

Motivational barriers to retention of at-risk young adults in HIV-prevention interventions: perceived pressure and efficacy

Jiaying Liu^a, Christopher Jones^a, Kristina Wilson^{a,b}, Marta R. Durantini^{a,c}, William Livingood^b and Dolores Albarracín^{a,c*}

^aAnnenberg School for Communication, University of Pennsylvania, Philadelphia, PA, USA; ^bDuval County Health Department, Institute for Public Health Informatics and Research, Jacksonville, FL, USA; ^cDepartment of Psychology, University of Pennsylvania, Philadelphia, PA, USA

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Multi-session HIV-prevention interventions are efficacious but depend on the retention of clients over time. In a sample of at-risk young adults ($N = 386$), we investigated three potential motivational barriers that might affect the likelihood of retention. Perceived pressure, perceived efficacy and fear and anxiety during the initial session were measured, along with demographic characteristics, partner characteristics, and HIV-related health knowledge. Logistic regressions demonstrated that (1) in general, perceived ineffectiveness was negatively associated with retention; (2) perceived pressure or coercion was negatively associated with retention but only for younger clients; (3) experienced fear and anxiety had no significant association with retention. Implications for theory and counseling practices to reduce motivational barriers and effectively tailor interventions are discussed.

Keywords: HIV-prevention; retention; pressure; ineffectiveness; fear

Retaining young people in HIV-prevention programs is critical for reducing the estimated 12,200 new HIV infections occurring annually in people 13–24 in the USA (Centers for Disease Control and Prevention [CDC], 2012). Several multisite studies and meta-analyses have demonstrated the efficacy of HIV-prevention intervention programs (e.g., Albarracín et al., 2005; Fogarty et al., 2001; Heaton & Messeri, 1993; Kalichman, Carey, & Johnson, 1996; Lauby, Smith, Stark, Person, & Adams, 2000). Importantly, multi-session interventions are often more effective than single-session ones. For example, one meta-analysis indicated the positive behavior change elicited by HIV-prevention interventions for clients of sexually transmitted infection (STI) clinics was $d = 0.33$ for multi-session programs but only 0.06 for single-session programs (Albarracín et al., 2005). However, currently, the efficacy of multi-session interventions is limited by low completion rates (Albarracín et al., 2005; Johnson et al., 2009; Simpson, Joe, & Rowan-Szal, 1997), particularly among highly vulnerable youth (Borek, Allison, & Caceres, 2010; Magruder, Bichun, Miller, & Tilley, 2009; Roffman, Picciano, Bolan, & Kalichman, 1997). Nonetheless, the psychological determinants of retention in HIV-prevention programs have remained understudied, generally, and among youth.

What factors influence at-risk participants' return to the follow-ups after an initial HIV counseling session has taken place? Given that similar determinants influence enrollment and retention (Noguchi, Albarracín,

Durantini, & Glasman, 2007), it is likely that the various motivational barriers that affect enrollment in HIV-prevention counseling (Albarracín, Durantini, Earl, Gunnoe, & Leeper, 2008; Earl et al., 2009) may also shape clients' decisions for continued attendance. Below we describe three motivational barriers that may play a role for clients generally, and an important question is whether any are particularly influential for younger clients.

First, counseling clients may be more reluctant to return when they perceive their autonomy as threatened by external pressure to change their behaviors. People often become defensive when they perceive their freedom as threatened, a phenomenon termed “psychological reactance” (Brehm, 1966; Brehm & Brehm, 1981; Burgoon et al., 2002). With respect to retention in HIV-prevention programs among clients with high-risk behavior, perceptions that counseling entails pressure to behave in unfamiliar or unpreferred ways may decrease retention. Past research indicates that younger individuals often exhibit more psychological reactance. As younger individuals commonly desire more autonomy than they have and may resent control by parents and other authorities, the negative influence of perceived pressure on retention should be particularly pronounced for younger clients (Hong, Giannakopoulos, Laing, & Williams, 1994; Labouvie-Vief, Hakim-Larson, DeVoe, & Schoeberlein, 1989; Woller, Buboltz, & Loveland, 2007).

*Corresponding author. Email: dalbarracin@asc.upenn.edu

Second, retention in HIV-prevention counseling is also likely to depend on the degree to which the initial intervention appears personally relevant and effective. Previous research on HIV-prevention intervention enrollment indicated that when participants feel that counseling does not personally apply to them or is ineffective, they may consider enrollment less favorably (Albarracín, Durantini, et al., 2008). This barrier should likely also influence retention, perhaps across all age groups.

Third, clients may be less likely to return when the first session makes them anxious or increases their fear of HIV. If a counselor describes the threat of HIV as significant, personally relevant, or even imminent, the client may decrease risk behavior (Earl & Albarracín, 2007; Fisher, Fisher, Bryan, & Misovich, 2002; Kelly, St Lawrence, Hood, & Brasfield, 1989) and perhaps return to a follow-up counseling session. However, fear is a double-edged sword because the threat may also provoke aversive feelings that can be avoided by nonattendance (e.g., Das, De Wit, & Stroebe, 2003; Hovland, Janis, & Kelley, 1953). Therefore, fear may be positively or negatively associated with the probability of retention. There is no overwhelming reason to assume that this factor would be especially impactful for younger clients.

The present study

Considering the critical role of retention in maximizing HIV-intervention effectiveness, the present study examined motivational factors (i.e., perceived pressure to change, perceived ineffectiveness, and fear) influencing retention at a follow-up counseling session in a vulnerable population with high levels of risk behavior. To identify factors of particular importance for younger at-risk individuals, we also compared motivational barriers between the younger and older participants in our sample by including interactions with age. We controlled for such sociodemographic variables as age, gender, education, income, and ethnicity (Fleishman, Yehia, Moore, Korthuis, & Gebo, 2012; Horstmann, Brown, Islam, Buck, & Agins, 2010; Sohler, Li, & Cunningham, 2009), as well as HIV risk factors such as health knowledge, related behaviors, and partner types (Albarracín, Leeper, Earl, & Durantini, 2008; Knobloch-Westerwick, Sharma, Hansen, & Alter, 2005).

Method

Overview and design

The present study is part of a larger study on retention in HIV-prevention counseling conducted with community members who were at risk for HIV in North Florida. During the first appointment, which took place at the Duval County Health Department in Jacksonville, FL, participants completed a baseline questionnaire and then

received their first HIV-prevention counseling session. Participants then completed a questionnaire assessing expectations and reactions to this initial counseling session. To control for measurement sensitivity, the order of the post-session questionnaire was systematically varied to ensure that any associations between expectations and retention were not artificially created by inducing expectations prior to the follow-up session. Therefore, half of the participants completed measures of perceptions of the first counseling session immediately after the first session, whereas the other half completed these reports retrospectively during the third session. Finally, follow-up sessions were scheduled and attendance at these appointments was recorded.

Enrollment and consent process

Clients were recruited through flyers placed in the community (e.g., bus stations, employment agencies) and throughout clinics at the Duval County Health Department. Others were recruited from direct referrals from health department staff and members of the community (e.g., staff at community agencies, former participants). To reduce self-selection, the flyers and instructions for referrals described the study as related to “health promotion counseling” and made no reference to HIV or condom use. To be eligible, individuals had to be between the ages of 18 and 35, report sexual activity in the past three months, and report using condoms “never” or “occasionally” in the past three months. Recruiters excluded those who planned to move from the Jacksonville area in the next six months, were HIV-positive, had concomitant knowledge of the study, or were trying to get pregnant or had a partner who was trying to get pregnant. Eligible participants were scheduled for their first study appointment. To ensure initial enrollment, intervention recipients were paid \$35 for attending the first session. They were paid \$15 each for attendance at the second and third sessions. The study was approved by the Institutional Review Boards of the University of Illinois, the University of Pennsylvania, and the State of Florida’s Department of Health, and each participant provided informed consent.

Participants

Four hundred and sixty four eligible study participants attended the initial counseling session, and the retention rate for the second session was 74%. Participants that were randomly assigned to complete the post-session questionnaire at the third session but did not attend this appointment were excluded from analyses due to missing data. Thus, our analyses included data from 386 clients who had valid records of attendance/absence at the follow-up sessions and completed both baseline and

post-session questionnaires. The sample for analysis was approximately 58% female, and the average age was 26.6 years ($SD = 4.81$). The participants were mostly African-American (83%), had an average of 11.8 years of education ($SD = 1.75$), and mostly had incomes of under \$9999 per year (58%).

The counseling program

Participants agreed to participate in HIV-prevention counseling and received appointments for three sessions. The counseling model entailed a one-on-one, client-centered HIV-prevention counseling intervention (CDC, 2011; Holtgrave, Valdiserri, Gerber, & Hinman, 1993; Kamb et al., 1998). The intervention was implemented by four female HIV counselors that completed the CDC-mandated training and further intensive training provided in the context of the project. In order to ensure fidelity to the counseling program, counselors were observed and rated by supervisors, and then feedback and additional training were provided, as required. Average adherence was judged to be at 95%.

Sessions were scheduled one week apart and spread over at least three weeks, with all session conducted by the same counselor. The first session delivered information regarding HIV transmission and prevention, performed personalized risk assessments, helped them commit to risk-reduction steps, and ended with a 20-minute video that included a reminder to attend the second session. The second and third sessions explored the success or failure of the steps agreed on during the previous counseling session and adjusted goals to the participant's achievements. In addition, the counselor addressed other emotional and instrumental needs, such as unemployment, housing, and mental health concerns. Thus, goals and referrals pertaining to these needs were also set during follow-up sessions.

Measures

Control factors

The baseline questionnaire assessed sociodemographic variables including gender, age, education, income, and ethnicity. The baseline questionnaire also included measurement of HIV risk factors including health knowledge and types of sexual partners. Knowledge about HIV and condom use was measured with 17 statements (e.g., "Some drugs have been made for curing AIDS"; Kamb et al., 1998). Knowledge scores were calculated by adding the number of questions correctly answered, after reverse scoring items as necessary ($\alpha = 0.72$). Partner type questions concerned whether participants had a main partner and whether they had any casual sexual partners in the last three months.

Perceived pressure, ineffectiveness, and fear

To measure expectations and reactions to the first counseling session, participants responded to items about perceived pressure, perceived ineffectiveness, and experienced fear using scales from 1 (*not at all*) to 4 (*a lot*). Relevant items for each subscale were averaged and all questions referred to the first counseling session. As a measure of perceived pressure, intervention recipients reported whether they felt like somebody wanted to convince them of doing something they did not want to do and whether they thought the counseling tried to force them to change their beliefs or behaviors ($\alpha = 0.82$). As a measure of perceived ineffectiveness, intervention recipients were asked whether they thought that the counseling would not apply to them personally and whether they thought that the counseling would be ineffective ($\alpha = 0.66$). As a measure of fear, intervention recipients were asked to report whether they felt nervous and worried during the session ($\alpha = 0.80$).

Retention

The main outcome variable was a dichotomous measure of return to the second session, scored as 1 (*return*) or 0 (*lack of return*). Reports from both the counselor and research assistant were recorded, and reliability between the ratings was high, $\kappa = 1.00$, $p < .001$.

Results

Exploratory analysis

With exploratory objectives, we analyzed the relation of retention with demographics and HIV risk factors using univariate logistic regressions with retention as the outcome. As shown in Table 1, there were no statistically significant associations of retention with either education or ethnicity. Marginally significant effects were observed for gender and income: retention was higher in men and clients with lower income. Finally, retention was significantly lower in younger than older clients. We did not find that recipient's partner variables or tendency to engage in risky behaviors predicted retention.

Retention in relation to perceived pressure, perceived ineffectiveness, and fear

Of all the 386 participants, the means for the motivational barriers were $M = 1.66$ ($SD = 0.79$) for perceived pressure, $M = 1.75$ ($SD = 0.85$) for ineffectiveness, and $M = 2.58$ ($SD = 1.09$) for fear.

Two logistic regressions were conducted to understand associations between the three motivational barriers and retention (Table 2). We first fit a logistic regression equation predicting retention from perceived pressure, ineffectiveness, and fear, controlling for age,

Table 1. Simple logistic regression analyses predicting retention.

Variables	Retention		Odds ratio (95% CI)
	Yes	No	
Age (in years)	26.78 (4.75) ^a	25.12 (5.17) ^a	1.08** (1.01–1.15)
Education (in years)	11.82 (1.76) ^a	11.84 (1.75) ^a	0.99 (0.82–1.20)
Health knowledge	11.85 (3.29) ^a	11.88 (3.52) ^a	1.00 (0.91–1.10)
Gender			0.51* (0.25–1.03)
Male (<i>N</i> = 163) ^b	151 (93%)	12 (7%)	
Female (<i>N</i> = 223)	193 (87%)	30 (13%)	
Ethnicity			1.87 (0.88–3.93)
Non-African-American (<i>N</i> = 66) ^b	55 (83%)	11 (17%)	
African-American (<i>N</i> = 320)	289 (90%)	31 (10%)	
Main partners			0.92 (0.37–2.28)
No (<i>N</i> = 59) ^b	53 (90%)	6 (10%)	
Yes (<i>N</i> = 327)	291 (89%)	36 (11%)	
Occasional partners			0.64 (0.33–1.24)
No (<i>N</i> = 175) ^b	160 (91%)	15 (9%)	
Yes (<i>N</i> = 211)	184 (87%)	27 (13%)	
Income			
\$0–\$9,999/year (<i>N</i> = 225) ^b	205 (91%)	20 (9%)	
\$10,000–\$19,999/year (<i>N</i> = 87)	77 (89%)	10 (11%)	0.75 (0.34–1.68)
\$20,000 and above/year (<i>N</i> = 67)	56 (84%)	11 (16%)	0.50* (0.23–1.10)

Note: *N* = 386;

^aFor continuous variables, mean with standard deviation in parentheses,

^bReference category.

p* < .1, *p* < .05.

Table 2. Second session retention regressed on pressure, ineffectiveness, fear (model 1), and interactions (model 2), controlling for age, gender, education, income, ethnicity, health knowledge, and partner types.

DV = second session attendance	Model 1	Model 2
	AOR ^a (95% CI)	AOR ^a (95% CI)
<i>Motivational barriers</i>		
Pressure	0.84 (0.54–1.29)	1.01 (0.60–1.70)
Ineffectiveness	0.63 (0.42–0.96)*	0.63 (0.41–0.98)*
Fear	0.86 (0.61–1.23)	0.88 (0.61–1.25)
<i>Sociodemographic characteristics</i>		
Gender (1 = female)	0.33 (0.14–0.78)*	0.30 (0.12–0.72)**
Age (in years)	1.08 (1.00–1.16)*	1.06 (0.98–1.15)
Education (in years)	0.98 (0.79–1.21)	1.01 (0.81–1.25)
Income		
\$0–\$9,999 per year (referent)	1	1
\$10,000–\$19,999 per year	0.59 (0.24–1.47)	0.58 (0.23–1.45)
\$20,000 and above per year	0.35 (0.14–0.85)*	0.35 (0.14–0.86)*
Ethnicity (1 = African-American)	1.67 (0.72–3.87)	1.63 (0.68–3.92)
<i>HIV-related risk factors</i>		
Health knowledge	1.02 (0.91–1.14)	1.01 (0.91–1.14)
Main partners (1 = yes)	0.83 (0.30–2.33)	0.92 (0.31–2.68)
Occasional partners (1 = yes)	0.56 (0.26–1.21)	0.54 (0.25–1.19)
<i>Interactions</i>		
Pressure × Age		1.13 (1.02–1.26)*
Ineffectiveness × Age		1.06 (0.97–1.16)
Fear × Age		0.97 (0.90–1.04)
Constant	18.43	15.67
Pseudo- <i>R</i> ²	0.14	0.19

Note. **p* < .05, ***p* < .01.

^aAdjusted odds ratios.

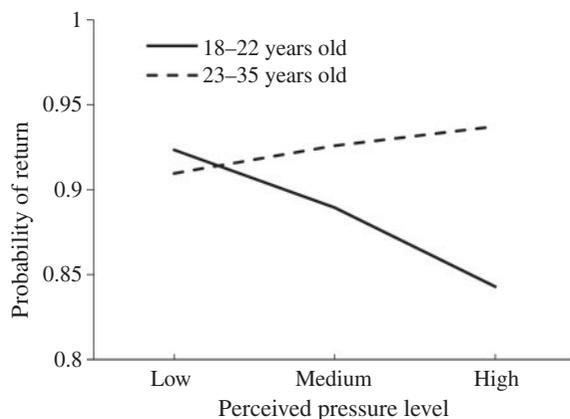


Figure 1. The relationship between pressure and return across levels of age.

gender, education, income, ethnicity, health knowledge, and two types of sexual partners. To explore whether any motivational barrier is especially prevalent for younger clients, a second model further included the mean-centered terms corresponding to two-way interactions of age with each of the three motivational barriers.

The main effect of age confirmed that younger clients were less likely to return while controlling for other relevant variables. Similarly, the gender effect (male clients were more likely to return) was also statistically significant. Other demographic variables and HIV risk factors showed no significant effects.¹ Of the three motivational barriers, perceptions of ineffectiveness or irrelevance had the clearest effect on retention, holding regardless of the client's age (adjusted odds ratios [AOR] = 0.63, $p < .05$). Fear had no significant association with retention (AOR = 0.88, $p = .42$).

We also found that age predicted retention in interaction with perceived pressure (AOR = 1.13, $p < .05$). We decomposed this interaction using the Johnson–Neyman technique (Hayes & Matthes, 2009). Hayes's (2012) PROCESS macro for SPSS (Model 1) identified 21.7 as the upper bound of the region of significance, suggesting 22 years old as a useful point to partition age (Hayes, 2013). Thus, Figure 1 partitions the age groups at 22 and demonstrates that the association between perceived pressure and retention was only significant in the younger group (for younger group: AOR = 0.18, $p < .05$; for older group: AOR = 1.10, $p = .74$).

Discussion

Although much work has been dedicated to designing effective HIV-prevention interventions, the effectiveness of such programs is compromised if at-risk individuals do not complete the intervention. Thus, we investigated whether motivational barriers, sociodemographics and HIV risk factors predict retention in HIV-prevention

counseling. Among the motivational barriers, we found a main effect of perceived ineffectiveness lowering retention. Also, there was an interaction between perceived pressure and age such that among younger intervention recipients, feeling pressured lowered retention. As for sociodemographic characteristics, younger participants and males were more likely to return. Our results have several important implications for theory and counseling practices.

First, the interaction between perceived pressure and age on retention suggests that practitioners should make efforts to ensure that younger clients in particular do not feel coerced, because such threats to autonomy can backfire (e.g., Brehm, 1966). This threat might be avoided by, for example, providing verbal reassurances that the client is the one in charge of his or her behavior. Avoiding threatening autonomy is important for targeting younger individuals for whom the number and rate of HIV diagnoses is relatively high (CDC, 2011).

Second, our results suggest that perceived ineffectiveness and irrelevance negatively affect retention, not only for younger clients but also in general. Even though practitioners naturally avoid inducing negative perceptions of the intervention, this finding suggests that practitioners make efforts to explicitly communicate the efficacy of the intervention. Increasing perceptions of counseling efficacy may be particularly useful for the clients who are less likely to return, which according to past research have been those at highest behavioral risks for HIV and STIs (e.g., Albarracín, Leeper, et al., 2008). Similarly, our results support the notion that fostering a sense of self-relevance will improve retention. Practitioners could deliver tailored information about HIV risk in a personalized manner according to demographics and other characteristics of the clients to enhance counseling's self-relevance. By increasing clients' perceptions of counseling efficacy and relevance, practitioners may be more successful at retaining at-risk audiences.

Although reactance and perceived ineffectiveness seemed to play a role in predicting retention, fear had no significant association with retention. There are a number of potential explanations for why fear was not related to retention in our study. First, our sample consisted of low condom users who may be more likely to justify or defend their current practices, deny the precautionary instructions, have lower perceived self-efficacy, or be less sensitive to the threatening consequences of risky behaviors (Sherman, Nelson, & Steele, 2000; Witte, 1998). Second, it is also possible that fear is less effective when the target behavior is proactive and needs more initiative (Rothman & Salovey, 1997). Given that retention needs participants' proactive efforts, aroused fear might not be sufficient to motivate return to follow-up sessions.

Furthermore, consistent with a previous meta-analysis (Durantini & Albarracín, 2009), men were more likely to return than the women in our sample. However, we also noted that males ($M = 3.13$, $SD = 0.91$) perceived the first counseling session as less effective than females ($M = 3.34$, $SD = 0.79$), and this difference was significant ($t = -2.37$, $p < .05$). This finding may relate to the fact that all the counselors in the present intervention program were females, reiterating the common conclusion that intervention effectiveness might depend on the relationship and fit between the client and practitioner and can be bolstered by careful tailoring for particular at-risk groups (Durantini, Albarracín, Mitchell, Earl, & Gillette, 2006). It is also possible that men are more likely to return to counseling despite rating it as less efficacious because the program offered a monetary incentive (Durantini & Albarracín, 2009). This finding suggests that besides psychological barriers, a better understanding of retention should also include other factors that might be particularly predictive for participants of different demographics.

We will note two limitations of the current study. First, even though we controlled for a number of factors, our findings are only correlational. Manipulating motivational barriers would further establish their significance for retention. Second, despite our interest in understanding how younger people experience interventions, our sample was limited to those of age 18 or older. Although we would anticipate that younger teenagers will be susceptible to autonomy threats, the present data cannot confirm this possibility.

In conclusion, retaining young people in HIV-prevention programs is a major goal in reducing the incidence of HIV. It is important that practitioners understand the psychological factors that can turn clients away from interventions, and for whom these factors are especially likely to matter. In this way, effective tailoring of interventions can be grounded in the collective experience of successes and failures in retaining members of at-risk populations.

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Note

1. Although participants who earned \$10,000–\$19,999 per year were significantly more likely to return to the second session relative to those in the lowest income group, an omnibus test for income showed no significant overall effect of income on retention for either of the two models ($p = .61$ – $.62$). This suggests an effect of income only at low levels of income with no evidence that increases in income above \$20,000 increase the probability of return. Special effort to ensure retention may be useful with the poorest clients.

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