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behavioral intention to engage in protection against Acquired Immune
Deficiency Syndrome (AIDS) and a specific behavioral intention to use
condoms as protection in vaginal sex. Data pertaining to beliefs,
knowledge about AIDS, fear of and perceived vulnerability to AIDS,
perceived efficacy to control exposure to AIDS, self-esteem and
general locus of control, and past reactions to AIDS were collected
from 124 Black respondents at a southeastern university and regressed
on the two behavioral intention measures. Results showed that
situational efficacy (to protect oneself from AIDS) was the best
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Proximal threat of AIDS was a negative predictor. For specific
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Predictions of general intentions, more so than those of specific
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PREDICTORS OF INTENTION TO TAKE PRECAUTIONS AGAINST AIDS AMONG BLACK COLLEGE STUDENTS

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ABSTRACT

This research explored the effects of a number of factors
derived from extant intention-behavior models on a general
behavioral intention to engage in protection against AIDS and and
a specific behavioral intention to use condoms as protection in
vaginal sex. Data pertaining to beliefs - including normative
beliefs - and knowledge about AIDS, fear of and perceived
vulnerability to AIDS, perceived efficacy to control exposure to
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PREDICTORS OF INTENTION TO TAKE PRECAUTIONS AGAINST AIDS

AMONG BLACK COLLEGE STUDENTS

There is a great need to understand why sexually active
individuals do not practice safe sex. Several theories provide
possible explanations of such behavior. Among the theories that
have revealed precursors of behavior are the theory of Reasoned
Action (Ajzen & Fishbein, 1980), a later version of that theory,
the theory of Planned Behavior (Ajzen, 1985), and the Health
Belief Model (see Mullen, Hersey, & Iverson, 1987). The theories
differ somewhat in regard to elements of the predictive model and
measurement of these elements. According to the theory of
Reasoned Action (Ajzen & Fishbein, 1980), behavioral intention is
the best predictor of behavior. Intention is determined by
attitudinal and normative factors. Attitudes are made up of
beliefs about consequences of the behavior and the importance of
those consequences; norms reflect beliefs about significant
others' endorsement of the behavior. Both components are derived
informationally and experientially. Intention and its predictors
are differentially proximal to behavioral decisions. All are
measured quite specifically: one attempts to predict specific
behaviors from intentions which are themselves predicted by
attitudinal-normative elements that are equally specific in terms
of time, target, context, and action. Distal factors, which

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could include individual difference factors such as perceptions
of personal control, are expected to predict to the more proximal
attitudinal-normative factors, but not directly to intentions.
The theory of Planned Behavior (Ajzen, 1985) adds to the
attitudinal and normative components a third variable of
'perceived control," as an additional predictor of both intention
and behavior. While similar in belief components, the Health
Belief Model (see Mullen et al., 1987) focuses more heavily on
motivational factors as determinants of the probability of
engaging in a preventive behavior. In particular, perceived
threat, perceived vulnerability, and perceived self-efficacy are
presented as important mediators of behavior.

Much research based on these theories has yielded strong
behavioral predictions. Expressed intention to engage in a
behavior has been shown to be a relatively reliable predictor of
actual behavior in different realms, such as contraceptive use,
voting behavior, and smoking cessation (see Ajzen & Fishbein,
1980 for some examples). For example, Mullen, Hersey, and
Iverson (1987) found intention to stop smoking to be a potent
predictor of actual behavior. Also, Fisher (1984) found that
condom use was predicted from behavioral intentions measured a
few weeks earlier. Much of this research involves
straightforward model testing: do the elements of a particular
model predict satisfactorily to intentions and/or behavior.

Based on the theories and the supportive research, it would

thus seem quite reasonable to hypothesize that intention to practice safe sex should be a strong and reliable predictor of actual behavior, and that various elements of the above-cited theories (e.g., attitudes, norms, perceived control, and motivational factors) should prove to be strong predictors of intention. It therefore seems appropriate to focus on predictors of intentions in the absence of reliable behavioral reports. Accepting the apparent adequacy of such models and their components in behavior or intention predictions, research should continue to explore both whether the elements are sufficient and their measurement robust, particularly in relation to behavioral intentions and behaviors in relation to potentially life-threatening situations. That is, we need to determine whether the elements of any one of the above models are sufficient predictors, even with the use of measures that do not specifically mirror those described in tests of the model (cf., Ajzen & Fishbein, 1980, in their specific guidelines about measurement in relation to the Reasoned Action Model). Further, while predictions of very specific behaviors are very useful, research should continue to explore predictors of more general behaviors: it is theoretically important to determine that highly specific measures predict highly specific behaviors; it is of practical importance to determine predictors of both highly specific and more general behaviors. The work of Harrison, Rodgers, and Thompson (1985) demonstrates the utility of research

exploring such issues. Using very crude measures of intention, attitudes, and norms, they demonstrated that the Reasoned Action Model was both robust and relatively sufficient in predicting to both specific and broader behaviors in the realm of educational attainment.

The present research was directed at a similar exploration of predictors of specific and general intentions to use contraceptive protection against AIDS. Consequently, the research was not designed simply to test any particular intention-behavioral prediction models. Rather, it was designed to include elements to represent the central components of the three models referred to in the preceding (Reasoned Action, Planned Behavior, and Health Beliefs), and to add to these elements some distal and proximal factors that are assumed to be non-essential or are ignored in one or the other of the models. To assure representation of elements of the Reasoned Action model, we included knowledge and beliefs about consequences of contraceptive use and normative perceptions, as well as some distal factors that are, according to that model, non-essential in predicting intentions. Because of its similarity to the Reasoned Action model, these same measures were included to represent the Planned Behavior model, but a proximal variable of perceived efficacy was also included to address this variation suggested by Ajzen (1985). Because the Health Belief Model stresses motivational elements, measures of perceived threat and

perceived vulnerability, in addition to perceiveu efficacy, were
included.

In addition to variables representing these models, a number
of additional proximal and distal factors were included. Based
on our research pertaining to self-esteem of young adults
(Tashakkori, Thompson, Wade, & Valente, 1990) we reasoned that
distal pervasive personality factors, in particular self-esteem
and locus of control, might in fact predict directly to general
and/or specific intentions to use contraceptive protection. That
is, low self-evaluation and/or perception that one generally is
not in control of one's outcomes might contribute to intentions
as or more strongly than attitudinal or normative beliefs. With
regard to proximal measures, we included measures pertaining to
the threat of AIDS and fear of AIDS. While these measures could
well reflect perceived vulnerability addressed in the Health
Belief Model, we reasoned that they might address salience of the
need to self-protect, in which case they should act as strong
proximal predictors of intentions. On the other hand, we
recognized that immediate threat, and thus salience, might
preclude rather than facilitate intentions to protect, depending
upon individual perceptions of vulnerability and of efficacy or
control. Such factors might ultimately be critical in
understanding, in particular, the behavior of high risk persons
who are fairly well informed and have a fairly elaborated
affective-cognitive structure, yet who continue to engage in

dangerous sexual behaviors. Recent research addressing the reception of information about AIDS (Valente, 1988) suggests that the more relevant and threatening the information about AIDS, the less likely that the information will be correctly perceived. Finally, we included a measure of reported protective behaviors as a potential proximal predictor of intentions. Reported behaviors are not specifically included as predictors in the models referred to in the preceding. However, research directed at testing the Reasoned Action Model in predictions of self-reported drug use (Bentler & Speckart, 1979) has demonstrated the importance of behavioral reports.

To reprise, measures designed to explore predictors of specific and general intentions to use contraceptive protection were viewed as potential distal or proximal predictors. Distal predictors included personality factors (general self-esteem and locus of control), the demographic attribute of gender, and number of past sexual partners; proximal predictors included attitudinal-cognitive factors (knowledge, beliefs), normative perceptions, perceived efficacy, fear of AIDS, level of perceived threat or vulnerability, and reported reactions to the AIDS epidemic.

METHOD

Respondents:

Two hundred college students at a small, predominantly Black campus in a southeastern state were asked to volunteer to respond

to a questionnaire regarding AIDS (see procedures below). Out of
these, 143 (71.5%) completed land returned the questionnaire.
Results of analysis of data from the 124 (53 Males, 71 Females)
Black non-married respondents are presented here (7 Whites were
eliminated from the sample).

Instruments and variables:

A. DEPENDENT VARIABLE:

The dependent variable of the study was the expressed
intention to take precautions against contracting AIDS. Two
levels or types of intention were measured. One consisted of a
general intention to engage in AIDS-preventive behaviors, the
other pertained to intentions to use condoms in specific sexual
behaviors. The general intention was measured by an item worded
"I intend to take precautions against getting AIDS," followed by
a 4-point response scale ranging from "strongly agree" to
"strongly disagree." Responses were recoded such that strong
agreement (high intention) was assigned a value of 4. Specific
intentions to use condoms in genital, anal, and oral intercourse
were measured by items worded "how often will you use condoms
when you have [this type of] sex in the future?" Response scales
were: "will never do this behavior (assigned a missing value for
this variable)," "will never use condoms," "will use them
sometimes," "will use them most of the time," and "will use them
every time." Responses were recoded such that a value of 4
indicated strong intentions to use condoms in each case. Later

examination of the data indicated that intentions to engage in oral and anal intercourse were expressed by a relatively small percentage of respondents (8% for oral, 7% for anal). For these reasons, these two responses were not included as dependent variables in subsequent analysis. The correlation between the general measure of intentions and the specific intention to use condoms in genital intercourse was .66 (p<.001).

B. PREDICTOR VARIABLES:

Predictor variables included the array of distal and proximal variables referred to in the preceding. The proximal variables included:

Knowledge of AIDS: Knowledge of AIDS was measured by 13 true-false items used in previous studies (Tashakkori & Cleveland, 1989, Newell and Newell, 1986; Goodwin & Roscoe, 1988). Examination of data indicated that 4 of these items had no variance. One item was specifically related to condom use (using condoms during intercourse can prevent AIDS), and also had a relatively small correlation with other items. It was decided to use that item as a separate predictor of specific intention to use A condom (to be discussed subsequently). The other 8 items were averaged to obtain a general measure of knowledge. The Alpha for this 8-item scale was .57.

Beliefs about using condoms: A 5-items scale asked respondents to determine the degree to which using condoms would facilitate (cause) or interfere with (prevent) enjoying sex,

being inconvenienced, having a good relationship with the

partner, catching diseases, and getting pregnant. Responses were

measured on 4-point-scales that were re-scaled, such that larger

numbers represented positive beliefs about consequences of condom

use; responses were then averaged to obtain an overall index of

beliefs about condom use. The Alpha for this 5-item scale was

equal to .82.

Normative perceptions regarding condom use: These measu, es

consisted of respondents' perceptions about the degree to which

their sexual partner, friends, family, and classmates considered

using condoms to be desirable. Responses were measured on

4-point scales (very good to very bad), which were averaged to

obtain a general index of normative perceptions. The Alpha for

this scale was rather low (.39) due to small item variances. In

the absence of any other normative information, it was decided to

use the index as a predictor.

Fear of AIDS: A fear of AIDS scale proposed by Newell and

Newell (1988) was administered, and was used to derive both past

experience and beliefs about AIDS. This instrument consists of

13 items, each of which was followed by a 4-point agree-disagree

response scale. Examination of items indicated that one item

represented a general measure of past behaviors or 'reactions' to

the AIDS epidemic ("my life style has changed since the emergence

of the disease AIDS"). This item was excluded from the scale and

used separately in analyses as an index of past behavior.

Another item ("AIDS is a highly contagious disease") was excluded

from the scale because it had relatively small (<.25)

correlations with all other items (it was used separately as a

predictor in regression analyses: AIDS CONTAGIOUS). The

remaining 11-item scale had an Alpha of .79.

Perceived threat of AIDS or perceived vulnerability to AIDS:

This was measured by items addressing the probability that self

or similar others would contract AIDS; several items measured

this construct. One item (OWN CHANCE) asked "Overall, taking

everything including your current life-style into account, what

are the chances that you might contract AIDS;" this was followed

by a 4-point response scale ranging from "no chance of getting

it" to "will get it for sure." Another item (OWN RISK) was worded

"There is a probability that I might contract AIDS;" this was

followed by a 4-point agree-disagree scale. The correlation

between the two measures of threat to self was .69 (p<.001). Two

items measured perceived threats for similar others on campus.

One item (COLLEGE THREAT) was worded "How much of a threat do you

think AIDS is to the health of your college community;" this was

followed by a 4-point scale ranging from "not at all" to "the

most serious threat." Another item was "If a college student like

yourself were to use a condom properly while having sex with

someone carrying AIDS, what are the chances of that student

getting AIDS?" This item (OTHER'S RISK) was followed by a

4-point response scale ranging from "no chance of getting it" to

"will get it for sure."

Perceived ability to prevent AIDS (Specific Self-Efficacy):
Perceived self-efficacy regarding AIDS-preventive behaviors was
measure.¹ by an item worded "I am able to behave in ways that
prevent me from contracting AIDS;" the item was followed by a
4-point agree-disagree scale.

Number of sexual partners: The respondents were asked how
many sexual partners they had had during the last year. Responses
were coded from 0 (no partner, not active) to 5 (maximum number
stated). It should be mentioned that previous research (e.g.
Fisher & Misovich, in press) has shown this type of measure to
underestimate the number of partners due to social desirability
tendencies.

Distal measures included the following:

Self-esteem: Self-esteem was measured by a short 5-item
version of the Rosenberg (1979) scale (see Robinson & Shaver,
1973): "I take a positive attitude toward myself," "I feel I am
a person of worth, on an equal plane with others," "At times I
think I am no good at all, "On the whole, I am satisfied with
myself," and "I feel I do not have much to be proud of." In
accordance with previous research using the same items (e.g.
Tashakkori et al., 1990), and after proper recoding, the 5 items
measuring self-esteem were averaged to obtain a single index of
self-esteem (higher number representing high self-esteem). The
5-item scale had an Alpha of .77.

Locus of control: General locus of control was measured by a 3-item scale ("Good luck is more important than hard work for success," "Planning only makes a person unhappy, since plans hardly ever work," "People who accept their condition in life are happier than those who try to change things"). All of these items were followed by 4-point agree-disagree response scales. The 3 items measuring locus of control were averaged to obtain a composite index of locus of control (higher number representing internality).

Descriptive Measures: Only subject gender and reported number of past sexual partners were included.

With regard to both proximal and distal measures, some measures were specific to condom use, and some were associated with sexual behavior in general.

Procedures:

Subjects were students in introductory Sociology and Psychology classes. The investigator and the data collection assistant were from a nearby campus. In each class, the 4-page questionnaire and a cover letter explaining the scientific purpose of the study were handed to each student in an envelope at the end of a class period. Respondents were also verbally informed about the general purpose of the study (measuring college students' attitudes regarding AIDS) and were asked to respond voluntarily to the questionnaire. Subjects were instructed to bring the questionnaires back to the next class

session or to mail them to a designated campus box. At the next
class session, the assistant was present in the beginning of the
class session to collect the envelopes. Everyone was encouraged
again to complete the questionnaires and mail them to the campus
box if they had not done so. As noted earlier, 143 of the 200
questionnaires were returned. Given the sensitive nature of the
questions and lack of incentive to respond, a response rate of
approximately 72% seems to be satisfactory, if not exceptional.

RESULTS AND DISCUSSION

Derivation of Scores

As noted above, responses were recoded and/or summed to
provide indices of self-esteem, efficacy, and other variables.
To generate a measure of fear of AIDS, a Principal Components
Analysis (SPSS-X, 1980) of the 11-item Fear of AIDS Scale was
completed. Three factors with Eigenvalues greater than one were
identified. These three were Varimax rotated, and factor scores
were calculated for each. Table 1 presents the factor loadings.
Factor 1, made up of items pertaining to general avoidance of
AIDS (e.g., not wanting to work with AIDS patients or visit
Africa, and seeing homosexuals as responsible) can be considered
a distal distancing factor. Factor 2, made up of items
pertaining to avoidance of AIDS in close contacts (e.g., mouth to
mouth resuscitation and dropping friends who are gay) can be
considered a proximal distancing factor. The third factor,
composed of items pertaining to testing for AIDS (pre-maritally

and on release from prison) can be considered a policy control factor. The three calculated factor scores and other variables mentioned in the Method section were used in subsequent regression analysis as possible predictors of the general measure of intention and the specific intention to use condom in the future.

******* TABLE 1 ABOUT HERE ******

Item Correlations

Table 2 presents the correlations between predictor and intention measures. As that table shows, the general and specific measures of intentions were highly correlated (r=.66) and highly correlated with past behavioral reaction (r=.68, and .67, respectively), with knowledge scores (r=.60 and .56, respectively), and with beliefs about condom use (r=.61, and .65, respectively). General intention was also highly correlated with efficacy (r=.70) and with fear factor 2 (r=-.54). In general, the stronger the intention, the less was the fear of threat to self.

******* TABLE 2 ABOUT HERE ******

Regression Analyses

Because there was such a large number of predictor variables, multicollinearity problems could exist in regression analyses. To deal with this potential problem, a series of procedures was used. First, a pre-planned procedure was used in which blocks of variables were separately evaluated in terms of

significance of contribution to the predicted variance (R^2 change). All variables that met this criterion within the block (e.g., within the block of fear or threat variables) were added to the model before the next block was examined. These blocks will be discussed as results are presented below. Although this procedure permitted the evaluation of each of the theoretically important 'blocks' of variables, it prevented the inclusion of all of the variables in the model and, hence, prevented multicollinearity. The pre-planned predictor 'blocks' (some including only one measure) were evaluated in the following order[1]: 1) cognitive indices such as knowledge and beliefs (about condoms, when applicable); 2) perceived efficacy to act preventively; 3) normative perceptions regarding condom use (when applicable); 4) self-esteem and locus of control (personality variables assumed to be related to efficacy and reaction to normative factors); 5) motivational indices such as fear of AIDS and types of perceived threat; 6) subject's gender and number of sexual partners; and 7) report of past behavioral changes in reaction to the AIDS epidemic.

For comparison purposes, and also as explanatory tools for

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[1] Although this order was perceived to be the most theoretically appropriate, the other two regression procedures (stepwise forward and backward) were totally independent of it. Hence, the other two procedures complemented the pre-planned procedure through selecting the 'strongest' predictor for forward inclusion in (and the 'weakest' predictor for backward elimination from) the models. The three approaches led to highly similar (or the same) models in most analyses.

designing future studies, two other procedures were also used to predict intentions. One was a stepwise backward regression during which 'weak' predictor variables (the ones corresponding to non-significant Betas or providing no significant reduction in R^2 if omitted) were removed from the full list of predictors one by one (see SPSS-X, 1985). As customary, a slightly more generous than .05 significance level (.051) was used for retaining variables in the model. At each step, a variable that did not have a significant (p<.051) Beta was removed from the model. The procedure continued until all remaining variables were significant predictors, i.e., their removal would lead to a significant reduction in the R^2.

A third procedure used was a stepwise forward regression, selecting the best predictors, one by one, until no predictor added significantly (p<.05) to the R^2 in previous steps. The final model was compared to the one obtained from the first (theory driven) and the second (backward) procedures.

Prediction of general measure of intention:

Only measures that were not directly related to any specific preventive method or behavior were examined as possible predictors of general intentions to act preventively[2]. Among

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[2] Specific measures pertain to knowledge, beliefs, or normative perceptions regarding using condoms. They will be used as predictors of intention to use condoms later in this paper. However, it should be mentioned that, when they were included as predictors of general intention, the final models obtained in regression analyses were not different from the ones discussed above. In other words, as predictors of the general intention to

these predictors, the cognitive block (overall knowledge score) was first examined as a set of predictors. Table 3 shows the results. Subsequently, the AIDS-specific efficacy score was examined; it was added to the model (forwarded) because it added significantly to the variance of the intention score (R^2-change=.27, F-change=88.92, p<.001). Then the general locus of control and self-esteem blocks were forwarded; only locus of control was retained in the model based on a significant change in R^2. In the next step, the motivational block (fear, perceived threat, and so on) was examined. Only fear factor 2 (the proximal distancing factor) met the criterion for addition to the model. Number of partners and respondents' gender were examined next. Neither met the criterion for entry into the model.

***** Table 3 about here ****

Up to this point, the regression model included, in order of magnitude for Beta: efficacy, knowledge, proximal fear (factor 2), with a negative Beta, and general locus of control. The latter did not have a significant Beta after fear factor 2 was added. In the final stage, past behavioral change was examined, and was added to the model because it contributed to a significant change in R^2. No other variable contributed significantly to the variance already predicted by this model.

Table 3 presents the final results of these analyses.

engage in AIDS-preventive behaviors, specific measures did not replace, or add to the variance already explained by, the general measures.

Again, situational efficacy was the best predictor of general

intention, followed by reports of past behavioral changes as a

result of the AIDS epidemic and by knowledge. Fear factor 2

(proximal threat) was a negative predictor.

The next set of analysis was based on the stepwise

'backward' method. The four variables mentioned above (efficacy,

past reaction, knowledge, and fear factor 2) were again the only

significant predictors remaining in the final model. Stepwise

forward analyses led to identical results.

Specific intention to use condoms:

The same procedure was used to predict the specific measure

of intention to use condoms in relation to future genital

intercourse. Condom-specific indices such as normative

perceptions regarding using condoms, beliefs about condom use,

and knowledge about effectiveness of condoms in preventing AIDS

were added to the set of general predictors in each block. As

before, the cognitive block (beliefs about condom use, knowledge

of AIDS, and awareness of condoms as a preventive means) was

examined first as a set of predictors. The belief score was the

strongest predictor[3], followed by general knowledge. Keeping

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[3] When the component beliefs, rather than the overall belief
score, were examined individually within this block, the threat to
good relationship and inconvenience were the only significant
predictors of the intention to use condoms within the cognitive
block.   Other beliefs regarding condom use (e.g. disease
preventive, contraceptive, disruption of enjoyable sex), general
knowledge, or knowledge regarding AIDS-preventive aspect of condoms
did not add significantly to the variance already explained by
these two beliefs.

these in the model, the specific knowledge variable did not significantly add to the R^2. { The next 'block' consisted of one variable, specific efficacy, which was added to the model because it contributed to a significant increase in R^2. The third 'block' consisted of the normative perceptions score (others' perceived desirability of condom use), which was also added to the model[4]. None of the variables in the fourth block (self-esteem and general locus of control) met the criteria for inclusion. Among the variables in the fifth block (fear factors and the four measures of perceived risk of AIDS for self and others), only the risk for others on campus (considered as proximal risk) added significantly to the R^2. Up to this point, only five variables were included in the model (beliefs about condom use, knowledge, normative perceptions, perceived risk for others on campus, and specific efficacy); one of these (efficacy) no longer had a significant Beta. In the last step, past behavioral reaction was added.

The final model is reported in Table 4. Only three predictors (past reaction to AIDS, beliefs, and normative perceptions). had significant Betas in the final model. The R^2 was .53. Examination of the variables not in the model indicated that _after_ adding past reactions to the model, fear factor 1 (which was not a significant contributor to the R^2 before) now

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[4] When the four separate measures within this block were individually examined, only the perceived partner's view added significantly to the R^2.

met the criteria for inclusion in the model.

***** Table 4 about here ****

Stepwise backward regression analysis (SPSS-X, 1985) was also performed to predict specific intention. The final model included three of the four variables mentioned above (past reaction, beliefs, and risk on campus,. The first fear factor (distal fear) was the fourth variable in the final model, replacing normative perceptions. The same model was obtained from stepwise forward procedures.

Results of the three different approaches to analysis are consistent in some respects. Using all three approaches, past reaction to the AIDS epidemic and beliefs about condom use were the best predictors of specific intentions to use condoms in future genital intercourse. However, normative perceptions about others' beliefs about the desirability of condom use was not consistently identified by the pre-planned and the forward/ backward procedures)[5]. As in any regression analysis, finding

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[5] An examination of the backward steps indicated that removal of fear factor 2 (due to non-significant Beta) led to a non-significant Beta for the normative component (Beta=.12, t=1.75, p<.083), which in turn led to removal of the normative component from the model. Before the removal of fear factor 2, the model (R^2=.56) included past reaction (Beta=.39, t=4.23, p<.001), belief component (Beta=.31, t=3.'9, p<.002), fear factor 1 (Beta=-.15, t=-2.31, p<.023), risk on campus (Beta=-.14, t=-2.08, p<.046), the normative component (Beta=.14, t=2.00, p<.048), fear factor 2 (Beta=.15, t=1.95, p<.054), and self-esteem (Beta=.14, t=1.96, p<.053). Removal of fear factor 2 led to a slightly smaller Beta for self-esteem (Beta=.13, t=1.88, p<.063). It seems that the normative component was facilitated by fear factor 2, and self-esteem was facilitated by the normative component.

that one variable does not add significantly to a model after
other variables have been included should not suggest that the
variable is not important. Thus, the fact that one or more
variables in the model can explain the variance representing
normative beliefs should not lead to a conclusion that such
beliefs are not important.

In the above-mentioned analyses to 'predict' intention to
use condoms, beliefs about different aspects or consequences of
condom use were averaged into a belief index. Later, it was
decided that different beliefs about condoms (e.g., causing
inconvenience while preventing disease, or pregnancy) are so
diverse that it would be proper to examine them also as single
indicators in regression analyses. When procedure 1 was followed
in such analyses, the final model showed a strong resemblance to
the one presented in Table 4. Instead of the belief index, only
two of the four beliefs (about inconvenience and interference
with a good relationship) were significant in the model. Before
adding past reaction to the model, both these beliefs had
significant Betas, along with the normative component,
knowledge, and risk on campus. Addition of past reaction led to
non-significant Betas for knowledge and for risk on campus. In
other words, when specific beliefs were in the model, the
normative perception about condom use was a better (significant)
predictor than fear or threat or than personal variables such as
efficacy and self-esteem.

At the end of this stage for procedure 1, all other variables were examined, post-hoc, to see if any added significantly to the R^2 for predicting specific intentions. If any variable was found to complete the model in this post-hoc examination, it was added to the model, and the search continued. The final model obtained has a number of interesting attributes. First, belief in disease-prevention through condom use, as well as fear factors 1 and 2 added significantly to the explained variance of the obtained pre-planned model. The obtained R^2 was equal to .60 (adjusted R^2=.56, as compared to .53 in the previous model). Second, addition of these three variables led to significant Betas for knowledge and risk on campus. Third, the best predictor of intention to use condoms was the belief about inconvenience (those who believed condoms were not inconvenient had higher intentions to use them, as would be expected); this was followed by past reaction and then by knowledge. Fourth, backward and forward regression analyses led to two models, both highly similar to the one discussed above. In both, the inconvenience belief was the best predictor, followed by past reaction, followed by knowledge. In all three models, the normative component, the disease-prevention belief, and fear factor 1 were also significant predictors. The forward and backward models did not contain risk on campus.

CONCLUSIONS

Results suggest some support for all of the models from

which conceptualization of measures was derived. The strongest predictor to general behavioral intentions is the measure of specific efficacy. This, in combination with knowledge about AIDS and beliefs about proximal threats of AIDS (through close contacts in high risk groups), predicted strongly, and the prediction was enhanced by addition of past behavioral reactions to AIDS. However, from various theoretical perspectives, these are variables that are expected to predict to specific, not general, behavioral intentions: according to the Reasoned Action Model, knowledge would be expected to be a primary predictor of specific intention; according to the Planned Behavior Model, efficacy and knowledge would both serve as predictors of specific intention; and according to the Health Belief Model, beliefs and threat would be included. With regard to predictions of specific behavioral intention, some variables that had entered into the prediction of general intention entered in, but in a different order. When very specific beliefs about consequences of condom use were examined, perceptions regarding inconvenience of condoms was the best predictor of intentions to use a condom in future sexual intercourse. When a more general measure of beliefs (constructed from averaging five beliefs about consequences of condom use) was used, the prediction from beliefs to intention was weaker, but past reaction to the AIDS epidemic was a better predictor. These findings offer some support for the Reasoned Action Model, in that a specific belief was a stronger predictor

of specific intention than were general beliefs. Finding that
past behavioral reaction was ½a potent predictor of intentions to
use condoms in the future is contrary to predictions from that
model, but consistent with the findings of Bentler and Speckart
(1979) in their explorations of that model. We thus find that
some specific measures (of efficacy and knowledge) predict well
to general intentions, but other specific measures (knowledge -
or beliefs and perceptions, but not efficacy) predict well to
specific intentions. In neither case is knowledge as strong a
predictor as other variables, and in neither case do distal
personality factors of self-esteem or locus of control aid in the
prediction.

When predicting general intentions, the model revealed seems
fairly logical and clear: persons who feel they can control their
susceptibility to AIDS and who have the proper knowledge and
concerns about high risk groups close at hand do intend to exert
control over their behaviors. Their perceived vulnerability does
not enter the model. Although their past behavior adds to the
predicted variance, it is not the most important predictor of the
general intention. Again, while these results pertain to general
intentions, they seem to map predictions of the Reasoned Action
Model concerning specific, rather than general, intentions. On
the other hand, with specific intentions, the overall predicted
variance in models containing a greater number of predictors is
not as strong as the one for general intentions (maximum R^2 of

.60, depending on the model, for specific intention, as compared
to an R^2 of .72 for general intentions). Given the greater
diversity of predictor variables for the specific intention, this
difference is unexpected.

How might these inconsistencies be explained? Perhaps it is
indeed broad, general intentions that do in fact follow a more
logical progression: in the broader sense, people may be able to
feel in control of their lives and thus may feel they can pledge
to take care. However, there is nothing in this pledge to
indicate the type of behaviors subjects would adopt, or that
intentions pertaining to specific behaviors would follow that
logical pattern. In line with previous findings in a
predominantly White campus in the same geographic area
(Tashakkori and Cleaveland, 1989), when asked about reasons for
not taking precautions against AIDS (for those who identified
themselves as such), a considerable number of respondents
provided reasons such as "I choose my sexual partners carefully,"
and "I have only one partner." It seems unlikely that any of
these respondents base their judgements on such things as
objective data about the partner's freedom from AIDS. Hence,
although the general intention is logical, and the respondents
feel efficacious enough to implement it, the specific preventive
method might not be at all logical. Perhaps for these reasons,
in predicting condom use as an AIDS-preventive strategy, efficacy
and miscellaneous strategies become irrelevant. Factors

immediately relevant to using condoms appear to become more important. It is not surprising, then, that inconvenience (both in terms of obtaining condoms and using them) becomes an important factor. Even the report of changes in life-style as a function of becoming aware of AIDS is not as strong a predictor as is this single belief.

It is possible that the more rational processing that seems to be associated with general intentions is in some part due to perceptions of reduced vulnerability that might be felt when one is addressing general issues of protection. However, the analyses indicate that vulnerability level does not predict - not that vulnerability level is low and stable across respondents. With specific intentions, however, perceived vulnerability becomes slightly more important, at least as far as perceived vulnerability of other students is concerned. Given the fact that the pool of sexual partners for a college student in a small town would likely consist of other college students on campus, perceived threat to these others might imply risk to self. A zero-order correlation of .47 (p<.001) might be an indication of this. However, it should be noted that those who expressed general or specific intentions to engage in AIDS-preventive behaviors perceived less threat to self _and_ to others on campus (see Table 1). Quite possibly, a selective perceptual mechanism is involved, whereby respondents who intended to behave in a certain manner assumed others would behave in the same way. This

is a hypothesis to be explored in our new research on this

subject.

There is cause to feel some optimism that, from these

findings, a better understanding of precursors to intentions, and

to behavior, may be derived. Results seem to suggest that

knowledge and information alone are not the factors that drive

intentions, and that one's causal orientation and perceived

vulnerability - though not self-esteem, which was a relatively

weaker predictor in most analyses - may in fact contribute to

intentions. The causal orientation in this case, however, is not

a general efficacy but a more proximal efficacy, specific to the

behavior in question, that governs intentions - a perception

that one is in fact responsible for and can control one's

outcomes in this realm. As such, at least with the particular

measure used, we may in fact be tapping a belief component,

concerning the likelihood of occurrence of an outcome, as

represented in the Fishbein-Ajzen model. This could be true as

well in relation to predictions from past behavior: once control

is achieved and recognized, specific efficacy may become a part

of the belief structure.

Earlier, we noted that defensive mechanisms might influence

perceptions and intentions. We do not have direct evidence of

cognitive distortion. However, regression analyses and

correlation matrices do suggest the possibility of such

mechanisms. Those who have high efficacy perceive their own

chances of getting AIDS as low (see the negative correlation

between efficacy and perceived threat in Table 1); they also have

knowledge of what to do and they intend to do, and apparently do,

what they feel is proper to do (though not necessarily an

effective preventive measures) to protect themselves. On the

other hand, these data also indicate that the opposite trends are

present: those who have low efficacy apparently do have less

knowledge, are more fearful of close contacts, and are less

formulated in their intentions. The fact that some fear factors

predicted intentions negatively (i.e., with negative betas) is

another aspect of this picture. Those who expressed stronger

fears were the ones who expressed weaker intentions, and vice

versa. The fact that the different fear factors predicted

differently indicates that fear should be considered as a

multi-dimensional construct. Some types of fear (e.g., fear of

close personal contact with exposed others) may be critical in

relation to specific intentions; other types of fear (e.g.,

distant fear) may have little influence on intentions. Future

research should elaborate and discriminate different 'types' or

levels of fear of AIDS as motivational predictors or instigators

of AIDS-preventive behaviors.

While self-esteem was not a significant predictor to

intentions, simple correlations between this variable and both

general and specific intentions were respectable (.49 and .44,

for general and specific intentions, respectively). Also,

self-esteem was negatively correlated (-.41 and -.41,
respectively) with measures of personal vulnerability or
perceived threat. Further, there is some support to suggest that
self-esteem may be derived from and/or may contribute to a sense
of control. The correlation of self-esteem with our specific
efficacy measure was .49. Also, self-esteem was moderately
correlated (.45) with general locus of control (internality).
Taken together, these findings seem to suggest some merit in
considering self-esteem as a potentially important factor in
perceived causality.

Finally, although our goal was not to test any specific
theoretical model, we included components of several major models
of behavior prediction: the Theory of Reasoned Action and its
extension, the Theory of Planned Behavior, and the Health Belief
Model. Because neither our measures nor our analyses
specifically parallel those used in major tests of these models,
it is not appropriate to suggest support for or rejection of
them. We do observe that, as far as general intention is
concerned, an efficacy component, comparable to that represented
in both the extended Reasoned Action Model and of the Health
Belief Model, was the best predictor. On the other hand, in
predicting specific intentions, normative and belief components
comparable to the basic elements of the Theory of Reasoned Action
and to the motivational component of the Health Belief Model were
the best predictors. Such findings suggest the need to explore

further the differential impact of elements of such models on

general and specific intentions.

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Table 1. Loadings of the fea. of AIDS items on Varimax rotated factors (all items were re-scaled such that larger numbers show greater fear).

Item	I	II	III	h^2
Would not want to be a nurse or doctor who treats AIDS	92	.14	.07	.88
Willing to work in a hospital ward treating AIDS patients	.90	.17	.11	.85
Would not want to visit Central Africa due to risk of AIDS	.80	-.24	-.16	.72
If weren't for homosexuals, AIDS would not be a problem today	.71	.23	-.19	.59
Willing to work in hospice where AIDS patients come to die	.62	.31	.50	.73
Quarantine anyone who has a positive AIDS test	-.08	.86	.12	.76
No mouth-to-mouth resuscitation of an injured AIDS person	.08	.83	-.11	.70
Children with AIDS should be kept out of public schools	.15	.78	.09	.64
Will terminate friendship if friend tells me s/he is Gay	.24	.66	.24	.56
AIDS test required before criminals released from prison	-.10	.12	.87	.78
AIDS test should be required before marriage license	.00	.03	.84	.71
Eigenvalue	3.88	2.42	1.61	
Percent Variance explained	35.3	22.0	14.6	

Table 2. Zero-order correlation between variables:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. General intent																			
2. Specific intent	.66																		
3. Fear factor 1	.08	.00																	
4. Fear factor 2	-.54	-.34	.01																
5. Fear factor 3	-.14	-.21	.02	-.01															
6. Self-esteem	.49	.44	.10	-.26	-.33														
7. Locus of control	.49	.42	.28	-.41	-.16	.45													
8. Knowlege	.60	.56	.21	-.39	-.32	.41	.53												
9. Own chance	-.52	-.51	-.27	.34	.18	-.41	-.50	-.60											
10 Own risk	-.59	-.46	-.21	.34	.19	-.41	-.47	-.56	.69										
11.Other's risk[a]	.33	.33	.07	-.23	-.23	.27	.30	.36	-.28	-.25									
12.College threat	-.34	-.41	-.20	.23	.15	-.24	-.32	-.34	.47	.39	-.21								
13.Efficacy	.70	.44	.08	-.32	-.14	.49	.32	.35	-.50	-.60	-.25	.18							
14.Past reaction	.68	.67	.24	-.47	-.11	.37	.51	.57	-.54	-.49	-.41	.43	.41						
15.Sex[b]	.05	.10	-.17	.06	-.14	-.14	.16	.03	.01	-.09	.10	-.07	.02	.07					
16.AIDS contagious	-.11	-.04	.27	.12	-.08	.10	.05	-.12	.07	.15	.01	-.07	-.23	.02	.05				
17.Number partners	-.10	-.21	.18	.19	.01	-.01	-.11	-.02	.09	.07	.15	.03	-.05	-.16	-.26	-.11			
18.Belief index	.61	.65	.15	-.58	-.28	.45	.53	.65	-.69	-.61	-.40	.35	.73	.70	.04	-.07	-.16		
19.Condom Knowlege	.02	.96	-.17	-.10	.04	.00	.08	.02	-.15	-.06	-.11	-.19	.10	-.02	-.11	-.17	-.06	.05	
20.Normative percep	.30	.37	-.16	-.31	.01	.12	.23	.11	-.10	-.16	-.16	.04	.20	.31	.10	-.06	-.09	.30	.18

* All correlations > .15 are significant at p<.05.
a Chance of a college student like self getting AIDS if having sex with someone carrying AIDS, but using a condom properly.
b Dummy coded, 0=male, 1=female.

Table 3. Regression results predicting the general intnetion
from 15 general predictors (arranged in 6 pre-planned
blocks for procedure 1).

Step # Predictor	Procedure 1: pre-planned Blocks		Backward/ Forward[a]
	Step R^2	Final Beta	Final Beta
1 Knowledge	0.36	0.20*	0.20*
2 Efficacy	0.63	0.45*	0.45*
3 Locus of control	0.65	0.04	-
4 Fear factor 2	0.69	-0.17*	-0.18*
5 Past reaction	0.72	0.27*	0.28*
Final R^2	0.72		0.72

* $p < .01$
a the two procedures lead to the same final model.

Table 4. Regression results predicting intnetion to use condoms
from 18 general and condom-specific predictors (arranged
in 7 pre-planned blocks for procedure 1).

Step		Procedure 1 pre-planned Blocks		Backward/ Forward[a]
#	Predictor	Step R^2	Final Beta	Final Beta
1	Belief measure	0.40	0.22+	0.31*
2	Knowledge	0.42	0.13	-
3	Efficacy	0.45	0.11	-
4	Normative percept.	0.48	0.16+	-
5	Chance on campus	0.51	-0.12	-0.15+
6	Past reaction	0.53	0.27*	0.41*
	Fear factor 1	-	-	-0.17+
Final R^2		0.53		0.52

* p<.01
+ p<.03
a the two procedures lead to the same final model.

END

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