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PREVIEW

EVALUATING THE EFFECTIVENESS OF AN EDUCATIONAL INTERVENTION
TO PREVENT THE TRANSMISSION OF SEXUALLY TRANSMITTED
INFECTIONS IN COLLEGE STUDENTS:
A SOCIAL COGNITIVE THEORY APPROACH

by

Kristine Jankovitz

A DISSERTATION

Presented to the Faculty of
The Graduate College at the University of Nebraska
In Partial Fulfillment of Requirements
For the Degree of Doctor of Philosophy

Major: Interdepartmental Area of Psychological &
Cultural Studies (Health Education)

Under the Supervision of Professor Ian M. Newman

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DISSERTATION TITLE

Evaluating the Effectiveness of an Educational Intervention to Prevent the
Transmission of Sexually Transmitted Infections in College Students:

A Social Cognitive Theory Approach

BY

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GRADUATE COLLEGE
UNIVERSITY OF NEBRASKA

EVALUATING THE EFFECTIVENESS OF AN EDUCATIONAL
INTERVENTION TO PREVENT THE TRANSMISSION OF SEXUALLY
TRANSMITTED INFECTIONS IN COLLEGE STUDENTS:
A SOCIAL COGNITIVE THEORY APPROACH

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University of Nebraska, 1995

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The high rate of sexually transmitted disease (STD) infection including HIV/AIDS has created a crucial need to prevent sexually transmitted infections among the sexually active. To benefit the health of sexually active college students, educational programs should seek to increase the consistent use of latex condoms. Many interventions to increase the use of condoms have not been based upon a framework reflecting a clear understanding of behavior change. Social Cognitive Theory (SCT) has been found to be a useful tool for explaining, understanding and predicting a variety of health behaviors that are effective for preventing the transmission of STDs/HIV.

An intact non-equivalent control group design was used to determine if the SCT constructs of outcome expectations and self-efficacy could predict the use of condoms by sexually active college students and to assess the effectiveness of an SCT based STD/HIV education program. A multiple discriminant function analysis and a

multiple analysis of covariance were used for data analysis. The subjects (n=184) were enrolled in a lower division healthy lifestyles course. Two course sections were randomly assigned to the experimental or control education program. The data were gathered through the use of a pretest and posttest questionnaire. No significant difference existed between the control and experimental groups on the adjusted posttest scores.

One significant ($p < .05$) discriminant function dominated by the score for outcome expectations accounted for 61.4% of the variance. Non-users of condoms were most different from the other user groups on the variable of outcome expectations while the consistent condom users were most different from the other users on the variable of self-efficacy. These findings suggest that programs to promote condom use by non-users should focus on positive outcomes of condom use and that sporadic condom users may be moved to consistent use by efforts to promote self-efficacy.

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It seems somehow inadequate to offer a simple thank you to the man who provided support in so many

ways. To my husband Ted, who never once said,
"Honey, I wish you wouldn't ..." I consider it my
privilege to have shared this journey with you. I
could never have completed it without your strength,
patience, and kindness.

K.J.

PREVIEW

DEDICATION

To my parents, John and Marta Zanghi, who always made
me believe that I could accomplish anything
I truly wanted.

PREVIEW

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CHAPTER I

The Problem: Its Nature and Scope

It has been estimated that 75 percent of the college student population in the United States is sexually active, that sexually active students average more than two partners per year, and that perhaps one-third to one-half will have six or more sex partners before marriage (Carroll, 1991). Due to the high rate of sexual activity, college students are at risk for contracting sexually transmitted diseases (STDs), including the human immunodeficiency virus (HIV). The Centers for Disease Control and Prevention estimate that 86 percent of all STDs occur among 15 to 29 year olds (Morbidity and Mortality Weekly Report [MMWR], 1992). The current epidemic of STDs among adolescents and young adults has resulted in sexually active college students experiencing high rates of infection with human papilloma virus (genital warts), Chlamydia trachomatis, herpes simplex and other STDs (Cates, 1991; Lee, 1989). These infections can lead not only to chronic recurrences, infertility, cancer and infection of newborns, but may put individuals at higher risk for contracting HIV.

Although the adoption of safer sex techniques for the sexually active can reduce the risk of contracting STDs, including HIV, there is little evidence to suggest that heterosexual college students are following recommendations

to modify sexual behaviors which put them at risk for STD/HIV infection (Baffi, Schroeder, Redican, & McCluskey, 1989; Carroll, 1988; Chng & Moore, 1994; DeBuono, Zinner, Daamen, & McCormick, 1990; MacDonald, Wells, & Fisher, 1990; MMWR, 1991; Reinisch, Sander, Hill, & Ziemba-Davis, 1992; Sawyer & Moss, 1993; Thurman & Franklin, 1990; Valdiserri, Arena, Proctor, & Bonati, 1989). Valdiserri et al. (1989) found that a majority of sexually active college students reported having used condoms, however, only 20 percent used condoms consistently. When used correctly, latex condoms lubricated with nonoxynol-9, can provide an effective mechanical barrier to the transmission of STDs/HIV (Dirubbo, 1987; MMWR, 1988).

Background

The high rate of STD infection and the Acquired Immunodeficiency Syndrome (AIDS) epidemic have created a crucial need to prevent sexually transmitted infections in sexually active college students. As a result, it is common to find STD/HIV education programs on college campuses throughout the United States (American College Health Association, 1991).

It is acknowledged that the best way to prevent STD/HIV transmission is through abstinence from behaviors which put an individual at risk for STD/HIV infection. However, to benefit the health of college students who are and plan to remain sexually active, educational programs should seek to increase the use of safer sex techniques, especially the

consistent use of latex condoms and nonoxynol-9. Many interventions to increase the use of condoms, (Beck & Davies, 1987; Gilliam & Seltzer, 1989; Kowaleski, Zeller, & Willis, 1991; Rhodes & Wolitski, 1989; Schneider, Greenberg, Devanas, Sajja, Goodhart, & Burns, 1994; Taylor, 1992; Turner, Korpita, Mohn, & Hill, 1993) have not been based upon a framework reflecting a clear understanding of behavior change and have produced mixed results. Boyd and Wandersman (1991) suggest that in order to understand safer sex behaviors, specifically the consistent use of latex condoms, a theoretical explanation for the behavior must first be established.

A theoretical framework can be used to identify and develop an understanding of the elements that affect health behaviors and to provide an explanation as to the functions of these elements. Theories may also suggest how to influence behavioral elements under a variety of circumstances and are useful tools for creating solutions for a wide variety of problems related to health behaviors (Hochbaum, Sorenson, & Lorig, 1992; van Ryn & Heaney, 1992).

Based on the review of attempts to understand STD/HIV prevention behavior, Social Cognitive Theory (SCT) was selected for use in this study because it addresses the acquisition and maintenance of new behaviors, it offers an explanation of human behavior as the reciprocal interaction among cognitive, behavioral and environmental determinants,

and it has been rigorously tested in a variety of different contextual situations (Bandura, 1986; Parcel & Baranowski, 1981; van Ryn & Heaney, 1992). Previous work has focused upon the use of the SCT to understand and improve the effectiveness of STD/HIV interventions designed to reduce risky sexual behavior in the college student population (Basen-Engquist & Parcel, 1992; Brafford & Beck, 1991; Kasen, Vaughan, & Walter, 1992; O'Leary, Goodhart, Jemmot, & Boccher-Lattimore, 1992).

Examination of condom use behavior in terms of the constructs of the SCT, could provide a mechanism for the development of more effective STD/HIV prevention programs. It appears that the SCT provides a useful theoretical foundation for better understanding condom use. A better understanding of this behavior will be useful in developing new methods for promoting behavior changes conducive to health (Parcel & Baranowski, 1981).

Statement of the Questions

Social Cognitive Theory has been found to be a useful tool for explaining and understanding a variety of health behaviors including the behaviors that are effective for preventing the transmission of STDs/HIV in sexually active college students. Perry, Parcel, and Baranowski (1991) suggest that the constructs of the SCT are important for predicting behavior. SCT explains human behavior in terms of triadic reciprocal causation or the interaction between

behavior, personal determinants, and environmental influences (Bandura, 1986). The first question posed for this study is: Can the SCT constructs of self-efficacy and outcome expectations be used as predictors of condom use among sexually active college students?

The construct of self-efficacy was chosen for use in this study because it is considered by some to be, "the most important prerequisite for behavior change," (Perry, et al., 1991, p. 174). The construct of outcome expectations was selected because it is through anticipated outcomes of a situation an individual forms a strategy to deal or cope with the event. Both constructs were also selected because they can be addressed in classroom based health education programs. By determining if condom use can be predicted by selected constructs of the SCT, it may be possible to develop a more effective STD/HIV prevention curriculum to increase the consistent use of latex condoms among the sexually active.

The second question posed for the purposes of this study is: Will a college level STD/HIV prevention curriculum based upon the theoretical framework of the SCT be more effective in increasing the consistent use of latex condoms among the sexually active, than a traditional (non-theory based) STD/HIV prevention curriculum?

It appears that health education curricula designed to promote condom use for STD/HIV prevention should focus upon

the positive outcomes (expectations) of health promoting behaviors, and use skills training to promote mastery which instills confidence (self-efficacy) in an individual about his/her ability to use a condom.

Hypotheses

It was hypothesized that sexually active college students, identified as condom users, would obtain higher scores than non-users of condoms for the SCT constructs of self-efficacy and outcome expectations as measured by the survey instrument.

It was hypothesized that college students exposed to an STD/HIV prevention curriculum based upon the theoretical framework of the SCT would obtain higher scores for the constructs of outcome expectations, and self-efficacy, than students who are exposed to a traditional (non-theory based) STD/HIV prevention curriculum.

As self-efficacy is considered to be important for predicting behavior (Perry, Baranowski & Parcel, 1991), it was hypothesized that subjects who achieved high scores in self-efficacy would be more likely to use condoms than those who achieved low self-efficacy scores. Expectations were measured because it was hypothesized that positive expectations about the use of condoms, would be correlated with an increase in the behavior of condom use.

Definitions

The construct of self-efficacy deals with a person's confidence in his/her ability to perform a particular task or skill. In relation to condom use, self-efficacy has been examined by numerous researchers (Kasen et al., 1992; Basen-Engquist & Parcel, 1992; Brafford & Beck, 1991; and O'Leary et al., 1992). All of these studies have determined that self-efficacy plays an important role in condom use, or in the attitudes and skills related to condom use.

The aspects of the behavior which are anticipatory in nature are termed expectations. An expectation is an event that is likely to occur given a particular situation. Even when an individual does not engage in a behavior, (s)he will anticipate events or aspects of a situation which (s)he believes will occur if the behavior is performed. Through this anticipation, a strategy is formulated to deal with the situation and an expectation will develop about a behavior or experience that has yet to take place. Expectations can affect anxiety and level of skill as they are connected with a certain situation. Additionally, expectations can result from previous or vicarious experience, and from emotional or physical responses to a situation (Perry et al., 1991).

For the purposes of this study, condom use was determined by the respondents answer to the question "In the past twelve months, when you had sexual intercourse how often

was a condom used?" Condom use was based on an interval scale ranging from one to six. A response score of six indicated more frequent use of condoms than a score of one. A respondent who indicated that they almost always (90% of the time or more) used a condom or always (100% of the time) used a condom was identified as a condom user.

For the purposes of this study, any sexually active person in the college-aged population was considered to be at risk for experiencing negative consequences associated with sexual behavior.

Limitations

For the pilot testing of the measurement instrument a convenience sample of students from two separate summer school classes was used. This procedure introduced some uncertainty about the representativeness of the sample. Participation was voluntary and all respondents were self-selected into the study. The study relied on self-reported data, therefore, some degree of misreporting may have occurred.

A convenience sample of students was used for the curriculum evaluation study. Participation was voluntary and all respondents were self-selected into the study. The study relied on self reported data. These factors may have produced a response bias and may limit external validity of the study.

CHAPTER II

Review of the Relevant Literature

Overview

Most health education professionals concede that definitions of health education include an emphasis on behavior change as a critical outcome of an intervention program. Health education programs to prevent the spread of STDs, including HIV, in young adults have become a priority undertaking for those concerned with the health of college students. The central focus of numerous STD/HIV prevention programs for college students, and other youth, has been to increase knowledge and favorable attitudes about HIV/AIDS with the underlying assumption that such increases will lead to a decrease in behaviors associated with HIV transmission (Basen-Engquist, 1992). Many studies do not support the conclusion that a high level of knowledge about HIV transmission is directly related to behavior change to reduce the risk of HIV infection (Kegeles, et al., 1988; Kowaleski, et al., 1991; Rhodes & Wolitski, 1989; Schnieder, et al., 1994; Thurman & Franklin, 1990). Relatively few studies, by comparison with the studies that surveyed college students' knowledge, attitudes and beliefs about HIV/AIDS, were based on any applied theory of the behavior. Basen-Engquist and Parcel (1992) indicate that to better educate college students to reduce their risk for STD/HIV infection existing

theory and knowledge about the complexity of behavior change should be applied to the problem.

A review of the relevant literature about the response to the AIDS epidemic and the prevention of STD/HIV transmission among sexually active college students reveals a rapid evolution of understanding over a very short period of time. In the first stage, an understanding of the elements of risk reduction behavior developed when the initial studies of STD/HIV prevention in sexually active heterosexual youth focused upon knowledge and attitudes about HIV/AIDS (Kegeles, et al., 1988; Valdiserri, et al., 1989). This initial stage is an understandable starting point as HIV/AIDS prevention for the heterosexual population has received attention for less than a decade and it was necessary to first determine if awareness education about HIV transmission was effective.

The second stage of research for HIV prevention in sexually active youth focuses on the identification of psychosocial and behavioral predictors of safer-sex practices including condom use (Ahia, 1991; Basen-Engquist, 1992; Basen-Engquist & Parcel, 1992; Boyd & Wandersman, 1991; Brafford & Beck, 1991; Brien, Thombs, Mahoney, & Wallnau, 1994; Vail-Smith et al., 1992). Most recent literature suggests a third stage which involves the use of theory-based interventions to prevent the transmission of STDs/HIV and