22 Sensitive Issues in Surveys: Reducing Refusals While Increasing Reliability and Quality of Responses to Sensitive Survey Items

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There is general agreement that certain survey topics pose problems for researchers due to the reluctance of respondents to discuss those topics. Social scientists have become increasingly interested in such topics due to the call for increased research in areas related to victimization, sexually transmitted diseases, and drug and alcohol use. Measurement error can occur when surveying on these sensitive topics since respondents may choose not to participate in the survey, not to answer particular questions, or not to give accurate answers to those items. Survey methodologists have identified several methods of reducing the threat associated with sensitive survey items; these methods include changes in mode of administration, question wording, and interviewer training. Such methods are essential in the attempt to reduce the total survey error (TSE), by minimizing response and nonresponse biases.

The first section of this chapter will identify and describe common sensitive topics, as well as populations that may view certain questions as especially threatening, in order to aid survey designers in determining whether sensitivity will be an issue for their survey. The second section will explain in more depth the problems posed by sensitive issues in surveys. The third section will offer methods to reduce the threat associated with sensitive issues: choosing the appropriate mode of administration, wording questions appropriately, training interviewers to ease participants' discomfort, and additional techniques that lessen the anxiety caused by sensitive issues.

22.1 Sensitive Topics

According to Tourangeau and Smith (1996, p. 276), "a question is sensitive if it raises concerns about disapproval or other consequences (such as legal sanctions) for reporting truthfully or if the question itself is seen as an invasion of privacy." More specifically, Barnett (1998) identified several ways of identifying topics that are sensitive. The first definition of "sensitivity" is based on the perceived costs of answering the question. If respondents are expected to worry about repercussions associated with answering, then the question is considered sensitive or threatening. A second way that researchers have determined if questions are sensitive is to examine whether anonymity makes a difference. If respondents whose identities are known refuse to answer the question or answer it inaccurately, then the item is considered sensitive. It is assumed that respondents would only lie about behaviors that are sensitive or threatening. Therefore, many topics are

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considered sensitive or threatening because studies have shown that respondents tend to answer inaccurately. Third, if respondents confirm that the subject makes them feel uneasy (or they feel that it would make others uncomfortable), then the subject is considered sensitive.

There has been little effort to empirically examine the sensitive nature of the subjects that researchers perceive to be threatening. Many sensitive topics are identified using "common sense;" certain subjects are considered threatening or sensitive due simply to the researcher's gut feeling regarding these topics (Barnett 1998). It is not unusual for researchers to determine that topics or questions are sensitive after the survey has been conducted (Sudman & Bradburn 1982).

However, some scholars have attempted to empirically determine the degree of sensitivity of a particular topic. Surveys asking respondents how sensitive they considered the questions to be have found that certain topics are generally considered sensitive. Blair et al. (1977) asked respondents whether they felt that certain topics would make people feel uneasy; a large percentage of participants rated topics related to sexual behavior and drug or alcohol use as topics that would make people feel very uneasy.

Research on sensitivity generally focuses on behavior rather than attitudes (Barnett 1998). This focus is likely due to the ability to validate some reports of behavior; attitudes cannot be verified against other types of data and are therefore more difficult to measure. This trend may be changing, as socially undesirable attitudes are beginning to be examined by scholars. Recent studies compare results from the Implicit Association Test (IAT) to answers to attitudinal questions to determine if respondents answer these questions dishonestly (Greenwald et al. 2009; Slabbinck & Van Kenhove 2010).

Box 22.1: Implicit association test

The Implicit Association Test, or IAT, was proposed by Greenwald & Banaji (1995) and introduced to social scientists by Greenwald et al. (1998). It is meant to link implicit and explicit memory to determine individuals' associations between concepts.

The IAT is a computer-based test. Users are asked to rapidly associate concepts; the time that the user takes to make these associations are measured to determine the user's ease of association. Generally, the test begins with two categories showing in the left and right areas of the computer screen; users are asked to associate words that appear in the middle with a certain category. The position of the categories and the associations are switched in order to measure the ease with which the user makes each association.

The most well-known IAT is used to measure the extent to which a person believes in stereotypes. There are a number of stereotype IATs, which test a wide range of ethnic, gender-based, and religious stereotypes. In addition to stereotype IATs, there are IATs that measure self-esteem and preferences for certain racial or ethnic groups.

There has been some criticism of the IAT; however, a great deal of research has been done to determine its validity. A recent meta-analysis determined that the IAT is an effective predictor of behaviors and attitudes. In fact, the IAT outperforms self-report measures in some studies (Greenwald et al. 2009).

For more information on the IAT, or to take the test, visit www.implicit.harvard.edu.

While there is not a clear standard definition of sensitive issues, there is general consensus that particular topics are sensitive. One of those topics is drug or alcohol use. Because of the illegal nature of some type of drug use, respondents could fear legal penalties if their answers became known. Furthermore, substance use, including drinking alcohol and smoking cigarettes, is considered deviant, and therefore is likely to cause embarrassment. Research has shown that certain drug or alcohol use is likely to be underreported due to the social undesirability associated with such behavior. Light or experimental users are less likely than habitual users to admit substance use (Mensch & Kandel 1988). For example, respondents tend to underreport drug use; this tendency is especially notable with use of "hard" drugs like cocaine, since other drugs are more socially acceptable (Sloan et al. 2004).

Scholars have become increasingly interested in conducting research on sexual behavior, especially risky sexual activity that is related to the transmission of STIs. The private nature of sexuality, as well as the empirically noted tendency of respondents to answer questions about sexual behavior inaccurately, has led to the inclusion of sexual behavior as a sensitive topic. It is expected that reports of sexual behavior would be equal across genders; however, these rates differ, suggesting that either men or women, or both, report inaccurately (Poulin 2010; Smith 1992). In face-to-face interviews, girls are unwilling to report sexual behavior, likely due to the embarrassing and socially undesirable nature of the topic (Mensch et al. 2003, 2008). On the other hand, boys often exaggerate sexual behavior in face-to-face interviews as a way to impress or shock the interviewer (Mensch et al. 2003).

Underreporting of homosexual behavior is an even more serious problem for researchers, especially when surveying juveniles. Juveniles report a lower rate of homosexual behavior than adults retroactively report engaging in as teenagers (Turner et al. 1996, 1998). Young males are less likely to report male–male sexual behavior than heterosexual behavior, suggesting that, at least for males, homosexual behavior is a more sensitive topic than is heterosexual behavior (Turner et al. 1998).

Private family issues are also considered sensitive topics, as it assumed that respondents are either unwilling or consider themselves unable to discuss these issues with interviewers. Studies show that relationship violence is underreported; both male and female partners tend to underreport marital violence (Szinovacz & Egley 1995). Furthermore, women in abusive relationships are less likely to participate in surveys, since such participation violates the isolation inherent in abusive relationships (Records & Rice 2006). Another family issue that is considered sensitive is loss or death in the family, as participants (and sometimes interviewers) can become emotionally distressed while discussing the topic (Kitson et al. 1996).

Victimology research relies heavily on survey data, as estimates obtained by official data are believed to be invalid due to the tendency of victims to opt out of notifying the police. Experiences of victimization are considered a highly sensitive topic, as these experiences are often traumatic and can be embarrassing (see Kleck and Roberts Chap. 24, and Yang and Hinkle Chap 25). Researchers have noted a tendency of survey participants to underreport experiences of victimization, especially sexual victimization (Langhinrichsen-Rohling et al. 2006; Krebs et al. 2011; Records & Rice 2006; Smith 1994). Misreporting of victimization experiences can be attributed to at least two factors—the sensitive nature of such victimizations and individuals' inability to define the incidents as criminal.

It has been suggested that survey respondents are unwilling to report criminal or delinquent activity (Tracy & Fox 1981). The sensitive nature of criminal behavior is clear, since participants would be admitting to behavior that could result in legal sanctions. Furthermore, since criminal behavior is considered morally wrong, responses to such questions could be damaging to one's reputation.

Questions regarding one's health are likely to be considered sensitive, as the respondent may view them as a violation of privacy. Therefore, researchers interested in medical conditions, suicide, or abortion should attempt to reduce the threat associated with such questions. Several medical conditions are underreported in surveys, while screening behaviors are overreported (Martin et al. 2000). Suicidal thoughts and attempts are considered sensitive topics, both because they are likely to be underreported and because discussing suicide may cause distress in respondents (Langhinrichsen-Rohling et al. 2006). Questions regarding experiences of abortion are likely to be considered sensitive for similar reasons (Fu et al. 1998). An experiment comparing survey responses to medical records demonstrated that 83.4% of women who had had abortions accurately responded to the question (Rasinski et al. 1999). However, surveys on medical topics that are conducted in clinical settings may not be considered as sensitive as those conducted in other settings, as respondents are used to discussing personal matters in that setting (Millstein 1987).

Questions on demographic information are considered sensitive because respondents may perceive these questions as identifying (Giles & Feild 1978). Individuals who complete surveys may worry that their unique responses to demographic questions could allow researchers to identify them, especially if they are part of a known sample, such as a survey conducted within one's workplace.

Some issues are considered sensitive because they are socially desirable. Individuals may be reluctant to admit that they do not engage in activities that are widely encouraged in society. One such behavior is voting. Voting is an especially popular topic when studying sensitive issues or social desirability due to the ability to use official voting records to verify self-reports (Silver et al. 1986; Tourangeau et al. 2010). Other issues that are sensitive due to social desirability are hygienic practices, diet, and exercise; many people are unwilling to report a lack of cleanliness or poor diet and exercise use due to the embarrassment that could result (Hebert et al. 1997; Motl et al. 2005; Visser et al. 1989).

22.2 Sensitive Populations

Cultural characteristics of the group being surveyed must be considered when attempting to conduct surveys on sensitive topics, as the sensitivity of the topic can vary depending upon the target population (Barnett 1998). Different cultural groups have different norms and preferences. These differences create a context in which a topic that is normally benign can be viewed as threatening. In contrast, certain groups can perceive a behavior that is usually socially undesirable as acceptable or even desirable.

As an example of the effect of cultural differences on surveys of sensitive behavior, researchers have found widely varying levels of sexual behavior across Sub-Saharan African countries. (Mensch et al. 2003). These differences are possibly due to cultural differences in willingness to report such behavior. For example, in Malawi, pre- or extra-martial sexual behavior has become morally reprehensible due to the AIDS epidemic (Poulin 2010). Therefore, surveys about sexual activity conducted there may be more vulnerable to misreporting due to the social undesirability of such behavior than surveys in other countries.

The cultural views of the target population, or segments of the population, can also affect the interview process. Certain groups, such as lower socioeconomic and minority groups, are more suspicious of the interview process (Mensch et al. 2008). More specifically, group membership and culture can affect whether the respondent believes the researcher's assurances of anonymity (Barnett 1998). Therefore, anonymity or confidentiality assurances will be a more effective method of dealing with sensitive topics for some groups than others. Furthermore, the culture of the population of interest should be considered when choosing a mode of administration, since the use of technological devices such as computers or tape recorders can make

some groups of respondents suspicious (Mensch et al. 2003; Poulin 2010).

Researchers should be especially careful when conducting surveys of children or adolescents, as sensitive topics pose additional ethical issues for this population. It is important to note that children or teenagers are often surveyed in the presence of others; surveys often take place in school in the presence of teachers and classmates or at home in the presence of family members (Phillips 1994). In these settings, juveniles may be very worried that their answers will be seen or overheard. Furthermore, they may feel that they have to participate in the study, as they may face ridicule if they refuse. Scholars attempting to survey these populations should take extra steps to ensure the privacy of respondents.

It has been suggested that teenagers and children are more emotionally affected by survey questions than are adults (Langhinrichsen-Rohling et al. 2006). Certain topics may be especially embarrassing for young participants (Harden et al. 2000). Children may also have increased difficulty in completing surveys due to lack of understanding of the questions (Jacobs et al. 2008). Also refer to Chap. 24 by Kleck and Roberts for further discussion on issues of privacy and sense of embarrassment.

22.3 Problems with Sensitive Topics

There are two main methodological issues associated with surveys covering sensitive topics. The first issue is *nonresponse*: potential respondents may refuse to participate in the survey when they see what topics are covered or may refuse to answer certain questions. The second issue is *misreporting*: a respondent who agrees to participate may not answer sensitive questions honestly, creating measurement error. In addition to these methodological issues, there are *ethical considerations* when asking threatening questions in surveys.

22.3.1 Nonresponse

A major issue associated with sensitive topics is refusal to participate. Since researchers are ethically obligated to explain the purpose of the survey and the topics that will be covered, respondents have the ability to opt out of surveys that cover issues that they consider threatening or invasive. This refusal to participate causes two main problems for the validity of the results. First, surveys that experience high refusal rates, especially surveys of sensitive topics, are unlikely to fully cover the population (Johnston & O'Malley 1985). It is possible that certain segments of the population, such as minority ethnic or religious groups, are underrepresented in surveys that contain questions on sensitive issues. Therefore, estimates obtained from such a survey may not be generalizable to the entire population of interest. Second, individuals whose information the researchers are trying to obtain may be the most likely to refuse to participate in the survey (O'Brien et al. 2006). For example, individuals who participate in risky AIDS-related behaviors may refuse to participate in a survey of such behavior. Therefore, estimates of the extent to which individuals participate in that behavior may be low, and important information that could be obtained through the survey may not be included.

Nonresponse is conditional on a number of factors, including an individual's general dislike for surveys; characteristics of the respondent, such as sociodemographic characteristics and household makeup; characteristics of the interviewer, such as sociodemographic characteristics, prior experience, and demeanor; and factors related to the survey design, such as mode of contact, mode of administration, and length of time to complete the survey (Groves 1989, 1992; O'Brien et al. 2006). In addition, survey participation may depend upon the topic(s) that the survey covers and the sensitive nature of those topics (Groves et al. 1992; Steeh 1981). Recent research indicates that surveys containing

embarrassing or socially undesirable topics are likely to have low response rates (O'Brien et al. 2006; Tourangeau et al. 2010).

Some individuals may refuse to participate in certain surveys because of their perception of the potential repercussions associated with answering. Research has identified several populations as less likely to participate due to this perception. First, arrestees may fear that their answers will be used against them (National Institute of Justice 2003). Second, studies examining alcohol and drug use among welfare recipients note the possibility that these participants may feel that their answers will get back to the government, especially if the study is funded by a grant (Pridemore et al. 2005). Finally, members of dysfunctional or abusive families may be unwilling to participate in surveys. For women in abusive relationships, either participating in a study or answering questions about their relationship may be considered dangerous, as their partners may retaliate with violence (Records & Rice 2006)

In addition to refusing to participate, respondents can refuse to answer specific questions. Item nonresponse can result in high levels of missing data for specific questions. Missing data affects the generalizability of estimates obtained from surveys, as it is unknown whether those individuals who chose not to answer are different from those who did answer. Furthermore, as explained above, statistics based on small sample sizes suffer more from sampling error. Therefore, survey designers must attempt to decrease item nonresponse.

Threatening survey questions are likely to suffer from nonresponse (Mangione et al. 1982; Mensch et al. 2008; Sakshaug et al. 2010). Nonresponse may be more problematic in reports of socially desirable behaviors than in reports of socially undesirable items (Sakshaug et al. 2010). Respondents may simply choose not to respond to non-threatening questions that they would prefer not to answer honestly.

22.3.2 Misreporting

Another major issue associated with surveys of sensitive topics is misreporting. Respondents who agree to participate in the survey may still feel unable or unwilling to answer honestly. This reluctance to give honest answers can stem from different sources. Respondents may be uncomfortable refusing to participate or respond, since such a refusal could be seen as an indication that their answers would be socially undesirable (Phillips 1994). Respondents may choose to answer dishonestly due to a desire to present themselves in the best light to the interviewer or to avoid potential repercussions (Pridemore et al. 2005; Szinovacz & Egley 1995). Respondents sometimes give inaccurate responses due to their unwillingness to think about embarrassing or traumatic events or inability to understand what has happened to them (Tourangeau & McNeeley 2000). Misreporting is problematic because it can result in large biases in estimates obtained from sensitive survey estimates. Rates of socially undesirable behavior can be underestimated by as much as 20% (Sakshaug et al. 2010)

Respondents purposely misreport for several reasons; to avoid embarrassment or stigmatization, to avoid potential repercussions, and to present themselves in a positive manner (Pridemore et al. 2005). There is a tendency to overreport socially desirable behavior, characteristics, or attitudes. For example, voting is considered highly desirable; therefore, individuals tend to report voting in elections even if they did not do so (Silver et al. 1986). In addition to overreporting socially desirable traits, respondents are likely to underreport socially undesirable behavior, characteristics, or attitudes. For example, drug use is likely to be underreported; the extent to which substance use is underreported varies by the level of social undesirability of the particular substance in question (Sloan et al. 2004).

It is generally assumed that misreporting will occur in a specific direction (as over- or underreporting, depending on whether the item is socially desirable or undesirable). However, it is possible that measurement error associated with reports of sensitive behavior occurs in both directions, regardless of the nature of the behavior in question. A meta-analysis found that errors were balanced on either side of the

average rather than occurring in the same direction, as would be expected if the respondent answered dishonestly due to the social desirability (or undesirability) of the behavior (Marquis 1984). Therefore, it is important that researchers do not assume that higher estimates of socially undesirable behavior are necessarily more accurate (Barnett 1998; Rand & Rennison 2005). Unfortunately, a great deal of research on improving accuracy in sensitive survey items makes that assumption.

22.3.3 Link Between Nonresponse and Misreporting

Tourangeau et al. (2010) found support for a relationship between nonresponse and misreporting, with sensitive surveys resulting in low response rates and inaccurate responses. This link between nonresponse and misreporting has not been replicated in other studies (Sakshaug et al. 2010). Therefore, more research must be conducted before it is clear whether such a relationship exists.

There is often a tradeoff between nonresponse and misreporting associated with choosing a mode of administration (Sakshaug et al. 2010). As will be discussed below, the various modes of administration have different effects on nonresponse and misreporting. Therefore, when choosing a mode of administration for a survey that includes sensitive items, one must take into account the specific nature of the topic in order to determine which source of error will be most problematic.

22.3.4 Ethical Considerations

Researchers must consider the emotional effect that their surveys will have on participants. Survey designers should attempt to phrase questions in ways that will ease respondents' discomfort. This consideration is especially important when conducting surveys in which respondents will be asked to recall and discuss traumatic past or ongoing events. Furthermore, surveys on certain subjects, such as family violence, can create dangerous situations for respondents if their family members become aware of their participation or responses (Lynn & Kaminska 2011; O'Brien et al. 2006; Records & Rice 2006). Therefore, every effort must be made to decrease these potential harms.

The emotional effects of survey questions are especially salient for children and teenagers (Langhinrichsen-Rohling et al. 2006; Phillips 1994). The results of a study conducted by Langhinrichsen-Rohling et al. (2006) suggest that sensitive survey items have a negative emotional effect on adolescents. A small percentage (between 2.5 and 7.6%) of participants reported feeling upset frequently while completing a survey on suicidal thoughts and attempts, illicit drug use, and experiences of victimization. Those who had experienced or engaged in the threatening behaviors or experiences were more likely to feel upset while participating in the survey. Demographic characteristics and mode of data collection were not significantly related to participants' emotional state.

22.4 Privacy, Anonymity, and Confidentiality

Survey techniques that guarantee anonymity are expected to result in more accurate reporting of sensitive issues. Respondents feel more comfortable admitting to embarrassing, stigmatizing, or illegal behavior when participating in more confidential interview processes, such as computer-based surveys (Mensch et al. 2003, 2008; Tourangeau & Smith 1996)

Box 22.2: Increasing privacy in face-to-face interviews

A useful way to improve accuracy in face-to-face interviews is to utilize the sealed booklet method (see Makkai & McAllister 1992). During an interview, respondents are handed a sealed booklet and told that the interviewer does not have a copy of the questions or answers. The numbers of the answers are also scrambled

to assure the respondent of the anonymous nature of the questions. The respondent simply calls out the number that corresponds to the answer, and the interviewer marks the answer. The use of the sealed booklet results in more accurate estimates of sensitive behavior; respondents feel more comfortable answering honestly due to the increase in privacy. It also allows the researcher to ask a greater number of sensitive questions.

A similar technique to the sealed booklet method is the use of a portable audiocassette tape player with headphones (see Horm et al. 1996). Devices such as these minimize the chance of a third party overhearing the respondent's answers by allowing the respondent to privately listen to the survey questions and answer categories. They also reduce the potential for embarrassment, since the respondent does not have to directly respond to the interviewer. This method is beneficial because it increases privacy without requiring a high degree of literacy and is inexpensive when compared to methods such as ACASI.

Research suggests that the presence of family members or others during interviews decreases truthful answering to sensitive questions (Rasinski et al. 1999; Smith 1995). However, while there seems to be a tendency to underreport embarrassing or undesirable behavior in the presence of others, it does not appear that such a tendency exists for questions regarding socially desirable behavior. For example, the presence of third parties does not affect misreporting of voting behavior (Silver et al. 1986).

While more anonymous or confidential interviews seem to be helpful in increasing accuracy of responses, it seems that assurances of anonymity or confidentiality are not as beneficial. Excessive assurances of confidentiality may give respondents the idea that the questions are more sensitive than they actually are, decreasing their willingness to participate or give honest answers (Rasinski et al. 1999). Some studies find anonymity assurances to be related to higher levels of nonresponse and misreporting; anonymity can lower accountability, making respondents feel that they do not need to respond to certain questions or that it does not matter if their responses are accurate (Fuller 1974; McDaniel & Rao 1981)

This inability of confidentiality assurances to improve accuracy is likely due to the fact that they typically do not address all of the concerns that participants may have about answering truthfully. An experiment conducted by Rasinski et al. (1999) found that respondents consider the chance of an unauthorized group gaining access to survey data to be low. However, they rate the chance of other negative consequences to be higher. Participants may worry that a third party (such as a family member) will overhear their answers during the interviewer, discover the respondent's secrets, and/or become upset with the respondent. Furthermore, participants worry that the interviewer will disapprove, causing the respondent to experience embarrassment. For survey conditions (including mode of interview and privacy) that respondents consider high risk, they consider the likelihood of truthful reporting to be low (Rasinski et al. 1999).

22.5 Mode of Administration

When surveying on sensitive topics, a researcher should consider the effect of the mode of administration on respondents' willingness to answer honestly. The choice of mode of administration is often dependent on other factors, such as the researcher's budget and time available in which to administer the survey. However, when possible, this decision should take into account the topic of the survey, as research suggests that the accuracy of estimates of sensitive behavior and attitudes varies by mode of administration. This section will discuss various modes of administration

and their effect on accurate reporting of sensitive behaviors.

22.5.1 Face-to-Face

Although one might expect lower rates of socially undesirable behavior in surveys conducted via face-to-face interviews, this is not always the case. Some studies obtain more accurate estimates when conducting surveys in person than when using other modes of administration. A study by Mangione et al. (1982) found that respondents reported higher rates of drinking behavior in face-to-face interviews than in telephone interviews or self-administered questionnaires. A study comparing abortion reports from personal interviews to those from self-reports obtained higher rates of abortion in self-administered questionnaires than in face-to-face interviews; however, some respondents who reported having abortions in the interviews did not report these incidents in the self-administered portion (Fu et al. 1998).

More specifically, it is possible to determine when face-to-face interviews are more appropriate for surveys of sensitive topics. It seems that in-person interviews are more suitable for extremely sensitive items. For example, a study examining the drug and alcohol use of welfare recipients obtained similar lifetime estimates of drug and alcohol use in telephone and face-to-face surveys. However, respondents were more likely to admit to recent drug and alcohol use in face-to-face interviews than in telephone surveys (Pridemore et al. 2005). Participants may have seen questions on more recent substance use as especially threatening due to the fear of negative consequences of answering those items truthfully.

The tendency of respondents to answer honestly during face-to-face interviews is not surprising considering the conversational nature of such interviews (Barnett 1998; Beck et al. 2002). Because surveys are social interactions between the interviewer and the participant, rapport with the interviewer can put respondents at ease and neutralize the threatening aspect of the topic (Poulin 2010; Smith 1994). In fact, in a flexible interview in which the participant feels a connection with the interviewer, he or she may joke or tell stories, even when discussing extremely sensitive topics (Poulin 2010). When respondents feel more comfortable with the interviewer, they are more likely to give honest answers (Poulin 2010). If the participant views the interviewer as an understanding listener, discussing sensitive information can actually be relieving or therapeutic (Rasinski et al. 1999). The flexible nature of interviews also grants the interviewer the ability to probe or ask about contradictory answers (Poulin 2010).

22.5.2 Telephone

Surveys administered over the telephone have become quite popular due to several procedural advantages over face-to-face interviews. Telephone interviews are less expensive than face-to-face interviews, easier to administer, and more convenient for both the data collectors and the respondent (Mangione et al. 1982; Pridemore et al. 2005). Furthermore, this mode of administration has the added benefit of quality control through monitoring and recording of interviewers (Pridemore et al. 2005). Respondents find surveys conducted over the telephone to be as enjoyable as in-person interviews (Mangione et al. 1982).

In many cases, telephone surveys result in similar estimates as those obtained from face-to-face interviews, although the latter may be more reliable for extremely sensitive items (Mangione et al. 1982; Pridemore et al. 2005). However, in some circumstances, telephone surveys are superior; the potential for embarrassment is lower since the interviewer and the respondent do not physically meet.

Box 22.3: T-ACASI

Telephone surveys can be further modified to increase anonymity. Modifications of telephone surveys can be used to mimic the beneficial aspects of audio computer-assisted self-interviewing (ACASI) while

maintaining the convenience and budgetary benefits associated with telephone surveys. These modifications are commonly referred to as telephone ACASI, or T-ACASI. Using touch-tone data entry, a recorded voice will read the questions and answers to the respondent, who will enter the answers using the phone's keypad. Similarly, interactive voice response (IVR) can be used; in this technique, the computer is programed to comprehend the participants' verbal responses. These surveys have been demonstrated to be useful in collective sensitive information (Blumberg et al. 2003). As with other computer-based methods, this mode of administration can suffer from its impersonality; respondents may be unwilling to participate in such surveys.

The increase in cell phones has resulted in higher quality data obtained from telephone surveys. At first glance, it may seem that those using cell phones would be more likely to take surveys in public in the presence of others who could overhear their answers. However, research suggests that respondents are less likely to give socially desirable answers when using mobile phones than when using fixed phone lines (Lynn & Kaminska 2011). Participants using cell phones have greater control over the presence of others within earshot; if someone is nearby, the participant has less restricted movement to avoid allowing that person to eavesdrop. Furthermore, cell phone survey respondents do not have to worry that someone in their household is listening on another line, thereby reducing the possibility that family members will discover their answers. Therefore, the use of cell phones results in greater privacy, encouraging participation in the survey and honest answers to threatening or embarrassing questions.

22.5.3 Self-Administered

Because the problems posed by sensitive survey items are considered to be related to the respondent's discomfort or embarrassment, it is commonly assumed that more reliable estimates can be obtained through survey methods that decrease the respondent's contact with others. Therefore, it is commonly believed that the use of self-administered surveys will suffer less from measurement error.

When using self-administered surveys, participants report higher levels of socially stigmatizing behaviors that are commonly believed to be underreported in face-to-face interviews (Aquilino 1994; Beach et al. 2010; Beck et al. 2002; Fu et al. 1998; Mensch et al. 2003; Turner et al. 1996). Since there is no interviewer to impress, respondents are also less likely to overestimate socially desirable behaviors and other shocking behaviors, such as sexual exploits, when using self-administered survey methods (Mensch et al. 2003). The usefulness of self-administered surveys has been confirmed by studies conducted outside of North America—Europe (Beck et al. 2002; Gmel 2000), South America (Mensch et al. 2008), and Africa (Mensch et al. 2003; Poulin 2010). Self-administered surveys can be conducted in a number of ways: written self-administered questionnaires (SAQ), which can be conducted through the mail or in the presence of the data collector; web-based surveys; and computer-based surveys taken in the presence of the data collector. However, other studies have found that face-to-face or telephone interviews result in more accurate estimates, possibly because self-administered surveys are less personal (Pridemore et al. 2005).

Surveys administered by mail are considered beneficial because they allow respondents to answer the questions privately and at their convenience. However, mail surveys have major disadvantages, depending upon the subject of the questions. Surveys regarding very sensitive topics should not be conducted through the mail because of the possibility that others in the household or the community may intercept and read the questionnaire. This possibility is especially problematic when conducting surveys on family or relationship issues, such as domestic abuse.

Records and Rice (2006) propose using a modified version of Dillman's method for surveys on sensitive topics; specifically spousal and domestic abuse. Dillman (1978) suggests four mailings: the original survey distribution, a postcard reminder, and two more distributions of the survey. Each of the three survey mailings should include a different cover letter that emphasizes the importance of the project and acknowledges the effort put forth by the respondent. The major modification suggested by Records & Rice (2006) for sensitive topics was the use of a letter for the second mailing instead of a postcard, because a postcard could be more easily intercepted and read by others in the household. Other modifications were made, including the use of a standard cover letter for each mailing, to decrease the cost and effort put forth by the agencies assisting in the data collection. The modified version of the Dillman method for sensitive issues increased the recruitment rate from 13 to 35% (Records & Rice 2006). However, it could not be determined whether this method increased the number of abuse victims in the sample.

As an alternative to mail surveys, researchers may consider a drop-off/pick-up method in which the interviewer delivers the survey and sets a time to pick it up. This face-to-face contact allows the respondent to establish a rapport with an interviewer but maintain privacy while completing the survey (Mangione et al. 1982). When using this method, the interviewer can assist those that are not capable of taking the survey on their own. While this method of conducting interviews is convenient, it does not increase accuracy of estimates over telephone or face-to-face interviews, and respondents may find it less enjoyable (Mangione et al. 1982). This method is also more costly than mail surveys in terms of time commitment.

Computer-based survey methods are becoming popular due to problems associated with other modes of administration. One such computerized method is computer-assisted self-interviewing, or CASI. CASI is similar to an SAQ in that participants are able to read the questions on the screen and respond. Another recent trend in social science research is the audio computer-assisted self-interview (ACASI) system. ACASI is a computer-based interview system that includes audible instructions, questions, and answers. The questions and instructions are usually displayed on the screen and read by the computer at the same time; respondents use the keyboard or mouse to progress through the survey (NIMH 2008).

There are several advantages associated with the use of computer-based surveys. First, these surveys may be more enjoyable for participants than other modes of administration (Millstein 1987; NIMH 2008). This is especially true for children; young respondents tend to prefer computer-based methods because they are "fun" or "interesting" (Jacobs et al. 2008). Second, a slight majority of participants report having a preference for computer-based surveys (Millstein 1987; NIMH 2008). Third, some participants who have little computer experience report feeling empowered by the opportunity to use a computer (NIMH 2008). Fourth and more specifically, ACASI is especially beneficial since it does not require any degree of literacy to be used. Studies have found that individuals with less education report sensitive behavior more accurately using ACASI than paper SAQ (Turner et al. 1998).

Computer-assisted self-interviewing methods (CASI and ACASI) produce more accurate reports of embarrassing information (sexual behavior and drug use) than do personal interviews (Gribble et al. 1999; Tourangeau & Smith 1996; Turner et al. 1996). ACASI also results in more reliable reporting of sensitive behaviors over time (Mensch et al. 2008). The use of ACASI also improves estimates of sensitive behavior over written self-administered questionnaires (Beach et al. 2010; Gribble et al. 1999; Mensch et al. 2003; Rhodes et al. 2002; Tourangeau & Smith 1996; Turner et al. 1996, 1998). Surveys on sexual behavior (including male homosexual behavior and contraceptive use), intimate partner violence, and drug and alcohol use have acquired higher estimates using ACASI than those using paper SAQs. Nonresponse is also less of a problem when using

ACASI than when using paper SAQ; respondents being surveyed via ACASI are more likely to use the "Don't know" or "Refuse to answer" options than are those filling out standard questionnaires (Turner et al. 1998).

While self-interviewing may result in less misreporting due to the increased privacy for respondents, there are also disadvantages associated with the use of self-administered survey methods. A major disadvantage of self-administered surveys is the absence of an interviewer. In other modes of administration, respondents who are confused by a question can ask for clarification. Self-administered modes of survey administration are limited in their ability to aid respondents in understanding questions. Therefore, results obtained from self-administered surveys may reflect measurement error due to participants' confusion. Furthermore, in telephone and face-to-face surveys, interviewers can identify answers that are inconsistent and ask for clarification (Mensch et al. 2008). Self-administered surveys suffer from an inability to check and/or correct for inconsistency in participants' answers. In addition, interviewers establish a rapport with respondents that eases their discomfort about answering honestly; they can also encourage hesitant participants to answer questions by reminding them of the confidential nature of the survey (Mensch et al. 2008). Without this encouragement, self-administered surveys may suffer more from missing responses (Turner et al. 1998).

When considering the use of paper-and-pencil SAQs, there are issues that a researcher needs to keep in mind. First, respondents may still be suspicious about the anonymity of their information, since their identification number and answers are located on the same form (Turner et al. 1998). This suspicion may discourage respondents from answering honestly.

A second disadvantage of written surveys is that they require the respondent to be able to read and write. Because of this issue, the use of paper-and-pencil surveys could bias estimates, as individuals who do not read or write well may be unwilling or unable to participate in the survey. An interviewer may assist individuals who are not literate; however, these interviews would not benefit from increased privacy or anonymity. In addition to a simple requirement of literacy, SAQs can be difficult for some literate respondents. Complicated surveys, such as those with skip patterns, are confusing even for respondents who can read and write (Turner et al. 1998). Therefore, written SAQs are not ideal for use with young children or other populations that are not well educated.

Computer-based survey methods have additional weaknesses as well. First, an understanding of computers and confidence in one's ability to use a computer is an important factor in self-reporting using computer-based surveys. The problem of computer illiteracy is especially salient when surveying certain groups (such as the elderly) or conducting surveys in areas (such as developing countries) in which computer use is less common (Beach et al. 2010; Mensch et al. 2003).

A second disadvantage is that the use of computers may increase suspicion about the survey process. Again, this disadvantage of computerized surveys is especially important in developing countries or low-income areas. The community may be apprehensive about the idea of computers being used to collect information about members of the community (Mensch et al. 2003). This apprehension may reduce response rates as well as discourage those who do participate in the survey from answering accurately.

Third, computer-based surveys (as well as other self-report modes of administration) of children and other at-risk populations may produce biased results since they have difficulty in understanding the questions asked (Jacobs et al. 2008). Because of this weakness, the use of ACASI under some circumstances can result in biased estimates of behavior or incidents. A study in which child endangerment reports generated from surveys using ACASI were investigated found that most of the reports were false (Jacobs et al. 2008). Sixteen percent of the sample reported incidents but only 3.6% reported incidents that were confirmed.

Fourth, computer-based survey methods can be expensive, as costly equipment must be

purchased and maintained. In addition to the initial cost of obtaining and programing equipment for use in computer-based survey methods, there is additional cost associated with the maintenance and replacement of computers if they malfunction or are stolen while surveys are being administered (NIMH 2008).

22.5.4 Survey Design

The wording of the survey description can affect the respondents' willingness to participate and answer honestly. First, researchers should be sure to stress the purpose of the survey and the way that the results will be used; respondents appear to be more inclined to answer honestly when the benefits of the survey results to society are emphasized (Rasinski et al. 1999). Second, whenever possible, survey designers should avoid the use of lengthy standard introductions (O'Brien et al. 2006). These introductions impede conversational flow, which is important for establishing rapport between the interviewer and respondent. As discussed earlier, this rapport makes the participant feel more comfortable divulging sensitive information to the interviewer. Also, a standard script makes it difficult for the interviewer to discover and address reasons for the respondent's unwillingness to participate in the survey.

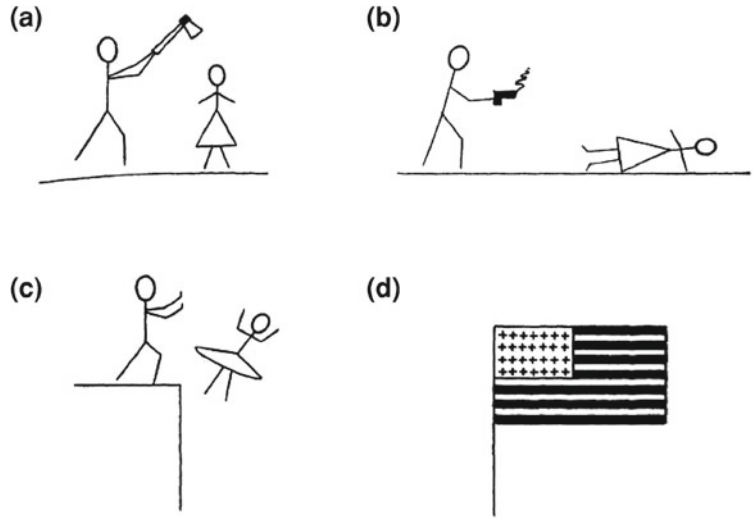
The wording of specific questions can also make an impact on misreporting; effective wording can make the question seem less threatening and put the respondent at ease. A common method of reducing the threat associated with particular topics is to load the question so that the behavior seems normal or common. Loading the question can be done in several ways. First, assume that respondents engage in the behavior of interest and ask about frequency or other more specific details ("How many alcoholic beverages do you consume per day?"). Second, the question can begin with a statement asserting that the behavior is common or understandable ("Even the calmest parents get angry with their children sometimes. Have your children done anything in the past 7 days to make you angry?") This can be combined with the third technique, the use of authority, in which experts are cited to prove to the respondent that the behavior is common or acceptable. Fourth, the question can be asked casually to make the behavior seem unimportant. See Fig. 22.1 for a popular example of these techniques of reducing question sensitivity: the "Did you kill your wife?" example by Barton (1958).

Another method of reducing the threat associated with a survey item is to use clear questioning that reduces confusion and aids recall. Questions that are easy to understand and answer will be less embarrassing for the respondent. The length and specificity of cues have been found to assist the respondent in understanding questions and easing discomfort. Such questions result in higher estimates of sensitive behavior (Blair et al. 1977; Mooney & Gramling 1991). Furthermore, using words that are familiar to the respondent and avoiding the use of jargon or technical terms results in higher estimates of sensitive behavior (Blair et al. 1977).

Indirect questioning is often used as a method of alleviating the threat associated with direct questions regarding sensitive behaviors or attitudes. In one form of indirect questioning, instead of asking respondents for reports of their own behavior or attitudes, the survey asks them to consider a third person (often, the "average" person). The wording of these questions should be as close as possible to that used in direct questioning; the only difference should be the use of third person rather than first person. Because the respondent uses his or her own behavior or attitude as a reference point, these items are meant to proxy the respondent's actual behavior or attitude. This type of indirect question reduces social desirability bias (Fisher 1993).

Indirect questions are believed to be less threatening and remove the tendency of respondents to answer in the way they perceive to be the most socially desirable. However, there are doubts regarding the validity of these items, since the respondent is not giving a true account of his or her behavior or mindset (Slabbinck & Van Kenhove 2010). Furthermore, it is possible

1. **The Casual Approach: "Do you happen to have murdered your wife?"**
2. **The Numbered Card: "Would you please read off the number on this card which corresponds to what became of your wife?" (HAND CARD TO RESPONDENT)**
   a. Natural death
   b. I killed her
   c. Other (What?)
   d. GET CARD BACK FROM RESPONDENT BEFORE PROCEEDING
3. The Everybody Approach: "As you know, many people have been killing their wives these days. Do you happen to have killed yours?"
4. The "Other People" Approach:
   a. "Do you know any people who have killed their wives?"
   b. "How about yourself?"
5. The Sealed Ballot Technique
   a. In this version you explain that the survey respects people's right to anonymity in respect to their marital relations, and that they themselves are to fill out the answer to the question, seal it in an envelope, and drop it in the box conspicuously labelled "Sealed Ballot Box" carried by the interviewer.



6. The Protective Technique: "What thoughts come to mind as you look at the pictures?" (Note the relevant responses will be evinced by picture D).
7. The Kinsey Technique: Stare firmly into the respondent's eyes and ask in simple, clearcut language such as that to which the respondent is accustomed, and with an air of assuming that everyone has done everything, "Did you ever kill your wife?"
8. Putting the question at the end of the interview.

Source: Barton, A.J. (1958).

Fig. 22.1 Loading the question, "Did you kill your wife?"

that respondents are more likely to perceive a socially undesirable behavior or trait as uncommon; this abnormality is the reason that scholars assume the topic is sensitive. Indeed, research shows that results from indirect questions are not free of social desirability bias (Slabbinck & Van Kenhove 2010).

Another type of indirect question is the Randomized Response Technique (RRT) (Warner 1965). Respondents are randomly assigned to answer one of two questions; the interviewer is unaware of which question they have been assigned to. The two questions can be opposite views of a controversial issue (for example, A) I

am in favor of legalizing gay marriage; B) I am against legalizing gay marriage) or one of the questions can be an unrelated question with a known probability for each answer. If the respondent answers, "yes," his or her answer to the item of interest is still unknown to the interviewer. This method is believed to improve reporting rates because respondents should feel less pressure to misreport if the interviewer does not know which question they are answering.

In another variation of RRT, sometimes known as the forced alternative method, respondents answer the same question, but are randomly assigned to either answer correctly or give a predetermined answer. In this case, respondents are expected to answer honestly because the interviewer will not know whether their answers are genuine.

A meta-analysis of studies using randomized response found that utilizing the technique resulted in significantly lower rates of socially desirable answers (Lensvelt-Mulders et al. 2005). However, a review of studies verifying RRT responses against actual incidences of behavior found that the responses still suffer from misreporting (Umesh & Peterson 1991).

It has been suggested that participants do not always understand the instructions or the way that the technique will protect their privacy, making them less likely to follow the directions and answer as instructed (Krosnick & Presser 2009; Holbrook & Krosnick 2010). Further, the unwillingness to report socially undesirable behavior may cause some respondents to lie, even if they have been randomly assigned to the group that is told to answer a certain way rather than answer honestly. A cheating-detection modification can be employed to account for this issue (Clark & Desharnais 1998; Moshagen et al. 2010).

A third type of indirect question is the Unmatched Count Technique (UCT), also called item count. Respondents are given a list of items and asked to give the number of items that apply to them. Respondents are randomly assigned to two groups; one of the groups receives the item of interest as part of the list and the other does not. Results from the two groups can be compared in order to determine the proportion of the sample that answered yes to the additional item. This technique is believed to increase accuracy because respondents are not asked which of the statements are true; therefore, they are less likely to answer dishonestly out of embarrassment or fear of sanctions. The use of UCT results in higher reporting rates of socially undesirable behaviors than direct questioning (Tourangeau & Yan 2007). However, item count does not significantly increase accuracy of reporting of victimization experiences (Krebs et al. 2011). Krebs et al. (2011) noted that estimates using UCT are unreliable since they are based on half the sample; they corrected for this by giving respondents two sets of items. Respondents in this study were randomly assigned to answer either item counts 1 and 4 or item counts 2 and 3 (Fig. 22.2).

Open-ended questions may be better for some threatening topics, as they allow participants to explain their answer rather than choose from a few narrow responses. This technique is recommended when surveying on such topics as victimization and criminal behavior (Smith 1994). For example, respondents may feel unwilling to answer "yes" to a question regarding spousal abuse, as they may prefer to explain the incident rather than vilify their spouse. Open-ended questions are also beneficial in increasing rapport between interviewers and respondents, which encourages accurate reporting (Smith 1994). However, for some questions, such as those asking for demographic information, categorical questions may be better, as they decrease the possibility of identifying the respondent (Giles & Feild 1978).

Open-ended questions are especially useful for asking questions regarding the frequency of socially undesirable behavior (Sudman & Bradburn 1982). The ordinal categories chosen by researchers may cause additional embarrassment to respondents who engage in behavior more often, as people tend to avoid choosing the extreme answers on lists. For example, a question asking respondents how often they drink

Fig. 22.2 Unmatched count technique

Item Count 1. How many of the following things have happened to you since you entered college?

- You have woken up with a hangover because you drank too much the night before
- Someone has pushed, slapped, or punched you
- You have received a failing grade on an exam or a paper
- You have been involved in a car accident
- Someone has stolen something from you

Item Count 2. How many of the following things have happened to you since you entered college?

- You have woken up with a hangover because you drank too much the night before
- Someone has pushed, slapped, or punched you
- You have received a failing grade on an exam or a paper
- You have been involved in a car accident
- Someone has stolen something from you
- Someone has had sexual contact with you by using physical force or threatening to physically harm you

Item Count 3. How many of the following things have happened to you since you entered college?

- You have had an alcoholic beverage before you turned 21
- You have used marijuana
- Someone has offered to pay you to write a paper or take a test for them
- You have lost your credit card or ATM card
- You have had mono (mononucleosis)

Item Count 4. How many of the following things have happened to you since you entered college?

- You have had an alcoholic beverage before you turned 21
- You have used marijuana
- Someone has offered to pay you to write a paper or take a test for them
- You have lost your credit card or ATM card
- You have had mono (mononucleosis)
- Someone has had sexual contact with you by using physical force or threatening to physically harm you

Source: Krebs et al. (2011)

alcohol could simply allow participants to supply a number of alcoholic beverages consumed in a specific period of time.

Sudman and Bradburn (1982) suggest adding questions to the survey to determine whether respondents considered the topics to be threatening or embarrassing. Because the definition of "sensitivity" is unclear, asking participants about their perception of the topics can be an ideal way to determine if the items included in the survey are sensitive. This ability to determine sensitivity is especially important when considering the context in which the question is asked, which can determine the sensitive nature of the subject in question (Barnett 1998). Furthermore, such questions can allow for further research that identifies particular topics as threatening, which can benefit future survey designers. Sections like these are also useful in determining if the respondents believe the researcher's assurances of anonymity (Lautenschlager & Flaherty 1990).

Survey designers should also consider the format of the survey, as the placement of sensitive items can be an important factor in easing the threat associated with particular questions. Several scholars suggest placing sensitive questions that are likely to make respondents feel uncomfortable at the end of a questionnaire (Andrews 1984; Blair et al. 1977; Giles & Field 1978; Krosnick & Presser 2010). According to Andrews (1984), questions do not perform as well at the very beginning of a survey as they do in other parts of the questionnaire. Therefore, more accurate responses can be expected if sensitive items are not included.

Fig. 22.3 Embedding sensitive items

Did you ever, even once, do any of the following?		
Commit armed robbery:	Yes	No
Break into a home, store, or building?	Yes	No
Take a car for a ride without the owner's knowledge?	Yes	No
Take something from a store without paying for it?	Yes	No

Source: Sudman and Bradburn (1982)

Also, respondents are more likely to end the interview if discomfort due to the topic of the survey occurs early.

The formatting of certain questions can influence the answers to those questions. Sensitive items may suffer less from nonresponse if options such as "don't know" or "not applicable" are not available (Krosnick & Presser 2010). Sudman & Bradburn (1982) suggest embedding sensitive items of interest within lists of items that are even more threatening. This type of question can encourage respondents to admit to mildly sensitive behavior or attitudes. For example, rather than simply asking whether the respondent has shoplifted, respondents could answer a series of questions such as that given in Fig. 22.3. Note that the items are in order from most to least severe, encouraging the respondent to view committing shoplifting as relatively harmless and therefore less embarrassing to admit.

22.5.5 Interviewer Training

Researchers conducting telephone surveys should have their interviewers undergo refusal aversion training, in which interviewers are taught how to detect reasons for refusals and encourage respondents to complete surveys (see O'Brien et al. 2006, for a more detailed description of refusal aversion training). This type of training is especially beneficial for surveys with sensitive topics because a participant who decides to complete the survey based on rapport with the interviewer is also more likely to accurately respond to survey questions. Interviewers should be taught to notice and address subtle cues of reluctance to participate or respond. These cues can include the respondent's tone of voice and pace of speech, as well as a tendency for the respondent to respond in a format unlike that which is instructed. When attempting to recruit and interview participants for sensitive telephone surveys, interviewers should be alert to cues that will inform them about the respondent's emotional state, privacy, and current safety.

The comfort level of the interviewer when surveying about sensitive topics may help put the participant at ease, affecting the participant's willingness to answer such questions (Rasinski et al. 1999). Therefore, interviewers should be selected based on their ability to remain professional and calm regardless of the topic being discussed, and training should further build upon this ability. The emotional state of the interviewer is important in avoiding nonresponse; interviewers who are nervous or uncomfortable about the topic are likely to obtain more missing responses than other interviewers (Groves et al. 1992). Respondents are concerned with how the interviewer will react to their answers; this concern affects the truthfulness of reporting sensitive behavior (Rasinski et al. 1999). Because of this concern, it is important that interviewers be trained to remain objective and refrain from visible or audible signs of judgment.

22.6 Conclusion

Survey designers must be mindful of the impact of sensitive questions on the results of their surveys. First, survey items of a threatening or sensitive nature must be identified so that they can be worded and/or formatted appropriately. Key suggestions for the wording and formatting

of sensitive items include: (1) Use open-ended questions when possible, especially for items regarding frequency, (2) Load questions so that the behavior seems common and normal, (3) Use indirect questions when appropriate, and (4) Place sensitive items at the end of the questionnaire or interview. Second, consider the effect of the survey topic when choosing a mode of administration. Self-administered methods may be more effective if the topic is somewhat sensitive due to the increased privacy and anonymity. However, the social exchange associated with interviews and the rapport established between the interviewer and the respondent may make face-to-face interviews more appropriate for extremely sensitive topics. Third, when conducting interviews, be sure that interviewers are trained well so that respondents are comfortable discussing sensitive information with them.

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