This paper outlines a proposed series of research investigations that will be undertaken to examine issues relating to AIDS education and prevention. The issues involve considerations of culture and media and examine issues relevant to organizational, mediated, interpersonal, and health communication. Attached to the paper is the current bibliography of the resources on AIDS education and prevention currently in possession of the researchers/authors. The ability to generate information that can improve efforts at prevention and education continues to improve as this project expands. The acquisition and analysis of what is literally becoming thousands and thousands of manuscripts takes time and effort. That challenge is welcomed as well as the promise that such an endeavor offers. (Contains six references; appended are a 52-page annotated bibliography of "owned" articles, a 49-page annotated bibliography of "unowned" articles, and a list of ERIC resources.) (Author/CR)
AGENDA FOR

AIDS EDUCATION RESEARCH:

PROPOSED SERIES OF META-ANALYSES

by

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ABSTRACT
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AIDS EDUCATION RESEARCH:
PROPOSED SERIES OF META-ANALYSES

This manuscript outlines the proposed series of research investigations that the authors will be undertaking to examine issues relating to AIDS education and prevention. The issues involve considerations of culture, media, and examine issues relevant to organizational, mediated, interpersonal, and health communication. Attached to this paper is the current bibliography of the resources on AIDS education and prevention currently in possession of the authors. The ability to generate information that can improve efforts at prevention and education continues to improve as this project expands. The acquisition and analysis of what is literally becoming thousands and thousands of manuscripts takes time and effort. We look forward to that challenge as well as the promise that such an endeavor offers.
This paper represents an outlining of what will be a long-term project dealing with issues dealing with AIDS prevention and education. The authors have been at work for almost two years in the identification and collection of materials. This project represents the far largest endeavor that either scholar (Tara Emmers-Sommer or Mike Allen) has even undertaken and should take at least a decade as various issues are explored and the relevant literature summarized. Attached are two Appendices. The Appendices are bibliographies of the various material available in the social and behavioral sciences dealing with AIDS education and prevention. The first bibliography or Appendix is a listing of the material currently in possession of the researchers. The bibliography at the time of presentation will be out of date. Every week more material is acquired and the list of possessed materials always runs a few weeks behind. The second bibliography or Appendix is a listing of material that the researchers know to exist (and believed to be relevant) but is not currently in possession of the authors. This bibliography represents the process of ongoing collection of manuscripts and data sets that represents the task of this set of investigations. Data collection is ongoing and the number of manuscripts is enormous, representing the largest data base that either author has ever worked on.

The authors define the issues broadly in terms of behavioral issues in AIDS education and prevention. This includes any feature that is related to the involvement in risk behaviors or efforts to reduce the participation in risk behaviors. The key is to develop an understanding of the motivational features that are present and methods of creating interventions that will reduce those behaviors. This is not an assessment of directly medical issues relating to how various behaviors effect the degree of risk of contracting the HIV virus (sometimes referred to as “conversion” or “seroconversion” or “positivity”). This research does not consider how various behaviors are an outcome of HIV infection symptoms (mental illness, dementia, etc.) or how
various behaviors impact on the onset or severity of symptoms (stress, exercise, etc.). This research program is targeted at the issues surrounding the degree to which a nonpositive person chooses to engage in behaviors increasing risk, what impact that knowledge of HIV positivity has on a person's willingness to put others at risk, what impact various methods of interventions have on reducing the level of risky behavior, and, finally, the practical and ethical implications of various policy approaches to handling the spread of HIV infection.

The only issue of note is the relatively enormous size of both bibliographies. If one were to use an electronic data base like the Educational Research Information Clearinghouse (ERIC), the Index to Psychological Literature (Psychlit), the Index to Journals in Communication (ComIndex), or Index Medicus (MEDLINE) or the special bibliographies on HIV/AIDS (AIDSLINE), the bibliographies for behavioral data would not exceed 1,000 relevant published manuscripts. The current bibliography of owned materials is well over 1,300 manuscripts and the unowned set of manuscripts exceeds 1,500 known texts. This creates a large set of primary data sets for the various outcomes. What is astounding is that the data has been collected in a relatively short time, about 15 years total (if one considers the normal lag time for research the real publication period is about 10 years). This represents a publication rate in excess of 200 manuscripts per year on this topic. The other aspect of the data base is the number of countries and cultures represented. This is one of the few data bases that contains a data base where a large number of investigations are conducted outside the United States. This is not always the case, in a review of more than 200 investigations of the relationship of gender and self-disclosure, very few of the manuscripts contain data representing samples outside of the United States (Dindia & Allen, 1992). The access to data sets that comprise a diverse set of cultures and conditions
permits an evaluation of the generalizability of any potential conclusions generated from this project.

One reason for the discrepancy between individual data bases and this bibliography in this report is that each of the indexes contains material relevant to defined discipline (representing a limited set of journals) and this research project does not respect the divisions of the academy. The search of data sets should cast the widest possible net and include as many manuscripts as can be reasonably obtained. It should be recognized that any meta-analysis will likely include less than 100% of the possible data sets, not all data sets are accessible to the researcher. The key to the conduct of a meta-analysis is whether the investigators have conducted a reasonable search and incorporated enough manuscripts to provide useful information based on the synthesis.

One reason that this bibliography is larger is the inclusion of manuscripts available in languages other than English. Tara is able, for example, to translate manuscripts available only in Spanish. Other manuscripts written in French, German, Dutch, Flemish, Japanese, Africaner, Swedish, Norwegian, and Swahli will represent a challenge as efforts will be undertaken to find ways of translating this material so that the data can be incorporated into the analysis. The failure to find methods of incorporating foreign data would limit the applicability of this analysis and the problem under investigation requires a much broader set of considerations that transcend national and cultural boundaries.

The expectation of the investigators is that this bibliography will continue to grow and grow rapidly as the research base it reflects grows rapidly. For example, the serial publication, AIDS Education and Prevention, is a bimonthly journal that contains typically seven research articles. There are at least six more additional publications devoted to information on AIDS
(AIDS, AIDS Care, AIDS & Public Policy Journal, International Journal of STD and AIDS, Journal of Adolescent AIDS Education and Prevention, Journal of the Acquired Immune Deficiency Syndromes), that all continue to increase the current data base. This generates an attitude that we are always behind the existing data base when conducting a meta-analysis. The AIDS education and prevention literature, given the rapid growth of available data, represents something that exemplifies this problem, more than most areas of research. This combined with a set of literature where large percentages of the material is not found in any index creates an enormous challenge that we are slowly working to overcome. However, as the data base continues to grow, the ability to continue to expand the scope of the knowledge continues to increase.

Statement of the Issues

Currently, the drug cocktail combinations for treatment of HIV infection involving various protease inhibitors (the state-of-the-art treatment for HIV) are running at about 50% effectiveness. That is, only about half of the individuals receive demonstrable positive benefits and there currently exists an issue about the longevity of those benefits. At the current time it is not known whether this is a complete cure or simply a temporary remission. Given the cost of the treatment, there exists little feasibility of extending this therapy to the number of persons worldwide that require this regimen. This paper is not intended to review or address the most current medical technology and advances. The focus of this inquiry are the issues of education and prevention for HIV transmission. As long as the current techniques at treatment or vaccination remain ineffective or cannot be implemented universally, the best hope for dealing with the infection is through prevention.
The 50% effectiveness of current treatment means that while medical therapy has improved the survivability and longevity rate for those with HIV, the current medical regimen is far from providing something that could be considered a cure or a vaccine. The best advice for the world is still to try to avoid infection. Until a regimen is developed with a much higher degree of success or a vaccine is found, the best advice is found in undertaking necessary steps to assist persons in being ready to avoid risk behaviors. This review project focuses on the efforts at evaluating the various methods of reducing infection. The fundamental assumption is that appropriate educational and informational efforts will reduce the number of persons engaging in risk behaviors.

GROUPS AT RISK FOR HIV INFECTION

The means of transmission of the HIV virus is relatively limited to direct exposure to bodily fluids. The general means of transmission are through sexual contact or the sharing of needles with an infected individual. There exists a third area of risk, blood transfusions, but proper screening and testing has reduced this risk to minute proportions (although with potential of forms of the virus through mutation this may not be true) and therefore is not considered a major risk. The risk of contamination from exposure as a result of a medical procedure is involuntary, that is a person probably cannot control the safety of the blood supply so education and prevention efforts cannot hope to reduce this potential form of risk behavior. Education can only be effective with those behavioral risks that a person can control.

Engaging in sex (particularly anal) without some type of protection from infection and the sharing of needles constitute the largest risk factors. Both of these risks are identifiable and the persons engaging in the behavior can be made aware that the behavior is potentially
dangerous. The more likely the sexual behavior is to result in bodily fluids (particularly blood) comes in contact with permeable membranes increases the risk. The longer that bodily fluids are in contact with those membranes, the greater the risk of transmission.

Both methods of transmission (sexual contact and contaminated needle use) are preventable. Obviously, not using intravenous drugs or engaging in sexual behavior would prevent risk. But abstinence may not be possible or desirable for any number of reasons. Persons addicted to the use of intravenous drugs are unlikely to accept a simple message that advises against using drugs. Persons sexually active (and that includes married couples) are unlikely to abstain from sexual contact. Simply advocating avoidance of the behaviors, while providing a guarantee of safety, is probably not a method that the persons would find acceptable or capable of readily undertaking. Engaging in the behaviors, for whatever reason, can take place in a manner that reduces (but probably does not eliminate) these risks. For drug users the use of sterile needles or needles that are not shared with others reduces the risk of infection. Sexual contact involving the use of a condom (either by a male or a female) reduces the risk as does a reduction in the number of sexual partners (as well as awareness of the sexual past of the partners). The reduction of risk is such that it creates a sense of safety and the possibility of avoiding widespread HIV infection. Obviously, the above behaviors are not necessarily a guarantee of elimination of risk, but the aforementioned behaviors do diminish the risk significantly.

The problem with identifying a group of individuals at risk is to create a sense of stigma or labeling on the basis of risk for the disease. The claim that sexually active and promiscuous persons and intravenous drug users are those infected creates the scenario of gay men, prostitutes, sexually promiscuous, and drug addicts as the source of the disease. Since anal sex
carries a higher risk of infection, gay males engaging in anal intercourse represent, among sexually active persons, a group that engages in higher risk behavior. The risk for men having sex with men can be demonstrated to be reduced and the diminished rates of infection among gay males in the United States indicates the potential for safer behaviors.

The issues involve only a sense of risk, rather than a sense of exclusivity. It is important to note that the general approach is to create a system of information or beliefs that will lead to attitudes and subsequently behavior. The theory of reasoned action indicates a sequence of effects that has attitudes predicting behavioral intentions and then subsequently behavior. This sequence has received substantial support from existing data summarized and tested through meta-analyses (Kim & Hunter, 1993a, 1993b; Sheppard, Hartwick, & Warshaw, 1988). The theory of Protection Motivation Theory for health communication has the same approach but concentrating on the aspects of the situation that messages can use to increase the level of behavioral compliance among recipients. The assumption that the larger community makes is that providing information will change beliefs and that in doing so attitudes will change and subsequently behavior will be changed as well. The fundamental orientation is that compliance will be voluntary based on the explanation of risk and the need for persons to reduce that risk.

**Sexually Active Persons**

Anyone sexually active is technically at risk for HIV infection. Condoms are not 100% successful, the failure rate for condoms is not trivial. The only way to avoid risk is not to practice sex. This seems impossible and unlikely that the human race will practice abstinence. The previous STD risk (gonorrhea, syphilis, herpes, etc.) as well as pregnancy did not seem to generate high use of condoms. The confidence that we can have that persons engaging in sexual
behavior will do so safely is fairly low. The question is how to provide a motivation that will uniquely increase the use of condoms for a population that has demonstrated significant resistance to condom use in the past.

So the effort is to provide a sense of potential behavioral alternatives that will reduce the risk. The educational efforts target creating an awareness of the risk and suggesting behavioral alternatives that will minimize exposure to HIV. The question is why awareness (and most of the world is aware of the risk) does not immediately translate into safe behavior. Theoretically, awareness would translate into a situation were one would expect reduction if not elimination of the risky behavior. The previous sections indicate the most of the guiding theoretical orientations in this area are predicated on the assumption that information will motivate behavioral compliance.

The key seems to involve the creation of a behavioral routine for persons engaging in sex that makes condom use a part of the ritual. This ritual needs to be a part of all explicit sexual encounters, whether they are heterosexual or homosexual (including lesbian). The development of a cultural norm involving the practice of safe sex creates the best possibility for reducing risk. The reluctance of parts of the culture to incorporate this as a norm means that the practice will not be encouraged.

**Intravenous Drug Users**

Probably the largest source of infection in the United States at the current time is the sharing of needles by those using intravenous drugs. Typically, the intravenous drug use is illegal and the practice is conducted covertly and outside the purview of the medical community.
Identification as an intravenous drug user (IDU) creates a stigma that carries both legal and social ramifications considered extremely negative.

The additional barrier of addiction means that often drugs dominate the psychological, financial, and physiological reality of the addict. The result of this addiction is that the addict concentrates on the addiction and the risk of HIV is far removed from the issues of the day to day existence of the addict.

The problem is the most addicts are using a drug that is contributing to their demise. The threat of HIV infection is only another in a series of threats that stem from the addiction. It is very difficult to convince a heroin addict that undertaking a procedure that will reduce HIV infection is something that the addict should be concerned about.

**EFFORTS AT EDUCATION AND PREVENTION**

Virtually every country has some form of public education intended to increase the level of prevention for HIV infection. The emphasis, funding, frequency, completeness, and type of program differs greatly from location to location based on needs and preferences of the social system. This awareness indicates the need for a sense of culture and permissible forms of message construction specific to the particular language community. More importantly, it recognizes that the reaction to a disease is one of perception, and that perception may not reflect the perspective of modern medicine.

This paper will treat the variable of culture as that associated with a particular language community of persons that share symbols. This view is typical of most communication scholars, that view the definition of culture as related to how persons establish a sense of community by creating an identifying set of symbols within a language community. The result is that while
meta-analysis generates useful theoretical and abstract understandings, it requires a qualitative knowledge of the actual language system for application of that knowledge. The authors believe that only by combining quantitative and qualitative approaches can an effective educational system be designed.

Educational efforts vary from relatively simple public health promotion campaigns using various media to distribute a message to one on one sessions with persons currently engaging in risk behaviors. The key is distributing information and providing reasons for reducing behavior will contribute to reduced risk. There effectiveness of the various media need to be considered: posters, public service announcements on the media, education in the schools, or the use of existing community groups or community leaders.

Some education and prevention efforts target particular populations with messages intended to elicit appropriate behavioral reactions from a particular set of persons considered as potential persons at risk for HIV infection (prostitutes, drug users, gay males). The expectation is that each group will have sources of information that are used most frequently and considered most credible. No assumption is made that these sources or evaluations are shared by the various groups. The result is that a comparison of the effectiveness of the various methods and approaches to communication is required. Meta-analysis permits a direct comparison in terms of effectiveness of the various methods of providing information.

**CULTURAL ISSUES**

HIV infection represents one of the few communicative issues with an immediate international set of expectations. By that we mean that the problem and the need for effective communication crosses geographic and cultural boundaries. Currently, Tara Emmers-Sommer,
Mike Allen, Lisa Bradford, and Tara Crowell are coding information that compares educational efforts for Hispanic groups. The preliminary findings indicate that Hispanic groups have a lower level of AIDS knowledge and do not practice or intend to practice appropriate prevention techniques. This finding, while it requires development (and confirmation) represents a question: Why do some ethnic (or cultural) groups demonstrate less knowledge and/or behavioral commitment? An understanding of this may permit the restructuring of messages to improve effectiveness.

Culture involves not simply a geographic set of boundaries that persons live within and the expectation that each set of areas represent a different practice. Instead, culture is defined by a group of persons that share a particular communication practices. The definition of culture as defined as a community of persons sharing a set of symbolic references indicates that multiple cultures can share the same geographic space. It is also possible and expected that individuals can be members of multiple cultures at the same time.

One issue with HIV infection is which culture does a person primarily belong? For example, a homosexual black male in the United States, is that man primarily associated with the African-American community or with the gay community (perhaps neither). Do intravenous drug users form a unique cultural entity that ignores sexual practices, race, and ethnicity? Does the differences in age, location (urban vs. rural), or any number of other features determine the reaction to the educational efforts. An examination of these various demographic characteristics and the identification that a person makes contributes to an understanding of what kinds of communication are most effective.

ETHICAL ISSUES
Public health matters in dealing with the education and prevention of a disease are generally not considered requiring an examination of ethical decisionmaking. However, AIDS prevention represents a perhaps unique and difficult situation. Sexual behavior and intravenous drug represents areas of human activity where there are often strong sets of rules that differ from culture to culture. In addition, there are typically prohibitions against the behavior that transmits the HIV virus. The result is that the issues in HIV/AIDS education encounter significant attention and resistance on the basis of ethical criteria.

The problem is that several cultures have particular attitudes about certain sexual practices. The use of educational materials in that social system may involve commentary on an aspect of social behavior that culture denies to exist. Some cultures essentially act as though homosexual sex acts, or sex acts between nonmarried persons do not exist. To introduce an educational technique that assumes that some violation of cultural practices exists, creates some degree of problem, particularly when dealing with the need to change a behavior for an condition that is not admitted to exist. The results of some cultural mores represent a barrier to effective education.

Sexual practices in some societies are not an acceptable topic of discussion with outsiders or in public. The introduction of an HIV or AIDS education program fundamentally represents a violation of the cultural norms. The ethical implications of the practice for communication researchers deserves continued attention (Allen, 1998). The problem with the implementation of any educational program targeted at prevention is ultimately the admission (in some cases) that widespread violation of stated norms.

This issue becomes whether a person, even with the best of intentions, can intervene ethically with a set of communication practices that violate some expectation of the society. This
is a particular problem when the disease can be associated with several practices considered to be
a violation of some social or legal norm for behavior. The result is that the targeting of audience
(prostitutes, homosexuals, intravenous drug users, promiscuous) is creating a social stigma and
assigning a negative valence to membership in this group. Literally, the designation provides
that these persons are "diseased" or "unclean" in an identifiable manner. Not only that, the
condition is one that could infect others.

The expectation in the United States is that matters of public health take precedence over
cultural norms when a discussion is considered beneficial to public health. While groups may
resist and react adversely to such discussions, the need of the medical community is generally
considered primary. Such an orientation is not necessarily shared by other communities. The
medical community is concerned about issues of public health and the normal boundaries of
discussion for topics, used by the general society, are generally not accepted within the medical
community. This creates a distance between what the medical community discusses as a
language enterprise and how of the rest of society continues to discuss these issues (if the
discussions occur at all).

Meta-analysis does not resolve ethical issues. Meta-analysis simply summarizes existing
research and points to consistency and differences in the existing findings. The problem is that
research findings serve as a basis for practice. The implementation of any program of AIDS
Education and Prevention must consider the impact of the system on the culture as well as the
individual.

**CONTRIBUTION OF THIS PROGRAM**
The contribution of this program of literature summary to the ongoing issues remains vital. The question is whether the efforts of the education are providing reduced infection rates and diminishing the extent of risk behavior. The means that the central focus is twofold: (a) diminishing risk behavior among those engaging in risk behavior, and (b) preventing persons currently not engaged in risk behavior from starting to engage in such behavior. Both parts are important, even persons that are HIV positive, if they reduced risk behavior would diminish the spread of the disease because they would be less likely to infect another person.

At a theoretical level, various approaches to the study of public health communication (Theory of Reasoned Action, Protection Motivation Model, Health Belief Model, etc.) can be potentially evaluated in terms of the potential that each theory offers as a contribution to understanding the issues. Each model carries expectations about how messages are expected to effect receivers. The differentiation of the models and examination of data can be conducted as part of a meta-analysis to evaluate the degree to which various models are useful in predicting attitude change.

At a pragmatic level the question can be addressed as to both whether the methods are effective and the level of effectiveness for the variety of interventions undertaken. This can take place regardless of the theoretical testing that occurs. Theoretical models however, provide better long term possibilities by providing a direction for future research to provide methods of improving the effectiveness of interventions.

The real test of any intervention system is whether risk behavior diminishes or not. This criteria represents a rather limited set of expectations about one outcome measure that may be produced. However, the bottomline for education and prevention efforts is the impact on the rate of HIV infection. The ability to identify the nature of the dependent variable in clear and concise
terms affords the ability to use meta-analysis without the issues of ambiguity of the dependent measures.

**Meta-analysis as a Method**

Meta-analysis represents a method of quantitative literature summary across a series of statistical empirical investigations. There seems to be little doubt about the superiority of meta-analysis to systematically handle large numbers of investigations to address issues of Type I and Type II error. The goal of meta-analysis is simply the averaging of effects that goes from a single estimate of a relationship with a sample to an estimate of the population parameter by combining samples. The larger the sample the less the associated error in estimating any particular parameter. If the effects are homogeneous, then the average parameter demonstrates a consistency with the population effect.

Heterogeneity often indicates some type of methodological artifact or meaningful moderator variable. The follow-up analyses permit an examination of the possibility that various features are contributing to differences in effectiveness of the programs. It should be stressed that is all the effects are in the same direction than the moderator distinguishes between larger and smaller magnitudes. When the sample of effects demonstrates a set of results that in different directions, more caution is warranted. It is possible that the effects are positive for one group and negative for another. Understanding this separation permits a reexamination of the application of various educational programs and a targeting for those message receivers for whom the message is most effective.

Meta-analysis in the social sciences is no longer a luxury or an experimental technique. The use of meta-analysis is a necessity to deal with the problems of sampling error and
moderator variables. At the current time, we are aware of almost no work done using meta-analysis for the examination of AIDS education and prevention. The only current summary (Kalichman, Carey, & Johnson, 1996) contains only 12 studies and is limited to one condition. The impact is that across all the programs of education and prevention in the world and the hundreds of empirical investigations, very little summary data exists.

**Topics for Various Meta-Analyses**

**Public Health Campaigns**

**Mass Media**

Mass media safe sex campaigns are efforts at using an information distribution system for changing beliefs and attitudes. Mass media campaigns range in energy and efforts from the simple display of posters at various public locations to the use of targeted campaigns involving public service announcements. The programs may use images, celebrity endorsement, or any number of techniques that have sold products or advanced political candidates.

Mass media represents one method of providing a series of messages for individuals that reach the majority of most of the population quickly and effectively. The problem is that such messages are public and therefore subject to the scrutiny of everyone. Persons objecting to the behavior that is the cause of the risk have protested the use of mass forms of communication to distribute information.

The issues of mass media provide the problem of access and the issues of determining how to provide a message. Commercial media are reluctant to accept advertising or message that may offend a portion of the audience. Government owned media are part of a political
process that ties the message to governmental policy. Government officials may want to reflect public sentiment and therefore media policy may reflect those desires.

**Educational System**

The educational systems in the world have also responded to the need to educate students about the problems and issues at stake for the spread of HIV infection. It represents a fundamental challenge to the structure of society, particularly various moral and ethical systems that do not acknowledge or endorse the various behaviors that are responsible for the transmission of HIV.

Educational systems suffer from the same problems that the mass media have in dealing with popular sentiment. Parents in particular feel that children should not be subjected to material that runs contrary to established community attitudes. The result is a structuring of content often targeted or limited in terms of advice (for example only advocating abstinence). While the method advocated may be effective, if a population chooses to be sexually active, then the failure to provide the “what if” recommendations may put a group of adolescents at risk.

Educational institutions are caught in the forces of a system that must acknowledge that behaviors many consider anti-social exist in order to implement a policy of education. The admission may be more than most parents or school administrators can feel comfortable making. And in some conditions, the advice, as well as precautions (condom distributions) may be unavailable. The issue is what kinds of interventions have produced what kinds of outcomes.

**Interpersonal Programs**

The link to interpersonal communication research and theory is evident in the fact that sexual transmission is predicated on a lack of safe sexual practices. We have little information
consistently identified about how couples negotiate this behavior. The key is to provide a connection between the cultural practices and the behavior of a couple going through the initial stages of negotiating a sexual encounter. A current meta-analysis is coding the reports of how couples negotiate this behavior (or why they do not). The feeling is that the ability to understand the process and what factors inhibit or promote use of a condom are important in establishing educational patterns that promote successful behavior.

A major challenge for persons involved in health communication is the establishment of effective means of communication that encourage persons to practice safe sexual behavior. The problem is that the couple about to engage in sexual behavior needs to be encouraged to take appropriate steps. The use of some type of condom is probably essential in a nonmonogamous relationship.

One subset of issues is that some populations are not capable or able to implement safe behaviors. For example, persons with any mental limitation or defect may not be in a position to cognitively process educational materials. In addition, the use of drugs or alcohol by sexually active persons may reduce the level of sound judgment. The ability to implement safe behaviors may be reduced under a variety of conditions, despite knowledge and the intentions of the person. The issue is how to create, under adverse conditions, the maintenance of the behavior. Enough data exists to investigate many of these conditions and permit the making of recommendations.

**Testing and Counseling**

No problem is perhaps more frustrating than the fact that large numbers of persons will become tested for HIV but then fail to return for the results of the test (estimates typically
converge on 33\% \text{ of persons taking a test failing to return}). Anonymous testing encourages persons to test, but the fear of finding out the results of the test (or some other factor) represents a barrier to having persons return to find out the results of the test. The research identifies clearly the nature of the problem but the results are mixed on what is the genesis of the problem and what appropriate solutions exist to minimize this problem.

The identification of the motivations that a person has for not coming back to receive the outcome of the test should receive attention. Understanding the motivation of those not coming back would provide a basis for effective counseling. The problem is that persons seeking out an HIV test are probably at risk, and therefore need this information.

Another set of issues deal with the failure of persons to follow recommended drug regimens. One of the largest causes of failure in protease inhibitor therapy is failure to follow the guidelines for the taking of medications. The side effects of the drugs are serious, but so is the failure to follow the procedure. Understanding the effectiveness of various kinds of behavioral interventions (support groups, partners, disclosure) could increase the taking of prescribed medication.

**Targeting Special Populations**

Since the disease is spread by particular types of behavior, it is possible to target educational efforts at particular groups. The question is how to identify those persons most at risk and provide the appropriate message that will reduce the prevalence of risk behaviors. The issue of designing a message for a particular audience at a given time for a specific topic requires an understanding of how that population constructs messages and meaning. The contribution of meta-analysis to that process is not the ability to provide an indication of what words and phrases
to use to improve effectiveness. Meta-analysis is the assessment of broader strategies and
techniques, particularly comparison of differing possibilities within a given strategy (high versus
low fear appeal use).

Some groups of individuals (runaway juveniles, migrant farmworkers, homeless,
incarcerated persons, mentally retarded) have particular issues that need to be considered. On the
other hand, it might be that methods may generalize and be effective with any group. A lot of
attention is spent developing and testing message strategies for particular audiences. If a general
model can be demonstrated that generalizes across situations, groups, and cultures, than the
question becomes not the identification and development of a specific strategy for a situation.

One consideration in dealing with special populations is the ability of the persons to
implement safer behaviors. For example, a prostitute may not be able to use a condom in an
environment where the patrons expect sex without a condom. The environment may literally
create an economic competitive disadvantage for the sex worker that is using a condom. This
economic disadvantage may reduce the probability of the prostitute in using less risky forms of
sex or taking precautions. The communities without needle exchange programs or other types of
services for increasing the safety of needles may reduce the safety for the drug user.

The problem with intravenous drug users and prostitutes is that while the person is
responsible for their own actions, others may be negatively effected. Drug users, prostitutes, and
the customers of prostitutes may all have spouses, lovers, and children that can become infected.
The spread of the disease to persons who are not drug users and practice monogamous sexual
habits can come from the person that they believe shares those behaviors. The result is that the
failure of the lover or spouse can have consequences for the other person believing themselves
not to be at risk.
The net result is that any program to reduce risk contributes the health of everyone. The asymptomatic period may range longer than a decade after initial conversion (becoming HIV positive) and many other persons may be exposed to the virus. The issues surrounding an evaluation of the various prevention programs requires examination of groups engaging in behaviors that increase the risk of seroconversion. The key is that most of these groups are not totally isolated from the general population in a manner that does not put everyone at risk.

POSSIBILITIES FOR IMPROVEMENT

Meta-analysis offers no guarantee of success or statement of improvement. Meta-analysis is intended to offer a method of summarizing the available literature. Such summaries, while imperfect, represent a distinct improvement over traditional narrative summaries of existing data with regard to an examination of Type I and Type II error. The primary problem in social science research is the existence of Type II (false negative) error. The typical rate runs at about 50%. The impact of this error is that programs that provide some potential of success may be prematurely abandoned due to false negative findings. Another outcome is the search for moderator or mediating variables to explain inconsistent research results.

The problem is that currently there exists relatively few meta-analyses in the area of HIV/AIDS research dealing with education and prevention. The ability to provide a sense of advice that stems from existing research currently does not exist. Without an ability to handle the hundreds of research studies currently that exist in the data base, the ability to provide effective advice stemming from that research is lost.

HIV/AIDS infection represents an international set of issues. Few issues have implications for communication scientists in every culture for every person. The issues for AIDS
education and prevention involve a combination of interpersonal, organizational, cultural, and mass media issues. There is virtually no broad area of communication research that in some way is not directly involved in the issues. The challenge in the coming decades is going to be the integration of this mass of data into a set of advice and activities that reduce the level of infection in the society.
ACKNOWLEDGEMENTS

We wish to acknowledge that ability that the Federation Prize has afforded us as researchers to undertake this project. We think that the contribution we can make in this endeavor is great, and the contribution should generate significant advances at a theoretical level as well as have immediate practical application. The ability of communication scholars to contribute to these and other issues continues to go. It is our belief that communication scholars have made far greater contributions to this society in proportion to our numbers than many academic fields. Ours is a discipline that is lived and alive with each act of communication, the contribution must be as ongoing as the process, a process central to that which defines us as human.
FOOTNOTES

1The reference list for the sources that the authors are aware that exist but are not currently in possession can also be obtained from the first author. The authors encourage interested persons to write for updated reference lists as well as completed works as they become available.

2The term, “men who have sex with men” is a more accurate reference to those at risk. The terms “homosexual” and “gay” while also applicable carry sociological and orientation information that is unnecessary for the problem described in this report. A bisexual male, or a male only engaging in homosexual behavior on an occasional basis, or a male engaging in homosexual relations due to situational parameters (e.g., incarceration), all are populations at risk regardless of whether one would consider the person a homosexual or gay. The technical term describes the behavior without focusing on other features. While this paper will use the term homosexual or gay, the reference is one of convenience and the focus of the report is the more accurate term, “men who have sex with men.”
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| ED 346 129 | Scale Develop—Attitudes towards AIDS |
| ED 342 750 | Manitoba AIDS education   |
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