



SURVEY QUESTION BANK: Topic Overview 1 (October 2010)

MEASURING SEXUAL BEHAVIOUR AND RISK

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1. Why measure sexual behaviour and risk?

Improving sexual and reproductive health is a public health priority both nationally and internationally. According to UNAIDS/WHO, the number of people living with HIV worldwide continues to grow, and in 2008 was an estimated 33.4 million, which was 20% higher than the 2000 estimate.(UNAIDS/WHO, 2009) In the UK, an estimated 83,000 people were living with HIV in 2008, a quarter of whom were unaware of their infection.(Health Protection Agency, 2009) Concern is also driven by the rising rates of sexually transmitted infections (STI) in the UK (Health Protection Agency, 2007) and high levels of teenage pregnancy (Department of Health, 2010). It is widely-accepted that research is needed to inform and evaluate interventions designed to improve sexual and reproductive health. However, this acceptance of research into sexual behaviour and risk as a legitimate area of research is relatively recent.

Kinsey's controversial studies conducted from 1938 to 1963 were groundbreaking as they provided a first insight into the range of sexual behaviour that was 'normal' and not 'deviant' as many had thought.(Kinsey et al. 1948; Kinsey et al. 1953) Subsequent surveys in the 1970s provided new insights into patterns of fertility and reproduction, which informed demographic projections and contraceptive service planning. The advent of HIV/AIDS in the 1980s then prioritised the need to understand the distribution of risky sexual behaviours for epidemiological and public health projections and was accompanied by a huge growth in research in this field. This 'legitimation' of the study of sexual behaviour instigated data collection on a range of behaviours and attitudes to answer epidemiological, reproductive

health, as well as psychosexual questions. This has furthered understanding of all aspects of sexual behaviour, and reflects how policy-makers are increasingly recognising the importance and contribution of other factors to sexual health, including sexual function, relationship quality, reproductive choice and the interplay between physical health and sexual well-being.

It is important that such data are accurate and that there are reliable estimates of the nature, extent and distribution of sexual behaviour in different populations. There are a number of issues to be considered at each stage of measuring sexual behaviour and risk from deciding on the target population; thinking about how to collect the data; making contact with potential participants; administering data collection; as well as the structure, content and wording of questions, so as to maximise response and minimise bias in the resulting data.

2. Key issues in measuring sexual behaviour and risk

There are a number of ways to research sexual behaviour and risk including using qualitative methods such as depth interviews, and quantitative methods such as conducting and analysing surveys, and even observation. For the purpose of obtaining accurate and reliable estimates of the nature, extent and distribution of sexual behaviour in different populations or groups, high-quality surveys are often regarded as the most desirable data collection tool. Undertaking a high-quality survey is a resource-intensive activity, which is exacerbated by the sensitive subject matter. For example, additional resources may be required to obtain a sufficient response rate and to include sufficient numbers of participants from population groups who practice relatively rare sexual behaviours, such as men who have sex with men, in the sample.

2.1 Designing a sample

Probability sample surveys are regarded as superior in terms of the resulting data quality to surveys using convenience or quota sampling. Probability sampling requires a sampling frame for the target population to generate a probability sample. Where the target population is the general population then a population or electoral register is likely to be a suitable sampling frame. However, when the target population is a particular population group such as an ethnic minority group, men who pay for sex, or lesbian women then it is unlikely that a sampling frame will exist. Studies focussed on such population groups may have no choice but to use a convenience or volunteer sample.

Given the sensitive subject matter, there may be particular ethical concerns about surveying young people, especially those aged under 16 years. This can be

frustrating given that half of people report having had heterosexual intercourse by age 16 (Wellings et al. 2001) and that young people are most at risk of STIs in the UK (Health Protection Agency, 2009).

Regardless of age, in a sexual behaviour survey of the general population, there will be some people who are sexually inexperienced. It may be desirable therefore to use filters in the questionnaire so that only those participants who are sexually experienced answer the questions on sexual practices and partnerships. However, it is important that everyone is invited to participate in the survey, not just those who are sexually experienced or sexually active at the time of the interview in order to get estimates for the whole population.

2.2 Mode of data collection

A key element of collecting data on sexual behaviour and risk is reassuring participants that their responses will be treated in the strictest of confidence. Young people may need to be explicitly reassured by researchers that their responses will be safeguarded. This can be facilitated by using self-completion questionnaires, especially for the more sensitive questions, whereby the participant does not need to articulate their responses to an interviewer. (Turner et al. 1998; Johnson et al. 2001a)

Increasingly, computer-assisted self-interviewing (CASI) is used for data collection as this has been found to improve data quality in terms of internal consistency and the number of missed questions, relative to using pen-and-paper questionnaires. (Johnson et al. 2001b) Another advantage of using CASI is that it is easy to incorporate filtering so irrelevant questions are skipped, reducing error and making it quicker and easier for participants to complete the survey. While hand-held computers are making CASI increasingly practical, CASI may still not be feasible in some settings. (See Couper et al. 1998 for a general discussion of using CASI for data collection.)

2.3 Administering the questionnaire

Given the subject matter's sensitive nature, it is desirable that participants complete the questionnaire by themselves, ideally in a private location where they feel comfortable. If other people are within sight or earshot then this may inhibit participants from answering particular questions honestly, if at all.

If the questionnaire is administered as a face-to-face interview then showcards with concealed response codes can be used so that neither the participant nor the interviewer has to articulate any sexually explicit terms or the participant disclose any sensitive information (e.g. Figure 1).

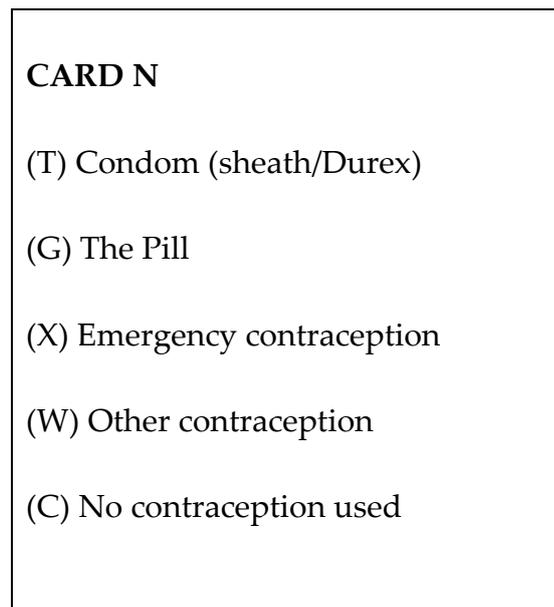


Figure 1: Showcard used in the National Survey of Sexual Attitudes and Lifestyles studies for asking about contraceptive method(s) used at first heterosexual intercourse. Source: Erens et al. 2001.

Other safeguards include asking participants to put paper questionnaires in sealed envelopes before returning them to the interviewer, or if CASI is used, then programming it to 'lock' once the participant completes it so that no-one can go back to access their data until the data are safely received by the research office.

Increasingly surveys of sexual behaviour and risk collect both behavioural and biological data, reflecting how adverse sexual health outcomes such as STIs and unintended pregnancy result from the interaction of behaviour and biology. Once participants have completed a questionnaire or CAPI, it may be appropriate to then invite them to provide a biological sample. For example, participants of Britain's second National Survey of Sexual Attitudes and Lifestyles (Natsal) were asked to provide a urine sample for testing for *Chlamydia Trachomatis*, (Fenton et al. 2001) while the London Gay Men's Sexual Health Survey invited men to provide a saliva sample for testing for HIV. (Dodds et al. 2004) This issue is further discussed in section 4.2.

2.4 Questionnaire structure and content

Regardless of the subject matter, it is always a good idea to start a questionnaire with easy-to-answer, neutral, questions. This is particularly important for a questionnaire that addresses a sensitive topic such as sexual behaviour and risk. For example, the Natsal studies begin by asking questions about the participant's health in general. Questions on learning about sex lead on to questions about the participant's

memories of their first sexual experience, and then questions about more recent sexual behaviour. It is a good idea that questions differentiate between sexual practices with opposite- *vs.* same-sex partners because of the different risks involved.

Questions on more specific sexual risk behaviours, such as on paying for sex, can then be asked. Asking about sexual health issues, such as whether participants have ever attended a sexual health clinic or been diagnosed with a STI are also highly sensitive topics and so are best asked as self-completion questions.

Attitudinal questions should be placed after questions on behaviours so that participants can report their own behaviour before being asked to make moral judgments, for example, on different types of sexual relationships (e.g. one night stands) or sensitive issues such as abortion. As with all surveys, it is usual to end the questioning with questions that collect standard demographic information such as occupation and educational background. Regardless of how or where the questionnaire is administered, it is advisable to provide details of helplines and advice/support groups should the questions have provoked any issues for the participants. Similarly, details about local health centres are helpful if participants feel that they may have been at risk, so that they can obtain appropriate health care and screening.

3. Important topic areas when studying sexual behaviour and risk

The sensitive nature of the topic means that sexual behaviour surveys require considerable development work. Where possible, it is advisable to use questions that have been piloted and validated for other studies, such as Natsal. At the time of writing, the Natsal studies are the largest consecutive national probability surveys of sexual behaviour undertaken anywhere in the world. The first Natsal study was conducted in 1990-1991 and interviewed 18,876 men and women aged 16-59 years resident in Britain.(Johnson et al. 1994; Wellings et al. 1994). A decade later, the second Natsal study interviewed 12,110 adults aged 16-44 years between 1999-2001.(Johnson et al. 2001a; Wellings *et al.* 2001; Fenton *et al.* 2001; Erens *et al.* 2001) In 2010, fieldwork began for a third Natsal study, involving interviews with 15,000 adults aged 16-74 years. The Natsal studies have as an international reputation for being at the forefront of survey research into sexual behaviour and the study's investigators advise researchers around the world on conducting surveys of sexual behaviour. It is for these reasons that we refer to the Natsal studies as we now look at four of the most important topics to consider when asking questions about studying sexual risk behaviour.

3.1 Questions about having sex(ual intercourse)

Development work for the Natsal studies found that survey participants prefer the use of scientific language (e.g. 'sexual intercourse') to the colloquial (e.g. 'having sex') or romantic language (e.g. 'making love').(Wellings et al. 1994) This work also revealed that some people think of sexual intercourse just as vaginal sex. Consequently, the Natsal studies use the following definition: "*Sexual intercourse, or 'having sex': This includes vaginal, oral and anal sexual intercourse.*"(Erens et al. 2001) This definition is just one of a list of eight terms that participants read in advance of answering questions on sexual behaviour in order to clarify meanings, ensuring that all participants ascribe the same meanings to the terms used. Having definitions of key terms is particularly important if the questionnaire is translated into other language(s) and if there is no equivalent term (Bhopal et al. 2004).

3.2 Questions about sexual partners

The number of sexual partners a person has had is one of the best measures of sexual risk and predictors of adverse sexual health outcomes (Fenton et al. 2001; Fenton et al. 2005; Aral and Holmes 2006). However, what is meant by a 'sexual partner' is subjective. The Natsal studies define sexual partners as: "*People who have had sex together - whether just once, or a few times, or as regular partners, or as married partners*".(Erens et al. 2001) This definition emphasises that sexual partners include **all** people that participants have had sexual intercourse with, regardless of the social or legal relationship between people.

It may also be helpful to take account of the *type* or nature of sexual partnerships that people have had.(Mercer et al. 2009) However, this can be difficult to do as some partnerships, e.g. casual partnerships, are difficult to define because they lack an objective measure of their status (relative to, for example, cohabiting partnerships or married partnerships). It is also worth noting that partnership status can change over time, thus while a partnership may not be regular at the time of the survey, it may go on to become so.

If space in a questionnaire is limited it will be necessary to just ask one or perhaps two questions on the number of sexual partners participants have had. The choice of time-frame should be dictated by the research question. A recent time frame (e.g. the past year) is useful to give a measure of current sexual activity and/or risk exposure. This time frame is not however very useful for differentiating people, as the majority of people have only one sexual partner in a year, (Johnson et al. 2001a) so a longer time-frame may be preferred (e.g. the past five years or life-time), which is also informative of cumulative or past risk exposure.

3.3 Questions about condom use

A study looking at sexual risk should include questions on whether or not sexual behaviour was protected from the risk of STIs or unplanned pregnancy, typically by the use of condoms. Numerous questions have been used to ask about condom use (see for example, Slaymaker 2004), but there is again no one, 'perfect' question so the question(s) asked will depend on the research topic.

Questions on condom use can be either partnership-specific or time-period specific. For example, asking: "*Did you always/sometimes/never use condoms in the past four weeks?*" gives no indication of condom use with particular partners. While asking participants about condom use with their most recent partner is not particularly informative in terms of their use of condoms over a particular time period, or indeed, about condom use in general with a particular partner.

It is important to remember that non-use of condoms does not always equate to sexual risk behaviour. For example if the participant or their partner is, or is trying to become, pregnant, or they are using other more effective and/or long-acting contraceptive methods (especially if protection from STIs is not required due to mutual monogamy). Reasons for not using condoms, and more generally contraception, may therefore need to be established via further questions.

Asking whether or not condoms were used does not capture whether or not condoms were used correctly. Epidemiological studies may need to ask additional questions about the timing of condom application and whether or not the condom slipped or broke during intercourse to get an understanding of the likely STI/HIV risk exposure. Of course, questions on condom use are subject to social desirability bias as it is widely-accepted that condoms should be used to protect against STI/HIV in particular.

Social desirability bias is not limited to questions on condom use, and may affect data collected for questions on a range of topics, especially those concerned with risk behaviours and behaviours that are not considered culturally or socially acceptable (e.g. injecting drug use). Care therefore needs to be taken that data obtained from surveys is regarded and documented as *reported* behaviour rather than actual behaviour.

3.4 Questions about sexuality, attraction and identity

The Natsal studies ask questions about sexual attraction and sexual experience and ask participants to select their response from a seven-point scale, reflecting how it is well-established that these exist on a continuum. Furthermore, the use of the terms 'heterosexual' and 'homosexual' are not used in the Natsal studies as people do not always identify with these labels, and also because their behaviour may differ from

their identity and/or attraction. It is therefore important for understanding sexual risk *behaviour* not to use responses to question(s) about sexual attraction to filter participants to questions on same-sex behaviour. Questions should distinguish between sexual attraction, identity and behaviour.

Regardless of the questions asked when studying sexual behaviour and risk, the language used should be non-judgmental, meaningful and widely acceptable. While it can be helpful to use questions from previously-conducted studies such as the Natsal studies, to maximise reliability, validity, and comparability, it is still wise to pilot the questionnaire, especially if the target population is different and/or the questionnaire has been translated into a different language.

4. Important future developments and needs in the area of sexual behaviour and risk

Technological advances in social research methods and the use of biological markers are continuing to offer new opportunities, increasing the utility of surveys as rich sources of sexual risk behaviour data.

4.1 Using computer technology to deliver surveys

A large proportion of the population nowadays has access to a computer. This means that an increasing proportion of people are computer-literate and thus able to complete questionnaires as computer-assisted self-interviews ('CASI'). As discussed above, CASIs have a number of advantages over pen-and-paper administered surveys. CASIs can also be delivered via the internet, which means that a large sample can be quickly and cheaply obtained without any geographical constraints. However, researchers are unlikely to be able to control who completes questionnaires accessed through the internet, which may not be desirable, for example in terms of sample representativeness.

4.2 Incorporating biological sampling

The best measure of sexual risk behaviour is a biological marker. Study participants are generally willing to provide biological samples such as urine and saliva that do not involve invasive collection, while requests for blood samples are less well received and may have the added complication of requiring a research nurse to collect the sample, adding to the cost of administering the survey (Craig and Mindell 2008). Technological advances are however facilitating the use of biological samples that can be obtained via unobtrusive methods of collection, expanding the range of biomarkers that can be studied as part of a survey.

Technological advances have also meant that an increasing range of STIs can be tested from one sample. However, while tests used in surveys may be sufficiently sensitive for population prevalence estimates, they may not reach the level of clinical diagnostic accuracy. For example, due to the type of specimen collected and/or the need to transport or freeze samples. There may therefore be concern about relaying results of tests administered as part of a survey to participants, since there may be adverse consequences of relaying both false-positive and false-negative results. Deciding whether or not to return biological test results to study participants or to undertake 'linked-anonymous testing' therefore requires careful consideration

4.3 Broadening the topic and target population

Sexual health is not simply the absence of disease, rather an individual's experience of sexual function, relationship quality, reproductive choice and the interplay between physical health and sexual well-being. Increasing partnership breakdown means that an increasing proportion of older people are having new sexual partnerships, often without using condoms.(Mercer et al. 2009) It is important therefore that sexual risk behaviour surveys consider sampling all ages to understand the relationship between physical and sexual health, in its broadest sense, throughout the life course.

Conclusions

This overview has discussed some of the key issues that should be considered when measuring sexual behaviour and risk. While conducting studies on this topic is challenging because of the highly-sensitive subject matter, it is possible to reduce bias and increase the accuracy of the data collected through careful planning and preparation.

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