Audio computer assisted self interview and face to face interview modes in assessing response bias among STD clinic patients

K G Ghanem, H E Hutton, J M Zenilman, R Zimba, E J Erbelding

Background: Audio computer assisted self interview (ACASI) may minimise social desirability bias in the ascertainment of sensitive behaviours. The aim of this study was to describe the difference in reporting risk behaviour in ACASI compared to a face to face interview (FFI) among public sexually transmitted diseases (STD) clinic attendees.

Study design: Randomly selected patients attending a public STD clinic in Baltimore, Maryland, sequentially took an ACASI formatted risk behaviour assessment followed by an FFI conducted by a single clinician, with both interview modalities surveying sexual and drug use behaviours. Binary responses were compared using the sign test, and categorical responses were compared using the Wilcoxon signed rank test to account for repeated measures.

Results: 671 (52% men, mean age 30 years, 95% African American) of 795 clinic attendees screened consented to participate. Subjects affirmed sensitive sexual behaviours such as same sex contact (p=0.012), receptive rectal sexual exposure (p<0.001), orogenital contact (p<0.001), and a greater number of sex partners in the past month (p<0.001) more frequently with ACASI than with an FFI. However, there were no differences in participant responses to questions on use of illicit drugs or needle sharing.

Conclusions: Among STD clinic patients, reporting of sensitive sexual risk behaviours to clinicians was much more susceptible to social desirability bias than was reporting of illegal drug use behaviours. In STD clinics where screening of sexual risk is an essential component of STD prevention, the use of ACASI may be a more reliable assessment method than traditional FFI.
METHODS

Participants

All individuals between the ages of 18 years and 65 years presenting to the Baltimore City Health Department Eastern STD Clinic between July 2000, and August 2001 for STD care were eligible and were randomly approached and sequentially recruited to participate in a cross sectional study on the prevalence of mood disorders and their relation to STD risk behaviours.

Measures

Following informed consent, participants took an ACASI formatted interview including questions on number and types of sex partners, condom use during different types of sexual contact, drug use, and questions from a depressive symptoms screening tool, all as part of a study with separate aims related to mood and STD risk. This procedure was done in a private room. They then were evaluated by a single female clinician who performed a standardised STD clinic risk assessment in FFI format for the purposes of routine clinical care, along with medical history and STD examination. The clinician was trained on performing the clinical risk assessment to ensure consistency between the two testing modalities, and reproducibility of the FFI mode among all study participants. She was monitored by clinical supervisory staff (EJE) periodically over the course of the study for added quality assurance. Participants had the option of not answering questions in either interview mode. Only responses to questions asked in the FFI that were the same as questions posed in the ACASI formatted risk assessment formed the basis of this analysis.

Human subject considerations

The study was approved by the institutional review boards of the Johns Hopkins Medical Institutions and the Baltimore City Health Department. Informed consent was obtained from all participants. The consent explicitly stated that study data were protected from outside disclosures by a certificate of confidentiality issued by the Department of Health and Human Services.

Statistical analysis

All data analyses were performed using STATA (version 8.0, College Station, TX, USA). We compared all participants’ individual responses in the ACASI formatted risk assessment to responses in the FFI. Analyses were stratified by age and sex. We used the sign test for comparisons involving binary responses, and the Wilcoxon signed rank test for categorical ones. These statistical techniques were chosen as they took into account the nature of the study design which yielded repeated measures on the same individual (the same individuals being compared by ACASI and FFI modes). p Values of <0.05 were considered statistically significant.

RESULTS

Study participants

Of 795 patients approached for study participation, 671 (84%) consented to participate and completed the initial interview sequences and clinical evaluation. Men were more likely to refuse study participation than were women (81 of 401 men refused versus 43 of 394 women; p = 0.001), but those refusing to participate were no different in age or race from those who consented. Table 1 summarises the demographic and clinical characteristics of study participants. More than 50% of participants had a high school diploma or its equivalent, and 23% had some college experience. Less than 1% of participants had no formal schooling.

Sexual behaviours

Table 2 compares the responses to questions about sexual behaviours given in the ACASI as compared to the FFI. Participants were more likely to admit to having multiple sex partners in the past 30 days in the ACASI as compared to the FFI (p = 0.001). This response bias remained significant in analyses stratified either by age or by gender. All participants were more likely to admit to oral-genital exposures in the ACASI than the FFI (p<0.001). Women were more likely to report receptive rectal exposures (p<0.001) in the ACASI than the FFI. In the age stratified analysis, a similar trend was observed in all age groups, but this observation was driven mostly by the female respondents.

| Table 1 Demographic and clinical characteristics of study participants by sex |
|-------------------|-------------------|
| Characteristic    | Respondents (n=671) |
|                   | Men (n=48)        | Women (n=52) |
| Number (%)        | 48                | 52            |
| Age (years) mean | 30.9              | 28.8          |
| Race/ethnicity (%)|                   |               |
| African American  | 97                | 93            |
| White             | 3                 | 4             |
| Other             | 0                 | 3             |
| Education (%)     |                   |               |
| No formal schooling| 0                | 0.9           |
| 8th grade or less | 4.0               | 3.4           |
| Some high school  | 17.9              | 21.7          |
| High school diploma| 56.4             | 52.7          |
| Some college      | 21.6              | 21.3          |
| Reason for visit (%)|               |               |
| Contact to known STI | 12               | 15            |
| Symptoms          | 59                | 44            |
| Check up          | 29                | 41            |
| HIV infected (%)  | 2.5               | 1.0           |
| STI (%)           |                   |               |
| Gonorrhea         | 17                | 6             |
| Chlamydia         | 5.0               | 7.2           |
| NGU               | 39                | N/A           |
| Trichomoniasis    | N/A               | 11.7          |

STI, sexually transmitted infection; HIV, human immunodeficiency virus. NGU, non-gonococcal urethritis defined as ≥5 polymorphonuclear leucocytes/HPF on Gram stained urethral secretions.
Overall, participants were more likely to admit to ever having same sex exposures in the ACASI interview than the FFI (p = 0.012); they were also more likely to endorse items related to having ever exchanged sex for money or drugs in the ACASI interview (p = 0.01). In analyses stratified by age and gender, women (p < 0.001) and respondents less than 25 years of age (p < 0.001) demonstrated a response bias between interview modes for these categories of responses, while men and older respondents did not.

Drug using behaviours

Table 3 summarises the drug using behaviours measured in our participants. Overall, approximately 10% of the participants admitted to ever injecting illicit drugs, and there was no difference in reporting illicit injection activity in ACASI compared to FFI. Women were more likely to report injection drug use in FFI than in ACASI; neither men nor different age groups showed this discrepancy although they tended to report more IDU in FFI. There was no significant reporting bias between interview modes among those reporting IDU.

Missing answers

Participants could opt out of answering questions in either interview mode. For the drug related questions, <1% of subjects did not answer the questions in each interview mode. For questions related to sexual behaviour, 16% of participants taking the ACASI chose not to answer the questions in contrast to 0.3% in the FFI. Of the 378 patients who skipped the rectal exposure question in ACASI, 377 (99.7%) denied rectal exposure during the FFI. Similarly, of the 117 patients who skipped the oral exposure question in ACASI, 92 (78.6%) denied oral exposure during the FFI. Of the 98 patients who opted out of reporting the number of sex partners they had in the past 30 days in ACASI, 85 (86.7%) reported having 0-1 partner during the FFI.

DISCUSSION

This study demonstrates a strong social desirability bias in the reporting of sensitive sexual behaviours among STD clinic attendees. We found that study participants were much more likely to endorse certain sensitive sexual behaviours by ACASI than in the FFI, suggesting that in our population,
social desirability bias operates during the reporting of sensitive sexual behaviours in standard clinical practice. This bias is notable because these patients are presenting for care at an STD clinic, where they should expect to answer questions about their sexual risk behaviours. Substantial social desirability bias of patients in face-to-face discussions with clinical providers may impact the quality of care. Several studies have derived from comparison of the responses given by the same person obtained when varying interview modes. Other studies, however, have included biological variables as a validation of some self-reported data. Thus, some of the differences reported in our study that are attributed to social desirability bias may reflect other inherent biases. Furthermore, in our study, under-reporting on certain stigmatising behaviours (drug use and receptive rectal contact in men) may have occurred with both interview modes which would have made it impossible to detect any response bias. As previously mentioned, specific mode biases detected in special populations, such as urban STD clinic attendees, might not generalise to other groups. Finally, 16% of respondents opted out of answering questions regarding sexual behaviours in the ACASI group compared to the FFI. Answers given by these participants during the FFI favoured the less stigmatising behaviour. While we believe that the degree of non-response for this question would have made it less likely to detect a response bias even when present, we cannot verify this assumption from our data.

All of our participants first underwent ACASI interview immediately followed by an FFI administered by a single clinician. We do not know whether respondents might have felt pressure to maintain consistency in their responses with the sequential risk assessments. Because the sequence always began with the ACASI, any reporting bias for consistency’s sake would have biased our results towards the null. It is not possible, however, to rule out an order effect bias in this study. Some individuals may have felt that they could avoid answering sensitive questions in the FFI because they had already provided the answer earlier with ACASI. A randomised crossover design changing interview sequences would have allowed us to address this, but the flow scheme we used was designed to address our main study aim related to mood and risk behaviour. The sex of the clinician may also have influenced some of the differential responses observed between the male and female participants. More research is needed to ascertain how differential reporting, often attributed to social desirability bias, may differ by clinical provider and by patient.

Finally, the fact that a single research clinician was responsible for the clinical risk assessment meant greater standardisation of the FFI, but makes our results less generalisable to reporting biases that might exist in data gathered in STD clinics as a whole. Future studies evaluating the role of ACASI in the STD clinical setting should include multiple interviewers to better reflect standard clinical practice. We have shown that social desirability bias exists for STD clinic patients when reporting certain sensitive sexual behaviours to their clinician. More complete disclosure of these behaviours may improve with confidential interviewing using computer technology, though gender and age may have a role in optimising data collection for sensitive risk behaviours. Further research to evaluate the feasibility of integrating confidential computer interviewing into STD clinic operations, as well as its impact on quality of care, is needed.

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Authors’ affiliations K G Ghanem, H E Hutton, J M Zenilman, E J Erbelding, Johns Hopkins University School of Medicine, Baltimore, MD, USA R Zimbo, New York City Department of Health and Mental Hygiene, New York, NY, USA E J Erbelding, Baltimore City Health Department, Baltimore, MD, USA

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