Notice:

The work from which this copy was made included a formal copyright notice. This work is protected by copyright law. Uses may be allowed with permission from the rightsholder, or if the use is "fair use" or within another exemption. The user of this work is responsible for determining lawful uses. (Title 17, US Code 1998.)
Using an AIDS KABP Survey to Identify Determinants of Condom Use Among Sexually Active Adults From St. Vincent and The Grenadines

MARTIN FISHEIN2 DAVID TRAFIMOW
University of Illinois, Champaign-Urbana New Mexico State University

SUSAN E. MIDDLESTADT AND MICHAEL HELQUIST
Academy for Educational Development, Washington, DC

CLAUDETTE FRANCIS
Caribbean Epidemiology Centre, Port of Spain, Trinidad

M. ANN BUSTACE
Ministry of Health and the Environment
Kingstown, St. Vincent & The Grenadines

In Fall 1990, a knowledge, attitude, belief, and practices (KABP) survey was administered to a representative sample of residents of St. Vincent and the Grenadines, an island nation in the Eastern Caribbean. The KABP questionnaire contained a large number of questions that could reasonably be expected to be related to whether or not people use condoms. To a certain extent, each of these questions can be viewed as an attempt to assess one of the variables identified by one or more theories of behavior and behavior change. More specifically, questions on the KABP were identified as possible indicators of AIDS knowledge, cues to action, perceived susceptibility, perceived severity, perceived (locus of) control, perceived normative pressure, and condom use outcome expectancies. Statistical analyses indicated that some, but not all, of these variables were related to condom use among sexually active adults. In particular, the analyses indicated that perceived normative pressure to use condoms was the single most important determinant of condom use behaviors on St. Vincent. The implications of this finding for designing mass-media campaigns to increase condom use is discussed, and a campaign that attempts to change condom use by influencing perceived social norms is strongly recommended.

In Fall 1990, an AIDS knowledge, attitude, belief and practices (KABP) survey was administered to a representative sample of residents of St. Vincent

1Funding for this study was provided by the U.S. Agency for International Development, AIDS Technical Support: Public Health Communication (AIDSCOM) Component, Project No. 936-5972, Contract No. DPE-5972-Z-00-70700. The KABP instrument was designed in collaboration with Family Health International, Inc. and the Survey was conducted by Systems Caribbean, Ltd.

2Correspondence concerning the article should be addressed to Martin Fishbein, Department of Psychology, University of Illinois, 603 East Daniel Street, Champaign, IL 61820.

and the Grenadines, an island nation in the Eastern Caribbean. Data from such KABP surveys are typically used to identify gaps in knowledge about AIDS (including knowledge about how AIDS is transmitted and how one can protect oneself from exposure to HIV, the virus that causes AIDS), to assess beliefs and attitudes about AIDS and people with AIDS, and to determine the degree to which members of a given population are engaging in a variety of high-risk or protective behaviors or both (e.g., DiClemente, Zorn, & Temoshok, 1987; Fishbein, Trafimow, et al., 1993; Joseph et al., 1987). However, as Fishbein, Middlestadt, and Trafimow (1993) have recently argued, KABP surveys can also be used to test theoretical hypotheses that can guide the development of behavior-change interventions.

For example, it has often been assumed that the more knowledge one has about AIDS, the greater the probability that one will engage in AIDS protective behaviors (e.g., Fisher & Fisher, 1992). Similarly, according to the health belief model (Becker, 1990), a person is unlikely to adopt a health-protective behavior unless (a) he or she believes that he or she is personally threatened by a disease (i.e., that he or she is personally susceptible to a disease that has severe and serious consequences), and (b) he or she believes that the benefits of adopting the health protective behavior outweigh the costs.

From the perspective of most social learning theories (e.g., Rotter, 1954, 1966), adoption of a health-protective behavior is more likely to occur if one believes one has control over one’s outcomes than if one believes that what happens to him or her is largely due to chance or fate. That is, it is assumed that people with an internal locus of control will be more likely to engage in health-protective behaviors than those with an external locus of control. Bandura (1977a, 1977b), however, has argued that performance of a given behavior is less strongly related to locus of control, per se, than to one’s sense of personal agency with respect to performing a given behavior (i.e., one’s belief that one has the skills and abilities necessary to perform the behavior under a variety of circumstances). More specifically, Bandura has argued that perceived self-efficacy is a major determinant of whether one will or will not perform the behavior in question.

Other variables are suggested by the theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein, 1980; Fishbein & Ajzen, 1975). According to this theory, whether one will or will not perform a given behavior is primarily determined by one’s intention to perform that behavior. The intention, in turn, is viewed as a function of two components: one’s attitude toward performing the behavior in question, and one’s perception of normative pressure to perform (or not to perform) the behavior.

Although KABPs are usually not designed to test theoretically based hypotheses, Fishbein, Middlestadt, and Trafimow (1993) pointed out that many
of the items contained in a KABP can be viewed as indicants (or measures) of variables that have been identified by different theories of behavior and behavior change. Consistent with this view, the KABP administered in St. Vincent and the Grenadines contained a large number of questions that could be viewed as indicants of most of the theoretical variables described above. For example, the KABP questionnaire assessed people’s knowledge about AIDS, including their understanding of how AIDS is transmitted and how it can be avoided. It also assessed the respondents’ perceptions that they are personally at risk for AIDS, as well as their propensity to engage in a number of risky behaviors, such as unprotected anal and vaginal sex with one or more sexual partners. In addition, the questionnaire assessed the extent to which respondents believed that they had control over their lives in general, as well as control over the likelihood that they could avoid AIDS. Further, it assessed their knowledge of condoms, their beliefs about the ease or difficulty they would experience in obtaining condoms, and their beliefs that condom use would increase or decrease their sexual pleasure. Other questions asked respondents if they had discussed condoms with their friends, and about their friends’ use of condoms.

Given that consistent and proper use of latex condoms is one method to substantially reduce the risk for transmitting HIV and other sexually transmitted diseases (Centers for Disease Control, 1993), the present paper will explore the extent to which items on the KABP can be used to assess a number of theoretical variables and to test hypotheses concerning the role of these variables as factors influencing condom use. More specifically, the purpose of the present paper is to see how well AIDS knowledge, perceived threat, perceived (locus of) control, condom use efficacy beliefs and perceived norms can predict condom use among sexually active adults from St. Vincent and the Grenadines.

Method

In Fall 1990, a KABP survey was administered to a nationwide probability sample of residents of St. Vincent and the Grenadines. A local market research firm was hired to develop the sampling frame and to conduct the interviews. The KABP survey was designed, developed, and implemented by AIDSCOM in collaboration with the Caribbean Epidemiology Center and AIDSTECH. Respondents were interviewed in their homes by trained interviewers.

AIDSCOM and AIDSTECH are projects supported by U.S.A.I.D. Under the original agreements, AIDSCOM was to assist developing countries to develop AIDS education and information campaigns whereas the mission of AIDSTECH was to provide AIDS-related technical assistance.
Table 1

Demographic Comparison Between Total Population and Sexually Active Sample

<table>
<thead>
<tr>
<th>Age</th>
<th>Total Population (%)</th>
<th>Sexually Active (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N = 513)</td>
<td>(N = 428)</td>
</tr>
<tr>
<td>15-19</td>
<td>26.7</td>
<td>14.7</td>
</tr>
<tr>
<td>20-24</td>
<td>20.1</td>
<td>19.6</td>
</tr>
<tr>
<td>25-29</td>
<td>12.4</td>
<td>17.2</td>
</tr>
<tr>
<td>30-34</td>
<td>9.1</td>
<td>18.4</td>
</tr>
<tr>
<td>35-39</td>
<td>6.9</td>
<td>8.5</td>
</tr>
<tr>
<td>40-44</td>
<td>6.6</td>
<td>7.6</td>
</tr>
<tr>
<td>45-49</td>
<td>6.2</td>
<td>4.9</td>
</tr>
<tr>
<td>50-54</td>
<td>5.8</td>
<td>5.5</td>
</tr>
<tr>
<td>55-59</td>
<td>6.3</td>
<td>3.6</td>
</tr>
</tbody>
</table>

χ²(8) = 40.14, p < .001

Sex

<table>
<thead>
<tr>
<th></th>
<th>Total Population (%)</th>
<th>Sexually Active (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>47.5</td>
<td>42.6</td>
</tr>
<tr>
<td>Female</td>
<td>52.5</td>
<td>57.4</td>
</tr>
</tbody>
</table>

χ²(1) = 2.19, p = .14

Educational level

<table>
<thead>
<tr>
<th>Level</th>
<th>Total Population (%)</th>
<th>Sexually Active (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete primary</td>
<td>16.8</td>
<td>18.6</td>
</tr>
<tr>
<td>Complete primary</td>
<td>57.8</td>
<td>57.9</td>
</tr>
<tr>
<td>Complete secondary</td>
<td>18.8</td>
<td>17.1</td>
</tr>
<tr>
<td>Some college/university</td>
<td>6.7</td>
<td>6.4</td>
</tr>
</tbody>
</table>

χ²(3), ns

Employment status

<table>
<thead>
<tr>
<th>Status</th>
<th>Total Population (%)</th>
<th>Sexually Active (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>45.0</td>
<td>48.0</td>
</tr>
<tr>
<td>Unemployed</td>
<td>55.0</td>
<td>52.0</td>
</tr>
</tbody>
</table>

χ²(1), ns

Married/regular sex partner

<table>
<thead>
<tr>
<th>Status</th>
<th>Total Population (%)</th>
<th>Sexually Active (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>59.0</td>
<td>68.7</td>
</tr>
<tr>
<td>No</td>
<td>41.0</td>
<td>31.3</td>
</tr>
</tbody>
</table>

χ²(1) = 8.91, p < .01
Subjects

The survey was completed by 513 residents of St. Vincent between the ages of 15 and 59. Since there was an oversampling of women and older age groups, the data were weighted for age and gender in order to make them projectable to the 15-59-year-old population of St. Vincent. This weighted sample was found to be representative of the population of St. Vincent and the Grenadines with respect to a number of demographic variables within this age group (Fishbein, Trafimow, et al., 1993). The following report is based on the 428 (weighted) respondents who reported that they were sexually active (i.e., it is restricted to those who reported that they had had sex during the past 6 months).

Generally speaking, residents of St. Vincent and the Grenadines are black or of mixed heritage and have English as their native language. As can be seen in Table 1, the sexually active sample had fewer 15-19 year olds but more 25-34-year-olds than did the general population, $\chi^2(8) = 40.14$, $p < .001$. Although there were more sexually active women than men, the gender distribution in the sexually active sample did not differ significantly from the gender distribution of the population, $\chi^2(1) = 2.19$, $p < .10$. Similarly, with respect to educational level and employment status, the sexually active sample was similar to the general population. Finally, and not surprisingly, the sexually active sample was more likely to report that they were married or that they had a regular sexual partner (68.7%) than was the population in general (59%), $\chi^2(1) = 8.91$, $p < .01$.

Frequency of Condom Use

Those respondents who had been sexually active during the past 6 months were asked a number of different questions to indicate the frequency of their condom use during this time period. More specifically, the respondents were asked:

1. Have you or your partner ever used a condom? Those responding “yes” were further asked:
   1a. Would you say you use condoms always, sometimes, or rarely?

2. Of the last five times you had sex, how many times did you use a condom?

3. Have you had vaginal intercourse in the last 6 months? Those responding “yes” were further asked:
   3a. How often did you use a condom during this practice? Was it always, sometimes, rarely, or never?4

4Respondents were asked similar questions about their engaging in anal sex in the past 6 months.
Based on their responses to all of these questions, the respondents were classified into one of three groups: those who never used a condom, those who sometimes used a condom, and those who reported that they always used a condom during sexual activity in the past 6 months. For analytic purposes, this trichotomous variable was coded from never (1) to always (3), and served as the dependent variable in all correlational and regression analyses.

Theoretical Variables

Thirty-four questions on the KABP survey were identified as possible indicants of five theoretical variables: AIDS knowledge, perceived threat (based upon cues to action, perceived susceptibility, and perceived severity), perceived (locus of) control, perceived normative pressure, and condom use outcome expectancies.

Aids Knowledge

Three different procedures were used to assess three different aspects of knowledge:

1. Transmission knowledge-I. Respondents were asked to list the ways in which AIDS is transmitted. Specifically, they were asked, “How do you think people can get infected with the virus that causes AIDS?” Each of their spontaneously emitted responses was classified as being correct or incorrect. A transmission knowledge score was calculated by subtracting the number of incorrect responses from the number of correct responses. This score ranged from -2 to +9.

2. Transmission knowledge-II. In addition to the above open-ended questions, respondents were asked to agree or disagree (on a 5-point scale) with the statement: “Little is known about how AIDS is spread.” Strong agreement (incorrect) was scored 1 and strong disagreement (correct) was scored 5.

3. Disease knowledge. Respondents were asked the following three “yes/no” questions:

(1) Can you tell by looking at someone if a person has AIDS?
(2) Is there a difference between being infected with the AIDS virus and having AIDS?
(3) Can an infected person who looks and feels well infect other people so that they might get AIDS?
For each question, respondents were given a +1 if they were correct, a -1 if they were incorrect, and a 0 if they gave no answer or said they didn't know. Correct answers are No, Yes, and Yes for questions 1 to 3, respectively. This disease knowledge score ranged from 0 to +3, with item-total correlations ranging from .46 to .60 (all \( p < .01 \)).

Each of the above scores was standardized (i.e., set to have a mean of 0 and a standard deviation of 1). The correlations between each subscale and the total knowledge score (i.e., the item-total correlations) ranged from .54 to .67 (all \( p < .01 \)). Thus, the three standardized scores were averaged to create a total knowledge score. The higher the score, the greater the respondent's knowledge of AIDS.

**Perceived Threat**

According to the health belief model (Becker, 1990), a number of different variables contribute to the degree to which one feels personally threatened by a given disease. Generally speaking, perceived threat is based on feelings of susceptibility to a severe illness and is enhanced by exposure to various cues to action. To arrive at measure of perceived threat, the following items were considered:

1. **Perceived risk.** After being asked to list the ways in which people can be infected by the AIDS virus, respondents were asked, “What about yourself, do you think you might be at risk of getting AIDS?” Those responding “Yes” received a score of +1, those responding “No” received a score of -1, and those who reported that they didn’t know if they were at risk received a score of 0.

2. **Most serious problem.** Subjects were asked to report what they thought was “the most serious health problem in our country today.” Those spontaneously mentioning AIDS were given a score of +1, all other respondents received a score of 0.

3. **AIDS concern.** Subjects were asked to agree or disagree (on a 5-point scale) with the following two statements:
   a. Here in our country there are more important things to worry about than AIDS.
   b. We will all die anyway, so why worry about AIDS.

For each item, strong agreement received a score of 1 while strong disagreement received a score of 5. The two items were significantly related \((r = .20, p < .01)\), and thus the sum of the two responses served as an index of perceived concern. The higher the score, the more one was concerned about AIDS.

4. **Perceived severity-I.** Respondents were also asked whether they
agreed or disagreed that "AIDS causes great suffering to the people who have it." Strong agreement was scored 5 while strong disagreement received a score of 1.

5. Perceived severity-II. Respondents were asked "Do you think there is a cure for AIDS?" Those answering "Yes" received a score of -1, those answering "No" received a score of +1, and those who said they "didn't know" received a score of 0.

6. Cue I—know PWA. Respondents were asked (a) "Do you personally know anyone who has or who had AIDS?" and (b) "Do you personally know anyone who is infected with the virus (HIV) that causes AIDS but does not actually have AIDS?" Respondents answering "Yes" to both questions received a score of +1. Those answering "No" to both questions received a score of -1. And those answering "Yes" to one of the two questions received a score of 0.

7. Cue II—saw presentation. Respondents were asked if they had ever seen "a play, dramatic presentation, or movie about AIDS." Those responding "Yes" received a score of +1, those responding "No" received a score of -1, while those who "couldn't remember" or "didn't know" received a score of 0.

In order to compute an overall perceived threat score, each of the above scores was standardized. Item-total correlations ranged from .31 to .44 (all p < .01), and thus the eight standardized scores were averaged to create a total perceived threat score. The higher the score, the greater the perceived AIDS threat.

Perceived Locus of Control

The questionnaire contained a number of items from Rotter's (1966) original locus of control scale. This scale is comprised of two types of items: those indicating internal attributions (I) and those indicating external attributions (E). The response format for all items was a 5-point agree/disagree scale. For internal control items, strong agreement received a score of 5 and strong disagreement a score of 1. Scoring was reversed for external control items. The following 11 items were used to assess general locus of control:

(I) People's misfortunes result from the mistakes they make.
(I) There is really no such thing as luck.
(I) Luck has little or nothing to do with me getting what I want.
(I) When I make plans, I am almost certain that I can make them work.
(I) What happens to me is my own doing.
(E) Accidents play a large part in what happens in life.
(E) I do not think I have much influence over the things that happen to me.
(E) I feel that I do not have enough control over the direction my life is taking.
(E) Usually what is going to happen will happen.
(E) You might as well decide what to do by tossing a coin.
(E) Many of the unhappy things in people's lives are partly due to bad luck.

Item-total correlations ranged from .43 to .56 (all significant at \( p < .001 \)). Since there were more external (6) than internal (5) control items, a single general locus of control score was computed by subtracting the standardized mean response to the external items (E) from the standardized mean response to the internal items (I). The higher the score, the more one believed that, in general, one had control over his or her environment.

Perceived AIDS control. protect themselves from getting infected with the virus that causes AIDS? Those responding “Yes” received a score of +1, those responding “No” received a score of -1, and those who said they “didn’t know” received a score of 0.

The general locus of control score and the perceived AIDS control score were significantly correlated \( (r = .27, p < .001) \) and thus the above two scores were standardized and averaged to produce a total perceived (locus of) control score. The higher the score, the more one felt that internal, rather than external, factors determined one’s outcomes.

Beliefs About Condom Use (Outcome Expectancies)

Four items assessed the respondents' beliefs about condom use:

1. Condom use efficacy I. Subjects were asked “What can one do (to protect oneself from getting infected with the AIDS virus)?” Subjects who spontaneously mentioned “always use a condom” were given a score of 1; all others received a score of 0.

2. Condom use efficacy II. Respondents were asked, “Do you think the use of condoms prevents sexually transmitted diseases or AIDS?” Those answering “Yes” received a score of +1, those answering “No” received a score of -1, and those who “didn’t know” received a score of 0.

3. Perceived nonembarrassment. Subjects were asked, “Would you be
embarrassed to go somewhere and ask for condoms?” Those responding “Yes” were given a score of +1, those responding “No” received a score of +1, and those who responded that “it would depend upon the place” or who “didn’t know” received a score of 0.

4. Expected pleasure. Respondents were also asked, “Do you think condoms increase, decrease, or make no change in sexual pleasure?” Those responding “increase” received a score of +1, those responding “decrease” received a score of -1, and those who said it would not change their sexual pleasure or who said they “didn’t know” received a score of 0.

Item-total correlations ranged from .03 to .64, indicating that the expected pleasure item should be dropped from consideration. Revised item-total correlations ranged from .52 to .56 (all \( p < .01 \)). To arrive at a single condom beliefs (or outcome expectancy) score, the first three item scores were standardized and averaged. Thus the higher the score, the more one’s beliefs should support condom use.

**Perceived Normative Pressure to Use Condoms**

Three items were used to assess perceived normative pressure:

1. **Discussions with others.** Respondents were asked, “Do you and your friends ever talk about using condoms?” Those responding “Yes” received a score of +1, while those responding “No” received a score of -1. (None of the respondents said they “didn’t know” or “couldn’t remember.”)

2. **Friends’ behavior.** Respondents were asked, “Do your friends use condoms?” A “Yes” response was scored +1, a “No” response was scored -1, and those who “didn’t know” received a score of 0.

3. **Partner asked.** Finally, respondents were asked, “Has a sex partner ever suggested using a condom?” Those responding “Yes” received a score of +1, while those responding “No” received a score of -1. (Again, no respondent said they didn’t know or that they couldn’t remember.)

Item-total correlations ranged from .51 to .81 \( (p < .01) \). Thus, to arrive at a single perceived normative pressure score, the three above items were standardized and averaged. The higher the score, the more one perceived social pressure to use a condom.

**Results**

Although the above describes the way in which we combined individual items (or item clusters) to arrive at scales measuring five key theoretical variables (i.e., AIDS knowledge, perceived threat, perceived [locus of] control, condom use efficacy beliefs, and perceived normative pressure), it must be
recalled that the KABP was not constructed with these scales in mind. Thus, other investigators may have combined different items and/or used different scale construction procedures. In order to ensure maximum insight into the factors related to condom use behavior in St. Vincent and the Grenadines, we first examined the extent to which each item (or cluster of items) was related to frequency of condom use (i.e., whether condoms were used never, sometimes, or always). We then examined the extent to which the five theoretical variables were related to condom use. Finally, multiple regression analyses were conducted to assess the independent contributions of the five theoretical variables to the prediction of condom use behavior.

Analyses of Individual Items and Subscales

As can be seen in Table 1, there are 19 individual items or subscales that were considered in developing the scores for the five theoretical variables. An overall MANOVA treating these 19 variables as dependent measures and the trichotomous frequency of condom use variable as the independent variable was significant, $F(36, 776) = 7.88, p < .001$. The following describes the results of the univariate tests and correlational analyses. Given the large number of correlations computed, significance was set at the .01 level.

AIDS Knowledge

It has often been assumed that the more one knows about a disease and how it is transmitted, the more likely one is to engage in health-protective behaviors. In order to test this notion, we considered several different indicants of knowledge:

\[1\] For example, since variables such as knowledge and condom use outcome beliefs are multidimensional, we chose to use Likert scaling procedures (i.e., item-total correlations) rather than coefficient alpha to construct indices (or scales) to assess each of the theoretical variables. That is, since respondents may have knowledge about some aspects of AIDS but not others (e.g., one may know how AIDS is transmitted but not about the latency period between infection and illness or about whether there is a cure for AIDS or both, while another respondent may know there is no cure for AIDS but not how AIDS is transmitted), one would not expect every item to correlate with every other item. Clearly, however, given that each item is a valid indicant of total AIDS knowledge (i.e., correlates with the total score), a person who correctly answers any two of these questions has more AIDS knowledge than a person who can correctly answer only one of these questions. Since alpha simply provides a measure of the mean inter-item correlation, we believe that it is an inappropriate statistic to use in constructing an overall knowledge index. Indeed, we believe that the current reliance on coefficient alpha for scale construction all too often leads to the elimination of valid and useful indicants of a given theoretical variable.
1. Transmission knowledge I. Consistent with expectations, knowledge about AIDS transmission is significantly related to condom use \( (r = .20, p < .01) \); those who always use a condom have significantly more knowledge about AIDS transmission \( (M = 3.66 \) net correct responses) than do those who have sometimes \( (M = 3.35) \) or never \( (M = 2.53) \) used a condom, \( F(2, 380) = 8.70, p < .01 \).

2. Transmission knowledge II. In contrast to the above finding, there was little support for the hypothesis that frequency of condom use would be related to the strength of one's disagreement with the statement "Little is known about how AIDS is spread" \( (r = -.01) \). Those who always used a condom were no more likely to disagree with this statement \( (M = 3.27) \) than were those who sometimes \( (M = 3.18) \) or never \( (M = 3.27) \) used a condom, \( F(2, 380) \).

3. Disease knowledge. There was also little support for the hypothesis that condom use behavior would be related to knowing that there is a difference between being HIV+ and having AIDS and knowing the implications of this distinction for being able to identify people who are infected with the AIDS virus \( (r = .12, p < .05) \). There is however, a slight tendency for those who always use a condom to have slightly more knowledge about these aspects of the disease \( (M = 2.19) \) than do those who sometimes \( (M = 2.14) \) or never \( (M = 1.94) \) used a condom, \( F(2, 380) = 3.34, p < .05 \).

Perceived Aids Threat

According to the health belief model, the more one feels personally threatened by a disease, the greater the likelihood that one will take preventive action to avoid that disease. As indicated above, the KABP contained several different indicants of perceived threat.

1. Perceived susceptibility and severity. According to the health belief model, people are unlikely to engage in health protective behaviors unless (a) they believe they are personally susceptible to (i.e., at risk from) a given illness and (b) they believe that getting the illness will have severe, serious consequences on their lives. In order to test this notion, we considered a number of different items.

Respondents were asked if they thought they were personally at risk for AIDS. In contrast to expectations, this relatively direct assessment of perceived susceptibility was unrelated to condom use \( (r = -.01) \).

A number of other indicants of perceived susceptibility were also found to be unrelated to condom use. For example, respondents were asked what they thought was the most serious health problem on St. Vincent. In contrast to expectations, those spontaneously mentioning AIDS were no more likely to
have frequently used condoms than were those who did not mention AIDS
($r = .07, ns$).

A somewhat different indicant of susceptibility assessed respondents’ AIDS
care, that is, the extent to which they believed that one should be concerned
about AIDS in St. Vincent. In contrast to expectations, those who disagreed that
there were more important things to worry about than AIDS were no more
likely to be frequent condom users than were those who agreed with this
statement ($r = .02, ns$).

Respondents were asked whether they believed that AIDS causes great
suffering to those who get it. In contrast to expectations, this relatively
direct measure of severity was found to be unrelated to frequency of condom
use ($r = .03, ns$). Respondents were also asked whether they believed that
there was a cure for AIDS. It seems reasonable to assume that a life-threatening
disease without a cure will be perceived as more severe than one with a cure,
and, thus, those believing there is no cure should be more likely to take
health protective measures. Once again, however, we found no evidence for
a relationship between perceived severity and frequency of condom use
($r = .05, ns$).

2. Cues to action. According to the health belief model and other models
of behavioral change (e.g., Kanfer, 1970), one is unlikely to adopt health-
protective behaviors unless something happens to make the individual consider
changing his or her behavior. These cues to action may be either internal (e.g.,
symptoms) or external (e.g., knowing someone with AIDS, being exposed to a
mass media AIDS message). Since exposure to such cues is expected to
enhance one’s feelings of susceptibility, it follows that those exposed to one or
more AIDS cues should be more likely to have used a condom than should those
who have not been exposed. Two such cues were assessed in the KABP. First,
respondents were asked if they had seen a play or movie about AIDS. Second,
they were asked if they personally knew someone who was HIV+ and/or who
had AIDS.

In contrast to expectations, condom use was unrelated to exposure to either
of these cues ($r = -.08$ and $r = .03$ for Cue I—Know PWA and Cue II—Saw
Presentation, respectively).

**Perceived (Locus of) Control**

According to almost all social learning theories (e.g., Bandura, 1977b;
Kanfer, 1970; Rotter, 1954), people should be more likely to perform health-
protective behaviors if they believe that what happens to them is due to their
own actions rather than to chance or fate. This tendency to attribute outcomes
to internal or external factors has been referred to as perceived locus of
control. In contrast to expectations, the degree to which one attributes outcomes to internal rather than external factors, was not significantly related to frequency of condom use \((r = .09, p < .10)\).

In addition to the locus of control scale, respondents were asked if they believed that it was possible for a person to do something to protect himself or herself from AIDS. In contrast to expectations based on Bandura’s social cognitive theory, there was only a slight tendency for those who believed it was possible to protect oneself from AIDS to use condoms more frequently than those who did not \((r = .11, p < .10)\). Those who always used condoms during the past 6 months were only slightly more likely to believe that one could do something to protect oneself \((M = .18)\) than were those who sometimes \((M = .05)\) or never \((M = -.11)\) used condoms, \(F(2, 380) = 2.89, ns\).

**Outcome Expectations**

According to almost all behavior theories, the more one believes that performance of a given behavior will lead to more positive than negative outcomes, the more likely is one to perform that behavior. Several questions on the KABP appeared to address this issue. For example, people who said that a person could do something to protect himself or herself from AIDS were asked what could be done. Consistent with expectations, those who spontaneously said that one way to protect oneself was to “always use a condom” were more likely to have always used a condom than were those not mentioning this method of protection \((r = .15, p < .01)\).

Respondents were also asked explicitly whether using a condom would protect them from AIDS and other STD’s. Consistent with expectations, those saying “Yes” were significantly more likely to frequently use condoms than were those saying “No” or “Don’t know” \((r = .15, p < .01)\).6

Along somewhat different lines, respondents were asked whether they believed that using a condom would increase, decrease, or have no effect on sexual pleasure. It seems reasonable to assume that the more one believes that condom use will increase (or at least not affect) sexual pleasure, the more likely one is to use a condom. In contrast to expectations however, exactly the

---

6As one anonymous reviewer pointed out, rather than viewing this correlation of .15 as evidence for a significant relationship between condom use outcome expectancy and behavior, one could “use the finding to demonstrate the lack of relation between knowledge and behavior.” Unfortunately, such an interpretation assumes that this one belief should be a primary (if not the only) determinant of condom use. Clearly, however, there are many other condom use outcome expectancies (e.g., using a condom will lead to a loss of trust between me and my partner, will make my partner angry, is the responsible thing to do, will reduce intimacy) that will influence one’s decision to use (or not use) condoms.
opposite was true; those who believe that condom use decreases pleasure tend to be more likely to frequently use condoms than those who believe condom use increases or does not affect sexual pleasure \((r = -0.12, p < .05)\).

Although initially surprising, this latter finding makes considerable sense. That is, although beliefs about outcome expectancies may influence future performance, they are also expected to reflect past experience. Viewed from this perspective, it is not unreasonable to have found that, in comparison to those who have never used a condom \((M = -0.18)\), those who sometimes \((M = -0.31)\) or always \((M = -0.41)\) use condoms are slightly more likely to believe that their use decreases sexual pleasure.

Finally, we assumed that embarrassment surrounding the purchase of condoms would be related to frequency of condom use. That is, it seems reasonable to assume that people who believe that they would be embarrassed buying a condom will be less likely to purchase (and, thus to frequently use) condoms than those who believe they would not be embarrassed. Consistent with expectations, this belief was positively related to frequency of condom use; those who believed that they would be embarrassed to buy a condom were significantly less likely to have always used one than those who believed that they would not be embarrassed \((r = 0.14, p < .01)\).

**Normative Pressure**

According to the theory of reasoned action (Fishbein, 1980) as well as Triandis' (1980) theory of subjective culture, perceived norms are important determinants of behavior. The more one perceives social pressure to perform a behavior, the more likely one is to actually perform that behavior. The KABP contained three questions that assess social pressure.

First, respondents were asked whether they talked to their friends about using condoms. Consistent with expectations, those who had talked to friends were significantly more likely to have always used condoms than those who had not talked to their friends \((r = 0.41, p < .001)\).

Second, respondents were asked whether they thought their friends used condoms. As expected, those who believed their friends used condoms were significantly more likely to frequently use condoms themselves than were those who were unsure of their friends' behavior or who believed that their friends did not use condoms \((r = 0.28, p < .001)\).

Finally, respondents were asked if a sexual partner had ever suggested using condoms. Consistent with expectations, those whose partners had suggested condom use were more likely to have used condoms frequently than were those who had not had partners who had suggested condom use \((r = 0.60, p < .001)\).
Testing the Relative Importance of the Theoretical Variables

The above analyses indicate that some, but not all, of the individual indicators of a given theoretical variable help to explain condom use behavior in St. Vincent. Thus, for example, although there is consistent support for the role of norms, there is only mixed support for the role of knowledge and behavioral beliefs (or condom outcome expectancies), and virtually no support for perceived threat (i.e., perceived susceptibility, perceived vulnerability, or cues to action) or perceived (locus) of control.

In order to provide a more rigorous test of the relationships between each of these theoretical variables and condom use, individual items were combined to develop indices (or scales) to assess each variable. That is, as described in the Method section, all the knowledge questions were combined to form a single knowledge index; the higher the score, the more knowledge one has about AIDS. Similarly, based on the health belief model, a single index of perceived threat was constructed. Three other indices were developed: (a) a single measure of perceived control that combined the general locus of control scale with the AIDS specific item; (b) a condom use belief (or outcome expectancy) measure; and (c) a measure of normative pressure. All five of these indices were constructed by taking the mean of the standardized scores comprising the scale. A MANOVA treating the trichotomous condom use measure as an independent variable and the five scale scores as dependent variables was highly significant, $F(10, 802) = 14.74, p < .001$.

Table 2 presents the mean standardized scores for each of the above five variables (as well the [raw] means for the subscales or individual items comprising those scores) for those who have never, sometimes or always used a condom. In addition, the Table shows the correlation between each of these measures and frequency of condom use.

Consistent with analyses of the individual items, Table 2 shows considerable variation in the strength of the association between frequency of condom use and the five theoretical variables. More specifically, while perceived threat appears unrelated to frequency of condom use ($r = .02, ns$), perceived normative pressure is very strongly related ($r = .57, p < .001$). The remaining three variables have moderate relations with frequency of condom use (i.e., for perceived [locus of] control, $r = .15, p < .01$; for knowledge, $r = .17, p < .01$; and for outcome expectations, $r = .25, p < .01$).

Implications for Developing Mass Media Interventions

Although four of the five theoretical variables were found to be significantly related to condom use on St. Vincent, in designing interventions it is
### Table 2

**Relationships Between Frequency of Condom Use and Selected Theoretical Variables (Means and Correlations)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency of condom use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Knowledge</td>
<td>-0.34</td>
</tr>
<tr>
<td>Transmission I</td>
<td>2.35</td>
</tr>
<tr>
<td>Transmission II (A/D)</td>
<td>3.27</td>
</tr>
<tr>
<td>Disease (Yes/No)</td>
<td>1.94</td>
</tr>
<tr>
<td>AIDS threat</td>
<td>-0.34</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>-0.62</td>
</tr>
<tr>
<td>Most serious problem</td>
<td>5.52</td>
</tr>
<tr>
<td>Perceived concern</td>
<td>0.63</td>
</tr>
<tr>
<td>Severity I—suffer</td>
<td>4.60</td>
</tr>
<tr>
<td>Severity II—no cure</td>
<td>0.78</td>
</tr>
<tr>
<td>Know AIDS/HIV</td>
<td>-0.77</td>
</tr>
<tr>
<td>Saw play/movie</td>
<td>0.07</td>
</tr>
<tr>
<td>Perceived (locus) control</td>
<td>-0.15</td>
</tr>
<tr>
<td>General locus</td>
<td>0.55</td>
</tr>
<tr>
<td>AIDS control</td>
<td>-0.11</td>
</tr>
<tr>
<td>Outcome expectations</td>
<td>-0.50</td>
</tr>
<tr>
<td>Condom use efficacy I</td>
<td>0.70</td>
</tr>
<tr>
<td>Condom use efficacy II</td>
<td>0.79</td>
</tr>
<tr>
<td>Nonembarrassment</td>
<td>0.56</td>
</tr>
<tr>
<td>Expected pleasure</td>
<td>-0.18</td>
</tr>
<tr>
<td>Normative pressure</td>
<td>-1.39</td>
</tr>
<tr>
<td>Talk to friends</td>
<td>0.44</td>
</tr>
<tr>
<td>Friends use</td>
<td>0.16</td>
</tr>
<tr>
<td>Partner asked</td>
<td>0.18</td>
</tr>
</tbody>
</table>

*Note. N = never, A = always, S = sometimes.*

*p < .05. **p < .01.
important to distinguish between statistical and substantive significance. Indeed, only two of the five variables (perceived normative pressure and condom use beliefs) account for more than 5% of the variance in condom use. Thus, even significant changes in knowledge or perceived (locus of) control would not be expected to substantially impact on condom use behavior in this population.

In order to further explore this hypothesis, a series of regression analyses was conducted. As noted above, perceived normative pressure correlates .57 with frequency of condom use. Regression analyses allow us to determine whether the simultaneous consideration of perceived normative pressure and one or more of the other variables will contribute to our understanding of condom use behavior. For example, one can test to see if the simultaneous consideration of outcome expectations and perceived norms will increase the size of the correlation over that based solely on a consideration of perceived normative pressure. That is, does the additional consideration of condom use beliefs lead to a significantly higher correlation than .57? These analyses indicated that none of the four remaining variables (whether considered individually or in combination) significantly increased our understanding of condom use in St. Vincent and the Grenadines.\(^7\) Thus, it would appear that, for this population, if one conducts a normative campaign, little will be gained by directing interventions at any of the remaining four variables (i.e., knowledge, perceived threat, perceived control, or condom use beliefs).

Summary and Conclusions

In this paper we have tried to show how KABP surveys can be used to test hypotheses derived from different theories of behavior. More important, we have tried to show that these tests can provide valuable insights into the relative importance of a number of theoretical variables as determinants of health-protective behaviors. Specifically, we have seen that, in St. Vincent, key constructs from social learning theory (i.e., perceived [locus of] control, condom use beliefs [or outcome expectancies]), the Health Belief Model (i.e., condom use beliefs), and the theory of reasoned action (i.e., perceived normative pressure, condom use beliefs) were significantly related to condom use behavior. In addition, and in contrast to these positive findings, one of the central variables in the health belief model (i.e., perceived threat) was found to be unrelated to condom use.

These findings clearly indicate that, among sexually active residents in

\(^7\)With all five variables entered, \( R = .58 \) and only the beta-weight for perceived normative pressure is significant.
CONDOM USE AMONG SEXUALLY ACTIVE ADULTS 19

St. Vincent, interventions designed to increase condom use would be most successful when they focus on increasing perceived normative pressure to use condoms and they should be least successful when they focus on increasing perceived AIDS threat. Although attempts to increase knowledge, perceived locus of control, and condom use beliefs (i.e., positive outcome expectations) may also lead to some increased condom use, the data suggest that, by far, the strongest influence on condom use in St. Vincent is perceived normative pressure. Equally important, the data indicate that, given a normative intervention, little will be gained by simultaneously trying to change any of the other variables.

In order to increase people's perceptions of normative pressure, a mass-media campaign might suggest that people talk to their friends about condom use; or it might provide information about the frequency with which condoms are used in St. Vincent. That is, the message might point out that the majority of sexually active people living in St. Vincent have used condoms. Another strategy might be to suggest that one talk to one's partner about condom use and/or that one asks one's partner to use a condom.

From a theoretical perspective, this type of campaign has the greatest potential for successfully influencing condom use behaviors in St. Vincent. Based on the findings reported in this and other papers (Fishbein, Middlestadt, et al., 1993; Fishbein, Traftimow, & Traftimow, 1993), a 2-month, normative radio campaign was developed and executed in the Eastern Caribbean. An evaluation of the impact of that campaign is reported in Middlestadt et al. (1995). In addition, we are currently examining public reactions to the campaign.

References


DiClemente, R. J., Zorn, J., & Temoshok, L. (1987). The association of gender,


