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Motivational Strategies Can Augment HIV-Risk Reduction Programs

Michael P. Carey[12] and **Brian P. Lewis**[1]

1*Department of Psychology, Syracuse University, Syracuse, NY 13244-2340.*

Abstract

This article advances the view that motivational strategies can augment the effectiveness of skills-based HIV-risk reduction interventions. We articulate the empirical and theoretical rationale for a motivational approach, and describe how we developed a motivationally-based HIV-risk reduction intervention. We describe the strategic exercises as well as the therapeutic style that constitutes this approach. We then present detailed reviews of three clinical trials that have evaluated HIV-preventive motivational interventions; these trials provide promising evidence for the integration of motivational approaches with traditional skills-based approaches. We recognize the limitations of existing research, and provide suggestions for future research.

Keywords

HIV; prevention; motivation; skills; behavior change

INTRODUCTION

This paper provides a brief overview of the efficacy and development of behavioral approaches to the prevention of HIV infection, focusing on sexual risk reduction. Although skills-based programs remain the cornerstone of behavioral prevention efforts, we propose that motivational strategies may be able to augment these skills-based approaches. To support this view, we identify several empirical and theoretical precedents for the development of a motivationally-based intervention, and review recent evidence for the effectiveness of motivational approaches. We close with suggestions for future research.

BEHAVIORAL APPROACHES TO HIV PREVENTION

Ample empirical evidence supports the efficacy of behavior change interventions for the primary prevention of HIV infection. Scholarly reviews of the literature evaluating these methods consistently conclude that behavioral interventions, when grounded in psychosocial theory and implemented by trained facilitators, reduce behaviors known to confer risk for HIV infection (Choi and Coates, 1994; Exner et al., 1997; Kalichman et al., 1996; Kalichman and Hospers, 1997; Kelly et al., 1993; Reiss, 1997).

Behaviorally-based prevention programs have developed in a logical fashion, and have confirmed theoretical notions regarding the determinants of health behavior change. Early programs were exclusively didactic or educational but resulted in limited or no risk behavior change. Such programs matured to include psychological components (e.g., group processing

2Correspondence should be directed to Michael P. Carey, Ph.D., Department of Psychology, 430 Huntington Hall, Syracuse University, Syracuse NY 13244-2340 (email mpcarey@syr.edu).

of information to deepen understanding and to sensitize participants to social norms), but even these psychoeducational programs produced only modest behavior change and risk reduction.

A major advance in HIV risk reduction programs occurred with the inclusion of behavioral skills training. Kelly's early work with gay and bisexual men demonstrated that interventions that supplemented basic HIV-related information with careful skills building exercises led to significant reductions in risk sexual practices (Kelly et al., 1989). Subsequent randomized clinical trials have confirmed the importance of behavioral skills-based interventions with a variety of populations, including heterosexual women (e.g., Hobfoll et al., 1994; Kalichman et al., 1996b; Kelly et al., 1994), adolescents (e.g., Jemmott et al., 1992; St. Lawrence et al., 1995a, 1995b), adults living with a severe and persistent mental illness (e.g., Kalichman et al., 1995; Kelly et al., 1997; Weinhardt et al., 1998), runaway youth (e.g., Rotheram-Borus et al., 1991), and the homeless (e.g. Susser et al., 1998). These studies consistently document the value of a skills-based training protocol regardless of the setting or population. The NIMH Multisite study provided the most convincing evidence to date of the value of skills-based interventions: This project demonstrated reductions in not only self-reported behavior changes (and its antecedents), but also reducing incident STD infection (NIMH Multisite HIV Prevention Trial Group, 1998).

The efficacy of behavioral skills-based interventions is consistent with theoretical models grounded in the social-cognitive tradition (Kalichman, 1998). Such models recognize the reciprocal determinism between an individual and his or her environment (Bandura, 1994), as well as other cognitive and environmental determinants of behavior change. These models have guided our understanding of general health behavior change as well as HIV-specific behavior change. Social-cognitive models continue to guide interventionists, evaluators, and investigators (DiClemente and Peterson, 1994).

MOTIVATIONAL APPROACHES TO HIV PREVENTION

A recent development in the evolution of social-cognitive, HIV-risk reduction programs involves the inclusion of an explicit motivational component. The inclusion of motivational factors in risk reduction strategies has both empirical and theoretical precedent.

Empirical precedents

Several findings in the sexual risk behavior literature suggest an important role for motivational factors, including risk perception and social norms. For example, it has been common to find that people greatly underestimate their risk of infection. This underestimation of risk occurs even among people who are engaging in behaviors known to enhance their vulnerability to HIV. For example, several studies have reported that that sexually active, single urban women did not consider themselves at risk for HIV infection despite histories of multiple partners and sexually transmitted diseases (STDs) (Sikkema et al., 1995; Hobfoll et al., 1993). Similarly, in a study with gay and bisexual men, Kalichman et al. (1998) reported that men who practiced unprotected anal intercourse as the receptive partner (UAR) believed that it is safe to have UAR intercourse with an HIV-positive man, as long as the latter has an undetectable viral load.

Moreover, data indicate that when intervention participants increase their risk perception, they also reduce their risk behavior. This risk reduction seems to occur even in the absence of a formal intervention component dedicated to motivational processes. For example, Kalichman et al. (1997) reported that the mere assessment of sexual risk behavior can enhance risk perception and motivate intentions to reduce risky behavior. Kelly et al. (1994) reported that women who received a skills-based AIDS prevention program viewed themselves as more vulnerable to HIV than did a comparison group, and contemporaneously reduced their risk behavior.

However, it is important to acknowledge that perceived risk has not always been associated with risk behavior or its modification. For example, a recent meta-analytic review did not find a consistent relationship between perceived vulnerability to HIV and the adoption of precautionary behavior; however, the authors of this review identified many methodological problems with the literature (including restricted sampling), and concluded that perceived vulnerability may be necessary but not sufficient to foster risk reduction (Gerrard et al., 1996).

The influence of other motivational constructs (e.g., social norms, attitudes toward condoms, behavioral intentions) have also been investigated empirically. In most instances, investigators find support for the importance of motivational constructs on sexual behavior although, as is the case with risk perception, no single construct is universally associated with risk behavior or its reduction. Thus, although motivational constructs cannot completely explain sexual risk taking, they do appear to play an important role in decisions regarding sexual behavior.

Theoretical precedents

In addition to the empirical findings regarding the potential importance of motivation in the context of risk behavior change, several of the theoretical models used to guide behavioral change, including HIV risk reduction, highlight motivational constructs. Most psychological theories define "motivation" with respect to the forces that determine the direction and intensity of the behavior change effort; motivation, it is theorized, derives from a variety of sources loosely broken down into three categories: individual characteristics or personality dispositions (e.g., future time perspective, dispositional optimism), situational or social factors (e.g., social support), and the interactions between personality characteristics and situational influences (e.g., context specific self-efficacy).

Personality characteristics that may affect motivation to engage in behavior change include perceived control (Bandura, 1977; Cohen and Edwards, 1989), dispositional optimism (Scheier et al., 1986) and need for achievement (McClelland, 1961). These constructs have been linked to more effective coping and increases in effort when faced with a challenge. Other approaches to the study of motivation incorporate multiple personal factors. The McClelland-Atkinson model of motivation, for example, characterizes motivation as stemming from the intrinsic drive to achieve success and the fear of failure (McClelland et al., 1953). However, empirical support for the relationship between these personality dimensions and actual behavior has been limited (Carron, 1980; Fodero, 1980; Healey and Landers, 1973). From a HIV-risk reduction perspective, we believe that individual personality characteristics may be less important than situational factors due to (a) the limited applicability of a personality-based intervention, and (b) the generally low predictive relationship between a personality trait and actual behavior. Further, by definition, personality traits are more difficult to influence with the limited contact afforded by most public health interventions. If we assume that personality characteristics reflect genetic predispositions coupled with many years of life experience, then it seems reasonable to assume that their modification would require an equally long interval. Thus, most health behavior change approaches focus on situational and behavior-specific factors, rather than on the personal dimensions of motivation.

Motivational theories of health behavior change (e.g., Health Belief Model, Theory of Reasoned Action) have emphasized attitudes about the behavior, subjective norms associated with the behavior, perceived vulnerability to the illness, perceived costs and benefits associated with the behavior, and self-efficacy about enacting the behavior and its likelihood of effectiveness. These approaches often view motivation from the standpoint of the particular health behavior that they wish to impact. HIV-specific models draw upon such health behavior change perspective. For example, Fisher and Fisher's (1992) Information-Motivation-Behavioral Skills (IMB) model identifies "motivation," broadly, as an important determinant

of risk behavior change. In this model, motivation is hypothesized to reflect subjective norms, attitudes toward risk reduction behaviors, and values associated with the norms; in many ways, the IMB notion of motivation resembles Fishbein and Azjen's (1975) Theory of Reasoned Action.

Overall, many psychological theories draw upon motivational constructs to understand the development, maintenance, and change of health practices. Despite their differences, these approaches share the perspective that motivational forces play an important role in the determination and modification of risk behavior. It is also important to point out that individual-level models of behavior change are not incompatible with social, cultural, or public health models that focus on larger groups or populations. Ewart's (1991) Social Action theory provides one example of a model that integrates individual and social-contextual mechanisms of self-protective behavior change.

Developing a motivationally-based HIV-risk reduction intervention

Given these empirical and theoretical precedents, our research group decided to explore the value of a motivationally-based HIV-risk reduction intervention. Although several interventionists have recognized the importance of motivation in developing HIV-risk-reduction interventions (e.g., Kelly, 1995), these models focused primarily on self-management and interpersonal skills. We sought to strengthen the central role of motivation, and began by attempting to define motivation in this context.

As the foregoing review of motivational theories suggests, motivation could be conceptualized along several levels. Our discussions led us to talk about two levels of motivation. The immediate and proximate level, small "m" motivation, refers to the motivation needed to adopt a specific health behavior such as condom use or other safer sexual practices. At this small "m" level, we were interested in the situational influences on sexual behavior, such as immediate partner reactions or concerns for spontaneity and intimacy. A second level, big "M" motivation, refers to factors that are more distal in nature and influenced a broader range of behaviors, not just sexual practices in one specific encounter. At this level, we were concerned with life goals, important personal and community values, and other trans-situational motivational forces. We hypothesized that both levels influenced individual's decisions and behavior, and should be addressed by a HIV-risk reduction intervention.

Once these motivational sources of influence were identified, we developed several strategic exercises to liberate latent motivation for risk reduction and the enhancement of sexual health. At the level of small "m" motivation, for example, our facilitators provided information about local HIV, AIDS, and other STD epidemiology in order to sensitize participants to their risk. They used local survey data coupled with participants' individual data to provide personalized feedback about each individual's risk (i.e., how each individual's behaviors and risk compared with community norms from similar others). Facilitators provided this feedback privately, but women had the opportunity, if they wished, to discuss it with their peers. We also used decisional balance exercises to elicit women's views of the "pros" and "cons" of both risky and safer behaviors, and we encouraged participants to identify benefits (e.g., use of a condom would help them to relax more during sex, making them better lovers) that may not have been obvious previously.

At the level of big "M" motivation, we tapped into large life goals, motives, and values. For example, facilitators used videotaped interviews with a local woman who was infected with HIV to stimulate discussion about how HIV might change the course of their lives. The HIV + spokeswoman articulated poignantly how her life was changed by HIV/AIDS, including the effects on important relationships with partners, parents, and children. She drew upon important cultural and spiritual traditions to contextualize her experiences, and provoked a

solidarity among group participants. Women were encouraged to develop personal HIV-preventive goals and action plans that were suited to their life circumstances. And, drawing upon qualitative findings, we appealed to women's concern for their children and for their community to enhance the importance of self-protection.

Therapeutic style

Key to a motivational approach is implementing the strategic exercises with a non-directive therapeutic style. This style is designed to foster each participant's collaboration, and to avoid the psychological reactance or other forms of "resistance" to change that can arise in confrontive (or even purely didactic) approaches. Facilitators were instructed to recognize and respect the ambivalence regarding behavior change. This therapeutic style was informed by the approach articulated by Miller and his colleagues in the treatment of substance abuse (Miller, 1996; Miller and Rollnick, 1991).

Clinical trials

Following qualitative work, pilot testing, and refinement of the intervention, we have now tested this approach in two randomized clinical trials with low income, primarily minority women (Carey et al., 1997, in press). Full reports of these trials appear elsewhere, and are only summarized here.

The first study was conducted at a community-based organization (CBO) long known for its service to communities of color (Carey et al., 1997). Participants (N=102) were women who were primarily young (M = 32 years), single, and African-American (76%). The mean educational level was 11 years, and 65% reported an income of less than $10,000 per year. The majority (80%) had children (M = 2.1). Risk markers were common, including lifetime diagnosis with an STD (63%), having a bisexual partner (30%) or a partner who had injected drugs (36%), use of injection drugs (12%), sex trading (39%), and non-monogamous partners (56%). Women recruited to the trial were randomly assigned to either the motivationally-based risk-reduction intervention or to a waitlist control condition. All women were assessed at baseline; those assigned to the motivational group then participated in four small-group sessions designed primarily to enhance their motivation and secondarily to improve their knowledge and sharpen their interpersonal skills. All women were then reassessed at post-intervention and again 3 months later.

The motivational intervention relied heavily upon the strategies and therapeutic style described by Miller and Rollnick (1991). Thus, in the first session, the facilitators provided the rationale for the motivational enhancement approach, elicited self-motivational statements, summarized women's concerns regarding HIV-risk, encouraged risk sensitization through presentation and discussion of a videotaped interview of a local woman infected with HIV, provided personalized feedback on HIV-risk, and elicited reactions to risk feedback. The personalized feedback was based upon each participant's pre-intervention responses, and contrasted with normative data on HIV-risk behaviors from a larger sample of women from the community.

During the second session, facilitators responded to women's concerns regarding other health and social problems facing their community (to contextualize the threat represented by HIV), and provided personalized feedback about women's HIV-related knowledge and risk-related situations. The personalized feedback was again based on participants' responses and compared with normative data that we had previously collected in the same community. Facilitators prepared participants for the development of an action plan (in the next session) by eliciting risk-reduction strategies, and affirming women's commitment to change.

At the third session, facilitators led a decisional balance exercise in which the pros and cons of behavior change were elicited and discussed. The facilitators then introduced the behavioral skills component by suggesting that some participants might want to use such skills to help them to reach their self-identified goals. The skills training addressed condom acquisition and use as well as skills for eroticising safer sex.

The fourth session was devoted to enhancing women's communication and interpersonal skills regarding condom negotiation and safer sex. These skills were taught using instruction, modeling, role-plays, encouraging feedback, and additional rehearsal, consistent with the guidelines recommended by Kelly (1995). The session ended with a review of important motivational statements, members' commitments to change, reaffirmation of members for commitments and progress made so far, and support of members' self-efficacy for change.

Results indicated that treated women increased their knowledge and risk awareness, strengthened their intentions to adopt safer sexual practices, communicated their intentions with partners, reduced substance use proximal to sexual activities, and engaged in fewer acts of unprotected vaginal intercourse. These effects were observed immediately and most were maintained at a three-month follow-up. Comparison of these results with those obtained in earlier projects with low income urban women suggested the motivational approach yielded larger effect sizes ($\underline{d} = 0.56$) relative to skills-based approaches ($\underline{d}s = 0.32$ to 0.43; see DiClemente and Wingood, 1995; Hobfoll et al., 1994; Kelly et al., 1994). Although the nature of these cross-study comparisons precludes strong inferences, the effect sizes clearly suggested that the motivational approach warranted further investigation with more advanced designs.

Therefore, we designed a second study (Carey et al., in press) to replicate and extend our earlier work. The second study used the same intervention format and manual with an entirely new sample of women and new group facilitators. This study also improved upon our earlier methodology by using (a) a structurally equivalent health promotion group to control for the non-specific effects of being involved in any intervention, (b) recruiting women based upon their risk, and (c) employing a more streamlined assessment strategy to minimize respondent burden and enhance data quality.

For this replication and extension project, we screened more than 350 women at several convenient, community-based settings. A woman was consider to be "at risk" for HIV if she endorsed one or more of the following: lifetime history of IDU; STD, sex trading, or multiple partners in the past year; non-monogamous partner; or partner who had used injection drugs. From those who determined to be at risk, 102 women (88% African-American, 93% with an income $\leq$ $12,000 per year) agreed to participate and were randomly assigned to either the motivationally-based HIV risk reduction program, or a structurally equivalent health promotion control group. Women in both groups completed a self-administered survey at baseline, post-intervention, and three-month follow-up. These surveys assessed HIV-related knowledge, risk perception, behavioral intentions, and risk behaviors, including the frequency of protected and unprotected intercourse, number of partners, and substance use before sex.

Women who participated in the motivationally-based risk-reduction intervention enhanced their HIV-related knowledge and strengthened their risk reduction intentions over time. Moreover, women in the motivational group who expressed imperfect intentions at the post-test increased their condom use fourfold, and talked more about condom use and HIV testing with their partners at the follow-up. These women were also more likely to have refused unprotected sex. Our interpretation of this finding is that women who acknowledged imperfect intentions appraised the obstacles to safer sex more realistically. In contrast, women who reported "perfect" intentions may have believed, in the context of a supportive group setting, that overcoming the obstacles to safer sex would not be difficult, and expressed strong

intentions to do so. Their responses may have reflected an unrealistic optimism (Weinstein, 1987) or an exaggerated sense of self-efficacy (Forsyth and Carey, 1998). When these women returned to the natural environment, where their supports were diminished and the demands for and attractions of unprotected sex were more powerful, it was difficult to put their good intentions into practice. Overall, this pattern of findings provided a partial replication of our previous results, and strengthened our view that a motivational approach has considerable merit for HIV-risk-reduction, especially among low income, urban women.

Other investigators interested in HIV risk reduction have begun to explore the value of a combined motivational and skills-based approach to prevent HIV infection. In a recent study, Belcher et al. (1998) described an approach that combined skills training with a motivational enhancement approach. The skills building focused on learning (a) techniques of effective communication of feelings and sexual behavior limits prior to intimate relations, and (b) condom use skills through modeling and hands-on training. Behavioral role-plays were used to increase communication skills, self-efficacy, and comfort in discussing sexual alternatives with partners. The motivational aspect of this intervention involved use of personalized feedback forms, discussion to sensitize women to their risk of infection, and formulation of a personal action plans, using a non-confrontive therapeutic style. This intervention, which was conceptually similar to our approach, was administered during a single, 2-hour session with 74 low income urban women at a CBO. For evaluation purposes, the intervention was compared to a time-matched, AIDS education intervention with results reported at a 3-month follow-up. Although AIDS-related knowledge and self-efficacy did not improve (perhaps as a function of the brevity of the intervention), women who received the motivational intervention reported significantly higher rates of condom use during vaginal intercourse than control participants. For example, intervention participants reported condom use 22% of the time at baseline and 66% of the time at the follow-up, compared with 27% and 43% for the control condition.

Taken collectively, these three studies provide promising evidence that motivational strategies, drawn from the treatment of substance abuse but adapted to the modification of HIV risk behavior, can be combined with traditional skills-based interventions. The use of motivational strategies may also augment the efficacy of these skills-base programs, and extend the current behavioral prevention paradigm in a potentially important way; that is, motivational strategies may prove to be more acceptable to those with lower initial motivation or interest (i.e., readiness-to-change; Prochaska, 1994; Prochaska et al., 1992). Theoretically, such persons might not be responsive to “action-oriented” interventions; however, motivational enhancement may help such persons to understand the relevance of HIV-risk reduction for other, more important life goals (e.g., economic survival, well-being of their children). Explicit recognition of the importance of motivational variables is also consistent with leading social-cognitive theories of HIV prevention (e.g., IMB model; Fisher and Fisher, 1992), and with general psychological principles, where cognition, affect, and behavior are all seen as critical to a complete understanding of human behavior and its modification.

Limitations

The extant research on motivational interventions is promising and we believe that a motivational approach “adds value” to skills-based programs. However, the unique contribution that we hypothesize requires further verification. It is also important to recognize that the follow-up intervals employed in current research have been brief. Whether the effects of motivational interventions persist requires further scrutiny. Also, it is important to recognize that motivational interventions are designed for individuals; to date, they have not been developed for dyads, communities, or systems. Because individual-level interventions cannot address all of the determinants of healthy or risky behavior, they should not be thought of as the only solution to the HIV pandemic. Interventions targeted at public policy, communities,

and other levels are necessary to provide a comprehensive response to the HIV (Ewart, 1991; Kelly et al., 1993).

FUTURE RESEARCH

To determine if motivational approaches can augment the behavioral skills approaches that have earned a central place in HIV prevention, further research is needed. Practical and methodological research might determine the durability of risk reduction (e.g., using longer follow-up intervals), assess biomedical as well as self-report indices of change (e.g., STD reoccurrence), extend the application of these approaches to other populations (e.g., men who have sex with men, adolescents), evaluate further the structural characteristics of successful programs (e.g., individual vs. small group, multiple vs. single sessions). Further clinical refinement of the motivational strategies are also warranted, including evaluation of differential effectiveness as a function of gender or age, and tailoring such strategies to include important developmental, gender, relationship, and cultural considerations (e.g., DiClemente and Wingood, 1995).

In our view, there are at least two theoretical questions that should be addressed. The first question is whether motivational approaches do augment the effects of skillsonly interventions; that is, it would seem worthwhile to determine the unique contribution of motivational versus skill training components using a dismantling or other research designs (cf. Kalichman et al., 1996b). A second question involves the prediction that individuals who differ in their "readiness-to-change" do respond differently to motivational versus action-oriented (i.e., skills only) interventions using treatmentmatching designs (cf. Project MATCH Research Group, 1997).

SUMMARY

Stemming the wave of new HIV infections will depend more upon behavioral prevention than is typically recognized by the media, elected officials, biomedical scientists, and the general public. Social and behavioral scientists can be proud of their accomplishments but need to avoid complacency; we should continue to refine our conceptual models, research methods, and intervention strategies. Although behavioral skills-based interventions remain a powerful public health approach, there is room for improvement. The motivational enhancement approach discussed herein represents one effort to augment the impact of behavioral risk reduction. Continued investigation of motivational approaches appears warranted, and is strongly encouraged.

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