SLOVENIAN NATIONAL SURVEY OF SEXUAL LIFESTYLES, ATTITUDES AND HEALTH: PREPARATORY WORK AND FEASIBILITY STUDY

SLOVENSKA NACIONALNA PREČNA RAZISKAVA SPOLNEGA VEDENJA, STALIŠČ IN ZDRAVJA: PRIPRAVE IN PILOTSKA RAZISKAVA

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Abstract

Introduction: *A national survey of sexual lifestyles, attitudes and health in Slovene men and women aged 18 to 49 years was conducted. This paper reports on the preparatory work and feasibility study.*
Methods: *The feasibility study used a stratified two-stage probability design for the selection of the sample from the Central Population Registry. Data were collected between 1996 and 1997. A combination of face-to-face interviews and anonymously self-administered questionnaires was used.*
Results: *The overall response rate was 77.4 %. Two percent of respondents reported having had ten or more heterosexual partners during the five years preceding the interview, and 14 % during their lifetime. Slightly more then 2 % of male respondents reported having ever paid a woman for sex, and less than 0.5 % admitted to having had homosexual sex during the past five years. The problem identified in the performance of the self-administered questionnaire was that many respondents omitted their current steady partner from the total count of partners for different periods.*
Conclusions: *The high overall response rate indicated that good acceptability could be expected for the main survey. The self-administered questionnaire was divided into four booklets in order to provide opportunity for a brief introduction before giving them to respondents. It was decided to change the order of questions asking about the number of partners during different periods, and to start with questions for the most recent period, last month, and then to proceed with questions for the last year, last five years and lifetime. The results helped us design the main survey conducted in 1999 and 2001.*

Key words: sexual behaviour, sexually transmitted infections, human immunodeficiency virus, feasibility study, general population, Slovenia

Izvirni znanstveni članek
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Izvleček

Uvod: *Izvedli smo nacionalno prečno raziskavo spolnega vedenja, stališč in zdravja med slovenskimi moškimi in ženskami, starimi 18 do 49 let. V članku poročamo o pripravah in pilotski raziskavi.*
Metode: *V pilotski raziskavi smo uporabili stratificirano dvostopenjsko vzorčenje iz centralnega registra prebivalcev. Podatke smo zbrali v letih 1996-1997. Uporabili smo kombinacijo anketiranja z anonimnim samoizpolnjevanjem vprašalnikov.*

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Rezultati: *Odgovorov v raziskavi je bilo 77,4 %. Da so imeli deset ali več heteroseksualnih partnerjev v petih letih pred anketiranjem je poročalo 2 %, in v vsem življenju 14 % sodelujočih. Nekaj več kot 2 % moških je poročalo, da so že plačali ženski za spolnost in manj kot 0,5 %, da so imeli homoseksualne spolne odnose v preteklih petih letih. Prepoznali smo problem pri vprašalniku za samoizpolnjevanje, in sicer, da so številni anketiranci pozabili všteti svojega trenutnega stalnega partnerja v skupno število partnerjev za različna obdobja.*

Zaključki: *Visok odgovor v pilotski raziskavi je nakazal, da lahko pričakujemo dober sprejem glavne raziskave. Odločili smo se, da vprašalnik za samoizpolnjevanje razdelimo v štiri knjižice, kar naj bi omogočilo dodatna kratka navodila, preden se vprašalniki dajo anketirancem, in spremenimo vrstni red vprašanj o številu partnerjev v različnih življenjskih obdobjih. Začnemo z najbolj nedavnim obdobjem ter nadaljujemo z vprašanji za zadnje leto, zadnjih pet let in vse življenje. Rezultati so nam bili v pomoč pri načrtovanju glavne raziskave, ki je bila izvedena v letih 1999 do 2001.*

Ključne besede: spolno vedenje, spolno prenosljive okužbe, virus človeške imunske pomanjkljivosti, raziskave, splošna populacija, Slovenija

1 Introduction

Sexual behaviour patterns reported to be associated with increased risk for human immunodeficiency virus (HIV) or other sexually transmitted infections (STIs) include : having numerous sexual partners (1-8), having sex with a partner who has many other sexual partners or with a partner from a “core group”, such as a commercial sex worker (3, 9, 10), early age at sexual debut (8), practising certain types of unprotected penetrative sexual acts (highest risk for anal intercourse (1, 11-15), and lowest for oral intercourse (16-18)), having vaginal intercourse during menstruation (13, 19), and not using condoms (15, 20-23). Risk is increased for people from low HIV and STI endemic countries, engaging in sex with persons from high prevalence countries, or while travelling or living in high prevalence countries (24, 25). Having concurrent partnerships has also been associated with the increased risk (26). Sexual behavioural parameters suggested by modellers as enhancing the spread of HIV and other STIs include the proportion of people in different sexual activity categories according to the rate of partner change and frequency of sexual contacts per partnership (assortative mixing) (27, 28) the extent of mixing of different sexual activity classes (disassortative mixing) (9, 27-30), the extent of mixing of different classes according to other characteristics, such as age sexual orientation (27, 31, 32) and injecting drug use (27, 33) and the frequency and types of concurrent partnerships (26, 34-37). Most previous sexual behaviour surveys failed to provide sufficient data for modelling purposes (38). It is not yet clear which parameters are most relevant in the course of HIV epidemic (15). By 1999, no surveys on national sexual behaviour had been conducted in Slovenia. Two fertility surveys, which had other objectives, did not collect adequate information on sexual behaviour patterns relevant for the STI and HIV epidemiology (39-41).

Genital infection with *Chlamydia trachomatis* is presumably the most common curable STI in Slovenia (42, 43). This pelvic inflammatory disease in women presumably accounts for the largest proportion of serious acute diseases, and for high economic burden of *C. trachomatis* infection (44). However, in most infected women and in a large proportion of infected men, symptoms of *C. trachomatis* infection are absent or minor (45-49). This large group of asymptomatic and infectious persons sustain transmission within the community. Studies of convenience samples in Slovene health care settings reported prevalences ranging from 6 % to 16.5 % for asymptomatic women, and from 2.7 % to 3.2 % for asymptomatic men (50-53). All these estimates are subject to selection bias. By the year 1999, no prevalence estimate based on a probability sample of the general population had been made.

To provide information on sexual and reproductive health policies, including STIs and HIV prevention, treatment and care, the Institute of Public Health of the Republic of Slovenia (IPHRS) co-ordinated the first

Slovenian national survey of sexual lifestyles, attitudes and health with integrated testing for *C. trachomatis* infection. Two broadly defined objectives of the survey were the following: first, to describe sexual behaviour patterns and identify demographic, social, and behavioural determinants of higher-risk behaviour patterns and, second, to determine the distribution of *C. trachomatis* genital infection and identify risk factors in the general population of Slovene residents aged 18 to 49 years. The main survey data collection was conducted between 1999 and 2001.

To ensure the accuracy of the survey results much attention was devoted to the reduction of potential survey errors, including non-response and measurement errors. The aim of this paper is to describe our extensive preparatory work for the survey (development of the questionnaires, information leaflet and introductory letter, and the pre-testing data collection methods) and the feasibility study.

2 Preparatory work

2.1 Development of the questionnaires, information leaflet and introduction letter

We decided to adapt the very well-designed data collection methods and questionnaires used in the British National Sexual Attitudes and Lifestyles Survey (NATSAL) in 1990, i.e. a combination of face-to-face interviews and anonymous self-administered questionnaires (54). To meet the survey objectives we included some sexual behaviour variables that have been found to be associated with increased risk for HIV or other STIs but were not inquired about in the British survey, and excluded some others.

The interviewer-administered questionnaire (IAQ) contained questions about health, family and religious affiliation, first heterosexual experience and first heterosexual intercourse, different attitudes related to sexual lifestyle, and questions on demographic and social characteristics. Show cards with letter pre-coded answers were used to help respondents answer more sensitive questions, such as those on sources of information about sexual matters and age at first heterosexual experience and intercourse. This presumably resulted in less discomfort felt by both respondents and interviewers, as potentially embarrassing sex related words were avoided by answering with letter codes. We shortened the British IAQ by eliminating some questions about the family history and attitudes, and the questions on demographic and social characteristics were adapted to the Slovene context. No changes were made in the first heterosexual intercourse module.

We appreciated the careful wording and attractive layout of the British self-administered questionnaire (SAQ), as well the definitions for terms that may be difficult to understand (e.g. anal sexual intercourse). We added many questions about condom use and also many detailed questions about three most recent partnerships during previous five years. This also ensured partial comparability with the European Union project “Sexual behaviour and risks of HIV infection in Europe”(55). A few questions were added to estimate some of the preventive indicators proposed by the former Global Programme for AIDS and UNAIDS (knowledge of preventive practices, reported condom use with non-regular sexual partners, and reported STI incidence in men) (56, 57).

We prepared an introductory letter that explained the survey goals and random selection of individuals from the general population invited to participate. It also included information about the institutions conducting the survey and major funding agencies. It stressed that more intimate information would be collected anonymously and that for the success of the survey it was important for each invited individual to contribute his/ her own experiences and attitudes, whatever they may be.

A short leaflet was prepared providing general information about the study. It explained that most intimate questions would be answered anonymously and that everyone had the right to refuse to participate in the study, to interrupt the interview at any point, or just skip an intimate question. The leaflet also listed the interviewers’ professional duties, and provided information about the research team, the participating institutions and the funding sources. The research team address was given at the end, in case further information was needed.

Since the reference population for our cross-sectional study consisted of Slovene citizens 18 to 49 years old residing in Slovenia, who as a rule spoke Slovene (excluding less than 3 % of the population who were foreigners living in Slovenia), there was no need to translate the questionnaires and other survey materials into other languages. The English translation of the introductory letter, the information leaflet about the survey, the IAQ, and the SAQ booklets used in the main survey have been published elsewhere (58).

2.2 Pre-testing

The aim of the small-scale pre-testing was to assess the performance and to revise the first draft of the IAQ and SAQ, the advance letter and information leaflet, as well as to pre-test the proposed data collection methods and to obtain some information necessary for planning the feasibility study.

In June 1997, six experienced female interviewers from several regions of Slovenia were recruited from the pool of interviewers of the Statistical Office of the Republic of Slovenia and trained during a full-day workshop. They were instructed in doorstep approaches and in how to explain the purpose of such pre-testing, and informed about the procedures to obtain appropriately informed consent (introducing the introduction letter and the information leaflet), and interviewing procedures (face-to-face interviewing and introducing the self-administration booklet). Finally, they were instructed in how to conduct semi-structured discussions on these data collection methods using a set of open questions about the interviewing process which was recorded. For example, how to ask respondents whether they understood all the questions, whether all the terms and definitions used were clear, and whether they would prefer male interviewers.

A total of 30 interviews were conducted. Each interviewer recruited five respondents meeting the defined eligibility criteria regarding gender, age group (16 to 54 years old), education, and marital status through the acquaintance networks. Close friends were not eligible for the survey. The research team provided addresses of four individuals with homosexual lifestyles who consented to participate. Additional lists of addresses of people with the required demographic characteristics sampled from the Central Population Registry were provided in case convenience sampling through acquaintance networks would not suffice. Thus, respondents represented the range of characteristics of individuals anticipated as eligible for the main survey.

The great majority of respondents felt that the advance introduction letter and the information leaflet were well designed and provided all necessary information. Terminology, definitions and wording in the interviewer-administered questionnaire were clear, and no missing categories for variables were identified. Respondents were comfortable using cards with letter pre-coded answers. Also, the terminology, definitions and wording of the self-administered questionnaire were clear to the majority of respondents. A few spontaneously mentioned that the self-administered module enabled them to respond comfortably and honestly to intimate questions. The outstanding complaint was the long duration of the interview and the overwhelming majority of respondents suggested that the interview should be shortened. We estimated that approximately one hour was needed to administer the interviewer questionnaire and half an hour to complete the self-administered questionnaire. One respondent claimed that she would not be willing to participate in a similar study again. Six respondents reported mild discomfort or slight embarrassment. Not a single one would prefer a male interviewer. They either expressed no preference or preferred females.

Interviewers were enthusiastic about using the cards with the interviewer-administered questionnaire. It resulted in faster interviewing, provided confidentiality if another household member passed by, and caused less discomfort for the respondent as well as the interviewer, as potentially embarrassing sex-related words were avoided by using coded answers. Two main complaints from interviewers were the long duration of the interview and the extensive wording of the combined female and male version of the interviewer-administered questionnaire. One interviewer reported on embarrassment of two adolescents whose parents insisted on being present during the interviews. Interviewers recommended that invitation letters should be sent to all selected individuals before the interviewers' visits. No specific suggestions were given as concerns the doorstep approaches. Several interviewers made strong recommendation that incentives should be provided for respondents to improve response rate. No additional interviewers' training needs were identified.

Overall, no serious problems were detected. Since all 30 interviews were completed, the duration of the interview itself was not considered likely to reduce the completion rate. Nevertheless, we shortened the interviewer-administered questionnaire and planned for separate male and female versions so as not to have interviewers work through the complex Slovene wording to accommodate both genders.

Two main problems with the self-administered questionnaire were identified. The first one was related to filtering mistakes. One respondent even interrupted the self-completion session, because he perceived that the same questions were asked over and over again, as he was not following filtering instructions. The second major problem was the 15 % non-response

rate for questions about the history of STIs. A different questionnaire format for these questions, with questions and answers set out in a table format, was suspected to have contributed to this.
To minimise filtering mistakes in the self-administered questionnaire, additional explanations were inserted into filtering questions. We concluded that respondents should be given more extensive instructions about how to complete the self-administered questionnaire including hypothetical examples for the most important filtering questions. Consequently, more time was planned for training interviewers to acquire the skills required to give relevant instructions. We planned a split run for the STI section in the feasibility study, by having a randomly selected half of respondents answer the old version of the STI-related questions in a table format, and the other half a version asking less information in a simpler way. We decided to send invitation letters to selected individuals in advance of interviewers' visits, to provide incentives for participants, and to use exclusively female interviewers.
We chose not to include individuals below the age of 18 in the feasibility study for several reasons. Firstly, we assumed that the validity of responses would be questionable if adolescents were interviewed in the likely presence of their parents. Secondly, we wanted to avoid possible problems in simultaneous negotiations to obtain the consent of both the selected adolescent and a parent. And thirdly, we wanted to avoid additional sensitive issues concerning interviewing adolescents likely to be raised by the Medical Ethical Committee at the Ministry of Health of the Republic of Slovenia after their initial reluctance to consent to such a sensitive study.

3 Feasibility study

3.1 Aims

Our aim was to assess the acceptability of the main survey goals, data collection methods, as well as to pilot fieldwork procedures in a probability general population sample of at least 500 individuals, and to obtain other information needed to plan the main survey. In addition, we wanted to assess the feasibility of collecting first void urine (FVU) specimens to be confidentially tested for C. trachomatis infection in a small convenience sub-sample.

3.2 Methods

The fieldwork for the feasibility study was conducted from November 1997 to February 1998. Addresses of 1000 individuals were selected from the Central Population Registry using a two-stage probability design. The sample was stratified according to 12 statistical regions, and 100 primary sampling units with approximately 200 inhabitants each were sampled with a probability proportional to the size of their 18- to 54-year-old population. Ten persons 18 to 54 years old were randomly selected from each.
Altogether 33 female interviewers from all over Slovenia were recruited from the pool of interviewers engaged by the Statistical Office of the Republic of Slovenia. They received training through two full-day workshops held in November 1997. The overall aims of the survey and some results of the pre-testing were presented. The need for confidentiality was stressed, and the procedures to ensure anonymity of most sensitive information while still preserving the link between the information reported by each respondent were explained. Instructions on appropriate doorstep approaches were given. The need to obtain appropriately informed consent by offering to read the leaflet with information about the study was emphasised. We urged the interviewers to insist on conducting the interview in privacy. Instructions were given on how to complete the forms to record visits to selected individuals' addresses, the forms to notify temporary addresses or new permanent addresses, the forms to record the number of conducted interviews, and respective mileage. Detailed instructions on interviewing procedures using the interviewer-administered questionnaires were given. The greatest emphasis was placed on developing the skills for appropriate introduction of the questionnaire for self-completion including role-playing. Interviewers were instructed to provide respondents with additional explanation about anonymity and detailed instructions on how to answer the questions in self-administered booklets. This was expected to encourage respondents to answer honestly and to minimise the number of mistakes. The interviewers received written instructions for data collection and all the necessary forms, letters, information leaflets and questionnaires.
Before the visits of interviewers, all selected individuals received an introductory letter. Details of all visits to selected individuals' addresses, their outcome, and information on the ascertained residence status were recorded on visit record forms. Interviewers

were required to make at least five calls at different days of the week and at different times of the day before accepting any individual's address as a non-contact. If information was obtained that some of the selected individuals lived at a temporary address or a new permanent address, these addresses were recorded and reallocated to interviewers working in respective areas. At the doorstep interviewers introduced themselves with interviewers' identity cards with the interviewer's photograph, and gave the name of the survey. Permission to briefly explain the study aims was asked for. Respondents were invited to read a short leaflet providing information about the study. Interviewers provided additional explanations only upon request.

After verbal informed consent had been obtained, interviewing started with less sensitive interviewer administered questions. Show cards with letter pre-coded answers were used to facilitate answering more sensitive questions that included questions on sources of information about sexual matters and age at first heterosexual experience and intercourse. Respondents who reported their age at first heterosexual intercourse were asked several questions about the event. A great majority were asked face-to-face. An alternative to completing a self-administered booklet was offered if interviewers judged that it was not private. Respondents who reported their age at first heterosexual intercourse or some other sexual experience were invited to anonymously complete the SAQ in the presence of interviewers. Two versions of self-administered questionnaires, differing in the module with questions related to STI, were randomly assigned to respondents to assess which version performed better. Respondents were told in advance that they would themselves seal the completed booklets in envelopes with the IPHRS logo. The interviewer administered questions about respondents' attitudes followed. The interviews concluded with questions about demographic and social characteristics.

All interviewers received a list comprising the same number of randomly selected unique numbers and of addressess of selected individuals. They were instructed to use one of these unique numbers to link the interviewer-administered questionnaire and self-administered questionnaires for each respondent. These questionnaires contained no identifying information. In contrast, forms to record visits to all selected individuals' addresses and their outcomes contained identifying information about respondents as well as non-respondents, but the allocated respondents' unique numbers were not recorded on these. Two data sets, the visits' records data set and the main data set including information reported by respondents, were entered separately in two different locations, at the IPHRS and at the CATI Centre respectively. Thus, the identity of each respondent was unlinked from the demographic, behavioural and attitudinal information reported.

The methods for integrated voluntary confidential testing for C. trachomatis genital infection were described elsewhere (59).

3.3 Results

Overall, interviews were conducted with 752 out of the 971 selected individuals who were either confirmed or assumed to be eligible, resulting in the estimated overall response rate of 77.4 % (58, 59). Women were more likely to participate than men ($p<0.01$), young more likely than old ($p<0.01$), and people from smaller communities more likely than those from larger communities ($p<0.01$).

Preliminary prevalence estimates, together with 95 % confidence intervals (CI_{95}) for rare behavioural patterns associated with increased risk for HIV and STIs, were obtained assuming random sampling. Ten or more heterosexual partners during the five years preceding the interview were reported by 2 % (CI_{95} 1 % - 3 %), and during lifetime by 14 % (CI_{95} 12 % - 17 %) of respondents. Slightly more than 2 % (CI_{95} 1 % - 4 %) of male respondents reported having ever paid a woman for sex, and less than 0.5 % (upper CI_{95} <1 %) admitted to having had homosexual sex during the past five years. The self-reported lifetime prevalence of all STIs combined was 6 % (CI_{95} 3 % - 10 %) for participants answering the self-administered questionnaire where STI related questions were laid out in a table format, and 3 % (CI_{95} 1 % - 6 %) for those who received the simplified version of the questionnaire.

The results of the feasibility of integrated voluntary confidential testing for C. trachomatis genital infection were published separately (59).

4 Discussion

The high overall response rate of the feasibility study was encouraging and indicated that good acceptability can be expected for the planned main survey. The strengths of our feasibility study included a reliable

general population sampling frame and the use of appropriate two-stage probability sampling strategy that ensured that the survey sample was representative of the reference population. Preliminary prevalence estimates of rare behavioural patterns associated with increased risk for HIV and STIs allowed sample size calculations for the main survey (58).

The remaining main problem identified in the performance of the self-administered questionnaire was that many respondents omitted their current steady partner from the total count of sexual partners for different periods of their life. For example, a respondent first reported having had the last heterosexual intercourse during the week preceding the interview, then reported in depth on their main steady partner, and later stated that they had no lifetime partners, which suggested that they misinterpreted the question about the number of heterosexual partners as a question about the number of additional heterosexual partners. As a consequence, when asked about the numbers of partners during lifetime, and then about more recent lifetime periods, some respondents with a single lifetime partner tended to inappropriately filter and skip all questions about the number of partners during more recent periods. Consequently, they also skipped all questions about condom use and frequency of sex during more recent periods.

In order to prevent similar mistakes, we decided to divide the self-administered questionnaire into four booklets and thereby provide opportunity for brief introductions before giving them to respondents. We also changed the order of questions asking about the numbers of partners during different periods, and started with questions for the most recent period, last month, and then proceeded with questions for the last year, last five years and finally, lifetime. We hoped to help respondents recall, and to improve thereby the validity of reported figures. Respondents were expected to add up numbers of partners, gradually going back in their memory from the most recent period to those more distant. There was no conclusive evidence on which version of STI related questions performed better, yet we decided to keep the table layout version for two reasons: first, there was some indication that it may capture the history of STIs better, and, second, it was asking for more detailed information.

Before proceeding to the main survey, we also planned for changes of some of the fieldwork procedures. In the feasibility study, invitation letters were mailed to selected individuals at the beginning of the fieldwork, which often resulted in a rather long time lag between the arrival of letters and visits of interviewers. In the main survey, interviewers mailed letters before they started working in a particular area.

As it proved feasible to collect first void urine specimens for C. trachomatis testing, as described elsewhere, we decided to proceed with the integration of *C. trachomatis* infection testing in the main survey (59).

The participation bias has the potential to introduce significant error in estimates of behavioural risk. We may have underestimated proportions of individuals with particular high-risk behavioural patterns that tend to be less acceptable or even to be stigmatized by the majority of the population, such as the proportion of homosexually active males during the preceding five years. Individuals with such behavioural patterns may be unwilling to disclose such behaviour and are more likely to refuse to participate. In order to prevent this from happening, the invitation letters stressed that the most intimate questions would be answered anonymously in self-administered questionnaires. We instructed interviewers to reinforce the point that it is extremely important for the success of the study that each invited individual contributes his/her own attitudes and experiences whatever they may be.

5 Conclusions

In conclusion, this article reports on the preparatory work for the first national general population probability sample survey of sexual behaviour and the prevalence of C. trachomatis infection in Slovenia, and on the execution of the feasibility study. The results informed the main survey design. The main survey data collection was conducted between November 1999 and February 2001. Some results have already been published, and further analyses and preparation of publications are in progress. (58, 60, 61). The results will provide information on reproductive health policies and on HIV and STI prevention and control strategies in Slovenia.

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