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A Comparison of Audio Computer-Assisted Self-Interviews to Face-to-Face Interviews of Sexual Behavior Among Perinatally HIV-Exposed Youth

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Abstract

Computer-assisted interview methods are increasingly popular in the assessment of sensitive behaviors (e.g., substance abuse and sexual behaviors). It has been suggested that the effect of social desirability is diminished when answering via computer, as compared to an interviewer-administered face-to-face (FTF) interview, although studies exploring this hypothesis among adolescents are rare and yield inconsistent findings. This study compared two interview modes

among a sample of urban, ethnic-minority, perinatally HIV-exposed U.S. youth (baseline = 148 HIV+, 126 HIV–, ages 9–16 years; follow-up = 120 HIV+, 110 HIV–, ages 10–19 years). Participants were randomly assigned to receive a sexual behavior interview via either Audio Computer-Assisted Self-Interview (ACASI) or FTF interview. The prevalence of several sexual behaviors and participants' reactions to the interviews were compared. Although higher rates of sexual behaviors were typically reported in the ACASI condition, the differences rarely reached statistical significance, even when limited to demographic subgroups—except for gender. Boys were significantly more likely to report several sexual behaviors in the ACASI condition compared to FTF, whereas among girls no significant differences were found between the two conditions. ACASI-assigned youth rated the interview process as easier and more enjoyable than did FTF-assigned youth, and this was fairly consistent across subgroup analyses as well. We conclude that these more positive reactions to the ACASI interview give that methodology a slight advantage, and boys may disclose more sexual behavior when using computer-assisted interviews.

Keywords

ACASI; Sexual behavior assessments; HIV + youth

Introduction

For the first time in history, U.S. children who acquired HIV perinatally are now reaching adolescence in large numbers (Rangel, Gavin, Reed, Fowler, & Lee, 2006), enabled by widespread roll-out of antiretroviral treatment (Brady et al., 2010). For example, in New York City, the majority of children perinatally infected with HIV are age 13 years and older (HIV Epidemiology and Field Services Program, Pediatric Unit, & New York City Department of Health and Mental Hygiene, 2008). Therefore, many HIV+ youth are at an age when dating, physical relationships, and sexual behavior become important parts of their lives. Many of these youth live in underprivileged environments characterized by high rates of poverty, violence, substance abuse, HIV, and other sexually transmitted infections (STIs). HIV+ youth who engage in risky sexual behavior (e.g., vaginal or anal sex without a condom) could transmit HIV to sexual partners (Janssen et al., 2001) and offspring (Luo et al., 2007), and could acquire a STI that could further compromise their vulnerable immune systems (Buchacz et al., 2004). The accurate assessment of their sexual behavior is critical to developing and planning appropriate preventative behavioral interventions for this potentially high-risk population.

In the general population, researchers and clinicians have struggled to obtain accurate reports of adolescents' sexual behavior using various interview methods. Although paper and pencil questionnaires (PPQ) are easy and relatively inexpensive to administer, they have several disadvantages. Adequate literacy is needed to read PPQs, skip patterns may not be properly followed, questions may be answered without being read, and there may be limited support if a participant does not understand the terminology used (Gribble, Miller, Rogers, & Turner, 1999). Additionally, a subsequent data entry step is required, increasing opportunities for data entry errors. Interviewer-administered face-to-face interviews (FTF) remove the literacy requirement, but can be costly due to the need for hiring and training of interviewers (Wolford et al., 2008). Inclinations to respond in a socially desirable manner may also make it difficult for participants to report sexual behaviors directly to an interviewer (Aquilino, 1994). With the Computer-Assisted Self-Interview (CASI) (Johnson et al., 2001), participants read and answer questions on a computer, which provides more anonymity than FTF, presumably resulting in more accurate responses. Additionally, CASI allows for programmed consistency checks and skip patterns that reduce errors, and it eliminates the need for an additional data entry step after the assessment is completed. The

Audio-CASI (ACASI) provides the advantages of the CASI and also significantly reduces the literacy requirement by adding an audio component through which participants hear questions and response options read by a computerized or recorded voice (Jones, 2003). For gathering information about high-risk behavior and experiences that may be embarrassing or stigmatizing, including sexual behavior and substance use, the ACASI method of data collection has increasingly been used with both adolescents and adults (Resnick et al., 1997).

Comparing ACASI and FTF Among Adolescents

For assessing sexual behavior, studies have compared ACASI to a variety of other self-report methods (Ellen et al., 2002; Hewett, Mensch, & Erulkar, 2004; Morrison-Beedy, Carey, & Tu, 2006; Turner et al., 1998; van Griensven et al., 2006). In some cases, researchers may find themselves choosing between ACASI or FTF, as both reduce the need for high literacy levels. Yet, limited research has compared ACASI to FTF among adolescents in the U.S. The earliest known study of this age group was conducted among 9–15 year-old Black early to middle adolescents living in large urban U.S. public housing locations (Romer et al., 1997). A total of 300 adolescents completed an ACASI interview and an additional 96 adolescents completed a FTF interview containing two questions regarding sex that were also in the ACASI interview and recorded their own responses on paper. Adolescents in the ACASI condition reported more experience with sex and more favorable attitudes towards sex, suggesting that ACASI reduced the tendency to respond in a socially desirable manner. Neither age nor gender moderated the effects between interview condition and reports of ever having had sex; however, the effect of more favorable feelings about sex in the ACASI condition (vs. FTF) was stronger among children older than age 10 years (vs. age 9 or 10 years).

Findings from Romer et al. (1997) contrast with findings from a study of 11–18 year olds involved in the U.S. juvenile justice system, in which adolescents completed an HIV risk assessment via ACASI or a FTF interview with youth recording their responses on paper (Jennings, Lucenko, Malow, & Devieux, 2002). Among these primarily low-income, ethnic-minority urban adolescents, greater reporting of sexual and substance use behavior was found with the FTF versus ACASI method. However, when data were analyzed separately for male and female adolescents, they found that, for items pertaining to sexual behaviors, the FTF and ACASI methods did not result in significantly different responses for females, although the FTF method resulted in reports of more sexual behaviors for males. It could be that males in the juvenile justice system are especially prone to over-reporting of sexual conquests; therefore, it is not clear that this finding means FTF led to more accurate responding.

A major weakness of both prior studies was a lack of randomized design. Additionally, in both prior studies, adolescents in the FTF condition recorded their own responses. Although this strategy could reduce socially desirable responding, some researchers may prefer that the interviewer completes the response form to ensure that responses are accurately recorded. No known studies of adolescent sexual behavior have compared ACASI to FTF when the interviewer recorded the adolescents' responses.

Validity and Acceptability

There is no “gold standard” for assessing the validity of sexual behavior questionnaires. Biological tests for HIV, STIs, and pregnancy are effective at detecting some youth who engage in risky behaviors, yet have low sensitivity—many adolescents may be sexually active without developing an STI or becoming pregnant. Moreover, even if biological tests could distinguish between those who are and are not sexually active, they provide limited

information regarding specific behaviors in which participants engage. Thus, we are dependent on self-report methods. Researchers have used various self-report modalities to demonstrate convergent validity and/or superiority of one method over another (Beebe, Harrison, Park, McRae, & Evans, 2006; Durant & Carey, 2000; Ellen et al., 2002; Hewett et al., 2004; Jennings et al., 2002; Morrison-Beedy et al., 2006; Paperny, Aono, Lehman, Hammar, & Risser, 1990; Romer et al., 1997; Turner et al., 1998; van Griensven et al., 2006). To determine which method is superior, studies rely on the somewhat tenuous assumptions that (1) we know which behaviors participants are reluctant to report and (2) greater reporting of those behaviors is more accurate.

An additional approach to assessing the validity of ACASI is to ask participants about the honesty of their responses or about which methods they believe result in more honest responses. Ellen et al. (2002) studied urban African-American 12–18 year-olds who answered questions about sexual behavior during an at-home ACASI versus those who answered via telephone, and found generally equivalent reports of sexual behavior across methods and no significant difference in subjective reports of honesty, comfort, and accuracy. Studies have not examined adolescents' reports of honesty on ACASI versus FTF.

The acceptability of ACASI by participants is also important, as it may determine the extent to which people are willing to participate in studies using ACASI as well as the accuracy of responses. Among adults, studies suggest that ACASI is easy to use (DiIorio et al., 2003; Jones, 2003) and promotes honest responding (Jones, 2003). In a study of HIV risk behaviors among gay men and injection drug users, Metzger et al. (2000) found that 59% of gay male participants felt that ACASI would result in more honest responding than FTF, whereas 7% said they would be more honest with FTF and 25% expected no differences in honesty between the two methods. Most men thought that ACASI was preferable to or as good as FTF in terms of protecting privacy. Similarly, Kinsey, Thornberry, Carson, and Duffer (1995) found that 89% of women ages 15–44 years thought ACASI was better or as good as FTF. It is expected, then, that ACASI would be preferable to or as acceptable as FTF among adolescents.

The Present Study

The present study compared reports of sexual behavior via ACASI versus FTF (with interviewers recording responses) among a sample of ethnic minority, urban youth who were either perinatally infected with HIV (HIV+) or perinatally exposed to HIV but uninfected (HIV–). Data from the baseline and first follow-up assessment of a longitudinal study were analyzed to test for differences in adolescent reports of sexual behavior, honesty, and ease of completion between interview methods. In addition to full sample analyses, we also tested for differences in reports of sexual behavior between the two interview modes with in sample subgroups, including HIV+ and HIV– youth.

We hypothesized that youth randomized to the ACASI condition would have equivalent or greater reports of sexual behavior compared to those randomized to FTF, given the potential social undesirability associated with youth reporting sexual risk behavior. Also, given the added stigma associated with HIV+ youth engaging in sexual behavior (Marks, Burris, & Peterman, 1999), we expected that the additional anonymity of the ACASI interview would make it easier for this subgroup to report sexual behavior. Finally, we expected participants in the ACASI condition to report more honesty, comfort, and ease of administration than participants in the FTF condition.

This study addressed several limitations of previous work. First, participants were randomized to the two interview conditions, thereby reducing potential selection bias and balancing both known and unknown prognostic factors in their assignment to an interview

method. Second, we collected data at two assessments points which provided us more information and therefore larger statistical power to evaluate possible difference between the two interview modes; we properly accounted for between subject correlation via generalized estimating equation (GEE) analyses. Third, this study included a relatively large age range of adolescence to examine age differences. Finally, the sample was unique, as it included HIV-exposed but HIV– youth, who may be at greater risk for acquiring HIV than youth who were not perinatally exposed to HIV (Chabon, Futterman, & Hoffman, 2001), and youth who acquired HIV perinatally—a group that may especially have difficulty reporting their sexual behavior, due to fears of judgment given the possibility of transmitting HIV to sexual partners (Marks et al., 1999).

Method

Participants

Data for this article come from the baseline and first follow-up interview of a longitudinal study of risk behavior with perinatally HIV-infected and HIV-exposed, but uninfected youth: Project CASAH (Child and Adolescent Self-Awareness and Health) (Mellins et al., 2009). For CASAH, participants were recruited from clinics in four medical centers in New York City that provide services to families affected by HIV. To be eligible for enrollment, youth had to: (1) be 9–16 years old; (2) have been perinatally exposed to HIV; (3) be English speaking; and (4) have a caregiver who spoke English or Spanish and could sign consent for the adolescents' participation (foster care parents do not have this capacity for psychosocial research in New York).

For CASAH, 367 youth (83% of eligible participants in the participating clinics) were approached to participate in the study. Of these, 340 youth and their caregivers were enrolled and 280 of these completed a follow-up assessment approximately 18 months post baseline. The first 47 participants enrolled provided pilot data for the newly developed ACASI interview, but they were not randomized and therefore, were not included in the current analyses. Several additional participants did not complete the sex interview or had irregularities with their interview process. Ultimately, 274 (135 ACASI and 139 FTF) participants contributed baseline data and 230 (116 ACASI and 113 FTF) participants contributed follow-up data to the current analyses. The sample included in these analyses represents 86% of completed baseline sex interviews (274 of 320) and 84% of completed follow-up sex interviews (230 of 273).

At the baseline and initial 18-month follow-up, both youth and their caregivers completed assessments during two 60–90 min sessions approximately 1 month apart; only youth were asked about sexual behavior. The analyses in this report were based solely on data provided by youth in the second session, which included the sexual behavior part of the interview and was available in two modes: ACASI or FTF. Youth were interviewed using the same interview mode at baseline and follow-up. At the completion of this assessment, participants were given a self-administered paper and pencil questionnaire that was designed to assess their reaction (difficulty, comfort, and honesty) to the sex interview. The participants were given privacy to complete this questionnaire and then asked to return the form in a sealed envelope upon completion. This procedure was used to minimize the potential tendency for FTF participants to give socially desirable feedback to the interviewer and to standardize reporting on reactions across the two conditions.

Measures and Procedure

The Adolescent Sexual Behavior Assessment (Dolezal, Mellins, Brackis-Cott, & Meyer-Bahlburg, 2006) was developed in preparation for this project, and based, in part, on the

Psychosexual Development Interview (PDI; Meyer-Bahlburg, Dugan, Mellins, Williams, & Ehrhardt, 1999). The goal was to develop a brief assessment of sexual behavior that could distinguish among various specific sexual practices, yet would be appropriate for children as young as 9 years (via gateway questions). Members of the CASAH team met with the developers of the PDI and with interviewers who had conducted sex interviews with adolescents in previous projects. Focus groups were also conducted with medical and health care providers of HIV+ youth (doctors, nurses, psychologists, etc.) from two of the recruitment sites. Male and female versions of the instrument were developed.

The ACASI and FTF sexual behavior assessments used in this study were identical except that the ACASI was administered via computer and the FTF was administered by a person. Each assessment began with questions about heterosexual behaviors and experiences. Initial questions concerned kissing, having a boy/girlfriend, and being in love. Then participants were asked three gateway questions (here directed toward a female): (1) Has a boy ever touched your private parts? (2) Have you ever touched a boy's private parts? and (3) Have you ever had sex or made love to a boy? At this point, the terms "sex" and "made love" were not defined but relied on the participant's understanding of the terms. If each of these questions was answered "no," the participant was directed to similar questions regarding same-sex behaviors and experiences. If any of the three gateway questions were answered "yes" for opposite-sex or same-sex partners, the participant was directed to a section in which various terms (penis, vagina, rectum, condom) were explicitly defined. After each definition, the participant was asked whether they understood the term. In the computer-assisted condition, if the participant answered "no" (i.e., they did not understand the term), a screen appeared that asked them to get the interviewer (who was outside of the interviewing room) for clarification. After confirmation that all terms were understood, participants were asked questions about various specific sexual behaviors; clear definitions of such behaviors were provided. If a participant reported having engaged in a given behavior, subsequent items asked for additional details such as the number of partners with whom the participant had engaged in the behavior.

For the computerized versions, audio files were recorded so the interviewee could hear questions as they appeared on a computer screen. A male voice was used for the boys' interview and a female voice was used for the girls' interview. Administered on laptop computers, the ACASI was pilot tested on 47 participants at one of the study sites prior to the beginning of the randomized trial. "Warm up" questions on non-sexual behavior topics, completed in the presence of an interviewer, were used to familiarize the participant with the computer and provide a preview of the type of questions asked. The interviewer emphasized honesty and privacy (as in the FTF interview), asked the participant if they would prefer to use headphones (if "yes," they were provided), and then left the room.

When administered as a FTF interview, the assessment was conducted by interviewers who had completed a training program that included: desensitization to discussing sex, an introduction to sex research interviewing techniques, discussion of pertinent ethical issues, a line-by-line review of the structured interview protocol, and mock interviews with staff and fellow trainees. Interviewers learned to approach sex interviewing with neutral verbal and nonverbal language to facilitate participant comfort and honest responding. Their training focused on: (1) ensuring that adolescents remain honest when faced with questions that ask about sexual practices and that sometimes involve words children are told are "bad" (e.g., telling them "remember, if you don't want to tell me about something, that's fine"); (2) maintaining a neutral posture during questions containing words describing sexual practices and body parts, especially when adolescents appeared to become uncomfortable; and (3) communicating that, as an interviewer, one has talked about sex topics many times with young people. Over the course of the study, 15 interviewers, the vast majority of whom were

African-American or Latina women in their 20 s or early 30 s, conducted the FTF interviews. Female interviewers were used primarily because of other study demands, including interviews with primarily female parents/caregivers; however, research has been inconclusive regarding the value of matching interviewer and interviewee by gender (Davis, Couper, Janz, Caldwell, & Resnicow, 2010). Only a very few interviews were conducted by a male interviewer.

Following the sexual behavior interview, participants were given a paper and pencil questionnaire, which was self-administered. The questionnaire asked about their reactions to the interview, including ease of use, emotional reactions, and their honesty when responding to questions.

Data Analysis

Participants in the two conditions (ACASI vs. FTF) were compared on demographic variables using chi-square tests. The primary interest of this article was to understand if the prevalence of sexual behaviors and participants' reactions to the interviews differed by the methods of interview. The analyses for this purpose incorporate data from both the baseline and the follow-up assessments. The availability of two time points provided additional observations and therefore greater statistical power to compare the rates of sexual behavior and reactions to interview between ACASI and FTF interviews. Generalized linear models (GLM) were constructed for comparison between the two interview methods using the binomial distribution and logit link for dichotomous variables (e.g., ever kissed, ever had vaginal sex), the Poisson distribution and log link for count variables (appropriate for number of vaginal sex occasions and number of sex partners, which had skewed distributions), and normal distribution and an identity link for the continuous variables (e.g., reaction to interview items). Since data from both time points were included in the analysis, to account for the correlation introduced by assessing the participants at two time points, the generalized estimating equation (GEE) method was used to estimate model parameters and their standard errors. The over-dispersion parameter was used for analyzing count variables to account for the unexplained between-subject heterogeneity. Childrace/ethnicity was a covariate in all analyses, based on significantly different distributions of race/ethnicity between the two conditions. We report the odds ratios (for dichotomous variables), rate ratios (for count variables), and group mean differences (for continuous variables), in addition to 95% confidence intervals, and *p*-values for each of the above analyses. All analyses were subsequently repeated within various demographic subgroups (girls, boys, HIV+, HIV-, early adolescents [9–12/10–13 years old], middle adolescents [13–16/14–19 years old], African-American, and Latino). These analyses were also adjusted for race/ethnicity (except, of course, for the racial/ethnic subsamples).

Results

Table 1 shows the demographic characteristics of the participants at both time points. Boys and girls were equally represented in this sample. Slightly more than half of participants were HIV+. Mean age was 12.2 years (*SD* = 2.3; range = 9–16) at baseline and 13.6 (*SD* = 2.4; range = 10–19) at follow-up. Significantly more African-American participants were randomized to the ACASI condition, but the two groups were very similar on all other demographic variables.

Reports of Sexual Behavior

Table 2 compares the prevalence of various sexual behaviors reported via ACASI versus FTF interviews. Many of the behaviors were relatively rare, reported by only a small percentage of the participants. However, some of the low prevalence behaviors were the

most likely to be affected by social desirability (e.g., unprotected vaginal sex, anal sex, and same-sex behavior). These behaviors are also critical to assess in terms of HIV-transmission risk. Therefore, we felt it was important to examine these behaviors as well, in spite of their low prevalence.

Although prevalence rates were higher at both time points in the ACASI condition than in the FTF condition for almost all of the sexual behaviors assessed, only a few of the differences were statistically significant. In analyses involving the full sample, participants in the ACASI condition were more likely to report having been in love, having had someone touch their private parts, and having more sex partners than participants in the FTF condition. But the effect sizes for these differences were very modest, with p values barely reaching conventional significance (.05).

Subgroup Analyses

We tested for different rates of sexual behavior between the two interview conditions within several demographic subgroups (girls, boys; HIV+, HIV-; early adolescents, middle adolescents; African-American, and Latino). The most striking effects pertained to gender. As shown in Table 2, among girls, there were no significant differences between the two interview conditions. However, among boys, prevalence rates of over half of the sexual behaviors were significantly higher in the ACASI group than in the FTF group and the ACASI group also reported significantly more sex partners, suggesting that boys may be more likely to report sexual behaviors via ACASI versus FTF.

For the most part, the remaining subgroup differences were rare and modest, but nearly all differences reflected greater reporting of sexual behaviors in the ACASI condition compared to FTF. Among HIV+ participants, the ACASI condition resulted in reports of more sex partners (RR = 7.58, CI = 1.35–42.45, p = .021) and more vaginal sex occasions (RR = 5.33, CI = 1.20–23.79, p = .028). Among HIV- adolescents, those in the ACASI condition were more likely to report fellatio (OR = 3.34, CI = 1.12–9.98, p = .031). Among early adolescents, the ACASI condition resulted in higher rates of having been in love (OR 1.78, CI = 1.00–3.16, p = .05) and having “had sex or made love” (OR 4.31, CI = 1.0–7.43, p = .041). Among middle adolescents, those in the ACASI condition reported more sex partners (RR = 5.14, CI = 1.08–24.42, p = .039). Among African-American participants, the ACASI condition resulted in reports of more sex partners (RR = 9.58, CI = 1.30–70.11, p = .027). Among Latino participants, no differences were found between conditions.

In sum, overall, rates of sexual behavior were almost always higher in the ACASI condition, but only a few differences were large enough to be statistically significant. Among boys specifically, several differences were significant at the .05 level, indicating that boys might be less likely to report sexual behavior in a FTF interview than via ACASI.

Reaction to Interview

Table 3 summarizes the participants' reaction to the two interview methods. Items are scored so that high scores indicate more positive or favorable reactions. In general, participants reported that they were comfortable answering the questions, were not very embarrassed or worried about privacy, and answered the questions honestly. Compared to those in the FTF condition, those in the ACASI condition rated the process as easier and said they liked the interview more. No significant differences were found between the two conditions in terms of reports of comfort or honesty. These findings were fairly consistent across demographic subgroups (results not shown). The ACASI interview was rated as significantly easier than FTF among all eight subgroups (although only marginally significant among girls). The ACASI also had higher ratings of liking the interview among

boys, HIV+ youth, middle adolescents, and Latino youth. Furthermore, boys were more comfortable with the ACASI interview, corresponding with their higher reports of sexual behaviors on the ACASI versus FTF. Among middle adolescents, the ACASI was associated with less embarrassment than FTF. Among early adolescents, FTF was associated with less embarrassment—this was the only case in which FTF was associated with greater acceptability than ACASI.

Discussion

In a substudy of a larger longitudinal study, perinatally exposed HIV+ and HIV– youth were randomly assigned to assessments of sexual behavior via either ACASI or FTF, completed at two time points approximately 18 months apart. Most sexual behaviors were more commonly reported via ACASI compared to FTF, although the differences were modest. Prevalence rates for the vast majority of the sexual behaviors were statistically equivalent between the two methods (in contrast with Romer et al., 1997, and with total sample analyses for Jennings et al., 2002).

In most cases, when analyses were limited to a demographic subgroup, rates of sexual behavior did not differ between interview conditions. This indicates that these methods result in comparable prevalence rates in most demographic subgroups, despite expectations that girls, early adolescents, and HIV+ youth would report more sexual behavior in the ACASI condition versus FTF. HIV+ youth, especially, were expected to report more risky sexual behavior via ACASI versus FTF, based on studies such as Macalino, Celentano, Latkin, Strathdee, and Vlahov (2002), whose findings showed that, among adult injection drug users, HIV+ participants (but not HIV-negative participants) were more likely to report unprotected sex on ACASI versus FTF. There were two group differences among our HIV+ participants, with ACASI-assigned youth reporting more sex partners and vaginal sex occasions than those in the FTF condition. However, the effect sizes were very modest, and there were no significant differences found for the majority of the behaviors assessed.

In contrast with other subgroups, among boys, significant differences were found between interview conditions, suggesting that adolescent boys perinatally exposed to HIV were more likely to report sexual behaviors when interviewed via ACASI versus FTF. Compared to boys in the FTF condition, boys in the ACASI condition were more likely to report having had a girl-friend, having been in love, “making love,” genital touching, fellatio, and anal sex. They also reported more lifetime sexual partners. These findings differ from Jennings et al. (2002), in which boys in a FTF condition (recording their own response on paper) were more likely to report sexual behavior than boys in the ACASI condition. Answering questions aloud to an interviewer creates stimulus demands that may differ from recording one’s own responses (Gribble et al., 1999). Furthermore, in the current study, virtually all of the interviewers were female (in Jennings et al., 2002, interviewer gender was not reported). It may be that the boys were reluctant to admit to sexual behaviors in the presence of a young woman, feeling that such behavior would be socially unacceptable.

Consistent with findings from some studies among adults (Pluhar et al., 2007), youth interviewed via ACASI rated the interview as easier than youth in the FTF condition, and they also reported that they liked the interview more. For at least some adolescents, it may be easier to answer questions about sexual and romantic behavior on a computer than aloud to an interviewer. Thus, even if the two methods result in comparable rates of sexual behavior, ACASI still has advantages. If the interview is seen as easier and less burdensome, it will likely be a more pleasant experience for participants, possibly resulting in better participation, cooperation, and retention. Moreover, for researchers and clinicians,

additional advantages include that ACASI requires less time for interviewer training and data entry, and potentially reduces research costs and errors.

This study was unique in that it included youth perinatally exposed to HIV and living with and without HIV infection, randomly assigned to interview conditions, and compared reports of sexual behavior and interview acceptability between ACASI and FTF (the latter conducted by highly trained interviewers). Yet, findings should be considered in light of several limitations. Reports of sexual behavior were relatively low, which significantly limited statistical power in many of these analyses. Effect sizes were small and adjusting for multiple comparisons would have eliminated any statistical differences between conditions. Yet, we felt it was important to explore risky, lower-prevalence behaviors (e.g. vaginal sex vs. only higher-prevalence behaviors like kissing) because they pose more health risks and may be more difficult to report and thus more affected by interview mode. Third, we had few male interviewers, as described above. Finally, this study, like others comparing sexual behavior assessments, was limited by the self-report nature of the assessments, and the inability to truly know which reports more accurately reflect behavior (Schroder, Carey, & Vanable, 2003). Our data suggest that neither interview method eliminated bias altogether. In a separate paper and pencil questionnaire, participants in both conditions admitted to over- and under-reporting behavior indicating that measurement error is an issue for both modes of interview. Also, some participants in both conditions admitted to being embarrassed by some of the questions and being concerned about privacy of their responses. Regardless of interview mode, embarrassment and perceptions of confidentiality will likely continue to influence the accuracy of self-reports.

In conclusion, in this sample of perinatally exposed, HIV+ and HIV– youth, FTF and ACASI interview methods resulted in very similar reports of a variety of sexual behaviors—except among boys, who appeared to be more willing to report sexual behavior via a computer than to a female interviewer. Data suggest that computer-assisted interviews and interviews conducted by well-trained interviewers can both be used successfully to assess sexual behavior among adolescents perinatally infected and exposed to HIV. However, ACASI may be preferable, as it appears to result in slightly greater reports of sexual behavior (particularly among boys) and reduced interview burden among most participants. It can also be programmed in advance to limit responses to valid entries, do consistency checks, follow skip patterns, etc. Larger studies that follow this population into late adolescence and adulthood, when sexual behaviors are more prevalent, will increase statistical power to detect differences necessary to more fully examine the impact of interview mode.

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Table 1

Sample description

	Baseline		Follow-up	
	ACASI (N = 135)	Face-to-face (N = 139)	ACASI (N = 116)	Face-to-face (N = 114)
Female	63 (47%)	72 (52%)	57 (49%)	62 (54%)
Male	72 (53%)	67 (48%)	59 (51%)	52 (46%)
HIV+	71 (53%)	77 (55%)	61 (53%)	59 (52%)
HIV–	64 (47%)	62 (45%)	55 (47%)	55 (48%)
Adolescent age ^a				
Early	71 (53%)	73 (53%)	56 (48%)	59 (52%)
Middle	64 (47%)	66 (48%)	60 (52%)	55 (48%)
Race/ethnicity ^b				
African-American	78 (58%)	60 (43%)	68 (59%)	52 (46%)
Latino	32 (24%)	61 (44%)	29 (25%)	47 (41%)
Other/mixed	25 (19%)	18 (13%)	19 (16%)	15 (13%)

^aEarly adolescents at baseline = 9–12, at follow-up = 10–13; middle adolescents at baseline = 13–16, at follow-up = 14–19

^bAt baseline: $\chi^2 = 12.48$, $df = 2$, $p = .002$. At follow-up: $\chi^2 = 6.85$, $df = 2$, $p = .033$

Table 2

Prevalence of sexual behaviors by interview type

	Baseline		Follow-up		OR/RR (95% CI) ^a	p
	ACASI N	Face-to-face N	ACASI N	Face-to-face N		
Total	135	139	116	114		
Boys	72	67	59	52		
Girls	63	72	57	62		
Heterosexual behaviors	%	%	%	%		
Kissed						
Total	38	36	53	44	1.24 (0.81–1.93)	ns
Boys	46	36	62	44	1.77 (0.96–3.26)	.066
Girls	29	36	44	44	0.85 (0.45–1.62)	ns
Had boyfriend/girlfriend						
Total	53	46	53	45	1.33 (0.87–2.03)	ns
Boys	61	46	61	44	1.92 (1.09–3.40)	.023
Girls	44	46	44	45	0.91 (0.49–1.71)	ns
Been in love						
Total	47	36	51	38	1.65 (1.08–2.53)	.020
Boys	49	34	54	37	1.96 (1.09–3.54)	.025
Girls	45	38	47	39	1.40 (0.76–2.58)	ns
Had “private parts” touched						
Total	19	12	30	18	1.80 (1.04–3.14)	.037
Boys	26	9	36	15	3.38 (1.54–7.42)	.002
Girls	12	15	23	21	0.94 (0.42–2.12)	ns
Touched other’s “private parts”						
Total	16	13	30	19	1.57 (0.91–2.72)	ns
Boys	20	12	36	15	2.48 (1.12–5.46)	.025
Girls	12	14	23	23	0.96 (0.43–2.15)	ns
Made love or had sex (self-defined)						
Total	16	10	23	18	1.50 (0.84–2.66)	ns

	Baseline		Follow-up		
	ACASI N	Face-to-face N	ACASI N	Face-to-face N	
Boys	21	9	27	14	2.51 (1.04–6.06) .040
Girls	10	11	19	23	0.87 (0.39–1.96) ns
Girl touched boy's penis					
Total	15	9	23	16	1.71 (0.93–3.12) .084
Boys	22	8	28	17	2.45 (1.10–5.45) .029
Girls	6	10	18	15	1.01 (0.39–2.63) ns
Boy touched girl's vagina					
Total	13	9	19	17	1.32 (0.71–2.43) ns
Boys	18	8	24	17	1.87 (0.79–4.40) ns
Girls	6	11	16	16	0.83 (0.33–2.11) ns
Vaginal sex					
Total	14	10	20	18	1.36 (0.75–2.47) ns
Boys	18	9	21	14	2.02 (0.81–4.99) ns
Girls	10	11	19	21	0.93 (0.40–2.15) ns
Fellatio					
Total	8	2	12	10	2.02 (0.95–4.27) .067
Boys	11	2	21	8	4.30 (1.60–11.53) .004
Girls	5	3	4	11	0.67 (0.15–2.94) ns
Cunnilingus					
Total	5	4	11	11	1.17 (0.54–2.54) ns
Boys	3	3	9	8	1.19 (0.40–3.57) ns
Girls	8	6	14	15	1.21 (0.43–3.37) ns
Anal sex					
Total	5	1	7	4	2.24 (0.84–6.01) ns
Boys	9	2	11	2	5.21 (1.13–23.92) .033
Girls	0	1	4	5	0.55 (0.10–3.07) ns
Unprotected vaginal sex					
Total	5	3	7	8	1.21 (0.47–3.10) ns
Boys	8	2	7	6	2.60 (0.59–11.52) ns
Girls	2	4	7	10	0.60 (0.17–2.09) ns

	Baseline		Follow-up		
	ACASI <i>N</i>	Face-to-face <i>N</i>	ACASI <i>N</i>	Face-to-face <i>N</i>	
Any same-sex behavior					
Total	4	4	5	11	0.61 (0.23–1.60) ns
Boys	2	0	0	4	0.92 (0.12–7.09) ns
Girls	5	7	11	18	0.60 (0.20–1.79) ns
<hr/>					
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
<hr/>					
Number of vaginal sex partners					
Total	1.41 (9.19)	0.29 (1.30)	3.11 (28.08)	0.58 (1.79)	4.59 (1.09–19.22) .037
Boys	2.49 (12.58)	0.38 (1.63)	5.77 (39.69)	0.67 (2.27)	6.45 (1.20–34.72) .030
Girls	0.22 (1.00)	0.21 (0.89)	0.46 (1.14)	0.50 (1.28)	1.02 (0.39–2.68) ns
Number of vaginal sex occasions					
Total	2.31 (10.55)	1.51 (10.97)	6.67 (47.16)	3.39 (19.22)	1.81 (0.53–6.15) ns
Boys	3.20 (13.40)	0.71 (3.23)	9.84 (65.64)	1.62 (5.26)	4.69 (0.97–22.67) .055
Girls	1.32 (5.84)	2.25 (14.88)	3.44 (10.97)	4.87 (25.61)	0.76 (0.21–2.70) ns

^aOR = Odds ratios for dichotomous variables, RR = Risk ratios for two count variables. All analyses were adjusted for race/ethnicity

Table 3

Reaction to assessment by interview type

	ACASI (N = 135)		Face-to-face (N = 139)		ACASI (N = 116)		Face-to-face (N = 114)		Mean difference (95% CI)		p
	M	(SD)	M	(SD)	M	(SD)	M	(SD)			
How comfortable were you? (1–4) ^a	2.78	(1.00)	2.72	(0.95)	3.11	(0.94)	2.95	(0.83)	0.12	(-0.06–0.31)	ns
How easy was it? (1–4)	3.19	(0.87)	2.75	(0.87)	3.44	(0.74)	3.06	(0.77)	0.41	(0.26–0.57)	<.001
How honestly did you answer? (1–3)	2.83	(0.43)	2.86	(0.41)	2.90	(0.38)	2.89	(0.36)	-0.00	(-0.08–0.07)	ns
How much did you like it? (1–3)	1.79	(0.60)	1.65	(0.51)	1.85	(0.56)	1.78	(0.58)	0.11	(0.00–0.23)	.050
Were you embarrassed? (1–3)	2.47	(0.71)	2.56	(0.60)	2.66	(0.59)	2.63	(0.59)	-0.03	(-0.15–0.09)	ns
Did you worry about privacy? (1–3)	2.47	(0.67)	2.58	(0.59)	2.66	(0.56)	2.58	(0.59)	-0.03	(-0.15–0.08)	ns

	% Yes	% Yes	% Yes	% Yes	OR (95% CI)	p
Reported behavior not actually done	9	8	10	8	1.13 (0.58–2.23)	ns
Did not report actual behavior	10	14	12	11	0.85 (0.47–1.54)	ns
Words describing sex offended	11	6	4	7	1.18 (0.57–2.46)	ns

^aResponse scale in parentheses; higher rating=more positive/favorable reaction (e.g. more comfortable, less embarrassed, etc.). All analyses were adjusted for race/ethnicity