DEVELOPMENT AND RELIABILITY ASSESSMENT OF A QUESTIONNAIRE

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ABSTRACT

This report describes a methodological study in which an interviewer-administered questionnaire was developed for use among incarcerated injection drug users (IDU) and assessed for reliability. A conceptual framework postulating psychosocio-behavioural determinants of condom use intention based on the Theory of Planned Behaviour (Ajzen, 1985) and the AIDS Risk Reduction Model (Catania et al, 1990) is presented first. This framework is specifically designed to include elements deemed relevant for the planning of HIV/AIDS preventive interventions targeted at incarcerated IDU. Questionnaire elaboration then involved a qualitative elicitation study, content validation, pilot testing, assessment of the internal consistency of eighteen additive scales defined *a priori*, and test-retest analyses. Results indicate that it is possible to obtain reliable data from incarcerated IDU. This sets the stage for eventual assessment of construct validity to assist in the choice of relevant measures and findings for consideration in the design of HIV/AIDS preventive public health interventions.

RÉSUMÉ

Ceci est le compte-rendu d'une étude méthodologique ayant pour but de développer un questionnaire nécessitant l'apport d'un intervieweur et d'évaluer sa fiabilité auprès d'utilisateurs de drogues injectables (UDI) incarcérés. Un cadre conceptuel postulant des déterminants psychosociaux et comportementaux de l'intention d'utiliser des condoms est proposé à partir de la Théorie de l'action planifiée (Ajzen, 1985) et du "AIDS Risk Reduction Model" (Catania et al., 1990). Ce cadre fût conçu spécialement afin d'inclure des éléments pertinents à l'élaboration de programmes de prévention VIH/SIDA destinés aux UDI en milieu carcéral. Ensuite, l'élaboration du questionnaire a comporté une approche qualitative, une validation de contenu, un pré-test, l'évaluation de la fiabilité de dix-huit échelles de mesure sommatives définies *a priori*, et des analyses test-retest. Les résultats indiquent qu'il est possible d'obtenir des données fiables auprès d'UDI incarcérés. La vérification de la validité conceptuelle des diverses mesures peut dès lors aller de l'avant afin de déterminer la valeur utilitaire des données produites par ce questionnaire pour l'élaboration de programmes de prévention VIH/SIDA.

CHAPTER 1

BACKGROUND INFORMATION

In 1988, following recommendations from the Federal Centre for AIDS, the Department of National Health and Welfare offered to support provincial governments in their efforts to prevent the spread of the Human Immunodeficiency Virus (HIV) among injection drug users (IDU). It was proposed that multi-faceted pilot prevention programmes designed to reduce the transmission of HIV among IDU and their sexual partners could be funded by both federal and provincial levels of government on an equal cost-sharing basis. Conditional to financing 50% of the service delivery component, the federal government required that these projects include a "comprehensive and methodologically sound" evaluation component funded by the National Health Research and Development Programme. After the programme demonstration and evaluation period, provincial agencies would then have some necessary information to appraise the efficacy of the interventions and to decide whether these should be sustained as a community service. This initiative was to provide the impetus for the development of timely interventions across Canada.

An examination of the Montreal drug scene at that period revealed several elements: (1) Montreal had become a major port of entry for the illicit distribution of both cocaine and heroin throughout Canada and North America, making these drugs widely available in and around the city[1] (2) there were at least 30,000 IDU in the Montreal metropolitan region;[2] (3) only ten pharmacies in the area accepted to sell injection equipment to IDU without restriction;[3] (4) shooting galleries were increasingly present, with Montreal urban community police reporting 50 such hide-outs in the central portions of the city;[4] and (5) resources to assist IDU in accessing detoxification, rehabilitation, and other drug-related services were of limited availability.[5] In addition, two studies clearly demonstrated the presence of HIV infection among IDU in Montreal. An anonymous unlinked seroepidemiologic study conducted at St-Luc Hospital among 147 IDU hospitalized for acute detoxification between April 1985 and March 1987, revealed that 4,1% of these patients were positive for HIV antibodies.[6] In a study examining risk factors for HIV infection among women incarcerated in a medium security correctional institution, 14.6% of 130 IDU volunteers were found HIV antibody positive.[7] Based on these two figures, it was estimated that HIV seroprevalence in the IDU community of Montreal could be in the order of 10%[8]. This was comparatively high in contrast to other Canadian cities such as Vancouver and

Toronto where seroprevalence estimations were 1 to 3% and 2 to 4% respectively among IDU[9].

In this context, Montreal was quickly recognized as a critical site for the implementation of a preventive intervention aimed at IDU. Experience in other cities had already shown that in the presence of HIV and of environmental conditions which promote behaviour facilitating its transmission, the incidence of HIV infection and AIDS among IDU could escalate dramatically within a short period of time. For example, in New York City, HIV antibody seroprevalence among IDU increased from 11% in 1977 to 27% in 1979 and to 58% in 1984.[10] In Edinburgh (Scotland), HIV seroprevalence was 5% in 1983 and escalated to 51% in 1985.[11] In Bangkok (Thailand), serosurveys conducted from 1987 to 1988 among IDU clinic attendees demonstrated rises in prevalence from 1% to 43%,[12] while another study in an outpatient narcotic clinic between 1987 and 1989 showed an increase from 16% to 45%.[13]

Additional to the threat HIV presents to the IDU subculture, is the potential for transmission of HIV infection from IDU to segments of the larger population.[14 15 16 17 18 19] A number of studies in the USA and Europe have shown that at least 40% of IDU are in sexual relationships with non-drug users[20 21 22] and that between 60 to 100% of heterosexually acquired HIV among non-drug using populations in certain areas is currently related to sex with an IDU or with a person who contracted HIV from an IDU.[23] In particular, male IDU tend to prefer non-drug users as sex partners It has been estimated that the number of non-injecting women who are regular sexual partners of IDU is at least half as large as the number of persons who inject drugs.[24] And this, combined with the estimate that approximately one-third of IDU are women of childbearing age,[23] highlights the manner by which maternal-foetal transmission of HIV infection can reach substantial levels in areas where there is a high concentration of IDU.[25 26] For instance, 70% of the pediatric AIDS cases reported in the US in 1988 resulted from maternal HIV infection acquired via injection drug use or heterosexually from a male IDU.[27] Overall then, injection drug use entails serious potential for HIV transmission not only among drug users, but also to non-drug using populations via heterosexual and maternal-foetal routes.

It was with the above considerations that a consortium representing seven health agencies and community groups interested in or directly implicated with IDU elaborated

the first demonstration project for IDU in Montreal submitted for joint federal-provincial funding.[3] This project was named CACTUS-Montreal and service delivery and evaluation[28] were initiated in July 1989. The global aim was to reduce HIV transmission associated with the borrowing and lending of needles/syringes and with unsafe sex practices in the IDU community of Montreal. Aside from implementing a needle exchange site staffed by four nurses providing information, counselling and referral services, the demonstration project was characterized by a unique feature: an AIDS-preventive intervention aimed at IDU inmates in two major provincial correctional institutions on the island of Montreal. *La Maison Tanguay* houses as many as 2000 women per year with a capacity of 150 at any one time; *Le Centre de Détention de Montréal* admits close to 12,000 men per year with a daily capacity of 850 individuals. Prison authorities estimated in 1989 that as many as 50% of the female and 30% of the male inmates could be IDU.

To June 30 1991, a community worker ensured the delivery of CACTUS-Montreal prison activities in both institutions, with a focus on IDU. The objectives of the programme were:

1) to develop knowledge among incarcerated IDU concerning HIV transmission routes and risk reduction measures;
2) to facilitate the development of positive attitudes toward safer behaviours: using condoms for sex and cleaning borrowed needles with bleach;
3) to foster intentions to use condoms and bleach upon release from prison.

The intervention was carried out on two levels. On a general level, pamphlets, posters and a video clip were used to alert all inmates to the importance of the AIDS problem in the IDU community, to foster an appreciation of individual risk, to provide basic information on HIV transmission and prevention, and to publicize the CACTUS needle exchange and referral site. On a more specific level, group interventions using interactive instructional games were developed and implemented for inmates.[29] These involved sessions of 8 to 12 volunteers lead by the community worker on two consecutive days for periods lasting two and one half hours. The approach was based on the premise that games facilitate knowledge and belief acquisition and that guided interactions can promote discussion conducive to the alteration of attitudes in a non-threatening way. Evaluation of these group-based educational interventions entailed an

assessment of the impact of these activities on knowledge (K) about HIV transmission routes and risk reduction measures, attitudes (A) toward using condoms for sex and cleaning borrowed needles with bleach, and intentions (I) to adopt these preventive behaviours in the future (KAI). KAI measures were obtained from group participants via standard questionnaires prior to and post-intervention. Changes in KAI between sessions were proposed to provide an indication of the short term impact of the intervention upon volunteers.

Whether the intentions measured in the KAI study translated into preventive behaviours remains unknown, as it was not feasible to obtain follow-up behavioural information from inmates upon their release from prison. Evidence from the USA and Europe indicates that significant proportions of IDU expressing intention to modify their behaviour tend to do so in response to the threat of AIDS and targeted prevention programmes.[22 30 31 32 33 34 35 36 37 38] Since 1984, IDU are reporting increased usage of sterile injection equipment and reduced numbers of sharing partners. Needle-sharing practices are increasingly regarded as antisocial. Nonetheless, complete elimination of risk via needle use remains difficult to achieve for the majority of IDU, largely as a consequence of the effects of drug consumption. Moreover, diverse studies report increasing levels of condom use among IDU, but the overall usage rates tend to remain low and the extent of sexual risk reduction generally lags behind drug use risk reduction.[22 37 39 40 41] Thus, studies indicate that despite progress in promoting intentions to adopt preventive behaviours and in reducing risk behaviours, there is still a worrying level of risk occurring among IDU populations worldwide, especially with respect to sexual behaviour.[42] Since the only effective measure against HIV acquisition is currently behavioural change,[32 42 43 44 45 46 47] the general response to this disquieting situation is to call for research which aims to understand the predictors and correlates of risk reduction.[48 49 50 51] Such research can identify conditions under which individuals will respond to interventions and can eventually facilitate the formulation of sensible prevention strategies.

In light of the above, the CACTUS-Montreal KAI study provoked further questioning: Which factors, aside from knowledge and attitudes, underlie intentions of IDU to adopt HIV-preventive behaviours? An answer to this question could promote further refinement of the prison group interventions so as to influence IDU positively

toward achievement of HIV risk reduction. Specifically, an improved understanding of the processes that motivate and shape safer sexual behaviours appeared as a particularly desirable study outcome in view of the threat heterosexual transmission from IDU represents for the entry of HIV into the general population and in light of the less encouraging evidence with respect to sexual behavioural change. Also, given that among safer sex alternatives, condom use generally appears as a more acceptable and realistic proposition than abstinence or non-penetrative sex for most individuals, it was decided to concentrate an investigation on the determinants of the intention of incarcerated IDU to use condoms upon release from prison. But first, a well-suited and reliable data collection instrument must be developed for this study.

CHAPTER 2

LITERATURE REVIEW ON DETERMINANTS OF CONDOM USE AMONG INJECTION DRUG USERS

Initial questionnaire development for a study on determinants of condom use intention among incarcerated IDU took place in the Winter of 1989. Prior to developing the questionnaire, published research which had examined determinants or correlates of condom use and factors mediating sexual risk behaviour was reviewed.

Overall, few studies had begun either to examine factors which influence risk behaviour or to investigate determinants of sexual behaviour change and condom use In extensive reviews of published reports describing behaviour change and their determinants in response to the threat of AIDS, Becker and Joseph[43] and Coates et al.[48] documented that most behavioural research had been conducted among "high risk groups", with a major focus on homosexual/bisexual men. In contrast, there was less information pertaining to the general population, including adolescents and young adults. Investigations of possible correlates of risk behaviours and preventive practices were of an exploratory nature and included cognitive, affective, and social variables such as: perceived risk of AIDS, perceived efficacy of preventive behaviours, perceived social norms and barriers to behaviour change, social network characteristics, knowledge about AIDS, and health beliefs[52 53 54 55 56 57 58 59]. Although initially some similar findings were reported between studies involving homosexual/bisexual men and IDU[48], it was also recognized that the majority of studies involving gay men could be of limited generalizability to other populations such as IDU. These studies generally recruited urban, middle class, older, highly motivated and well identified homosexual/bisexual white men[13 48]. In contrast, most IDU appear to be disadvantaged socioeconomically and have a lower average level of education, and a majority are likely heterosexual[13 60]. These factors, added to the particular problems associated with drug addiction, may in turn influence the context within which high risk sexual activities occur and the determinants of sexual risk reduction and condom use[43 48]. For our study purposes, an indepth review of research on determinants of safer sexual behaviour and condom use among IDU was thus conducted to identify which elements could be of most relevance when considering this particular population.

The Paris (1987), Stockholm (1988) and Montreal (1989) International AIDS Conference peer-reviewed abstracts were first consulted. By their format, abstracts limit the amount of information on a given subject, but nonetheless they are useful in providing timely indications of new initiatives in the rapidly evolving field of

AIDS/HIV research. Then, Medline and Aidsline computerized bibliographical searches were conducted for the 1983-1989 interval, retaining only those journal publications in English or French language. The reports selected for this review consist of those studies examining factors upon which an intervention may impact to promote safer sexual behaviour with respect to HIV transmission among IDU.

A. PEER-REVIEWED ABSTRACTS

The first surveys reporting on determinants of condom use as a means to help prevent HIV transmission among IDU are found in the 1988 Stockholm abstracts. In a pilot study conducted in San Francisco among IDU attending a short-term outpatient heroin detoxification programme (N=30), Gibson et al.[61] found that reported condom use was more likely among those with stronger feelings of personal susceptibility to HIV infection and a greater sense of self-efficacy regarding adherence to safe sex guidelines and ability to negotiate safer sex. Mosely et al.[62] recruited IDU presenting for drug treatment in Brooklyn (New York) and examined knowledge and attitudes with respect to HIV transmission and condom use. The major finding from this study is that despite high levels of knowledge about HIV transmission and the effectiveness of condoms as a preventive measure, actual condom use among these IDU was minimal. Subsequent studies generally confirmed this among IDU in Baltimore[63] and in New York City methadone maintenance treatment programmes and detoxification centres.[64 65 66]

By 1989, several reports originated from research teams at the Narcotic and Drug Research Inc. in New York City (NDRI). Magura et al.[64 67] collected information from IDU in methadone maintenance clinics. Measures focused on knowledge of AIDS risk, awareness of susceptibility to AIDS, self-efficacy in avoiding risk, and beliefs and attitudes around condom use. They found that condom use among these IDU was determined by specific beliefs and attitudes such as: 1) believing that condom use does not cut down on enjoyment; 2) believing that sexual partners would not be insulted by requests for condom use; 3) and being willing to use condoms if partners asked them to. Also, facilitated peer support groups were found associated with improved attitudes toward condoms and increased condom use, implying an important role for peer support and norms. Another team from NDRI presented three studies conducted among IDU

recruited through street outreach contacts by neighbourhood ex-IDU workers. Elements from the Health Belief Model, Bandura's Self Efficacy Theory, and the Social Influence Theory were measured to predict sexual risk reduction and maintenance of behaviour change. Tross et al.[68] reported that perceived current and future risk of HIV infection and having friends who practice sexual risk reduction are significant p ›sitive predictors of sexual risk reduction (inclusive of condom use) among female IDU. Abdul-Quader et al.[69] also found that having friends who made sexual behaviour changes is a significant positive predictor of sexual risk reduction for male IDU. However for these men, in contrast to female IDU, perceived susceptibility to HIV infection was not a predictor of sexual risk reduction, whereas a sense of self-efficacy about being able to make risk reduction behaviour change was. With respect to maintenance of behaviour change, Des Jarlais et al.[70] found that believing behaviour change would successfully protect against HIV infection was a significant predictor among street-recruited IDU.

Overall, the studies from NDRI indicated, among other factors, the important role of normative influences in promoting behaviour change. These studies also suggested that the Health Belief Model (HBM) is not useful in its entirety. Perceived susceptibility to HIV and response efficacy are the two factors out of four which could be helpful in promoting behaviour change. In turn, a study examining the relative influence of health beliefs and social/ environmental factors as they affect condom use among IDU did not provide much support for the HBM.[71] Social/environmental factors predicted the largest amount of variance in condom use among both men and women IDU. There were only very weak associations with health beliefs for men - and none for women. Social/environmental factors represent elements such as partner acceptance of condoms and peer norms. This again provides support for the role of normative influences.

Some studies concentrated specifically on women involved in the drug using world and at high risk for HIV infection. This interest has been based on the premise that women are in a disadvantaged position in the face of their male counterparts when it comes to the implementation of safer sexual practices. Such studies report that there is a need to empower these women as strict gender roles promoting subservience to men, a low sense of self-efficacy, and feelings of inertia, isolation, stigmatization, and low self-esteem appear to impede proactive HIV risk reduction.[72] Skills building

sessions were found to enhance womens' perception of their ability to successfully negotiate safer sex with sexual partners and they were eventually more likely to carry condoms with them, to initiate safer sex discussions, and to have less sex with IDU.[74] Thus, the quality of interpersonal interactions with sex partners appear to be important factors for the initiation and maintenance of HIV-preventive actions among women who use or whose partners use injection drugs.

B. JOURNAL ARTICLES

Only two studies on the subject of determinants of condom use/sexual risk reduction among IDU were located in the scientific journals.

Magura et al.[74] reported more details on the quantitative findings of a cross-sectional study presented earlier.[61] Two hundred and eleven sexually active IDU enroled in methadone maintenance in New York City, and who had volunteered for an AIDS demonstration/research project, completed a self-administered questionnaire on the factors influencing their decisions about condom use. Multivariate analyses indicated that personal acceptance of condoms and expectations and communication within sexual partnerships exert the primary influences on condom use for these IDU.

Paulussen et al.[75] published a unique study which analyzed the determinants of condom use among IDU in the context of an established psychosocial model. This Dutch research team used Ajzen's Theory of Planned Behaviour[76] to measure attitudes, social norms, self-efficacy, behavioural intentions, and resultant behaviours among 86 IDU with respect to using a condom with varying partners. The largest impact in terms of explained variance on condom use intention and behaviour was due to perceptions of self-efficacy. Social norms on the other hand did not significantly explain any of the variance. The authors suggest that lack of a social network is characteristic of this group of IDU, forming a barrier for effective prevention formulated on the basis of normative influences. Their findings also suggested that even though IDU are convinced that they should use condoms, they are aware of their lack of skills in the actual performance of this AIDS preventive behaviour.

C. CONCLUSION

As of January 1990, the near totality of available data on the predictors of sexual risk reduction/condom use among IDU had been presented in peer-reviewed abstracts which generally provide less information. Also, several studies recruited IDU in clinical settings, so that their results may not be entirely applicable to the overall active IDU population as these individuals have already made some form of personal commitment to change their lifestyle. In spite of this, the data confirm previous experience in the field of health promotion to the effect that facts and knowledge are not enough to change people's health-related behaviours.[43 77 78 79] Not surprisingly, differential effects were noted according to sex, with women in disadvantaged and disempowered positions with respect to the prevention of sexual HIV transmission.

Overall, the data portray sexual behaviour as a complex social interaction which is determined by psychological as well as by social factors. Health-related beliefs (perceived susceptibility, response efficacy, and self-efficacy), personal non health-related beliefs, normative influences, social support, and technical, interpersonal and negotiation skills are among the significant predictors of condom use and/or sexual risk reduction among IDU, not unlike other populations studied[18]. However, in arriving at these conclusions, most investigations apparently involved the study of an ad hoc collection of variables, with limited justification for these choices. The variables seldom appeared integrated into a conceptual framework based on established theory and models of health behaviour, such that the inter-relationships between the variables remain unknown. Also, it is possible that in the absence of an established reference, the ascribed variable definitions could be rather specific to each study. In this context, it becomes difficult to assess the meaning and relevance of the findings and to determine how they could be used in the formulation or evaluation of a preventive intervention. Eventually, this impedes the obtention of comparable data across studies and the integration of findings with one another over time. Thus this review leads to similar observations as those of Becker and Joseph[43] and Coates et al.[48] who call for a more systematic and integrated approach to the investigation of determinants of behaviour in all segments of the at-risk population.

Finally, no useful scales to measure specific dimensions with the IDU population were obtained. In most instances, the reports only partially suggested how the variables were measured, and only two studies provided indication that the metric properties of the data collection instruments had been evaluated.[61] [71] Unfortunately, this does not attest to the quality of the results in the reported studies even though often they appeared to be very interesting.

CHAPTER 3

STUDY OBJECTIVES

This report presents the findings of a **methodological study** of which the objectives were:

1. To develop a questionnaire based on a meaningful conceptual framework to measure psychosocial determinants of the intention of incarcerated IDU to use condoms for HIV prevention upon release from prison.

2. To conduct initial reliability assessment of the questionnaire by testing:
   a) its ability to elicit stable responses from a same individual on two separate occasions (test-retest reliability);
   b) the internal consistency of the scales comprising the questionnaire.

The use of a conceptual framework aids in the choice and definition of variables to include in the questionnaire and in the specification of potential relationships between them. By providing some direction to the research effort, data interpretation may then occur within a more meaningful context and the significance of findings understood more clearly. In turn, elaboration and evaluation of preventive interventions may be facilitated. An initial assessment of reliability assists in further refinement of the questionnaire and in preparation for the examination of construct validity. The full sense of the conclusions resulting from an investigation can only be established with more certainty when the metric qualities of a questionnaire have been established.

CHAPTER 4

THE CONCEPTUAL MODEL

A. OVERVIEW

A basic premise underlying this endeavour is that a conceptual model can prove useful to guide research examining the determinants of a health-related behaviour. When carefully elaborated, a conceptual model serves several purposes: (1) to identify areas of relevance for data collection; (2) to organize observations into a coherent framework; (3) to provide a matrix for data interpretation; and (4) to generate hypotheses for future investigation. Its practical utility for health research consumers is also of prime importance. Study findings derived from a meaningful explanatory framework enable informed decision-making with respect to the eventual content and structure of a preventive intervention.

A conceptual model can be conceived of as a diagram of proposed causal linkages among a set of concepts believed to be related to a specific health behaviour and which renders explicit the alternative routes to a same endpoint.[80] A concept is a factor or variable which can be empirically observed and measured. Conceptual models differ from theory in that they are usually concerned with specific types of behaviour in specific contexts. In fact, they are most often informed by more than one theory to avoid partial and selected views. This is justifiable for the study of health behaviours as there exists no clear consensus on their determinants.[81] In addition to concepts grounded in formal theory, conceptual models allow the inclusion of processes or variables which represent empirical findings. By definition then, conceptual models can embody specifically selected factors from diverse sources at multiple levels of influence and are flexible and adaptable to specific situations.

Developing a conceptual model can readily be described as a process of invention including both art and science. Thoughtful creativity is necessary to assemble the elements deemed relevant into a meaningful and realistic model. For this study, four criteria were used to determine which theories/models and empirical findings to consider for inclusion. First, the theories/models/variables must be applicable to the explanation of social behaviour in view of the social nature of sexual behaviour. Second, they must be inclusive of the elements highlighted in the literature review (cf. Chapter 2), and indications regarding the operationalization of these elements must be available. Third, evidence in support of the retained theories/models must have been documented in previous studies. Finally, the proposed variables must make sense in

light of our own impressions acquired in the course of previous interactions with the study population.

Figure 4.1 presents the conceptual model developed for this study. Globally, the model revolves around Ajzen's Theory of Planned Behaviour[76 82] and Catania et al.'s Psychosocial AIDS Risk Reduction Model (ARRM).[83 84 85 86] Ajzen's theory is an outgrowth of Fishbein's Theory of Reasoned Action.[87 88] Catania et al.'s model was recently developed to facilitate the conceptual organization of behaviour change and subsequent intervention development and evaluation in the context of AIDS. Bandura's notion of Self Efficacy[89 90 91] is included in both models. To complete our model, elements of the Theory of Interpersonal Behaviour[92] have been added. This latter theory has many similarities with Ajzen's theory, although it is formulated somewhat differently and includes additional concepts of interest. Finally, the central dimensions of Fisher's model[93] on the effects of reference group social influence on AIDS-risk behaviour and AIDS prevention are included.

Overall, the proposed conceptual model in Figure 4.1 appears amenable to the study of condom use in the context of HIV infection across a wide variety of populations. It includes theories of social behaviour and models which were developed in particular response to the HIV/AIDS epidemic. And most importantly, its elements appear to be in concordance with the thoughts of researchers who have been working in the area of HIV prevention among IDU.[31 35 71 94]

B. THE CONCEPTS

A diagram of each theory/model composing our conceptual model is presented in Appendix 1. Excellent overviews of these are provided by Valois et al.,[95 96] Catania et al.,[85] Godin[97] and Fisher.[93] The purpose here is to define each concept retained for our model.

Figure 4.1 illustrates how ***behavioural intention*** is the dependant variable under study. This is defined as a person's subjective perception and report of the probability that s/he will eventually perform a particular behaviour. According to Fishbein,[87] Ajzen,[76 82] Catania *et al.*[85] and Triandis,[92] behavioural intention is a strong predictor of eventual behaviour in as much as conditions which facilitate its performance are present. Behavioural intention itself is predicted by the remaining concepts denoted in

the diagram. For purposes of clarity, relationships amongst the independent variables have not been illustrated. However, some interaction is possible.

The first two elements are essentially derived from Ajzen's Theory of Planned Behaviour:

Attitude toward the behaviour (Att): This concept represents an emotional response, that is, the degree of positive or negative affect towards a given behaviour.[76 92] In turn, according to Ajzen, an attitude is determined by a personal subjective analysis of the advantages and disadvantages inherent in the adoption of a given behaviour. This encompasses beliefs concerning the *probable consequences of the behaviour* (CB) and the *evaluation of each consequence* (EC). By multiplying the perceived likelihood of occurrence of each consequence by its perceived cost/benefit impact on the person, and summing these products, we obtain an indirect estimate of attitude toward a specific behaviour based on the person's salient beliefs about the consequences of that behaviour (Att=Σ[CB*EC]). This "expectancy-value" dimension is akin to the "cognitive determinant" of behavioural intention presented by Triandis.

Subjective norms (SN): This concept refers to a personal subjective analysis of the normative social influences exerted by one's reference group upon one's behaviour.[76 93] Specifically, it is an individual's perception of the opinion held by his/her reference group as to whether s/he should adopt a given behaviour. According to Ajzen, this construct is in turn determined by the individual's perception of *each* significant other's opinion concerning the appropriateness of the given behaviour for him/her (ie normative beliefs) (NB) and the *motivation to comply* (M) with *each* of these significant others. By multiplying a normative belief strength by the motivation to comply with the significant other holding the belief, and summing the resulting products, we obtain an indirect estimate of the personal subjective norm for a given behaviour based on the person's perception of what his/her significant others think (SN=Σ[NB*M]).

The next four elements are derived from the Theory of Interpersonal Behaviour:[92]

Role beliefs: These represent one's personal opinion regarding the appropriate type of behaviour a group of individuals in a similar social position ought to have in the face of a given issue. This can be thought of as a person's rules of behaviour for others.

Self concept: This construct refers to the personal evaluation of the pertinence of a behaviour for oneself. It taps into feelings of obligation to adopt a behaviour, so that

it may be considered a moral norm. This belief differs from normative beliefs in that the person's final choice does not depend on the opinions of others, but rather on his/her own.

According to Triandis,[92] previous experiences or habits are predictive of eventual behaviours, to the extent that behavioural performance is contingent on intention. Two dimensions of "previous experience" are incorporated in our model:

Previous behaviour: This construct considers previous condom use, behaviours which increase the potential for HIV transmission, as well as indicators of unprotected sexual activity.

Communication patterns on condom use: This refers to the ability to communicate about sexual issues, which is essential to successfully engage a sexual partner in behaviours which impede transmission of HIV.

The remaining variables in our conceptual model are from the ARRM, a three-stage psychosocial model designed to conceptualize the processes that may influence change in behaviours which promote HIV infection.[85] Each successive stage is a goal to achieve and is influenced by factors which are hypothesized to foster motivation through the change process. This model was developed in response to inconsistent results in the literature regarding the determinants of behaviour change. Previous studies generally did not account for the fact that change is a process and that conditions which give rise to intermediate steps in the process may be quite different from those that influence subsequent efforts to actually perform a new behaviour. Depending on where one is at in the process of change, different determinants are found, thus leading to inconsistencies between studies. This model then allows to determine if people are in fact engaged in a change process, where they are at in this process, and why they fail to progress over time. Educational messages can then be tailored to assist their movement through the process.

As depicted in Appendix 1, the ARRM can be summarized as follows: Stage 1 involves personal recognition of risk for HIV infection and is conducive to ***labelling behaviours as high risk and problematic for HIV acquisition***. At stage two, individuals make a ***commitment*** to modify their high risk behaviour. Finally at stage three, people seek and enact solutions directed at reducing their high risk activities.

Only stages 1 and 2 are included in our conceptual model, where commitment to change is equated to behavioural intention.

The first stage (labelling) is postulated to be influenced by the presence of at least three factors:

1. ***Knowledge of the risks of HIV transmission*** associated with a given behaviour.
2. ***Perceived susceptibility*** to HIV acquisition.
3. ***Aversive emotions***, which are feelings of anxiety aroused by recognition that HIV infection/AIDS is undesirable and threatening to one's integrity.

At stage two, individuals reach a firm decision to make behavioural changes and commit strongly to that decision. Five factors influence this process:

1. ***Perceived costs***: the perceived degree of *loss of enjoyment and pleasure* caused by performing a new behaviour as compared to previous experience.
2. ***Perceived benefits***: the perceived effectiveness of a preventive behaviour in reducing negative health consequences (*ie response efficacy*). This is in the domain of personal opinions.
3. ***Knowledge of the health utility*** of the preventive behaviour: this is more within the realm of the person's awareness of facts, in contrast to his/her own personal opinion.
4. ***Knowledge of necessary skills*** as to how to incorporate a new behaviour into one's repertoire in a satisfying, safe and enjoyable manner.
5. ***Self-efficacy***: this is defined as a personal subjective belief in one's own situation-dependant ability to perform a behaviour that will produce the desired outcomes. The first to propose this construct was Bandura.[89] [90] [91] Ajzen also built on this concept, which he termed "perceived behavioural control". This is the construct which he added to Fishbein's Theory of Reasoned Action to further explain the determinants of behaviour in his Theory of Planned Behaviour.[98] [a] Generally, when confronted with a difficult task, individuals with a higher sense of self-efficacy tend to be more perseverant in attaining their objectives.[99]

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a) A more recent version of Ajzen's Theory of Planned Behaviour was proposed in 1991[42] and is illustrated in Appendix 1. This version specifies determinants of perceived behavioural control (PBC) along the same format as the determinants of attitudes and subjective norms. Beliefs regarding the presence or absence of factors which facilitate or block behaviour (FB) and evaluation of the intensity of the effect of these factors (E:FB) on the adoption of behaviour are the 2 constructs proposed ($PBC=\Sigma[FB*E:FB]$)

Finally, the ARRM postulates that ***social context*** is influential on the overall processes proposed. For instance, networks and norms can influence whether an individual labels risky behaviour (stage 1) by affecting the quantity and quality of health knowledge available and by providing rewards and sanctions for certain behaviours. The labelling process may also be influenced by the presence of individuals in the environment whose high risk behaviour leads to disease. Social factors and community norms can also have considerable influence on cost-benefit analyses and perceived self-efficacy (stage 2). An impression that significant others are successful at adopting a behaviour, finding it easy to incorporate and enjoyable, and are reducing their chances of negative health consequences, are all social conditions that reinforce the notion that change is possible and will be beneficial and not too costly. Overall, Catania's reference to "social context" is similar to what Fisher[93] has termed "informational social influences", where members of a social group can serve as a source of information for one another aside from exerting social pressure.

To complete the description of our conceptual model, two final points must be highlighted. First, variables such as sociodemographic data, personality traits, and cultural values are considered external to our model. We adopt the contention that their influence is filtered through beliefs and other elements of the model.[76 92] Second, to obtain a measure of behavioural intention which will most likely reflect eventual behavioural performance, this construct must be stated in very specific terms.[88 100] The general intention to avoid HIV infection will not be effective in predicting any particular behaviour. The intention, as well as the independent predictor variables, must then be specified along four dimensions: action (which behaviour?), context (where/in which situation?), time (when?), target (with who/how?). Our conceptual model thus requires that we examine one specific behaviour at a time to be able to achieve any conclusive evidence.

C. COMMENTS

The HIV/AIDS epidemic creates a context different from that in which research on health behaviours has typically been conducted. The threat presented by HIV infection is comparatively unique in that it is of extreme seriousness and requires short term changes in behaviours of a socially complex nature. For many individuals, it is

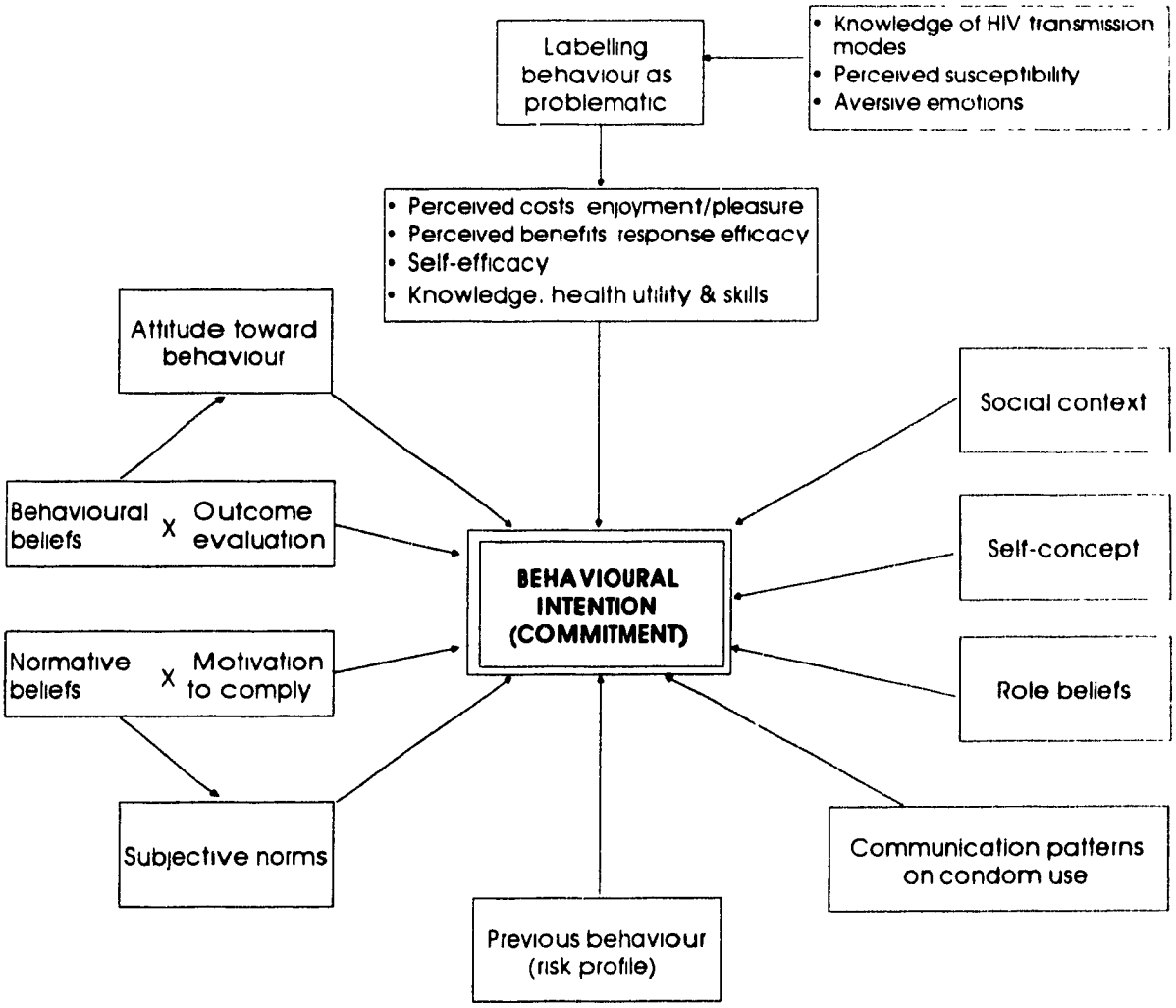
reasonable to believe that the adoption of recurrent condom use represents a complex social task. The multiple elements of our model attempt to capture this feature, while representing the earlier findings derived from the literature review.

Empirical evidence in support of the models and theories we have used for the elaboration of our framework is available across a variety of settings and populations. Ajzen's Theory of Planned Behaviour has been applied to numerous studies which report encouraging findings for the prediction of behavioural intention.[101] As this theory was not specifically designed to address health behaviours however, there are proportionately few studies which have verified its applicability in this domain. The theory has been used in studies examining female college students' intention to lose weight,[102] preferred sexual strategies for reducing risk of HIV infection among sexually active homosexual men and heterosexual men and women,[103] and adolescents' intentions to use condoms with a new sexual partner in order to prevent STD/AIDS.[104 105 106] It has also been used for the evaluation of an educational programme to promote condom use among male students at a vocational training school,[107] and in a study of safer sex behaviour in a cohort of HIV-positive individuals.[108] Triandis' model has not generated as much research, but has been applied with success in several studies. These include the prediction of oral contraceptive use,[109] the intention to have children,[110] seat belt use,[111] and the prediction of exercise intention and behaviour.[95] The above study by Otis et al.[106] also included elements from Triandis' theory, and found that these were important determinants of the intentions of high school students to use condoms with a new partner in the context where the female partner was already taking oral contraceptives. Bandura's postulate that self-efficacy is a major connection between cognition and action is confirmed with remarkable consistency across a wide range of health applications, supporting the notion that self efficacy is an important determinant of present and future health behaviour and of health behaviour change.[112 113 114 115 116] Finally, evidence is accumulating in favour of the recent AIDS Risk Reduction Model from studies of sexual behaviour patterns related to HIV transmission in gay/bisexual men,[83] adolescent females attending family planning centres,[84] people attending antibody testing centres,[85] and unmarried white, black and hispanic heterosexuals.[86] This model has also been used to study predictors of needle sharing among IDU.[117]

It is important to note that our conceptual model is largely based on a cognitive approach, where a person's behavioural intention is explained by his/her beliefs and perceptions. One of the most useful aspects of this is that, contrary to the widely cited Health Belief Model,[118] [119] beliefs that are unrelated to health issues can be considered determinants of health behaviours. This is particularly relevant to sexual behaviour which is potentially more influenced by non-health motives than health motives.[120] For example, beliefs concerning pleasure, intimacy, comfort, and convenience can have a much more immediate effect on sexual behaviour than those pertaining to the long term beneficial health effects of condom use. This by itself may partly explain the instability of findings and the paucity of support for the Health Belief Model (HBM) in AIDS research.[121] On the other hand, delving into peoples' beliefs and perceptions may lead them (and health educators) to presume that they should have control over their health and are liable for whatever negative health events occur in their lives. This eventually could influence the resulting validity of the study findings. For instance, one may feel compelled to justify and rationalize his/her actions and not offer an accurate reflection of his/her actual thoughts and intentions. Also, such placement of responsibility on the individual tends to neglect the fact that not all behaviours are rational and under one's control,[101] [122] as can be the case when trying to use condoms with an uncooperative sexual partner. Thus, this justifies the study of situational contexts and norms and sociosexual interactions when considering condom use.

However, although we have attempted to account for social context and norms, our model can still be characterized as rather individualistic as the study of social factors generally is in the realm of the individual's perceptions. This apparently reflects a trend whereby models of behaviour change currently informing health promotion generally appear to rely on under-developed conceptions of social structure and cultural processes.[123] Although we recognize this weakness, it remains though that the feasibility of meeting more than one inmate at a time in the correctional setting is limited, so that the exploration of socio-sexual contexts is necessarily restrained to personal perceptions in this study.

Figure 4.1. CONCEPTUAL MODEL



CHAPTER 5

QUESTIONNAIRE DEVELOPMENT:

SOME PRACTICAL CONSIDERATIONS

Having formulated our model, the concepts deemed relevant for data collection are now defined. The next step consists of translating those concepts into measurable entities. In terms of measurement theory, this implies devising the empirical indicants which will best represent each concept[124] and sampling the items which will best operationalize those indicants for the particular study population[125]. This chapter presents the issues we considered in the elaboration of our questionnaire. First, we will outline how items can be generated from a hypothetical domain of items which tap into a given attribute. Then, elements pertaining to questionnaire format will be presented. Following this, the process of pre-testing and principles of reliability assessment will be discussed. Finally, in light of the characteristics of the study population, some issues concerning data collection, question formulation and response format will be examined.

A. THE GENERATION OF ITEMS

Following the definition of each concept, well-worded, unambiguous and relevant questions and items must be drafted to adequately cover the domains under investigation and generate empirical data. It is recommended to consult various sources which may provide indications as to their best content and formulation in a given context.[126] [127] [128] For instance, suggestions may be inherent in the definitions provided in the conceptual framework. Existing instruments may comprise questions and scales which have already been tested and which can be adapted to the particular research purpose. Empirical findings derived from previous research, or mere observation of the situation, could also provide elements of question formulation. Finally, expert opinion can add to these differing perspectives, and enhance the questionnaire's ability to tap efficiently into the most important components of each concept.

In particular, expert opinion can be drawn from individuals conducting research in a similar field and from persons in contact with members of the study population. If chosen carefully, these individuals can probably reflect the most recent thinking in the study domain. Where possible, it is advisable though to supplement these opinions with information obtained directly from members of the study population, or "cultural insiders", particularly if the group is a marginal one. This avoids the pitfalls of relying on the literature and impressions of professionals which may be biased and not in tune with the particular perceptions and idioms of the group. Ajzen and Fishbein[88] propose

such an exploratory process which they refer to as an "elicitation study" for the exploration of behavioural determinants. They suggest a series of questions to elicit beliefs and opinions. Individuals are asked to (1) enumerate what they believe to be the advantages and disadvantages inherent in performing a given behaviour; (2) list the people who would approve and those who would disapprove of them when they view themselves engaging in the behaviour; and (3) detail the barriers and facilitators they perceive to the performance of the behaviour in question. A compilation of the data unveils the salient beliefs of the study population around a particular behaviour.

In the end, once all questions and items have been drafted on the basis of information gathered from the above sources, they are then assembled into an apparent logical sequence and laid out into a clear and attractive format.

B. QUESTIONNAIRE FORMAT AND INSTRUCTIONS

The format of a questionnaire and the corresponding instruction manual are in part dependant on the data collection method and characteristics of the study population. However, there are some general principles which we will outline here.[126 127 129]

An introduction stating who the survey is for and what it is about must be prepared. The layout of the questions should be practical, with enough space provided for accurate recording and coding of responses. Distinct typography is preferred for directives and probes. Skip pattern instructions should be placed immediately after an answer, and it is best to indent sections which are applicable to only a subgroup of respondents. Filter questions must not require extensive page flipping or memory of responses to earlier items. Questions should not be split between two pages, and those which are related ought to be presented on the same or facing pages. A booklet format is generally easier to manipulate and prevents inadvertent loss of pages.

To facilitate data processing, it is advisable to precode and pre-column the questionnaire. Precoding ensures that data is in a proper form for analysis. Pre-columning facilitates data entry, such that visual searches of responses throughout the questionnaire are avoided and verifications can be made directly without additional forms which can be mixed or lost. This process also assists in planning the size and structure of the data file.

Prior to first submitting the questionnaire, a preliminary instruction manual specifying administration procedures and how questions ought to be asked and responses recorded, coded and interpreted must be prepared. One is then ready to pre-test an experimental version of the questionnaire. This is a critical stage where weaker points necessitating revisions are identified.

C. PRE-TESTING THE QUESTIONNAIRE

Despite the general consensus that pre-testing must be conducted in the course of questionnaire development, there appears to be no systematization of practice. A synthesis from various references suggests three to four phases in the process of pre-testing.[127 129 130 131 132] Ideally, these phases should be run sequentially, each resulting in modifications upon which the next builds. However, due to time and budgetary constraints, they are often combined to run concurrently.

In a first phase of pre-testing, the instrument should be presented to two groups of experts: colleagues knowledgeable of the subject matter and experienced questionnaire users such as interviewers. Consultation with members from the first group can serve the purpose of content validation, where it is ensured that the relevant domains and necessary questions and items are included to permit satisfactory exploration of the phenomenon under study. Members from the second group can provide comments on the adequacy of question and instruction formulations, presentation of response formats, and the general appearance of the questionnaire.

In a second phase, the questionnaire is submitted to subjects representative of the study population under conditions similar to those which will be established in the actual study. Experience suggests that this pre-test be "undeclared", since there are important doubts as to whether non-experts should be asked to serve as actual judges of a questionnaire.[133] It is useful to include in this process some articulate persons who can explain their understanding of different questions and instructions. A synthesis of some elements to assess during this phase are outlined below:

First, the language must be comprehensible and unambiguous. Evidence suggests that respondents inherently strive for meaning and tend to modify seemingly obscure questions and instructions into ones that are sensible from their standpoint.[134] As this may circumvent intended goals, it is best to use simple language and familiar words,

with jargon and subcultural vocabulary being defined jointly by the research team and study group to ensure equal interpretation. Value-laden words and negatively-worded items must also be detected. The former can create loaded questions which do not allow for the equal expression of all points of view. And the latter tend to create confusion, and generally produce lower validity coefficients than positively worded items.[128]

The content and structure of questions must be examined to ensure that only one question is being asked. With double-barrelled questions, two or more issues are addressed at the same time, each of which can be responded to differently.

Indications must be gathered as to whether the questions have some face value. If respondents judge that irrelevant and unimportant concepts are being dealt with, some questions may not be taken seriously, and may even be rejected for consideration. In most instances, it seems preferable for the questions to appear on the surface to be measuring what they actually are.

The task difficulty inherent in the process of responding to the questionnaire must be evaluated. To avoid creating resistance and confusion, respondents should be able to relate to the concepts presented. They must also manage to provide answers within the limits of the response formats, so that these must be conceptually clear and inclusive of all alternatives. Instructions and skip patterns should be easy to handle. A review of missing responses may provide clues to difficulties and ambiguities. Finally, individuals must be able to recall the events under investigation. Landmarks such as major holidays or birthdays can be used to stimulate memory, and cross checks during the course of data collection can also bring forgotten information into focus. With respect to the optimal recall period, research suggests a minimum of one to two months to a maximum recall period of six months.[127 135] Although the shortest recall period may provide more reliable data, this period may be too short to represent typical behaviour patterns however.

A sense of logic and naturalness must emerge from the flow and sequencing of the questions and sections. Ideally, these should be introduced along a gradient of increasing sensitivity to allow establishment of rapport prior to introduction of potentially threatening questions. Also, their order must not alter or influence interpretation of subsequent questions, nor create expectations with respect to provision

of answers. For instance, Bradburn[136] refers to "consistency response effects", where individuals modify their responses to corroborate previous answers. In this sense, it is preferable to ask behavioural questions prior to delving into personal thoughts and ideas, as ideas can evolve after actual behaviour has occurred and individuals may feel compelled to modify behavioural reports to reflect their new ideas.[137]

In turn, the effect the questionnaire has on respondents must be appraised. Their degree of attention should be ascertained, as lack of interest may result in haphazard responses and responses sets. Questions which seem awkward to ask and which appear to create distress, and any untoward effects, should also be documented. Maintenance of rapport and the respect of respondent well-being is essential to the research process. Negligence to consider the effect of the questionnaire on respondents may result not only in incomplete data, but in adverse publicity affecting recruitment for a study.

Finally the length of time required to complete the questionnaire must be recorded. Each administration period must be no longer than twice that planned for the final product. This double time is likely to occur as a first version is generally comprised of a larger number of questions and respondents are probed for their perceptions and further comments.

The sample sizes for this phase of pre-testing vary with budgetary and time constraints, from a minimum of 10 to as many as 75 to 100 subjects. However, it usually takes no more than 10 to 12 interviews to reveal major difficulties and weaknesses as well as content areas deserving more attention.[126]

In the end, pre-tests allow to detect problems and may suggest alternatives to strengthen a questionnaire. Once revised, it is suggested that the instrument be again submitted to experts/colleagues (third phase of pre-testing). A final product is then available for a "polishing" pre-test with a larger sample of the study population and via which assessment of reliability can be undertaken - a further step in the process of diagnosing the quality of a questionnaire.

D. RELIABILITY

a) Error in measurement

It is important that the process of measurement be as accurate as possible to obtain empirical data which is relevant for the variables comprised in the conceptual framework presented in Chapter 4. This implies assessing the degree of exactness with which each proposed concept is operationalized. In this context, Zeller and Carmines[124] define measurement as a process of linking empirical indicants to abstract concepts, where empirical indicants must provide an accurate representation of the proposed concepts under investigation. However, a basic premise of measurement theory is that some degree of error is always present in any given measure[138]. Zeller and Carmines[124] differentiate between two classes of error which may hamper the true empirical representation of a concept: random error and non-random error. Random error is caused by all those chance factors that confound the measurement of a phenomenon. The amount of chance error may be large or small, but it is universally present to some extent. By definition, its effects are unsystematic in character, thereby affecting the degree of precision with which an instrument can measure a construct. Non-random error produces empirical indicators which represent something other than the intended underlying concept. This systematic error, or bias, diminishes the accuracy of an instrument in that it does not measure what it purports to measure.

Stanley [130] provides an exhaustive list of potential sources of error in measurement. These arise as a consequence of the instrument itself, from the persons using the instrument, and/or from those to whom it is administered. For example, a question can lead to differential interpretation between respondents, or may elicit responses to another unintended question altogether. Response formats may appear novel to some individuals who can then vary in the extent to which they "catch on" to the nature of the task, producing an unequal quality of responses. An interviewer may fail to adopt a standardized approach or may introduce some lasting modifications in the interview schedule. Responses could be incorrectly recorded and/or coded. Also, the context within which an instrument is used can affect its actual measurement capacities and the persons involved in its processing and administration.

Careful design and pre-testing of a questionnaire largely serve to reduce potential sources of error to a minimum. Identification of error sources at pre-testing may also

assist in determining factors which could be controlled for in subsequent analyses. In the end, the extent of remaining error inherent in the use of an instrument must be assessed to give an appreciation of its quality and pertinence as a measurement of an underlying concept. The degree of random and non-random error may be represented, respectively, by the properties of reliability and validity[124]. Basic methods by which to assess these are available from Cronbach,[140] Campbell and Fiske,[111] Carmines and Zeller,[138] Fleiss,[142] Nunnally,[125] and Zeller and Carmines[121]. The following summarizes the main considerations.

b) Definitions

Reliability concerns the extent of reproducibility or consistency of an outcome given by repeated measures of the same object under constant conditions. This refers to the notion of precision, in that the degree of reliability of an instrument is inversely related to the amount of random error involved in the process of measurement. Validity is the capacity of the instrument to measure what it is intended to measure. In this respect, validity reflects the degree to which an instrument is accurate and free of non-random error, or bias. By their definitions, both reliability and validity are distinct concepts. However, they are also related. Mathematically, it has been shown that the square root of the reliability coefficient of an instrument is the upper limit to its validity coefficient.[143] This implies that the validity of an instrument is limited by its reliability, where reliability is a necessary but not a sufficient condition for validity. Indeed, if a set of measures is fraught with random error, it certainly cannot represent what it is intended to represent; but despite the absence of random error, non-random error may persist. Thus, although the definition of measurement referred to earlier ultimately appears to portray the ascertainment of validity as more important than that of reliability (ie empirical indicants must *accurately* represent the underlying concept), it is essential to first ensure the reliability of an instrument.

Aside from its deterrent effect on the validity of an instrument, unreliability can also have serious implications on the conclusions of scientific enquiries. In randomized trials or quasi-experimental studies, unreliability can increase the variance in outcome measures, thereby reducing the power of a study and making it difficult to distinguish real differences between groups or to isolate changes over time. In correlational or

observational studies, unreliability in either exposure or outcome variables attenuates correlations and therefore reduces the power to detect significant relationships. Unreliability in the measurement of confounders also leads to loss in the ability to control for confounding be it via study design or statistical treatment, biasing conclusions in unpredictable directions. Thus, it is important to assess the reliability of measurements prior drawing conclusions from study findings.

c) Estimation of reliability

An estimate of reliability expresses the magnitude of agreement or correlation between measures proposed to give similar representations of a same object. Two general orientations underlie reliability assessment. The first consists of methods which ascertain the degree of reproducibility of measures, and the other looks at the issue of homogeneity or internal consistency. Reproducibility determines how well one given measure fares as a result of repeated administrations, as it is important to be able to distinguish real differences between administrations from variations which are due to instability in the measurement technique. The assessment of homogeneity enables to verify if apparently related items of a scale do measure the same object. Both the assessment of reproducibility and internal consistency are essential to determine the reliability of an instrument. For instance, a measure with items that are internally consistent may work well in discriminating between different persons at one point in time, but it may be unresponsive to detecting real change over time.

i) Reproducibility

The most intuitively appealing procedure to ascertain reproducibility of a measure is to consistently apply it to identical samples of a population at several points in time and to compare the results. To the degree that the results are the same, reliability is achieved. This is referred to as the "test-retest method". However appealing though, this method is not without certain limitations. Repeated measurements require the expenditure of extra resources, either in money or time. Also, the actual degree of reliability of some concepts can either be under or over estimated via this method, so that the context within which this assessment occurs must be taken into account when interpreting the results. Deflated reliability estimates generally arise when the time

elapsed between measurements is long enough so that actual changes have occurred; or in some instances, the very process of measuring a concept once induces change in subsequent measures. The latter is referred to as "the learning effect" or "reactivity".[144] By far, the more typical problem with the test-retest method though is substantial over-estimation of reliability due to memory effects. Nunnally[125] suggests that during the two-week time interval in which it is advisable to complete a repeat testing, memory is likely to be a strong factor because subjects tend to give the same answers to appear coherent. Thus, experience with a first series of measurements can influence responses in subsequent testing.

Reproducibility can also be assessed by having several "raters" independently assess each subject once with a same instrument. To the extent that the multiple ratings assigned to a subject are similar, reliability in the measurement process is ensured. Statistical techniques of analysis of variance are used to compute an estimate commonly referred to as the intraclass correlation coefficient.[145] [146] [147] This coefficient indicates the degree of correspondence between the ratings provided by multiple judges. When several individuals will be using an instrument, such as in the case of clinicians using a diagnostic classification scale, this is the recommended type of analysis to resort to.

However, when focus is on the ability of the instrument itself to elicit stable responses from a subject, the test-retest method, despite its limits, appears best suited for the assessment of reproducibility.[148] [149] [150] [151] [152] [153] [154] According to Stanley,[139] questions which elicit factual and enduring information will generally provide the most reliable measures with this method. Also, it appears that the major problem of memory effects referred to earlier is unlikely to operate in the case of lengthy instruments which tap into several concepts and require a large number of ratings.[139] This describes our instrument quite well.

The most frequently used test-retest estimate for instruments which produce nominal or categorical data is Cohen's Kappa.[155] This statistic was cited in over 810 publications between 1960 and 1985.[156] Kappa represents the degree of agreement between measurements of the same categorical variable corrected for the amount of agreement expected by chance. It is appropriate for either dichotomous or polychotomous ratings.[157] Initially presented as index which considered only total agreements in its calculations, a weighted Kappa statistic was eventually developed to provide partial

credit for partial agreements, that is, responses which are not the same but are in the same direction.[158] Application of this latter version of the Kappa statistic ought to be restricted however to situations where differential valuing of certain kinds of agreements or disagreements reflects gradations defined on the basis of a theoretical rationale determined *a priori.*

If test-retest measurements disagree more than expected by chance, the value of Kappa (K) is negative; if there is no more nor less than chance concordance, K=0; if the measurements agree more often than expected by chance, K is positive; and if concordance is complete, K=1. To maintain consistent nomenclature when describing the relative strength of agreement associated with Kappa statistics, Landis and Koch[159] have recommended the following criteria: K < 0 indicates poor agreement; 0-0.20, slight agreement; 0.21-0.40, fair agreement; 0.41-0.60, moderate agreement; 0.61-0.80, substantial agreement; and 0.81-1.00, almost perfect agreement[b]. To further characterize a given Kappa value, Fleiss, Cohen, and Everitt[160] have presented rather long and complex calculations to derive standard error estimations for both unweighted and weighted K. Recently, Hanley[161] has been able to derive the unweighted Kappa standard error with no recourse to tedious calculations, with estimates seldom in error by more than $10/\sqrt{N}$ percent.

In the case of ordinal and continuous data, test-retest reliability is generally assessed via Spearman's rank correlation coefficient (R_S) and Pearson's product-moment correlation coefficient (R_P) respectively.[162] When measures are identical on both testings, R=1; and in the complete absence of agreement, R=0. Caution must be applied in the interpretation of R, as high correlations can mask absolute differences between two sets of scores. For example, if all subjects show identical change between test and retest measures, the resulting R will be perfect, yet the scores are far from being reproducible.[163] Examination of the data helps detect such systematic discrepancies.

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b) These criteria have also been extended to evaluate the degree of reliability denoted by other indices, such as correlation coefficients and Cronbach alphas

ii) Internal consistency

In his theoretical discussion of measurement, Nunnally proposes that any particular measurement or scale is the estimate of a measurement that would be obtained if *all* the possible items from a hypothesized domain representing a given construct were employed.[125] He refers to the widely used domain-sampling model of measurement where each particular measure is considered to represent a random sample of items from a hypothetical domain of items, and where each item could ultimately be considered an equally good single measure of a given concept. The assessment of internal consistency is thus at the heart of this theoretical model of measurement, as the goal is to determine the extent to which the items in a scale share a common core and measure an intended concept equally. It follows that should the sampled items represent one same concept, they will be correlated to one another. With these assumptions, it is possible to derive the mathematical formula for the calculation of coefficient alpha. Following work by Kuder and Richardson,[161] Cronbach[110] proposed coefficient alpha "to estimate the reliability of a summation of items forming a scale". To this day, this coefficient remains the most widely used and documented measure of internal consistency for the assessment of multiple item scales.[141]

Coefficient alpha is computed on the basis of data collected on one occasion. This estimate tells us about the extent of common entity between all the items forming a scale, and its calculation uses the average correlation of all the items. It can be interpreted as a correlation coefficient ranging in value from 0 to 1, with the value of 1 showing perfect internal consistency[c]. Despite being the most strongly suggested estimator of internal consistency, it remains that alpha will provide an optimal estimate of reliability only when the items of a scale are truly parallel in relation to one another or are tau equivalent[d]. In practice, it is rare for all the items of a scale to be parallel or tau equivalent, so that alpha will merely give a lower bound estimate to reliability. Coefficient alpha is thus a conservative estimate of a scale's reliability.[165]

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c) Negative alpha values do occur on occasion when items are not positively correlated among themselves

d) Tau equivalent items have a same true score but not necessarily equal measurement error variances, whereas parallel items have both equal true scores and equal measurement error variances

The value of alpha varies directly as a function of two factors: the average inter-item correlations and the number of items forming a scale. As the average correlation among items increases, and/or as the number of items increases, the value of alpha increases. Thus, one can augment the internal consistency of a scale by deleting items that do not correlate highly with others and/or by adding more items that correlate well with the existing ones. However, addition of equivalent items to a scale has progressively less impact on reliability with each addition. Consequently, in designing a scale, when efforts necessary for the development of additional equivalent items outweigh gains in reliability, it is recommended to end scale construction. Also, a greater number of items may eventually appear redundant to respondents, so that it is best to settle with an instrument that has fewer items and a moderate reliability than to hamper respondent cooperation.

To complete the interpretation of alpha indices, it is recommended that the correlation matrix of the items forming a scale be examined. A low value of alpha can generally be explained by either of three conditions: the items of a scale may measure a single concept unequally, or they may measure more than one concept equally or unequally.[166] If the number of items in a scale is fairly small, the pattern of interitem correlations may be reasonably clear and distinct, so that these conditions can be detected by examining the correlation matrix of the items. Visual inspection of the matrix may reveal highly related subsets within the item pool as well as items that do not relate to any of the others, so those which contribute to lowering the value of alpha can be singled out. With a larger number of items composing a scale however, it can become very complicated to examine the data clearly. In this case, factor analysis is recommended.[167] [168] This statistical method allows to identify and describe clusters of interrelated items in a data set, as well as to determine the contribution of each item to a given cluster, so that the input of each item to a scale can be evaluated. Such analyses however require a larger sample size than is possible in the context of this study.

In final analyses, a question remains: How reliable does a measure have to be? Basically, it depends on what the measure is for. As a general rule, the reliability coefficient for measures which serve to classify individuals such as aptitude tests for academic rating or job selection should not be below 0.80. This is a minimum level

of reliability which is needed to assure that potentially disastrous misclassification errors are made. It is to be noted that at that level, correlations are attenuated very little by random measurement error and at the same time it is often too costly in terms of time and money to try to obtain a higher reliability coefficient.[136] However, when an instrument is to be used to detect differences between groups, as in our case, lower reliability estimates are acceptable. For instance in studies where an instrument will be administered to a large sample of individuals, thus enhancing a study's statistical power, alphas as low as 0.60 may be sufficient. Also, our scales being relatively short, we may inevitably obtain lower reliability estimates.[121,125]

E. PARTICULAR ISSUES TO CONSIDER

In this final section, some considerations on questionnaire administration mode and design will be discussed in light of the particularities of the proposed study population.

a) The study population

With the exception of studies conducted by Hankins et al.,[7,169] very little information exists on incarcerated IDU in Canada. In these studies, approximately one out of three volunteers has a primary school level of education only. The extent to which this observation can be extrapolated to this current study is limited by the fact that subjects are not being recruited for an HIV test. Nonetheless, it can safely be assumed that a non-negligible proportion of the population targeted for recruitment has limited scolarity, with the attendant consequences of functional illiteracy and less developed abilities for formal thinking. In addition to addressing these issues, Huang et al.[170] suggest that problems with self-reporting be considered when conducting research with IDU. Because of their marginal lifestyles, IDU may feel propelled to provide what they perceive as socially desirable responses. Also, there generally is a subcultural tendency toward caution in revealing information which may make it difficult to obtain rich and well articulated responses.

b) Issues

i) Limited scolarity

Assuming that limited scolarity may impede one's sense of competence in handling paper and pencil forms, and is conducive to problems of functional illiteracy, an interviewer-administered questionnaire could best fulfil our purposes.

Well-trained interviewers can stimulate and maintain respondent interest, ensure standardized interpretation of concepts, probe for complete answers to all questions, clarify ambiguous replies and inconsistencies, and detect and attempt to alleviate to response sets. With respect to response sets, it is most common among individuals with less formal education that subjects systematically agree with a series of statements irrespective of the question being asked, so that in extreme cases, even mutually contradictory statements are endorsed. This is referred to as the "acquiescence response set."[127] Streiner and Norman[128] suggest including equal numbers of items keyed in the positive and negative directions to counteract this.

On the other hand, verbal administration may require a high degree of attention and short-term memory from respondents for retrieval of stored information and decision-making. Therefore, short and closed form questions are generally preferred for verbally-administered instruments.[126 127 130] When appropriate, comprehensive, and mutually exclusive, the response categories provided may further clarify the meaning of the question. Also, to the extent that response categories refer to familiar notions by which respondents are capable of translating their experiences, formulating answers to closed questions generally demands less effort than articulating responses to open questions. In turn, a maximum of four to five response categories are generally advocated.[126 129] With more than this, a visual aid or something beyond the use of words is often necessary. Our previous experience with the proposed study population suggests that introduction of these "aids" confuses some individuals more than it helps, resulting in some lack of standardization in the process of data collection. This then argues against more than five response categories. In addition, research points out that there are no useful increases in variance after about five to seven response categories.[128]

Finally, to avoid threatening individuals who have less formal education with a seemingly academic approach, questions verifying knowledge on a particular topic are best phrased as if they were seeking an opinion.[129]

ii) Social desirability

In view of the possible tendency of this group of study subjects to provide socially desirable responses, the manner in which response categories are presented must be taken into account. Socially desirable options given first may make people less willing to admit to actual behaviour or thoughts, and subjects may then choose such answers without even taking the time to hear the entire set of responses and to reflect upon the question. Thus it is preferable to start reading out the end of the scale that is least socially desirable.[129] Loading questions so as to acknowledge the existence of undesirable behaviours and thoughts, may make it easier to report these.

In addition, interviewers must be aware not to create an atmosphere where respondents provide answers that maximize the rewards of the respondent-interviewer interaction at the expense of response validity.[171] In particular, their general attitude appears to be a more important factor to consider than the effect of their age, sex, and socio-economic status.[128] Of interest here is that past studies have shown no clear gender effect of interviewers on responses to sexual questions.[135, 172, 173, 174]

iii) Caution in revealing information

Finally, with the apparent inclination of IDU to reveal minimal amounts of information, the issue as to whether response categories should include a neutral position and/or a "not sure" or "don't know" option must be addressed to avoid eliciting pointless data. Evidence indicates that to have respondents commit themselves to a position, it is best not to include a middle or neutral alternative. Instead, one should focus on measurement of *intensity* to separate those who have a definite opinion from those who only lean toward a position.[127] With respect to the "not sure" or "don't know" option, it is generally recommended that it be included to provide for a comprehensive scale.[127, 129] However, the frequency with which this option is chosen by respondents is partially a function of the way it is offered. Many more people will give this response when the alternative is explicitly provided.[127] To best handle this situation, it is recommended to make clear toward the beginning of an interview that this option is a legitimate answer, so that subjects do not feel compelled to manufacture opinions on the spot. Thereafter, it is preferable not to offer this option repeatedly as it may be

chosen as an easy way out of the interview process. Near the end of the interview, incarcerated IDU may in fact prefer to end the process hastily, as the issue of condom use upon release from prison is most probably not within a high order of priorities in comparison to other concerns.

CHAPTER 6

METHODS

A. STUDY DESIGN

This is a five-phase methodological study on the development of a standardized interviewer-administered questionnaire. In the first phase, the conceptual framework was elaborated. In a second phase, items were generated and put together in sequence to yield a first version of the questionnaire; this included the conduct of a qualitative study. Third, the preliminary instrument was submitted, along with a graphical outline of the conceptual framework, to external reviewers for content validation and critical appraisal. Fourth, a pre-test with representatives from the study population was conducted. Finally, after the incorporation of modifications, a "polishing pre-test" with a larger sample of subjects for an assessment of reliability was carried out.

B. STUDY POPULATION

French-speaking inmates who reported any injection drug use in the six month period prior to their incarceration were eligible for this study. It is hypothesized that this captive population "in forced detoxification" approximates the world of currently injecting drug users. Were they on the outside, they potentially would be current IDU. Whether or not they will continue to inject drugs upon completion of their sentence is difficult to evaluate. Detoxification and rehabilitation services are not available within the prison setting, and it is not clear to what extent individuals are referred to appropriate services upon their release. Meanwhile, a certain percentage continue to inject drugs while imprisoned.

In the women's prison, access to all inmates was possible to the exclusion of those residing in the psychiatric ward and in 24 hour deadlock. Therefore, approximately 100 women were eligible for recruitment at any one time, although access was easier in the evening when there were less scheduled activities. In the men's prison, one particular sector was privileged for recruitment by the prison authorities for organizational purposes. This unit is comprised of 180 new arrivals awaiting for the resolution of their trial. Not yet sentenced, they are not allowed access to regular prison activities and are restrained to their sector. Thus, these inmates were readily available and eager to participate in an interview with a person external to the correctional system.

C. RECRUITMENT STRATEGIES

To date, research activities in both prisons have met no major obstacles in the milieu, so long as they become unobtrusively incorporated in the established structure and require minimal logistical support.[7 169] However, recognizing eligible IDU in the prison environment is not a straightforward task. There exist no records to identify these individuals. Also, many do not want their status to become common knowledge, so that it is unproductive to approach inmates directly in their living quarters with the message that we are seeking to recruit IDU. Acceptance to participate would reveal drug using habits. Identifying potential study subjects in this setting then requires not only sensitivity, but contact with those who do obtain information on drug injection behaviour in a manner perceived by IDU as posing no threat to their imprisonment conditions.

a) Recruitment in the women's prison

Individuals were recruited via two strategies. First, cooperation was enlisted from the research assistant conducting confidential interviews for the ongoing study on risk factors for HIV infection,[7 169] as she directly obtained information on drug using habits. A standardized interview, pre-test counselling, and venipuncture for HIV serology, provided ample opportunity for an IDU to unveil her status. The research assistant would then mention this study, and request permission for its interviewer to set up an appointment with the inmate to explain the study purpose and elicit her participation. With the individual's consent, her name was then recorded on a confidential list which was directly forwarded to the interviewer for this study. Most women were recruited via this route. For the second strategy, advantage was taken of the fact that health services in this setting are provided by an external agency which is not under the jurisdiction of the prison authorities. Unless an inmate provides written consent, there is no transfer of health-related information from this agency to the prison staff nor administration. In these conditions, inmates are found to readily report their drug injection habits to health staff and have not felt threatened by referrals to our research team.[175] Therefore, it was possible to meet groups of inmates directly on their sectors, elicit participation for a confidential interview seeking personal opinions on condom use for HIV prevention, and to draw up a list of volunteer names - with the understanding

that it may not be possible to meet all interested women. From this list, health service staff were able to identify IDU for this study.

b) Recruitment in the men's prison

As previously mentioned, correctional authorities privileged one particular sector for study availability, so that a prison cell on this sector was allocated to the interviewer. Her mere presence behind the bars gave rise to curiosity and eventually many volunteers were available for interviewing. To avoid making it obvious that only IDU were being recruited, a screening mechanism was devised. The interviewer met each person expressing interest for participation in the study, and briefly engaged them in a discussion on their risks of contracting HIV infection. This approach was possible in that the questionnaire was presented as seeking opinions on condom use for HIV prevention. In this way, IDU could be identified. Each volunteer's name and cell block number was then recorded on a confidential list, and individuals were told that since there were already other people on the list, it was possible that not all volunteers may be interviewed should the study quota be attained. Afterwards, the interviewer recorded the coordinates of IDU on a separate list, immediately discarded the initial list, and systematically interviewed each IDU until the required sample size was achieved.

In the end, the recruitment process avoided public divulgation of IDU status. The extent to which all IDU were identified among the pool of volunteers remains unknown however.

D. MANAGEMENT OF STUDY PARTICIPANTS

Having obtained a list of potential study subjects, the writer called for each person individually. In the women's prison, a private office outside the living quarters of the inmates was available. When prison guards were requested to send a person to this office, they were only made aware that it was for the purpose of a consultation with a nurse, which is not an unusual request. In the men's prison however, identification of those participating in the study could not be avoided as all interviews were conducted in a cell on the sector and prison guards and inmates are all in close proximity. Also, the standard procedure to contact an inmate was to have his name called out via intercom. The person then presented himself to the guards, and from

there was directed to the interviewer. Collaboration was obtained from the guards and inmate committee to ensure that nobody was eavesdropping near the cell door during interviews. After an initial commotion, the interviewer's presence became accepted as "routine", and the research subject came to be considered relatively innocuous, so that the study did not attract unjustified attention. None of the subjects expressed discomfort regarding their participation in this study.

Upon contact with the inmate volunteer, the full purpose of the study, the procedures employed, the expected benefits, and potential risks, were discussed to ensure informed consent prior to enrolment (cf. Appendix 2). Individuals were assured that they would not be penalized in any way should they refuse to answer particular questions. They were guaranteed that information obtained during the interview sessions would not be reported nor released to any other person or agency, and were told that the questionnaires remained the property of the research team. It was also assured that no nominal information would appear on the study questionnaire. These were identified by sequential numbers. When it was necessary to link the test-retest questionnaires, the sequential numbers were also recorded next to the participant's name on the subject recruitment list, along with the expected date of the retest interview. Finally, once verbal informed consent was provided, the standardized interview proceeded. All inmate questions which surfaced during the interview were referred to at the end of the interviews to avoid influencing responses.

E. DATA MANAGEMENT

a) The participant list

The interviewer was responsible for the supervision of this list. Each entry (name, cell block location, sequential identification number and date of test-retest interview) was transcribed on a separate sheet. Once the interviews were completed for an individual, the identifying sheet was destroyed to avoid long term storage of nominal information. If it was impossible to meet an inmate for a retest interview within the prescribed time limit, the identifying sheet was also destroyed at that time.

b) The questionnaires and data

Following each interview, all questionnaires were reviewed for completeness, clarity, and the presence of discrepancies, and codification was completed by the interviewer. Data was then entered by this person on an IBM-compatible PC using dBase IV, verified for data entry errors and stored on diskette for statistical treatment. All questionnaires remain under the supervision of the interviewer.

F. ETHICAL CONSIDERATIONS

In view of the highly sensitive environment in which the study population lives, and of the relationship of the study to HIV/AIDS, several ethical considerations received prominence in the research methods. Study participation rested on the initiative of the inmate and was planned, inasmuch as it was possible, to avoid stigmatization by fellow inmates, prison guards, correctional authorities and others. Information which would permit personal identification was safeguarded, and eventually destroyed so that no such material remained upon completion of data collection. Written proof of informed consent was not required as the questionnaire was anonymous.[176] However, the interviewer signed each questionnaire to indicate that verbal informed consent had been obtained. If subjects manifested any interest, or if a need was identified, referrals for HIV counselling and serological testing were made. Under no conditions did this study confer any privileges to participants, such as special treatment by prison staff or shortened length of sentence. The ethical research committee of the Montreal General Hospital Department of Community Health provided approval for this study as it endorsed the "Evaluation of CACTUS-Montreal" protocol[28] (cf. Appendix 3). Permission to meet inmates was obtained fron both correctional institution administrations prior to implementation of this study (cf. Appendix 4).

G. THE STUDY PHASES

a) A first version of the questionnaire

We have seen in Chapter 5 that for the construction of a questionnaire, Ajzen and Fishbein[65] recommend an "elicitation study" to obtain substantive information about the cognitive formulations underlying a behaviour. Their premise is that under most circumstances, a small number of beliefs (the first five to nine which come to mind)

are determinant of behaviour. Such a study serves to identify those beliefs, and since it is generally done with a representative sample, these are referred to as "modal salient beliefs". Eighteen (18) incarcerated IDU were recruited to participate in an elicitation study. Standardized and confidential 20 to 30 minute exploratory interviews were conducted with each individual in accordance with the directives provided by Ajzen and Fishbein[88] (cf. Appendix 5). All responses to open questions were recorded verbatim. Included were also closed questions requesting sociodemographic data and information on behavioural antecedents.

All free format responses provided to the open questions were hand-tallied, and those which referred to similar beliefs were grouped. Consultation was sought from colleagues who have experience with this population to ensure the most fitting categorization. The most frequently mentioned wording used by respondents referring to a same type of belief was retained. Then a code was ascribed to each resulting belief, the questionnaires coded, and the data transformed into a SAS data set for statistical treatment.[177] Prior to conducting the analysis, data entry verification was completed for the 18 questionnaires. Frequency counts were computed for each variable, and the resulting beliefs were then ranked by decreasing order of frequency. The modal salient beliefs are those included within an 80% cumulative frequency, so as to obtain the broadest picture possible. These analyses were also conducted by respondent sex to detect any significant differences by gender. Chi-square and Fisher Exact tests were used for these comparisons. Finally, univariate statistics were computed for the sociodemographic and behavioural data for the total sample and by sex for descriptive purposes.

Having elicited the salient beliefs underlying the behaviour under consideration for our study population, measures for each variable of the questionnaire were devised and assembled. All are specified in terms of the action, target, context, and time: *using (ACTION) condoms (TARGET) each time one has sex (CONTEXT) in the first month after leaving prison (TIME)*. Some questions/items were formulated on the basis of our framework's concept definitions and according to the directives provided by the respective theories/models incorporated; others were inspired from previously used questionnaires; and the remainder were derived from reported research findings. Table 6.1 presents the major sources supporting the measures for each variable.

Table 6.1. Study variables and their sources

VARIABLES	SOURCES
Sociodemographic, behavioural, and risk factor data	Hankins et al.[7 28 169]
Knowledge	Catania et al.,[85] Selwyn et al.,[33] Kelly et al.[178] DSC-MGH pamphlet: Sans condom c'est non[179]
Perceived susceptibility; Response efficacy; Aversive emotions; Labelling behaviour as problematic; Sexual communication patterns; Perceived pleasure	Catania et al.[84 85]
Behavioural intention; Attitude; Subjective norms	Ajzen and Fishbein[88]
Behavioural beliefs; Outcome evaluation; Normative beliefs; Motivation to comply	Ajzen and Fishbein[88] Elicitation study results
Social context	Catania et al.[85]
Self concept; Role beliefs	Triandis,[92] Otis et al.[106]
Perceived behavioural control (self efficacy)	Ajzen and Madden,[180] Lawrance et al.,[113] Elicitation study results

Overall, questions/items were drafted to be coherent with impressions acquired from the literature concerning safer sexual behaviour in IDU, as well as our research experience with this population. For instance, although Fishbein and Ajzen directly measure attitudes with Osgood's semantic differential technique,[181] we resorted to more transparent bipolar scales which have consistently been shown appropriate for the measurement of attitude ie good-bad, like-dislike.[87] Osgood's technique requires subjects to grade the object under study along pairs of antonymous adjectives which have an evaluative connotation, such as hot-cold, smooth-sharp, etc. This necessitates some practice as well as abilities for formal thinking and may be an arduous task for a verbally administered questionnaire with a less educated study group. Moreover, to facilitate a ranking process in a question devised to measure condom use intention, the technique of paired comparisons was used, and the method of Ross[182] allowed to

present the pairs in an optimum and balanced order. With respect to response formats and coding schemes, those suggested by the respective authors were generally retained. However, the response formats for data resulting from the elicitation study are not those proposed by Ajzen and Fishbein.[88] We used shorter scales and adapted the wording to refer to concepts more familiar to the study population. Also, negative scores were not included. When calculating the value of the indirect measures of attitude and subjective norms, this avoids the problem of obtaining a false positive score from the multiplication of two negative scores.[183] Thus, it was decided to use positively valued unipolar scales, with the value of 0 assigned to the most negative response. This latter approach is implemented throughout the questionnaire.

Finally, the questions were put in sequence, the responses pre-coded, and the questionnaire pre-columned. A preliminary version of the instruction manual for questionnaire administration and data codification and interpretation was then prepared.

b) External review process

The preliminary version of our questionnaire was submitted to ten external reviewers, along with a graphical outline of the conceptual framework. This group comprised individuals who were well-versed in questionnaire design, familiar with the models underlying our framework, knowledgeable on the subject of AIDS and IDU, and who had previous experience in conducting interviews with IDU. They were asked to provide their comments on the manner in which the concepts were construed, and on the formulation of the questions and response formats. They were also invited to reflect on whether the items proposed adequately covered the domain of the phenomena under study. After a period of two weeks, each person was met individually for his/her comments. These were then reviewed, and some modifications were introduced in the questionnaire. Some suggestions for change were not included, but were noted as points to be verified during the next phase of questionnaire development.

c) Pre-test with the study population

The revised preliminary version of the questionnaire was pre-tested with 10 subjects representative of the study population. Confidential interviews were conducted by the writer, with attention given to the points enumerated in sections B and C of Chapter 5.

The reactions of respondents were noted, and their comments recorded verbatim on the questionnaire. The interviewer also noted her impressions and kept a record of alternative question/item formulations which appeared more successful in eliciting the required information. Univariate descriptive statistics were computed for sociodemographic and behavioural data and the frequency distributions of responses to the remaining variables were examined. Particular attention was given to responses provided via the ordinal scales to detect and attempt to remedy to skewed distributions. Finally, based on an examination of the comments provided by the respondents and interviewer, and in light of those of the external reviewers, further modifications were introduced in the questionnaire. Some new questions altogether emerged from this process. After revisions in consultation with external reviewers, a "final" version of the instrument was ready for a "polishing pre-test", with a larger sample of the study population (cf. Appendix 6).

d) Polishing pre-test: Reliability assessment

i) Design

A larger scale pre-test was conducted to try out the newly introduced modifications in the questionnaire and to estimate the test-retest reliability of the instrument and the internal consistency of its constituent scales. All confidential interviews were administered by the writer. Subjects who had already participated in the elicitation study or the previous pre-test were not eligible for this study phase. Each participant was scheduled for a retest interview within 10 to 14 days following the initial encounter. Participants were reassured that the purpose of the second interview was not to test whether they were telling the truth the first time around, but to test the questionnaire itself. Overall, the data collected from the first series of interviews served to assess internal consistency of the various scales. The second series of interviews provided data for the estimation of test-retest stability.

ii) Sample size considerations

Donner and Eliasziw[184] developed a guide for the estimation of sample size requirements for reliability studies. They graphically displayed the number of subjects and repeated measurements that provide 80% power to test H_o: $r \leq r_o$ versus H_1: $r >$

r_o at a 5% level of significance, where r and r_o are reliability coefficients, and r_o is a specified criterion value investigators consider acceptable for a given study. Their results are useful in that they provide assistance in the choice of a minimum number of subjects required to achieve fairly stable power to test H_o. For instance, with two measurements per subject, a minimum of 40 subjects is required to be 80% certain of achieving a reliability of 0.80 at a 5% level of significance. If r_o is settled at 0.75, a sample size of up to 100 subjects is necessary to reject H_o at α=0.05 and β=0.20. Thus it appears that a sample size of 40 subjects, which could realistically be attained within the constraints of this study, only ascertains variables which have achieved more than "substantial" reliability according to the criteria of Landis and Koch.[159]

iii) Data management

For this study phase, statistical analyses were managed with the SPSS/PC+ Statistics 4.0 software package.[185] Prior to conducting the analyses, a 25% random sample of questionnaires was retrieved for verification of coding and data entry.

iv) Data analysis

To begin, frequency distributions for each variable to be included in our analyses were generated to provide an overview of the data, and to detect potential errors and incongruencies. Second, comparative analyses were conducted on 14 selected sociodemographic and behavioural variables: (1) comparisons by gender on the test (N=49) and retest (N=40) data were conducted to detect any significant differences by sex which could influence interpretation of results; (2) the test and retest data were then compared overall, genders combined due to the small sample sizes otherwise, to determine whether the 40 individuals who took part in the retest phase are representative of the 49 individuals in the initial test; (3) finally, the test and retest data on the 14 selected sociodemographic and behavioural variables was compared with similar data collected via the elicitation study (N=18) and the previous pretest (N=10) to test the null hypothesis of no difference between the four groups on these variables. This allowed determination of the extent to which the data obtained during the course of the study were from individuals with comparable characteristics. Variables on a nominal scale were submitted to Chi-square or Fisher Exact tests and those on an

ordinal or non-parametric interval scale were analyzed via the Kruskal-Wallis one way analysis of variance test or the median test.

Third, endorsement rates for each variable at test and retest were examined to identify items which obtained less than 10% or more than 90% of the responses. Response scales were then either transformed in preparation for the internal consistency analyses, or some of these variables were deleted altogether.

Fourth, the internal consistency of each of 18 scales devised to illustrate elements of our conceptual framework was assessed via the computation of Cronbach's standardized item coefficient alpha[c] using data from the first wave of interviews (N=49). To interpret these coefficients and identify items which contributed to lowering an alpha value, item analyses and item-total statistics were conducted. Specifically, item analyses involved examination of univariate descriptive statistics for each item in light of the scale, and the generation of correlation matrices between the items of each scale. Item-total statistics involved assessment of the relationship between the individual items of a scale and its composite score. For example, each item was correlated with the scale total, omitting that item. If the Pearson correlation coefficient for that item was below 0.20, it was discarded from the scale.[128] [186] Another method consisted of calculating alpha for the scale, eliminating one item at a time. Should alpha significantly increase following any of these manipulations, this provided support for the elimination or modification of the item in question. Based on the results of these analyses indicative of which items to retain for each scale, standardized alpha coefficients were generated with the data obtained at retest (N=40). Significant differences between the alpha coefficients at test and retest on the same scales were then calculated using Fisher's z transformation.[187] [188] One tail significance levels are reported. Finally new variables representing the score for each scale were computed and submitted to tests of the assumption of normality to assess the appropriateness of using parametric statistics in subsequent test-retest analyses of the scale total scores.

The analyses concluded with test-retest statistics. The data was first appraised for overall per cent agreement on the same variable between interviews. Nominal data were

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c) This is the alpha value obtained if all the items of a scale are standardized to have a variance of 1. It is generally advised to use this alpha value if the variances of the constituent items of a scale differ.

analyzed via unweighted Kappa statistics[f] and standard errors for Kappa were calculated using the method proposed by Fleiss, Cohen and Everitt.[180] The hypothesis that the true value of Kappa is 0.80 for each nominal variable was also tested and the areas in one tail of the standard normal distribution are reported. Non-parametric statistics for non-independent samples, such as McNemar's Chi-square test for dichotomous data and the Sign test for polychotomous variables were computed to test the null hypothesis of no difference in response distributions between the test and retest nominal variables. Two-tailed significance levels are reported in this case.

Test-retest reliability of ordinal data was assessed via Spearman's rank correlation coefficient (R_S),[189] whereas continuous data was assessed via Pearson's correlation coefficient (R_P). Standard errors and significant differences between correlation coefficients using Fisher's z transformation were calculated.[187] [190] One-tail significance levels are reported. The test-retest ordinal and continuous data were also compared via statistics for paired data, to further interpret the significance of R. A high value of R can mask directional discordance, whereas efforts should be made to explain a low value of R. Wilcoxon signed rank tests were used for ordinal data, and paired t-tests were run on interval parametric data to test the null hypothesis of no differences in responses between both interviews. Two-tailed significance levels are reported here. The assumption of homogeneity of variance was verified on the data submitted to paired t-tests.

In final analyses, the internal consistency statistics are examined in light of the results obtained via test-retest results. Note that for all our comparative analyses, a p-value of 0.05 was considered significant.

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f) Kappa=$(p_o-p_0)/(1-p_0)$ where p_o=observed proportion of agreement
p_0=proportion of chance agreement

CHAPTER 7

RESULTS

A. ELICITATION STUDY RESULTS

a) Description of participants

Eighteen self-identified francophone incarcerated IDU, comprising ten men and eight women, volunteered for this exploratory qualitative study. Table 7.1 presents the sociodemographic characteristics and behavioural antecedents for the total study group and by gender.

Men and women are statistically comparable on all the variables, except one: more women (6/8) report any lifetime occurrence of bisexual experiences than do men (2/10) (Fisher Exact test; $p_{one\text{-}tail}=0.03$). Of interest, respondents have been injecting drugs for a median duration of nine years, with an apparent preference for cocaine (16/18) over heroin (6/18) in the last six months pre-incarceration ($\chi^2=9.47$; $p=0.002$). Also, two thirds of respondents (12/18) injected with a borrowed needle in that period. A total of 14 individuals (78%) did not use condoms for the prevention of STD in the six months pre-incarceration. One woman reported she was seropositive for antibodies to HIV.

b) Qualitative outcomes

Tables 7.2, 7.4, and 7.6 present the findings to the exploratory questions concerning condom use for the total group and by gender. Each subject provided multiple responses so that N represents the total number of beliefs emitted per group. Responses are listed by descending order of frequency in each table. A cumulative frequency of approximately 80% delineates the most salient beliefs retained for our questionnaire. It is interesting that the results are similar to those obtained in previous studies with different populations.[105 106 108] Chi-square, Fisher Exact and median tests did not reveal any statistically significant differences by gender. This could in part be due to the small sample sizes.

Six beliefs concerning the consequences of condom use are retained (cf. Table 7.2). Two refer to advantages and four to disadvantages. With respect to advantages, condoms are described as a secure protective measure against sexually transmitted diseases (STD) and as an effective barrier contraceptive. However, these responses appeared learned and cerebral. Alternatively, the enumeration of disadvantages was tinted with more emotion and subjectivity. First, it is believed that condoms reduce

sensation for both men and women during intercourse, by blocking skin contact and "taking away that natural feeling". Second, condoms are said to curtail spontaneity and consequently, to deter arousal, as some "time off" from "the normal routine" is necessary to put them on. Third, condom use is associated with the notion of promiscuity. A person using a condom may convey the message that s/he has multiple sex partners. Or, requesting condom use can be insulting to a partner who may equate this with being perceived as promiscuous or unfaithful. Fourth, condoms are associated with the concept of disease, and their use raises suspicions about the presence of a transmissible infection. Speculations concerning both promiscuity and disease are portrayed as major threats to the establishment and maintenance of trust between sexual partners. Table 7.3 presents the resulting items formulated for the preliminary version of our questionnaire.

Table 7.4 lists persons who could potentially influence the condom use behaviour of individuals in this study. For the majority of respondents, the initial response was that condom use is a personal issue which is generally not discussed. Some probing was necessary to encourage subjects to think about which type of persons could advise them about condom use if it was possible to discuss the issue in their milieu. Eight groups are retained (cf. Table 7.5). Close family members include parents, siblings and children. With respect to IDU, respondents differentiate between the IDU population in general, those with whom one injects, and street junkies. The latter are generally described as having the most disrupted lifestyle. New sex partner refers to a person with whom one has sex for the first time. Straights are those who are not addicted to hard drugs; they are perceived to represent the opinion of the general population. When prostitutes are considered, men and women have different views. Men tend to have a negative perception of prostitutes: they describe them as vectors of infection, and their opinion on condom use is not deemed trustworthy. Women however perceive prostitutes as among the best advisors on condom use in view of their experience.

The compilation of perceived barriers to condom use is presented in Table 7.6. Table 7.7 lists items generated for the preliminary version of our questionnaire. Responses suggest that there are barriers at different stages in the process of condom use. For instance, availability is an issue. Some respondents indicated uneasiness about obtaining condoms. Next, subjects report that if they perceive a risk of infection, they

will use condoms. However, if a person looks clean, has been in a stable relationship, or has had few sex partners, it is not likely that protective measures will be adopted. Respondents also suggest that condom use requires some planning: one must have some ndoms readily available "just in case", be able to predict the possibility of a sexual encounter, and decide on when, where and how to introduce condoms. For many, sex is rarely a planned activity, and it is said to be quite a burden to have to think of the logistics of sex. Moreover, planning sex appears to have a negative connotation. Condom use is also perceived to require negotiation skills, aptitudes to convince sex partners, and abilities to refuse unsafe sex, without creating undue distrust and rejection. None of the respondents felt qualified in this domain. To complete the process, individuals must feel skilful and competent in condom use. Although few respondents suggested they were unfamiliar with the technical skills involved, demonstrations of proper condom use uncovered a lack of knowledge. A majority of individuals did not leave an empty reservoir space at the tip of the condom, thus enhancing risks of condom breakage. In the end, despite the absence of any statistically significant gender differences concerning barriers to condom use, a general impression remained. Women expressed having less control than men in their sexual interactions, so that there are fewer opportunities for protection from potential STD. They perceive themselves in a submissive position to their male partners. In contrast, several men discussed how they would comply with a woman's request for safer sex if it was formulated. They "would appreciate not having to be in control". This reflects somewhat dichotomous sociosexual expectations which could contribute to the explanation of poor condom use.

Overall, the elicitation study revealed more negative than positive perceptions with respect to condom use. The process permitted identification of potential determinants of this behaviour and yielded findings which could then be reformulated along dimensions that are meaningful for this study population. However, some nuances were inevitably lost as qualitative data were transformed into items for quantitative measures.

B. QUESTIONNAIRE REVISIONS

Subsequent to developing the preliminary version of our questionnaire, seven revisions followed. The first derived from a series of individual consultations with ten external reviewers. The second involved a pre-test with ten incarcerated IDU. Five additional revisions were then conducted by the research team to ensure the judicious disposition of all suggested modifications. At this latter phase, particular attention was given to terminology, instructions to respondents and interviewers, skip patterns, and questionnaire format and data codification. The final version prepared for reliability assessment is presented at Appendix 6.

a) Particular outcomes from the external review process

The elements of the questionnaire which gave rise to significant comments from most of the reviewers are presented here:

First, differential interpretations were uncovered when responses to the questions measuring knowledge were verified. Second, questions exploring aversive emotions evoked by HIV infection were not found adequate. They were replaced by an open question for exploratory purposes in the next pre-test phase with IDU. Third, the section involving examination of social context raised doubts regarding the possibility of obtaining valid responses. The goal was to determine the extent of perceived condom use in one's milieu, and to record impressions acquired from peers about the personal and social consequences of condom use. It was deemed best to restrict questions to personal awareness of condom use in one's milieu. The questions which were dropped were found to imply a rather unusual degree of awareness. Finally, response formats also received some attention. Several were formulated in terms of probabilities and reviewers felt that this referred to complex mathematical notions. Therefore, a more concrete formulation along a "yes-maybe-no" continuum was suggested. In addition, it was found that response options for evaluation of the consequences of condom use would tend to elicit socially desirable responses rather than personal opinions, as respondents were asked to answer on a "good-bad" dimension. Two corrective measures were suggested. For items connoting a negative consequence, subjects would be asked how much the situation would be "bothersome".

For items connoting a positive consequence, they would be asked to determine the "degree of importance" they attributed to the situation.

Overall, questionnaire items were found to encompass the various concepts subsumed in our model. Corrective measures were proposed and elements necessitating inquiry were identified. In the end, several reviewers asked whether it would be possible to engage respondents in such a long interview within the context of an established study.

b) Particular outcomes from the pre-test with incarcerated IDU

Five women and five men volunteered for the pre-test of the questionnaire. Interviews were conducted in French. Table 7.8 presents the sociodemographic characteristics and behavioural antecedents of the total group and by gender. No statistically significant differences were detected between men and women on any of these variables. Only one person had used condoms in the six months pre-incarceration. One woman reported she was seropositive for antibodies to HIV.

Most interviewees highlighted the need to include more response alternatives to the "no-maybe-yes" ordinal scale which they found forced answers that did not reflect their positions accurately. It was best replaced by a "definitely no -maybe no - maybe yes - definitely yes" scale. Moreover, subjects spontaneously identified terms which they did not comprehend, and those which could have more than one meaning. For instance, there was no clear consensus on the meaning ascribed to condoms being "not natural", or on the terms "junkies" or "IDU in general", so that these items were discarded. Several individuals pointed to questions where distinctions should be made between steady and casual sex partners. Otherwise, it was difficult for them to respond, as their reactions are not similar for all partner types.

On a more general level, respondents implied that some effort was required to relate to questions about condoms since they had never or rarely used them, have negative attitudes toward condoms, have no intention of using them systematically in the future, nor do they perceive themselves at risk. The effort required is even greater when asked to reflect upon what others may think, perceive or do. As a result, subjects expressed difficulty with questions pertaining to subjective norms and social context. Perhaps as a consequence of this difficulty, these questions were found somewhat repetitious. Some

items were eliminated and others were reformulated, and eventually, most people were able to proceed smoothly in the interview process. The mean duration of the interviews was 70 minutes (range: 35 to 90). Despite the required effort and time however, there were no comments to the effect that the questionnaire was too long. In fact, the interview appeared to be interpreted as an intervention which participants readily engaged in. Several respondents suggested that it allowed them to assess their level of risk for HIV infection and to start contemplating how to incorporate safer behaviour into their sexual repertoire.

C. POLISHING PRE-TEST: ASSESSMENT OF RELIABILITY

a) Comparative analyses on selected sociodemographic and behavioural data.

Table 7.9 presents comparative data by gender for the 49 francophone self-identified incarcerated IDU who participated in the first wave of interviews in the reliability assessment phase of this study. More women (11/22) than men (5/27) have had bisexual experiences in their lifetime (Fisher Exact test; p=0.02), whereas more men (20/27) than women (10/22) are exclusively heterosexual (χ^2=4.18; p=0.04). Also, more men (22/27) than women (6/22) have not used condoms for STD prevention in the six months pre-incarceration (χ^2=14.55; p=0.00014). The finding that more women (19/22) than men (14/27) have ever been tested for HIV antibodies (χ^2=6.57; p=0.01) could be a consequence of our recruitment strategy: access to anonymous anti-HIV testing with counselling was limited for the majority of men as they were not yet integrated into the general prison population, where access to this service was possible. Otherwise, there are no significant gender differences with respect to the remaining variables. Subjects who had been tested for HIV antibodies all reported a seronegative status.

Similar analyses were conducted with data collected from the 40 IDU who participated in the second wave of interviews for reliability assessment (Table 7.10). A median test on age indicates that women are older than men by five years (χ^2=4.87; p=0.03). As above, the data highlight that more women (14/15) than men (12/25) have been tested for HIV antibodies (Fisher Exact test; p=0.004), and that more men (20/25) than women (5/15) have not used condoms for STD prevention in the six months pre-incarceration (Fisher Exact test; p=0.004). In addition, more women (7/15) than men (4/25) report having borrowed needles for drug injection in the six months prior to

imprisonment (Fisher Exact test; p=0.04). There are no statistically significant differences by gender on the remaining variables, although there is still a tendency for more women than men to have had bisexual experience. Again, all subjects who had an HIV antibody test reported they were seronegative.

Interest in examining the data by gender is limited by the fact that subsequent analyses do not differentiate on the basis of sex due to sample size considerations. It is noteworthy however that there are no major discrepancies between the four data bases of the three study phases (elicitation, pretest, and test and retest). For example, as a general rule, more women than men tend to have had bisexual experience, and more men than women have not used condoms for STD prevention in the six months pre-incarceration. Therefore, any significant differences between the four data bases is not likely a consequence of gender distribution within each group.

Table 7.11 presents comparisons between the test and retest data, genders combined. There are no statistically significant differences between the two groups on sociodemographic characteristics or behavioural antecedents. Thus, there is no indication that the nine inmates who failed to complete the retest phase of the study are any different from those who did. In the majority of cases, these non-participants had been released from prison earlier than initially planned.

Finally, the elicitation, pre-test, and test and retest data bases were compared overall on 14 selected variables (Table 7.12). Participants in the test-retest phases of this study appear younger by a median of five years (χ^2=10.85, 1df; p=0.01), and fewer have attended college (χ^2=10.64, 1 df; p=0.001), than those in the elicitation and the pre-test phases of the study. This lower level of education could possibly be a function of younger age. Also, fewer individuals in the test-retest phases report having engaged in needle borrowing in the six months pre-incarceration (χ^2=9.22, 1 df; p=0.002). This latter finding could be explained in part by the six-month interval which occurred between the elicitation/pre-test and reliability study phases. In this interim, ongoing external events such as prevention campaigns and incidents publicized by the media, and internal events such as the implementation of CACTUS educational activities in the prison, could have increased awareness of the risk of acquiring HIV via needle borrowing. As a consequence, this could have influenced behaviour or, at the least, identified socially desirable responses. Otherwise, there are no statistically significant

differences with respect to the remaining variables. In the extreme, the information acquired from the first two study phases may not be fully pertinent for the younger and less educated subjects participating in the reliability phases. In the end however, the elicitation study data appeared comprehensible and inclusive of all essential elements. Moreover, no unidentified problems residual to the pre-test phase emerged during the reliability phases.

***b)* Internal consistency analyses**

Prior to conducting internal consistency analyses, categories on ordinal scales responded to by less than 10% of subjects were merged to others. In several instances, this resulted in a reduction to dichotomous "yes/no" nominal scales to avoid inordinately skewed response distributions. It is possible that a larger sample size could have avoided the necessity of reducing the response scales. Variables hypothesized *a priori* to take part in the representation of constructs depicted in our conceptual framework (cf. Figure 4.1) were then assembled to form 18 scales, and the internal consistency of each intended scale was assessed. The measures reported in this section are the maximal alpha values (α) obtained for each resultant scale using data obtained in the first wave of reliability assessment interviews. The choice of which items to retain was based on statistics derived from item and item-total analyses. A description of each resultant additive scale by order of appearance in the questionnaire follows:

1) Aversive emotions (α=0.52): This scale consists of two items measuring one's degree of concern about having contracted and/or transmitted HIV in the 12 months preceding the interview (never worried; sometimes worried; often or nearly always worried) Subjects were rarely worried about having transmitted HIV (6/49).

2) Knowledge (α=0.32): From the 16 true-false items measuring levels of knowledge, it was not possible to derive a scale with even a moderate degree of internal consistency. Also, the ten items measuring knowledge of HIV **transmission** resulted in an α of 0.20, and the six items assessing the subject of **condoms** yielded an α of 0.16. (See Appendix 6 for item descriptions).

3) Communication (α=0.70): Two items measure if, in the six months pre-incarceration, the respondent has been able to discuss the subject of condoms with a steady sex partner and a person with whom sex was a first time occurrence (yes-no).

Two additional items enquire if the respondent was then able to ask these partners to use condoms (yes-no).

4) Risk profile (α=**0.81**): This scale includes eight variables coded on dichotomous yes-no response schemes: In one's lifetime, having: (1) used condoms for STD prevention; and (2) had bisexual experience. In the six months pre-incarceration, having: (3) used condoms for STD prevention; (4) had other sex partners aside from a steady partner; (5) had commercial sex partners; (6) had sex for drugs; (7) borrowed used needles for drug injection; and (8) had an STD. The data imply that women may be over-represented here as 15/17 respondents who report commercial sex partners are female, and more women than men have had bisexual experience in their lifetime (cf. Table 7.9). Interestingly, condom use appears as an indicator of risk behaviour. In fact, condom use among these IDU is selective and most frequent within commercial sex interactions. Of the 21/49 respondents who reported condom use in the six months pre-incarceration, 16 (76%) used them solely with clients.

5) Past behaviour label (α=**0.72**): This two-item scale is meant to measure whether a respondent labels his/her sexual behaviour in the six months pre-incarceration as presenting a risk for acquisition of HIV infection. The first item examines the impression of having engaged in sex with individuals who could have transmitted HIV to oneself (yes-no), and the other item measures the perceived probability that one's sexual practices have resulted in HIV infection (probability nil, small, medium/large).

6) Perceived vulnerability (α=**0.71**): This two-item scale is proposed to measure whether a respondent perceives him/herself vulnerable to acquiring HIV infection via sex *in the future*. The first item examines the expectation that one's partner selection style can result in sexual encounters with HIV-infected individuals (yes-no); and the other item measures the perceived probability of acquiring HIV infection as a consequence of one's sexual practices (probability nil, small, medium/large).

7) Perceived susceptibility (α=**0.74**): This is a four-item scale resulting from the combination of the above two scales.

8) Intention to use condoms (α=**0.74**): This four-item scale is designed to measure intention to use condoms each time one has sex in the first month post-incarceration. It comprises one direct (no intention; small/medium intention; strong/very strong intention) and three indirect questions. The latter use dichotomous response scales to

examine preferred modes of sexual protection against HIV and the perceived feasibility of adopting condom use behaviour: (1) preference for condom use versus avoidance of penetrative sex; (2) exclusivity to one sexual partner versus preference for condom use; (3) feasibility of condom use: yes-no.

9) Social context (α=**0.77**): Four items measure an awareness of the impact of HIV/AIDS on significant others. One item enquires about the proportion of significant others who could be using condoms for HIV prevention (none; few; about half; most/all). The remaining items investigate if some significant others have acquired HIV, and if those infected became so via needle borrowing and/or unprotected sex (yes-no).

10) Response efficacy (α=**0.78**): Two items were designed to measure the perceived efficacy of condom use as a HIV protective measure. First, the certainty with which one may feel protected from sexual acquisition of HIV in a context of consistent condom use is recorded (not safe at all; probably not safe; probably safe; very safe). Second, the perceived probability of experiencing condom breakage during intercourse is noted (great, medium, small, none).

11) Attitude (α=**0.78**): An indirect measure of attitude toward condom use is provided by a scale of 12 items. Each item is the result of a multiplication: the code assigned to a ***belief*** regarding the potential consequence of consistent condom use ***multiplied by*** the code assigned to the ***evaluation*** of that consequence. The beliefs are measured on an ordinal scale (definitely no; probably no; probably yes; definitely yes). Outcome evaluations are measured on the dimension of "bothersome" or "important" (not at all; a little; average; a lot).

12) Pleasure (α=**0.90**): This scale consists of two items which assess if respondents consider that they and their sex partners could derive enjoyment during sexual intercourse with condoms (definitely no, probably no, probably yes, definitely yes).

13) Self-concept (α=**0.66**): This two-item scale was proposed to measure whether an individual perceives him/herself as a potential condom user, and if there is a felt moral obligation to use condoms for each sexual encounter in the first month post-incarceration (definitely no, probably no, probably yes, definitely yes).

14) Subjective norms (α=**0.83**): An indirect measure of subjective norms is provided by a six-item scale. Each item is the result of a multiplication: the code assigned to

a ***subjective belief*** is ***multiplied by*** the code assigned to the ***motivation to comply*** with individuals postulated to hold meaningful beliefs with respect to the condom utilization behaviour of respondents. All items are measured on a "definitely no, probably no, probably yes, definitely yes scale".

15) Perceived behavioural control (α=**0.76**): Fifteen items are assembled to form this scale, with measurements recorded on the same ordinal scale as above. The items are presented in the context of consistent condom use for each sexual encounter in the first month post-incarceration. Individuals are asked if they think they could use condoms if they wanted to, and if it would be easy for them to do so, with regular and casual sex partners; they are also asked who, between themselves and a regular or casual partner, they perceive has the most influence on the decision to use condoms. Thereafter, subjects indicate their perceived ability to undertake a series of activities which are conducive to condom use, such as ensuring their ready availability, and negotiating their use with a prospective sexual partner.

16) Roles or rules of behaviour (α=**0.56**): This two-item scale was intended to measure personal beliefs as to how many individuals among one's significant others should use condoms (none, some, most, all). A distinction was made between IDU and non-IDU.

17) Risk perception (α=**0.80**): This scale portrays perception of the personal risk of acquiring HIV infection. It includes ten items, taken from five of our postulated scales: (1) one's degree of concern about having contracted HIV in the 12 months preceding the interview; (2) four items measuring perceived susceptibility to HIV; (3) two items measuring self concept; (4) two items measuring role beliefs; and (5) the total score on ten items measuring knowledge of HIV transmission. The scale is meant to represent the mediating variables in the first stage of the AIDS Risk Reduction Model (ARRM), where self concept and role beliefs can be subsumed under the heading of "perceived susceptibility". If measurements of knowledge are excluded, α=0.82.

18) Condom perceptions (α=**0.72**): To exemplify some of the variables mediating the second stage of the ARRM, the scales measuring "pleasure" and "response efficacy" were combined with the total score obtained on six items measuring knowledge pertaining to condoms. The scale is intended to depict a combination of beliefs held about condoms: their effect on sexual enjoyment and pleasure; their efficacy as a

protective measure; their health utility; and the skills and means necessary to incorporate their use in a safe and satisfying manner.

Table 7.13 presents internal consistency measures of the 14 additive scales with an alpha value of 0.70 or more, which is indicative of substantial reliability.[159] These scales were retained for calculation of alpha indices with the retest data. With the exception of the **response efficacy scale**, the alpha values on the retest data are statistically comparable to those obtained via the first wave of interviews. This is suggestive of a similar degree of cohesiveness between the items over time.

c) Test-retest analyses

Overall, measures of percent agreement between test and retest interviews are generally higher for the nominal variables (range: 62.5 to 100%) than for the ordinal variables (range: 35 to 95%) (Appendices 7 and 8). Unweighted Kappa statistics for 95 of the 102 nominal variables of the questionnaire are presented at Appendix 7. It was not possible to calculate Kappa for seven variables as all subjects (N=40) either provided the same response at the first interview, at retest, or at both test and retest on these variables. Computation of z test critical ratios determined that six variables have a Kappa value significantly greater than 0.80. Otherwise, 14 of the 95 variables have a Kappa value significantly lower than 0.80 (z test $p_{one\text{-}tail} \leq 0.05$). These variables are listed in Table 7.14. The true Kappa value of seven of these variables however could be in the range of 0.70 to 0.79. Nine of the 14 variables displayed in Table 7.14 are measurements of knowledge. Without exception, a higher proportion of true responses is found at retest on these items. Such acquisition of knowledge is most likely a consequence of the first interview itself. The other variables pertain to reports of the behaviour of others and projections into the future, which respondents have generally found more difficult to relate to. Although meant to complement the Kappa statistics, McNemar Chi-square statistics reveal only one variable where the response distributions between test and retest are discordant. It appears that even if variables demonstrate a low Kappa value, they may not necessarily be shown to have different response distributions between tests. This implies that non-parametric tests may have a low degree of sensitivity to minor variations in the data. Or, Kappa may be over-

sensitive. In the end, a total of 81 of the 95 nominal variables (85%) demonstrate a test-retest reliability of 0.80 or more, thus denoting "almost perfect" reliability.[159]

Appendix 8 presents Spearman rank correlation coefficients (R_s) computed for the 70 ordinal variables of the questionnaire. In general, these test-retest indices are lower than those found for the nominal data. Despite this, the Wilcoxon signed rank test reveals only three variables as having significantly different distributions at retest. For the 69 variables for which it was possible to compute a rank correlation, three (4%) were found to have a R_s significantly greater than 0.80, 15 (22%) have a true R_s not significantly different from 0.80, 44 (64%) have a true R_s significantly greater than 0.60 although less than 0.80, and seven (10%) have a R_s significantly less than 0.60. Thus, according to the criteria of Landis and Koch,[159] only 26% (18/69) of the ordinal variables have "almost perfect" reliability. It remains though that 90% (62/69) of these variables demonstrate at least "substantial" reliability, which is nevertheless acceptable. Table 7.15 displays the seven ordinal variables which have a $R_s<0.60$ and the three variables which demonstrate dissimilar response distributions between the test and retest. All are intended and/or actual components of the scales reported earlier. Aside from the fact that they are all ordinal variables, there does not appear to be any commonality between these variables which could explain their lower reliability.

In response to the weaker test-retest performance of ordinal variables compared to nominal ones, ten variables were randomly selected from Appendix 8, and their response scales were recoded into dichotomous yes-no nominal categories to verify the ensuing effect upon reliability indices. Table 7.16 presents the reliability statistics for these variables. The percent agreements are consistently higher. Three variables no longer have a stability index significantly different from 0.80. However, two of these show a critical ratio one-tail p value=0.06. This is somewhat on the limit of rejection of the null hypothesis (H_0: Kappa $\geq$ 0.80). Alternately, for the eight variables for which it made sense to do so, the response scales were recoded into three nominal categories: yes - maybe - no (Table 7.17). Although the percent agreements are higher or equal to those found at Appendix 8, none of the variables had a Kappa value significantly equal to or greater than 0.80. Thus, re-categorization of the data does not appear to greatly affect stability indices.

Table 7.18 displays the stability measure for the single continuous variable of the questionnaire. The Pearson correlation coefficient attests a perfect degree of correlation.

Finally, Table 7.19 presents the test-retest statistics compiled for the variables representing each of the additive scales. Determination of which correlation statistic to compute was dependent on tests of normality. These were conducted with the resultant scale totals derived from the first series of interviews (N=49). A non-normal distribution of scores was identified for six of the 14 scales. Overall, the test-retest correlation measures are "substantial to almost perfect" (range: 0.68 to 0.98). The critical ratio one-tail p values permit acceptance of the alternate hypothesis whereby R<0.80 for the **response efficacy scale** only. This scale was previously shown to have significantly different internal consistency indices between test and retest also (cf. Table 7.13). The "risk profile" scale has the highest correlation coefficient. However, a paired t-test comparing the mean scores obtained at test and retest suggests inequality of means. In fact, the mean score at re-rest on this scale is significantly lower. Thus, this high correlation coefficient masked a directional discordance between test and retest, where all respondents apparently had a tendency to change their responses in the same direction.

d) Interpretation of reliability measures combined

Examination of the test-retest results pertaining to particular items could explain the statistically significant differences between the internal consistency indices noted in Table 7.13. The premise is that unstable measurements could affect the relationships between the items of a scale. The most dramatic variation is noted for the **response efficacy scale**. This is likely a consequence of the low test-retest rank correlation coefficient of one of the variables (Probability of condom breakage: R_S=0.38). And, although on the limit of statistical significance (p=0.06), the internal consistency index of the **perceived behavioural control scale** is found to vary between the two tests by as much as 11 points. In this case, the majority of the items (13/15) have test-retest reliability scores significantly lower than 0.80. On the whole, it is possible that unstable items reflect questions which tend to elicit different interpretations over time or which generate high levels of ambivalence thus leading to the provision of erratic responses. Or the issue itself under examination may have changed and taken another meaning.

Consequently, the inter-relationships between the individual components of an intended scale are likely to vary and result in a differing internal consistency index. The scale may then possibly represent a different construct altogether.

In contrast, some unstable measurements do not appear to affect the internal consistency of a scale over the study period. This is the case for the **attitude scale**, where α_1=0.78 and α_2=0.80: either one or both of the components of 5/12 items[g] of this scale has a test-retest score significantly lower than 0.60 or dissimilar response distributions between the two tests (cf. Table 7.15). It appears then that even though individual items yield unstable scores, they tend to remain associated with one another with a similar strength. The question remains as to whether the same constructs are being measured over time. A partial answer to this may be found in the results presented in Table 7.19. The data suggest that 12 of the 14 scales yield correlated and stable score totals over time. Thus, although not all the items of a scale are stable and equally related to one another over time, the score totals may not be greatly affected. This could be an indication that the scales do in fact tend to measure the same or at least a very related construct over time. It is also possible though that the study sample size is not large enough to detect true variations in response distributions or that the statistical tests are not sensitive enough to these variations.

e) Conclusion to reliability assessment study phases

Overall, it appears that nominal variables produce higher test-retest reliability than ordinal variables with this study population. Despite losing some nuances in the data, it would seem advisable to limit the number of response choices to the extreme poles of a dichotomy if one wants to ensure "almost perfect" precision of measurements. For our questionnaire, the decision regarding which unstable items to dispose of is dependent on their contribution to the postulated scales. If such items are not elements of a scale, they are best rejected as they can not be used as reliable determinants of condom use behaviour. These items are highlighted by an asterisk in the questionnaire in Appendix 6. The reader will note that those items measuring knowledge have been retained to ensure a baseline assessment of respondents. The question remains regarding

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g) 1 scale item = belief about the consequences of consistent condom use * evaluation of the consequence

the value of the 18 resultant scales. Thirteen of the postulated scales have "substantial to almost perfect" internal consistency indices at both test and retest study phases (cf. Table 7.13). And, withholding the **risk profile scale**, the 12 remaining scales also appear to have stable scores over time, despite the inclusion of unstable individual items (cf. Table 7.19). Thus 12 scales could be considered reliable. In the end, this series of analyses will have been useful to exclude unstable items from the questionnaire and to identify the potential scales for eventual construct validity assessment.

TABLE 7.1

ELICITATION STUDY
Sociodemographic characteristics and behavioural antecedents for the total study group and by gender

VARIABLE	TOTAL GROUP (N=18)	MEN (N=10)	WOMEN (N=8)	GENDER DIFFERENCES
	n (%)	n (%)	n (%)	p value
Median age (years)	32	30	32	0.64 [1]
Range (years)	21-44	21-44	28-38	
Median age at first injection (years)	23	23	17	0.43 [1]
Range (years)	12-36	12-36	12-33	
Mean sentence length category (months)	12-18	12-18	12-18	
LIFETIME EXPERIENCE				
High school attendance or less	10 (56%)	4 (40%)	6 (75%)	0.16 [2]
College/Cegep attendance	8 (44%)	6 (60%)	2 (25%)	
Exclusively heterosexual	10 (56%)	8 (80%)	2 (25%)	0.03* [2]
Bisexual experience	8 (44%)	2 (20%)	6 (75%)	
CACTUS client	5 (28%)	3 (30%)	2 (25%)	0.62 [2]
Risk factor study participation [3]	13 (72%)	8 (80%)	5 (63%)	0.38 [2]
Had anti-HIV test	16 (89%)	9 (90%)	7 (88%)	0.71 [2]
6 MONTHS PRE-INCARCERATION				
Had a steady sex partner	12 (67%)	6 (60%)	6 (75%)	0.44 [2]
Had other sex partners [4]	9 (50%)	6 (60%)	3 (38%)	0.32 [2]
Had both steady and other sex partners	3 (17%)	2 (20%)	1 (13%)	0.59 [2]

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TABLE 7.1 (continued)

VARIABLE	TOTAL GROUP (N=18)		MEN (N=10)		WOMEN (N=8)		GENDER DIFFERENCES
	n	(%)	n	(%)	n	(%)	p value
No condom use	14	(78%)	8	(80%)	6	(75%)	0.62 (2)
Cocaine IDU	16	(89%)	9	(90%)	7	(88%)	0.71 (2)
Heroin IDU	6	(33%)	4	(40%)	2	(25%)	0.44 (2)
Borrowed used needles	12	(67%)	7	(70%)	5	(63%)	0.56 (2)
Borrowed each time injected	4/12	(33%)	3/7	(43%)	1/5	(20%)	0.42 (2)
Cleaned borrowed needles	11/12	(92%)	7/7	(100%)	4/5	(80%)	0.42 (2)
Cleaned prior to each injection	4/11	(36%)	1/7	(14%)	3/4	(75%)	0.09 (2)
Cleaned with bleach	4/11	(36%)	2/7	(29%)	2/4	(50%)	0.47 (2)
Cleaned with water	5/11	(46%)	4/7	(57%)	1/4	(25%)	0.35 (2)

* Statistically significant difference ($p \leq .05$); reject H_0: no gender differences; accept H_1: presence of gender differences

(1) Median test (exact probability provided)

(2) Fisher exact test (one-tail probability)

(3) Study of Hankins et al. (1989): Risk factors for HIV-1 infection among female inmates in a medium security correctional institution.

(4) Casual partners, clients and/or prostitutes.

TABLE 7.2

ELICITATION STUDY
Beliefs concerning consequences of condom use

VARIABLE	TOTAL GROUP N=92*		MEN N=52*		WOMEN N=40*		GENDER DIFFERENCES
	n	cum. %	n	cum. %	n	cum. %	p value
STD protection	18	19.6	11	21.2	7	17.5	.86 (1a)
Reduction of sensation	18	39.2	10	40.4	8	37.5	.86 (1a)
Reduction of spontaneity	15	55.5	8	55.8	7	55.0	.99 (1b)
Sign of promiscuity	12	68.5	6	67.3	6	70.0	.86 (1a)
Effective contraceptive barrier	5	73.9	2	71.1	3	77.5	.38 (2)
Sign of potential illness	5	79.3	2	74.9	3	85.0	.38 (2)
Uncomfortable: too tight too small	5	84.7	4	82.6	1	87.5	.27 (2)
Need for negotiation	2	86.9	--	--	2	92.5	Women only
Loss of erection	2	89.1	2	86.4	--	--	Men only
Impairs self image	2	91.3	2	90.2	--	--	Men only
Diversification of sexual repertoire	1	92.3	--	--	1	95.0	Women only
Non-applicable	7	100.0	5	100.0	2	100.0	.34 (2)

cum. % = cumulative percent

(1) Chi-square test (1 df)

(1a) χ^2=.03

(1b) χ^2=.002

(2) Fisher Exact test (one-tail probability)

* Represents the number of responses

TABLE 7.3

Beliefs concerning consequences of condom use: Items formulated for preliminary version of questionnaire

Si tu utilisais des condoms pour chaque relation sexuelle que tu pourrais avoir au mois de _____, dirais-tu que :

- Ça nuirait au déroulement de tes relations sexuelles
- Ça insulterait ton (ta) partenaire sexuel(le)
- Ça te protègerait des maladies transmises sexuellement (MTS)
- Ça rendrait tes relations sexuelles moins spontanées
- Ça serait un signe que tu as une maladie
- Ça indiquerait que tu n'as pas confiance en ton (ta) partenaire sexuel(le)
- Ça t'éviterait une grossesse
- Ça serait un signe que tu courailles
- Ça te donnerait un sentiment de sécurité après tes relations sexuelles
- Ça rendrait tes relations sexuelles moins naturelles
- Ça serait un signe d'amour pour ton (ta) partenaire sexuel(le)
- Ça diminuerait les sensations pendant les pénétrations
- Ça serait un signe que tu es une personne responsable

TABLE 7.4

ELICITATION STUDY
Significant others who may influence condom use behaviour

VARIABLE	TOTAL GROUP N=61*		MEN N=35*		WOMEN N=26*		GENDER DIFFERENCES
	n	cum. %	n	cum. %	n	cum. %	p value
Close family members	17	27.9	8	22.9	9	34.6	.47 (1)
IDU	11	45.9	7	42.9	4	50.0	.45 (2)
Spouse	10	62.3	5	57.2	5	69.2	.43 (2)
New sex partners	5	70.5	4	68.6	1	73.0	.28 (2)
Straights	4	77.1	2	74.3	2	80.7	.57 (2)
Prostitutes	4	83.7	1	77.2	3	92.2	.20 (2)
Health professionals	2	87.0	2	82.9	--	--	Men only
Friend with multiple partners	2	90.3	2	88.6	--	--	Men only
Non-applicable responses	6	100.0	4	100.0	2	100.0	.49 (2)

cum. % = cumulative percent
(1) Chi-square test (1 df); χ^2=.52
(2) Fisher Exact test (one-tail probability)

* Represents the number of responses

TABLE 7.5

Significant others who may influence condom use behaviour: Items formulated for preliminary version of questionnaire

Crois-tu que ces personnes trouveraient que c'est une bonne idée pour toi d'utiliser des condoms pour chaque relation sexuelle que tu pourrais avoir au mois de _____?

- Les membres les plus proches de toi dans ta famille
- Les gens avec qui tu te piques
- Les gens qui se piquent (en général)
- Les junkies
- Les gens straight
- Les gens pratiquant la prostitution
- Ton chum (conjoint)/ta blonde (conjointe)
- Une personne avec qui tu aurais une relation sexuelle pour la première fois

TABLE 7.6
ELICITATION STUDY
Barriers to condom use

VARIABLE	TOTAL GROUP N=64*		MEN N=36*		WOMEN N=28*		GENDER DIFFERENCES
	n	cum. %	n	cum. %	n	cum. %	p value
Negotiation process	18	28.1	8	22.2	10	35.7	.36 (1)
Risk perception	13	48.4	9	47.2	4	50.0	.23 (2)
Planning process	7	59.3	5	61.1	2	57.1	.33 (2)
Initiation process	6	68.7	3	69.4	3	67.8	.54 (2)
Threat to establishment of trust	4	75.0	2	75.0	2	74.9	.59 (2)
Availability of condoms	3	79.7	2	80.6	1	78.5	.59 (2)
Lack of technical skills	2	82.8	1	83.4	1	82.1	.69 (2)
Contraceptive effect	2	85.9	1	86.2	1	85.7	.69 (2)
Reduction of sexual pleasure	2	89.0	1	89.0	1	89.3	.69 (2)
Impairment by drugs	1	90.6	1	91.8	--	--	Men only
Non-applicable	6	100.0	3	100.0	3	100.0	.54 (2)

cum. % = cumulative percent

(1) Chi-square test (1 df); χ^2=.83

(2) Fisher Exact test (one-tail probability)

* Represents the number of responses

TABLE 7.7

Perception of personal control concerning condom use:
Items formulated for preliminary version of questionnaire

Pour chaque situation énumérée, jusqu'à quel point penses-tu pouvoir faire ce que je te suggère, au mois de _____? Peux-tu:

- acheter ou aller chercher des condoms?
- avoir des condoms à portée de la main pour chaque relation sexuelle?
- prévoir d'avance que tu vas avoir une relation sexuelle?
- aborder le sujet du condom au bon moment avec un(e) partenaire sexuel(le)?
- sortir les condoms au bon moment pendant une relation sexuelle?
- convaincre ton (ta) partenaire sexuel(le) régulier(ère) d'utiliser des condoms avec toi pour chaque relation sexuelle?
- convaincre chaque nouveau(elle) partenaire sexuel(le) d'utiliser des condoms avec toi?
- convaincre une personne qui n'aime pas les condoms d'en utiliser pour chaque relation sexuelle avec toi?
- refuser d'avoir des relations sexuelles avec une personne que tu désires mais qui ne veut pas utiliser de condoms avec toi?
- voir si une personne est à risque pour le sida?
- mettre un condom comme il faut?
- "avoir du fun" à mettre des condoms?

TABLE 7.8

PRE-TEST
Sociodemographic characteristics and behavioural antecedents for the total study group and by gender

VARIABLE	TOTAL GROUP (N=10)		MEN (N=5)		WOMEN (N=5)		GENDER DIFFERENCES
	n	(%)	n	(%)	n	(%)	p value
Median age (years)	32		32		32		1.000 (1)
Range (years)	24-39		27-39		24-34		
Mean sentence length category (months)	6-12		6-12		6-12		
LIFETIME EXPERIENCE							
High school attendance or less	6	(60%)	4	(80%)	2	(40%)	0.26 (2)
College/Cegep attendance	4	(40%)	1	(20%)	3	(60%)	
Exclusively heterosexual	6	(60%)	4	(80%)	2	(40%)	0.26 (2)
Bisexual experience	4	(40%)	1	(20%)	3	(60%)	
CACTUS client	6	(60%)	3	(60%)	3	(60%)	0.74 (2)
Had anti-HIV test	8	(80%)	3	(60%)	5	(100%)	0.22 (2)
6 MONTHS PRE-INCARCERATION							
Had a steady sex partner	9	(90%)	5	(100%)	4	(80%)	0.50 (2)
Had other sex partners (3)	6	(60%)	2	(40%)	4	(80%)	0.26 (2)
Had both steady and other sex partners	5	(50%)	2	(40%)	3	(60%)	0.50 (2)
No condom use	9	(90%)	5	(100%)	4	(80%)	0.50 (2)
Borrowed used needles	5	(50%)	2	(40%)	3	(60%)	0.50 (2)

(1) Median test (exact probability provided)

(2) Fisher Exact test (one-tail probability)

(3) Casual partners, clients and/or prostitutes

TABLE 7.9

RELIABILITY ASSESSMENT
First wave of interviews:
Sociodemographic characteristics and
behavioural antecedents by gender

VARIABLE	Men (N=27)	Women (N=22)	Gender Differences	
	n (%)	n (%)	Statistic	p value
Median age (years)	26	29	χ^2=1.56	0.21 (1)
Range (years)	20-43	21-35		
Mean sentence length category (months)	6-12	6-12		
LIFETIME EXPERIENCE				
High school attendance or less	24/26 (92%)	15/20 (75%)		0.11 (2)
College attendance	2/26 (8%)	5/20 (25%)		
Exclusively heterosexual	20 (74%)	10 (46%)	χ^2=4.18	0.04* (3)
Exclusively homosexual	2 (7%)	0		0.30 (2)
Bisexual experience	5 (19%)	11 (50%)		0.02* (2)
CACTUS client	7 (26%)	8 (36%)	χ^2=0.62	0.43 (3)
Had anti-HIV test	14 (52%)	19 (86%)	χ^2=6.57	0.01* (3)
6 MONTHS PRE-INCARCERATION				
Had a steady sex partner	19 (70%)	15 (68%)	χ^2=0.03	0.87 (3)
Had other sex partners (4)	19 (70%)	18 (82%)	χ^2=0.86	0.35 (3)
No condom use	22 (82%)	6 (27%)	χ^2=14.55	0.00014* (3)
Borrowed used needles	5 (19%)	8 (36%)		0.14 (2)

* Statistically significant difference ($p \leq .05$); reject H_0: no gender differences; accept H_1: presence of gender differences
(1) Median test (Chi-square statistic with 1 df)
(2) Fisher Exact test (one-tail probability)
(3) Chi-square test (1 df)
(4) Casual partners, clients and/or prostitutes

TABLE 7.10

RELIABILITY ASSESSMENT
Second wave of interviews:
Sociodemographic characteristics and
behavioural antecedents by gender

VARIABLE	Men (N=25)	Women (N=15)	Gender Differences
	n (%)	n (%)	p value
Median age (years)	25	30	0.03* (1)
Range (years)	20-43	23-34	
Mean sentence length category (months)	6-12	6-12	
LIFETIME EXPERIENCE			
High school attendance or less	23 (92%)	11/14 (79%)	0.24 (2)
College attendance	2 (8%)	3/14 (21%)	
Exclusively heterosexual	20 (80%)	9 (60%)	0.16 (2)
Exclusively homosexual	1 (4%)	0	0.63 (2)
Bisexual experience	4 (16%)	6 (40%)	0.09 (2)
CACTUS client	7 (28%)	4 (27%)	0.61 (2)
Had anti-HIV test	12 (48%)	14 (93%)	0.004* (2)
6 MONTHS PRE-INCARCERATION			
Had a steady sex partner	20 (80%)	12 (80%)	0.66 (2)
Had other sex partners (3)	17 (68%)	12 (80%)	0.33 (2)
No condom use	20 (80%)	5 (33%)	0.004* (2)
Borrowed used needles	4 (16%)	7 (47%)	0.04* (2)

* Statistically significant difference ($p \leq .05$); reject H_0: no gender differences; accept H_1: presence of gender differences

(1) Median test (Chi-square statistic with 1 df): $\chi^2=4.87$

(2) Fisher Exact test (one-tail probability)

(3) Casual partners, clients and/or prostitutes

TABLE 7.11

RELIABILITY ASSESSMENT:
Comparison between test and retest groups on sociodemographic characteristics and behavioural antecedents, genders combined

VARIABLE	First Wave Test Data (N=49)	Second Wave Retest Data (N=40)	Difference	
	n (%)	n (%)	Statistic	p value
Sex (female)	22 (45%)	15 (38%)	χ^2=0.50	0.48 (1)
Median age (years)	27	27	χ^2=0.03	0.87 (2)
Mean sentence length category (months)	6-12	6-12		
LIFETIME EXPERIENCE				
High school attendance	39/45 (87%)	34/38 (89%)		0.48 (3)
College attendance	6/45 (13%)	4/38 (11%)		
Exclusively heterosexual	30 (61%)	29 (73%)	χ^2=1.25	0.26 (1)
Exclusively homosexual	2 (4%)	1 (3%)		0.58 (3)
Bisexual experience	16 (33%)	10 (25%)	χ^2=0.62	0.43 (1)
CACTUS client	15 (31%)	11 (28%)	χ^2=0.10	0.75 (1)
Had anti-HIV test	33 (67%)	26 (65%)	χ^2=0.05	0.82 (1)
6 MONTHS PRE-INCARCERATION				
Had a steady sex partner	34 (69%)	32 (80%)	χ^2=1.29	0.26 (1)
Had other sex partners (4)	37 (76%)	29 (73%)	χ^2=0.10	0.75 (1)
No condom use	28 (57%)	25 (63%)	χ^2=0.26	0.61 (1)
Borrowed used needles	13 (27%)	11 (28%)	χ^2=0.01	0.92 (1)

(1) Chi-square test (1 df)
(2) Median test (Chi-square statistic with 1 df)
(3) Fisher Exact test (one-tail probability)
(4) Casual partners, clients and/or prostitutes

TABLE 7.12

Comparison between elicitation, pretest, and test and retest study groups on sociodemographic characteristics and behavioural antecedents, genders combined

VARIABLE	Elicitation		Pretest Study (N=18)		Reliability Test #1 (N=10)		Reliability Retest (N=49)		Difference (N=40)	
	n	(%)	n	(%)	n	(%)	n	(%)	statistic	p value
Sex (female)	8	(44%)	5	(50%)	22	(45%)	15	(38%)	χ^2=0 78	0 85 (1)
Median age (years)	32		32		27		27		χ^2=12 49	0 006* (2)
Mean sentence length category (months)	12-18		6-12		6-12		6-12		χ^2=3 77	0 79 (3)
LIFETIME EXPERIENCE										
High school attendance or less	10	(56%)	6	(60%)	39/45	(87%)	34/38	(89%)	χ^2=12 69	0 005* (1)
College attendance	8	(44%)	4	(40%)	6/45	(13%)	4/38	(11%)		
Exclusively heterosexual	10	(56%)	6	(60%)	30	(61%)	29	(73%)	χ^2=2 05	0 56 (1)
Exclusively homosexual	0		0		2	(4%)	1	(3%)	χ^2=1 19	0 76 (1)
Bisexual experience	8	(44%)	4	(40%)	16	(33%)	10	(25%)	χ^2=2 45	0 48 (1)
CACTUS client	5	(28%)	6	(60%)	15	(31%)	11	(28%)	χ^2=4 18	0 24 (1)
Had anti-HIV test	16	(89%)	8	(80%)	33	(67%)	26	(65%)	χ^2=4 20	0 24 (1)
6 MONTHS PRE-INCARCERATION										
Had a steady sex partner	12	(67%)	9	(90%)	34	(69%)	32	(80%)	χ^2=3 14	0 37 (1)
Had other sex partners (4)	9	(50%)	6	(60%)	37	(76%)	29	(73%)	χ^2=4 63	0 20 (1)
No condom use	14	(78%)	9	(90%)	28	(57%)	25	(63%)	χ^2=5 48	0 14 (1)
Borrowed used needles	12	(67%)	5	(50%)	13	(27%)	11	(28%)	χ^2=11 45	0 01* (1)

(1) Chi-square (3 df)
(2) Median test (Chi-square statistic with 3 df)
(3) Kruskal-Wallis one-way ANOVA (Chi-square statistic corrected for ties with 3 df)
(4) Casual partners, clients and/or prostitutes

* Statistically significant difference ($p \leq .05$), reject H_0 no differences between groups, accept H_1 presence of differences between groups

TABLE 7.13

Internal consistency measures of scales retained from reliability assessment study phase

SCALE	Number of items	Interviews		Z test	
		First wave (N=49)	Second wave (N=40)	critical ratio	p value (1 sided)
		Alpha (1)	Alpha (1)		
Risk profile	8	0.81	0.82	.13	.45
Communication	4	0.70	0.74	38	.35
Past behaviour label	2	0.72	0.84	1.42	.08
Perceived vulnerability (future)	2	0.71	0.75	.39	.35
Perceived susceptibility (past and future)	4	0.74	0.75	.10	.46
Condom use intention	4	0.74	0.74	--	--
Social context	4	0.77	0.78	.11	.46
Attitude	12	0.78	0.80	.24	.41
Response efficacy	2	0.78	0.49	2.30	.01*
Pleasure	2	0.90	0.93	.84	.20
Subjective norms	6	0.83	0.76	.86	.20
Perceived behavioural control	15	0.76	0.87	1.52	.06
Risk Perception					
• including measure of knowledge	10	0.80	0.76	.46	.32
• excluding measure of knowledge	9	0.82	0.80	.26	.40
Condom perceptions	5	0.72	0.74	.19	.43

(1) Cronbach alpha value (α)

* Statistically significant difference; ($p \leq .05$); reject H_0: $\alpha_1 = \alpha_2$; accept H_1: $\alpha_1 \neq \alpha_2$

Z test critical ratio (Fisher Z transformation) :

$$\frac{(Z_1 - Z_2)}{\sqrt{1/(n_1-3) + 1/(n_2-3)}} \quad \text{where} \quad Z_1 = \tfrac{1}{2}\ln\frac{(1+\alpha_1)}{(1-\alpha_1)} \quad \text{and} \quad Z_2 = \tfrac{1}{2}\ln\frac{(1+\alpha_2)}{(1-\alpha_2)}$$

TABLE 7.14

Test-retest statistics for nominal variables: Kappa values significantly lower than 0.80

VARIABLE	% Agreement	Kappa	Standard error for Kappa	Z test critical ratio	Z test p value (1 sided)	Comparison of response distributions Test	Comparison of response distributions p value (2 sided)
KNOWLEDGE							
a. HIV infection is obvious	82.5	**.13**	.20	3.35	**<.01**	McN	1.00
d. Sexual transmission of HIV: male ejaculation is necessary	62.5	**.20**	.15	4.00	**<.01**	McN	.30
e. Lubricated condoms increase sensation	75.0	**.50**[1]	.14	2.14	**.02**	McN	.75
f. Sexual transmission of HIV: via anal sex only	95.0	**.03**	.02	38.50	**<.01**	McN	1.00
g. Most HIV infected persons are aware of their status	82.5	**.39**	.17	2.41	**<.01**	McN	.02[δ]
i. Condom may prolong erection	80.0	**.38**	.17	2.47	**<.01**	McN	.29
k. Condoms: one unique shape	70.0	**.21**	.16	3.69	**<.01**	McN	.39
n. Condoms are permeable to HIV	80.0	**.47**[1]	.16	2.06	**.02**	McN	.73
Knows how to put a condom on	77.5	**.62**[1]	.10	1.80	**.04**	Sign	1.00
IN THE LAST 6 MONTHS PRE-INCARCERATION							
Regular partner asked to use condoms	77.5	**.52**[1]	.13	2.15	**.02**	Sign	1.00
Used condoms with regular partner upon his/her request	87.5	**.49**[1]	.19	1.63	**.05**	Sign	1.00
Expectation that sexual partners could transmit HIV to respondent in future	75.0	**.48**[1]	.14	2.29	**.01**	McN	.75
DECISION TO USE CONDOMS							
Respondent vs regular partner	80.0	**.54**[1]	.14	1.86	**.03**	McN	1.00
Respondent vs casual partner	75.0	**.33**	.17	2.76	**<.01**	McN	1.00

Z test critical ratio = (Kappa - .80)/SE (Kappa); if $p \leq .05$: reject H_0: Kappa $\geq .80$ and accept H_1: $K < .80$

McN: McNemar Chi-square test for paired dichotomous variables

Sign: Sign test for paired polychotomous variables

[1]: Z test critical ratio calculated; if $p \leq .05$: reject H_0: Kappa <.70 and accept H_1: $.70 \leq K < .80$

δ : 2 sided $p \leq .05$, reject H_0: variables have same distribution

Variable names/descriptions have been translated from French to English for presentation of results.

TABLE 7.15

Test-retest statistics for ordinal variables

VARIABLE	% Agreement	Spearman's R	Standard error for R_s	Z test critical ratio	p value (1 sided)	Wilcoxon rank test p value (2 sided)
VARIABLES WITH R_S SIGNIFICANTLY LOWER THAN 0.60:						
Probability of condom breakage	52.5	**.38**	.17	1.64	**.05**	.20
BELIEFS ABOUT CONSEQUENCES OF CONSISTENT CONDOM USE						
e. Sign of distrust toward partner	35.0	**.09**	.16	3.68	**<.01**	84
i. Sign of potential illness	37.5	**.14**	.16	3.37	**<.01**	.62
k. Sign of accountability/dependability	47.5	**.29**	.16	2.41	**<.01**	.81
EVALUATION OF CONSEQUENCES OF CONDOM USE						
b. Reduction of sensation for partners	55.0	**.39**	.15	1.72	**.04**	.28
SUBJECTIVE BELIEFS re SIGNIFICANT OTHERS						
f. New sex partner	42.5	**.26**	.17	2.60	**<.01**	.99
SELF-EFFICACY						
a. To ensure ready availability of condoms for self	70.0	**.33**	.17	2.14	**.02**	.94
VARIABLES WITH DIFFERENT DISTRIBUTIONS BETWEEN TEST AND RE-TEST:						
EVALUATION OF CONSEQUENCES OF CONDOM USE						
c. Giving impression of distrust toward partner	50.0	**.66**	.10	.61	**.27**	.04$^{\delta}$
i. STD protection	87.5	**.42**	.19	1.50	**.07**	.04$^{\delta}$
MOTIVATION TO COMPLY WITH SIGNIFICANT OTHERS						
b. IDU	65.0	**.71**	.10	1.18	**.12**	.01$^{\delta}$

Z test critical ratio (Fisher Z transformation):

$$\left[\tfrac{1}{2}\ln \frac{(1+R)}{(1-R)} - \tfrac{1}{2}\ln \frac{(1+.60)}{(1-.60)} \right] \Big/ \frac{1}{\sqrt{n-3}}$$

if $p \leq .05$: reject H_0: $R_s \geq .60$ and accept H_1: $R_s < .60$

δ : 2 sided $p \leq .05$; reject H_0: variables have same distribution/same mean rank

Variable names/descriptions have been translated from French to English for presentation of results.

TABLE 7.16

Test-retest statistics for ordinal variables:
Dichotomization of a 25% random sample of ordinal variables

VARIABLE	% Agreement	Kappa	Standard error for Kappa	Z test critical ratio	P value (1 sided)
Probability of condom breakage	90.0	**.54**	.20	1.30	**.10***
BELIEFS ABOUT CONSEQUENCES OF CONDOM USE					
Sign of potential illness	55.0	**.01**	.16	4.94	**<.01**
Sign of promiscuity	70.0	**.36**	.15	2.93	**<.01**
EVALUATION OF CONSEQUENCES OF CONDOM USE					
Reduction of sensation for partners	75.0	**.41**	.15	2.60	**<.01**
Giving impression of potential illness	70.0	**.32**	.15	3.20	**<.01**
STD protection	92.5	**.38**	.27	1.56	**.06***
Subjective beliefs re spouse	75.0	**.37**	.16	2.69	**<.01**
Motivation to comply with straight people	80.0	**.58**	.13	1.69	**.05***
SELF-EFFICACY:					
To ensure ready availability of condoms for self	90.0	**.45**	.23	1.52	**.06***
To convince each new partner to use condoms	72.5	**.24**	.17	3.29	**<.01**

Z test critical ratio = (Kappa - .80)/SE (Kappa)

* 1 sided $p \leq .05$: reject H_0: $K \geq .80$; accept H_1: $K < .80$

TABLE 7.17

Test-retest statistics for ordinal variables:
Recategorization of a 25% random sample of ordinal variables

VARIABLE	% Agreement	Kappa	Standard error for Kappa	Z test critical ratio	P value (1 sided)
BELIEFS ABOUT CONSEQUENCES OF CONDOM USE					
Sign of potential illness	52.5	**.18**	.12	5.17	**<.01**
Sign of promiscuity	62.5	**.40**	.11	3.64	**<.01**
EVALUATION OF CONSEQUENCES OF CONDOM USE					
Reduction of sensation for partners	57.5	**.29**	.12	4.25	**<.01**
Giving impression of potential illness	62.5	**.33**	.12	3.92	**<.01**
Subjective beliefs re spouse	65.0	**.35**	.12	3.75	**<.01**
Motivation to comply with straight people	65.0	**.41**	.13	3.00	**<.01**
SELF-EFFICACY:					
To ensure ready availability of condoms for self	70.0	**.25**	.14	3.93	**<.01**
To convince each new partner to use condoms	67.5	**.43**	.12	3.08	**<.01**

Z test critical ratio = (Kappa - .80)/SE (Kappa)

all $p \leq .01$: reject H_0: $K \geq .80$; accept H_1: $K < .80$

TABLE 7.18

Test-retest statistics for continuous variable

VARIABLE	% Agreement	**Pearson's R**	Standard error for R	Z test critical ratio	**p value (1 sided)**	Paired t-test p value (2 sided)
Age of respondent	97.5	**1.00**	.001	>10	**<<.01****	1.00[δ]

Z test critical ratio (Fisher Z transformation):

$$\left| \tfrac{1}{2}\ln\frac{(1+R)}{(1-R)} - \tfrac{1}{2}\ln\frac{(1+.80)}{(1-.80)} \right| \Big/ \frac{1}{\sqrt{n-3}}$$

** One-sided $p \leq .01$: reject H_0: R = .80; accept H_1: R>.80

δ Accept H_0: same variances

TABLE 7.19

Test-retest statistics for scale variables

SCALE	Test	R	Standard error for R	Z test critical ratio	Z test p value (1 sided)	Comparison of response distributions Test	Comparison of response distributions p value (2 sided)
Condom use intention	Spearman	**.85**	.06	.96	**.17**	Wilcoxon	98
Social context	Spearman	**.86**	.08	1.19	**.12**	Wilcoxon	09
Past behaviour label	Spearman	**.77**	.09	.48	**.32**	Wilcoxon	.28
Perceived vulnerability	Spearman	**.70**	.09	1.41	**.08**	Wilcoxon	13
Pleasure	Spearman	**.77**	.06	.48	**.32**	Wilcoxon	74
Communication	Spearman	**.82**	.08	.35	**.36**	Wilcoxon	74
Risk profile	Pearson	**.98**	.01	7.31	**<<.01****	Paired t-test	.02$^{\delta}$
Attitude	Pearson	**.85**	.04	.96	**.17**	Paired t-test	.27
Subjective norms	Pearson	**.79**	.06	.17	**.43**	Paired t-test	.57
Perceived susceptibility	Pearson	**.83**	.06	.54	**.30**	Paired t-test	.77
Risk perception	Pearson	**.86**	.04	1.19	**.12**	Paired t-test	.47
Condom perceptions	Pearson	**.82**	.06	.35	**.36**	Paired t-test	06
Response efficacy	Pearson	**.68**	.10	1.64	**.05***	Paired t-test	.09
Perceived behavioural control	Pearson	**.74**	.08	.90	**.18**	Paired t-test	81

Spearman: Spearman rank correlation
Pearson: Pearson correlation
Wilcoxon: Wilcoxon signed rank test
Paired t-test: Tests for homogeneity of variance conducted; p values $\geq$.05, so accept H_0: equality of variances
Z test critical ratio (Fisher Z transformation):

$$\left[\tfrac{1}{2}\ln \frac{(1+R)}{(1-R)} - \tfrac{1}{2}\ln \frac{(1+.80)}{(1-.80)} \right] \Big/ \frac{1}{\sqrt{n-3}}$$

* 1 sided $p \leq .05$: reject H_0: $R \geq .80$; accept H_1: $R < .80$
** 1 sided $p << .01$: reject H_0: $R = .80$; accept H_1: $R > .80$
δ: 2 sided $p < .05$: reject H_0: equal means

CHAPTER 8

COMMENTARIES

This methodological study had as its goal the development of a reliable survey instrument based on a psychosocio-behavioural conceptual framework relevant for the design of AIDS prevention strategies targeted at incarcerated injection drug users. In this final chapter, we will comment upon noteworthy study outcomes and observations, consider issues pertaining to the applicability of the questionnaire and the generalizability of the research findings, and suggest future steps to complete its development. But first, an overview is presented of the more recent literature on psychosocial determinants of condom use/safer sexual behaviour and on reliability assessment among IDU.

A. THE RECENT LITERATURE

a) Psychosocial determinants

After our questionnaire had been designed, the HIV/AIDS literature began to report more studies than had previously been noted on determinants or correlates of condom use and/or safer sexual behaviour among IDU. These studies increasingly incorporated interrelated sets of theoretical concepts, some of which were borrowed from existing models of health behaviour.

Multi-stage frameworks are now frequently referred to in the literature. Condom use and safer sexual behaviour are portrayed as the result of an individual's progression through various successive stages, movement through which is influenced by psychosocial and environmental factors. Such an approach suggests avenues for intervention strategies which vary according to the stage from which an individual is to progress. For instance, the AIDS Risk Reduction Model referred to earlier (cf Chapter 4) was eventually applied to epidemiological studies of sexual risk behaviour among IDU.[191, 192] Other teams conducting research among IDU in drug treatment and rehabilitation facilities in Massachusetts[193] and New Jersey[194] also conceptualized condom use behaviour within a similar three-stage process. In stage one, individuals label themselves as being at risk for infection. This perceived susceptibility leads to stage two, worry about AIDS, an aversive emotional response to perception of risk. The final stage refers to actual use of condoms. Fisher and Fisher[195] developed a conceptually-based model promoting AIDS risk reduction, and proposed to validate it among IDU in New England and Connecticut. According to their model, in order to

reduce AIDS risk behaviour in a particular population, it is first necessary to ascertain the existing level of AIDS risk reduction knowledge in the population, then to understand the unique motivational determinants underlying risk reduction behaviour (cf. Ajzen and Fishbein[88]), and finally to assess the behavioural skills extant within the group which effectively reduce risk. Based on the information gathered, interventions can then be designed to modify knowledge, motivation levels and behavioural skills in the direction of preventive action.

Although not organized within a multi-stage framework, elements of a psychosocial model of behaviour have also been used by a Dutch research team examining determinants of safer sex and condom use among IDU enroled in a longitudinal study.[196, 197, 198] Significant predictor variables are derived from Roger's protection-motivation theory and include: knowledge about AIDS and risk reduction measures, perception of severity of the HIV threat, perception of the risk of transmitting HIV, response and self-efficacy with respect to condom use, beliefs about the negative consequences of condom use, and intentions to use condoms.

Otherwise, research teams at Narcotic and Drug Research Inc (cf. Chapter 2) further provided support for the determinant role of normative influences in promoting sexual risk reduction and condom use among IDU. For instance, lack of community support for risk reduction among Harlem IDU was reported as contributing to resistance to condoms.[199] Condom use among heterosexually active street-recruited IDU in New York City was found to be strongly associated with knowing someone with AIDS and having friends who practised risk reduction.[200] Finally, active mobilization of peer pressure appeared to increase condom use among IDU in New York City.[201]

Moreover, the limited capacity of AIDS and HIV transmission knowledge alone to predict sexual risk reduction has been further confirmed in studies within Italian methadone maintenance programmes[202] and at a London drug dependency unit.[203] Two studies pointed out that IDU who are aware they are HIV infected are more likely to change their sexual behaviour towards risk reduction and to use condoms with their private (non-commercial) partners.[204, 205]

Studies focusing on women at risk of HIV infection have again highlighted the difficulties women face in adopting safer sexual behaviours.[206, 207] Those who attend skills building sessions[208] and who perceive they have stronger social support

networks,[209] are apparently more successful in handling condom use with sexual partners. In particular, women who are able to discuss condom use with their sexual partners, whose partners have either a neutral or a positive reaction to the suggestion of condom use, and/or whose friends are also using condoms, tend to use them more frequently [210, 211]

Overall, it appears that ongoing research pertaining to sexual HIV risk reduction among IDU generally confirm the findings reported earlier (cf. Chapter 2), and which were considered in the development of our conceptual framework. Also, there is a trend toward increasing use of models of health behaviour.

b) Reliability assessment

Two studies which reported findings concerning the methodological issues of scale/questionnaire development and reliability assessment with IDU study subjects were located in the published literature. Darke et al.[212] developed an 11-item interviewer-administered scale which inquires about HIV risk-taking behaviour among IDU, including both injecting and sexual behaviour. Initial analyses revealed satisfactory reliability and validity. Closer to our study interests, Longshore et al [188] examined the issue of reliability with respect to AIDS knowledge and attitude measurements among IDU in relation to demographic traits hypothesized to affect reliability estimates. Eight measures defined as predictors of AIDS risk behaviour were developed. These were then administered to 322 IDU in drug abuse treatment clinics and internal consistency results were compared by ethnicity, educational level, and sex of respondents. Hispanics and individuals with less than a complete high school education produced lower reliability estimates, whereas these Cronbach alpha indices were not found to vary consistently by gender. Such data demonstrate how different groups could exhibit varying levels of reliability, which could in turn influence the pattern of findings of a study, complicating interpretation of results and impeding comparisons between studies.

In the end, a review of the literature conveys that in the face of the increasing HIV epidemic among IDU, there are still too few reports of methodological studies involving this population.

B. NOTEWORTHY STUDY OUTCOMES AND OBSERVATIONS

a) A conceptual contribution

A major task in this study was the assembling of various elements into a meaningful and multifaceted conceptual framework which would be pertinent for the study of determinants of intentions of incarcerated IDU to use condoms for HIV prevention upon release from prison, so as to develop educational interventions. Each variable was defined and some potential relationships between them were proposed to facilitate data interpretation

This framework is characterized as meaningful in that, with few exceptions, respondents reported that the proposed concepts and questions raised issues related to their decisions and motivations around condom use. This was invariably enhanced by the elicitation study which assisted in formulating concepts along relevant dimensions for this particular study population. On a broader level, the meaningfulness of our framework is defendable in that its general orientation is concordant with our own experience with this population and with past and current research findings highlighted in the relevant literature.

Furthermore, this framework is characterized as multifaceted as it includes behavioural and psycho-social determinants, and a combination of health and non-health related beliefs and perceptions which are individually-driven, although some may be primarily under the influence of social processes. A stage approach is also incorporated as an added refinement. This recognizes the fact that factors such as knowledge levels may have varying influences on intentions and behaviour depending on where an individual stands in relation to his/her experience vis-à-vis HIV infection.

However, it may be questioned as to whether this framework is too "all inclusive" and whether integrating such a large number of variables is warranted. This approach has necessitated the development of a rather long questionnaire in order to sufficiently capture the essence of each variable. The premise here has been that the study topic had gone relatively unexplored, so that an initial investigation which provides a wide overview of potential elements to consider in the development of a preventive intervention is preferable. We have been privileged in that it was possible to engage inmates in long interviews lasting up to 90 minutes in order to obtain initial reliability indices. Eventual construct validation and multivariate analyses with a larger sample

size of the study population will most likely justify re-modelling of the framework into a tighter version.

b) A methodological contribution

The demonstration that self-reported information obtained from study participants is reliable is fundamental to the ultimate utility and substantive interpretation of study findings. While reliability of data capture does not guarantee its validity, it has been shown (cf. Chapter 5) that it is a necessary criterion prior to demonstrating that the information does represent valid measures of the factors under investigation. A major outcome from this study has been to present evidence that **it is possible to obtain reliable self-reported data from incarcerated IDU with a standardized interviewer-administered questionnaire**, even with questions involving a recall period of 6 months

Overall, the reliability estimates derived from this study are generally high and are, for the most part, superior to those results summarized by Longshore et al.[188] in a recent review of reliability assessment among IDU in the context of HIV/AIDS research. This encouraging outcome can be attributed to several factors: early consultation with experts in this specific content area as well as in questionnaire design; particular attention to the characteristics of the study population while designing the questionnaire; careful pre-testing of the instrument with representatives of the study population; and a standardized approach to data collection by an experienced interviewer who understood exactly what information was being sought for, as she herself had developed the questionnaire. Additionally, attempts were made to render the task of responding to the questionnaire as easy as possible. For instance, data indicate that people, particularly individuals with less practice and developed abilities for formal thinking, have most difficulty reliably estimating counts and frequencies of occurrence of events,[135 171] so that this approach to desired answers was avoided.

Interestingly, once the process of data collection was completed, subjects almost always solicited some counselling with respect to condom use. Their questions and concerns revealed that a majority of the IDU in this study had rarely considered condom use as a realistic option. In fact, they had been mobilized to reflect upon issues which were novel to them, and were then apparently engaged in a process of "opinion formation". This can explain, in part, the lower test-retest reliability indices

noted for the ordinal variables, as these generally examined the beliefs and perceptions which were most likely to undergo some transformation over time. Until respondents adopt clear opinions, some questions then could elicit ambivalent and unstable responses. It is also possible that requests for prompt expressions of agreement or disagreement on somewhat new and controversial issues may have the effect of creating erratic responses as individuals may feel pressured to answer. Despite this, it remains that IDU can be reliable subjects for epidemiological studies.

Finally, this study has also shown that the prison setting is an ideal milieu to reach IDU for HIV/AIDS research. Once potential organizational barriers are removed, and ethical principles of voluntary informed consent, interview confidentiality, and anonymity of data are integrated into the study process, incarcerated IDU are readily available and inclined to participate in thorough personal interviews. Research related to the HIV/AIDS epidemic is found to evoke interest among this population, and participants in this study demonstrated much thoughtfulness as they responded to our questions.

c) A comment on the qualitative approach

The qualitative elicitation study was ultimately very useful in ensuring that the final questionnaire did tap into dimensions of meaningful significance to this study population. Also, in considering further research into determinants of behavioural intentions, a qualitative approach would be advisable for exploration of the following areas, in which the sole use of quantitative measures was felt rather restrictive in this study: aversive emotions aroused by HIV/AIDS; normative influences and informational social contexts; and the study of sociosexual interactions and communication patterns concerning condom use and safer sexual behaviour. It is highly probable that the subjects we interviewed could have provided insightful information on these topics if guided in this direction. For instance, the data recovered via the elicitation study unveiled a richness of information hitherto undocumented among IDU in Canada.[213] [214]

C. APPLICABILITY AND GENERALIZABILITY

With respect to the applicability of this questionnaire to similar or other settings, some points should be considered. First, this questionnaire was designed specifically for administration in the context of a one-to-one confidential session with a trained interviewer. Self-administration may be a rather tedious process considering its format. Second, to maximize the possibility of obtaining complete and thoughtful responses, this questionnaire is best used in a situation where it is possible to engage subjects in an hour long interaction. And third, counselling and consultation services on HIV/AIDS should be available to respond to needs which may arise as a consequence of the interview. Ideally, the choice between anonymous or confidential HIV-antibody testing services should be available to inmates.

The issue of generalizability of our research findings is not so clear-cut. This pertains to defining study populations to which results may be generalizable and those with whom the questionnaire ought to be used. The non-probability based sampling strategy used to recruit inmates could have resulted in a study group not representative of incarcerated IDU. Previous research indicates that individuals willing to participate in face-to-face interviews are generally more sexually self-disclosing than those who choose to respond to self-administered forms.[135, 215] Also, these volunteers could be a well-informed and motivated group, with the result that the developed instrument may not exactly reflect the ideas of the intended target population. This might also affect the reliability estimates by enhancing them to some undetermined extent. Comparison of baseline sociodemographic data for respondents with data required from inmates at prison entry may assist in determining the representativeness of the study group in relation to the entire inmate population in these institutions. However, since it is not possible to specifically identify IDU in the prison registries, this solution is likely imperfect since IDU may be different from non-IDU on sociodemographic characteristics.

D. SOME FUTURE ENDEAVORS

Having demonstrated reliability, we intend to conduct, at some time as yet to be determined, further analyses with a larger sample of study subjects to verify if our initial reliability indices are not fortuitous and to determine construct validity of the various measurements composing the questionnaire. Construct validation implies examination of the extent to which proposed measurements apparently correspond to the postulated concepts under study, to ensure that one is in fact measuring the intended constructs. Part of this assessment should include an examination of the responsiveness of the various component measures to actual changes and differences in the phenomena under study. If they are to be useful in evaluation research which seeks to either monitor modifications over time, or to distinguish between individuals with differing features, the measurements must be sensitive enough to detect these variations. Also, if a large enough sample size can be obtained, factor analytic techniques could be applied to verify how our proposed scales fare in relation to other subsets of items not defined *a priori* via our conceptual framework. These techniques could in fact unveil intercorrelated sets of variables as yet unconsidered, but which might eventually be identified as significant determinants of condom use intention among incarcerated IDU. Finally, multivariate analyses to assess the relative contribution of the independent variables to the intention to use or not to use condoms should be conducted in order to shed some light on which elements to consider in designing relevant preventive interventions for incarcerated IDU in the face of the HIV/AIDS epidemic.

CONCLUSION

A recent report indicates that HIV seroprevalence proportions among injection drug users incarcerated within the two correctional institutions involved in this study are 8.6% (14/163) for men and 11.5% (15/130) for women, for an overall seroprevalence of 10%.[216] These represent some of the highest HIV seroprevalence proportions documented amongst IDU in Canada and are critical elements in support of the urgent necessity to target relevant and effective preventive interventions at this population. This methodological study consisted of an initial step toward the design of such interventions. It has lead to the development of a questionnaire which is based on a meaningful and multifaceted conceptual framework and which can be used reliably with incarcerated IDU to examine psychosocio-behavioural determinants of their intention to use condoms upon release from prison. Having demonstrated initial reliability, construct validity assessment may then proceed to qualify the extent to which proposed measures and study results may be considered for the design and evaluation of preventive interventions. In the final analyses, it is clear that further research involving this instrument and incarcerated IDU is warranted in view of our encouraging results and the receptivity and collaboration among IDU. The findings from such studies will serve to inform preventive strategies aimed at reducing further spread of this devastating infection.

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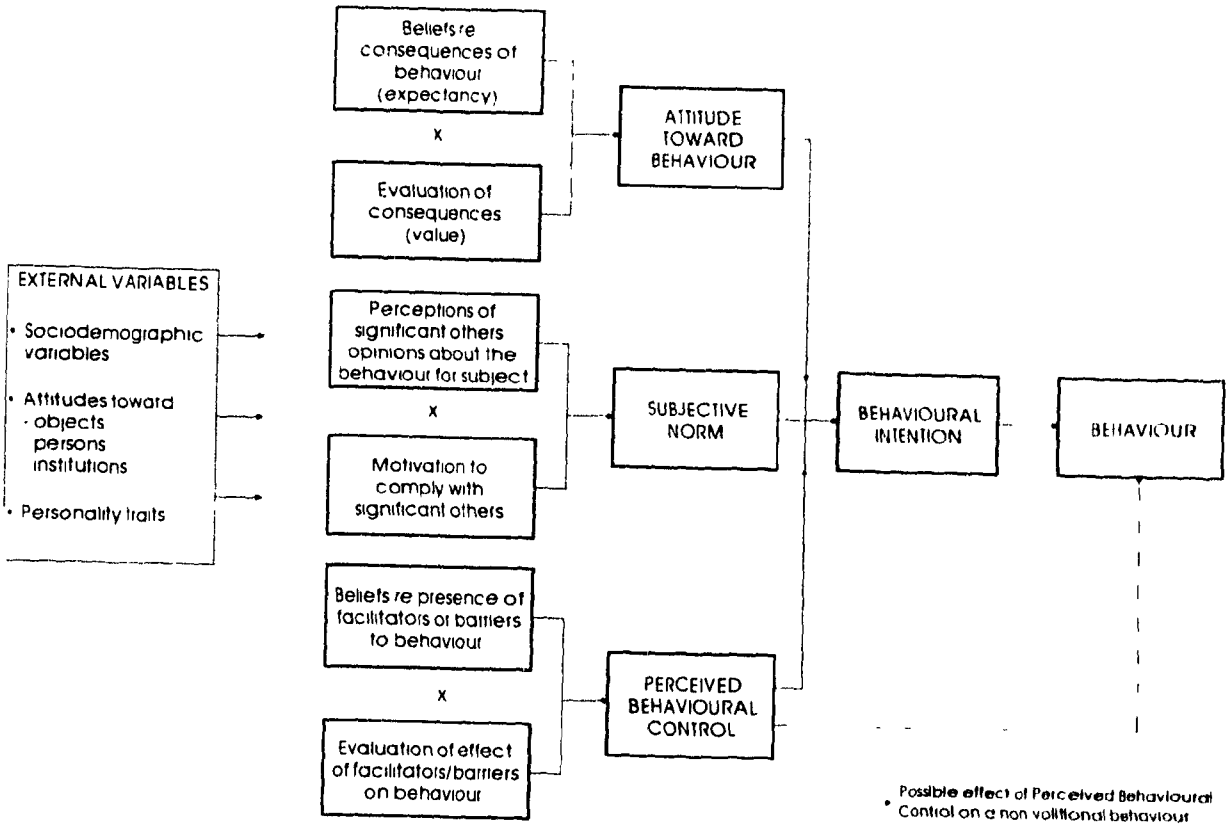
APPENDICES

APPENDIX 1

Diagrammatic representations of the theories
and models composing the study
conceptual framework

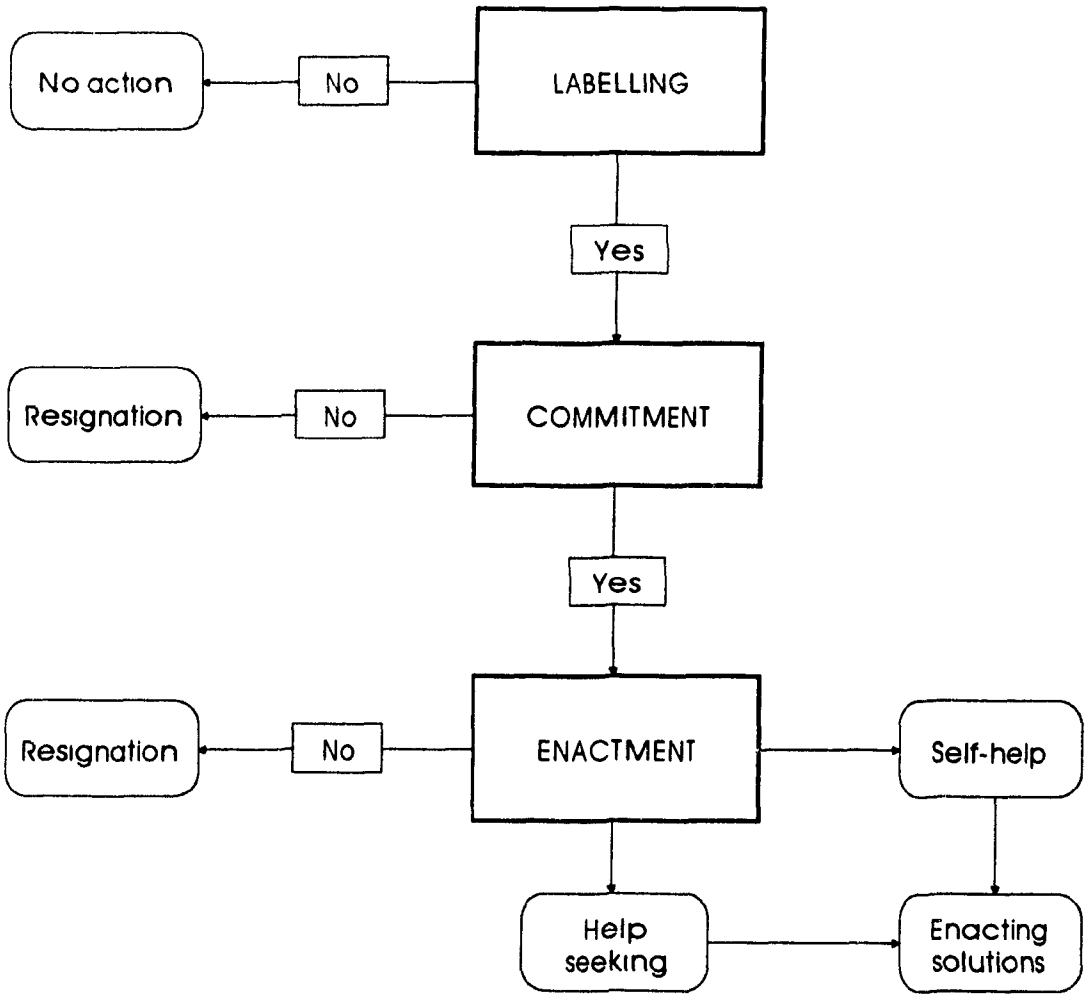
THEORY OF PLANNED BEHAVIOUR (Simplified version)
(Ajzen, 1985 1990)



This diagramme was proposed by Valois et al. (1989) in reference to the Ajzen 1991 publication

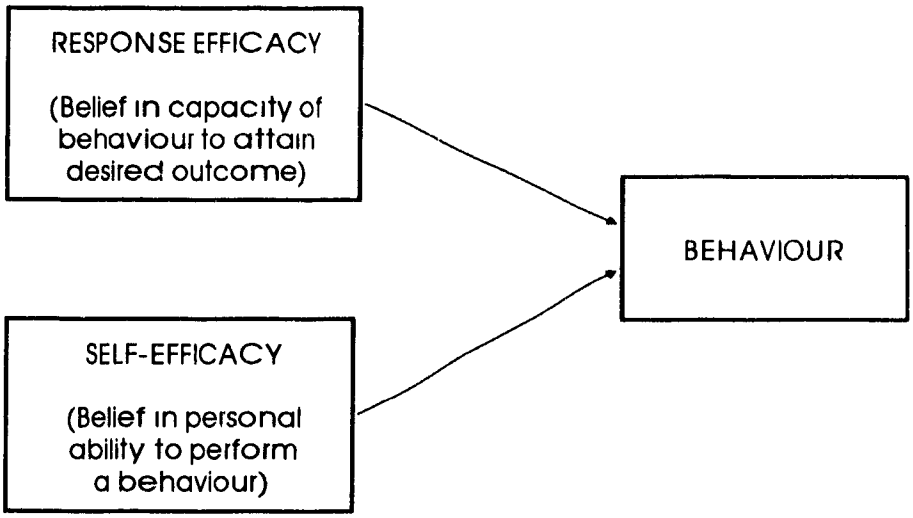
AIDS RISK REDUCTION MODEL (ARRM)

(Catania et al., 1990)

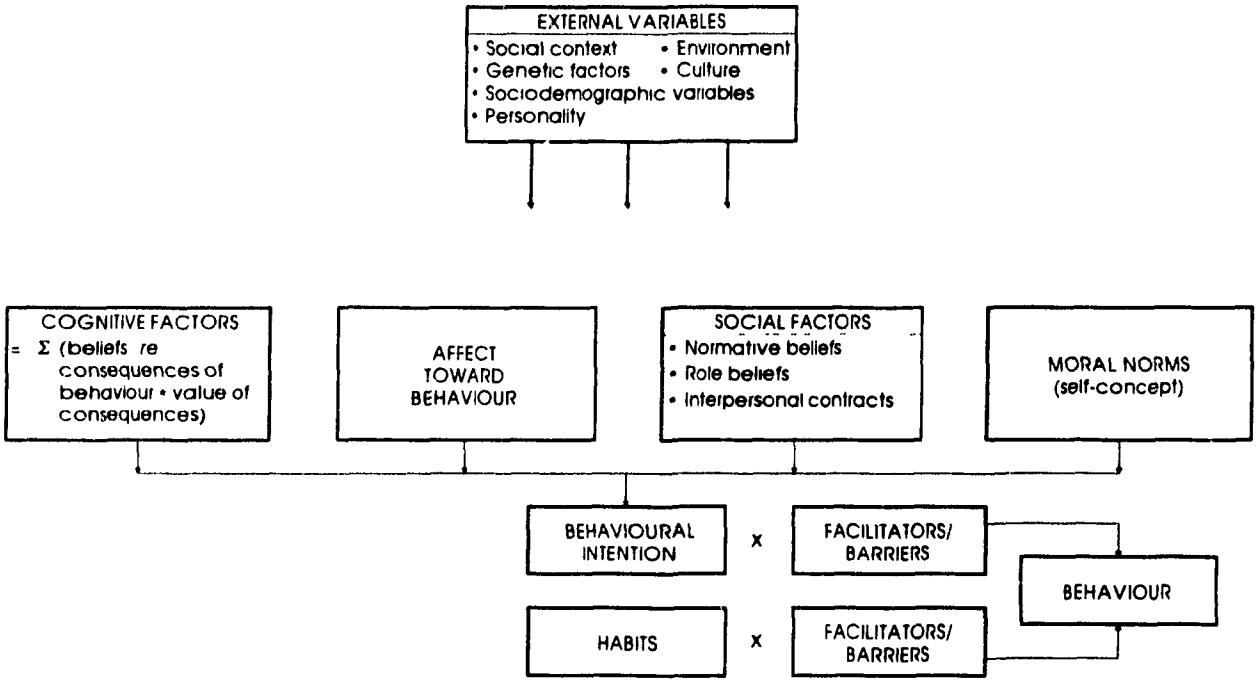


SOCIAL COGNITIVE THEORY

(Bandura, 1977; 1982; 1986)



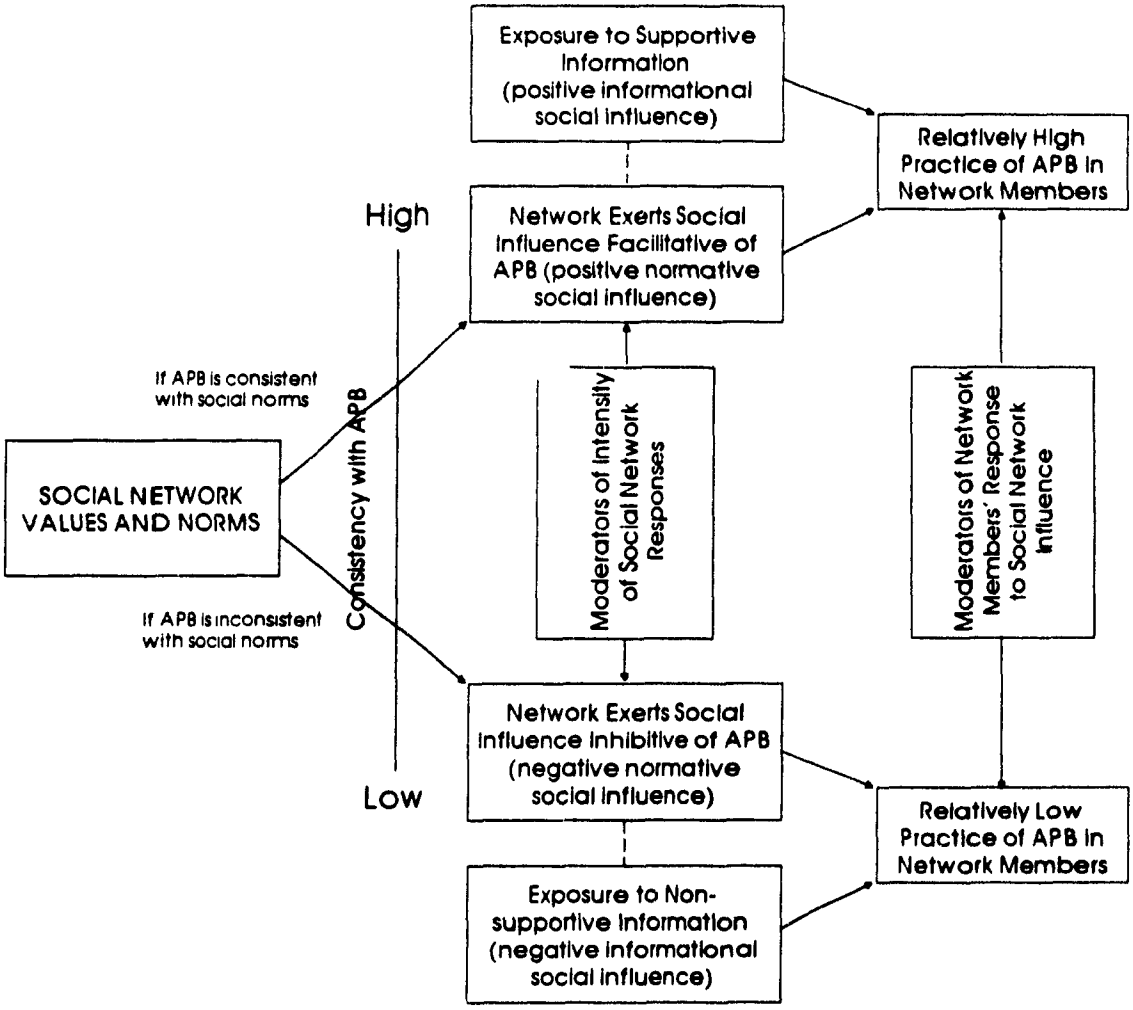
THEORY OF INTERPERSONAL BEHAVIOUR
(Triandis, 1977)



This diagramme was proposed by Valois et al (1989).

EFFECTS OF SOCIAL NETWORKS AND REFERENCE GROUPS ON AIDS RISK BEHAVIOUR AND AIDS PREVENTION

(Fisher, 1988)



* APB: AIDS Preventive Behaviour

APPENDIX 2

Information to prospective study participants

INFORMATION TO PROSPECTIVE STUDY PARTICIPANTS

Prior to conducting each interview, the interviewer must discuss the following points with each individual to elicit verbal informed consent:

1. Self-identification:

   Provide name and inform that are a research assistant from the Montreal General Hospital Department of Community Health, who works on research projects related to the prevention of AIDS. Indicate that are external to the legal system.

2. Explanation of study purpose:

   State that this is the preliminary phase of a study seeking to understand the factors or conditions which lead people to use or not to use condoms. We are in the process of developing and verifying the adequacy of a questionnaire which is to be used for confidential interviews.

3. Specification of subjects recruited for this study:

   Indicate that we are soliciting voluntary participation from a population which comprises individuals with some high risk activities for the contraction of HIV infection. It is not necessary to have ever used condoms.

4. Presentation of procedures:

   Specify that interviewer is sole holder of the confidential list of volunteers for study.
   Inform that in addition to opinions and beliefs, personal questions will be asked about one's sexual and drug using habits during a confidential standardized interview.
   Explain process ensuring safeguards to nominal information (ie. the participant list; numerical identification of questionnaires).
   State anticipated time commitment for the respondent.
   Reassure that all questionnaires and data treatment remain under the supervision of the interviewer, and that publication of research findings does not allow individual identification.

5. Discussion of anticipated benefits of this study:

Convey that we can have more confidence in the results of a survey if the instrument/questionnaire has been carefully pre-tested.
Indicate how the data will be useful for the elaboration of AIDS prevention activities.
Emphasize the opportunity to personally obtain updated information on AIDS and HIV prevention and to reflect upon one's own risk for this infection.

6. Consideration of any potential risks to the participant:

Mention that discussion of a topic related to HIV infection sometimes creates anxiety about one's own status. Inform that confidential and anonymous anti-HIV testing with counselling is available in prison from an experienced nurse (*cf.* studies on risk factors for HIV infection, Hankins *et al.* 1989; 1991).

7. Conclusion:

Indicate that the individual has a right to refuse to participate or to answer some particular questions. No penalty whatsoever will ensue.

APPENDIX 3

Ethics committee certificate

APPENDIX 4

Letters of approval from correctional institution administrations

APPENDIX 5

Elicitation study questionnaire

EVALUATION CACTUS-MONTREAL

INTERVENTIONS EN MILIEU CARCERAL

ETUDE EXPLORATOIRE

Cette entrevue ne devrait durer plus de 15 minutes.

Les questions portent sur l'utilisation du condom pour les relations sexuelles et l'eau de javel pour nettoyer les seringues.

Tout ce que tu diras pendant cette entrevue reste entre nous deux. Aucune information permettant de t'identifier personnellement sera inscrite sur le questionnaire.

Pour chaque question, j'aimerais que tu me dises tout ce qui te passe par la tête. Ceci n'est pas un test; donc il n'y a pas de bonnes ou de mauvaises réponses.

C'est seulement ce que **tu** penses qui est important.

Il n'est pas nécessaire d'avoir déjà utilisé un condom ou de l'eau de javel pour répondre à ces questions. Tout ce que je veux, c'est ton opinion.

DATE DE L'ENTREVUE: _____ _____ _____
jour mois année

INSTITUTION DE DÉTENTION:
[ ] TANGUAY
[ ] BORDEAUX
[ ] B-16

PARTICIPATION ANTÉRIEURE AUX SESSIONS ÉDUCATIVES:
[ ] OUI
[ ] NON

PARTICIPATION A L'ÉTUDE EN MILIEU CARCÉRAL:
[ ] OUI
[ ] NON

(quand sors-tu de prison?)

POUR LES PROCHAINES QUESTIONS, IMAGINE QUE TU UTILISES DES CONDOMS POUR CHAQUE RELATION SEXUELLE DANS LE PREMIER MOIS APRES TA SORTIE DE PRISON.

1. Si tu y penses, il y a souvent des bons et des mauvais côtés à ce qu'on fait. **Par exemple**, fumer peut être relaxant, mais c'est aussi une cause importante du cancer du poumon.

   Quels seraient pour toi les bons côtés (avantages) d'utiliser un condom **pour chaque** relation sexuelle?

   _____

   _____

   _____

   _____

   Quels seraient les mauvais côtés (inconvénients) d'utiliser un condom **pour chaque** relation sexuelle?

   _____

   _____

   _____

   _____

   Y a-t-il autre chose qui te passe par la tête quand tu penses à toi en train d'utiliser un condom **pour chaque** relation sexuelle dans le premier mois après ta sortie de prison?

   _____

   _____

   _____

   _____

2. Qu'on fasse n'importe quoi, il y a généralement des gens dans notre entourage qui sont pour ce qu'on fait et ceux qui sont contre ce qu'on fait. **Par exemple**, ton patron peut être bien d'accord à ce que tu travailles pour lui 6 jours par semaine, mais ta blonde risque d'être contre l'idée.

   Maintenant, pense à toi qui utilise un condom pour chaque relation sexuelle dans le premier mois après ta sortie de prison.

   Qui sont les personnes autour de toi qui trouveraient que c'est une bonne idée pour toi d'utiliser un condom **pour chaque** relation sexuelle?

   _____

   _____

   _____

   _____

   _____

   Qui penses-tu sont les personnes autour de toi qui seraient contre le fait que tu utilises un condom **pour chaque** relation sexuelle?

   _____

   _____

   _____

   _____

   _____

   _____

   Y a-t-il d'autres personnes qui te viennent à l'esprit quand tu penses à toi en train d'utiliser un condom **pour chaque** relation sexuelle dans le premier mois après ta sortie de prison?

   _____

   _____

   _____

   _____

3. Maintenant, j'aimerais savoir ce qui rendrait ça plus facile ou difficile pour toi d'utiliser des condoms. Je sais que c'est pas toujours facile, que ce soit à cause de nous-même ou des autres.

   Qu'est-ce qui t'empêcherait ou rendrait ça plus difficile pour toi d'utiliser un condom **pour chaque** relation sexuelle?

   _____

   _____

   _____

   _____

   _____

   _____

   Qu'est-ce qui rendrait ça plus facile pour toi d'utiliser un condom **pour chaque** relation sexuelle?

   _____

   _____

   _____

   _____

   _____

   _____

Merci. Les prochaines questions sont semblables, mais je te demande de penser à l'injection de drogues: imagines que tu nettoies tes seringues avec de l'eau de javel avant chaque injection **dans le premier mois après ta sortie de prison.**

4. Quels seraient pour toi les bons côtés (avantages) de nettoyer tes seringues avec de l'eau de javel **avant chaque** injection?

_____

_____

_____

_____

_____

_____

Quels seraient les mauvais côtés (inconvénients) de nettoyer tes seringues avec de l'eau de javel **avant chaque** injection?

_____

_____

_____

_____

_____

_____

Y a-t-il autre chose qui te vient à l'esprit quand tu penses à toi en train nettoyer tes seringues avec de l'eau de javel **avant chaque** injection dans le premier mois après ta sortie de prison?

_____

_____

_____

_____

_____

5. Je vais encore te poser des questions sur les personnes qui peuvent être pour ou contre des choses que tu peux faire.

   Qui sont les personnes autour de toi qui trouveraient que c'est une bonne affaire pour toi de nettoyer tes seringues avec de l'eau de javel **avant chaque** injection?

   _____

   _____

   _____

   _____

   _____

   _____

   Qui sont les personnes autour de toi qui seraient contre le fait que tu nettoies tes seringues avec de l'eau de javel **avant chaque** injection?

   _____

   _____

   _____

   _____

   _____

   _____

   Y a-t-il d'autres personnes qui te viennent à l'esprit quand tu penses à toi en train de nettoyer tes seringues avec de l'eau de javel **avant chaque** injection dans le premier mois après ta sortie de prison?

   _____

   _____

   _____

   _____

   _____

6. Maintenant je vais te poser les dernières questions sur l'utilisation de l'eau de javel.

Qu'est-ce qui t'empêcherait ou rendrait ça plus difficile pour toi de nettoyer tes seringues avec de l'eau de javel **avant chaque** injection?

_____

_____

_____

_____

_____

_____

Qu'est-ce qui rendrait ça plus facile pour toi de nettoyer tes seringues avec de l'eau de javel **avant chaque** injection?

_____

_____

_____

_____

_____

_____

DONNÉES SOCIO-DÉMOGRAPHIQUES ET COMPORTEMENTALES

Pour terminer l'entrevue, j'aimerais te poser quelques questions pour me donner une idée générale de l'ensemble des gens qui font partie de cette étude.

S'il y a des questions auxquelles tu ne veux pas répondre, dis-le moi et nous les passerons.

A. DONNEES SOCIODEMOGRAPHIQUES

1. Peux-tu me dire ta date de naissance? _____ jour _____ mois _____ année

2. De quel groupe ethnique es-tu?

[ ] Caucasien - Français
[ ] Caucasien - Anglais
[ ] Caucasien - Espagnol
[ ] Inuit
[ ] Amérindien
[ ] Noir
[ ] Asiatique
[ ] Oriental
[ ] _____

3. A quel niveau as-tu arrêté d'aller à l'école?

[ ] Primaire
[ ] Secondaire
[ ] Cegep/Collège
[ ] Université (premier cycle)
[ ] Université (études supérieures)

4. Quelle est la durée de ta sentence?

[ ] Moins de 6 mois
[ ] De 6 à moins de 12 mois
[ ] De 12 à moins de 18 mois
[ ] De 18 à moins de 24 mois
[ ] Deux ans et plus
[ ] Indéterminée

B. VIE SEXUELLE

5. Jusqu'à ce jour, est-ce que tes partenaires sexuels ont été:

   [ ] Des hommes seulement
   [ ] Des femmes seulement
   [ ] Des hommes et des femmes

6. Pense à toutes les fois que tu as eu des relations sexuelles dans les 6 derniers mois avant ton arrivée ici: combien de fois as-tu utilisé des condoms pour prévenir les maladies transmises sexuellement?

   [ ] Jamais
   [ ] De temps en temps
   [ ] A peu près la moitié du temps
   [ ] La plupart du temps
   [ ] A chaque fois

7. As-tu un(e) partenaire stable en dehors?

   [ ] Oui [ ] Non

8. Dans les 6 derniers mois avant ton arrivée ici, as-tu eu d'autres partenaires sexuel(le)s?

   [ ] Oui [ ] Non

C. INJECTION DE DROGUES

9. Quel âge avais-tu la première fois que tu t'es piqué(e)?

   _____ans

DANS LES 6 DERNIERS MOIS AVANT TON ARRIVÉE ICI:

10. As-tu injecté des drogues dans tes veines ou sous ta peau?

    [ ] Oui [ ] Non -----> **Q.15**

11. As-tu injecté:

	Oui	Non
De la cocaïne?	[ ]	[ ]
De l'héroïne?	[ ]	[ ]
Du speedball?	[ ]	[ ]

12. T'es-tu piqué(e) avec une seringue qui avait déjà servie à quelqu'un d'autre?

[ ] Oui [ ] Non -----> **Q.15**

12a) Combien de fois?
[ ] De temps en temps
[ ] A peu près la moitié du temps
[ ] La plupart du temps
[ ] A chaque fois

13. Nettoyais-tu ces seringues usagées avant de t'en servir?

[ ] Oui [ ] Non -----> **Q.15**

13a) Combien de fois?
[ ] De temps en temps
[ ] A peu près la moitié du temps
[ ] La plupart du temps
[ ] A chaque fois

14. En général, avec quoi les nettoyais-tu?

[ ] Eau
[ ] Eau bouillante
[ ] Alcool
[ ] Peroxide
[ ] Vinaigre
[ ] Eau de javel
[ ] _____

15. Es-tu déjà allé(e) à Cactus?

[ ] Oui [ ] Non

16. As-tu déjà été testé(e) pour le virus du SIDA?

[ ] Oui ----------> 17. Peux-tu me dire ton résultat?
[ ] Non
[ ] Ne sait pas
[ ] Aucune réponse

[ ] HIV positif
[ ] HIV négatif
[ ] Ne sait pas
[ ] Aucune réponse

APPENDIX 6

Questionnaire used for reliability
assessment study phases

NOTE: This questionnaire was photo-reduced to respect format requirements to facilitate the binding of the final document.

ENQUETE SUR LES FACTEURS PSYCHOSOCIAUX POUVANT DÉTERMINER L'INTENTION D'USAGERS DE DROGUES INJECTABLES D'UTILISER DES CONDOMS AFIN DE PRÉVENIR L'INFECTION AU VIH-1

This questionnaire was used for the reliability assessment study phase and presented in a booklet format with pages presented double-sided. The questions marked with an asterix are those which would be deleted in a revised version of the instrument. Items not proposed for inclusion in a scale which have low stability indices would be deleted. Those items which were meant for inclusion in a scale but were not retained via internal consistency analyses would aslo be deleted. The items which raised less than 10% or more than 90% of responses ought to be omitted too. Final decisions for further deletions would be based on construct validity assessment of the proposed scales.

QUESTIONNAIRE

Sylvie Gendron
Étudiante Maitrise Épidémiololgie & Biostatistiques
Université McGill

SECTION A COMPLÉTER PAR L'INTERVIEWEUR

☐☐☐ 1-3

I Institution de detention: Maison Tanguay 1 ☐ 4
Detention Montréal 2

II. Date de l'entrevue _____ _____ _____ ☐☐ 5-6 ☐☐ 7-8
jour mois an
☐☐ 9-10

III. Injection de drogues 6 mois pré-incarcération: Non .... 0 ☐ 11
Oui 1

IV. Obtention d'un consentement éclairé verbal. _____ ☐☐ 12-13
Signature de l'intervieweur

V. Participation antérieure aux sessions éducatives CACTUS en milieu carcéral: Non ..... 0 ☐ 14
Oui 1

VI. Participation antérieure à l'enquête en milieu carcéral portant sur les facteurs de risque pour l'infection au VIH-1 Non ..... 0 ☐ 15
Oui ... 1

* VII. Entrevue: phase pilote .... 1 ☐ 16
première collecte fiabilité 2
deuxième collecte fiabilité 3

Heure au début de l'entrevue: _____ ☐☐☐☐ 17-20

2

Bonjour Je m'appelle _____ Je suis infirmiere et je fais partie d'une equipe au DSC de l'Hôpital général de Montreal qui fait de la recherche sur la prevention du SIDA

Je m'intéresse entre autre aux opinions des gens sur l'usage du condom pour se protéger contre le SIDA. Il y a toutes sortes de raisons qui font que les gens utilisent ou n'utilisent pas des condoms quand ils ont des relations sexuelles. Je suis ici aujourd'hui pour rencontrer des gens qui se piquent ou qui se sont déja piqués pour connaitre leur expérience et leur opinion face au condom

Pendant notre entrevue, tout ce que tu vas me dire reste confidentiel Aussi, ton nom ne sera écrit nulle part sur ce questionnaire

J'ai des questions assez personnelles à te poser sur ta vie sexuelle S'il y en a auxquelles tu ne veux pas répondre, tu n'as qu'à me le dire et je les passerai.

Finalement, en ce qui concerne les questions sur le condom, il n'est pas nécessaire d'en avoir déjà utilisé pour pouvoir répondre. Ce que je veux, c'est ton opinion.

On va commencer par des questions générales.

A. RENSEIGNEMENTS SOCIODÉMOGRAPHIQUES

1 Quel âge as-tu? _____ ans ☐☐ 21-22

2 Peux-tu me dire ta date de naissance: _____ jour _____ mois _____ an ☐☐ 23-24 ☐☐ 25-26 ☐☐ 27-28

3 **VÉRIFIER AVEC LE (LA) RÉPONDANT(E) A QUEL GROUPE ETHNIQUE IL (ELLE) S'IDENTIFIE, BASÉ SUR UNE INSPECTION VISUELLE:** ☐☐ 29-30

Caucasien - Francophone 1
Caucasien - Anglophone 2
Inuit 3
Amérindien 4
Noir - Caraïbes 5
Noir - Afrique 6
Noir - Amérique 7
Hispanique - Europe 8
Hispanique - Amérique Centrale . . . 9
Hispanique - Amérique du Sud 10
Asiatique 11
Oriental 12

4. A quel niveau as-tu arrêté tes études? ☐ 31

Primaire 1
Secondaire 2
Cegep/Collège 3
Université (1er cycle) 4
Université (> 1er cycle) 5

5. Quelle est la durée de ta sentence? ☐ 32

Moins de 6 mois 1
De 6 à moins de 12 mois 2
De 12 à moins de 18 mois 3
De 18 à moins de 24 mois 4
Deux ans et plus 5
Indéterminée 9

B. INQUIÉTUDES FACE AU SIDA

6 Au cours de la dernière année, c'est-à-dire depuis _____

A) Est-ce que l'idée que tu aies pu attraper le SIDA t'a inquiété? Dirais-tu que: ☐ 33

Tu n'as jamais été inquiet(ète) 0
Tu as été inquiet(ète) de temps en temps 1
Tu as été inquiet(ète) souvent 2
Tu as été inquiet(ète) presque tout le temps 3
Est séropositif(ve) 4

* B) Est-ce que l'idée que tu aies pu donner le SIDA t'a inquiété? Dirais-tu que: ☐ 34

Tu n'as jamais été inquiet(ète) 0
Tu as été inquiet(ète) de temps en temps 1
Tu as été inquiet(ète) souvent 2
Tu as été inquiet(ète) presque tout le temps 3

5

C. CONNAISSANCES

Je vais maintenant te lire de courtes phrases. Pour chacune, j'aimerais que tu me dises si tu penses que l'idée est vraie ou fausse. Si tu ne sais pas, je préfère que tu me le dises au lieu de deviner

		Vrai	Faux	NSP	NRP	
7	Ca paraît quand une personne a le virus du SIDA.	0	1	9	8	☐ 35
	Le virus du SIDA se transmet par le sexe seulement entre deux hommes	0	1	9	8	☐ 36
9.	La vaseline peut briser les condoms.	1	0	9	8	☐ 37
10.	Il faut qu'un homme infecté "vienne" pour transmettre le virus du SIDA.	0	1	9	8	☐ 38
11.	Les condoms lubrifiés peuvent aider à donner plus de sensations que les non-lubrifiés.	1	0	9	8	☐ 39
12.	Seules les relations anales donnent le virus du SIDA par le sexe.	0	1	9	8	☐ 40
13.	La plupart des gens qui sont infectés par le virus du SIDA le savent.	0	1	9	8	☐ 41
14.	Une femme peut attraper le virus du SIDA d'un homme infecté si elle a des relations sexuelles avec lui.	1	0	9	8	☐ 42
15.	Le condom peut empêcher d'éjaculer trop vite.	1	0	9	8	☐ 43
16.	Une personne qui attrape le virus du SIDA par les seringues peut le transmettre par le sexe.	1	0	9	8	☐ 44
17.	Il existe une seule forme de condoms.	0	1	9	8	☐ 45
18.	Le virus du SIDA peut être transmis par les relations sexuelles par le vagin.	1	0	9	8	☐ 46
19	Une personne qui transmet le virus du SIDA peut avoir l'air en parfaite santé	1	0	9	8	☐ 47

		Vrai	Faux	NSP	NRP	
20	Le virus du SIDA est assez petit pour passer a travers un condom intact.	0	1	9	8	☐ 48
21	Un homme peut attraper le virus du SIDA d'une femme infectée s'il a des relations sexuelles avec elle	1	0	9	8	☐ 49

D. VIE SEXUELLE

Maintenant je vais te poser des questions qui ont rapport à ta vie sexuelle

I. Partenaires sexuels et utilisation du condom

22. Pense à tous les partenaires sexuels que tu as eu dans ta vie ☐ 50
Est-ce que tes partenaires sexuels ont été:

CHOIX DE RÉPONSES POUR HOMMES:

Des femmes seulement 1
Des hommes seulement 2
Des femmes et des hommes 3

CHOIX DE RÉPONSES POUR FEMMES:

Des hommes seulement 1
Des femmes seulement 2
Des hommes et des femmes 3

23. As-tu déjà utilisé des condoms pour prévenir les maladies transmises sexuellement (MTS)? ☐ 51

Non . . . . . 0 ---> **ALLER A LA Q. 24**
Oui . . . . . 1 ---> **ALLER A LA Q. 25**

24 Sais-tu comment mettre un condom? ☐ 52

Non . . . . . 0 ---> **ALLER A LA Q. 26**
Oui 1

* 25 **Description du processus d'utilisation des condoms**

(i.e. a partir du moment ou tu as une boite de condoms entre les mains, décris-moi ce que tu fais pour en utiliser, du début jusqu'au moment ou tu jetes un condom usagé a la poubelle.)

	Non	Oui	
a) Vérification de date d'expiration	0	1	☐ 53
b) Pincer le bout du condom	0	1	☐ 54
c) Déroulement du condom	0	1	☐ 55
d) Retrait du pénis	0	1	☐ 56
TOTAL: _____ points sur 4			☐ 57

26 Pour les prochaines questions, il faut qu'on se situe dans le temps Peux-tu me dire quand tu es arrivé(e) ici en prison?

_____ _____ ___
mois année

Janv.	Fév.	Mars	Avril
Mai	Juin	Juil.	Août
Sept.	Oct.	Nov	Déc

☐☐ 58-59

☐☐ 60-61

27 Pense aux 6 derniers mois avant ton arrivée ici, c'est-à-dire de _____ à _____

Rappelle-toi des gens avec qui tu as eu des relations sexuelles pendant cette période là.

As-tu eu des relations sexuelles avec des

	NON	OUI		
i) Partenaires réguliers? (conjoints, amants, ≥ 3 mois ou <3 mois mais intention de garder comme partenaire)	0	1 --->	MASCULIN: Non 0, Oui 1 — UDI: non 0, oui 1, nsp 9 / FEMININ: Non 0, Oui 1 — UDI: non 0, oui 1, nsp 9	☐ 62 ☐☐ 63, 65 ☐☐ 64, 66
ii) Partenaires occasionnels? (d'un soir à <3 mois et pas intention certaine de garder comme partenaire)	0	1 --->	MASCULIN: Non 0, Oui 1 — UDI: non 0, oui 1, nsp 9 / FEMININ: Non 0, Oui 1 — UDI: non 0, oui 1, nsp 9	☐ 67 ☐☐ 68, 70 ☐☐ 69, 71
iii) Prostitué(e)s? (achat de sexe)	0	1 --->	MASCULIN: Non 0, Oui 1 / FEMININ: Non 0, Oui 1	☐ 72 ☐☐ 73, 74
iv) Clients? (vente de sexe)	0	1 --->	MASCULIN: Non 0, Oui 1 / FEMININ: Non 0, Oui 1	☐ 75 ☐☐ 76, 77

POSER CETTE QUESTION SI A DÉJA UTILISÉ DES CONDOMS:

28 Toujours dans les 6 derniers mois avant ton arrivée ici, as-tu utilisé des condoms pour prévenir les maladies transmises sexuellement (MTS)?

Non . . . . . 0 ---> **ALLER A LA Q. 31** ☐ 78
Oui 1

SI N'A JAMAIS UTILISÉ DE CONDOMS POUR PRÉVENIR LES MTS, ALLER A LA Q. 31.

SI AUCUN PARTENAIRE SEXUEL DANS LES 6 DERNIERS MOIS, OU SI EXCLUSIVEMENT LESBIENNE, ALLER A LA Q. 48.

10

29	COCHER LES CASES DES CATEGORIES DE PARTENAIRES SEXUELS NOMMÉES A LA Q 24 ET POUR CHAQUE CATÉGORIE, DEMANDER SI A UTILISE DES CONDOMS POUR PREVENIR LES MTS AVEC CETTE PERSONNE/ CES GENS	Condoms prevention MTS Non	Oui --->	30. Combien de fois ? Une fois (essai) 1 Des fois 2 Une fois sur deux 3 Souvent . . . . 4 A chaque relation sexuelle . 5	
[ ]	partenaires réguliers masculins	0	1	_____	☐☐ 4-5
[ ]	partenaires réguliers féminins	0	1	_____	☐☐ 6-7
[ ]	partenaires réguliers masculins UDI	0	1	_____	☐☐ 8-9
[ ]	partenaires réguliers féminins UDI	0	1	_____	☐☐ 10-11
[ ]	partenaires occasionnels masculins	0	1	_____	☐☐ 12-13
[ ]	partenaires occasionnels féminins	0	1	_____	☐☐ 14-15
[ ]	partenaires occasionnels masculins UDI	0	1	_____	☐☐ 16-17
[ ]	partenaires occasionnels féminins UDI	0	1	_____	☐☐ 18-19
[ ]	prostitués masculins	0	1	_____	☐☐ 20-21
[ ]	prostituées féminines	0	1	_____	☐☐ 22-23
[ ]	clients masculins	0	1	_____	☐☐ 24-25
[ ]	clientes féminines	0	1	_____	☐☐ 26-27

II. Communication

31 **S'IL Y A EU PARTENAIRES REGULIERS DANS LES 6 DERNIERS MOIS PRE-INCARCERATION, POSER LES QUESTIONS 31 A 39 SINON, ALLER A LA Q. 40.**

Toujours dans les 6 derniers mois avant ton arrivee ici

Avez-vous parle de condoms toi et ton (ta) dernier(ère) partenaire régulier(ère) ?

Non . . . . . 0 ---> **ALLER A LA Q. 38** ☐ 28
Oui 1
Ne s'en souvient pas 9 ---> **ALLER A LA Q. 40**

32. Lui as-tu demandé d'utiliser des condoms avec toi ?

Non . . . . . 0 ---> **ALLER A LA Q. 34** ☐ 29
Oui . . . . . 1 ---> **ALLER A LA Q. 33**
Ne s'en souvient pas . 9 ---> **ALLER A LA Q. 36**

33. Suite à ta demande, en avez-vous mis?

Non . . . . . 0 ---> **ALLER A LA Q. 34** ☐ 30
Oui . . . . . 1 ---> **ALLER A LA Q. 35**

34. Pourquoi pas?

_____ ☐☐ 31-32

_____ ---> **ALLER A LA Q. 36** ☐☐ 33-34

35 Combien de fois? ☐ 35

Une fois 1
Des fois 2
Une fois sur deux 3
Souvent 4
A chaque relation sexuelle 5

* 36 Est-ce qu'il (elle) t'a demandé d'utiliser des condoms avec lui (elle)? ☐ 36

Non 0 ---> **ALLER A LA Q. 40**
Oui 1 ---> **ALLER A LA Q. 37**
Ne s'en souvient pas 9 ---> **ALLER A LA Q. 40**

* 37 Suite à sa demande, en avez-vous mis? ☐ 37

Non 0 ---> **ALLER A LA Q. 38**
Oui 1 ---> **ALLER A LA Q. 39**

* 38 Pourquoi pas?

_____ ☐☐ 38-39

_____ **---> ALLER A LA Q. 40** ☐☐ 40-41

* 39 Combien de fois? ☐ 42

Une fois 1
Des fois 2
Une fois sur deux . . 3
Souvent 4
A chaque relation sexuelle . 5

40 Toujours dans les 6 derniers mois avant ton arrivée ici.

As-tu eu un(e) ou des partenaires avec qui tu as eu des relations sexuelles pour la première fois? ☐ 43

Non . . . . 0 ---> **ALLER A LA Q. 48**
Oui 1

41 Pense à la dernière personne avec qui c'est arrivé:

Avez-vous parlé de condoms la première fois que vous avez eu des relations sexuelles ensemble? ☐ 44

Non . . . 0 ---> **ALLER A LA Q. 47**
Oui 1
Ne s'en souvient pas 9 ---> **ALLER A LA Q. 48**

42 Lui as-tu demandé d'utiliser des condoms avec toi la première fois que vous avez eu des relations sexuelles ensemble? ☐ 45

Non . . . 0 ---> **ALLER A LA Q. 44**
Oui . . 1 ---> **ALLER A LA Q. 43**
Ne s'en souvient pas . 9 ---> **ALLER A LA Q. 45**

43 Suite à ta demande, en avez-vous mis? ☐ 46

Non . . . . 0 ---> **ALLER A LA Q. 44**
Oui . . . . . 1 ---> **ALLER A LA Q. 45**

44 Pourquoi pas?

_____ ☐☐ 47-48

_____ ☐☐ 49-50

* 45. Est-ce qu'il (elle) t'a demandé d'utiliser des condoms avec lui (elle) la première fois que vous avez eu des relations sexuelles ensemble? ☐ 51

Non . . . . . 0 ---> **ALLER A LA Q. 48**
Oui . . . . . 1 ---> **ALLER A LA Q. 46**
Ne s'en souvient pas 9 ---> **ALLER A LA Q. 48**

* 46. Suite à sa demande, en avez-vous mis? ☐ 52

Non . . . . . 0 ---> **ALLER A LA Q. 47**
Oui . . . . . 1 ---> **ALLER A LA Q. 48**

* 47 Pourquoi pas?

_____ ☐☐ 53-54

_____ ☐☐ 55-56

48 Quand tu y penses, y a-t-il des (d autres) gens avec qui tu as déja parlé de l'usage du condom ? ☐ 57

Non	0	---> **ALLER A LA Q. 51**
Oui	1	---> **CONTINUER A LA Q. 49**
Ne s'en souvient pas	2	---> **ALLER A LA Q. 51**

49 Avec qui en as-tu parlé ?	50 Peux-tu me decrire votre conversation ? (**theme, contexte**)	
1 _____	_____	☐☐ 58-59
	_____	☐☐ 60-61
2 _____	_____	☐☐ 62-63
	_____	☐☐ 64-65
3. _____	_____	☐☐ 66-67
	_____	☐☐ 68-69

III. Facteurs de risque

Toujours dans ces mêmes 6 mois (de _____ à _____)

* 51. Est-ce que ça t'est arrivé d'avoir des relations sexuelles quand t'étais gelé(e)? ☐ 70

Non . . . . . 0 ---> **ALLER A LA Q. 53**
Oui . . . . . 1 ---> **CONTINUER A LA Q. 52**
Ne s'en souvient pas 9 ---> **ALLER A LA Q. 53**

* 52. Combien de fois dirais-tu que ça t'est arrivé? ☐ 71

Une fois 1
Des fois 2
Une fois sur deux 3
Souvent 4
A chaque relation sexuelle 5

53 Est-ce que ça t'est arrivé d'avoir des relations sexuelles en échange de drogue? ☐ 72

Non . . . . . 0 ---> **ALLER A LA Q. 55**
Oui . . . . . 1 ---> **CONTINUER A LA Q. 54**
Ne s'en souvient pas . 9 ---> **ALLER A LA Q. 55**

54. Combien de fois dirais-tu que ça t'est arrivé? ☐ 73

Une fois 1
Des fois 2
Une fois sur deux 3
Souvent 4
A chaque relation sexuelle 5

55. Est-ce que ça t'est arrivé de te piquer avec une seringue qui avait déjà servi à quelqu'un d'autre? ☐ 74

Non . . . . . 0 ---> **ALLER A LA Q. 57**
Oui . . . . . 1 ---> **CONTINUER A LA Q. 56**
Ne s'en souvient pas . 9 ---> **ALLER A LA Q. 57**

56. Combien de fois dirais-tu que ça t'est arrivé? ☐ 75

Une fois 1
Des fois 2
Une fois sur deux 3
Souvent 4
A chaque fois que tu te piquais . 5

• 57 As-tu déjà eu une MTS ? ☐ 76

Non 0 ---> **MONTRER LISTE POUR VÉRIFICATION; SI NÉGATIF, ALLER A LA Q. 60**

Oui 1

• 58 As-tu attrapé l'herpès génital ? ☐ 77

Non 0
Oui 1
Ne sait pas 9

59 Combien de fois as-tu eu une ou des MTS entre _____ et _____ ? ☐ 78
(6 derniers mois pré-incarcération)

Nombre de fois: _____

IV. Identification du risque

☐☐☐ 1-3

Toujours dans les mêmes 6 mois (de _____ à _____).

60 Penses-tu qu'il y a de tes partenaires sexuels qui auraient pu te donner le virus du SIDA par le sexe? ☐ 4

Non . . . 0
Oui 1
Ne sait pas . 9

61. D'après toi, avec ce que tu as fait, quelles sont les chances que tu aies attrapé le virus du SIDA par le sexe? ☐ 5

Aucune 0
Petites 1
Moyennes . . 2
Grandes . . . 3
Ne sait pas 9
Est séropositif(ve) 5 ---> **ALLER A LA Q. 65**

* 62. Pense aux gens autour de toi qui se piquent aussi. Comparé à eux, est-ce que tes chances d'avoir attrapé le virus du SIDA par le sexe sont. ☐ 6

Plus petites qu'eux . . . 1
Les mêmes qu'eux 2
Plus grandes qu'eux . . 3
Ne sait pas 9

V. Perception de vulnérabilité

63 Penses-tu qu'il y a de tes partenaires sexuels qui peuvent un jour te donner le virus du SIDA par le sexe? ☐ 7

Non 0
Oui 1
Ne sait pas . . . 9

64. D'après toi, avec ce que tu fais, quelles sont les chances que tu puisses un jour attraper le virus du SIDA par le sexe? ☐ 8

Aucune 0
Petites 1
Moyennes 2
Grandes 3
Ne sait pas 9

E. UTILISATION DU CONDOM

Encore une fois, pour que tu puisses repondre a ces questions, il faut qu'on se situe dans le temps

65 Peux tu me dire quand tu penses sortir de prison? ☐☐☐☐ 9-12

_____ _____ ou ☐ ne sait pas
mois annee

I. Intention face à l'utilisation du condom

66 T'attends-tu à avoir des relations sexuelles dans le premier mois apres ta sortie de prison, en _____? ☐ 13

Non	0	---> **ALLER A LA Q. 72**
Oui	1	--> **CONTINUER A LA Q. 67 ou la Q. 68**
Ne sait pas	9	---> **ALLER A LA Q. 72**

67 **QUESTION POUR LESBIENNE SEULEMENT:**

Penses-tu avoir des relations sexuelles avec un ou des hommes? ☐ 14

Non	0	---> **ALLER A LA Q. 72**
Oui	1	---> **CONTINUER A LA Q. 68 EN NE CONSIDÉRANT QUE CES RELATIONS HÉTÉROSEXUELLES**
Ne sait pas	9	---> **ALLER A LA Q. 72**

19

68 Penses-tu avoir des relations sexuelles avec un ou des
(ne considérer que les relations homosexuelles masculines et les relations heterosexuelles)

NON **OUI**

i) Partenaires reguliers? (conjoints, amants, ≥3 mois ou <3 mois mais intention de garder comme partenaire) — 0 **1 --->**

MASCULIN			FEMININ		
Non	**Oui**		Non	**Oui**	
0	1		0	1	
Même que pre-incarcération?			Même que pré-incarcération?		
non	oui	nsp	non	oui	nsp
0	**1**	**9**	**0**	**1**	**9**	☐ 15
☐☐ 16, 18
☐☐ 17, 19

ii) Partenaires occasionnels? (d'un soir à <3 mois et pas intention certaine de garder comme partenaire) — 0 **1 --->**

MASCULIN			FEMININ		
Non	Oui	nsp	Non	Oui	nsp
0	1	9	0	1	9	☐ 20
☐☐ 21, 22

iii) Prostitué(e)s? (achat de sexe) — 0 **1 --->**

MASCULIN			FEMININ		
Non	Oui	nsp	Non	Oui	nsp
0	1	9	0	1	9	☐ 23
☐☐ 24, 25

iv) Clients? (vente de sexe) — 0 **1 --->**

MASCULIN			FEMININ		
Non	Oui	nsp	Non	Oui	nsp
0	1	9	0	1	9	☐ 26
☐☐ 27, 28

COCHER LES CASES DES CATEGORIES DE PARTENAIRES SEXUELS POUR LESQUELLES A RÉPONDU OUI A LA Q. 68	69 As-tu l'intention d'utiliser des condoms pour prévenir les MTS? Non	NSP	Oui --->	70 Combien de fois?	
				Une fois (essai) 1 Des fois 2 Une fois sur deux 3 Souvent 4 A chaque relation sexuelle 5	
[ ] partenaires réguliers masculins	0	9	1	_____	☐☐ 29-30
[ ] même partenaire régulier masculin	0	9	1	_____	☐☐ 31-32
[ ] partenaires réguliers féminins	0	9	1	_____	☐☐ 33-34
[ ] même partenaire régulier féminin	0	9	1	_____	☐☐ 35-36
[ ] partenaires occasionnels masculins	0	9	1	_____	☐☐ 37-38
[ ] partenaires occasionnels féminins	0	9	1	_____	☐☐ 39-40
[ ] prostitués masculins	0	9	1	_____	☐☐ 41-42
[ ] prostituées féminines	0	9	1	_____	☐☐ 43-44
[ ] clients masculins	0	9	1	_____	☐☐ 45-46
[ ] clientes féminines	0	9	1	_____	☐☐ 47-48

71. Pour résumer, quelle est ton intention d'utiliser des condoms pour chaque relation sexuelle que tu pourrais avoir dans le premier mois après ta sortie de prison, en _____? ☐ 49

Aucune 0
Petite 1
Moyenne 2
Grande 3
Très grande 4

II. Contexte social

Maintenant, j'aimerais que tu penses aux gens de l'extérieur avec qui tu te tiens et qui sont importants pour toi

		aucun	peu	à peu près 1-2	beaucoup	tous	NSP	
72	D'après toi, combien utilisent des condoms pour se protéger du virus du SIDA?	0	1	2	3	4	9	☐ 50
* 73	Combien te donnent l'impression que c'est du trouble utiliser des condoms?	0	1	2	3	4	9	☐ 51

POUR CEUX ET CELLES QUI CONNAISSENT DES GENS QUI UTILISENT DES CONDOMS POUR SE PROTÉGER DU VIRUS DU SIDA, CONTINUER: (SINON, ALLER A LA Q. 77)

De ceux et celles qui utilisent des condoms:

74 Pourquoi penses-tu que ces gens-là en utilisent? ☐☐ 52-53

Contraception 1
Pratique de la prostitution . 2
Protection des MTS . 3 ☐☐ 54-55

_____

_____

75 Avec quel genre de partenaires penses-tu qu'ils ont tendance à se servir du condom? ☐☐ 56-57

Partenaires occasionnels 1
Nouveaux partenaires sexuels 2
Clients . . . . . 3 ☐☐ 58-59

_____

_____

76 Avec quel genre de partenaires penses-tu qu'ils n'ont pas tendance à s'en servir? ☐☐ 60-61

☐☐ 62-63

Partenaires réguliers	1
Ex partenaires réguliers	2

_____

_____

77 Parmi ces gens de l'extérieur avec qui tu te tiens et qui sont importants pour toi, y en a-t-il qui ont attrapé le virus du SIDA? ☐

Non	0	---> **ALLER A LA Q. 79**
Oui	1	---> **CONTINUER A LA Q. 78**
Ne sait pas	9	---> **ALLER A LA Q. 79**

78 Combien sont devenus infectés par:

a) Les seringues? _____ personnes ou ☐ ne sait pas ☐☐ 65-66

b) Les relations sexuelles? _____ personnes ou ☐ ne sait pas ☐☐ 67-68

III. Attitude envers le comportement

Maintenant pense à toi au mois de _____, quand tu vas sortir d'ici

Imagine que tu utilises un condom pour chaque relation sexuelle que tu as pendant ce mois-là

79 Dirais-tu que: ☐ 69

Tu aimes beaucoup l'idee . 5
Tu aimes l'idee . . 4
Tu es neutre . . 3
Tu n'aimes pas l'idée . . . 2
Tu n'aimes pas du tout l'idée 1
Ne sait pas . 9

IV. Perception d'efficacité

80 Si tu utilises un condom à chaque fois que tu as une relation sexuelle (avec penetration) dirais-tu que tu es protégé(e) du SIDA de façon. ☐ 70

Très sûre 3
Probablement sûre 2
Probablement pas sûre 1
Pas sûre du tout 0
Ne sait pas 9

* 81 D'après toi, quelles sont les chances qu'un condom brise pendant tes relations sexuelles? ☐ 71

Aucune 0
Petites 1
Moyennes 2
Grandes 3
Ne sait pas 9

V. Croyances

☐☐☐ 1-3

Imagine-toi qui utilise un condom à chaque relation sexuelle que tu as en _____, quand tu vas sortir d'ici

Dirais-tu que

		Définit Non	Probabl Non	Probabl Oui	Définit Oui	NSP	
82.	Ca peut interrompre tes relations sexuelles	4	3	2	1	9	☐ 4
83	Ton (ta) partenaire sexuel(le) régulier(ère) se sentirait en confiance avec toi	1	2	3	4	9	☐ 5
84	Ca diminuerait les sensations de tes partenaires pendant les pénétrations	4	3	2	1	9	☐ 6
85	Ca te donnerait une sécurité contre les MTS	1	2	3	4	9	☐ 7
86	Ca voudrait dire que tu n'as pas confiance en le (la) partenaire sexuel(le)	4	3	2	1	9	☐ 8
87	Tes partenaires sexuel(le)s occasionnels(les) se sentiraient en confiance avec toi	1	2	3	4	9	☐ 9
88	Tu aurais l'air mal à l'aise en en train de mettre un condom.	4	3	2	1	9	☐ 10
89	Ca diminuerait tes sensations pendant les pénétrations	4	3	2	1	9	☐ 11
90	Ca voudrait dire que tu as une maladie	4	3	2	1	9	☐ 12
91	Tu aurais l'esprit en paix pendant tes relations sexuelles.	1	2	3	4	9	☐ 13
92.	Ca voudrait dire que tu es une personne qui prend ses responsabilités	1	2	3	4	9	☐ 14
93	Ca voudrait dire que tu courailles.	4	3	2	1	9	☐ 15

25

VI. Perception du plaisir

Avec ce que tu viens de me dire

		Définit Non	Probabl Non	Probabl Oui	Définit Oui	NSP	
94	Penses-tu que tu aurais du plaisir à avoir des relations sexuelles avec condom avec un(e) partenaire auquel(le) tu es très attiré(e)'	1	2	3	4	9	☐ 16
95	Penses-tu qu'une personne très attirée envers toi aurait du plaisir à avoir des relations sexuelles avec condom avec toi'	1	2	3	4	9	☐ 17

VII. Evaluation

Je vais t'énumérer encore les mêmes phrases que je viens de te lire Pour commencer, j'aimerais que tu me dises jusqu'à quel point chaque situation te dérange ou pas.

		Pas du tout	Un peu	Moyennement	Beaucoup	NSP	
96	Faire quelque chose qui interrompt tes relations sexuelles.	4	3	2	1	9	☐ 18
97	Diminuer les sensations de tes partenaires pendant les pénétrations.	4	3	2	1	9	☐ 19
98	Donner l'impression à un(e) partenaire sexuel(le) que tu n'as pas confiance en lui (elle)	4	3	2	1	9	☐ 20
99.	Avoir l'air mal à l'aise en train de mettre un condom.	4	3	2	1	9	☐ 21
100.	Diminuer tes sensations pendant les pénétrations.	4	3	2	1	9	☐ 22
101.	Donner l'impression que tu as une maladie.	4	3	2	1	9	☐ 23
102.	Donner l'impression que tu courailles	4	3	2	1	9	☐ 24

26

Maintenant j'aimerais que tu me dises jusqu'à quel point chacune des situations suivantes est importante pour toi ou pas

		Pas du tout	Un peu	Moyennement	Beaucoup	NSP	
103	Que ton (ta) partenaire régulier(ère) se sente en confiance avec toi	1	2	3	4	9	☐ 25
104	Avoir une sécurité contre les MTS.	1	2	3	4	9	☐ 26
105	Qu'un(e) partenaire sexuel(le) occasionnel(le) se sente en confiance avec toi	1	2	3	4	9	☐ 27
106	Avoir l'esprit en paix pendant tes relations sexuelles	1	2	3	4	9	☐ 28
107	Donner l'impression que tu es une personne qui prend ses responsabilités	1	2	3	4	9	☐ 29

VIII. Perception de soi

Continue à penser au premier mois après ta sortie de prison.

		Définit Non	Probabl. Non	Probabl. Oui	Définit. Oui	NSP	
108	Te vois-tu comme quelqu'un qui pourrait utiliser des condoms pour chaque relation sexuelle ? (Est-ce ton genre. ?)	1	2	3	4	9	☐ 30
109.	Dans le fond de toi-même, penses-tu que tu devrais utiliser des condoms pour chaque relation sexuelle?	1	2	3	4	9	☐ 31

IX. Normes subjectives

Maintenant, pense aux gens qui sont importants pour toi dans ta vie

		Définit Non	Probabl Non	Probabl Oui	Définit Oui	Perception d'une indifférence	NSP	
110.	Crois-tu que <u>la plupart</u> auraient tendance à penser que tu devrais utiliser des condoms pour chaque relation sexuelle que tu pourrais avoir quand tu vas sortir de prison en _____'	1	2	3	4	8	9	☐ 32

X. Croyances subjectives

Je vais t'énumérer des groupes de personnes J'aimerais que tu me dises si tu penses que ces personnes trouveraient que c'est une bonne idée pour toi d'utiliser des condoms pour chaque relation sexuelle que tu pourrais avoir quand tu vas sortir de prison pendant le mois de _____

Ce n'est pas nécessaire qu'ils te l'aient déjà dit Tu me dis ce que tu crois qu'ils pensent

		Définit Non	Probabl. Non	Probabl Oui	Définit Oui	Perception d'une indifférence	NSP	
111.	Les membres les plus proches de toi dans ta famille	1	2	3	4	8	9	☐ 33
112.	Les gens avec qui tu te piques	1	2	3	4	8	9	☐ 34
113.	Les gens straight	1	2	3	4	8	9	☐ 35
114.	Les prostitué(e)s	1	2	3	4	8	9	☐ 36
115.	Ton chum (conjoint) ou ta blonde (conjointe)	1	2	3	4	8	9	☐ 37
116.	Une personne avec qui tu as des relations sexuelles pour la première fois	1	2	3	4	8	9	☐ 38

XI. Motivation a se conformer

Je vais encore t'énumérer les mêmes groupes de personnes. S'ils te suggéraient d'utiliser les condoms, ferais-tu ce qu'ils te conseillent de faire?

		Définit Non	Probabl Non	Probabl Oui	Définit Oui	Perception d'une indifférence	NSP	
117	Les membres les plus proches de toi dans ta famille	1	2	3	4	8	9	☐ 39
118	Les gens avec qui tu te piques	1	2	3	4	8	9	☐ 40
119	Les gens straight	1	2	3	4	8	9	☐ 41
120	Les prostitué(e)s	1	2	3	4	8	9	☐ 42
121	Ton chum (conjoint) ta blonde (conjointe)	1	2	3	4	8	9	☐ 43
122	Une personne avec qui tu as des relations sexuelles pour la première fois	1	2	3	4	8	9	☐ 44

* 123 De qui suivrais-tu le plus les conseils par rapport aux condoms (que ce soit pour ou contre les condoms)?

_____

_____

_____

☐☐ 45-46

XII. Perception de contrôle

124 Si tu le voulais, penses tu que tu pourrais utiliser un condom pour chaque relation sexuelle que tu pourrais avoir en _____ avec

		Definit Non	Probabl Non	Probabl Oui	Definit Oui	NSP	
a)	un partenaire sexuel regulier'	1	2	3	4	9	☐ 47
b)	un partenaire sexuel occasionnel?	1	2	3	4	9	☐ 48

125 Penses-tu que ce serait facile pour toi d'utiliser un condom pour chaque relation sexuelle que tu pourrais avoir en _____ avec

a)	un partenaire sexuel régulier'	1	2	3	4	9	☐ 49
b)	un partenaire sexuel occasionnel'	1	2	3	4	9	☐ 50

126 D'après toi, qui aurait plus de poids dans la décision finale d'utiliser ou de ne pas utiliser des condoms'

a) Toi . . 1 ou Ton/ta partenaire sexuel(le) régulier(ere) . 2 ' ☐ 51

b) Toi . . 1 ou Un partenaire sexuel occasionnel 2 ' ☐ 52

Maintenant je vais t'énumérer une serie d'activités entourant l'utilisation du condom Pour chaque situation, j'aimerais que tu me dises si tu penses pouvoir faire ce que je te propose.

Quand tu vas sortir de prison, au mois de _____, penses-tu que tu peux

		Définit. Non	Probabl. Non	Probabl Oui	Definit Oui	NSP	
127.	T'organiser pour avoir des condoms à portée de la main pour chaque relation sexuelle?	1	2	3	4	9	☐ 53
* 128.	Prévoir d'avance que tu vas avoir une relation sexuelle?	1	2	3	4	9	☐ 54

30

		Définit Non	Probabl Non	Probabl Oui	Définit Oui	NSP	
129	Parler de l'utilisation du condom au bon moment avec un(e) partenaire sexuel(le)?	1	2	3	4	9	☐ 55
130	Sortir les condoms au bon moment pendant une relation sexuelle?	1	2	3	4	9	☐ 56
131	Convaincre un(e) partenaire sexuel(le) régulier/ere) d'utiliser des condoms pour chaque relation sexuelle?	1	2	3	4	9	☐ 57
132	Convaincre chaque nouveau(elle) partenaire sexuel(le) d'utiliser des condoms?	1	2	3	4	9	☐ 58
133	Convaincre un(e) partenaire qui n'aime pas les condoms d'en utiliser?	1	2	3	4	9	☐ 59
134	Refuser d'avoir des relations sexuelles avec une personne que tu desires mais qui ne veut pas utiliser des condoms?	1	2	3	4	9	☐ 60
135	Mettre un condom toi-même?	1	2	3	4	9	☐ 61
136	T'arranger pour "avoir du fun" à mettre des condoms?	1	2	3	4	9	☐ 62
• 138	Si c'est le (la) partenaire qui s'occupe des condoms, aurais-tu des relations sexuelles avec lui (elle)?	1	2	3	4	9	☐ 63

XIII. Rôles

Pense aux gens avec qui tu te tiens D'après toi, combien devraient utiliser des condoms pour chacune de leurs relations sexuelles parmi

		Tous	La plupart	Quelques uns	Aucun	NSP	
139.	Ceux/celles qui se piquent?	4	3	2	1	9	☐ 64
140	Ceux/celles qui ne se piquent pas?	4	3	2	1	9	☐ 65

F. MÉTHODE PRIVILÉGIÉE DE PROTECTION

Il peut y avoir plus d'une façon de se protéger du virus du SIDA quand tu as des relations sexuelles. Je vais t'en nommer 2 à la fois, et j'aimerais que tu me dises lequel des 2 choix tu préfères pour ta protection:

141. Avoir des relations sexuelles sans pénétration . . 1 ☐ 66

ou:

Demeurer fidèle à un(e) seul(e) partenaire 3

142. Utiliser des condoms pour chaque relation sexuelle . 2 ☐ 67

ou.

Avoir des relations sexuelles sans pénétration 1

143 Demeurer fidèle à un(e) seul(e) partenaire . . . . 3 ☐ 68

ou

Utiliser des condoms pour chaque relation sexuelle . . 2

144. Laquelle des 3 suggestions serait **la plus faisable** pour toi pour te protéger du virus du SIDA dans le premier mois après ta sortie d'ici, c'est-à-dire en _____? ☐ 69

Avoir des relations sexuelles sans pénétration 1

Utiliser des condoms pour chaque relation sexuelle . . 2

Demeurer fidèle à un(e) seul(e) partenaire . . . 3

Aucune de ces suggestions 0

G. CACTUS-MONTRÉAL

☐☐☐ 1-3

145 As-tu déjà entendu parler de CACTUS-Montreal sur la rue St-Dominique ? ☐ 4

Non 0 ---> **ALLER A LA Q. 148**
Oui 1

145 Y es-tu déjà allé(e) ? ☐ 5

Non . . . 0
Oui 1

147 Est-ce que quelqu'un d'autre est déjà allé à CACTUS pour toi? ☐ 6

Non 0
Oui . . . 1

H. STATUT VIH

148. As-tu déjà eu une prise de sang spécialement pour le test du SIDA? ☐ 7

Non . . . . . 0 ---> **ENTREVUE TERMINÉE**
Oui . . . . . 1 ---> **ALLER A LA Q. 149**
Ne sait pas . . . . 9 ---> **ENTREVUE TERMINÉE**

149 Connais-tu ton résultat? ☐ 8

Non . . . . . 0 ---> **ENTREVUE TERMINÉE**
Oui . . . . . 1 ---> **ALLER A LA Q. 150**
NRP . . . . . 8 ---> **ENTREVUE TERMINÉE**

150. Peux-tu me dire ton résultat? ☐ 9

VIH négatif . . . 0
VIH positif . 1
NRP 8

34

Nous avons termine le questionnaire. Je tiens à te remercier pour ton aide Ton opinion est tres importante pour nous

As-tu des commentaires ou des questions?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Heure à la fin de l'entrevue: _____

☐☐☐☐ 10-13

I. COMMENTAIRES DE L'INTERVIEWEUR

VIII Réaction de la personne à l'entrevue. ☐ 14

Très intéressée	5
Intéressée	4
Ni l'un ni l'autre	3
Désintéressée	2
Très désintéressée	1

IX. Capacité de se rappeler l'information ☐ 15

Très bonne	5
Bonne	4
Moyenne	3
Faible	2
Très faible	1

X. Perception de la validité des réponses obtenues: ☐ 16

Très bonne	5
Bonne	4
Moyenne	3
Faible	2
Très faible	1

Autres commentaires:

APPENDIX 7

Test-retest statistics
for nominal variables

Test-retest statistics for nominal variables

VARIABLE	% Agreement	**Kappa**	Standard error for Kappa	Z test critical ratio	**p value (1 sided)**	Comparison of response distributions Test	p value (2 sided)
IDU in 6 months pre-incarceration	100	**1.00**	.00	--	--	McN	1.00
Participation in CACTUS prison activities	92 5	**.84**	09	.44	**.33**	McN	1.00
Participation in prison risk factor study	95.0	**.89**	.08	1.13	**.13**	McN	.50
Ethnic group	90.0	**.80**	.10	.00	**.50**	McN	.63
Highest level of education	100	**1.00**	.00	--	--	Wilcox	1 00
KNOWLEDGE							
a. HIV infection is obvious	82.5	**.13**	.20	3 35	**<.01***	McN	1.00
b Sexual transmission of HIV· man to man only	92.5	**.36**	29	1.52	**.06**	McN	1.00
c. Vaseline causes condom breakage	82 5	**.65**	12	1.25	**.11**	McN	.13
d Sexual transmission of HIV: male ejaculation necessary	62.5	**.20**	.15	4.00	**<.01***	McN	.30
e. Lubricated condoms increase sensation	75.0	**.50**	.14	2.14	**.02***	McN	75
f Sexual transmission of HIV via anal sex only	95.0	**.03**	.02	38 5	**<.01***	McN	1.00
g Most HIV infected persons are aware of their status	82.5	**.39**	.17	2.41	**<.01***	McN	.02[b]
h. Sexual transmission of HIV male to female	97 5	**N.A.**[a]	--	--	--	--	--
i. Condoms may prolong erection	80.0	**.38**	.17	2.47	**<.01***	McN	.29
j HIV acquired via needles is transmissible via sex	95 0	**.48**	.31	1.03	**.15**	McN	.50
k Condoms: one unique shape	70.0	**.21**	.16	3.69	**<.01***	McN	.39
l Sexual transmission of HIV, possible via vaginal sex	100	**N.A.**[b]	--	--	--	--	--

VARIABLE	% Agreement	Kappa	Standard error for Kappa	Z test critical ratio	Z test p value (1 sided)	Comparison of response distributions Test	Comparison of response distributions p value (2 sided)
m. Person who transmits HIV can appear healthy	92.5	N A	--	--	--	--	--
n. Condoms are permeable to HIV	80 0	.47	16	2 06	**.02***	Mc N	73
o. Sexual transmission of HIV: female to male	100	N.A [b]	--	--	--	--	--
Sexual orientation	95.0	89	08	1 13	**.13**	Sign	.50
Heterosexual	95.0	.88	08	1.00	**.16**	Mc N	50
Homosexual	97 5	.66	32	44	**.33**	Mc N	1 00
Bisexual	95.0	87	.09	78	**.22**	Mc N	1.00
Ever used condoms for STD prevention	95.0	.90	.07	1.43	**.08**	Mc N	50
Know how to put condom on	77.5	.62	10	1 80	**.04***	Sign	1 00
SEXUAL PARTNERS IN LAST 6 MONTHS PRE-INCARCERATION							
a. Regular partner	90.0	.74	.12	50	**.31**	Mc N	13
b Regular male partner	90.0	.85	.07	71	**.24**	Sign	13
c. Regular male IDU partner	92.5	84	.09	44	**.33**	Sign	25
d. Regular female partner	90.0	.85	07	71	**.24**	Sign	13
e. Regular female IDU partner	95.0	.91	.06	1.83	**.03****	Sign	.50
f. Casual partner	92.5	.85	.09	56	**.29**	Mc N	1 00
g Casual male partner	92.5	88	06	1 33	**.09**	Sign	1 00
h. Casual male IDU partner	95.0	.85	.10	50	**.31**	Sign	1 00
i. Casual female partner	92.5	.88	.06	1 33	**.09**	Sign	1.00
j. Casual female IDU partner	95 0	.91	.06	1 83	**.03****	Sign	.50
k. Paid for sex	97.5	.66	.32	44	**.33**	Mc N	1 00
l. Received money for sex	100	1.00	00	--	--	Mc N	1 00
CONDOM USE FOR STD PREVENTION IN 6 MONTHS PRE-INCARCERATION							
a. Yes	92 5	84	.09	44	**.33**	Mc N	1 00
b. With regular male partner	97.5	.93	.07	2 86	**.03****	Sign	1 00
c With regular female partner	97.5	.79	.20	.05	**.48**	Sign	1.00
d. With regular male IDU partner	95.0	.47	32	1 03	**.15**	Mc N	1.00

VARIABLE	% Agreement	Kappa	Standard error for Kappa	Z test critical ratio	Z test p value (1 sided)	Comparison of response distributions Test	Comparison of response distributions p value (2 sided)
e. With regular female IDU partner	100	N.A.[b]	--	--	--	--	--
f With casual male partner	92.5	**.75**	.13	38	**.35**	Sign	1.00
g With casual female partner	95.0	**.64**	24	67	**.25**	Sign	1.00
h With casual male IDU partner	97.5	**.66**	32	47	**.32**	McN	1.00
i. With casual female IDU partner	97.5	**.66**	.32	.47	**.32**	McN	1.00
j With prostitutes	100	**N.A.**[b]	--	--	--	--	--
k With clients	100	**1.00**	00	--	--	Sign	1.00
IN LAST 6 MONTHS PRE-INCARCERATION							
a Talked about condoms with regular partner	85.0	**.64**	13	1.23	**.11**	McN	1.00
b Asked regular partner to use condoms	82.5	**.61**	13	1.46	**.07**	Sign	1.00
c Condom use with regular partner upon request	97.5	**.79**	.21	.05	**.48**	McN	1.00
d. Regular partner asked to use condoms	77.5	**.52**	.13	2.15	**.02***	Sign	1.00
e Condom use with regular partner upon his/her request	87.5	**.49**	.19	1.63	**.05***	Sign	1.00
f Sex with a person for the first time (new sex partner)	90.0	**.80**	10	.00	**.50**	McN	.63
g Talked about condoms with new sex partner first time had sex	87.5	**.80**	.08	.00	**.50**	Sign	1.00
h Asked new sex partner to use condoms first time had sex	95.0	**.83**	11	.27	**.39**	Sign	1.00
i Condom use with new sex partner upon request first time had sex	100.0	**1.00**	.00	--	--	McN	1.00
j New sex partner asked to use condoms first time had sex	92.5	**.75**	.13	38	**.35**	Sign	1.00
k Condom use with new sex partner first time had sex upon his/her request	92.5	**.38**	.26	1.50	**.07**	Sign	1.00

VARIABLE	% Agreement	Kappa	Standard error for Kappa	Z test critical ratio	Z test p value (1 sided)	Comparison of response distributions Test	Comparison of response distributions p value (2 sided)
Ever talked about condoms with other people	85.0	.69	12	92	.18	McN	1.0
Needle borrowing for IDU in last 6 months pre-incarceration	100	1.00	00	--	--	McN	1.00
Ever had an STD	90.0	.79	10	10	.46	McN	63
Genital herpes infection	90.0	.80	.09	00	.50	Sign	63
STD in last 6 months pre-incarceration	87.5	.78	.09	22	.41	Sign	1.00
Expectation that sexual partners transmitted HIV to respondent in last 6 months pre-incarceration	87.5	.74	.11	.55	.29	McN	38
Expectation that sexual partners could transmit HIV to respondent in future	75.0	.48	14	2.29	.01*	McN	75
SEXUAL PARTNERS IN FIRST MONTH POST-INCARCERATION							
a. Regular partner	90.0	.75	.12	42	.34	Sign	1.00
b. Regular male partner	87.5	.81	.08	.13	.45	Sign	1.00
c. Same regular male partner as pre-incarceration	100	1.00	00	--	--	Sign	1.00
d. Regular female partner	87.5	.81	08	.13	.45	Sign	1.00
e. Same regular female partner as pre-incarceration	75.0	.53	.10	2.70	<.01*	Sign	75
f. Casual partner	82.5	.63	.13	1.31	.10	Sign	1.00
g. Casual male partner	80.0	.61	.12	1.58	.06	Sign	73
h. Casual female partner	80.0	.61	12	1.58	.06	Sign	.73
i. Prostitutes	97.5	.68	28	43	.33	Sign	1.00
j. Clients	95.0	.72	.19	42	.34	Sign	50
INTENTION TO USE CONDOMS FOR STD PREVENTION IN FIRST MONTH POST-INCARCERATION							
a. With regular male partner	97.5	.95	05	3.00	<.01**	Sign	1.00
b. With same regular male partner as pre-incarceration	100	1.00	.00	--	--	Sign	1.00
c. With regular female partner	92.5	.85	.08	63	.26	Sign	1.00
d. With same regular female partner as pre-incarceration	85.0	.63	13	1.31	.10	Sign	45
e. With casual male partner	95.0	.64	.24	.67	.25	McN	1.00

VARIABLE	% Agreement	Kappa	Standard error for Kappa	Z test critical ratio	Z test p value (1 sided)	Comparison of response distributions Test	Comparison of response distributions p value (2 sided)
f. With casual female partner	82.5	**.62**	.13	1.38	**.08**	Sign	.45
g. With prostitutes	97.5	**.66**	.32	.44	**.33**	McN	1.00
h. With clients	97.5	**.84**	.15	.27	**.39**	McN	1.00
Significant others HIV-infected	90.0	**.78**	.10	.20	**.42**	McN	.63
Significant others HIV-infected via needle-sharing	87.5	**.74**	.10	.60	**.27**	Sign	1.00
Significant others HIV-infected via sex	90.0	**.81**	.09	.11	**.46**	Sign	1.00
Decision to use condoms: Respondent versus regular partner	80.0	**.54**	.14	1.86	**.03***	McN	1.00
Decision to use condoms: Respondent versus casual partner	75.0	**.33**	.17	2.76	**<.01***	McN	1.00
PREFERRED HIV PROTECTION MODE							
a. Non-penetrative sex versus exclusivity	87.5	**.55**	.18	1.39	**.08**	McN	.38
b. Consistent condom use versus non-penetrative sex	92.5	**.75**	.13	.38	**.35**	McN	1.00
c. Exclusivity versus consistent condom use	87.5	**.73**	.11	.64	**.26**	McN	1.00
MOST FEASIBLE HIV PROTECTION MODES IN FIRST MONTH POST-INCARCERATION							
a. Non-penetrative sex	100	N.A.[b]	--	--	--	--	--
b. Consistent condom use	85.0	**.69**	.11	1.00	**.16**	McN	.69
c. Exclusivity	82.5	**.65**	.12	1.25	**.11**	McN	1.00
Ever heard of CACTUS	85.0	**.69**	.12	.92	**.18**	McN	.69
Ever been to CACTUS	100	**1.00**	.00	--	--	McN	1.00
Anybody else been to CACTUS for respondent	100	**1.00**	.00	--	--	McN	1.00
Ever been tested for anti-HIV	97.5	**.95**	.05	3.00	**<.01****	McN	1.00
Knowledge of anti-HIV status	92.5	**.85**	.08	.63	**.26**	McN	1.00
HIV serostatus	97.5	**.95**	.05	3.00	**<.01****	McN	1.00

Notes for Appendix 7:

Z test critical ratio = (Kappa - 80) S E (K).

McN: McNemar Chi-square test for paired dichotomous variables
Sign: Sign test for paired polychotomous variables

* 1 sided $p \leq .05$ reject H_0: $K \geq .80$, accept H_1: $K < .80$
** 1 sided $p \leq .05$ reject H_0: $K = .80$, accept H_1: $K > .80$
δ: 2 sided $p \leq .05$: reject H_0: variables have same distribution

N.A.[a]: Kappa cannot be calculated: all subjects provided one same response on re-test
N.A.[b]: Kappa cannot be calculated: all subjects provided one same response on both test and re-test
N.A.[c]: Kappa cannot be calculated: all subjects provided one same response at the first interview

Variable names/descriptions have been translated from French to English for presentation of results

APPENDIX 8

Test-retest statistics
for ordinal variables

Test-retest statistics for ordinal variables

VARIABLE	% Agreement	Spearman's R	Standard error for R	Z test critical ratio=.80 p value (1 sided)	Z test critical ratio= 60 p value (1 sided)	Wilcoxon rank test p value (2 sided)
Sentence length	75 0	**.74**	.10	18	06	39
IN THE LAST 12 MONTHS						
a Worried about having acquired HIV infection	85.0	**.80**	09	50	< 01"	12
b Worried about having transmitted HIV infection	90 0	**.64**	.20	02*	35	72
IN THE LAST SIX MONTHS PRE-INCARCERATION						
a. Sex when high on drugs	80.0	**.88**	.05	05**	< 01"	.53
b. Sex for drugs	92 5	**.89**	07	.02**	< 01"	59
c Probability of having acquired HIV infection	75.0	**.71**	11	11	12	44
Future probability of acquiring HIV infection	75.0	**.68**	.09	05*	20	09
Intention to use condoms in first month post-incarceration	75.0	**.73**	.11	15	08	14
Proportion of significant others using condoms for HIV protection	62.5	**.53**	15	< 01*	26	64
Proportion of significant others giving negative impressions on condoms	47.5	**.46**	16	< 01*	12	61
Attitude toward consistent condom use for each sexual encounter in first month post-incarceration	62.5	**.75**	08	22	04"	.90
Response efficacy of consistent condom use	70.0	**.71**	09	10	12	.24
Probability of condom breakage	52.5	**.38**	17	< 01*	05'	20

VARIABLE	% Agreement	Spearman's R	Standard error for R	Z test critical ratio= 80 p value	Z test critical ratio=.69 (1 sided)	Wilcoxon rank test p value (2 sided)
BELIEFS ABOUT CONSEQUENCES OF CONSISTENT CONDOM USE						
a Reduction of spontaneity	50.0	.70	.09	.08	.15	.94
b. Ensures trust from regular partners	37.5	.43	.14	<.01*	.08	.45
c Reduction of sensation for partners	52.5	.68	.09	.05*	.20	.82
d STD protection	55.0	.41	.14	<.01*	.06	.33
e. Sign of distrust toward partner	35.0	.09	.16	<.01*	<.01[†]	.84
f. Ensures trust from casual partners	62.5	.43	.16	<.01*	.08	.14
g. Embarrassment while putting condom on	70.0	.62	.13	.01*	.43	.41
h. Reduction of own sensation	60.0	.57	.13	<.01*	.39	.86
i. Sign of potential illness	37.5	.14	.16	<.01*	<.01[†]	.62
j Ensures peace of mind during sex	55.0	.48	.15	<.01*	.15	.27
k. Sign of accountability/ dependability	47.5	.29	.16	<.01*	<.01[†]	.81
l. Sign of promiscuity	50.0	.49	.14	<.01*	.17	.88
Sex with condoms. Pleasurable for self	62.5	.79	.06	.43	.01[††]	.86
Sex with condoms' Pleasurable for partner	62.5	.62	12	.01*	.43	.55
EVALUATION OF CONSEQUENCES OF CONDOM USE						
a. Reduction of spontaneity	55.0	.54	.13	<.01*	.30	.32
b. Reduction of sensation for partners	55.0	.39	.15	<.01*	.04[†]	.28
c. Giving impression of distrust toward partner	50.0	.66	.10	.03*	.27	.04[δ]
d. Embarrassement when putting on condoms	65.0	.65	.12	.02*	31	.40
e Reduction of own sensation	50.0	.63	.12	.02*	.39	.58
f. Giving impression of potential illness	62.5	.50	.14	<.01*	.19	.17
g. Giving impression of promiscuity	62.5	.74	.08	.18	.06	.91
h Establishment of trust with regular partners	95.0	.70	.25	.08	.15	1.00

VARIABLE	% Agreement	Spearman's R	Standard error for R	Z test critical ratio=.80 p value	Z test critical ratio= 60 (1 sided)	Wilcoxon rank test p value (2 sided)
i. STD protection	87 5	.42	.19	<.01*	.07	04[b]
j. Establishment of trust with casual partners	65.0	.58	.14	< 01*	.43	83
k. State of peace of mind during sex	87.5	N.A.[a]	--	--	--	--
l. Giving impression of accountability/dependability	70 0	.58	.13	<.01*	43	.31
IN THE FIRST MONTH POST-INCARCERATION						
a. Self-perception as a consistent condom user	62.5	.59	.14	<.01*	.46	.28
b. Moral obligation to use condoms	60.0	.78	.07	.37	.02[m]	.68
Subjective norm	55.0	.57	.13	<.01*	.39	.47
SUBJECTIVE BELIEFS re SIGNIFICANT OTHERS:						
a. Close family members	65.0	.65	.12	.02*	.31	.32
b. IDU	60.0	.45	.16	<.01*	.11	.90
c. Straight people	52.5	.72	.08	.12	.10	.06
d. Prostitutes	55.0	.53	14	<.01*	.26	.53
e. Spouse	57.5	.46	15	<.01*	.12	43
f. New sex partner	42.5	.26	.17	<.01*	<.01[r]	.99
MOTIVATION TO COMPLY WITH SIGNIFICANT OTHERS						
a. Close family members	42.5	.62	10	01*	.43	.36
b. IDU	65.0	.71	.10	.10	.12	.01[b]
c. Straight people	50.0	.59	.12	<.01*	.46	.74
d. Prostitutes	65.0	.72	.10	.12	.10	.98
e. Spouse	55.0	.66	.10	.03*	27	.13
f. New sex partner	62.5	.52	.13	<.01*	.24	75
PERCEPTION THAT CONSISTENT CONDOM USE IN FIRST MONTH POST-INCARCERATION IS DEPENDANT ON OWN WILLINGNESS						
a. With regular partners	52.5	.56	.13	<.01*	.36	.56
b. With casual partners	60.0	.47	.14	<.01*	.13	.88

VARIABLE	% Agreement	Spearman's R	Standard error for R	Z test critical ratio=.80 p value	Z test critical ratio= 60 p value (1 sided)	Wilcoxon rank test p value (2 sided)
PERCEPTION THAT CONSISTENT CONDOM USE IN FIRST MONTH POST-INCARCERATION WOULD BE EASY						
a. With regular partners	57.5	**.48**	.14	<.01*	.15	.36
b With casual partners	57 5	**.54**	.13	<.01*	.30	.51
SELF-EFFICACY						
a. To ensure ready availability of condoms for self	70.0	**.33**	17	<.01*	.02[γ]	.94
b. To plan sex ahead of time	45.0	**.42**	.14	<.01*	.07	.52
c. To discuss condom use with sex partner	60 0	**.54**	.14	<.01*	.30	.38
d To incorporate condom use in a sexual encounter	70.0	**.66**	.12	.03*	.27	.72
e. To convince regular partner to use condoms consistently	62.5	**.55**	.14	< 01*	.32	.78
f. To convince each new sex partner to use condoms	52.5	**.60**	.11	<.01*	.50	.67
g. To convince partner who dislikes condoms to use them	55.0	**.55**	.13	<.01*	.32	.53
h. To refuse sex with someone who will not use condoms	72.5	**.90**	.03	<.01**	<.01[π]	.79
i. To put a condom on	90.0	**.83**	.10	30	<.01[π]	27
j. To have fun using condoms	50.0	**.60**	.11	<.01*	.50	.14
PROPORTION OF INDIVIDUALS WHO SHOULD USE CONDOMS CONSISTENTLY AMONG						
a Significant other IDU	80.0	**.54**	.14	<.01*	.30	.26
b. Significant other non-IDU	57 5	**.54**	.15	<.01*	.30	.51

Z test critical ratio (Fisher Z transformation):

$$\left[\tfrac{1}{2}\ln \frac{(1+R)}{(1-R)} - \tfrac{1}{2}\ln \frac{(1+R_0)}{(1-R_0)} \right] \Big/ \frac{1}{\sqrt{n-3}} \qquad \text{where } R_0 = .80 \text{ or } .60$$

The critical ratios are not reported here to disencumber the presentation of results.

* 1 sided $p \leq .05$: reject H_0: $R \geq .80$; accept H_1: $R < .80$
γ: 1 sided $p \leq .05$: reject H_0: $R \geq .60$; accept H_1: $R < .60$
** 1 sided $p \leq .05$: reject H_0: $R = .80$; accept H_1: $R > .80$
π: 1 sided $p \leq .05$: reject H_0: $R = .60$; accept H_1: $R > .60$
δ: 2 sided $p \leq .05$: reject H_0: variables have the same distribution/same mean rank.
N.A.: R cannot be calculated; all subjects provided one same response at second interview.
Variable names/descriptions have been translated from French to English for presentation of results.