

SELECTIVE EXPOSURE TO HEALTH PROMOTION INTERVENTIONS:  
AN UNOBTRUSIVE OBSERVATION OF PARTICIPATION IN HIV PREVENTION  
PROGRAMS

By

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To Mom and Dad

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Abstract of Thesis Presented to the Graduate School  
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Little research has systematically addressed the factors that influence participation in behavioral-change programs. A field experiment with a community sample from Alachua County (Florida) addressed this issue by investigating the relation of motivation and behavioral skills with selective exposure to the intervention. Participation was unobtrusively recorded with respect to reading brochures, watching a video, and participating in a counseling session. Results indicated that participants with high motivation and behavioral skills preferred the counseling session, but participants with low motivation and behavioral skills were more likely to read the brochures. In addition, differences in the relations of motivation and behavioral skills with exposure to the program components were mediated by differences in expectations about the content of each strategy.

## CHAPTER 1 INTRODUCTION

### **Introduction**

Little systematic research has investigated strategies that increase participation and retention in health promotion programs. This deficiency is striking because as a whole, structured, standardized intervention programs tested in research trials are poor predictors of success in a community-wide effort (Lauby, Kotranski, Feighan, & Collier, 1996; Stanton & Shadish, 1997). Once programs are offered to the community, without the rewards of the program as tested in the trial (e.g., payment in exchange for participation), target audiences may or may not participate in them.

A fruitful model to study participation in behavior change programs is to examine selective exposure as a function of motivation and behavioral skills. The term *selective exposure* originated with Festinger's (1957) dissonance theory. This theory postulates that people prefer information that supports their decisions, not just before or during the decision-making process, but more importantly, after people have already made a decision (Festinger, 1957). As a consequence, people are more likely to read information that is congruent with their current evaluations rather than incongruent with their current evaluations (Frey, 1986; Sears & Freedman, 1965). There are situations, however, in which participants may show no preference for consonant or dissonant information, or may even prefer dissonant information. For example, people may prefer information that counters their attitude if the information is perceived as easily refutable (Brock, 1965; Festinger, 1964; Lowin, 1967), useful for future decisions (Festinger, 1964), or just strong and/or personally relevant (Festinger, 1964).

Unfortunately, in health domains, findings are disparate. In some cases, there is a positive linear relation between prior behavioral skills and exposure to materials (Brock & Balloun, 1967;

Canon & Matthews, 1972). In other cases there is no relation (Bertrand, 1977). Still in others, there are no differences in acceptance rates, but are differences in post-acceptance attention to the message (Feather, 1962). In addition, although attitudes serve as an important predictor of exposure decisions in the experimental literature, in health domains, other factors may relevant to examine.

This paper provides a detailed examination of motivation and behavioral skills as predictors of selective exposure to HIV prevention programs. Specifically, we examined the roles of attitudes and beliefs about condom use, intentions to use condoms in the future, perceived behavioral control over condom use, condom use negotiation skills with potential sexual partners, and prior condom use. These variables were linked to number and intensity of exposure to (readings of) brochures about HIV and condom use, whether participants accepted to watch a video about HIV prevention, how intently they watched if they accepted, and whether participants accepted to partake in an HIV-risk-reduction counseling session. We examined various shapes of the influence of motivation and behavioral skills on exposure decisions, including direct and reverse linear relations and curvilinear and moderated patterns. We also examined these relations as a function of the specific intervention component. In addition, we conducted mediation analyses to identify how participants' perceptions of the materials and programs affected exposure decisions, and if differences in these perceptions guided participation. To our knowledge, this study provides the most comprehensive analysis of exposure decisions in health domains available

### **Limitations of Prior Research on Selective Exposure for Understanding Behavioral Change Decisions**

Most research done in the domain of selective exposure to information has dealt with the relation between prior attitudes about a topic and the discrepancy between preferences for

consonant versus dissonant information. For instance, researchers have assessed political beliefs or opinions and given participants the choice of which essay to read on a given topic (Freedman, 1965; Freedman & Sears, 1965; Sears & Freeman, 1965). Other times, researchers have offered a variety of different articles and asked participants to rank the order in which they wish to view them (Brock, 1965; Feather, 1962, 1963). Much of this research suggested that prior attitudes predict exposure to opinion-based materials (for a review see Frey, 1986; but see also Freedman & Sears, 1965), which are often attempts at persuading the recipient to change his/her attitude or belief.

When the focus is on changing risky *behavior*, the picture is murkier. Take the case of health behavior change. In this domain, there are six research studies examining exposure to messages about health risks (e.g., risks of cancer and hypertension) as a function of past behavior (e.g., smoking). However, none of these addressed participation in behavioral change programs. Perhaps more importantly, even with a relatively small set of studies, the findings in health domains provided no clear consensus. On the one hand, smokers showed a distinct preference for consonant information (e.g., articles that refute the smoking-cancer link) over dissonant information (e.g., articles that support the smoking-cancer link) (Brock & Balloun, 1967; Canon & Matthews, 1972). On the other hand, smokers were no less likely than nonsmokers to watch a video depicting the negative effects of smoking (Bertrand, 1977). Still other studies indicated no difference in acceptance rates between smokers and non-smokers, but showed greater post-acceptance attention to the message for smokers than non-smokers (Feather, 1962). In addition, attitudes were not used as potential predictors in any study. All in all, no clear relation between prior health behavior and selective exposure to risk-relevant materials has been established.

The present study examined the influence of both past motivation and past behavioral skills on selective exposure to fully developed behavioral change programs. Following Fisher and Fisher (1992), motivation included attitudes and beliefs about condom use, and intentions to use condoms in the future. Behavioral skills included perceptions of control over using condoms, condom use negotiation skills, and prior experience using condoms. Behavioral-change programs have modules that inform, motivate, and train recipients (Fisher & Fisher, 1992). For example, these programs provide information about HIV transmission and prevention or highlight the audiences' personal risk for contracting HIV. They also have modules designed to increase behavioral skills (Fisher & Fisher, 1992). For example, participants are trained to use condoms or negotiate condom use with a partner.

We also wanted to avoid the artificial conditions of lab studies, which make it obvious that researchers are interested in people's exposure decisions. Thus, the measures of motivation and behavioral skills were obtained as part of a survey on various health behaviors conducted at a state-run health department with participants recruited from various community settings. Exposure decisions were recorded unobtrusively while participants waited to finish the study. Thus, participants were interviewed in a place that often offers the option to read HIV-prevention brochures, watch an HIV-prevention video, or participate in a HIV risk-reduction counseling session. In this way, exposure decisions should more closely approximate decisions in natural conditions.

### **Shape of Relation between Predictors of Selective Exposure and Selective Exposure**

Unfortunately, not every person with a health risk attends a preventive intervention program. Instead, some people may be more likely than others to participate in these programs (Kalichman, Carey, & Johnson, 1996). Take, for instance, potential participants who have inadequate motivation or insufficient behavioral skills. For example, if potential participants do

not want to use condoms, a blunt offer to read relevant brochures, watch a prevention video, or participate in a multi-session counseling program is likely to elicit reactance instead of participation (Brehm, 1972; Festinger, 1957, 1964). In the same vein, a potential participant may not feel able to use condoms due to low self-efficacy or poor negotiation skills (Bandura, 1997). If this potential participant feels that the intervention is not useful for her case, she is also unlikely to participate in a risk-reduction program. Thus, based on this logic, as seen in Panel A of Figure 1, there may be a *positive linear relation* between motivation and behavioral skills and selective exposure to prevention materials and programs. That is, participants with low motivation and behavioral skills may be less likely to take part in preventive programs than participants with high motivation and behavioral skills.

Alternatively, potential participants who have low motivation and behavioral skills may be the intervention seekers (Becker, 1974; Rogers, 1975). If a potential participant has high motivation and behavioral skills, she may feel that participating is useless. After all, she is already engaging in the targeted behavior and thus cannot gain anything new from participating. As a result, although the offer of a prevention program is unlikely to induce reactance (as in the case above), this potential participant may not participate either if she feels that the program has nothing new to offer her. Perhaps, then, as seen in Panel B of Figure 1, there may be a *negative linear relation* between motivation and behavioral skills and selective exposure to prevention materials and programs.

There may also be a *curvilinear relation* linking prior motivation and behavioral skills to exposure to interventions (Frey, 1986; Rhine, 1967) (see Figure 1: Panel C). On the one hand, potential participants with low motivation and behavioral skills may perceive the intervention as a threat to their personal decisions or a challenge they cannot overcome. On the other hand,

people with high motivation and behavioral skills may see the same prevention program as irrelevant or useless for them. Therefore, preventive interventions may be most attractive for people who have moderate motivation and behavioral skills. For these potential participants, the intervention is not introducing discordant information. In addition, these individuals have something to gain from participating because the intervention may teach them new skills or motivate them to use condoms even more frequently and consistently in the future. Therefore, these potential participants may be the most likely to start a prevention program.

Finally, as seen in Panel D of Figure 1, the relation between motivation and behavioral skills and selective exposure may be *moderated* by several variables. First, factors such as education level may alter the relation between motivation and behavioral skills and exposure. For instance, when condom use is low, people with high education may seek corrective interventions, whereas people with low education may avoid them. Second, discrepancies between motivation and behaviors may facilitate exposure to prevention programs. For instance, participants who neither do nor want to use condoms in the future may be unlikely to view materials or participate in counseling. In contrast, participants who currently do not but want to use condoms may be more likely to partake in these programs to carry out their intentions. As another example, participants who both do and want to use condoms may find the video or counseling session useless. After all, they are already successful at carrying out their motivations.

### **Exposure to Different Program Components and Potential Mediators**

Another interesting possibility is that perceived differences in the content of various preventive materials and programs may influence exposure decisions. For instance, meta-analytic data suggest that some prevention programs are more effective than others at changing risk behavior (Albarracín et al., 2005; Durantini et al., 2006). For instance, interventions that include an active component are better able to facilitate condom use than programs that passively

provide information, or include attempts to scare participants (Albarracín et al., 2005; Earl & Albarracín, in press). However, these earlier reports did not consider differences across communication modality, even when these differences can be relevant to exposure decisions. For instance, low versus high condom users may prefer different communication modalities based on differences in the expected content of these program components.

To examine differences in content across communication modality, we first re-analyzed Albarracín and colleagues' (2005) meta-analytic dataset to test for differences in the content of brochures, videos, and face-to-face counseling sessions. The results of these analyses indicate that there were differences across communication modality. For instance, brochures contained significantly more informational arguments than control groups. However, videos frequently contained both more informational and motivational arguments relative to control groups. Finally, face to face counseling programs contained more of all strategies relative to control groups. Generally then, brochures are primarily informational, videos are both informational and motivational, and face to face counseling programs have all three components.

These objective differences in the intensity of communication modalities may not influence participants' decisions, however, unless they are also aware of these differences. To verify these differences, we collected supplemental data from an independent sample of community participants in Alachua County (FL). These participants reported their perceptions about the content of brochures, videos, and counseling sessions. These data indicated that community participants in Alachua County (FL) thought that counseling was the most intense and effective prevention method, followed by videos, and last brochures. These differences support the afore-mentioned meta-analytic results, and suggest that people are aware of systematic content differences across communication modality.

One may predict, then, that participants should prefer the counseling session over other strategies because the counseling session is the most effective. However, people often approach weak counter-attitudinal information because this information is less threatening than the strong (Festinger, 1964). Perhaps then, when one does not want to change what one is currently doing, one may prefer the less effective change strategy (i.e., brochures). If this is the case, one may report that the counseling is personally threatening, and this perception may mediate the preference for brochures. Furthermore, people should approach strong pro-attitudinal information more than weak pro-attitudinal information. If one wants to change one's behavior, one may prefer the most effective strategy (i.e., counseling) over less effective strategies (i.e., brochures). To this end, one should also report that the counseling is more useful or necessary than the brochures.

Contrarily to the self-defense hypothesis, participants with high (versus low) motivation and behavioral skills may prefer different materials because they have different needs. On the one hand, participants with low motivation or behavior need information to initiate a new behavior (Prochaska & Diclemente, 1983). As a result, these participants may prefer the information-based material (i.e., brochures) because they see it as more useful for them. On the other hand, high condom users may need skills to reinforce their behavior (Prochaska & Diclemente, 1983). Thus, participants with high motivation or behavioral skills may see motivational and behavioral skills components (i.e., counseling) as more useful for them.

To test these potential relations, we measured HIV-relevant motivation and behavioral skills in the context of a "Health Behavior Survey." During an ostensible break in the study, participants had the opportunity to read six HIV-relevant brochures, watch a HIV-relevant video, and participate in an HIV-risk reduction counseling session. Then, to test the hypotheses in

Figure 1–1, we analyzed motivation and behavioral skills in relation to exposure to a health promotion program, as well as exposure to individual program components. In this way, we were able to examine the potential relations between motivation and behavioral skills and exposure to health promotion materials and programs. In addition, we also examined perceptions of the materials as potential mediators of exposure.

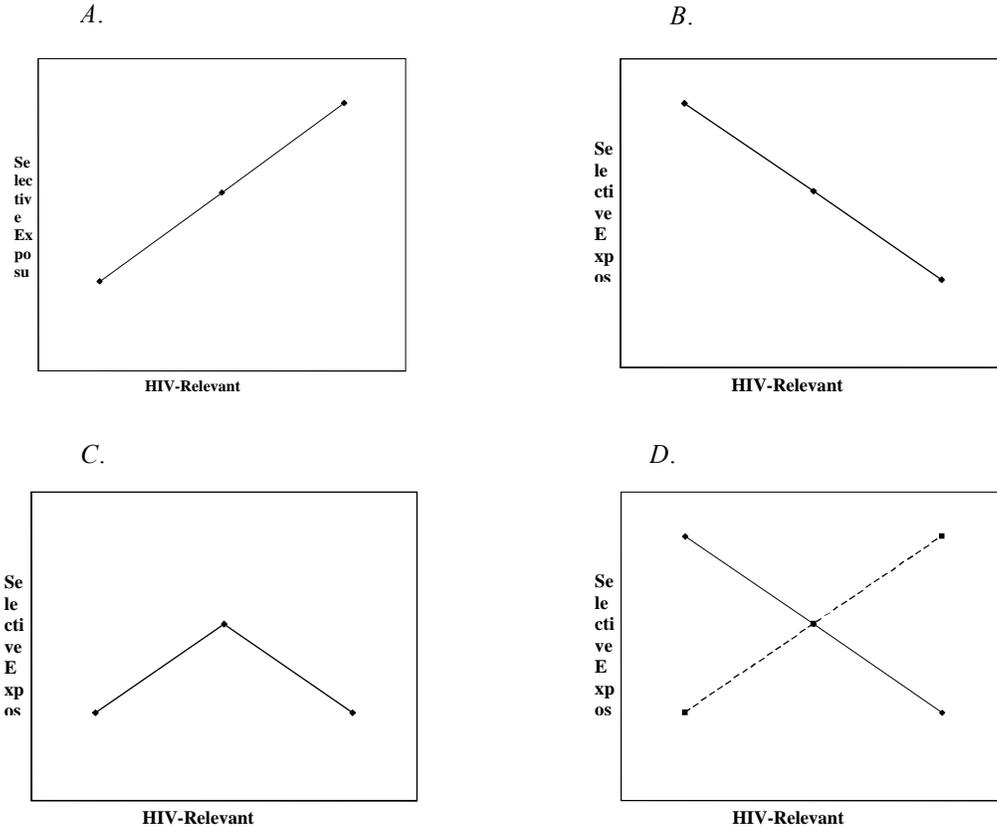


Figure 1–1. Models of the association between motivational and behavior factors and selective exposure to materials and programs. A) Direct Linear Relation. B) Reverse Linear Relation. C) Inverted-U Relation. D) Moderated Linear Relation

## CHAPTER 2 MATERIALS AND METHODS

### **Overview and Design**

Participants were 350 community members recruited through flyers or direct referrals from community organizations and professionals from the local health department. Referral was made to what was described as a “health survey” and participants who called were asked various questions about health, including sexual activity. Only participants who were sexually active in the last six months and not currently pregnant were considered eligible and scheduled to come in for an interview at a subsequent time. At the time of this interview, after signing the informed consent, the participant responded to a questionnaire administered by a member of the research team. Critical to the research problem of interest in this paper, halfway through the interview, the interviewer paused the administration, announcing a 30-minute break. At that point, a confederate entered the room pretending to do work unrelated to the interview, and unobtrusively observed the participant’s exposure behavior. Specifically, participants had the opportunity to (a) read six HIV-prevention brochures, (b) watch a video on HIV-prevention, and (c) participate in a brief HIV-risk-reduction counseling session. Thus, the behavior of the participant could be recorded with respect to the brochures, the video, and the counseling. Following this ostensible break, the interviewer returned and administered measures of retention as well as measures of attitudes, beliefs, intentions, perceived behavioral control, and negotiation skills. On completion of the interview, participants were fully and carefully debriefed, discussing in particular the true purpose of the study as studying condom use and selective exposure, as well as the role of the confederate.

## **Participants**

Participants were 350 community members (260 females and 90 males) who were paid U\$5 for the eligibility screening and U\$40 for participation in the main study if eligible. Non-eligible participants were paid a total of U\$5, and completers were paid a total of U\$45.

## **Research Team**

The staff of the study were an interviewer and a confederate/counselor. The interviewer administered the questionnaire and offered the materials to the participant. The confederate/counselor served as an observer of the participant's behavior in relation to preventive brochures, a video, and a counseling program, and also facilitated the HIV risk-reduction counseling session if the participant accepted.

## **Procedure**

### **Recruitment**

Patients were either recruited by viewing a flyer that advertised the study placed extensively in the community and the Health Department or through a personal referral from a member of the community. Participants were not actively recruited by the study staff. In addition, to prevent contamination and reduce self-selection, the flyer advertised the study as a "general health study" with no mention of HIV or condom use. Participants then called the telephone number provided to them to make an appointment, at which time they were screened for eligibility (ages 18 to 50, sexually active, and not currently pregnant or trying to get pregnant). Participants had to be sexually active to give accurate answers regarding condom use and not just hypothetical answers, and could not be pregnant because pregnancy affects the decision to use condoms.

## **Unobtrusive observation**

This study utilizes unobtrusive observation to measure exposure behavior. This approach has several distinct advantages. First, unobtrusive observation allows us to examine exposure to materials and programs while minimizing the effects of social desirability on the choice to accept these offers (Webb, Campbell, Schwartz, & Sechrest, 1966). Second, unobtrusive observation allows us to have an accurate, objective measure of exposure free of motivational biases in reporting (Webb, et al., 1966). Third, unobtrusive observation allows us to estimate the reliability of exposure measures across participant and confederate reports (Webb, et al., 1966).

## **Interview protocol**

When participants arrived for their interview, they checked in at the front desk of the Alachua County Health Department and waited to be seen. When the interviewer was ready, the participant was taken to the interview room where s/he was re-screened for eligibility. If the participant was still eligible, the interview began. The first part of the interview consisted of general health questions such as, “Do you feel tightness in your chest? YES/NO,” and “On average, how many cigarettes do you smoke per day?” The next section of the questionnaire addressed the decisions to use or not use condoms with a main sexual partner and included frequencies of past sexual activity and condom use, attitudes and beliefs about condom use, intentions to use condoms in the future, perceived behavioral control over using condoms, and condom use negotiation skills with potential sexual partners. Subsequently, participants’ general HIV knowledge was assessed with true/false questions such as “Some drugs have been made for curing AIDS” and “Using Vaseline or baby oil with condoms lowers the risk of getting HIV,” followed by a section assessing behaviors, attitudes, intentions, beliefs, perceived behavioral control, and negotiation skills with occasional sexual partners.

After thirty minutes elapsed, and while the first part of the interview was being completed, the counselor knocked on the door of the interview room and requested to use the space to do some work. The interviewer responded that they were in the middle of the interview but would call when at the break. Subsequently, when the first half of the questionnaire was completed, the interviewer excused her/himself from the interview claiming that s/he had to enter the participant's data before finishing the interview, and then called the counselor and told her/him that it was ok to come back to the room.

After the counselor entered the room, the interviewer exited under the guise of data entry. While the counselor was in the room, the participant had ten minutes to peruse the six brochures sitting on the table. These six brochures were prescreened and selected from a larger sample with health care professionals and a sample of Alachua County Health Department patients to assess attractiveness and educational quality. After ten minutes elapsed, the interviewer knocked on the door, apologized for a delay in the data entry and offered the participant a ten-minute video about HIV. The client could either accept or decline to play the video. Next, the interviewer returned and offered the participant the option of participating in a HIV risk-reduction counseling session. If the participant previously accepted the video, the interviewer waited 10 minutes before returning to offer the counseling. In contrast, if the participant declined to watch the video, the interviewer would only wait 5 minutes before returning to the room and offering the counseling to the participant. After the interviewer offered the counseling, if the participant accepted, the counselor was asked to counsel the participant. If the participant declined, however, the interviewer exited the room and returned 5 minutes later to administer the posttest questionnaire.

The posttest questionnaire first assessed participants' self-reports of viewed materials, including how many brochures they viewed, if they watched the video and if they accepted the counseling. In addition, participants were guided in their recognition of information from the brochures and video by the interviewer, who asked ten questions from each brochure they read, as well as ten more questions from the video if they accepted to watch it.<sup>1</sup> Next, participants completed the same measures administered during the pretest for both main and occasional sexual partners except condom use to assess any change that may have resulted from the materials presented.

### **Motivation and Behavioral Skills Measures**

The questionnaire measured motivation and behavioral skills to examine the potential of using these measures as predictors of selective exposure to HIV-prevention materials and programs. The questionnaire assessed many demographic and behavioral variables, including age, race, sex, education level, and measures of overall general health. Specific to HIV and condom use, the questionnaire assessed attitudes, beliefs, intentions, perceived behavioral control, negotiation skills, and prior condom use.

#### **Motivation**

Motivational factors included attitudes and beliefs about condom use, and intentions to use condoms in the future. All measures were converted to z-scores to compare responses for some analyses ( $\alpha = .88$ ).

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<sup>1</sup> Because the content of the counseling sessions varied across individuals based on the problems addressed, we could not have standardized recall questions for the counseling session.

## **Attitudes**

Attitudes toward condom use with both main and occasional partners were measured with semantic-differential scales (e.g., “If you were to use a condom every time you have vaginal sex with your main partner in the next six months would it be very unpleasant or very pleasant?”; “If you were to use a condom every time you have vaginal sex with your occasional partner(s) in the next six months would it be very bad or very good?”). An overall measure of attitudes toward condom use was calculated by summing all attitude measures ( $\alpha = .91$ ).

## **Beliefs**

Beliefs about condom use with both main and occasional partners were measured by having participants state whether they strongly disagreed, disagreed, were unsure, agreed, or strongly agreed with each of a series of statements (e.g., “If you were to use a condom every time you had sex with your main partner it would protect you from HIV”; “If you were to use a condom every time you had sex with your occasional partner(s) it would break the mood [reverse scored]”). An overall measure of beliefs about condom use was calculated by converting the scores so they ranged from negative to positive beliefs about condom use and summing the responses across all beliefs ( $\alpha = .73$ ).

## **Intentions**

A measure of intentions assessed the intent or willingness to use condoms with both main and occasional partners both the next time participants had sex as well as in the next six months (e.g., “How strong are your intentions to use condoms with your main partner in the next six months”). An overall measure of intentions was calculated by summing the responses across both main and occasional partners ( $\alpha = .66$ ).

## **Behavioral Skills**

Measures of behavioral skills included perceptions of control over condom use, skills for negotiating condom use with a partner and prior experience using condoms. All measures were converted to z-scores to standardize responses ( $\alpha = .89$ ).

### **Perceptions of control**

Perceptions of control over condom use were measured by having participants rate how sure they were that they could or could not use condoms in a given situation with both main and occasional partners (e.g., “How sure are you that you could use a condom every time you have vaginal sex with you main partner when you have been drinking or doing drugs?”; “How sure are you that you could use a condom every time you have vaginal sex with you occasional partner(s) when you have to interrupt or delay sex to purchase condoms?”). An overall measure of perceived behavioral control was computed by summing the responses across items ( $\alpha = .90$ ).

### **Negotiation skills**

Negotiation skills with both main and occasional partner were measured by having participants describe strategies they would use, both verbally and nonverbally, to convince their sexual partners to first use, and then not use, condoms (e.g., “Assume you wanted to use a condom with your main partner, but you’re not sure how s/he will react. How would you convince him/her to go along with your plan? What would s/he say in response? If that strategy didn’t work, what else might you use?”; “Assume you wanted to avoid using a condom with your occasional partner, but you’re not sure how s/he will react. How would you convince him/her to go along with your plan? What would s/he say in response? If that strategy didn’t work, what else might you use?”). An overall measure of negotiation skills was computed by coding responses across measures by coding each response on a 5-point scale to assess viability of the strategy. A summary score was then calculated by subtracting the number of strategies that

typically prevent condom use from the number of strategies that typically facilitate condom use ( $\alpha = .67$ ; inter-rater reliability  $r(350) = .90, p < .01$ ).

### **Past behavior**

Condom use measures included reports of the percentage and number of times participants use condoms over a period of time. Participants were asked to report the frequency of sexual intercourse over the previous month, three months, and six months, as well as the number of occasions of sexual intercourse for which condoms were used with both main and occasional partners. An overall percentage of condom use, and well as percentages of condom use with each type of partner (main versus occasional) was then derived from this information ( $\alpha = .90$ ).

### **Exposure Measures**

The dependent measures in the study were exposure to materials and retention of new information. For measures of exposure, reports from both the participant and the confederate were recorded to ensure reliability for these behaviors. Selective exposure was measured not only by the quantity of information selected, including number of brochures read and whether the participant accepted or declined the video or counseling, but quality as well, including how intently the participant read each brochure (if the participant ignored the brochure, looked at, picked up, opened, read, commented on, or took the brochure with them), and how attentively the participant watched the video (if the participant ignored, looked at briefly, watched more than once, paid careful attention, commented on, or asked to watch another video). Immediately after the interviewer returned, the posttest questionnaire assessed the measures of recognition discussed above. Reliability between participant and confederate reports of exposure was high, ranging from  $r(350) = .78, p < .01$  to  $r(350) = 1.00, p < .01$ . We calculated a composite index of exposure to each material by converting each individual measure of exposure to a standardized z-

score and summing across measures (for brochures:  $\alpha = .95$ ; for video:  $\alpha = .97$ ; for counseling  $\alpha = 1.00$ ).

### **Potential Mediators**

To measure potential mediators, we asked participants to report what they were thinking right at the time of deciding whether or not to read the brochures, watch the video, or participate in the counseling session. Specifically, we asked participants if they thought that each of the materials would (a) make it easier for them to use condoms, (b) be necessary for them, (c) not make them change their point of view, (d) force them to do things they did not like, (e) challenge their beliefs, (f) make them feel scared, or (g) make them worry about HIV and STDs. Participants responded on a four-point scale indicating their agreement or disagreement with each perception (i.e., *not at all*, *a little*, *quite a bit*, or *a lot*). We then combined these measures into three indexes of perceptions of the materials. First, perceptions of the materials related to utility included agreement with the statements that participation “would make it easier for me to use condoms” and “is necessary for me” ( $\alpha = .81$ ). Second, perceptions of the materials related to self-defense included agreement with the statements that participation “would not make me change my point of view [reverse scored],” “force me to do things I do not like,” and “would challenge my beliefs” ( $\alpha = .74$ ). Finally, perceptions of the materials related to perceived threat include agreement with the statements that participation “would make me feel scared” and “would make me worry about HIV and STD” ( $\alpha = .58$ ).

## CHAPTER 3 RESULTS

### **Description of Sample**

Participants were 350 community members living in Alachua County (FL). Sixty-five percent of the participants were recruited through flyers advertising the study and the remaining 35% of participants were recruited by direct referral. Seventy-four percent were female, *M* age was 32.12, and the sample was ethnically diverse (65% African-American, 28% European-American, 3% Latino-American, 2% American Indian, 1% Asian-American, 1% Other). Seventy-five percent of the participants graduated from high school, with *M* = 12.63 years of school completed. In terms of risky behavior, 41% of participants had not used condoms at all in the previous six months, and only 20% had used condoms every time they had sex in the previous six months. In addition, 12% reported having been diagnosed with a sexually transmitted infection in the previous year.

### **Demographic Factors and Selective Exposure to Materials and Programs**

We first checked to see if participants' demographic characteristics influenced exposure to materials and programs. We examined the effects of level of education, level of income, ethnicity, gender, and age on exposure to the dependent variables of interest. No demographic variables systematically predicted exposure to either the brochures or the counseling session. However, four demographic variables predicted exposure to the video. First, level of education was negatively related to exposure to the video, such that participants with lower levels of education were more likely to watch the video ( $r = -.18, p < .01$ ). Second, level of income was also negatively related to exposure to the video, such that participants with lower levels of income were also more likely to watch it ( $r = -.12, p < .04$ ). Third, African-Americans were more likely than people from other ethnic groups to watch the video (for African-Americans: *M*

= .15,  $SD = .82$ ; for all other ethnicities:  $M = -.30$ ,  $SD = 1.18$ ;  $F(1, 337) = 16.57$ ,  $p < .01$ ).

Finally, women were more likely than men to watch the video (for Women:  $M = .07$ ,  $SD = .90$ ; for Men:  $M = -.26$ ,  $SD = 1.16$ ;  $F(1, 341) = 7.53$ ,  $p < .01$ ).

### **Test of Hypotheses**

#### **Effects on Exposure to Materials and Programs**

Overall, participants preferred some materials over others. For instance, 83% of participants accepted the video, compared to 68% who read at least one brochure and 28% who accepted the counseling.

The next step was to see if prior motivation (i.e., attitudes and beliefs about condom use, and intentions to use condoms in the future) or behavioral skills (i.e., perceived behavioral control over using condoms, condom use negotiation skills, and prior condom use) predicted exposure. To test this hypothesis, we regressed motivation and behavioral skills on our dependent measures of exposure. We performed linear and quadratic regressions, as well as regression analyses examining moderation. To check for nonlinearity, a first set of the regressions included a linear term as well as a quadratic term. For moderation, we entered each motivation or behavioral skills variable as well as a moderator (e.g., level of education, level of income, ethnicity, gender, or age) and the interaction between the two.

The analyses showed no effects on exposure to brochures and no curvilinear or moderated effects for any of the three exposure measures. However, there were several important linear effects, which appear in Table 1. Consistent with the positive linear prediction (see Figure 1: Panel A), there was a positive linear relation for both motivation and behavioral skills and exposure to the counseling session (for motivation:  $\beta = .16$ ,  $p < .01$ ; for behavioral skills:  $\beta = 0.13$ ,  $p < .05$ ) (see Table 1). Also, there was a positive linear relation between motivation and overall exposure ( $\beta = .16$ ,  $p < .01$ ).

In addition, we found support for the prediction that participants with low versus high motivation and behavioral skills prefer different materials. Specifically, comparing the slopes of the relations of motivation and behavioral skills with exposure indicated that participants with low motivation and behavioral skills were more likely to read brochures than participate in a counseling session. Contrarily, participants with high motivation and behavioral skills were more likely to participate in a counseling session than read brochures (comparing brochures and counseling: for motivation  $z(350) = 2.07, p < .01$ ; for behavioral skills  $z(350) = 3.91, p < .01$ ). These differences are noted in Table 1 by use of different subscripts indicating significantly different slopes.

### **Mediation Analyses**

Next, we wanted to see if differences in any perceptions of the materials such as utility or perceived threat were responsible for the differential relations between motivation and behavioral skills and exposure to materials the program components. To test these possibilities, we first calculated an exposure difference measure by subtracting exposure to the brochures from exposure to the counseling. We also calculated perceptions difference measures by subtracting perceptions about the brochures from perceptions about the counseling. In addition, given the similarity of the patterns for motivation and behavioral skills, we averaged the two indexes. We then regressed the differences in exposure measure on the differences in perceptions measure. These coefficients appear in Table 2 and must all be significant for mediation to be possible.

Importantly, the differences in the perceptions of the counseling versus brochures related to utility (“would make it easy for me to use condoms,” and “necessary for me”) emerged as a mediator of the difference in exposure measure (see Table 2). That is, participants with low motivation and behavioral skills saw the brochures as better able to facilitate condom use for them and more necessary for them. Consequently, they were more likely to read brochures than

participate in a counseling session. Contrarily, participants with high motivation and behavioral skills saw the counseling as better able to facilitate condom use for them and more necessary for them. Consequently, they were more likely to participate in the counseling session than read brochures. Finally, the mediators related to self-defense (“would not make me change my point of view [reverse scored],” “would force me to do something I do not like,” “would challenge my beliefs”) and perceived threat (“would make me feel scared,” and “would make me worry about HIV or STDs”) did not mediate the relation of motivation and behavioral skills with differential exposure to the counseling and the brochures.

Table 3-1. Regression Analyses with HIV-relevant Factors as Predictors of Exposure to HIV-Prevention Materials and Programs

	Brochure	Video	Counseling	All Materials
Motivation index	.05 <sub>a</sub>	.09 <sub>ab</sub>	.16** <sub>b</sub>	.16** <sub>b</sub>
Attitudes	.08 <sub>a</sub>	.14* <sub>ab</sub>	.21** <sub>b</sub>	.22** <sub>b</sub>
Beliefs	.04 <sub>a</sub>	.12* <sub>ab</sub>	.14* <sub>ab</sub>	.16** <sub>b</sub>
Intentions	.04 <sub>a</sub>	.04 <sub>a</sub>	.13* <sub>a</sub>	.10† <sub>a</sub>
Behavioral skills index	-.04 <sub>a</sub>	.04 <sub>ab</sub>	.13* <sub>c</sub>	.09 <sub>bc</sub>
Perceived behavioral control	-.05 <sub>a</sub>	.03 <sub>ab</sub>	.12* <sub>b</sub>	.05 <sub>ab</sub>
Behavioral skills	.02 <sub>a</sub>	.04 <sub>a</sub>	.15** <sub>b</sub>	.11* <sub>ab</sub>
Condom use	-.07 <sub>a</sub>	-.01 <sub>a</sub>	.13* <sub>b</sub>	.02 <sub>a</sub>

†  $p < .06$  \*  $p < .05$ . \*\*  $p < .01$ .

Table 3-2. Analyses of the Influence of Motivation/Behavioral Skills on Exposure to Counseling (vs. Brochures) with Expected Utility, Self-Defense, and Threat as Mediators

Potential Mediators	Simple correlation				Multiple regressions				Sobel test	
	Motivation/behavioral skills with greater exposure to counseling than brochures		Mediator and greater exposure to counseling than brochures		Motivation/behavioral skills		Mediator		<i>t</i>	<i>p</i>
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	$\beta$	<i>p</i>	$\beta$	<i>p</i>		
1 Greater utility of counseling versus brochures	.12	.04*	.17	.04*	0.00	.99	0.33	.00**	1.89	.06†
2 Worse self-defense from counseling than brochures	.12	.04*	-.26	.001**	0.08	.34	0.09	.31	-0.99	.32
3 Greater threat from counseling than brochures	.12	.04*	-.13	.12	0.07	.40	0.07	.43	-0.72	.47

†  $p < .06$  \*  $p < .05$ . \*\*  $p < .01$ .

## CHAPTER 4 DISCUSSION

Theories about patterns of exposure to materials and programs have predicted one of four possible relations (Figure 1–1). First, there may be a positive linear relation, with participants who have high motivation and behavioral skills being more likely to view materials or participate in prevention programs than participants low or weak on these dimensions. Second, there may be a negative linear relation, with participants who have low motivation and behavioral skills being more likely to view materials or participate in prevention programs than participants high or strong on these dimensions. Third, there may be a curvilinear relation, with participants who have moderate motivation and behavioral skills being more likely to view materials or participate in prevention programs than participants high or low on these dimensions. Last, there may be a moderated relation, with the participant's level of education or motivation affecting the shape of the association between motivation and behavioral skills and exposure to health promotion program components. Of these hypotheses, only a positive linear relation received support, suggesting that participants with high motivation and behavioral skills are most likely to participate in further prevention efforts.

To the best of our knowledge, this is the first study to explicitly examine factors relevant to exposure decisions with respect to behavioral interventions. By examining factors that predict exposure to health promotion programs, we have identified some determinants of participation by target audiences. The results of this study indicate that differences in exposure to health promotion program components are mediated by differences in perceptions of the intervention's likely facilitation of condom use and necessity to participants. Specifically, participants with low motivation and behavioral skills perceived the brochures as better able to facilitate condom use and more necessary than the counseling. Thus, they were more likely to read brochures and less

likely to participate in counseling. In contrast, participants with high motivation and behavioral skills perceived the counseling as better able to facilitate condom use and more necessary. Thus, they were more likely to participate in the counseling session and less likely to read brochures.

The results from the mediation analyses suggest that perceived utility but not self-defense or threat motivations was implicated in the observed biases. However, there are two important considerations. First, the mediation data were obtained at the end of the study, thus requiring retrospective reports from the participants. As is well known (Nisbett & Wilson, 1977), people are often unable to report on the reasons for their decisions. This problem may be particularly salient for this community sample, as the level of education was only 12 years on average. In addition, mediation data are correlational. Thus, verification of the extent to which the threat of a change intervention discourages participation must be examined experimentally.

Interestingly, our findings about the influence of motivation and behavioral skills on different programs have implications for two prior models of behavior change. First, they suggest that Fisher and Fisher's (1992, 2000) classification of the factors involved in behavior change is also useful to study participation decisions. Second, they support Prochaska and DiClemente's (1983) proposal that different programs are necessary depending on people's past behavior and intentions. Specifically, as found in our study, people in the earlier stages of change need information about how HIV is or is not transmitted and how to protect oneself. In contrast, participants in the later stages need behavioral-skills-counseling to realize their intentions.

In our study, the obtained effect sizes were very small, suggesting limited biases introduced by past behavior and motivation. Nonetheless, these effects are not trivial. For example, acceptance of the counseling was 19 and 35% for participants with respectively low and high motivation. Similarly, acceptance of the counseling was 17 and 34% for participants

with respectively low and high behavioral skills. Moreover, detecting these small findings suggests that the methods used in this research are sensitive. In the future, other determinants of exposure could be analyzed using similar techniques.

Another aspect that future research may address is retention of participants within a program after this program has commenced. Perhaps the factors influencing exposure also influence retention. If so, higher risk audiences should drop out more than lower risk audiences. Alternatively, however, people may drop out when the interventions are redundant given already compliant behavior or high motivation. These questions may be addressed through observational studies like the one in this paper, or perhaps by analyzing attrition in the literature of HIV-intervention research.

To conclude, although researchers have examined a myriad of factors relevant to health promotion intervention design, these efforts are not complete without understanding who participates in these programs. By examining factors relevant to selective exposure, we now have a clearer picture of not only of who participates, but also why participants may or may not accept relevant materials and programs. By understanding these factors, researchers may be better able to solicit participation from target populations and prepare interventions to attract at-risk populations. Ironically, participants with low motivation and behavioral skills are the least likely to participate in the most effective and intensive programs (i.e., counseling). This finding is alarming because these participants are the ones who have most to gain from participation. Thus, future research should investigate the role of framing and packaging interventions. Perhaps framing effective programs as less discrepant from the target audience will increase participation by high-risk audiences.

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