

## Methodological Considerations from a Kinsey Institute Mixed Methods Pilot Project

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### **Abstract:**

Despite the growth of mixed methods, little attention has focused on the specific challenges of conducting mixed methods research on sexual experience and perceptions of sexuality. This paper's purpose is to discuss the exploratory sequential design of, and methodological considerations originally arising from, a mixed methods pilot project that explored the possibility of updating components of Alfred Kinsey's mid-20th century research on US men and women. This pilot project consisted of three phases: (1) cognitive interviews, (2) two modalities of computer-based surveys conducted in two settings with two samples, and (3) debriefing interviews with selected survey participants from phase two coupled with ethnographic observations. We describe the phases, focusing on how multiple methods facilitated the design and assessment of our pilot project. We end by highlighting methodological considerations relevant to our mixed methods approach--phase timing, research environment, longitudinal design, data security and privacy, and cost--and their implications for sexuality researchers.

**Keywords:** mixed methods | research design | sexuality

### **Article:**

Given social norms and stigmas related to sexuality, researchers studying sexual experience and perceptions of sexuality face particular issues related to measurement error in sampling and instrumentation, including non-participation, validity, reliability, participant comfort, privacy, and confidentiality (e.g., Fenton, Johnson, McManus, & Erens, 2001; Smith, 1992). Single method approaches can address some of these issues. For example, surveys can improve confidentiality, while interviews can improve validity through allowing clarification of questions and responses. Further, ethnographic observations can provide in-depth insights by presenting an insider's point of view. Research designs incorporating multiple methods can further strengthen the results and improve understandings of a variety of topics (e.g., Creswell & Plano Clark, 2011; Morgan, 1998), including sexuality. Our methodological approach is built on this premise:

We can improve understandings of sexual experience and perceptions of sexuality by drawing on the strengths of mixed methods.

In this paper, we reflect on the sequential mixed methods approach we used for a pilot project conducted in 2005 to evaluate the potential of updating components of Alfred Kinsey's mid-20th century research on the sexual experiences of US men and women (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953), and current perceptions of sexuality, including its importance for wellbeing and what constitute 'sexual problems' in people's lives. Table 1 provides an overview of the three phases in this pilot project: (1) cognitive interviews, (2) two modalities of computer-based surveys conducted in two settings with two samples, and (3) debriefing interviews with selected survey participants from phase two coupled with ethnographic observations. We describe the phases, how multiple methods facilitated the design and assessment of our pilot project, methodological considerations relevant to our approach, and implications for other sexuality researchers.

**Table 1.** Exploratory Qualitative → Quantitative → Qualitative Design Phases

Phase	Method	N	Sample	Setting	Goals
1	Cognitive interviews	20	Randomly-selected staff members at a large public university in Indiana, in the Midwestern US	Face-to-face	Soliciting feedback about survey questions, responses and terms; assessing validity, reliability and privacy before designing survey
2a	Survey	218	Randomly-selected members of Knowledge Networks (KN) online panel who are residents of Indiana	Computer, at home	Deciding which modality to choose for potential update of Kinsey Study based on comparative evaluation of the modalities' samples and questions along with comparisons to 'gold standard' questions from larger studies
2b	Survey	211	Quota-based non-probability sample using volunteers from the Indianapolis metropolitan area (IM) in Indiana	Computer, with access to researcher	
3	Debriefing interviews and ethnographic observations	13	All IM participants in phase 2b entering research site in 4-hour period	Face-to-face survey at site	Assessing reliability, privacy, and sampling issues

## MIXED METHODS RESEARCH

Methodologists categorize mixed methods research along several dimensions, including two that are particularly relevant to our study. First, research is characterized by the order in which researchers collect data. Some collect data sequentially (e.g., qualitative then quantitative), others simultaneously (Morgan, 1998). We used an exploratory sequential design, consisting of a qualitative phase followed by a quantitative phase (Creswell & Plano Clark, 2011) followed by an additional qualitative phase. In this design, researchers collect and analyze qualitative data, using these results to develop and inform the quantitative method (Creswell & Plano Clark, 2011; Greene, Caracelli, & Graham, 1989). While exploratory sequential designs have previously been used exclusively for two-phase designs, we adopted it here because both of our qualitative phases served to develop and improve the quantitative component. Second, research methods are characterized by the priority given to quantitative and qualitative aspects (Morgan, 1998; Morse, 1991). In this notation, uppercase letters give priority to a method and an arrow demonstrates sequence (Creswell & Plano Clark, 2011; Morse, 1991). Adopting these conventions, we use a qualitative [right arrow] QUANTITATIVE [right arrow] qualitative design because our project's goal was to update Kinsey's findings and investigate current perceptions of sexuality among a representative sample.

## EXISTING NATIONAL STUDIES OF SEXUALITY

Sexual behavior is among the most complicated topics to collect reliable information on because it is intimate and personal, varies across relationship status, is closely related to people's self-image, may include morally-condemned or illegal behaviors, incorporates cultural biases, and may relate to unpleasant experiences (e.g., sexual victimization or unhappy relationships, past or current) (Smith, 1992). The result is that the validity of responses and reliability of reporting can be compromised. Through triangulating data, mixed methods approaches can assess these potentially sensitive issues from a variety of perspectives, increasing the validity and reliability of the data within the specific research context (e.g., country, place in history).

Alfred Kinsey and his associates (1948; 1953) interviewed over 18,000 US men and women from 1938 to 1953, producing extensive data on their sexual experiences and histories. The initial published volumes focused primarily on data from 5,300 white men (Kinsey et al., 1948) and 5,940 white women (Kinsey et al., 1953). While pioneering in its methods, scope, and findings, Kinsey et al.'s work has been criticized on multiple fronts, including sampling--a sample unrepresentative of the US--and validity--inadequate checks on response accuracy (see, e.g., Bancroft, 2004; Hegarty, 2012).

Since the Kinsey et al. work, most studies of people's sexual lives designed to be representative of a specific country have been quantitative in nature, despite using different data collection techniques. Most recent research in the US has relied on surveys, such as the National Health and Social Life Survey (Laumann, Gagnon, Michael, & Michaels, 1994), National Longitudinal

Study of Adolescent Health, and Youth Risk Behavior Survey (e.g., Santelli, Lindberg, Abma, McNeely, & Resnick, 2000) (all three using interviewer collected data) and the National Survey of Sexual Health and Behavior (e.g., Reece et al., 2010) (web-based data collection). Similarly, the British National Survey of Sexual Attitudes and Lifestyles (Johnson, Wadsworth, Wellings, & Field, 1994) and the Australian Study of Health and Relationships (e.g., Smith, Rissel, Richters, Grulich, & de Visser, 2003) relied on computer-assisted telephone surveys. These quantitative surveys assess selected aspects of sexual health, behaviors, and attitudes of the population of these countries to better understand sexuality and improve sexuality-related policies and programs. Although some studies mention using interviews in survey development (Aicken et al., 2013; Laumann et al., 1994), they have not detailed their mixed methods approach and methodological considerations arising from it. Further, while methodologists have advocated combining surveys with ethnographic observations of a survey site (Kennedy, 1997), researchers have not described this type of methodology or its contributions for better understanding the survey process.

Recently, scholars have turned to web-based samples. In this regard, Knowledge Networks (KN) provides a frequently-used resource to conduct online sexuality research, particularly for quantitative studies (Bleakley, Hennessy, & Fishbein, 2011; Caskey, Lindau, & Alexander, 2009; DeLamater, 2012; Reece et al., 2010; Rowland et al., 2004). KN specializes in online research, maintaining a panel of volunteer respondents who complete surveys every few weeks in return for free computer hardware and cable internet linkage to their home. While most KN surveys are for commercial products, KN's Division of Government and Academic Research routinely conducts high-quality probability-based scientific studies. Despite its increasing popularity, however, we know little about efforts to combine KN surveys with other methods.

## MIXED METHODS IN SEXUALITY RESEARCH

Sexuality researchers have occasionally used mixed methods designs. For example, Mustanski, Lyons, and Garcia (2011) investigated internet use through quantitative surveys of 329 young gay, bisexual and other men who have sex with men and in-depth interviews with 16 survey participants. They documented patterns with quantitative data (e.g., relationships between meeting partners online and sexual risk-taking behaviors), then explored meanings of these patterns with qualitative data (Mustanski et al., 2011). Brotto, Kundson, Inskip, Rhodes, and Erskine (2010) also used this sequential design of online surveys with 187 asexual individuals, followed by telephone interviews with 15 survey participants. They used interviews to explore 'some of the more puzzling [survey] findings,' such as participants who listed their sexual orientation as 'other' rather than 'asexual' (Brotto et al., 2010, p. 608). Tolman and Szalacha (1999) collected qualitative and quantitative data simultaneously during interviews with 30 adolescent girls, using the different types to address separate research questions. These studies provide examples of the added value of mixed methods in improving understandings of sexual experience and perceptions of sexuality.

Another application of mixed-methods involves using cognitive interviewing to prepare surveys. Cognitive interviewing refers to techniques evaluating the quality and content of survey responses through soliciting verbal feedback about the questions, responses, or terms used in surveys (Beatty & Willis, 2007; Dillman, Smyth, & Christian, 2009; Kennedy, 1997). Cognitive interviewing increases validity through investigating the extent to which questions generate the type of information intended by the researchers and how these questions and response categories could be improved (Beatty & Willis, 2007). Although sexuality research using cognitive interviewing is growing (e.g., Aicken et al., 2013; Austin, Conron, Patel, & Freedner, 2007; Edwards, Thomsen, & Toroitich-Ruto, 2005; Mavhu, Langhaug, Manyonga, Power, & Cowan, 2008; McCabe, Tanner, & Heiman, 2010; McGavock & Traeharne, 2011; Neilands, Chakravarty, Darbes, Beougher, & Hoff, 2010), papers focus on substantive findings rather than methodology.

Despite the recent use of mixed methods research to assess people's sexual experiences and perceptions, a broader dialogue related to the application of mixed methods research is necessary. Frequently mentioned considerations in designing sexuality research include measurement error in sampling and questions, non-participation, validity, reliability, participant comfort, privacy, and confidentiality (see, e.g., Fenton et al., 2001; Kennedy, 1997; Smith, 1992; Smith et al., 2003). While all research is subject to these concerns to some degree, the private and potentially-stigmatizing aspects of sex create specific concerns for sexuality researchers; for example, participants may refuse to participate or answer particular questions they perceive as personal or sensitive (e.g., Fenton et al., 2001; Smith, 1992; Smith et al., 2003).

Three aspects of our design make our study notable for sexuality research. First, our three-part qualitative [right arrow] QUANTITATIVE [right arrow] qualitative exploratory sequential design is rare. While online samples are increasingly common (Bleakley et al., 2011; Caskey et al., 2009; DeLamater, 2012; Reece et al., 2010; Rowland et al., 2004), comparisons of survey results from an online to a non-online sample are limited (for a notable exception see Ross, Mansson, Daneback, Cooper, & Tikkanen, 2005). Third, while cognitive interviewing is growing (e.g., Aicken et al., 2013; Austin et al., 2007; Edwards et al., 2005; Mavhu et al., 2008; McCabe et al., 2010; McGavock & Traeharne, 2011; Neilands et al., 2010), its use is focused on substantive rather than methodological findings.

## METHOD

We take a more methodological focus here. We describe the exploratory sequential mixed methods design and highlight findings for each phase that illustrate the relationship between different methods.

### Phase one

We conducted 20 cognitive face-to-face interviews to aid in crafting the surveys used in phase two. Using a random sample of staff members at a large public university located in Indiana, in

the Midwestern US, we recruited 20 participants who were as diverse as possible in age, social class and their comfort in discussing sensitive topics. In order to maximize our ability to attract participants who might be less comfortable discussing sexuality, our recruitment materials explicitly stated, 'We are not interested in asking you about your personal sexual experiences or behavior, but in finding out about what you think are important parts of sexual life today and what you think is important to know about sexuality.' While this decision precluded asking participants to identify their sexual orientation, nearly all (N = 18) of our participants discussed personal aspects of their sexuality, through which we ascertained that not all participants were heterosexual. Participants were diverse in terms of gender (60% women; 40% men) and age (range 28-76, mean of 46.5), but were more highly educated (100% had at least a high school degree, 75% bachelors, 50% advanced graduate degree), white (90% white nonHispanic; 5% African American; 5% Hispanic [see Winker, 2004 for discussion of racial/ethnic categories]) and liberal (with 75% self-identifying as liberal, 15% moderate and 10% conservative) than the US public (see McCabe et al., 2010 for additional information about the sample).

To maximize participants' comfort, participants chose the interview location (e.g., interviewers' offices, restaurants). Interviews lasted from 34-104 minutes (mean = 60 minutes SD = 16 minutes). Using interview transcripts and field notes, the interviewers (the first and second authors) developed procedures to maximize reliability through the careful development and documentation of coding categories and memos. Codes and memos discussed, for example, question order and participants' definitions of terms.

During the cognitive interviews, we asked participants a variety of questions related to sex and sexuality and to describe what these key terms meant to them. Topics included the importance and purpose of sex in people's lives, what constitute 'sexual problems,' and the impact on sexuality of moods, religion/spirituality, politics, social movements, and the internet and other media. We asked participants to talk through the criteria used to answer questions included in previous sex surveys, such as evaluations of people's sexual relationship and own sexuality, criterion to judge their own and others' sexual attractiveness, and experiences of sexual desire. Before we concluded the interview, if they had not already, we asked participants to explain what 'sex' and 'sexuality' meant to them.

Differences in participant's definitions of 'sex' and 'sexuality' highlighted the importance of defining these terms to maximize reliability and comparability of responses across participants. Participants' definitions of sex varied as predicted from other studies (Aicken et al., 2013; Austin et al., 2007; Sanders & Reinisch, 1999), though the range of definitions was unexpected. For example, a substantial minority of participants included a hug or kiss (30%) or the emotions or feelings attached to physical (including genital) activities (35%). Participants provided broader definitions for the term 'sexuality' than 'sex'. No one restricted the meaning of sexuality to being physical or encompassing only acts or activities. They typically described sexuality as a 'feeling' or 'state', with 40% specifying that it includes how one views oneself or feels about oneself, and 20% using 'sexuality' to refer to what we saw as their gender and 5% as what we saw as their

sexual orientation. Without prompting, participants noted that the lack of terms and imprecise way they are used can be problematic. For example, in response to a question about rating one's own sexuality, one participant stated, 'Well, see I have a tough time, like what's the definition of sexuality? That's what I need to know before I can get at what this question is asking'. Further, these interviews highlighted how participants' understandings of gender influenced how they understood 'sex' and 'sexuality' (discussed in more detail in McCabe et al., 2010).

Question order impacts variability in responses (e.g., Dillman et al., 2009), a finding reinforced in our cognitive interviews. Specifically, participants' comments suggested that people in relationships generally default to thinking about their 'own sexuality' in terms of their relationship to their partner. Therefore, asking a question about one's 'own sexuality' first followed by a question related to one's 'current relationship' may lead people in relationships to answer these two questions in similar ways. Based on these comments, we designed the survey in phase two to ask people about their 'current relationship' before asking about their 'own sexuality'. Ordering questions to reduce variability in responses should increase reliability and validity (e.g., Dillman et al., 2009).

In sum, cognitive interviews were a critical step in developing the survey. First, they pointed to the importance of asking about specific behaviors (e.g., 'vaginal sex', 'anal sex') and providing definitions of key terms (e.g., 'sex', 'sexuality') that were clear and inclusive. We sought to remove variation in answers due to alternative definitions, such as those for whom sex included kissing or feelings that may or may not be associated with sex (e.g., love). Second, interview results suggested a preferred question order to improve the validity and reliability of responses. In these ways, cognitive interviews helped identify issues related to measurement error that could be addressed so we could more clearly assess differences between modalities of data collection.

## Phase two

The second phase was designed to decide which modality to use for a potential national study. The phase involved two modalities of computer-based surveys: (1) KN sample of 218 residents of Indiana, with data collected in each participant's home; and (2) a sample of 211 residents of the Indianapolis metropolitan area (IM), which had a population of 1.75 million residents (US Census 2010) and is the capital of Indiana, who used a computer-assisted interview format in a location with direct access to a researcher. The KN panel of approximately 40,000 individuals reflected the US population within sampling error (Baker, Bundorf, Singer, & Wagner, 2003). KN randomly selected individuals drawn from their Indiana probability panel. We obtained a roughly equivalent IM sample of adults via a quota-based non-probability availability method. Volunteers responded to advertisements in the city's newspaper and to flyers in grocery stores, senior citizen centers, and a regional college campus. We selected individuals for possible inclusion in the IM sample based on their responses to screening questions about gender, marital status, and age.

Essential to deciding which modality to use was that the survey's questions be clear and understandable to the general adult public and take no more than 20 minutes to complete. The survey focused on a range of sexuality-related issues including the importance of sex to people's wellbeing, what constitute 'sexual problems' in people's lives, how people experience and recognize sexual desire/interest, the relationship between mood and sexuality, the relationship between religion and sexuality, and the impact of the internet on people's sexual lives. In deciding which modality to use, we compared KN and IM based on participants' characteristics and responses to questions. Comparisons were made to 'gold standard' questions from larger studies, test-retest of the same questions at different parts of the survey, item non-response, and internal inconsistencies between questions (e.g., Dillman et al., 2009 discusses these techniques to assess mode differences). For example, 95% of KN participants responded that they considered themselves heterosexual, 0.7% homosexual, 3.6% bisexual, and 0.7% 'something else'; and 91.6% of IM participants considered themselves heterosexual, 1.5% homosexual, 3.1% bisexual, and 3.8% 'something else'. Given the small number of participants in categories other than heterosexual, we combined these categories to create a binary measure of whether a respondent reported being heterosexual or not; in comparisons with the National Health and Social Life Survey (where 97.4% of participants were heterosexual, see Laumann et al., 1994), the 2.4 percentage point difference with KN was not significant, but the 5.8 percentage point difference with IM was significant at the 0.05 level.

The phase one findings helped address concerns about the validity and reliability of the survey. Based on insights from the cognitive interviews, we provided a definition of sexuality to all participants before asking questions including this term. We worded this part of the survey as follows: 'For these questions please think about sexuality broadly, including not only your physical satisfaction, but also your emotional satisfaction and your overall sense of your sexual self'. The first question following this prompt is: 'In general, over the past four weeks, how have you felt about your own sexuality?' Responses included: excellent, very good, good, fair, or poor. We found KN participants evenly divided in responding excellent/very good (33%), good (33%), and fair/poor (34%), while IM participants were more likely to respond excellent/very good (48%) and less likely to respond fair/poor (23%), with similar numbers rating their own sexuality as good (29%). Providing a standard and specific definition of 'own sexuality' allowed us to more easily interpret the responses compared to the range of possibilities generated from the original question posed in the cognitive interviews.

Included on the survey were questions about participant comfort, privacy, and perceived confidentiality, which were investigated further in the final qualitative phase. Few participants indicated that they were uncomfortable. For example, when asked to evaluate their survey experience, only 2% of either sample said it was 'negative', with most IM participants (48%) choosing 'positive' and most KN participants (69%) reporting the experience as 'neutral'. In addition, with no modality difference, most participants indicated that they would have felt less comfortable if the questions had been asked face-to-face.

### Phase three

The third phase generated two types of qualitative data: Interviewer notes from 13 face-to-face debriefing interviews conducted with IM participants and ethnographic observations of the research site. Because the IM participants completed the survey in one centralized location, we were able to observe the site and ask open-ended questions to some participants to gather more information about the experience. Interviews lasted 5-10 minutes. Participants consisted of everyone arriving at the research site within a 4-hour period on 1 day. No participants refused.

The interviewer (first author) asked participants about their experiences completing the survey and their reactions to the modality. The findings illustrated five relevant themes:

- (a) Participants reported that they were comfortable, with several noting that the questions were not as intrusive or private as they expected.
- (b) Most participants said there was nothing more we could do to make them comfortable answering the survey. Two suggested privacy dividers between the computers so people could not see others' faces while they were taking the survey, and one noted the importance of the researchers' friendly greeting when participants arrived.
- (c) While most participants said they would be comfortable in either location, two said their homes were more convenient and two said their homes were too distracting compared to the central location.
- (d) Participants offered a range of suggestions for recruiting people who would not have volunteered for this study, including advertising in a range of outlets (e.g., community organizations, bingo, casino boats).
- (e) Two older participants noted that using the mouse was difficult and emphasized the ease of arrow keys to select answers.

Further, we conducted ethnographic observations of the research site and noted ways that the IM sample might be different from KN. For example, there was an unexpected clustering of participants. Although the demographics of the IM and KN sample matched on age, gender, and marital status, only five of the 13 people arrived by themselves to the survey site. Those who arrived together included two romantic couples, one mother-daughter pair, and one roommate pair. Moreover, two of the other participants greeted other participants and one researcher at the site. These ethnographic observations suggest that participants may be clustered in ways we were unable to account for due to the non-probability quota sampling strategy.

### MODALITY DECISION

Based on insights from all three phases, we concluded that KN was the preferred mode for a potential national survey. Overall, after controlling for demographic differences, the KN and IM

samples provided similar results on nearly all questions. Because the IM sample had fewer older participants (i.e., age 65 or older), more with Bachelor's degrees or higher levels of education, and more who reported 'excellent' health, all analyzes comparing modalities were statistically adjusted for these differences. Demographic differences counter those found in a Swedish study comparing web-based and population-based interviewer-administered surveys, where the web sample was younger and more educated (Ross et al., 2005). In assessing reliability, both KN and IM produced results similar to 'gold standard' questions drawn from larger studies (e.g., National Health and Social Life Survey in Laumann et al., 1994; General Social Survey in Smith, 1992) on nearly all measures, similar results through test-retest of the same questions at different parts of the survey, similar rates of non-response on most questions, and no internal inconsistencies in either sample (e.g., Dillman et al., 2009; Fenton et al., 2001; Smith, 1992). One reason for these similarities in response patterns may be because of the removal of ambiguities in questions detected in phase one.

Despite these similarities, there were indications that the KN modality was superior, including the ability to select from a large panel and to oversample specific sub-groups (e.g., racial and ethnic minorities), the lower per participant cost (detailed below), and the substantial amount of information available about panel members. The later point allows more sexuality-specific questions to be included in a given length survey without the need for most demographic questions and to compare participants to those who refuse to participate. While the 207 KN panel members who refused to participate did not differ from the 218 KN participants in terms of gender, marital status, income, household size, number of children by age group of child, or internet access, those who participated were significantly younger and more educated. The most noticeable difference was in participation rates among those ages 75 and older ( $p = 0.009$ ); this age group was 7% of the KN sample, but 29.6% of those who refused. The ability to compare participants and non-participants helps to assess sample bias, which is particularly useful for sensitive topics where participation rates may vary systematically, and most research designs do not allow for such comparisons. Furthermore, clustering among the IM sample, which we were able to account for, does not appear in the KN panel because it is based on random sampling.

## MIXED METHODS RESEARCH CONSIDERATIONS

We identified five key considerations for improving mixed methods investigations of sexual experience and perceptions of sexuality.

First, sequential designs open possibilities for how closely to sequence phases; however, practical considerations may constrain these decisions. We sought to time phases so insights could best inform the other phases and improve validity and reliability. Phase one ended just weeks before the final survey was due to KN. Closely sequencing phases one and two enabled us to try out wording in cognitive interviews while we designed the survey; for example, we discussed potential ambiguity in questions and responses in our research team meetings and then were able to try out wording and/or ordering options in cognitive interviews before finalizing the

survey. Reducing variation caused by alternative definitions allowed us to address concerns about validity and reliability in phase two. However, with a few more weeks, perhaps we could have made better use of the insights from cognitive interviews in our survey design. Too closely sequencing phases could be problematic since it reduces time for reflection and because research (e.g., recruitment, interviewing, transcription) may take longer than expected. While 20 cognitive interviews is not a large sample, it is typical for this method (Dillman et al., 2009) and we were reaching saturation, with few new issues emerging in the final interviews. We concluded, therefore, that this close timing did not warrant delaying phase two. Rather than prescribing rigid guidelines, we advocate timing decisions be guided by the project's goals and budget (as more time costs more money).

The second set of considerations relates to sampling and the research environment. There were personal relationships between IM participants, which we did not anticipate and could not account for in our analytic techniques. Even if we had known to ask a survey question about whether they knew another participant or a researcher, our confidentiality agreement would have prevented us from connecting this response to another participant's survey. Additional sampling error can be introduced through non-participation and non-response bias and assessed through comparing characteristics of people who participated and/ or answered a question to those who did not (e.g., Dillman et al., 2009; Smith, 1992). KN facilitates this comparison by allowing researchers to select from a large panel and to have demographic information about the people who refused to participate/answer compared to participants who did, though the more information requested from KN, the greater the cost. Since the KN surveys were done in participants' homes without the presence of KN staff, we were unable to conduct debriefing interviews for phase three, so we might have missed insights about their experience, which could differ since they are 'professional' participants. Relatedly, KN participants had more control over their environment and we had less control about what they were doing (e.g., watching TV) and who else was present, including their intimate partner, though the instructions included finding a time to respond in which they had privacy. It could be useful to include questions about KN environment (e.g., who is present, what the participant is doing while taking the survey).

Third, if using KN or other panel-based service, there is no opportunity to return to those participants except through that service, decreasing the flexibility for researchers to follow up from an owned database. Web panel surveys also necessitate anticipating and evaluating conditioning and attrition effects (Dillman et al., 2009). While longitudinal research is possible, this methodology may be better suited for cross-sectional designs.

Fourth, the online design raises issues around data privacy, confidentiality and security compared to other formats (e.g., Dillman et al., 2009). In his review of web surveys, Couper (2000) notes people's concerns about the security and confidentiality of their information on the web results in higher rates of non-response and less honest reporting. Although we did not find these differences across modes, further study is needed about current research practices and perceptions. One recent study found that re-identification of confidential survey data taken from

two social science datasets from the Kinsey Institute is possible and recommends aggregating data to mitigate privacy risks and the need for additional research (Solomon, Hill, Janssen, Sanders, & Heiman, 2012). When collecting web-based information, particularly sensitive information related to sex, researchers need to take steps to protect the data (e.g., store data on a secure server, consider uniqueness of data in light of its potential for reidentification) and also inform participants of the limits of privacy, confidentiality and data security.

The final set of considerations relate to funding the study. Cost was part of the consideration when we compared modalities. Consistent with discussions of web-based surveys, the KN format is less costly (Frippiat, Marquis, & Wiles-Portier, 2010; Rookey, Hanway, & Dillman, 2008). The cost per IM participant was approximately \$125, including personnel time, room rental, printing, computers, and participant compensation (\$6 parking and \$25 incentive). The expense of conducting the KN survey was approximately \$45 per respondent; there was no monetary compensation since completing the survey was part of participants' ongoing commitment to KN. At nearly \$30,000, phase two was the most expensive part of our pilot study. The phase one cognitive interviews cost approximately \$120 per participant, including personnel time, transcription costs, and \$20 incentives. The phase three debriefing interviews were the least expensive phase, estimated at \$15 each for personnel time to conduct the interviews and ethnographic observations and write fieldnotes. We achieved a 100% participation rate without offering an additional incentive for the debriefing interview. Researchers might find incentives helpful to convert initial refusals (e.g., Dillman et al., 2009; Smith, 1992) or compensate participants for longer debriefing interviews. Finally, the broader issue regarding cost is the limited availability of funding for sexuality-focused surveys as asking questions about sexuality, particularly in the US, remains a lower priority for funding from both governmental and private sources.

## CONCLUSIONS

Little attention has focused on the methodology of mixed methods research on sexual experience and perceptions of sexuality. It is our understanding that our three-phase qualitative [right arrow] QUANTITATIVE [right arrow] qualitative exploratory design is unique in sexuality research. By describing issues and solutions faced by the research team, we hope to offer useful considerations for future research. By gaining participant insights in phases one and three, the mixed methods design allowed us to better address the validity of the results. While these insights echo those established by others using cognitive interviews (e.g., Aicken et al., 2013; Edwards et al., 2005; Mavhu et al., 2008; McCabe et al., 2010; Neilands et al., 2010), their benefits are enhanced by the inclusion of debriefing interviews following the survey. One contribution of this study, therefore, is the unique three-phase design. Another is ethnographically observing the survey site. Multi-method approaches commonly highlight surveys and interviews (e.g., Creswell & Plano Clark, 2011; Mustanski et al., 2011; Tolman & Szalacha, 1999) but overlook the possible benefits of ethnographic observations for gaining additional perspective on the survey experience. Together the ethnographic observations,

interviews, and surveys drew on the strengths of each of these methods to provide 'multiple ways of seeing' (Creswell & Plano Clark, 2011), which allowed us to address issues of validity, reliability, privacy, and participant comfort. Despite the challenges of conducting mixed methods research on a sensitive topic, we encourage future researchers to be open to the benefits of this design.

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