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Misreporting in a Randomized Clinical Trial for Smoking Cessation in Adolescents

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Abstract

Introduction—Misreporting smoking behavior is common among younger smokers participating in clinical trials for smoking cessation. This study focused on the prevalence of and factors associated with adolescent misreporting of smoking behaviors within the context of a randomized clinical trial for smoking cessation.

Methods—Adolescent smokers (N=129) participated in a randomized clinical trial that compared two brief interventions for smoking cessation. Following the final (6-month) follow up, a confidential, self-administered exit questionnaire examined the extent to which participants admitted to having misreported smoking quantity, frequency and/or consequences during the study. Factors associated with under- and over-reporting were compared to accurate-reporting.

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Results—One in 4 adolescent smokers (25.6%) admitted to under-reporting during the study and 14.7% admitted to over-reporting; 10.9% of the adolescents admitted to both under- and over-reporting. Rates of admitted misreporting did not differ between treatment conditions or recruitment site. Compared to accurate-reporting, under- and over-reporting were significantly associated with home smoking environment and the belief among adolescents that the baseline interviewer wanted them to report smoking more or less than they actually smoked. Compared to accurate reporters, over-reporters were more likely to be non-White and to report being concerned with the confidentiality of their responses.

Conclusions—A post-study confidential debriefing questionnaire can be a useful tool for estimating rates of misreporting and examining whether potential differences in misreporting might bias the interpretation of treatment effects. Future studies are needed to thoroughly examine potentially addressable reasons that adolescents misreport their smoking behavior and to develop methods for reducing misreporting.

1. Introduction

While self-reported smoking data are generally considered accurate, some level of misreporting is likely to occur in smoking research, particularly among adolescents (Patrick et al., 1994). Reasons for misreporting smoking may differ for adolescents versus adults (Velicer, Prochaska, Rossi, & Snow, 1992; Patrick et al., 1994; Mermelstein et al., 2002). Adolescents are more likely than adults to deny or under-report smoking due to fear of reprimand, punishment, or disapproval from adults. Adolescents also are more likely than adults to exaggerate or over-report their smoking to impress friends or fit in socially (Dolcini, Adler, & Ginsberg, 1996; Mermelstein et al., 2002, Stein et al., 2002).

Demographic variables and home smoking environment may also influence misreporting among adolescent smokers. Adolescents who have a parent or friend who smokes were less likely to misreport smoking behavior (Griesler, et al., 2008). Previous research also has shown that racial/ethnic minority adolescents are more likely to misreport smoking behavior than White adolescents (Wills & Cleary, 1997; Stein et al. 2002; Kandel, Schaffran, Griesler, Hu, Davies, & Benowitz, 2006; Griesler, Kandel, Schaffran, Hu, & Davies, 2008). Willis and Cleary (1997) found that more minority teens than White teens said they were non-smokers when biomarkers indicated they were smokers. Stein et al. (2002) found that, upon direct inquiry, more non-Whites than Whites admitted they had misreported during a smoking cessation study. Griesler and colleagues (2008) found that African American and Hispanic adolescents were less likely than White adolescents to accurately report having smoked when they had. The basis for the association between misreporting (specifically under-reporting) and ethnic minority status remains uncertain, but may reflect a more general mistrust of researchers (Corbie-Smith et al., 2005; Yancey et al., 2006).

The likelihood of misreporting smoking may also vary by the type of intervention study being conducted. As reviewed by Velicer and colleagues (1992), large-scale studies

involving minimal contact interventions and low perceived demand for participants to report smoking reduction or cessation are likely to have lower rates of misreporting. Clinical trials involving face-to-face contact, more intensive interventions, and more rapport between participants and counselors, however, may have greater likelihood of misreporting smoking outcomes.

Stein and colleagues (2002) published one of the only reports that directly asked adolescents who had recently completed participation in a randomized clinical trial for smoking cessation about the truthfulness of their reports about smoking during the trial. Using open-ended questions, adolescents were asked why they or other adolescents might under- or over-report their smoking. Reasons provided for under-reporting included: the desire to please the interviewer; confidentiality concerns; and fear of reprimand. Reasons for over-reporting included: peer pressure; wanting to impress people; to seek attention or help; or to seem tough.

The gold standard method of verifying self-reported smoking data in research is the use of biomarker assays such as cotinine, a nicotine metabolite, in blood, urine or saliva, or expired alveolar carbon monoxide (CO) in breath. Because self-reported smoking data from adolescents can be unreliable (Dolcini, Adler, & Ginsberg, 1996), it should be verified whenever possible. The *Society for Research on Nicotine and Tobacco* (SRNT) subcommittee on biochemical verification of tobacco use and cessation (2002) recommended that biochemical verification be used in most or all studies of smoking cessation in special populations, including adolescents. However, there are some situations in which biochemical confirmation is not practical, including large-scale trials with minimal or no in-person contact between participants and study staff, or studies where data collection is done mostly or entirely by mail, phone or internet-based websites (SRNT, 2002). Furthermore, biochemical confirmation has limitations, particularly for adolescent smokers, whose relatively light and/or intermittent smoking patterns can reduce the reliability of some biochemical assays (Patrick et al., 1994; Mermelstein et al., 2002; Stein et al., 2002). Biomarkers also are more useful for verifying brief periods of smoking abstinence than longer periods of continuous abstinence or reduced number of cigarettes per day (Dolcini, Adler, & Ginsberg, 1996; Dolcini, Adler, Lee, & Bauman, 2003). Finally, biomarker specificity is reduced when participants are exposed to alternative sources of the biomarker (e.g., using CO to verify tobacco smoking abstinence among heavy marijuana smokers, or using cotinine to verify smoking abstinence in participants using nicotine replacement therapy).

Thus, while it is no substitute for biochemical verification of smoking outcomes, an exit questionnaire directly querying the accuracy of adolescent self-reports could be a useful adjunct for evaluating smoking outcomes under certain circumstances. As such, the current study aims were to: 1) test the feasibility of using a self-administered confidential exit questionnaire to evaluate the accuracy of adolescents' self-reported data in a smoking cessation trial; 2) determine the rates of admitted under- and over-reporting of smoking in the trial; 3) test whether rates of misreporting differed between two brief treatments of varying contact time; and 4) examine other factors potentially associated with misreporting. Based on prior work, we hypothesized that the exit questionnaire approach would be

feasible and acceptable; that adolescents would admit to misreporting at non-trivial rates; that misreporting would be greater in the higher-contact intervention condition; that ethnic minority status, concerns about confidentiality, and wanting to please the researcher would be associated with misreporting; and that greater exposure to smoking in the home environment would be associated with more accurate reports.

2. Method

2.1. Participants

Data were collected from 162 non-treatment-seeking adolescent smokers as part of a randomized clinical trial comparing the efficacy of a brief motivational interview (MI) versus brief advice (BA) on smoking cessation (Colby et al., 2012). MI included an in-person individual session and a one-week telephone booster with a counselor, and a telephone-based parent intervention. BA was a minimal-contact intervention comprising about 5 minutes of strong advice to quit smoking as soon as possible; a pamphlet on quitting tips and a list of local referrals also were provided.

Participants were recruited from medical settings, high schools, and the community. In medical settings, flyers were posted and patients waiting for appointments were proactively recruited. In high schools, study staff conducted classroom presentations and set up table displays in the cafeterias during lunch. Adolescents in the community were recruited by flyers, radio ads and word of mouth. Results from the clinical trial are published elsewhere (Colby et al., 2012). Briefly, the effects of MI and BA on 7-day point prevalence abstinence at 1-, 3-, and 6-month follow ups were not significantly different. Confirmed abstinence rates at follow ups were low, ranging from 3.3% to 4.9% in MI and 1.4% to 6.8 % in BA.

Out of 162 participants enrolled in the original trial, 132 completed the final follow-up assessment, and 129 (80% of the original sample and 98% of those who completed 6-month follow up) completed the self-administered exit questionnaire.

2.2. Procedure

Adolescents who met study eligibility (ages 14 to 18; smoke at least once per week for the past month) where invited to participate in the study. Research assistants explained the nature of the study, answered any questions, and emphasized that participation was completely voluntary. Informed assent and consent were obtained from minor participants and their parents respectively; 18-year old participants provided their own consent.

2.2.1. Measures—At baseline, a Demographic Questionnaire assessed age, gender, years of education, ethnicity, and race. Past 30-day cigarettes per day was assessed using the Time-Line Follow-Back (TLFB), a calendar-assisted structured interview that uses memory cues to assist in recall (Sobell & Sobell, 1992; Lewis-Esquerre et al., 2005). Nicotine dependence was assessed using The Stanford Dependence Inventory (SDI; Rojas et al., 1998), with scores ranging from 5-25 and higher scores indicating greater dependence. Single-item indices of Motivation to Quit ("I would like to quit smoking") and Quitting Self-efficacy ("I can quit smoking for good") were rated on 5-point scales (1 = not at all, 5 =

very). The Interpersonal Influences Questionnaire (IIQ; Colby, et al., 2005) assessed smoking environment and smoking status of the participant's five closest friends.

2.2.1.1. Exit Questionnaire: The Exit Questionnaire was adapted from the Perceptions of Self Report Survey (PSRS; Stein et al., 2002). The questionnaire was completed **immediately** following the completion of the final follow-up for the clinical trial, **after** participants had received compensation for their 6-month follow-up assessment. Participants did not receive additional compensation for completing the exit questionnaire. Confidentiality was assured by emphasizing that the interviewers would not see the participant's responses. The participant was instructed to complete the questionnaire in private and seal it in an unlabeled envelope and place it in a box that would only be accessed by data entry staff unknown to the participant.

Items on the exit questionnaire were rated on Likert-type scales. Participants rated: how important each of five reasons for joining the study (the money; sounded interesting; wanted to cut down/quit smoking; liked interviewer/recruiter; and someone I know wanted me to join) was in their decision to participate (0 = not important at all, 3 = very important); the extent to which they paid attention to the study questions and their answers (1 = I did not pay attention, 4 = I paid close attention); the extent to which they liked or disliked the way smoking makes them look (1 = dislike very much, 4 = like very much); degree of concern about confidentiality (i.e., whether information they provided would be shared with parents or others; 1 = not concerned at all, 4 = very concerned); how important it was to them that the interviewer like them (1 = not important at all, 4 = very important) at baseline and each follow-up separately; and whether they felt the interviewer wanted them to report that they smoked less than they actually did (= 1), as much as they actually did (= 2), or more than they actually did (= 3) at baseline and at each follow up.

Under-reporters were classified using three items that asked participants to rate how frequently they "purposely told the researchers" that they "smoked fewer cigarettes," "smoked less often," and/or "had fewer problems due to smoking" than they really had. Over-reporters were classified using three items that asked participants to rate how frequently they "purposely told the researchers" that they "smoked more cigarettes," "smoked more often," and "had more problems due to smoking" than they really had. Items were rated from 1 = almost always during study to 5 = never during study. Participants endorsing a 5 on all items were classified as accurate reporters. Ratings of 1-4 on any of the first three items classified respondents as under-reporters; ratings of 1-4 on any of the second set of items classified respondents as over-reporters. Under-reporting and over-reporting were not mutually exclusive. Participants could admit to both under- *and* over-reporting their smoking behavior over the course of the study. Ratings of 1-4 on any of the first three items **and** ratings of 1-4 on any of the second set of items would classify adolescents as both under- and over-reporters.

2.3. Data Analysis

Descriptive statistics were calculated to describe demographic and smoking characteristics and to determine prevalence of misreporting in the sample. Chi-square and independent *t*-

tests were used to separately compare: 1) those who admitted under-reporting to accurate-reporters and 2) those who admitted over-reporting to accurate reporters. Due to overlap across under- and over-reporter groups, we considered alternative ways of grouping misreporters, including doing a four-group comparison (accurate reporters vs. over-reporters only vs. under-reporters only vs. over- and under-reporters), or excluding participants that both under- and over-reported. Unfortunately, these approaches resulted in highly unbalanced cell sizes and one small cell of n=5 (over-reporters only), raising concerns about statistical power. Ultimately, our decision to keep three adequately sized groups with some overlap seemed to be the best available option and did not alter the main findings or conclusions of the study.

Groups were compared based on: treatment condition; recruitment site; demographics; baseline smoking level; exposure to smoking in their environment; reasons for joining the study; attention paid to the study questions and their answers; and whether they liked or disliked the way smoking makes them look. Groups also were compared on the following exit questionnaire items: concerns about confidentiality; how important it was to them that the interviewer liked them; and whether they felt the interviewer wanted them to misreport their smoking at baseline and at each follow up. Two indices were dichotomized as yes/no based on limited variability in response distributions: attention paid to questions and answers, and concern over answers being shared with parents/others. Race/ethnicity was dichotomized as non-Hispanic White vs. non-White.

3. Results

3.1. Acceptability

Very high (98%) rates of participation for completing the self-administered exit questionnaire provided strong support for the acceptability of this approach.

3.2. Types of Reporters

The majority of adolescents (91/129; 70.5%) were classified as accurate reporters. Thirty-three participants (33/129; 25.6%) were classified as having under-reported at some point during the study, and 19 participants (19/129; 14.7%) were classified as having over-reported during the study. Fourteen participants (14/129; 10.9%) were classified as having both under- *and* over-reported. Thus, overall prevalence of admitted misreporting was 29.5% (38/129). Baseline demographics, treatment condition, smoking characteristics, and smoking environment of the three reporter groups (accurate reporters, over-reporters, and under-reporters) are presented in Table 1. Responses to exit questionnaire items of the three reporter groups are presented in Table 2.

3.3. Under-reporters versus Accurate-reporters

Under-reporters and accurate reporters did not differ by treatment condition (χ^2 (1, 123) = .535; p = .464), recruitment site (χ^2 (2, 123) = .210; p = .210), demographics, or baseline smoking (Table 1). Under-reporters indicated that the people they lived with smoked less frequently around them compared to accurate reporters (*t* (122) = -2.18, *p* = .034). None of

the other smoking environment variables, including parental attitudes or peer smoking, differed between under-reporters and accurate reporters.

On the exit questionnaire, under-reporters were less likely to report feeling that the baseline interviewer wanted them to report how much they *actually* smoked compared to accurate reporters (χ^2 (2, 123) = 7.15, p = .028). Follow-up tests indicated that under-reporters were more likely to report feeling that the baseline interviewer wanted them to report *more* than they actually smoked (χ^2 (1,117) = 5.58, p = .018; see table 3). Under-reporters and accurate reporters did not differ on any other exit questionnaire items (see Table 2).

3.4. Over-reporters versus Accurate-reporters

Over-reporters and accurate reporters did not differ by treatment condition (χ^2 (1, 110) = . 2.605; p = .107) or recruitment site (χ^2 (2, 109) = .272; p = .873); Table 1). With respect to demographic characteristics, a larger proportion of over-reporters were non-White adolescents compared to accurate reporters (χ^2 (1, 110) = 5.22, p = .022). Over-reporters and accurate reporters did not differ on any other demographic or smoking characteristics. Over-reporters also reported that the people they lived with smoked less frequently around them compared to accurate reporters (t (108) = -2.20, p = .030). None of the other smoking environment variables, demographic variables or baseline smoking characteristics differed between over-reporters and accurate reporters (Table 1).

On the exit questionnaire, over-reporters were less likely than accurate reporters to report feeling that the baseline interviewer wanted them to report how much they actually smoked (χ^2 (2, 109) = 8.81, p = .012). Follow-up tests indicated that over-reporters were more likely to report feeling that the baseline interviewer wanted them to report that they smoked *more* than they actually smoked (χ^2 (1,104) = 7.32, p = .007; Table 3). Over-reporters were more likely than accurate reporters to have concerns about the confidentiality of their responses. More than half (52.6%) of over-reporters had concerns that their answers would be shared with someone, compared to 22.0% of accurate-reporters (χ^2 (1, 110) = 7.45, p = .006). Over-reporters and accurate reporters did not differ on any of the other exit questionnaire items (Table 2).

4. Discussion

In the context of smoking intervention trials with adolescents, a confidential, self-administered exit questionnaire may be an acceptable and feasible tool to detect misreporting and potential biases associated with it. In the current study, 29.5% of participants admitted to misreporting during the study, highly consistent with the rate of misreporting (27%) that Stein and colleagues (2002) found in a prior, smaller study that used similar methods. Also consistent with prior studies (Velicer, Prochaska, Rossi, & Snow, 1992; Patrick et al., 1994; Mermelstein et al., 2002), adolescents were more likely to under-report smoking behavior than to over-report it. A substantial portion of adolescents admitted to both under- and over-reporting during the study, a possibility because misreporting is assessed using multiple questions for multiple time points. Motivations to misreport may vary from baseline to follow-up. For example, participants may over-report smoking at

baseline to meet inclusion criteria, but under-report smoking at follow up due to perceived experimenter demand to report positive treatment gains.

Rates of misreporting did not differ by treatment condition, although MI and BA did differ in counselor contact time. These findings are consistent with Stein and colleagues (2002), who found no differences in misreporting for MI versus BA. Although rates of misreporting did not differ by treatment condition, this study illustrates how differential misreporting by treatment condition could be detected using this tool, for example in trials with more disparate treatment conditions.

Compared to accurate reporters, both under-reporters and over-reporters were more likely to say they felt the baseline interviewer wanted them to misreport their smoking behavior. Specifically, both types of misreporters said they felt the baseline interviewer wanted them to report *more* (i.e., over-report) than they actually smoked. Because eligibility was determined at baseline, and participants were required to smoke at least weekly over the past month to qualify, participants may have perceived a positive response from baseline interviewers when their reported smoking patterns met inclusion criteria. It is possible that adolescents who are susceptible to misreporting are more attentive to such interviewer reactions. Also, consistent with Griesler and colleagues (2008), both types of misreporters indicated that the people they lived with smoked less frequently around them compared to accurate reporters. It is plausible that adolescents living with smokers (such as parents) might feel less pressure to misreport their own smoking behavior.

Over-reporters were more likely than accurate reporters to indicate that they had concerns about confidentiality. In addition, a larger proportion of over-reporters were comprised of non-White adolescents compared to the accurate reporter group. These findings are interesting, given that the extant literature indicates adolescents are more likely to under-report (not over-report) smoking behavior when they have concerns about confidentiality (for fear of reprimand, for example) or when they are members of a racial/ethnic minority (Wills & Cleary, 1997; Stein et al. 2002; Griesler, Kandel, Schaffran, Hu, & Davies, 2008). These disparate findings might be due to methodological differences across studies; for example, we directly asked participants about misreports whereas others assessed via biological data. Demographic or smoking differences between studies, such as the prevalence or relative acceptance of smoking behavior among racial/ethnic minorities, may also account for different patterns in misreporting among non-White adolescent smokers. In addition, methods for classifying over- and under-reporting may account for different findings. In the current study, 74% of over-reporters also admitted to under-reporting during the study; thus the majority of our over-reporting group might better be characterized as an "over- and under-reporting group".

We anticipate the concern that our exit questionnaire method for evaluating misreporting itself relies on self-reported data. This is an obvious limitation because self-report data on misreporting are also subject to misreporting. In this context, four scenarios are possible: 1) Participant self-reports may be accurate both during the study and on the exit questionnaire, presenting no concerns; 2) Participant reports could be inaccurate during the study but accurate on the exit questionnaire; this is the pattern of misreporting that the exit

questionnaire is designed to detect. The conditions of the exit questionnaire, designed to promote more accurate reporting (e.g., self-administered rather than face-to-face report; high assurance of confidentiality; outside the context of the clinical trial; experimenter demand for accurate reporting), increase our confidence in the veracity of the exit questionnaire reporting; 3) Participants could report accurately during the study but inaccurately say they misreported on the exit questionnaire. Although this scenario is possible, it is illogical and likely to be quite rare. Thus, the primary limitation is: 4) Participants may misreport during the study and deny misreporting on the exit questionnaire. The likelihood of this pattern is unknown but could be estimated in future research involving multiple methods of exit questionnaires, reliable biomarker data, and self-reported outcomes verifiable by those biomarkers.

Although biomarker data were collected in the main cessation trial (Colby et al., 2012), the decision was made to omit these data from the study because they do not inform the current analysis. Specifically, the exit questionnaire asks about misreporting based on multiple indices, (e.g., quantity, frequency, abstinence) at multiple time points, which are then collapsed across time points to classify the *overall* quality of reporting over the course of the entire study. As a result, it would not be possible to align biomarker data from specific observations with the (unknown) timing of misreporting incidents. Future research could evaluate misreporting within a single time point and use biomarker data to validate those items.

Our data were drawn from a clinical trial for adolescent smoking cessation which included past-month weekly smokers. This is a low threshold for inclusion in a cessation trial which may raise concerns about generalizability of results. However, it is important to note that on average participants at baseline reported smoking about a half-pack of cigarettes daily over the past month, a rate of smoking that is quite comparable to rates observed in most other adolescent smoking cessation trials. Another limitation to consider is that adolescent recall of their prior self-reports may be inaccurate or biased. Future research that employs this exit questionnaire could provide participants with information about the amount of smoking they had reported earlier in the study. This could limit potential recall bias associated with less accurate recall for earlier versus later interviews.

A final limitation is that the small sample size precluded an examination of differences between all four possible reporting patterns (i.e., accurate, over- only, under- only, and both under- and over). Since this study was a secondary analysis of data drawn from Colby et al., (2012), and *a priori* power calculations were not performed, it is likely that some of our analyses were underpowered to detect meaningful influences on misreporting. Future research with a larger sample, and the use of multivariate models, would allow for a more precise understanding of the factors underlying different types of misreporting. This research could enhance the validity of future clinical trials by identifying factors that lead adolescents to misreport, and testing methods designed to effectively address those factors.

4.2 Conclusions

Despite efforts made by researchers to encourage accurate reporting at all stages of the research process, the prevalence of misreporting is too large to be ignored without

compromising the precision of adolescent smoking trial findings. This study provides support for one approach that, despite its limitations, can enhance our understanding of the rates, causes, and potential solutions to such misreporting. A confidential self-administered exit questionnaire can provide a highly feasible, low-cost, acceptable method for evaluating misreporting in adolescent smoking cessation trials.

Acknowledgments

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Highlights

- Data were collected from a randomized clinical trial of adolescent smoking cessation.

- Most adolescents (70.5%) were classified as accurate reporters.

- Adolescents under-reported smoking behaviors (25.6%) more than over-reported (14.7%).

- Misreporting was associated with ethnicity, and concerns about confidently.

- Substantial misreporting could affect interpretations of treatment efficacy in RCTs.

Table 1

Baseline demographic and smoking characteristics.

Variable	Accurate Reporters (n = 90)	Under-reporters (n = 33)[a]	Over-reporters (n = 19)[a]
Recruitment Site			
Medical Settings (% within)	33.33	39.39	36.84
Community Settings (% within)	23.33	9.10	26.32
School Settings (% within)	43.33	51.52	36.84
Treatment Condition			
Brief Motivational Interview (% within)	42.86	54.55	63.16
Brief Advice (% within)	57.14	45.45	36.84
Demographic Characteristics			
Sex (% male)	50.54	63.63	73.68
Age	16.05 (1.17)	16.18 (1.40)	15.89 (1.52)
Race/Ethnicity (% Non-Hispanic Caucasian)	78.02	69.70	52.63[*]
Smoking Characteristics			
# Cigarettes/day in past 30 days	10.09 (8.69)	10.01 (6.50)	8.73 (6.99)
% Days smoked in past 30 days	92.30 (14.85)	91.41 (17.28)	89.82 (15.09)
Stanford Dependence Index	13.67 (4.11)	14.67 (3.62)	13.05 (3.52)
Motivation to Quit	4.02 (0.99)	4.30 (0.92)	4.26 (1.24)
Quitting Self-efficacy	2.49 (1.44)	2.48 (1.35)	2.58 (1.22)
Smoking Environment			
How often do people you live with smoke around you?	3.79 (1.59)	3.00 (1.85)[*]	2.89 (1.73)[*]
How often are you around people who don't smoke?	3.14 (1.07)	3.52 (1.20)	3.21 (1.27)
How do your parents feel about someone your age smoking?	2.21 (0.91)	2.09 (0.72)	2.17 (0.62)
How many of your 5 closest friends (males and females) smoke?	3.89 (1.15)	3.70 (1.10)	3.84 (1.12)

Note. Stanford Dependence Index: scores range 5-25, higher scores indicate greater dependence. Motivation to Quit, Self-Efficacy, and Smoking Environment items: 5-point likert scale, 1= not at all/never/strongly disapprove, 5 = very/always/strongly approve. Numbers in parentheses represent Standard Deviation values.

[a]Includes 14 participants that both under-reported and over-reported

[*] $p < .05$, compared to Accurate Reporters

Table 2

Exit questionnaire items.

Variable	Accurate Reporters (n = 91)	Under-reporters (n =33)[a]	Over-reporters (n = 19)[a]
Reasons for Joining Study			
The Money	1.22 (1.02)	1.39 (0.86)	1.61 (0.98)
It Sounded Interesting	1.99 (0.69)	2.03 (0.64)	1.83 (0.71)
Wanted to cut down/quit Smoking	2.29 (0.84)	2.39 (0.79)	2.47 (0.84)
Liked the Interviewer/Recruiter	1.62 (1.06)	1.84 (1.08)	2.06 (0.94)
Someone I know wanted me to Join	1.04 (1.15)	1.03 (1.10)	1.06 (1.11)
Other Exit Questionnaire Items			
Paid attention to study questions and answers (% paid attention)	58.89	51.52	36.84
Liked or disliked the way smoking makes you look	1.80 (0.63)	1.94 (0.90)	2.11 (0.94)
Concerned about confidentiality (% concerned)	21.98	36.36	52.63[*]
Importance of baseline interviewer liking you	2.14 (1.01)	2.48 (0.94)	2.42 (0.77)
Felt baseline interviewer wanted me to misreport my smoking[+]	1.99 (0.24)	2.03 (0.47)[*]	2.05 (0.52)[*]
Importance of follow-up interviewer liking you	2.17 (1.01)	2.13 (0.99)	2.37 (0.96)
Felt follow-up interviewer wanted me to misreport my smoking	1.97 (0.24)	1.97 (0.41)	1.95 (0.41)

[+]Follow-up tests indicated that both under- and over- reporters were more likely to report feeling that the researchers wanted them to report *more* than they actually smoked at baseline. See Table 3 for additional information.

[a]Includes 14 participants that both under-reported and over-reported

[*]$p < .05$, compared to Accurate Reporters

Table 3

Percent of adolescents who felt baseline interviewer wanted them to misreport at baseline

	LESS	ACTUAL	MORE
Accurate-Reporters	3.33	94.44	2.22
Under-Reporters[a]	9.09	78.79	12.12[*]
Over-Reporters[a]	10.53	73.68	15.79[*]

Notes: LESS = "Wanted me to report less than I actually smoked;" ACTUAL = "Wanted me to report the actual amount I smoked;" MORE = "Wanted me to report more than I actually smoked."

[a]Includes 14 participants that both under-reported and over-reported

[*]$p < .05$, compared to Accurate Reporters