

Accessing Adolescents: A School-Recruited, Home-Based Approach to Conducting Media and Health Research

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This article describes a protocol that was effective in collecting media-use pattern and sensitive health data from young adolescents. Students from three public school districts in the southeastern United States were recruited to participate in a study of the impact of the media on adolescents' sexual health. Using a 34-page mailed survey, extensive media-use pattern data were gathered from 3,261 7th and 8th graders (a 65% response rate) after students were recruited in schools and parents mailed back consent forms. The media sample included responses from a large number of Black teens and males, subgroups that have been understudied in media research. A subsample of students who completed the media questionnaire was then recruited to participate in a 45-minute audio computer-assisted self-interview in-home health and sexuality interview. A random sample of 1,074 adolescents (a 90% response rate), stratified into equal Black and White male and female strata, completed the health survey. Both the media and the health samples were representative of the entire school population from which the samples were drawn. Strategies that were effective in recruiting respondents are discussed.

Keywords: *adolescents; mass media; sex behavior; recruitment; survey research*

One of the perennial problems of social scientific research is obtaining large samples of young respondents. In recent years, requirements for active parental consent and reluctance of schools to give up instructional time for students to participate in academic research have created new challenges. When this research involves collection of sensitive health and sexuality data, school approval is even more difficult to gain (Blinn-Pike, Berger, & Holloway, 2000). In this article, we describe a set of strategies that were used to successfully recruit a large number of middle school students to complete a

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comprehensive mailed questionnaire assessing their media-use patterns. A random sample of media questionnaire respondents, stratified by race and gender, were then recruited to complete an in-home survey assessing their health and sexuality. The research discussed here is the first wave of a 5-year longitudinal study of the impact of the mass media on adolescents' sexual health. Respondents who completed both the media and health surveys will be reinterviewed about their media use and health beliefs and behaviors 2 years after completion of the baseline surveys.

Investigations of adolescents are often carried out in school settings. Students are considered a captive and accessible audience during school hours because the large majority of adolescents in the United States attends elementary or secondary schools (Iverson & Kolbe, 1983). Administering pencil-and-paper surveys in classroom settings is considered advantageous for several reasons. First, it is convenient for researchers to distribute questionnaires to and collect questionnaires from groups of students in classrooms. Second, data quality is assumed to be good because research staff and teachers monitor students while they complete questionnaires and are available to answer questions or to clarify instructions for respondents. Third, it is expected that research carried out in schools will yield a sizable and representative sample of adolescents.

However, gaining access to students in schools and managing the administration of surveys during school hours are challenging tasks (Aarons et al., 2001; Harrington et al., 1997; Peterson, Mann, Kealey, & Marek, 2000; Piper, King, & Moberg, 1993). School administrators increasingly are reluctant to devote academic time to nonacademic endeavors, especially as the pressure to perform well on end-of-grade tests increases in schools around the country. Persuading school staff that survey research is important enough to justify allocation of limited class time with students is difficult, and gaining acceptance and cooperation from all levels of the schools' administrative structure (e.g., district, principal, teachers) is challenging. School administrators may be persuaded to provide access to students in nonacademic courses (i.e., physical education, homeroom), but these class periods typically have short lengths or enroll limited numbers of students so that only a proportion of all students in school are reached.

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Scheduling survey administration increases in complexity as more schools are added to the sample, and hiring and managing research staff to administer the questionnaires to students is cumbersome. Students who do not want to participate must be provided with alternative activities in alternate locations, a problem that can significantly increase time and resources for managing the survey (O'Donnell et al., 1997). Additionally, students may be concerned about the confidentiality of their responses and feel pressure to respond with socially desirable answers when completing questionnaires in a group setting, and some students will not be able to complete the questionnaire during the allotted class time. Finally, the difficulty of conducting research in schools is compounded when it is necessary to obtain active informed consent from parents, which is now required more frequently, even for low-risk research (Aarons et al., 2001; Johnson et al., 1999; O'Donnell et al., 1997). As a result of these potential difficulties, school-based data collection may yield smaller and more biased samples than expected, and data quality may suffer.

ALTERNATIVE RESEARCH PROTOCOL

After considering the challenges of gathering data in schools, we decided to develop an alternative research protocol. We learned that school administrators who were reluctant to provide us with access to students during lengthy academic periods (45 to 55 minutes) were more willing to let us talk with students during briefer nonacademic class times. Therefore, we developed a research protocol that relied on student recruitment during brief one-time school visits, thereby providing us with face-to-face time with large groups of students while minimizing the amount of time the schools were involved in the project. Following the initial school-based recruitment of students, a media-use questionnaire and a parental consent form were mailed to the home of each interested student. Students and parents were told about the possibility of being selected to participate in a second interview about their health and sexuality, but the main focus of the school recruitment process and parent permission slip was the media-use-pattern questionnaire. This protocol resulted in a school-recruited, home-based study of 7th and 8th graders' media use that provided a foot in the door for the more sensitive health and sexuality survey. The data collection protocol is outlined in Figure 1.

The main risk to this school-recruitment, home-based approach was that too few students would return mailed questionnaires and that parents would not mail back consent forms, thus attenuating the sample size for the media survey, reducing the availability of students for health survey participation,

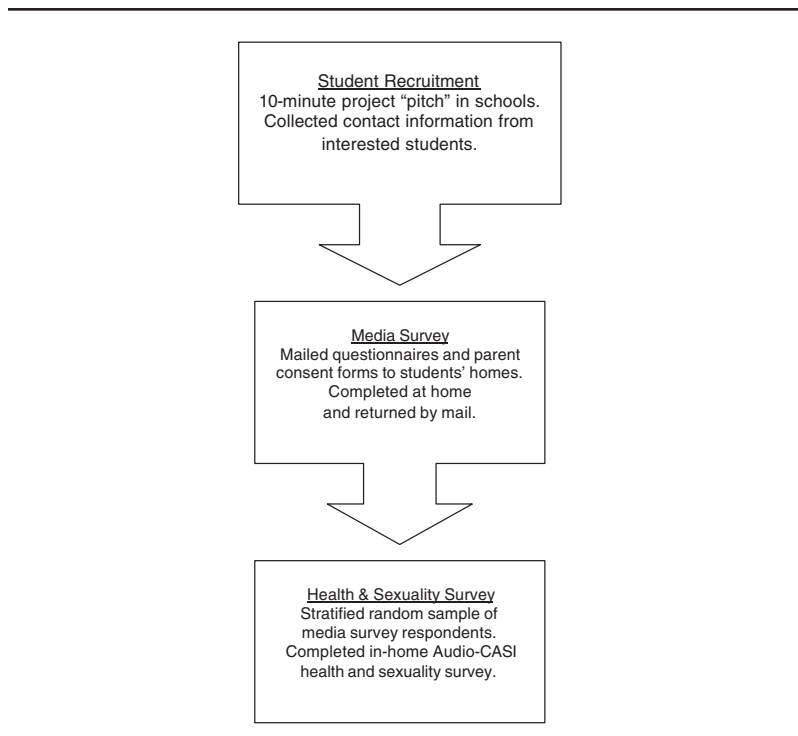


Figure 1: Data collection protocol.

NOTE: CASI = computer-assisted self-interview.

and, in general, diminishing the generalizability and the validity of the study results (Iverson, 1984). Although there is a sizeable literature on conducting mail surveys of adults (see, for example, Dillman, 2000), few previous studies have attempted to gather data from adolescents through the mail. Despite the lack of data regarding mail survey protocols and response rates with adolescent samples (see, e.g., Martinson et al., 2000), several factors suggested that the benefits might outweigh the risks: Minimizing time spent in each school should result in more schools agreeing to participate; parents should be more willing to return media survey consent forms if they could see the actual survey instrument for which they were giving their child permission to fill out; and familiarizing families with the study through participation in the low-risk media questionnaire should increase participation in the later, higher-risk health survey.

Strategies to Maximize Responses

Following the recommendations of Dillman (2000) and others (Yammarino, Skinner, & Childers, 1991), we incorporated a number of techniques that have been found helpful in previous survey research. First, we focused on branding the study to increase recognition and salience of the project, a process that involves several data collection efforts and student contact over a period of several years. We gave the project a name (Teen Media) that would resonate with adolescents and that was developed in formative focus groups with our target market, and we developed an eye-catching logo to use on all our materials. A recognizable brand identity has consistently been shown to be important to a target market (in this case, potential adolescent respondents) (Kotler, 1991). To extend the brand, we also placed the logo on pens that were distributed to students during initial recruitment, included the logo in mailings of the media survey and consent forms and on follow-up postcards, and printed the logo on T-shirts that were worn by all research staff and raffled off to students during the school recruitment phase. The Teen Media logo also was used in recruitment materials for the health survey and in tracking letters and postcards to maintain contact with the health sample.

Second, the media-use-pattern survey used a high-interest visual design technique, using three colors that matched the Teen Media logo and a variety of graphics throughout the survey. As recommended by Dillman (2000), the questionnaire was prepared as a 4 × 6.5-in. booklet, totaling 36 pages in length. In-depth questions were asked about seven different media (television, prerecorded music, newspapers, Internet, movies at home, movies in the theatre, and magazines), including time spent with each media, the specific vehicles viewed (such as *Seventeen* magazine, *Gilmore Girls*, Dave Matthews Band, etc.), motivations for viewing, and parent monitoring. Access to media in the home, favorite media personalities, and basic demographic questions also were included. Extensive formative research was conducted with three classrooms of students prior to printing the final survey.

Third, following suggestions of Martinson et al. (2000) and Church (1993), we used cash incentives to encourage students to complete the media and health questionnaires. These included a \$1 cash incentive attached to the outside of each media survey to attract the teen's attention to the questionnaire as well as ongoing drawings for basketball tickets and mall gift certificates, ranging from \$50 to \$100. The names of students who won basketball tickets and gift certificates were provided to each principal, and some schools chose to broadcast the winners' names during morning announcements. A cash incentive of \$20 was paid to each respondent who completed the health

survey, with a promise of \$25 for completion of the follow-up survey 2 years later.

Fourth, we created a presence in each school, starting with the face-to-face recruitment and continuing with regular phone calls to principals, fax reminders about the project, and a \$500 donation to each participating school.

Finally, we used a foot-in-the-door approach to increase participation in the health and sexuality survey. This strategy suggests that once a person has performed a small task, he or she will be more likely to later comply with a larger, more difficult task (DeJong, 1979; Freedman & Fraser, 1966). We expected that a student who successfully returned the low-risk media questionnaire with parental consent would be more likely to participate in the higher-risk health and sexuality survey. The health survey recruitment letter emphasized prior participation in the media-use portion of the research, with the expectation that prior involvement in the study would translate into continued commitment and participation in other project activities (Cialdini, 1984).

The Recruitment Process

We initially recruited all public middle schools in three local school districts that included urban, suburban, and rural populations. Fourteen out of 16 schools, enrolling between 284 and 847 7th- and 8th-grade students, agreed to participate. The two schools that declined to participate said they already were engaged in other research projects and did not have time to accommodate another.

We conducted student recruitment over an 8-week period in fall 2001, speaking to groups of approximately 100 students at a time. During the 10- to 20-minute school recruitment session, students were briefed about the rationale for the Teen Media study, were instructed that written parent or guardian permission was required for completing the media-use questionnaire, were shown the media-use questionnaire and the parent permission slip, and were told about the prize drawings. Students were told about the possibility of being selected to participate in a second interview about their health and sexuality, but the main focus of the school recruitment process and parental consent form was the media-use-pattern questionnaire. Heavy-stock cards requesting contact information (name, parent or guardian name, home and e-mail address, two telephone numbers, grade, gender, and race), printed in three colors and with the Teen Media logo, were handed out to interested students.

Information from the contact cards was entered using Microsoft Access. This database served as the repository for student contact information and the tracking database where follow-up activities were documented. Between 2 and 3 weeks after school recruitment, the parents or guardians of students who provided complete contact information were mailed Teen Media packets. Each packet contained a \$1 bill, a 6 × 9-in. card that gave instructions for completing the materials and a reminder of the prize drawings, a Teen Media logo pen, a media-use questionnaire, a parental consent form detailing study procedures and data confidentiality, a second consent form for the parent to keep, and two addressed stamped envelopes for returning the materials.

Approximately 2 weeks after the initial packet mailing, a postcard reminder was sent to nonrespondents. The postcard, which was printed in three colors with the Teen Media logo, thanked students, encouraged them to return their Teen Media materials, and reminded them about the prize drawings. E-mail reminders were simultaneously sent to all nonrespondents who had useable e-mail addresses. Second packets with all the same materials (except the dollar bill) were mailed to those who were still nonrespondents between 1 and 2 weeks after the postcard reminder.

A final effort was made to increase response rates by demographic group and school. After lower responding groups were identified, we increased the number of gift certificates for those groups, sent reminder postcards with the new incentives, made reminder phone calls, and sent a third complete mailing. Additionally, students who returned one document but not the other (questionnaire or parental consent form) were periodically flagged in the tracking database and then sent the necessary replacement materials. Efforts were focused on Black and on White students and not on students who had identified themselves as belonging to other racial or ethnic groups because the health survey participants were recruited from within Black and White strata.

Students who completed the media questionnaire with parental consent were eligible for selection for the health survey. A random sample of 1,200 students was selected from within gender and race (Black and White) strata, and the parents of these students were sent recruitment letters from the subcontractor, Westat Inc. This letter reminded parents that their adolescents had already completed the Teen Media media-use survey, mentioned a range of health and sexuality topics that would be covered in the interview, outlined steps taken to ensure data confidentiality (e.g., certificate of confidentiality from the United States Department of Health and Human Services), and emphasized that the study results may be used to improve media programming to teenagers. Parents were told that teens would work individually with an interviewer in their home to enter survey responses directly into a laptop

TABLE 1: Final Response Rates by Race and by Gender

	<i>Total</i> ^a	<i>Completes</i>	
		<i>Number</i>	<i>Percentage</i>
Overall	5,029	3,261	65
Black females	1,149	761	66
Black males	953	578	60
White females	1,219	849	70
White males	1,151	769	67
Other females	268	166	62
Other males	252	135	54

a. Numbers do not add up to the total because of missing demographic information from some students.

computer to ensure privacy and confidentiality, after the parent or guardian provided consent for their teen. Phone calls were then made to parents to set up interview appointments with students in their homes or in a more public place (e.g., library), if they preferred. If reaching families by telephone was difficult, or if there was no working telephone, interviewers made a home visit to set up the interview appointment.

RESULTS

Sample Response and Characteristics

A total of 5,398 students were reached during the school recruitment effort. A small proportion of these students (7%) did not provide useable contact information; 152 students declined to complete contact cards; 64 students provided incomplete information on the contact cards; and 153 provided unusable addresses. Black students provided significantly more unusable addresses (89) than White students (34), $\chi^2(1, N = 123) = 38.4, p < .001$.

Teen Media materials then were sent to a total of 5,029 students. Based on the average monthly attendance for students across all participating schools (5,886), the Teen Media study successfully reached 85% of the currently enrolled students as determined by school administrators. Even when using the more conservative number of total school enrollment (average attendance plus average absent), we successfully reached 81% of the total school enrollment of 6,234. Almost two-thirds (65%) of accessible students successfully returned media-use-pattern questionnaires and signed parental consent

TABLE 2: Race and Gender Comparisons Between Enrolled Students and Teen Media Participants

<i>Description</i>	<i>Total Student Enrollment</i>		<i>Useable Contact Information</i>		<i>Successful Completes</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
Overall	6,234		5,029		3,261	
Black females	1,410	23	1,149	23	761	23
Black males	1,349	22	953	19	578	18
White females	1,388	22	1,219	24	849	26
White males	1,458	23	1,153	23	769	24
Other females	303	5	268	5	166	5
Other males	322	5	252	5	135	4

forms. Response rates ranged from a high of 70% for White females to a low of 54% for non-Black and non-White males (see Table 1).

Table 2 compares the race and gender breakdowns of the total student enrollment, students reached by the Teen Media study, and students who successfully responded to the Teen Media media-use questionnaire with parental consent. Because fewer Black male students provided useable contact information at the initial point of contact, and because fewer returned the media-use questionnaire with parental consent, Black males were slightly underrepresented in the Teen Media sample. Additionally, White females were slightly overrepresented in the Teen Media sample because a greater proportion of them provided useable contact information and returned the media-use questionnaire with parental consent.

Because students were recruited for the health survey from within equal-size strata, race and gender breakdowns were approximately equal, with each of the four demographic groups (Black and White males and females) representing between 24% to 26% of the health sample. In contrast to recruitment for the media sample, it was most difficult to recruit White females to participate in the health survey and least difficult to recruit Black males; interviewers made more visits and phone calls to the homes of White females and used more resources for their recruitment. Participation in the health survey was very high: 90% of students selected for participation (1,074 out of 1,200) completed the in-home health and sexuality survey with parental consent.

To gauge their socioeconomic status, Teen Media participants were asked if they received free or reduced-price breakfast or lunch at school. Twenty-eight percent of the media sample and 31% of the health sample reported that they did. School-level data indicated that 35% of the total enrolled student

population in the 14 schools participating in the study received free or reduced-price lunch during the school year.

To confirm data quality of the mailed-back media questionnaires, we examined the proportion of missing data for every 10th variable in the media survey; a total of 75 variables were examined. The average proportion of missing data across the sampled items was 3.7%; the median and the mode was 2% missing. Missing responses ranged from 0.2% for several movie choices to 23% for the presence of televisions with satellite and videogame players in students' own bedrooms. On examination, wording of the items about presence of media in students' bedrooms and instructions for completing those items proved confusing for respondents.

The Importance of Tracking and Follow-Up

A total of 2,012 media surveys with parental consent were returned within 2 weeks after the initial packet mailing, representing 62% of all surveys that were eventually returned. There were significant differences in initial completion rates between demographic groups: Females were more likely than males to return their materials following the first mailing (nonintervention), $\chi^2(1, N = 1,816) = 50.3, p < .001$, and White students were more likely than Black students to return materials without intervention, $\chi^2(1, N = 1,816) = 40.5, p < .001$. Aggressive tracking and communication with all nonrespondents, and using even more intensive intervention strategies with Black and White male students, yielded substantial increases in final response rates.

More than one-third (38%) of the Teen Media final useable sample was the result of contact with nonrespondents following the initial mailing. This resulted in an additional 1,243 students who returned the survey with parental consent. As predicted by Dillman (2000), the second mailing generated the highest number of completes (348), followed by the first set of postcard and e-mail reminders that were sent subsequent to the initial mailing and that yielded 230 completes. Other follow-up activities yielded returned surveys as follows: phone calls (202), second postcard reminder (160), sending replacement materials (132), mailing a second packet and a third reminder postcard to males (107), and mailing a third reminder postcard to females (53).

On the other hand, sending replacement materials and making phone calls yielded the highest intervention success rates. Considering all follow-up intervention strategies, replacement materials and phone calls were most likely to result in survey returns, with 46% of all packet replacements and 28% of all phone calls generating completes. Table 3 presents the proportion of all follow-up interventions with nonrespondents that yielded returned media surveys with parental consent.

TABLE 3: Intervention Success Rate

<i>Description</i>	<i>Number of Successful Interventions^a</i>	<i>Total Number of Interventions^b</i>	<i>Intervention Success Rate (%)</i>
Overall	1,243	14,017	9
Replacement materials	132	288	46
Phone call	202	722	28
Packet 2	348	2,562	14
Males: Packet 2, Postcard 3	107	937	11
Postcard 1, e-mail, or combination	230	2,890	8
Postcard 2	160	2,095	8
Females: Postcard 3	53	781	7

a. This column includes students who became successful completers as a result of one of the intervention techniques listed; thus, the categories are mutually exclusive.

b. This column includes all of the interventions conducted with nonrespondents; these categories are not mutually exclusive because the majority of students received multiple follow-up interventions.

DISCUSSION

Given increased pressure among mass communication and public-health researchers to produce rigorous research in an increasingly competitive publishing environment, combined with increased budget restraints in many Research I universities, it is becoming even more critical to examine our data collection methods and data quality. By applying Dillman's (2000) time-tested questionnaire protocols, taking a more commercial, direct-mail approach (branding; using three-color, highly-designed pieces), and looking for ways to overcome the obstacles of conducting lengthy data collection in public middle schools, we were able to achieve a strong response rate (65%) for our mail-home media-use-pattern questionnaire. This response rate compares favorably to other surveys with adolescents in school that required active parental consent for student participation (Johnson et al., 1999; Severson & Biglan, 1989; Thompson, 1984). Given the added difficulty of recruiting minority adolescents into research studies (Jenkins & Parron, 1995; O'Donnell et al., 1997), the response rates we obtained for Black students are relatively high.

Furthermore, the final media sample is representative of the local school population and includes a relatively large number of Black teens and males and a substantial proportion of students from lower socioeconomic strata, as indicated by the receipt of meal subsidies at school. Much of what we cur-

TABLE 4: Comparisons Between Teen Media Data and National Data

<i>Description</i>	<i>Teen Media Sample</i>		<i>National Sample</i>	
	<i>Blacks (%)</i>	<i>Whites (%)</i>	<i>Blacks (%)</i>	<i>Whites (%)</i>
Have 2+ TVs in home ^a	95	90	92	88
Have 2+ radios in home ^a	89	92	80	89
Have 2+ VCRs in home ^a	69	70	57	60
Smoked in last 30 days ^b	20	21	12	19
Ever had sexual intercourse ^b	21	4	37	11

a. Teen Media data are compared to a nationally representative sample of children and youth ages 2 to 18 from the Kaiser Family Foundation (Roberts, Foehr, Rideout, & Brodie, 1999).

b. Teen Media data are compared to a nationally representative sample of 7th and 8th graders from the National Longitudinal Study of Adolescent Health (Blum et al., 2000).

rently know about patterns of media use among adolescents and children is based on small samples of relatively homogeneous, primarily White populations. Until the Kaiser Family Foundation study (KFF) conducted by Roberts, Foehr, Rideout, and Brodie (1999), few studies had examined more than one medium (usually television) at a time, and even fewer had included a significant portion of Black youth. Even in the KFF study of 2,065 adolescents, only 16% (330) of the sample was Black. Small samples limit understanding of the media-use patterns of important segments of the population that are historically understudied in mass communication research, and they impede the ability to conduct robust and sophisticated analyses because of limited statistical power. One of the strengths of the Teen Media study is the investigation of the comprehensive media use of a sizeable sample of Black adolescents.

Furthermore, Teen Media respondents' access to television, radio, and VCRs in their homes showed trends that are similar to national data on young people's access to the media. Responses to the Teen Media media-use questionnaire were compared to responses from the KFF study that included a nationally representative sample of children and youth ages 2 to 18 (Roberts et al., 1999) (see Table 4). Responses were examined separately for Black and White groups because the racial distributions of the two samples are very different. Similarities in reports of television, radio, and VCR home access suggest that data from our study may be generalizable to the larger population of adolescents in the United States.

Additionally, using the foot-in-the-door approach, we effectively primed the media sample to ease the way for achieving an unusually strong response rate (90%) to the more sensitive health and sexuality survey. This response

rate is higher than other comparable health studies that have used similar in-home, audio computer-assisted self-interview data collection protocols, such as the National Longitudinal Study of Adolescent Health that achieved a 79% response rate (Resnick et al., 1997). Health behaviors in this nationally representative sample of 7th and 8th graders (Blum et al., 2000) were compared to our Teen Media sample. Smoking reports were similar, although Teen Media respondents reported less sexual intercourse (see Table 4). Despite these differences, sexual-behavior trends were similar: Black males and teens from single-parent and lower income families in the national sample and in Teen Media samples reported higher levels of sexual intercourse than others. Further analyses, as well as the 2-year follow-up data collection with Teen Media respondents, will provide more insight into the sexual-behavior patterns of our sample.

Finally, although survey methodologists recognize the importance of extensive tracking and follow-up, budget restraints frequently reduce the number of persuasive contacts that can be conducted with nonrespondents (Dillman, 1991). The Teen Media study demonstrates how crucial it is to conduct thorough tracking and targeted contacts while recruiting the sample, especially to improve response rates among typically lower responding groups. Through tracking nonresponders on a weekly basis, we were in a position to create and to continually refine the most appropriate intervention strategies for increasing return rates. For example, the second reminder postcard offered students in the lowest responding schools more chances to win \$20 gift certificates at the local mall than it did for students at the higher responding schools. Also, nonresponding male students received more subsequent contacts than did nonresponding females because the initial response rates for males were substantially lower than for females.

For researchers who are interested in adolescents, it is important to continue to examine new ways to reach this crucial age group. Having initial face-to-face contact in the public schools, but allowing students to fill out questionnaires at home, is one way to meet the challenge. Branding, using highly-designed surveys, strategically using tracking and incentives, and taking a foot-in-the-door approach to recruit respondents for the initial low-risk survey and subsequently recruiting for a higher-risk survey are methods we used to successfully recruit and survey adolescents. The Teen Media mail survey will provide a comprehensive description of the media-use patterns of a demographically diverse group of early adolescents, and linked with the in-home sexuality survey, the study presents a unique opportunity to investigate how teens' media use is related to their sexual beliefs and behaviors.

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