The validity of drug use responses in a household survey in Puerto Rico: comparison of survey responses of cocaine and heroin use with hair tests

Héctor M Colón, Rafaela R Robles and Hardeo Sahai

Background Despite the widespread use of household surveys to assess the epidemiology of illicit drug use and abuse, there is very little information about the willingness of respondents to disclose their use of drugs in household studies outside the US.

Methods As part of a household study of substance use disorders in Puerto Rico, we collected hair specimens from a sub-sample of 114 respondents. Hair specimens were screened using a radio immunoassay. Screened-positive specimens were confirmed using gas chromatography/mass spectrometry.

Results Using hair-test results as the standard, specificity of self-reports was 98% or higher for both drugs. The sensitivity of all self-reports was low, although lifetime use reports had somewhat higher sensitivities. The sensitivity of self-reports of recent cocaine use was particularly low, 7.1%. The sensitivity of heroin use reports was somewhat higher, 33.3% for recent use and 66.7% for lifetime use. The estimate of recent cocaine use based on hair tests was 13.7 times the estimate generated from interview reports. For heroin use, the test-based estimate was 2.9 times the rate generated from the interview reports. A shift from the cut-off level of 0.2 ng/mg to 0.5 ng/mg had only a marginal improvement on validity, with sensitivity increasing from 7.1% to 11.1% for self-reported recent cocaine use.

Conclusions The results suggest that drug users, for the most part, are not willing to disclose their use of drugs in household surveys in Puerto Rico. Methods to increase the willingness of respondents to disclose their use of drugs are needed.

Keywords Drug use reports, hair tests, household surveys, reproducibility of results, health surveys, substance-related disorders, Puerto Rico

Accepted 9 January 2001

The misuse of drugs has been recognized as a major public health problem in many countries. Concurrent with this emerging concern, household surveys are increasingly being used to study and monitor drug misuse and abuse. Perhaps the best known programme of annual household surveys that continuously monitors the non-medical use of drugs in the general population is the US National Household Survey of Drug Abuse. Nonetheless, household surveys of drug misuse are also being conducted in several other countries. Moreover, the development of standardized diagnostic instruments of psychopathology have provided further impetus to the use of household surveys to study the non-medical use of drugs and substance use disorders. Household surveys using the Diagnostic Interview Schedule (DIS) or the Composite International Diagnostic Interview (CIDI) have been conducted in the US, Canada, England, New Zealand, Australia, Korea, Taiwan, and Puerto Rico, among others.

Despite the widespread use of household surveys to assess the epidemiology of drug misuse and abuse, there is very little information about the willingness of respondents to disclose their use of drugs for non-medical purposes in household studies. The possession or use of drugs without medical prescription constitutes illegal behaviour in many countries and is also stigmatized to varying degrees in many societies. Thus, responses obtained from household interviews can be expected to be affected.
by the sensitive nature of the behaviour. Validity research of self-reports of drug use is still in its early stages. For the most part, validity studies have examined the response patterns of respondents in special sub-populations such as drug treatment patients, criminal justice involved populations, employees in work settings, and obstetric patients.

The recent availability of toxicological tests that can detect cocaine and opiates in hair greatly facilitates the study of the validity of drug use reports in community samples. Hair tests offer some advantages over urinalysis for community studies. Compared to urinalysis, the collection of hair specimens is less embarrassing and intrusive for study subjects. Hair samples can be stored at room temperature and do not need to be processed shortly after collection. Moreover, the window of detection of drug use in hair tests is considerably wider than that of urinalysis; approximately 3 months with hair compared to 2–3 days with urinalysis. Nonetheless, hair tests are not without limitations. Compared to urinalysis, hair tests are usually more expensive and a non-trivial fraction of study subjects might not be able to provide specimens due to baldness or very short hair cuts.

One of the first studies to directly compare biological markers with survey responses from household interviews examined the reports of 322 adults in Chicago, Illinois. This study compared self-reports of cocaine and heroin use with results of toxicological tests of hair samples. With the hair-test results as the standard, the specificity of self-reports was found to be high. Sensitivity was found to be low. Of the 111 respondents testing positive to cocaine, only 20 reported use of cocaine in the past month and 4 of the 13 respondents with a positive heroin test reported heroin use. The findings of this study suggest that rates of drug use derived from household surveys can considerably underestimate the true rates of use because respondents are not likely to disclose their drug use in the study interview.

The validity of drug use reports in populations outside the US mainland is largely unknown. For the most part, validity studies have been conducted in the US mainland and have not been designed to assess differences by national origin. In this context, the population of Puerto Rico is of cross-cultural epidemiological interest because of its strong Hispanic heritage markedly influenced by the US mainland socio-cultural system. Yet, previous surveys of drug use and abuse in Puerto Rico, similar to those conducted elsewhere, lack information about the validity of self-reports of drug use.

As part of a research project aimed at estimating the rates of substance use disorders in the general population of Puerto Rico, we collected hair specimens from a sub-sample of household respondents. The purpose of the study was to assess the validity of drug use self-reports of the adult household population of Puerto Rico by comparing survey responses to drug use questions with toxicological tests of hair samples.

**Methods**

**Sampling and subjects**

The sample of the larger study was a stratified cluster sample of all households in Puerto Rico. To increase the probability of selecting drug abusers in the sample, household segments in the high-risk areas and young male adults were oversampled. The island territory was stratified on the basis of substance abuse problem indicators (i.e. per capita rates of drug overdose arrests, drug treatment admissions, drug violation arrests, and AIDS and hepatitis B cases among drug users). Three strata were derived corresponding to Municipalities with high, medium, and low rates of drug problem indicators. Household segments within each stratum were selected in three stages. In the first stage, a systematic selection of Census Block Groups (CBG) was made with probability proportional to the number of households in the CBG. The second selection stage consisted of a random selection of one block within each selected CBG. In the third stage, a segment of approximately 20 households was selected within each block. A total of 468 household segments were selected, 266 in the high-risk stratum, 117 in the medium-risk stratum, and 85 in the low-risk stratum.

Fieldwork was conducted between January 1997 and March 1998. Field enumerators visited the selected household segments and listed all residents 18–64 years old. The lists of residents were read over the phone and processed by a random selection software designed to select five males 18–34 years old, three females 18–34 years old, and one male and one female 35–64 years old from each household segment. Enumerators were able to visit 442 (94.4%) of the 468 selected household segments and to list the residents in 95.8% of the households. Field enumerators proceeded to contact the selected individuals and invite them to participate in the study interview. A monetary incentive of US$20 was offered for the time and effort of the interview. Of the selected individuals, 90.8% completed the assessment interview. These data yield an overall response rate of 85.8%.

To examine the validity of drug use self-reports in the entire adult household population of Puerto Rico, in one of every two enumerated segments, one of the subjects selected for the larger study was randomly re-selected for participation in the validity study. Upon completing the interview, the respondents that had been selected for the validity study were asked to provide approximately 3 cm of hair from the scalp. Respondents were not told about the hair test until after they had completed the interview. Participation in the validity study entailed an additional incentive of US$10. Figure 1 depicts the recruitment and attrition of participants for the validity study at various stages. Of the 221 individuals selected for participation in the validity study, 28 (12.7%) refused to participate in the interview phase or could not be located by the enumerators to be invited to participate. 41 (18.6%) did agree to the interview but refused to provide a hair sample, 11 (5.0%) consented to providing a hair sample but had no scalp hair, and 27 (12.2%) of the specimens collected were not processed at the laboratory due to insufficient quantity. All the study procedures were reviewed and approved for protection of human subjects by an Institutional Review Board previous to study implementation.

**Self-reported measures**

To increase the anonymity and privacy of the study interview, the interview was conducted over the phone. Consenting respondents were asked to dial the project telephone number to be interviewed. Respondents were offered the use of a cellular phone. The interview protocol consisted of a computer aided telephone interview. Interviewers were trained during a 10-day period in the administration of the interview protocol and the use of the computerized interview. The computer program implemented question skip patterns, did not permit answers
to be recorded outside of the valid ranges, and performed consistency checks. An interviewing supervisor was present at all times. The supervisor handled a console that allowed him or her to listen to the interviews. The supervision protocol entailed listening to 5-minute stretches of interviews and providing feedback to the interviewer at the end of the interview.

The interview protocol included the core substance abuse modules of the CIDI, version 2.1. This version incorporates the DSM-IV and ICD-10 diagnostic criteria. A Spanish translation and adaptation of a previous version of the CIDI was developed and tested among Spanish-speaking subjects, mostly from Puerto Rico. The substance abuse modules of the CIDI version used in our study were very similar to those of the version previously translated into Spanish and tested. The two versions differed in that the previous version incorporated DSM-III-R nosology and the DSM-IV nosology incorporated in the newer version eliminated a number of DSM-III-R criteria.

In the CIDI, respondents are asked if they have ever used, for non-medical purposes, each of nine classes of drugs, including cocaine and heroin, on at least five occasions. Negative responses to non-medical use on at least five occasions were followed by questions about ever use of each class of drug. The drug use questions were designed so the respondent would not have to mention drug names over the phone. The drug names used included the terms used for the different forms each drug was sold and referred to in the street drug markets in Puerto Rico (e.g. cocaine, crack, base). The interview protocol also included questions about period of most recent use of each drug. On the basis of responses to these questions, three separate dichotomous measures of drug use reports were generated for each drug: (1) use in the previous 3 months, (2) use in the previous year, and (3) lifetime use.

Toxicological tests
Hair segments were cut at the base of the crown as close to the scalp as possible. The samples were then wrapped in foil, enclosed in a plastic bag, and coded. Specimens were mailed to the Psychemedics Laboratory (Psychemedics Corporation, Culver City, California) for toxicological analyses. A total of 141 hair specimens were collected and sent to the laboratory; 27 specimens could not be processed and tested due to insufficient quantity.

At the laboratory, hair segments were washed for 15 minutes in ethanol and at least three times for 30 minutes each in phosphate buffer, and then screened using a radio immunoassay. Samples shorter than 3 cm were analysed in toto. All specimens exceeding 0.2 ng/mg of cocaine or its metabolic equivalents (benzoylecegonine or cocaethylene) were confirmed for cocaine using a gas chromatography/mass spectrometry procedure. Similarly, all specimens exceeding 0.2 ng/mg of opiate equivalents (codeine, morphine, or monoacetyl morphine) were confirmed for opiates using gas chromatography/mass spectrometry. All confirmed cocaine samples that identified cocaine or its metabolites at a level exceeding 0.2 ng/mg were considered to be cocaine-positive specimens and confirmed opiate samples that identified opiates or their metabolites at a level exceeding 0.2 ng/mg were considered to be opiate-positive specimens. We failed to request from the laboratory information about the specific substances detected in the tests (e.g. parent cocaine or its metabolites). Thus, this information was not available for reporting or analysis.

Statistical analyses
Descriptive statistics were computed for the hair-test results. Unweighted sample prevalence estimates were compared across
measures within each drug. Paired differences between the proportion indicating use on the interview and the proportion testing positive on the toxicological test were evaluated using the McNemar test. The validity of the interview reports were evaluated against the hair-test results by calculating specificity and sensitivity.

Results

Table 1 presents the demographic characteristics and drug use self-reports of the 114 respondents that provided usable hair specimens compared with the 41 respondents that agreed to be interviewed but declined to provide hair specimens. Compared to the respondents that provided usable hair specimens, a higher proportion of the respondents that declined to provide hair specimens reported not having completed high school (36.6% versus 24.6%) and ever having used cocaine (9.8% versus 3.5%). However, none of the differences were statistically significant.

Table 2 shows descriptive statistics of the lengths of the hair specimens and the results of the toxicological tests. Hair-specimen length varied from 1 cm to 4 cm, with a mean length of 3.2 cm and a median of 3.9 cm. Specimens less than 3 cm constituted 31.6% of the specimens analysed. Of the 114 specimens tested, 14 screened positive to cocaine and were also found positive by confirmation, and 3 specimens screened positive to heroin and were confirmed positive. Levels of cocaine detected in the confirmed samples ranged from 0.3 to 151.1 ng/mg (median 1.9 ng/mg). The three confirmed heroin samples had heroin levels detected of 1.9, 5.7, and 7.5 ng/mg, respectively. We compared the test results of the samples less than 3 cm in length with the results of the samples measuring 3 cm or more and found very similar proportions in the two groups. Of the 36 samples measuring less than 3 cm in length, 5 (13.9%) tested positive for cocaine and one tested positive for heroin (2.8%). Among the 78 samples that measured 3 cm or more, 9 (11.5%) tested positive for cocaine and 2 (2.6%) tested positive for heroin. None of the differences were statistically significant ($P = 0.72$ and $P = 0.95$, respectively).

Table 3 shows the comparisons of the sample prevalence rates of cocaine and heroin use across the toxicological and self-reported measures. For cocaine, the McNemar $\chi^2$ tests indicate that hair testing yielded a higher prevalence rate than any of the interview responses of drug use. The prevalence estimate based on the hair tests was 13.7 times the estimates generated from the interview reports of use in the past 90 days and during
the past year, and 3.5 times the estimate generated from the interview reports of lifetime use. In the case of heroin, the test-based estimate was 2.9 times the rates generated from the interview reports of use during the last 90 days and past year. However, the test-based estimate and the estimate derived from the interview reports for lifetime use were identical, 2.6%. The results of the McNemar tests indicate that the differences between hair-test results and interview reports of heroin use were not statistically significant.

Estimates of specificity and sensitivity are shown in Table 4. Ninety-day and past-year reports are shown together since the results were identical. Specificity was 98% or higher for all the self-reports of both drugs. Sensitivity estimates were all low, although they improved somewhat with reports of lifetime use. Sensitivity was particularly low for reports of past 90 days and past year cocaine use, 7.1%. Sensitivity estimates of heroin-use reports were somewhat higher; 33.3% for reports of recent use (past 90 days and past year) and 66.7% for reports of lifetime use.

We evaluated the impact of raising the cut-off level for positive test results on the comparative analysis. A shift from the cut-off level of 0.2 ng/mg to 0.5 ng/mg as used by Farabee and Fredlund35 resulted in a loss of five positive cocaine cases. This upward shift had only a marginal improvement on validity, with sensitivity increasing from 7.1% to 11.1% for reports of recent cocaine use.

Conclusions

The results of this study show that, among the survey respondents consenting to the hair test, cocaine and heroin use was substantially underreported. When recent drug use was reported, it was detected by the hair test. However, when recent drug use was detected by the hair test, it was only rarely reported. Heroin use was somewhat more likely to be disclosed than cocaine use. Respondents testing positive were also somewhat more willing to disclose lifetime use than recent use. These results suggest that rates of illicit drug use derived from household surveys of the population of Puerto Rico may underestimate the true rates of drug use because cocaine and heroin users, for the most part, are not willing to disclose their use of drugs.

False positives, or reports of drug use not confirmed by biological markers, does not seem to represent a substantial problem in studies of drug use. Even community studies of active drug users that offer monetary incentives to those willing to disclose their drug use have reported low numbers of false-positives reports.36 The main threat to the validity of survey reports of drug use seem to lie in the lack of sensitivity of the reports.

Fendrich et al. studied the validity of drug use reports with a high-risk household sample in Chicago.25 In their study specificity was also generally high, 98.6% and 99.4% for reports of past month use of cocaine and heroin, respectively. Sensitivity of self-reports, on the other hand, were low, although also somewhat higher for heroin than for cocaine; 18.0% and 30.8%, respectively. As was also the case in our study, sensitivity improved somewhat with reports of use in more remote time periods.

However, the sensitivity of reports of recent cocaine use in our study was lower (7.1%) than that reported by Fendrich

<table>
<thead>
<tr>
<th>Measures</th>
<th>n</th>
<th>%</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocaine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hair test positive</td>
<td>14</td>
<td>12.3</td>
<td>6.2–18.4</td>
<td></td>
</tr>
<tr>
<td>Self-reports of use in past 90 days</td>
<td>1</td>
<td>0.9</td>
<td>0.0–2.6 &lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Self-reports of use in past year</td>
<td>1</td>
<td>0.9</td>
<td>0.0–2.6 &lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Self-report of lifetime use</td>
<td>4</td>
<td>3.5</td>
<td>0.8–6.9  0.013</td>
<td></td>
</tr>
<tr>
<td>Heroin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hair test positive</td>
<td>3</td>
<td>2.6</td>
<td>0.0–5.6</td>
<td></td>
</tr>
<tr>
<td>Self-reports of use in past 90 days</td>
<td>1</td>
<td>0.9</td>
<td>0.0–2.6 0.500</td>
<td></td>
</tr>
<tr>
<td>Self-reports of use in past year</td>
<td>1</td>
<td>0.9</td>
<td>0.0–2.6 0.500</td>
<td></td>
</tr>
<tr>
<td>Self-report of lifetime use</td>
<td>3</td>
<td>2.6</td>
<td>0.0–5.6  1.000</td>
<td></td>
</tr>
</tbody>
</table>

a Exact P-values of the McNemar χ² statistic.

The small sample size of our study and the fact that among the respondents testing positive on the hair tests only one respondent disclosed recent use of cocaine or heroin in the interview, impeded any further tests of potential correlates of drug use disclosure. Nevertheless, we do note that the respondent reporting recent use of cocaine was the same respondent that reported recent heroin use. This respondent had the third largest amount of cocaine (56.2 ng/mg), and the largest amount of heroin (7.5 ng/mg) detected.

Table 3  Sample prevalence rates by hair test and self-report (n = 114), Puerto Rico, 1997–1998

<table>
<thead>
<tr>
<th>Measures</th>
<th>n</th>
<th>%</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocaine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hair test positive</td>
<td>14</td>
<td>12.3</td>
<td>6.2–18.4</td>
<td></td>
</tr>
<tr>
<td>Self-reports of use in past 90 days</td>
<td>1</td>
<td>0.9</td>
<td>0.0–2.6 &lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Self-reports of use in past year</td>
<td>1</td>
<td>0.9</td>
<td>0.0–2.6 &lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Self-report of lifetime use</td>
<td>4</td>
<td>3.5</td>
<td>0.8–6.9  0.013</td>
<td></td>
</tr>
<tr>
<td>Heroin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hair test positive</td>
<td>3</td>
<td>2.6</td>
<td>0.0–5.6</td>
<td></td>
</tr>
<tr>
<td>Self-reports of use in past 90 days</td>
<td>1</td>
<td>0.9</td>
<td>0.0–2.6 0.500</td>
<td></td>
</tr>
<tr>
<td>Self-reports of use in past year</td>
<td>1</td>
<td>0.9</td>
<td>0.0–2.6 0.500</td>
<td></td>
</tr>
<tr>
<td>Self-report of lifetime use</td>
<td>3</td>
<td>2.6</td>
<td>0.0–5.6  1.000</td>
<td></td>
</tr>
</tbody>
</table>

Table 4  Validity statistics: interview reports versus hair-tests, Puerto Rico, 1997–1998

<table>
<thead>
<tr>
<th>Interview reports</th>
<th>Cocaine</th>
<th>Heroin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HT+ive³</td>
<td>HT–ive⁴</td>
</tr>
<tr>
<td>Past 90 days/past year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reported using</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Reported not using</td>
<td>13</td>
<td>100</td>
</tr>
<tr>
<td>Sensitivity = 7.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specificity = 100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifetime</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reported using</td>
<td>11</td>
<td>110</td>
</tr>
<tr>
<td>Reported not using</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Sensitivity = 14.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specificity = 98.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

³ Hair test positive.
⁴ Hair test negative.
et al. (18.0%). This difference could be an artefact of differential rates of study participation. In Fendrich’s study, 47% of the selected subjects agreed to participate in the interview phase, and hair specimens were obtained from 56% of interview respondents. The participation rates in our study were higher, 87.3% of the selected participants consented to the interview phase, and hair specimens were collected from 63.8% of interview respondents. In addition, the rate of self-reported lifetime cocaine use in our study was higher among those refusing to provide a hair specimen than among respondents that provided a hair specimen for testing. Thus, our sample could potentially include a larger proportion of drug use deniers than were present in the Chicago study.

Another potential explanation for the lower sensitivity of cocaine use reports when compared to heroin may lie in a combination of the difference in the rates of use of the drugs together with a higher propensity of users of both drugs to disclose use. A larger number of respondents (n = 14) tested positive to cocaine than to heroin (n = 3). Thus, users of both drugs will of necessity have represented a lower proportion of the cocaine use group than of the heroin use group. If users of both drugs are more likely to disclose use than users of any one drug, the sensitivity of the more frequently used drug (i.e. cocaine) will be lower than the sensitivity of the less used drug (i.e. heroin). In our study, only one respondent disclosed recent use of a drug. This respondent reported having used both cocaine and heroin, and tested positive to both drugs. The disclosure of the use of both drugs contributed more to increase the sensitivity of heroin reports (i.e. one out of three positive reports), than to the sensitivity of cocaine (i.e. one out of 14 reports).

Nonetheless, the small number of drug positives did not allow us to test this potential explanation.

Some of the limitations of this study merit comment. The validity estimates lack precision due to the small number of positive test results in the sample. Moreover, even though all screened-positive specimens were confirmed through gas chromatography/mass spectrometry, certain potential laboratory errors (i.e. false positives due to contamination at the laboratory) could have been more thoroughly addressed with a higher number of specimens. In particular, the number of positive tests could have been increased if the validity study had been limited to residents of the strata with the highest rate of drug problem indicators. However, the study would have then addressed the validity of self-reports among residents of a particular geographical region, and not that of the entire adult household population of Puerto Rico, as was the aim of the validity study. Only one respondent disclosed recent use of cocaine or heroin, precluding any further analysis of drug use disclosure. In addition, 31.6% of the hair specimens analysed were shorter than the length recommended for analysis (3 cm). Even though the proportion of positive test results among short (<3 cm) and adequate length samples (≥3 cm) were similar, the analysis of short strands could have potentially reduced the number of positive test results and the estimates of sensitivity derived from our data might be overestimated. In addition, a number of false negative self-reports may be due to very light users denying use. We increased the cut-off level for positive test results from 0.2 to 0.5 ng/mg and found only a marginal improvement on validity. We do note, however, that some toxicologists have argued that the levels of drug detected in hair may not be useful for distinguishing between light and heavy drug consumption.

Notwithstanding the limitations of this study, the results are compelling and raise a number of important implications for the epidemiological study of drug use disorders. Validity studies with larger household samples are needed to reliably estimate the impact of drug use underreporting on the estimates of drug use prevalence rates. Even low rates of false positive drug reports can have a larger impact on prevalence estimates among low-risk groups than false-negative reports. The impact of false drug use reports (i.e. false positives as well as false negatives) on drug use prevalence estimates in general population studies is yet unclear. Studies of differential validity of drug use reports across cultures and countries are also needed for cross-cultural epidemiological studies.

It is also unclear to what extent underreporting of drug use affects the validity of diagnoses of drug use disorders. Drug users who have experienced symptoms of a drug use disorder might be more willing to disclose their use of drugs than non-problem users. There is some evidence that lighter drug users are more likely to deny use than heavier drug users, and that cocaine users meeting criteria for DSM-III-R substance dependence are more likely to report use than non-dependent cocaine users. Thus, estimates of the prevalence of drug use disorders may be more valid than the estimates of drug use. This issue, highly relevant for substance abuse epidemiology, remains under-researched.

Finally, methods to increase the willingness of respondents to disclose their use of drugs are needed. Several studies have shown that drug use reports are sensitive to interview mode effects. Specifically, it has been shown that self-administered questionnaires yield higher rates of drug use reports than personal interviews, and that face-to-face surveys yield higher rates than telephone surveys. We should note, however, that since the respondents in our study were not selected or recruited by calls initiated by the project staff (e.g. through the use of random digit dialling), as is typical in telephone surveys, the findings on the effects of telephone surveys vis-à-vis face-to-face surveys are not necessarily applicable to our study. In addition, self-administered questionnaires have limited use for studies of drug use disorders due to the complicated skip patterns of a diagnostic interview and the literacy requirements of a self-administered questionnaire. Nonetheless, recent technological developments in computer technology now allow the integration of audio to computer assisted self-interviews (i.e. Audio CASI systems). The availability of portable computers and Audio CASI systems could help overcome the limitations of self-administered questionnaires and have been proposed by several researchers. Cross-cultural studies of the feasibility and acceptability of Audio CASI systems and of the validity of the responses are needed to examine if this new technology is useful for the epidemiological study of drug use disorders outside the US.

Acknowledgement

This study was conducted with funds from the Center for Substance Abuse Treatment under contract 270-95-0026.
KEY MESSAGES
- There is very little information about the willingness of respondents to disclose their use of drugs in household studies.
- The sensitivity of self-reports of recent cocaine use was 7.1%.
- The sensitivity of heroin use reports was 33.3% for recent use and 66.7% for lifetime use.
- The estimate of recent cocaine use based on hair tests was 13.7 times the estimate generated from interview reports.
- For heroin use, the test-based estimate was 2.9 times the rate generated from the interview reports.

References


