distinction of what is a theory or merely a model or ideas is not easy. Several programs, although they may subscribe to a particular theory, do not always take time to explain their approach when reporting the results of their studies. Other programs may not subscribe to a particular theory, but have ideas about what works and follow a model. Again, authors may or may not take time to explain their approach and may feel it is apparent in the explanation of the program. There also appears to be a multitude of studies that provide a review of theories, but either do not apply the findings to their program or do not denote the theory they subscribe to. This often leaves the reader and researcher with little information on why the author chose the techniques or the outcome to measure that they did.

In addition, it leaves the reader with a lack of understanding or a conceptual framework for interpreting the results. Of the studies reviewed in the following chapter, only one study provided a theoretical framework from which the program was based upon (Baer et al., 1988). All of the program evaluations utilized only quantitative methods. The program in the Baer et al. study focused on two dimensions of Jessor's social deviance theory and were able to utilize the theory to interpret data. Kim, Mcleod, & Shantzis (1990) briefly elude to the idea that a theory is used that
incorporates social learning and personal growth theories; stating that conceptual framework is provided elsewhere.

Several other studies discussed and adhered to models or strategies including "social influence strategy" (Kim, Mcleod, & Shantzis, 1989), Mcquire Inoculation Model (Duryea & Okwumabua, 1988), and Botvin's Life Skills Training Curriculum (Kruetter, Gerwertz, Davenny, & Love, 1991). All of these programs were consistent in the framework they provided and the outcomes they chose to measure.

Two studies chose to describe the basic approaches of knowledge/attitude, values/decision making, and social competency and then attempted to incorporate all approaches into their programs (Moskowitz, Malvin, Schaffer, & Schaps 1984; Ambtman, Madak, Koss, & Strople, 1990). In doing so, the authors appear to be attempting to do address every aspect without ascribing to one model.

Other authors did not address theories or approaches at all. Green & Kelly (1989) simply stated what research findings indicated to be the best reducers of alcohol and drug abuse and incorporated these components into their program. No attempt was made to explain why such an approach would illicit change. Dejong (1987) discusses shortcomings of past research efforts and attempts to escape these in the study. The study does not clearly state any approach or theory that is subscribed to.
It is apparent that there is much confusion in the literature regarding theories. Prevention programs are developed and evaluated without considerations of the relevant theories (Botvin & Botvin, 1992). Further, the theory employed (if one at all) does not seem to impact the evaluation methodology relied on. Confusion also arises when authors parallel the terms of theory, model, approach, and strategy. Clearly, the majority of programs fall short in discussion of the role of theory in their programs. It is disturbing that programs are implemented and evaluated without any utilization of a theory. In discussion of both theories created and applied to programs it is apparent that a crucial component is not discussed. Although most theories and programs acknowledge the importance of the internal process of change, this component rarely is measured. Lastly, although the theories do not dictate evaluation measures to be used, all of the programs (theory bound or not) utilize only quantitative methods of evaluation.
CHAPTER V
RELATED RESEARCH

Expected Findings

In beginning to take a look at the research it is important to ask ourselves what it is we expect to learn from drug prevention studies--or what information do we expect to acquire from evaluations of drug prevention programs? The answer that appears most obvious is whether or not the program is aiding in the prevention of substance abuse. This seemingly straightforward answer becomes complex as we begin to see the various ways in which programs are evaluated. The most common ways of evaluating programs are through knowledge, attitude, and behavior change. It is difficult to ascertain whether or not these measures are able to evaluate the effectiveness of drug prevention programs. As demonstrated in the section devoted to theories, there appear to be no clear cut answers. Depending on the author's interpretation, often any change detected is viewed as a step in the right direction, regardless of what is being measured. For example, changes in self concept, knowledge, and self esteem are commonly measured as indicators of prevention in drug abuse. This does not make the task of deciding what is working simple.
If we were able to decide what programs are aiding in the prevention of drug and alcohol abuse the next question we might expect to answer is how the program was able to do so—why the program does or does not work. It appears that most evaluations offer little understanding of why the intervention was able to effect change or unable to accomplish any change. In performing evaluations there is a lack of importance placed on the meaning behind the numbers that would provide insight into the results. Overall, the research leaves us with little knowledge on what is working and why.

**Reported Findings (See Table 1)**

The studies that are included in this review are not presented as a comprehensive or representative view of those that are available. For the purpose of this thesis, dates of the program induction are not important. The purpose of looking at the studies is to assess the degree to which evaluations are enabling us to decide if the preventions are successful and the reason behind their success or failures.

The vast majority of evaluations employ paper and pencil measures meant to discover changes in knowledge, attitude, and behavior. Studies may also measure change in items such as self esteem (Dejong, 1987) self concept, passivity, locus of control (Kruetter et al., 1991), tolerance of deviance, self-derogation, and peer influence.
Table 1
Comparison of Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Theory</th>
<th>Outcome Measured</th>
<th>Results</th>
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<tbody>
<tr>
<td>Moskowitz, Malivin, Schaeffer, &amp; Schaps</td>
<td></td>
<td>Knowledge, Attitude, Behavior</td>
<td>Not Significant: Short-term</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Not Significant: Knowledge &amp; Attitude</td>
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<tr>
<td>Baer, McLoughlinBurnside, &amp; Porkorny (1988)</td>
<td>Components of Jessor's Social Deviancy Theory</td>
<td>Use (Behavior) and NonUse Variables</td>
<td>Significant: NonUse Variables</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Use for 10th graders</td>
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<td></td>
<td></td>
<td></td>
<td>Not Significant: Use for 7th graders</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Not Significant: Remaining Variables</td>
</tr>
<tr>
<td>Ambtman, Madak, Koss, &amp; Strople (1990)</td>
<td></td>
<td>Knowledge</td>
<td>Significant</td>
</tr>
<tr>
<td>Kim, Mcleod, &amp; Shantzis (1990)</td>
<td>Social Learning and Personal Growth Theories</td>
<td>Knowledge, Behavior</td>
<td>Significant</td>
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<td></td>
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<td></td>
<td>Not Significant: Locus of Control</td>
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<td></td>
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<td>Not Significant: Attitude, Locus of Control</td>
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<tr>
<td>Filson (1992)</td>
<td></td>
<td>Knowledge, Attitude</td>
<td>Significant: Knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Not Significant: Attitude</td>
</tr>
</tbody>
</table>
(Baer et al., 1988). The measurement of variables have the common problem of lacking understanding of why a response was received. In addition, each measure has unique difficulties associated with it.

Change in knowledge appears to be the most objective measure employed by drug and alcohol prevention studies. Results are direct; yet, alone are not informative to the goal of prevention. For example, Ambtman et al. (1990) found knowledge gains in first graders on the topic of medicines; but, this does not indicate the prevention of drug abuse occurred. Instead, we only know that the participants gained knowledge. It is widely accepted and researched that changes in education does not imply changes in attitude or behavior (eg: Goodstadt, 1978; Schaps, Bartalo, Moskowitz, Palley, & Churgin, 1981; Sheppard, 1984). Assessment of behavior change is another method utilized to evaluate programs. In addition to the lack of understanding why the evaluation was or was not able to record behavior change, a problem throughout the research in using behavior measures is that few studies have been able to indicate behavior change (Bangert-Drowns, 1988). Duryea & Okwumabua (1988) were unable to detect a significant change in behavior in a three year follow up study of youth alcohol misuse. Despite the findings, the authors are not convinced the program was ineffective. The authors state that the results could possibly be from students opening up
more and feeling less inhibited to report alcohol related issues. Unfortunately, the evaluation measure used does not enable us to confirm or disconfirm the authors' hypothesis for increase in behavior scores.

Several studies measure attitude change as a sole indicator of program success (e.g.: Kim et al., 1989; Kim et al., 1990). Within those programs measuring attitudes there are various components included such as self concept attitude (Kim et al., 1990) and "socially desirable" attitude (Kim et al., 1989). The difficulty with programs that employ only attitude measures is that just as one cannot assume knowledge changes attitudes and behavior, we are also unable to assume attitude changes lead to behavior change. Further, attitude change is difficult to achieve in the short span of time in which interventions and evaluations take place. One program trying to instill socially desirable attitudes chose to evaluate their effectiveness by measuring attitude alone (Kim et al., 1989). They were unable to achieve significant results. The research group responded to the results by stating it was unreasonable to expect long term attitudinal effects after a brief intervention. Further, the investigators felt that students may have responded the way they did because the program made them more attentive to issues about saying no. The research group's hypotheses appear insightful and warrant some attention. Both statements could be true; however, due to
the data collected one is unable to draw any conclusions. We are unable to respond to why the program "failed".

A second study conducted by Kim et al. (1990) measured self concept attitudes on third grade students. The evaluation revealed significant changes on four of six attitudinal scales measured. A previous longitudinal study indicates that in this program a short term attitude change led to a long term (four years) decrease in alcohol and drug use compared to students who did not participate in the program (Kim et al., 1989). It appears that such a program could be a model for what is working to prevent drug and alcohol abuse. It is not apparent, however, why or how this program achieved positive changes.

A large portion of studies evaluate program effectiveness based on a combination of factors (eg: Kruetter et al., 1991; Dejong, 1987; Filson, 1992). Such studies report significant changes in some factors but not in others. It is still apparent that we are not finding out why the program is working to change certain factors yet has no effect on others.

For example, two of the studies reviewed chose to focus both on knowledge and attitude change (Kruetter et al., 1991; Filson, 1992). Kruetter et al. reported a significant change on knowledge and other scales including self concept and passivity/assertiveness. However, the study was unable to detect any attitude change due to the high scores
achieved at the pretest. Filson's study was subject to the same inability to detect attitude change due to high pretest scores.

Filson's study was unique in that it also gained a qualitative evaluation via discussion groups. Students responded positively to the program and supported the findings of high knowledge level and negative attitudes towards drugs. The qualitative component began to aid us in finding out why the program changed knowledge level. Students found the humorous and entertaining video approach likable and therefore, become more susceptible to its messages. Because the programs only measured knowledge change we return to the dilemma of knowledge change not being enough to indicate behavior change.

The remaining articles reviewed combined measures of several variables including behavior change. The difficulty of measuring many variables without understanding the meaning behind them is again, one of interpretation. Often there is significant changes for some of the variables, but not for others. Dejong (1987) and Baer et al. (1988) both found significant changes in reported use, but were unable to detect positive effects on other variables measured. Neither study addresses the discrepant findings of changing behavior yet not other variables measured that would support success of the program. Baer et al. (1988) did offer an interesting component in their study that added to the
knowledge base of drug prevention. In their study participants were also asked to report the level of drugs and alcohol used by parents and peers. The study which contained two experimental groups found that students responded more positively to external influence programs when they reported higher parental and peer use. Students reporting lower parent and peer use responded more positively to the internal cognitive dimensions program. These findings offer support to the view that participants experience programs at an individual and unique level. Not all programs will be successful with each participant for each has a different internal process.

Other studies reviewed involving combination evaluation measures had little or no significant findings. Green & Kelley (1989) were successful in increasing knowledge change for some participants (elementary and middle schools) but found no significant attitude or behavior changes. Moskowitz et al. (1984) found no significant differences in six targeted areas including knowledge, attitude, and behavior. The authors report positive verbal evaluations given by students and were surprised at the lack of effects. Interestingly, the study mentions that it may be helpful to assess "intra and interpersonal competencies" by a method other than traditional paper and pencil measures. This comment addresses the lack of explanation that most studies leave readers and prevention teams grappling with.
With this brief review of studies we are able to see the inconsistency of findings reported and outcomes measured. Program evaluations leave one with a confusing view of what is working to prevent drug abuse. If we understood why certain aspects of the programs were effective we would be more equipped to design future programs that included these successful components (Beisecker, 1991). In attempting to analyze a group of studies, researchers' understanding is blocked by the lack of universality upon which to compare the programs. A look at meta-analyses and narrative reviews confirms the chaos that is present.

**Meta-Analyses & Narrative Review Results**

Narrative reviews report the findings of programs analyzed to be contradictory, contain flawed methodology, and provide little evidence that interventions are working (e.g.: Pellow & Jengeleski, 1991; Kinder, Paper, & Walfish, 1980). Kinder et al. found no studies to meet all of the basic components they utilized in reviewing studies. Pellow & Jengeleski state that most of the studies' findings cannot be verified due to the quality of research designs. Werch, Meers, & Hallan (1992) found the majority of programs did not employ a philosophy or theory underlying the programs reviewed. The narrative reviews offer little more than the individual evaluations themselves because of lack of complete reporting and comparability of programs. Meta-
analyses appear to be able to draw only a few conclusions. All of the meta-analyses report difficulty in comparing programs due to the various settings, treatments, populations, theory, and outcome measured. Tobler (1986) completed a meta-analysis of 143 adolescent drug prevention programs. In the analysis, five modalities (knowledge only, affective only, peer programs, knowledge + affective, and alternative activities) and five outcome measures (knowledge, attitudes, use, skills, and behavior) were identified. Tobler found that multi-modal programs gain more positive results than do single mode programs. Unfortunately, this finding has not been replicated by other meta-analyses. Bruvold's (1990) meta-analysis supported previous findings (Tobler, 1986; Bangert-Drown, 1988) that a rational or informational approach effects knowledge only; while alternative approaches (eg: developmental) have a higher chance for impacting behavior change.

The meta-analyses and narrative reviews reported can only be reflective of the studies they include. The integration of studies does not appear to be useful in detecting if prevention programs are working and why. Because quantitative methods do not indicate which methods are best to use we may need to address other means of obtaining information on whether programs are working and why.
CHAPTER VI
CAPTAIN CLEAN

This chapter will take a more in depth look at one program, Under Pressure, in order to highlight how the utilization of different evaluation methods impacts the type of information that is revealed. It can be seen through the changes in instruments that the researchers were attempting to get a better understanding on 1) whether the program was effective and 2) why the program was or was not effective.

Brief Introduction

The Under Pressure program is an innovative communication-centered approach designed to involve Chicago junior and senior high school students in considering the problems and prevention of adolescent substance abuse. It is a collaborative effort between Loyola University Chicago, Loyola Center for Children and Families, and the Chicago based not-for-profit Music Theater Workshop. The centerpiece of the Under Pressure program is a 30 minute live professionally scripted and performed contemporary musical play, CAPTAIN CLEAN. It incorporates extensive post performance dialogue and role playing to explore the pressure and feelings of adolescents in regard to substance abuse. By going beyond the 60 second "just say no"
television and radio campaigns the Under Pressure program is live theater that addresses underlying causes of adolescent substance abuse. Students are engaged in active participation rather than the traditional "teach and preach" method.

The centerpiece of the Under Pressure program features singing, dancing, and contemporary music elements specifically designed to advance and enhance the action of the play. The play concentrates on the difficult choices made by young characters who are challenged by school stresses, peer pressure, and failed family relationships. Their situations are familiar to adolescents of all socio-economic, racial and ethnic backgrounds. Secondary issues often coinciding with adolescent substance abuse are also addressed including teenage pregnancy, gang involvement, male/female relationships, and dysfunctional family structures (Safer & Harding, 1993).

Theoretical Approach

This program also fails to thoroughly explaining its theoretical base. It does, however, state its goals and objectives explicitly. What is important to note is that the theory and objectives, once again, did not limit the method of evaluation utilized.

Experiments Conducted

From 1991 to 1994 the Under Pressure program was evaluated utilizing six measures. Evaluations were designed
to provide a feedback loop to the programming in order to further refine the intervention and evaluation process. Outcome evaluation included both quantitative and qualitative methods. What follows is a summary of the evaluations to display how changing the way we evaluate effects what we discover (Safer & Harding, 1993).

**Experiment 1: Pretest/Posttest Measure.** The evaluative component of the project, a 20 question Likert-type survey, consisted of a short-term outcome evaluation assessing the degree of effectiveness on immediate attitude change via a pretest/postest measure administered to experimental and control groups.

Overall, results indicated that subjects demonstrated no change. A "ceiling effect" of having high scores at the pretest with little room for increase was apparent in this study. This is similar to results in both Filson (1992) and Kruetter et al. (1991) studies previously discussed. Because only quantitative methods were used, researchers were unable to develop a hypothesis of why students did not demonstrate a change. Even if attitudes had changed positively, quantitative methods could not elaborate on how the process came about.

In the description of the instrument utilized, one can see that a Likert-type scale does not allow the student to elaborate on their responses, but only to follow the researchers' interests. Language, context, and environment
are all manipulated by the researcher. Therefore, we are left with little information to add to the field of drug prevention.

**Experiment 2: Participant Observer.** This evaluation procedure utilized the field notes recorded by a counselor. The counselor attended the theater performance and group discussion as a participant observer, recording students' behavior and participation.

Open-ended questions were posed to the group such as "I feel most under pressure when?", "What is a friend?", and "Where do you get help?". In addition, students participated in role plays involving drug/alcohol issues. The researcher was able to unobtrusively record demographic information of the participants and their responses during discussion.

Results of the observations found that students often responded in similar manners to fellow classmates. In addition, they tended to respond based on personal experiences with issues.

This qualitative method allowed students some flexibility in their responses, gaining a clearer picture of their views. The goal of observing the performance and group discussion was to see if it solicited feedback in regard to students' feelings about substance abuse.

**Experiment 3: Vignette Measure.** The vignette test was a pilot study created to assess the immediate effects of
CAPTAIN CLEAN on students' attitudinal and behavioral responses to alcohol and drug-related situations of varying intensity. The use of vignettes was considered less threatening and thought to provide a more "practical feel" than the original instruments which asked students about abstract opinions. In addition to the vignettes, the survey included a checklist consisting of items developed to assess the students' existing support systems and their attitudes toward seeking support. The Vignette survey was designed to measure change in students' judgement, awareness of options, behavioral choices, and help-seeking behavior after participating in the Under Pressure program.

Results indicated that students responded to the Vignette survey in "appropriate" manners, indicating that they knew the "correct" answers and what they "should" do in drug/alcohol situations. The posttest responses were almost identical to the pretest responses, which were socially "correct" in the first place. This is similar to the findings in Kim et al. (1989) and Kim et al. (1990) in that participants responded in socially desirable manners.

Tabulation of the checklist yielded more valuable information than the survey. There appeared to be some knowledge change within students in regard to their support systems and where they could turn to for help. However, attitudes about using these support systems and the likeliness of doing so yielded mixed results, with some
students appearing more likely, and some appearing less likely to seek support after participating in CAPTAIN CLEAN.

The assumption that students "knew" correct answers could indeed be true. If a qualitative component had been combined, a hypothesis such as this could have been validated. The checklist's information could have also been enriched by allowing participants to expand upon why they viewed sources differently; therefore, being able to attribute this to the CAPTAIN CLEAN presentation. An interview, for example might have elicited information about how students respond to live theater as an intervention and how this intervention aided them in viewing certain sources in the manner they did. The checklist is an excellent example of how we can enrich information given by quantitative when combined with qualitative.

In both the Vignette and the pre/post test measures, researchers were surprised about the lack of effect recorded because of all of the positive verbal feedback received. Similar reactions have been reported (Green & Kelly, 1989; Moskowitz et al., 1984). Due to the nature of quantitative methods, one cannot answer why this discrepancy between reported findings and verbal feedback exists. A qualitative component combined might have revealed information allowing the researchers to draw a clearer understanding of the findings.

Experiment 4: Grading Survey. The Grading Survey
requested students to grade (evaluate) various drug/alcohol intervention programs on how well each program met six intervention objectives utilizing a Likert-type scale.

A change in the evaluation approach was made in an attempt to capture specific, unique aspects of the theater experience. The objective was to assess whether CAPTAIN CLEAN was more or less desirable than other approaches, as a measure of overall effectiveness.

Results indicate CAPTAIN CLEAN ranked higher than TV Ads, Famous People, Public Transportation, & Billboards on all six objectives. CAPTAIN CLEAN and Project DARE shared the top rankings on the six objectives.

Quantitative methods did not allow students to elaborate upon why they felt a program was better than others; therefore, we are left not knowing what components were most helpful to students. Students were not able to express emotions, shared experiences with the play, etc., that may have been what caused the impact. Why did other programs seem equal on some components? Qualitative methods would have enriched the information providing a meaning for the "grades" given.

Experiment 5: Teacher Survey. A survey was created to measure perceived effectiveness of CAPTAIN CLEAN and student responsiveness as reported by school staff members. This was used in conjunction with all of the student surveys. Subjects included teachers, administrators, and counselors
from Chicago Public schools in which CAPTAIN CLEAN was presented. The survey consisted of demographic, perceived play effectiveness ratings, and school staff observations. The perceived play effectiveness section employed a Likert-type scale.

Also included was a measure of the expected level of student participation in the discussions for the areas of focus as believed by the respondent. The final section consisted of open-ended questions designed to solicit feedback regarding the effectiveness of the play and discussion session, and a comparison of CAPTAIN CLEAN to other drug and alcohol programs in which the respondents have come into contact with. Lastly, space was provided for any additional comments.

Results showed that the majority of respondents viewed the play as effective in dealing with peer pressure, managing dating relationships, family situations, and seeking help as related to drug and alcohol issues. Students were viewed as responsive to the play and participation in discussion. The open-ended comments elicited respondents' expression of appreciation for production of the play and interest in future productions.

Utilizing teachers perceptions was a unique manner to extract additional information. Because teachers can be such a large component of students' lives (at least witnesses to) and are able to see them in this unique
environment, their perceptions are valuable. Leaving open-ended responses allowed for few some flexibility, whereas an interview may have elicited information on why teachers felt the way they did. What have they seen or experienced to warrant these views?

Experiment 6: Long-Term Follow Up. This instrument was created to assess the long-term effects of the CAPTAIN CLEAN Presentation. More specifically, this 17 question survey attempts to evaluate whether students were thinking and talking more often since viewing the play, whom they feel most comfortable talking to, and willingness to seek help—in regard to drug and alcohol related issues.

The second component of this evaluation is an interview with students who have viewed CAPTAIN CLEAN. The interview is semi-structured which means that the interviewer has a list of questions as a guide, but may deviate from it; following the interests and experiences of the student. Questions are shaped to gain a clearer understanding of what the effects of live theater are. The flexibility of the tool allows students to elaborate on their personal experiences that impact how the play effected them. It begins to recognize the multiple variables that effect the individual and allows them to share those effects and thought processes with the researcher. As a result, the researcher has a more full picture of what occurs as the student participates in a program.
The long-term follow up measure evaluation is currently in progress; therefore, reporting complete results is impossible. However, several interviews have been completed to date. Interviews thus far indicate that students' personal experiences or family incidences cause them to recall components of a play more clearly than others. In addition, students recall the alternate ways in which actors in the play and fellow classmates in role-plays handled the situation. This process of recall, (or reflecting back to the play/discussion) which may be an important element of intervention, was never captured in any of the quantitative measures. It may even clarify why students answered some of the paper and pencil measures the way they did.

The interviews are rich with an abundance of information about why students experience situations in the manner that they do. The interview allows the student to share information on their terms, in their environment (school), and using their language. Most importantly, the interview will enable the researcher to gain a fuller understanding of responses recorded in the quantitative measure (survey). For instance, upon obtaining students' narratives it is already clearer which type of students may be more resilient against negative influences, which are more likely to seek help, etc.

CAPTAIN CLEAN is presented as a case example because it is similar to the research completed in the drug
prevention field. Just as many programs do not employ or state a theoretical base, CAPTAIN CLEAN adhered to objectives and goals but not a theory. CAPTAIN CLEAN was consistent with the review of the research in that its evaluation was a paper and pencil measure intended to capture change in knowledge and attitude. Also consistent was the lack of conclusions that could be drawn. CAPTAIN CLEAN demonstrated a change in knowledge, but not attitudes. As with other studies that employed quantitative measures only, little meaning could be derived from the evaluation.

The discussion of the various evaluations conducted of the Under Pressure program has revealed that changing the quantitative methods used had little impact on the information derived. However, the combination of qualitative and quantitative methods was able reveal much more information about the individual's experiences and how it effects the impact of an intervention.
CHAPTER VII
CONCLUSION AND FUTURE IMPLICATIONS

This paper has presented the rationale for combining quantitative and qualitative methods in the evaluation of drug prevention programs. The intention is not that qualitative methods should replace quantitative methods. Rather, in taking a look at what we know and what we strive to know it appears crucial to utilize methods that enable us to understand the complexity of individuals and their subjective experiences. This will allow us to develop more effective prevention programs and to arrive at a holistic comprehension of the quantitative data. These goals can be accomplished with the aid of qualitative methods.

Coinciding with this thesis is an increasingly widespread interest in qualitative methods. Disciplines such as psychology, sociology, gerontology, education, social work, family therapy, family studies, and nursing are beginning to form interest groups. In addition, journal editors and editorial boards are now requesting manuscripts incorporating qualitative and multi-methods. This interest is supported by graduate students who are requesting training of qualitative methods (Gilgun, Daly, & Handel, 1992). Therefore, we may see an increase in results of studies
being presented qualitatively and multi-approached.

There are several implications for future research in drug prevention. For research as a whole, a recognition of the value of incorporating qualitative methods in order to achieve a holistic approach must occur. Foremost, graduate programs must address the importance of the incorporation of qualitative methods and provide training in these methods. The obstacle of funding for quantitative evaluations exclusively must be overcome with the recognition of the necessity of multi-method evaluations.

The long-term implications of multi-method and qualitative approaches to program evaluation include a variety of effects. An understanding of which programs are effective for which individuals may be uncovered. We may begin to see an emphasis on programs that are tailored for cultural, developmental, and geographical groups. There are as many possible prevention approaches as there are the multiple interactive factors involved (Kumpfer & Hopkins, 1993).
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The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

3/3/94  Carol Harding
Date  Director's Signature