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AIDS Prevention: Conclusions and Implications

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HIV infection and the onset of AIDS is one of the nation's most serious public health problems. Efforts to reduce the incidence of infection have resulted in some success, but prevalence rates among certain subpopulations such as injection drug users (IDUs), remain high. IDUs have received special attention and been the subject of targeted efforts to reduce their HIV prevalence rates for the past 10 years, beginning with the National AIDS Demonstration Research projects (NADR) funded by the National Institute on Drug Abuse (NIDA), and continuing with the NIDA Cooperative Agreement Program. In recent years, the Centers for Disease Control and Prevention (CDC) have tested intervention strategies with these and other populations as well. The articles in this publication all provide state of the art descriptions of the issues faced (and in many cases solved) through prevention programs that target at-risk users.

This chapter ties the combined findings together and reviews where we are with respect to HIV prevention for at-risk drug users, and attempts to address the implications of the different results by summarizing the prior reports in terms of their practical and theoretical concerns. Therefore, this chapter reviews common elements of the research, dealing with consistency of findings and their extrapolation. Many of the researchers who

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reported their findings are doing the same thing differently, or doing the same thing with different populations.

What is most striking about the reports is the extent to which the research studies incorporated current theories or approaches as a basis for their prevention strategies. Both cognitive theories (cf. Bandura, 1977) or "Change Theory," (cf. Prochaska, DiClemente & Norcross, 1992) are emphasized, and many hypotheses were tested pertaining to the efficacy of these theories with respect to prevention efforts. All also made use of sophisticated statistical analyses, chiefly logistic regression and other multi-variate procedures, to analyze data.

The utilization of theory by the researchers illustrates the strengths of using theoretically driven models to develop prevention programs to reduce HIV transmission risks. Thus the various research findings not only contribute information about prevention, but they also test models, many of which are essentially similar across the research programs. Based on the knowledge gained, the findings can contribute to theory testing, and modifications can be made to each theory, to make it more applicable to special populations.

One of the general conclusions across the studies is that the theoretical models only partially accounted for the results in the interventions, and that other factors, usually not encompassed in the model, also strongly influenced outcomes. This suggests that, in contrast to this theoretical procedure, researchers might benefit strongly by including an inductive reasoning process in their research, which would involve developing or refining theories or models based on consistencies across studies.

Following an inductive process in reviewing the reports, three key themes were identifiable across the studies. One is that high-risk HIV-related behavior is related to being a member of a minority group (either African American or Hispanic/Latino, of either gender), but that drug use patterns and sexual behavior cannot be predicted or stereotyped for members of these groups, on the basis of cultural affiliation alone. For example, it is generally believed that African Americans and Hispanics/Latinos are heavily involved with injection drug use compared with members of other cultural groups in the U.S., but findings reported herein show that being African American or Hispanic/ Latino does not automatically mean needle use. There is a considerable amount of within-culture variation in drug using behavior. Specific cultural patterns do influence drug use behaviors, and may dictate patterns to be followed among group members, but there is also considerable similarity between groups based on the context within which drugs are used. The issue then becomes one of understanding the relationship between cultural group influences and patterns of drug-taking and sexual behaviors, and the resulting task is to develop education/prevention/intervention programs that are culturally

specific and based on local contextual conditions; a conclusion cited in several of the preceding studies.

A second common dimension in the studies was the impact of the different types of relationships (and subsequent differences in risk taking and prevention behavior) based on having a main sex partner, as contrasted to other (casual) partners. Efforts have been successful in helping both heterosexual individuals and gay males take pre-cautions with casual partners. But prevention efforts, such as using a condom, are less effective with main partners, despite the fact that such partners may be actively engaged with multiple sex partners. Condom use was strongly influenced by cultural values, and the percentage of individuals using condoms varies across cultural groups. Research needs to evolve that deals with this area in greater detail in order to formulate strategies to change culturally-based behaviors.

The third theme involved a relationship between one's sense of self (i.e., self-concept, self-efficacy, self-esteem, etc.) and risk-taking behavior. The common findings in this area indicate that the more positive the way one views oneself, the better the level of functioning, and less risk-taking behavior. Efforts are thus needed to concentrate on how to evoke a change in one's self-concept, a problem of long-standing debate in personality research literature.

A further review of the research articles, based on an inductive process, led to their being grouped according to three categories based on their primary emphasis: (a) theories of change studies, (b) correlation studies that relate risks to key demographic or environmental conditions, and (c) treatment studies. The first type, change studies, were principally concerned with evaluating the relationship between stages of change and response to prevention/intervention efforts.

THEORIES OF CHANGE STUDIES

The first of this type, by Rhodes and Malotte ("Using Stages of Change to Assess Intervention Readiness and Outcome in Modifying Drug-Related and Sexual HIV Risk Behaviors of IDUs and Crack Users"), examined the relationship between potential for change and modification of specific drug-related and sexual risk behaviors of active IV and crack users. They reported that change stages are useful in assessing readiness for "behavioral intervention," and for evaluating the effectiveness of HIV-risk prevention efforts.

Anderson et al. ("Stages of Change for HIV Risk Behavior: Injecting Drug Users in Five Cities") examined the relationship between stages of behavior change and condom and needle behavior, and sought to identify factors associated with change stages. They found that change stages

were related to type of partner, either main or casual. Those who did not have a steady partner were more ready for change than those with a steady partner. Additionally, higher change levels were found for needle sharing than condom use, and change stage was related to types of sexual behavior and types of partners.

Bowen ("Predicting Increased Condom Use with Main Partners: Potential Approaches to Intervention") also examined the relationship between condom use and psychological theory and change theory. Here too, results varied with whether single or multiple partners were involved. Assertiveness was also found to be related to change stage.

The last study in this category, by Corby and Wolitski ("Condom Use with Main and Other Sex Partners Among High-Risk Women: Intervention Outcomes and Correlates of Reduced Risk"), which examined condom use by women, found, as in other studies, that condom use varied with main or other partners, and that heavy drug use was not related to readiness to change.

These four studies, each utilizing change theory, yielded mixed results. One of the key issues identified in them was the difference between the behavior associated with main partners and the behavior associated with casual partners. In the former instance, cultural values such as trust, maintaining smooth interpersonal relations, and cultural assumptions about "fidelity" prevented consistent use of condoms. One of the conditions that needs further exploration is whether or not the messages (such as "always use condoms with everyone") are correct for this context, or need to be modified to fit the nature of the "main partner" relationship. There is a need to make the messages and the judgements of whether or not to use a condom (and the subsequent research evaluation of that condom use) match more closely with the actual nature of the main and casual partner relationships, rather than assuming both are of equal risk and value in the analysis of behavioral change, especially if the "correct" relationship for change is assumed to be "always use a condom." Thus, some emphasis needs to be focused on identifying factors associated with readiness to change, and the cultural influences into this process.

CORRELATION STUDIES

The phrase "correlation" is used here to refer to studies seeking the relationship between domains of behavior, such as demographic variables or personality variables and measures of reduction of risk behavior.

Bell's study ("The Effect of Psychosocial Domains on AIDS Risk Behaviors") investigated the relationship between psychosocial resources and reduction of risk behaviors. It was found that emotional well-being and cognitive functioning were independently tied to risk behaviors other than a reduction in needle-risk behavior. Motivation to change was also found to be related to cognitive functioning, which involved being able to think more clearly about one's behavior. Thus, both self-concept and one's sense of well-being are related to lowered risk in some areas, but not to a reduction in needle risk behavior.

The Deren et al. paper ("Sexual Orientation and HIV Risk Behaviors in a National Sample of Injection Drug Users and Crack Smokers") begins to resolve an important gap in our knowledge about dual risk populations and their potential role as HIV transmission bridges between different high risk populations. The paper provides data on men who have sex with men (MSM), lesbian, and bisexual individuals who are active drug users (IDUs and crack smokers). The data provide evidence for high rates of seropositivity in these groups, as well as findings that there were significant differences in risk-related behaviors compared by sexual orientation (heterosexual, gay, lesbian, bisexual), especially in terms of types of drug use (crack smoking versus injection) and in terms of the number of sexual partners reported by respondents. These findings support the need for modifications in current HIV prevention messages and strategies for these groups.

Montoya et al. ("An Analysis of Differential Factors Affecting Risk Behaviors Among Out-of-Treatment Drug Users in Four Cities") looked at whether race or ethnicity are related to HIV risk. They found that being African American or Puerto Rican was associated with a reduction in needle-risk behaviors, even after socio-demographic variables and health variables were entered into the equation. One interesting aspect of their findings was that while race/ethnicity are involved in reducing some forms of risk-taking behaviors, specific cultural influences may nevertheless contribute to other nonneedle-risk behaviors, such as higher crack use or multiple sexual partners.

Robles et al.'s work ("Effects of HIV Testing and Counseling on Reducing HIV Risk Behavior Among Two Ethnic Groups") studied the effect of intervention on risk-taking among seropositive and noninfected individuals. They found interactive effects. African American injection users showed lowered risk behavior after intervention, regardless of HIV status. Puerto Rican users differed with respect to HIV status. Seropositive users were more likely to report shared use of cookers. Seropositive African Americans and Puerto Ricans showed a significant reduction in risky sexual behavior, while seropositive African Americans were also less likely to persist in practicing unprotected oral sex.

These four studies not only convey confidence that risk behaviors can be changed through prevention/intervention efforts, but also that many

sociocultural factors need to be accounted for to elicit a positive effect. Some of these factors are race/ethnicity and culture specific behaviors, gender, the nature of one's sense of self, HIV status (positive vs. negative), and types of risk behaviors acceptable within cultural groups. The studies also suggest strongly that there is a complex relationship between the elements listed above, and that efforts are needed to parcel them out more definitively. Moreover, they also indicate that these factors may work selectively in different cultural groups, and that culturally specific variables may need to be identified and specific culturally relevant instruments and interventions may need to be developed.

TREATMENT STUDIES

Three of the studies were directed at intervention/treatment issues. Stark et al. ("Correlates and Consequences of Entering Drug Treatment: A Study of the NIDA Cooperative Agreement National Database") explored the relationship between cessation of injection drug and crack use and treatment completion. A positive treatment outcome was found to be related to race (non-African Americans did better, and Hispanics showed a high drop out rate), few sex partners, a history of prior treatment or of HIV testing, and a high perceived risk of acquiring HIV infection. Motivation to change also appears to be an important factor related to risk reduction.

Baldwin et al. ("Factors Contributing to Retention of Not-in-Treatment Drug Users in an HIV/AIDS Outreach Prevention Project") also addressed the problem of identifying characteristics associated with the completion of outreach based prevention programs. They found that environmental factors (nonpersonal variables) were important predictors of treatment success. Specifically, it was not the individual's drug-taking behavior that was important, but rather the *drug network* in which the person functioned, as well as the impact of outreach that were important factors in retention. Thus, the person's associates, and the nature of this group's values, exert an influence over whether a person will remain in a prevention or intervention program. If the pull of the reference group is strong, such as being a closed system, the person is more likely to not return for follow-up. Such groups are likely to be less tolerant of "outsiders." Those affiliating with a more open group were more responsive to treatment, and not principally oriented toward avoiding others and seeking drugs.

McCoy et al. ("Effectiveness of HIV Interventions Among Crack Users") provides one of the first examples of the impact of intervention

efforts directed specifically at crack smokers. The intervention study compares the impact of the NIDA standard intervention with the efficacy of a locally designed intervention, comparing baseline and follow-up data. Significant behavioral change is demonstrated for both intervention types, with an additional impact of the local intervention in one subgroup within the target population. This study demonstrates the need "to develop, implement and evaluate intervention models targeted to specific subgroups and specific behaviors in order to find the most appropriate and cost-effective prevention models."

In all, these studies indicate that prevention and interventions do work, but selectively. Several important factors have to be addressed if higher success rates are to be achieved; such factors as race, social and cultural environment, including peer group identification, and motivation to change (which is linked to self-esteem and independent from measurement of a change stage). Treatment programs may also need to be culturally specific and innovative to stand a chance of being successful.

COST OF PREVENTION

One paper does not neatly fall into the three part classification. The report by Wright-De Agüero et al. ("Cost of Outreach for HIV Prevention Among Drug Users and Youth at Risk") answers the question that is very often asked by policy makers and politicians: What is the cost of prevention? The paper clearly substantiates that it is cheaper to prevent infection than treat HIV infected individuals or those manifesting AIDS. Both outreach and other type HIV prevention programs are clearly less costly than dealing with the onset or manifestation of the disease.

CONCLUSIONS

In summary, these presentations demonstrate that many different aspects of prevention/intervention do work, although the relationships between intervention and risk reduction are very complex, as demonstrated in this volume. Prevention is clearly less expensive than not conducting intervention at all. But if prevention effectiveness is to be strengthened, several elements have to be addressed. Cultural factors demand that prevention efforts be culturally relevant and competent. By taking into account many of the findings presented in the preceding studies, knowledge can be derived about what culturally specific factors should be addressed. Successful prevention programs will also have to address the unique

lifestyle, lifestage and health-related circumstances of the participants, including different forms and contexts of drug use. Simply providing more of the same will not advance prevention/intervention efforts. A third issue that is minimally addressed by these reports is the impact of social groups on individual behavior, and the need to move some aspects of prevention programs beyond the individual intervention stage. Most of the interventions reported are directed at individuals, while much of the analysis shows that there are very important impacts from peers, the surrounding sociocultural environment, and small groups. Some of the loss to follow up, and some of the problems with sustaining behavior change are not individual level phenomena. This indicates that there must be a paradigm expansion from individual change models to models that take into account both individual psychosocial conditions and the simultaneous impact of social conditions beyond the individual. The information about what factors may be important in prevention and treatment are becoming known. It is time to put them to work to move on to the next phase–that of making intervention work more effectively for more people, more of the time.

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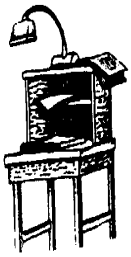

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