The Effect of Interview Method on Self Reported Sexual Behaviour and Perceptions of Community Norms in Botswana

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Rationale for Study
Botswana has the second highest HIV/AIDS prevalence amongst men and women aged 15 and older in the world at 17.6% . As the epidemic continues across sub-Saharan Africa, policies and programs have increasingly focused on identifying effective strategies to prevent further infection. Changing sexual behaviors is one way of averting new infections. Evaluations of the effects of such programs require measures of sexual behaviour (and changes over time). Therefore, research that accurately reports sexual behaviour is much needed as previous data has often shown to be of questionable validity. A study in Botswana investigated significant differences in impact of interview methods on self-reporting of sexual behaviours and attitudes.

Methodology
Three different survey methods for sexual behaviour self-reporting were compared: face-to-face (FTF) interviews, ballot box (BB) questionnaires and a version of randomised response called ‘forced response’ (FR). In comparing responses to each of these survey methods, significant differences in the reporting of sensitive behaviours and perceptions were examined.

Setting and Methods – A two stage sampling approach was utilised to ensure a random sample distribution similar to Botswana’s population, size and distribution in the south eastern area. 1,567 subjects were enrolled in the study. 563 assigned to FTF, 557 to BB and 447 to FR. Few statistically significant differences in background characteristics were found. Details of the three methods are detailed in the orange box opposite.

Difference between Methods – Both BB and FR protect participants from factors that could lead to biased responses. BB forms included a unique ID number. With FR, only the participant was aware of the dice roll or the question to which the answer pertains, adding further security.

The Direction of Bias – A problem inherent to research on survey methodology is that it is not usually possible to know the “absolute truth”. This way to do this objectively, is to compare self-reported behaviour to biomarkers for sexual behaviour, as Minnis et al (2009) have done. As a result, studies often must make assumptions about the “direction of bias”. In 18 previous studies, a clear gender pattern emerges with women generally under reporting their sexual behaviour but men equally over and under reporting.

Variables of Interest – Designed to compare reporting patterns relevant to HIV/AIDS risk behaviour in Botswana, the study topics focused on condom use, sexual partnerships and alcohol use. The FTF and BB questionnaires also included sections on perceptions of condom use and sexual partnering, particularly concurrent partnerships. For the purposes of analysis, the variables were dichotomised into ‘agree’ and ‘disagree’ for the multivariate analysis. All three methods included questions on actual reports of sexual behaviour, reported condom use and reported alcohol use. In total there were 76 variables across both FTF and BB and 27 variables for FR that could be compared with the other two methods.

Results

BIVARIATE ANALYSIS & RESPONSE PATTERNS (FTF vs. BB)

- Of 76 total variables, 38% and 30% show significant differences (at the p<0.01 level) for women and men respectively.
- Many (32%) of differences for women were found in perceptions questions, whereas only across perceptions and behaviours for men.
- For both methods: positive attitudes were recorded on condom usage for protection against HIV/AIDS, the encouragement of friends to use condoms and usage with mutual sexual partner.
- Negative responses recorded on their views on concurrent partnerships with similar numbers claiming to prefer partner fidelity.

MULTIVARIATE ANALYSIS4 (FTF vs. BB)

- Perceptions questions were more responsive to interview method than reported behaviours questions.
- Perceptions on condoms differed in 69% and 50% of 16 variables for women and men.
- Of the 24 and 19 variables with significant differences between interview methods for women and men, 11 and 6 are highly significant (at the p<0.01 level) and of these, 10 and 4 come from the perceptions sections.
- Women were noted as more sensitive to ways of asking, with differences most notable in regard to perceptions questions rather than behavioural questions.
- Men’s reports of partnerships (within sexual behaviour) were more responsive to method with 18% significantly different vs. 4% for women.

FORCED RESPONSE ANALYSIS

- Dramatic differences seen between FR and the two other methods.
- All 27 variables compared show significant differences (at the p<0.05 level) for women and 24 of 27 for men.
- Individuals report significantly higher values for every question related to sexual behaviour and partnerships (one exception for men).
- Differences in values also extends to condom and alcohol usage.
- All report generally less condom use in FR compared with BB and FF.
- Significantly larger percentages report concurrent partnerships and age gaps of more than 10 years between partners in FR.

In conclusion, the effect of interview method was not the same for all types of questions - perception questions were more sensitive to the interview method than reported sexual behaviour, alcohol use or condom use. There also appears to be a hierarchy of methods of interview - BB participants are slightly more likely to report sensitive behaviours than FTF participants, while FR produced dramatically higher reports than either of the other two methods.

Next Steps

Further research should be conducted to (a) identify why perceptions appear more responsive than behavioural questions to method of interview and (b) question the nature of differences within genders. Finally whilst the FR technique seems promising, there are some perceived drawbacks due to the method itself (namely interviewer effects and respondent unease when asked not to tell the truth) which need investigation and possible refinement before further adoption.

Background
The questionable validity of self-reported sexual behaviour has been demonstrated through a number of different analyses. Some compared reports of sexual behaviour across similar measures with incompatible results4. Others demonstrated self-reports that are inconsistent with object measures e.g. respondents who claim to never have had sex but who are found positive for an STI5. Literature proposes that respondents do not accurately report sensitive behaviours due to embarrassment or fear of lack of confidentiality. To better understand this and improve data quality, researchers are investigating methods other than traditional face-to-face interactions.

Three Methods of Questioning

(1) Face-to-face interviews utilised the standard approach of a trained interviewer posing questions to a subject who responds to the interviewer directly.

(2) Ballot Box, similar to FTF but the respondent records their answers on a form not seen by the interviewer during or after the interview. Upon completion, a unique ID number is written on the form adding a level of confidentiality for the respondent.

(3) Forced Response is a variation of a randomised response, first used by Warner (1965). Similar to the BB approach of ensuring confidentiality and protecting against embarrassment, it goes further by using a participant controlled randomised device not seen by the interviewer. In this study, dice were used to randomise ‘forced yes’, ‘forced no’ and ‘truthful’ responses. Subjects were given two dice, a box in which to throw the dice so that they could not be seen and a card that explained the instructions. Totals of 2, 3 and 4 required a ‘forced yes’ response, 11 or 12 required a ‘forced no’ response and all other numbers required the truthful answer. To ensure that the method was understood a practice session was undertaken with each respondent.

VERIFICATIVES

Interviewer Effects

- Testing for interviewer effects can provide further insight into how well each method of interviewing was implemented.
- Study measured for effect across all questions and all methods using interclass correlation coefficient (ICC).
- Results support the effectiveness of BB as a method:
  - Of 69 variables included, 23% show evidence of interviewer effect in FTF compared to only 1% for BB.
  - Most affected variables are perceptions questions.
- Women’s responses more influenced by interviewer method
  - Larger percentage were significantly different (46% to men’s 32%)
- FR also showed evidence of interviewer effects with 11 of 27 variables showing effect (nearly double FTF).

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