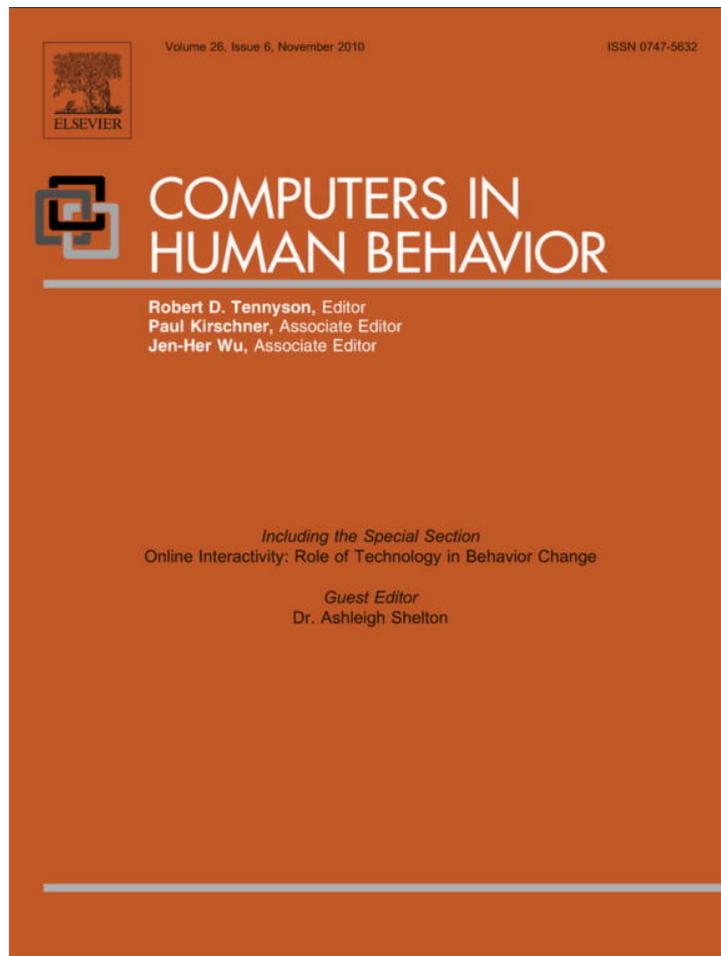


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Contents lists available at ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh

The effects of survey administration on disclosure rates to sensitive items among men: A comparison of an internet panel sample with a RDD telephone sample

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ARTICLE INFO

Article history:

Available online 13 May 2010

Keywords:

Sensitive topics
 Survey research
 Online surveys
 Phone surveys
 Methodology

ABSTRACT

Research using Internet surveys is an emerging field, yet research on the legitimacy of using Internet studies, particularly those targeting sensitive topics, remains under-investigated. The current study builds on the existing literature by exploring the demographic differences between Internet panel and RDD telephone survey samples, as well as differences in responses with regard to experiences of intimate partner violence perpetration and victimization, alcohol and substance use/abuse, PTSD symptomatology, and social support. Analyses indicated that after controlling for demographic differences, there were few differences between the samples in their disclosure of sensitive information, and that the online sample was more socially isolated than the phone sample. Results are discussed in terms of their implications for using Internet samples in research on sensitive topics.

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1. Introduction

Researchers in the social and health-related sciences struggle with the challenge of achieving accurate disclosures in survey research, especially when that research addresses sensitive issues such as the perpetration and victimization of violence, illegal behaviors, and symptoms of mental illness. There are many factors that contribute to the under-reporting of such experiences, including the fear of being judged by researchers, embarrassment about their experiences, and possible re-victimization which may result from reporting victimization experiences (Rubin & Babbie, 1993; Schuman & Converse, 1971). Topics that are sensitive in nature can lead respondents to be influenced by social desirability (Tourangeau & Yan, 2007). This makes studying these issues particularly challenging, and requires a better understanding of the impact of different survey designs on study findings. Demographic differences may also result from using different data collection methodologies. This study centers on a comparison of an Internet panel sample with a random digit dial (RDD) telephone sample, particularly with regard to how these two methods differ when measuring sensitive issues such as intimate partner violence (IPV), alcohol and drug use, and mental health indicators.

1.1. Types of survey administration

For decades, survey researchers have examined how response rates differ when the type of survey or survey administration changes (Dillman, 1978, 2000; Fowler, 1995). Research in the 1960s and 1970s focused on the concerns of moving from face-to-face interviews when conducting survey research to using the more cost effective measures of mail and telephone surveys (Blankenship, 1977; Cummings, 1979; Lucas, Adams, & Rand, 1977; Perry Jr, 1968; Siemiatycki, 1979; Tremblay & Dillman, 1977). A number of studies specifically examined how these different modes of survey administration might affect the results of studies focusing on sensitive topics, such as substance use and interpersonal violence. The results of such studies found little-to-no differences between the modes of different survey administration (Lawrence, Heyman, & O'Leary, 1995; Reddy et al., 2006; Rosenbaum, Rabenhorst, Reddy, Fleming, & Howells, 2006).

As more of the nation moves toward using the Internet, this mode of communication is becoming increasingly attractive to researchers. There are many ways that the Internet can be used to collect data. First, individuals can be recruited via email to participate in an Internet survey and a link to the survey is embedded within the body of the email. This method is used when an email distribution list exists. "Panel studies" are similar in nature. Here a survey research center has already identified a group of individuals who would be willing to participate in Internet

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surveys; they are sent an email and recruited to participate. Finally, one can also recruit individuals to participate via websites. In such instances, an individual/research team can post announcements concerning a study and the study link on special interest websites that match the content of a given survey. Here, the researchers hope that the posting will catch the attention of potential participants and that they will click on the survey link. Similarly, one could use pop-up advertising that provides information about an Internet study and a link to the survey (Dennis, 2009; Dillman, 2000).

The primary reason that Internet surveys are appealing to researchers is the low cost of administration. Estimates concerning the cost in savings are substantial, especially when compared to telephone surveys. Researchers note that Internet surveys are between 15% and 20% (Einhart, 2003) and sometimes as much as 50% less expensive than RDD telephone surveys (Roster, Rogers, Albaum, & Klein, 2004). There are other important advantages, including consistency in administration of the survey questions, anonymity that can be guaranteed to participants, and the lack of an interviewer, which might make participants more likely to disclose highly sensitive information (Tourangeau & Yan, 2007). Nonetheless, concerns exist about the representativeness of Internet-based samples (Chang & Krosnick, 2010; Ross, Månsson, Daneback, Cooper, & Tikkanen, 2005).

1.2. Representativeness of the population with differing types of survey administration

Like other methods of survey administration, including face-to-face, mail, and telephone surveys, Internet surveys have their own set of challenges. One of the most important challenges is the representativeness of a sample that is gleaned via the Internet. Survey researchers have noted a number of problems in this regard. Internet users constitute only 72.5% of the U.S. population (Nielson Online, 2009), whereas 94% have a telephone line (Fricker, Galesic, Tourangeau, & Ting, 2005). Telephone surveys have been shown to be more representative of the U.S. population, at least in terms of education, income, race/ethnicity, and age, when compared to Internet surveys (Chang & Krosnick, 2010). Younger individuals, in general, who are more comfortable using the Internet, are more likely to participate in Internet research as compared with older adults, especially those of retirement age (Ross et al., 2005; Roster et al., 2004). Other research confirms that Internet survey users from the general population are typically younger, are more likely to be white and less racially diverse, are better educated (Schillewaert & Meulemeester, 2005), and are more informed about world events than individuals participating in RDD telephone surveys (Duffy, Smith, Terhanian, & Bremer, 2005). This gap between Internet and non-Internet users is often referred to as “the digital divide” (Fricker et al., 2005).

There are some inconsistencies with regard to the demographic characteristics of Internet survey participants. Some studies have found that women are sometimes more likely to respond to Internet surveys (Roster et al., 2004); others have found that men are more likely to respond (Schillewaert & Meulemeester, 2005). A review of Internet surveys totaling over 100,000 participants aggregated from other studies found that higher socioeconomic classes were only slightly overrepresented. The final conclusions of these authors were that as compared to traditional paper-and-pencil samples, which often resort to the use of college student samples, Internet surveys, which are intended to be representative, are so with respect to many important demographic characteristics, including gender, class, geographic location, and age, but not with respect to race (Gosling, Vazire, Srivastava, & John, 2004).

On the other hand, with the increased use of “screening calls” and cellular telephones, data from telephone surveys is increasingly unrepresentative of the general population (Pew Research Center for the People, 2006). In a recent study, researchers found that online respondents were more similar to the U.S. Census Current Population Survey benchmarks than traditional landline telephone respondents, in which a number of important population groups were underrepresented including men, the younger and less educated, and ethnic minorities (Dennis & Li, 2007). The demographic makeup of an Internet sample, however, is dependent on the recruitment method. Researchers who recruited survey participants for Internet surveys through the same means of RDD telephone surveys had samples that deviated significantly less from the U.S. population in terms of racial and gender composition as compared to a sample that was recruited solely through online advertisements (Chang & Krosnick, 2010). The complexity and inconsistency of these findings speak to the importance of using comprehensive demographic controls when conducting survey research via the Internet. For example, when basic socio-demographic controls are utilized in analyses, differences in responses to non-sociodemographic questions that are sometimes attributed to the type of survey administration usually disappear (Schillewaert & Meulemeester, 2005).

1.3. Internet surveys and sensitive topics

The level of anonymity that is permitted with an Internet survey may have an impact on disclosure rates. Compared to telephone surveys, online surveys provide more anonymity, primarily because they are self-administered and because a computer allows one to submit information without any source of identification, unlike a mail survey which at the very least would have to be stamped with the date and zip code. Telephone surveys have the disadvantage of not offering complete anonymity, since respondents have to verbalize their responses to an interviewer which may bias their responses (Tourangeau & Yan, 2007).

There is evidence that participants may feel more free to be honest in their opinions and experiences without the presence of an interviewer, a phenomenon termed the “politeness to stranger” effect, whereby participants “tone-down” unpleasant disclosures in an effort to appear socially appropriate (Schuman & Converse, 1971). Research participants who provide data via the Internet have been known to rate named companies more negatively than participants providing answers to an interviewer (Roster et al., 2004). In a similar vein, Internet survey users were more critical than telephone survey participants about topics that could be deemed politically and socially sensitive, including government spending on welfare, attitudes toward African Americans, space exploration, and aid to foreign nations (Dennis & Li, 2007).

Research has found that some Internet survey participants report higher levels of personally sensitive information than when this information is collected by other means. For example, a panel of college students answering via the Internet reported higher levels of alcohol consumption than those responding as part of an RDD telephone study (Heeren et al., 2008). College students have also been found to report more socially desirable responses when reporting over the telephone. For example, Parks, Pardi, and Bradizza (2006) found that college women, when reporting to a telephone interviewer about their alcohol consumption, were more likely to report that they had tried to control their drinking or that they drank in response to an argument with a friend, than Internet participants who, in turn, were more likely to report that their drinking had changed their personality and that at times they felt that they were “going crazy.” Notably, there were no differences in reporting around sexual behaviors, such as having

unprotected sex, sex that they later regretted, or having been the victim of a sexual assault. Despite this study's limited generalizability, these findings are consistent with others already reviewed in this paper and are also consistent with a literature review by Tourangeau and Yan (2007) concerning disclosure rates of illicit substance use.

Another study on college students found no difference between three modes of data collection: paper, Internet, and telephone. Knapp and Kirk (2003) compared the responses of 352 undergraduate students to questions asking about increasingly personal behavior, including mischievous behavior, general honesty, interpersonal relationships, illegal behavior, substance use, and sexual behavior. The researchers found no differences in disclosure rates of these behaviors between the three groups. There was, however, a survey administration glitch that occurred in this study which resulted in the Internet sample being one-half to one-third the size of the comparison groups; this could have reduced the power for statistical analyses.

1.4. Current study

Research using Internet surveys is an emerging field, yet research on the legitimacy of using Internet studies, particularly those targeting sensitive topics, remains under-investigated. The current study builds on the existing literature by further exploring the differences between Internet panel and RDD telephone survey samples. Both samples in this study were recruited as part of a larger study exploring issues of intimate partner violence (IPV) among men who were involved in relationships with women in the past year. Thus, this study also investigates differences in responses when sensitive topics are the focus of the study. Specifically, we assess both demographic differences between the samples and differences in responses with regard to experiences of IPV perpetration and victimization, alcohol and substance use/abuse, PTSD symptomatology, and social support.

The goals of the current study are to:

- (1) Compare the Internet sample with the RDD phone sample on basic demographics. We will also roughly compare both samples to population-based data to investigate their relative representativeness.
- (2) Investigate whether disclosure rates for sensitive issues, including IPV perpetration and victimization, alcohol and substance use/abuse, and PTSD symptoms, differ between the two samples, and whether after controlling for any differences in demographics, differences in disclosure rates still remain.

2. Method

2.1. Sample and procedures

The data for this study is part of a larger study investigating issues related to men sustaining IPV from their female partners. As part of this study, a community sample of 520 men (mean age: 44 years, $SD = 10.88$; 84.8% White, 8.3% Black, 5.0% Hispanic/Latino, 3.1% Asian, 1.0% Native American), ages 18–59, who had been involved in a heterosexual relationship lasting at least 1 month in the previous year, was recruited. The average length of the intimate relationship they referred to was 164.90 months ($SD = 131.01$), or about 14 years. More information about the demographic composition of the two samples can be found in the results section. The data were collected via the phone and Internet.

Participants in the phone sample ($n = 255$) were recruited by a survey research center through a random digit dialing (RDD) technique and CATI administration. Interviewers were well-trained in

telephone interviewing methods and were further trained on administering this particular survey. Potential participants were contacted by a trained interviewer from the survey research center and invited to complete the survey over the phone. Potential participants were told that the study concerned how conflict is handled in men's relationships and the general well-being of men. The interviewers attempted to reach each phone number on 15 occasions at different times of the day and made call-back appointments when possible. They also made refusal conversion efforts when it was appropriate. Because of low response rates, which were calculated according to the methods recommended by the American Association for Public Opinion Research (American Association for Public Opinion Research, 2008), during the first 2 months (8%), advanced letters were sent to potential participants informing them that they were randomly selected to participate in a study sponsored by the National Institutes of Health that was focusing on how men and women get along and that they would be contacted within a week by a survey research center interviewer. The response rate for the participants who received an advanced letter was 15.5%. The overall response rate was 9.8%.

The Internet sample was recruited by the market research company, Survey Sampling International (SSI). SSI has an online survey panel that is recruited from a variety of sources, including banner ads, keywords, search links, pop-up polls, email, and online invitations. SSI has online communities which reward members for participating in surveys; members earn points that can be cashed in for prizes. Email invitations were sent to 16,000 male SSI panel members inviting them to participate in a study concerning how conflict is handled in men's relationships and the general well-being of men. They were directed to an anonymous, secure, online version of the survey. The first page of the survey included screener questions to test for eligibility. Eligible men were able to continue to the rest of the survey, whereas non-eligible men were routed to an exit screen that indicated that they were not eligible for the study, but thanked them for their interest and time. The survey was closed within 1 week after our target of at least 250 eligible men had completed the survey. The final sample size was 265 men. Because data collection was stopped when the target goal for the number of completed surveys was reached and we did not wait for all men who received invitations to complete the survey, response rates for the Internet sample cannot be reliably calculated.

2.2. Measures

Participants in the study were administered measures concerning demographics, aggressive behaviors that either they or their partners used in the past year against each other, and their mental health status. The presentation of the questionnaires differed slightly between the online and phone samples. For the phone sample, demographic questions were presented first, followed by questions about IPV experiences and finally their mental health. For the online sample, most of the demographic questions were presented last (with the exception of demographic questions regarding their relationship, which were presented first); after answering these basic questions about their relationship, they were then asked about IPV and their mental health. This ordering of questions is recommended by Dillman (2000) in order to capture and maintain the attention of online survey-takers.

2.3. Demographic information

Men were asked basic demographic information, including age, race/ethnicity, personal income, education, and if they or their partners had a disability. Men were also asked about the length of their relationship with their partners, the current status of their

relationship, and how many minor children were involved in that relationship, if any.

2.4. Revised conflict tactics scales (CTS2)

The CTS2 (Straus, Hamby, Boney-McCoy, & Sugarman, 1996) was used to measure the extent to which the men in the study perpetrated and sustained psychological, physical, and sexual aggression, and injuries in their relationships. The items used for this study included five items assessing minor physical aggression (e.g., grabbing, shoving, slapping), seven items assessing severe physical aggression (e.g., beating up, using knife/gun), two items assessing minor injuries (e.g., having a small cut or bruise), four items assessing severe injuries (e.g., broken bone, passing out), and one item assessing sexual aggression (insisting on sex when the partner did not want to). The eight CTS2 items regarding psychological abuse were supplemented with seven items from the Psychological Maltreatment of Women Inventory (Tolman, 1995). To investigate the factor structure of this combined psychological aggression scale, a factor analysis that combined these two samples with a comparison sample of self-identified male victims of IPV was conducted using the victimization items only because of greater variability of those items (see Hines & Douglas, *in press* for further details on this analysis). The factor analysis revealed that there were three subscales: Minor Psychological Aggression (e.g., insulting/swearing, shouting/yelling, doing something to spite partner), Controlling Behaviors (e.g., not allowing to leave the house, monitoring time and whereabouts), and Severe Psychological Aggression (e.g., threatening to harm partner, intentionally destroying something belonging to partner).

Participants responded to items depicting each of the conflict tactics by indicating the number of times that these tactics were used by the participant and his partner in the previous year. Participants indicated on a scale from 0 to 6 how many times they experienced each of the acts in the previous year (0 = 0 times; 1 = 1 time; 2 = 2 times; 3 = 3–5 times; 4 = 6–10 times; 5 = 11–20 times; 6 = more than 20 times). These data were then transformed in order to obtain an approximate count of the number of times each act occurred in the previous year, using the following scale: 0 = 0 acts in previous year; 1 = 1 act in the previous year; 2 = 2 acts in the previous year; 3 = 4 acts in the previous year; 4 = 8 acts in the previous year; 5 = 16 acts in the previous year; 6 = 25 acts in the previous year. The scores for the items comprising each of the scales (e.g., minor physical aggression, severe physical aggression) were then added together to obtain an approximate count of the total number of acts that were perpetrated and sustained for each scale. In addition, the score on each scale was dichotomized to indicate the presence (=1) or absence (=0) of any of the aggressive acts represented on that scale. The CTS2 has been shown to have good construct and discriminant validity and good reliability, with internal consistency coefficients ranging from 0.79 to 0.95 (Straus et al., 1996). For the current samples combined, alpha coefficients were low for both the controlling behaviors (perpetration $\alpha = 0.59$; victimization $\alpha = 0.57$) and severe psychological aggression victimization ($\alpha = 0.62$) scales, but ranged from 0.70 (minor psychological aggression perpetration) to 0.96 (minor injury sustained) for all other scales.

2.5. Social support

The ENRICH Social Support Instrument (Mitchell et al., 2003) was used to measure emotional and instrumental support. This six-item measure asked respondents to indicate on a five-point scale the extent to which each statement was true of their situ-

ation (1 = none of the time, 5 = all of the time). Example items include, “How often is someone available to you whom you can count onto listen to when you need to talk?” and “How often is someone available to help you with daily chores?” This measure has demonstrated excellent convergent and predictive validity, as well as excellent internal consistency reliability, with an overall alpha of .86 (Mitchell et al., 2003). For the current samples, the overall alpha was 0.91.

2.6. Posttraumatic stress symptoms

The PTSD checklist (PCL) (Weathers, Litz, Herman, Huska, & Keane, 1993) is a 17-item self-report measure of the severity of PTSD symptomology. Items reflect three symptom clusters: re-experiencing, numbing/avoidance, and hyperarousal. Consistent with the concept of PTSD and per the instructions of the PCL, respondents were asked to think about a potentially traumatic event, which for this study was their worst argument with their female partner, and then indicate the extent to which they were bothered by each symptom in the preceding month using a five-point scale (1 = not at all, 5 = extremely). The items were then summed to create a continuous measure of PTSD symptoms. Because a score of 45 or higher is considered to be indicative of PTSD (Weathers et al., 1993), the scores were also dichotomized to indicate the presence or absence of PTSD. One item, “Feeling as if your future will somehow be cut short”, was not included in the survey because participants reported that they did not understand the item during pilot testing of the instrument. The PCL has been validated for use in both combat and civilian populations, and the civilian version was used for this study. The PCL has been shown to have excellent reliability (Weathers et al., 1993) and strong convergent and divergent validity (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Ruggiero, DelBen, Scotti, & Rabalais, 2003). Furthermore, the PCL has been shown to have high diagnostic utility (0.79–0.90) when validated against “gold standard” measures such as the Structured Clinical Interview for DSM-IV Axis Disorders (First, Gibbon, Spitzer, & Williams, 1996). For the current samples, the alpha for all items combined was 0.94, and ranged from 0.83 for the avoidance/numbness subscale to 0.89 for the hyperarousal subscale.

2.7. Alcohol and substance abuse of the participant

Alcohol and substance abuse was measured using a scale developed for the National Women's Study to assess the association between IPV victimization and alcohol/substance abuse among female victims (Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997). The scale included up to 19 items asking respondents about their use and abuse of alcohol and illicit drugs in their lifetimes and in the past year, and included items regarding negative experiences resulting from alcohol abuse. Participants were classified as using alcohol in the past year if they indicated any alcohol use in the past year. Participants who answered affirmatively to any of the six questions on negative experiences (e.g., getting in trouble with the police or a boss) because of alcohol were classified as meeting the criteria for alcohol abuse ever. If participants indicated that any of these negative experiences occurred in the past year, they were classified as abusing alcohol in the past year. Participants who indicated they had used any of the listed illegal substances in their lifetimes were considered substance users ever; participants who indicated using any of the illegal substances within the past year were considered substance users in the past year. Finally, if participants indicated they used any of the illegal substances more than four times in the past year, they were considered nonexperimental users. This scale has demonstrated excellent construct validity (Kilpatrick et al., 1997).

Table 1
Demographic differences between online and phone samples.

	Online (n = 265) M (SD) or %	Phone (n = 255) M (SD) or %	χ^2 or t
Age	44.80 (10.56)	42.52 (11.10)	4.39 [*]
Race:			
White	86.8%	82.7%	1.65
Black	5.3%	11.4%	6.35 ^{**}
Asian	3.4%	2.7%	0.19
Hispanic/Latino	4.5%	5.5%	0.25
Income	\$45 K (\$26 K)	\$53 K (\$26 K)	3.46 ^{***}
Education ^a	4.06 (1.62)	4.01 (1.82)	0.30
Disability status:			4.39 [*]
Respondent disabled	13.1%	9.8%	
Partner disabled	10.0%	5.5%	
Both disabled	3.5%	0.8%	
Relationship variables:			
Currently in a relationship	93.9%	97.6%	4.39 [*]
Length of relationship (in months)	157.96 (132.35)	172.07 (129.49)	1.22
Were minor children at home?	37.2%	53.7%	14.27 ^{***}

^a Mean education level of four corresponds to a 2-year graduate degree.

^{*} $p < 0.05$.

^{**} $p < 0.01$.

^{***} $p < 0.001$.

3. Results

3.1. Sample characteristics

For our first series of analyses, we investigated whether there were any individual or relationship demographic differences between the online and phone samples. Table 1 presents the results. As shown, respondents from the online sample were significantly older, had significantly lower incomes, were less likely to be Black, and were more likely to be and/or have their partners be disabled; there were no differences in education. Moreover, respondents in the online sample were significantly less likely to be currently in a relationship and to have minor children regularly living in their homes.

3.2. Disclosure rates about sensitive items

Table 2 presents the results of our chi-square analyses comparing the online and phone samples in their prevalence of various forms of IPV. There were no significant differences between the online and phone samples in the prevalence of any of the types of IPV when used by either the respondent or his partner, nor were there any differences in the prevalence of injuries between the phone and online samples.

Table 3 presents the results of our comparisons between the online and phone samples in several indicators of mental health, including alcohol and substance use/abuse, PTSD, and social support. For alcohol and substance use/abuse, the only differences between the online and phone sample were in alcohol use in the past year and drug use ever, with those in the phone sample being significantly more likely to have engaged in either of these behaviors. There were also significant differences in indicators of PTSD, with the online sample being significantly more likely to score above the clinical cut-off for PTSD on the PCL and scoring significantly higher on the PCL overall. Moreover, the online sample scored significantly higher on both the avoidance and the hyperarousal subscales of the PCL. Finally, the online sample had significantly lower scores on social support than the phone sample.

3.3. Do differences in disclosure remain after controlling for demographic differences?

We then investigated whether these differences in mental health indicators remained after controlling for demographic differences between the samples.¹ For all regression models, nonsignificant demographic predictors were removed from the regression models and analyses were re-run to include only those demographics that made significant contributions, as advised by Meyers, Gamst, and Guarino (2006). In addition, disability status was recoded so that it was a dichotomous variable with 1 = either the respondent and/or his partner having a disability and 0 = neither the respondent nor his partner having a disability. To correct for experimentwise error, the alpha level of the omnibus test was adjusted, using a Bonferroni correction, to 0.007 (0.05/7 tests of hypotheses).

Table 4 presents the results of the logistic regression analyses investigating whether alcohol and substance use differences could be accounted for by demographic differences. For alcohol use in the past year, the overall regression model was significant, $\chi^2(4) = 33.32$, $p < 0.001$, and once the significant predictors of age, income, and disability were accounted for, the type of sample no longer predicted alcohol use. For substance use ever, the overall regression model was also significant, $\chi^2(3) = 18.84$, $p < 0.001$, but after controlling for the significant predictors of whether minors were present in the home and disability, the type of sample still significantly predicted substance use, with the online sample being 40% less likely to have ever used substances.

A logistic regression was then conducted to investigate whether demographic differences accounted for the differences between the samples in men scoring above the clinical cut-off on the PCL.

¹ Although bivariate analyses showed that there were differences between the samples on seven of the mental health indicators, we did perform logistic and multiple regression analyses on all 22 mental health indicators. It is unlikely that significant differences would appear in multivariate analyses that were not evident in bivariate analyses; however, it is possible that after correcting for demographic differences, there could be sample differences in mental health indicators. Consistent with our expectations, there were no multivariate differences between the samples on the mental health indicators that showed no sample differences in the bivariate analyses. In the interest of brevity, we do not show those analyses here.

Table 2
Chi-square analyses comparing IPV prevalence for online versus phone samples.

Type of IPV	% of respondents who reported perpetrating aggression			% of respondents who reported sustaining aggression		
	Online (%)	Phone (%)	χ^2	Online (%)	Phone (%)	χ^2
Minor psychological aggression	69.4	76.9	3.65	70.6	76.9	2.66
Controlling behaviors	10.9	12.2	0.19	20.0	20.1	0.001
Severe psychological aggression	11.3	9.4	0.51	14.7	12.5	0.52
Minor physical aggression	14.3	11.8	0.76	15.8	14.9	0.09
Severe physical aggression	3.0	1.6	1.21	6.4	5.1	0.42
Total physical aggression	14.7	12.9	0.34	16.6	16.1	0.03
Sexual aggression	11.7	13.8	0.48	11.0	8.7	0.76
Minor injuries	4.5	3.9	0.12	4.5	2.4	1.84
Severe injuries	0.8	1.2	0.24	1.1	2.0	0.59
Total injuries	4.5	4.7	0.01	4.5	3.5	0.34

Note: There are no significant differences between the phone and online samples for any of the IPV variables.

Table 3
Differences between phone and online samples in indicators of mental health.

	Online (n = 265) M (SD) or %	Phone (n = 255) M (SD) or %	χ^2 or t
<i>Alcohol and substance use/abuse</i>			
Alcohol use in past year	82.4%	90.3%	6.34**
Alcohol abuse ever	30.9%	38.0%	2.90
Alcohol abuse in past year	14.3	14.5%	0.004
Substance use ever	45.7%	55.7%	5.23**
Any substance use in past year	11.7%	14.1%	0.68
Nonexperimental use in past year	6.4%	7.5%	0.22
<i>PTSD</i>			
Scored above clinical cut-off	4.5%	1.6%	3.82*
PCL total score	21.13 (9.37)	19.70 (6.91)	1.98*
PCL re-experiencing	6.69 (3.28)	6.43 (2.58)	1.02
PCL avoidance	8.14 (3.80)	7.52 (2.95)	2.10*
PCL hyperarousal	6.30 (2.98)	5.76 (2.07)	2.41*
Social support	22.34 (5.89)	25.18 (3.99)	6.48***

* p < 0.05.
** p < 0.01.
*** p < 0.001.

Table 4
Logistic regression analyses investigating whether demographic differences between phone and online samples accounted for differences in alcohol use, substance use, and scoring above the clinical cut-off on PTSD.

Variable	B	SE	Odds ratio	Wald
<i>Alcohol use in past year</i>				
Age	-0.04	0.02	0.97	5.62*
Income	0.02	0.01	1.02	6.17*
Disability ^a	0.85	0.32	2.35	7.32**
Sample type ^b	-0.41	0.30	0.66	1.90
<i>Substance use ever</i>				
Minors ^c	0.37	0.19	1.45	4.06*
Disability ^a	-0.66	0.23	0.52	8.31**
Sample type ^b	-0.52	0.19	0.60	7.74**
<i>Scoring above PTSD clinical cut-off</i>				
Currently in a relationship ^d	1.60	.72	4.98	5.00*
Disability ^a	-1.50	0.53	0.22	8.08**
Sample type ^b	0.82	0.60	2.27	1.87***

^a Disability: 1 = either respondent and/or his partner had a disability, 0 = neither respondent nor his reported had a disability.
^b Sample type: 1 = online, 2 = phone.
^c Minors: 1 = respondent had minor children at home, 0 = respondent did not have minor children at home.
^d Currently in a relationship: 1 = yes, 0 = no.
* p < 0.05.
** p < 0.01.
*** p < 0.001.

Table 5
Multiple regression analyses predicting whether differences in demographics account for differences between online and phone samples in scores on the PCL and social support scales.

Variable	B	SEB	β
<i>PCL total score</i>			
Currently in a relationship ^a	-7.70	1.80	-0.19***
African American ^b	3.33	1.29	0.11**
Disability ^c	1.33	0.50	0.11**
Sample type ^d	-0.98	0.72	-0.06
<i>PCL avoidance subscale</i>			
Currently in a relationship ^a	-3.96	0.74	-0.23***
African American ^b	1.31	0.53	0.11*
Disability ^c	0.50	0.21	0.10*
Sample type ^d	-0.41	0.30	-0.06
<i>PCL hyperarousal subscale</i>			
Currently in a relationship ^a	-1.63	0.57	-0.13**
Disability ^c	0.36	0.16	0.11*
Sample type ^d	-0.37	0.23	-0.07
<i>Social support</i>			
Currently in a relationship ^a	235.16	47.02	0.21***
Disability ^c	-53.82	22.87	0.11*
Type of sample ^d	101.30	18.77	0.23***

^a Currently in a relationship: 1 = yes, 0 = no.
^b African American: 1 = yes, 0 = no.
^c Disability: 1 = either respondent and/or his partner had a disability, 0 = neither respondent nor his reported had a disability.
^d Sample type: 1 = online, 2 = phone.
* p < 0.05.
** p < 0.01.
*** p < 0.001.

Table 4 also presents those results. The overall regression model was significant, $\chi^2(3) = 16.33, p < 0.001$, and after accounting for whether the men were currently in a relationship and disability status, the type of sample no longer contributed to differences between samples in men scoring above the clinical cut-off for PTSD.

Finally, a series of multiple regressions were conducted to investigate whether demographic differences accounted for differences between samples in scores on the PCL scales and subscales and on the social support measure. Table 5 presents the results. For the total PCL score, the overall regression model was significant, $F(4, 508) = 9.53, p < 0.001$, and explained 6.3% of the variance. More importantly, once accounting for the demographics of currently being in a relationship, being African American, and disability, type of sample no longer predicted the total PCL score. Similarly, the overall regression model for the avoidance and hyperarousal subscales were significant, $F(4, 508) = 12.00, p < 0.001, F(3, 509) = 6.35, p < 0.001$, respectively, and explained 7.9% and 3.0% of the variance, respectively, and after accounting for demographic differences between the online and phone

samples, type of sample no longer predicted the avoidance or hyperarousal scores on the PCL. Finally, for social support, the overall regression was significant, $F(3, 509) = 23.16$, $p < 0.001$, and explained 11.5% of the variance, and even after controlling for demographic differences, type of sample still predicted social support, with men who completed the survey over the phone reporting significantly more social support.

4. Discussion

In this study, we investigated demographic differences between Internet and RDD phone samples and how type of survey administration could affect the disclosure of sensitive information. Both of our samples consisted of men between the ages of 18 and 59 who reported being involved in a heterosexual relationship lasting at least 1 month in the previous year, and responded to questions concerning IPV, PTSD, alcohol/substance use and abuse, and social support. Our results indicated that the samples significantly differed in important and meaningful ways.

Our first set of analyses focused on comparing the demographic differences between the two samples. We found that the two samples significantly differed on important demographics, but the men in our Internet sample were significantly older than the men in the phone sample, and there were no differences in levels of education, which is inconsistent with prior research that shows Internet survey users are typically younger and better educated (Schillewaert & Meulemeester, 2005). The fact that there was a significantly lower percentage of Black men in our Internet sample is consistent, however, with prior research which shows that Internet samples are less racially diverse than other samples (Schillewaert & Meulemeester, 2005).

In addition, we found that men from our Internet sample earned less money, were more likely to have a disability and/or to have a partner who had a disability, were less likely to be currently in an intimate relationship, and were less likely to have minors living in their household when compared with our RDD telephone sample. These results, in conjunction with our finding that the men in the Internet sample reported less social support, even after controlling for demographic differences, point to the possibility that the Internet sample may be more socially isolated than the telephone sample. It is possible that men who volunteer to be a part of an Internet survey panel, where they would routinely be requested to complete (sometimes lengthy) surveys, would be more likely than other men to be frequent Internet users. Furthermore, research indicates that among men, frequency of Internet use (e.g., time spent in chatrooms, gaming, and browsing) is associated with increased social anxiety (e.g., Mazalin & Moore, 2004) which could speak to our findings of higher levels of social isolation. Overall, our research demonstrates that we have more to learn about the differences between Internet and telephone samples.

The recruitment criteria for the men in our samples (i.e., between 18 and 59, in a heterosexual relationship lasting at least 1 month within the past year) makes it difficult to compare the demographics of these samples with those of the general population: there are no population databases that allow for an analysis of the demographics of men meeting these criteria. Nonetheless, we did a rough comparison of the men from our samples to Census Bureau information on men in the United States, or the entire population when published demographic information by gender was unavailable. Neither sample is uniformly more or less similar to the general population of men. Both of our samples are older, more likely to be White, earn more money, are more likely to be disabled, and are more likely to have children in their household than the general population. That said, the profile of our telephone sample is more congruent with the general population with regard to

being Black and disability status, and the Internet sample is more congruent with the general population with regard to presence of minor children in the household (Census Bureau, 2007; Spraggins, 2005).

We also compared the IPV and PTSD rates of the two samples with national data. Both samples' minor and severe physical aggression rates for both perpetration and victimization were comparable to, but slightly higher than, rates found with the National Family Violence Surveys (NFVS; Straus, 1995), a series of population-based surveys that assessed the rate of IPV perpetration and victimization, using the CTS, among couples in the United States. Specifically, Straus found that in the latest year of the survey, 1992, about 10% of both women and men perpetrated minor IPV against their partners (in comparison to about 14% in our samples), about 4.5% of women perpetrated severe IPV against their partners (in comparison to 5.1–6.4% in our samples), and about 2% of men perpetrated severe IPV against their partners (in comparison to 1.6–3.0% in our samples). The differences in IPV rates between our samples and the NFVS could be due to the possible nonrepresentativeness of our samples, or they could be due to the fact that our samples do not contain anyone over the age of 59 but do contain men who recently left a relationship, both of which could result in higher rates of IPV (Rennison & Welchans (2000)).

Rates of PTSD in our samples were compared with past-year prevalence rates found for men in the National Comorbidity Survey (NCS; Kessler, Chin, Demler, Merikangas, & Walters, 2005). The PTSD rate for our phone sample (1.6%) was comparable to the past-year prevalence rate for males found by Kessler and his colleagues (1.8%). PTSD rates for our online sample (4.5%) were much higher than rates found for the population of men in the NCS.

The differences that we found in our samples, as compared with the general population, may also be due to the very purpose of our study: assessing men's experiences with IPV, mental health issues, substance/alcohol use, and social support. The men in our sample had to be willing to talk about their relationships and how they handle conflict in their relationships. Men who volunteer for such a study may be different from the population in general. They may have a personal or professional investment in the topic of interpersonal relationships or they may be struggling in a current relationship. It is only speculation on our part, but it is possible that there is something about men who participate in such a study that makes them distinct from the rest of the population.

Our second area of study focused on possible differences in disclosure rates for sensitive information. There were no differences in disclosure of IPV perpetration or victimization, but there were differences in disclosure of some of the mental health indicators. Specifically, the Internet men disclosed more symptoms of PTSD, whereas the phone men disclosed more alcohol and substance use. Given the inconsistency of disclosure of these mental health indicators, it could be that these differences represent true differences between the two samples. The men in the Internet sample, as mentioned above, were more likely to have a disability and reported less social support, both of which are related to PTSD in this (disability: $r = 0.18$, $p < 0.01$; social support: $r = -0.35$, $p < 0.001$) and other samples (e.g., Fontana & Rosenheck, 1994; Sareen et al., 2007). Moreover, after controlling for disability and other demographic differences, the differences in PTSD between the samples disappeared; thus, the PTSD differences could reflect the higher disability status and greater social isolation of the Internet sample. In addition, although the telephone sample reported a higher prevalence of alcohol and substance use, this higher prevalence could be indicative of a better psychologically adjusted sample. Specifically, research shows that people who engage in occasional alcohol and experimental marijuana use are better adjusted, more satisfied with life, and more socially adept than their teetotaling and substance abusing counterparts

(Koivumaa-Honkanen et al., 2000; Shedler & Block, 1990). These findings are consistent with the fact that the phone sample has fewer PTSD symptoms and greater social support than the Internet sample.

Thus, it is possible that there are no differences between the samples in their willingness to disclose sensitive information, and that overall, these findings reflect greater social isolation among the Internet sample. If true, however, these findings would contradict previous research which shows that telephone survey participants may be interested in painting a socially acceptable picture of themselves to interviewers and that as the method of survey administration becomes more anonymous, the likelihood of disclosure of sensitive information increases (Parks et al., 2006; Tourangeau & Yan, 2007). If our findings truly indicate that disclosure of sensitive information is not dependent upon mode of survey administration, they would be consistent with other research showing no differences in disclosure of sensitive information among paper-and-pencil, in-person, telephone, and automated telephone data collection surveying techniques (Rosenbaum et al., 2006).

Although valuable in elucidating possible differences between Internet and phone samples, the limitations of this study must be considered. For example, given the low response rate for the phone sample and our inability to calculate a reliable response rate for the Internet sample, it is likely that neither of them represent the population of men from which we sampled – men between the ages of 18 and 59 who were involved in a heterosexual romantic relationship lasting at least 1 month in the previous year. We do not, however, have reliable population statistics (e.g., from the Census Bureau) for men meeting these criteria to empirically investigate possible differences between our samples and the corresponding population of men; therefore, representativeness is unknown.

It is likely that our samples are not representative of their corresponding population, and therefore, the use of either phone or internet samples is not recommended for gathering prevalence rates of IPV, PTSD, or alcohol/substance use/abuse in men who are currently or recently involved in a relationship. However, given the comparable rates of disclosure of sensitive issues after controlling for demographic differences between the samples, both Internet and phone samples are equally good for testing theories regarding associations between these and other sensitive variables, analyses which typically do not rely solely on representative samples. Moreover, because Internet samples are quicker and easier to obtain, and less expensive, than RDD phone samples, the use of Internet samples in studies designed to test theories should be explored as a viable and highly cost-effective sampling technique.

An Internet study like the one that we conducted in this study could be undertaken in a number of ways, as was explained in the introduction to this paper. To conduct a panel study, as we did, researchers would need to employ the services of a research firm to gain access to an identified group of individuals who are willing to participate in survey research via the Internet. Research firms categorize these groups by demographic characteristics and personal interests, and thus, the firm has the ability to target the survey to a select, but still large, group of individuals. We found that the panel portion of this study cost 2.3% of what we were charged for the RDD telephone portion of the study, despite the fact that the contracts with both the Internet-based and the telephone-based survey companies were to collect data from 250 respondents. That said, researchers could also recruit their own sample by posting announcements about their study on websites that are likely to attract individuals who might be potential study participants. As mentioned previously, this study is part of a larger investigation of men who sustain IPV and seek help, and we successfully used this technique to recruit a large sample of such

men (Hines & Douglas, in press). However, with the exception of screening questions, researchers have less control over this type of sample, but there are almost no costs associated with this technique, other than time.

The contributions of this paper to the emerging body of literature on assessing differences in survey administration and in gathering data on sensitive topics via the Internet are important. The findings suggest, and are consistent with much literature on the topic, that Internet and telephone samples differ (Dennis & Li, 2007), but that when one controls for these differences using demographic characteristics, responses to questions vary little (Parks et al., 2006; Roster et al., 2004). The findings show great promise for conducting future research via the Internet on sensitive topics.

Acknowledgments

The project described was supported by Grant No. 5R21MH074590 from the National Institute of Mental Health. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the NIMH. Special thanks go to Murray Straus and the members of the University of New Hampshire's Family Research Laboratory seminar program for their feedback on an earlier version of this article.

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