

# Conducting cognitive interviews over the phone: Benefits and challenges

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## Abstract

Cognitive interviews are commonly used in the survey research world as a question evaluation method to test survey questions before they go into the field. Typically, they are done in-person face-to-face; however, some target populations such as doctors or farmers are very difficult to reach in-person and other interview modes such as telephone interviewing may be more feasible and less costly. To date, little published research has examined the effectiveness of conducting cognitive interviews over the telephone. Many researchers face budget and staff time constraints at the same time that respondents are becoming harder to contact in-person and demand for larger samples has increased. All of these factors contribute to the appeal of conducting cognitive interviews by telephone.

This study looked at the benefits and challenges of conducting cognitive interviews over the phone. Eight cognitive interviewers were interviewed about their experiences conducting telephone cognitive interviews. Based on their experience, benefits of phone cognitive interviewing included better access to busy or disadvantaged populations, ability to get more sample variation, and cost and time efficiencies related to less travel and easier scheduling. Challenges included lost nonverbal cues and the need for more probing, more complicated logistics such as incentives, multi-tasking respondents, and more difficulty testing graphics, building rapport, and tracking instrument navigation. Most interviewers felt that in-person interviews were preferable but that if for some reason they could not do them in-person then phone would be better than not doing the interview at all. At the same time, most interviewers felt that the quality of the phone interview data was good enough compared to in-person interview data because they got what they needed for the analysis; however, they acknowledged that it was difficult to compare without a direct comparison within the same project.

**Key Words:** cognitive interview, question evaluation, pre-test method

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## 1. Introduction

Cognitive interviewing is among the most widely used methods for evaluating survey questions, especially for government surveys (Edgar, 2013b). Beatty and Willis (2007) define cognitive interviewing as, “administering draft survey questions while collecting additional verbal information about the survey responses, which is used to evaluate the

quality of the response or to help determine whether the question is generating the information that its author intends” (pp. 287). Q-Bank is a resource database of some of the questions from federal surveys that have been tested using cognitive interviews and other question evaluation methods and can be searched online at: (<http://wwwn.cdc.gov/qbank/home.aspx>). According to the Q-Bank website, question evaluation studies are conducted to determine if a question:

- Captures the intended concept
- Is interpreted consistently across respondent groups
- Poses problems for respondents when attempting to answer the question

Identifying problems with questions can be useful for survey designers who can make changes to improve questions and reduce measurement error (Noel & Ryan, 2011). In addition, understanding how groups of respondents interpret questions can be useful for survey designers and data analysts so they know what the questions are measuring (Noel & Ryan, 2011).

There are two main approaches for conducting cognitive interviews: 1) think-aloud and 2) probing (Beatty & Willis, 2007), although these two approaches can be used during the same interview and are not entirely mutually exclusive. In the think-aloud approach, respondents are asked to verbally describe their thought process as they formulate their answer to the survey question (e.g., “tell me what you are thinking about”). The interviewer is meant to facilitate this process but intervene as little as possible while the respondent is generating information. In contrast, the probing approach involves a more active role for the interviewer as they follow-up on the respondent’s answer to a survey question with various verbal probes (e.g., “can you tell me what this word means to you?”). Probing can either occur retrospectively at the end of the survey after all questions have been asked, or immediately following each survey question, known as concurrent probing..

In the analysis phase, themes or patterns based on answers to these think-aloud or explicit probes are extrapolated to summarize what respondents were thinking about and how they answered each question. Particular attention is paid to evidence of measurement error in the cognitive response process respondents go through to answer a question. Measurement error can be introduced at any of the four main stages of the cognitive response process (Tourangeau, Rips, & Rasinski, 2000):

1. Comprehension- what the question is asking
2. Recall- pull relevant experience from memory
3. Judgement- how experience fits into the given response options
4. Response- synthesize final answer to the survey question

### **1.1 Alternative cognitive interview modes**

A typical cognitive interview is a one-on-one in-person interview (Willis, 2004; Miller, 2011). However, some target populations such as clinicians or farmers are very difficult to reach in-person and other interview modes such as telephone interviewing may be more feasible and less costly. To date, little published research has examined the effectiveness of conducting cognitive interviews over the telephone or compared the quality of data between telephone and in-person interviews. Most likely telephone cognitive interviews are done in practice more often than is suggested from the literature. More methodological research on cognitive interviewing is needed, in particular, around

alternative modes to in-person interviews. Alternative modes may become the practical reality as many researchers are facing budget and staff time constraints at the same time that respondents are becoming harder to contact in-person and demand for larger samples has increased (Blair & Conrad, 2011).

Some research has explored the use of telephone cognitive interviews for specific populations. At the 2013 question evaluation QUEST conference at the National Center for Health Statistics, Ridolfo and Ott presented their experiences conducting telephone cognitive interviews with farmers as part of testing the 2012 Census of Agriculture form. Ridolfo and Ott explored telephone cognitive interviews in place of the traditional in-person interviews because their rural, geographically dispersed population of farmers makes travel impractical and extremely costly. They expanded on some of their lessons learned. They found it difficult to convey the intent of the interview and keep the respondent focused on the task at hand. To minimize the time spent on the telephone, they limited the interviews to 30 minutes but they found this constraining. Testing a self-administered survey over the telephone was difficult because the questions were not written in a way that was conducive to being spoken out loud. Also, respondent could not point to visuals or a location on the form when explaining their answer to the interviewer. The setting where the respondent conducted their interview affected the quality of the interview. The interviewers did not have appointments set up ahead of time so when they called many of these farmers were working or distracted. Many of the farmers did not have their forms available and this made probing nearly impossible.

Some researchers have explored other alternative methods for conducting cognitive interviews such as self-administered Web surveys with some promising success (Edgar, 2012; Edgar, 2013a). In 2012, Edgar compared the data from unmoderated, cognitive interviews conducted online using a structured Web survey to standard in-person cognitive interviews. A key objective of this research was to evaluate the response strategies used to answer global clothing questions from the Consumer Expenditure Quarterly (CEQ) survey collected by the Bureau of Labor Statistics. Both modes included similar tasks such as a global think-aloud questions, detailed follow-up questions about participants' answers, and listing hypothetical examples in response to probes about specific expenditures. Participants were given a Web survey containing the questions and instructions for each of the tasks and when they were done explaining a response they clicked continue and moved on to the next task. No additional probes were used in the web mode, but spontaneous probes were used in the in-person mode.

Edgar (2012) found that the quantity and quality of the data were comparable between the in-person and self-administered Web modes. Although Web participants used more words and concepts in their initial response, after all the follow-up probes were asked in-person participants had used more words and concepts. There was remarkable consistency between the modes in the content of responses and response strategies used by respondents. The self-administered Web mode had cost and time efficiencies because it took less time to schedule and administer the interviews. Edgar (2012) estimated that collecting 19 cognitive interviews in-person took 20 times as long as collecting 54 self-administered Web interviews, which means that using the self-administered Web mode produced more interviews in a shorter time period. The self-administered mode also does not have concerns over interviewer effects.

In 2013, Edgar followed up with a similar study to the one conducted in 2012 to find out if the conclusions, comprehension and recall, and potential issues identified about the questions were the same in the in-person and self-administered Web modes. Edgar

(2013a) found that comprehension and recall were similar, but different problems were identified between the two modes and some of the conclusions drawn about the questions differed as a result. For example, a major problem with a mortgage question was identified after in-depth probing in the in-person interviews that was not found in the self-administered Web interviews. All probes must be scripted for the Web and have to apply to all participants which means no spontaneous probing can be done and responses that would have been probed on in-person will not be followed-up on. Another difference is that the self-administered Web respondents felt the mortgage question was very personal whereas the in-person respondents did not express the same sensitivity. Self-administration is often thought to be better for administering sensitive questions, but this may not hold for testing sensitive questions. This is an area for further study.

Each mode has its own strengths and weaknesses and as a result Edgar (2013a) suggests a combination approach where the studies are run concurrently so that probes for the self-administered Web interviews can be modified based on in-person findings. This combined approach takes advantage of the cost and time efficiencies of using the Web, while benefiting from the richness of data obtained through in-depth probing done in-person.

## **2. Study Design and Methods**

### **2.1 Data Source**

The purpose of this project was to understand some of the practical benefits and challenges associated with telephone cognitive interviewing and explore data quality differences between telephone and in-person interviewing. To get an idea of the variety of experiences interviewers had using telephone cognitive interviews across different projects I interviewed eight researchers at the American Institutes for Research (AIR) about their experiences conducting telephone cognitive interviews. All of the interviewers also had experience conducting in-person cognitive interviews which allowed for comparisons to conducting the interviews by telephone. All of the interviews I conducted lasted about one hour. All the interviews were audio-recorded. IRB approval was obtained for this project from the American Institutes for Research. Protocol topics included:

- Description of cognitive interview projects
- Project logistics
- Benefits/challenges/trade-offs between telephone and in-person
- Perceived quality of the data
- Preferences for telephone or in-person

### **2.2 Cognitive interview projects covered**

The eight cognitive interviewers were asked about the telephone cognitive interviews they had worked on. Table 1 provides a summary description of the cognitive interview projects. The projects covered a wide variety of health topics. Telephone and Web surveys were tested along with other kinds of materials such as guides for consumers and comparative effectiveness reviews for clinicians. The population covered included mostly clinicians or consumers but also included Medicare beneficiaries and community site directors.

The logistics of these projects varied. All of these projects were done over the telephone remotely except one project. The Medicare Part D survey was a telephone survey that was cognitively tested in-person where the interviewer left the room and called the respondent to conduct the telephone survey and then returned to the same room for probing. The only two projects that used a shared screen with the respondent were the Web surveys. For the other projects the survey or material such as a comparative effectiveness review was emailed to respondents so they could look at it while answering questions over the telephone. The typical length of the phone cognitive interviews was one hour.

<b>Table 1. Description of telephone cognitive interview projects discussed</b>				
<b>Project Topic</b>	<b>Type of Material</b>	<b>Population</b>	<b>Shared Screen</b>	<b>Remote Location</b>
Medicare Part D	Telephone survey	Medicare	N	N
EHR Adoption	Telephone survey	Clinician	N	Y
Nutrition and Exercise in School Program Implementation	Web survey	Community Site Directors	Y	Y
Use of Clinical Guidelines	Web survey	Clinician	Y	Y
Traumatic Brain Injury, Burns, Spinal Cord Injuries	Guides	Consumer	N	Y
Cardiovascular Disease etc.	Comparative Effectiveness Reviews	Clinician	N	Y
Care Coordination	Definition	Consumer	N	Y

## 2.3 Analysis

Interview notes were the main source of data for analysis. When needed the audio recordings were used to get exact quotes or fill in details. A qualitative analysis was conducted to identify themes across cognitive interviewer experiences. The analysis focused on the important topics covered in the interview protocol such as the benefits, challenges, and trade-offs between telephone and in-person cognitive interviews, perceived differences in the quality of the data, and preferences for telephone or in-person cognitive interviews.

## 3. Results

### 3.1 Benefits of telephone cognitive interviews

#### 3.1.1 Better access to busy or disadvantaged populations

The most commonly mentioned benefit of conducting cognitive interviews over the telephone was the access to populations that were nearly impossible to get in-person. Cognitive interviewers specifically talked about clinicians and people with physical

disabilities as two populations that could be more accessible over the telephone. Clinicians are notoriously hard to interview in-person because of their busy schedule and clinical practice during the day. People with physical disabilities may also have a hard time coming into the cognitive interview lab and may not want interviewers going to their home.

### *3.1.2 More variation in the sample*

The next most common benefit mentioned was the ability to get variation in the sample more cheaply using telephone rather than in-person interviews. For surveys of clinicians this may be important for getting variation in practice setting and specialty. Depending on where the study is taking place there may not be enough variation in a single location. Other types of variation include urban versus rural, region of the country, education, income, and race. Geographic variation may be required for projects that are surveying organizations that are spread out around the country. For projects that require geographic variation, traveling would be required to do in-person interviews, but can be done over the telephone more easily and more cost effectively.

### *3.1.3 Cost savings*

Cost savings was another frequently mentioned benefit of telephone cognitive interviews compared to in-person interviews. The cost savings were mostly travel savings. The travel costs saved were both costs for interviewer travel such as flights and hotels, but also facility rental charges. In some projects respondents who did their interviews over the telephone were paid a lower incentive than those conducted in-person because telephone respondents did not have to travel.

### *3.1.4 Less travel and easier scheduling*

Interviewers also mentioned the scheduling benefits of conducting cognitive interviews. For projects with a quick timeline, interviews can be conducted in a shorter period of time if there is less travel involved. Also by taking advantage of time zone differences more interviews can be conducted per day. In addition, rescheduling is much easier which means that recruited participants can be kept in the sample instead of being replaced. This is especially important for populations who are very busy and have constantly changing schedules such as clinicians. It is also easier to conduct interviews after normal business hours over the telephone than it is in-person. Also, cognitive interviewers reported that respondents were not as late to their telephone appointments as they sometimes are to in-person interviews. Part of the reason for this is that there are less potential travel delays for the respondent.

## **3.2 Challenges of telephone cognitive interviews**

### *3.2.1 Lost nonverbal cues*

All of the interviewers said that the biggest challenge of doing cognitive interviews over the telephone is the loss of nonverbal cues. Interviewers used nonverbal cues to see emotions like confusion, and annoyance, and boredom. Without the ability to see the respondent's face and other nonverbal cues, the interviewer is only left with vocal expressions such as the tone of voice or other audible expressions such as a sigh. As a consequence, the interviewer may miss some of these raw reactions. If there is silence the interviewer will have to ask the respondent what they are thinking about instead of

getting nonverbal cues such as a look of confusion which can be followed up on with a more specific probe. This may change the respondent's reaction from something unconscious to something conscious which may qualitatively change the information the interviewer receives. Nonverbal cues can also provide context when talking with somebody with a strong accent.

Interviewers sometimes watch respondents read through text in a survey or material such as a pamphlet to see how respondents navigate the material. This is not easy to do over the telephone without a web camera or eye tracking software. Instead, telephone interviewers sometimes asked the respondents to read the material or survey questions out loud.

Periods of silence are often a time when respondents' nonverbal cues are used the most by interviewers. Silence is awkward both over the telephone and in-person, but is even more awkward over the telephone. It is also harder to know what silence means over the telephone because interviewers do not have nonverbal cues to rely on. As a result, more probing is needed.

### *3.2.2 More probing needed*

Interviewers also said they got less feedback in response to probes over the telephone compared to in-person. They reported having to probe more often to get respondents to think aloud. This was especially the case for people who were not familiar with verbalizing their thought process. Most consumers in the general population are not used to verbally processing what they are thinking about. This is not usually a problem for clinicians who are trained to articulate their thought process and give their feedback and opinions. The likely need for more probing suggests that a more experienced interviewer may be better for telephone cognitive interviews.

### *3.2.3 Rapport building harder*

Interviewers also discussed how rapport building is harder over the telephone than in-person. The interviewer can't see the respondent smiling or nodding over the telephone. The interviewer cannot shake their hand or use body language to build rapport. Interviewers reported still being able to develop rapport over the telephone but they said it was much harder. They had to build rapport vocally with words of encouragement, repeating back with the respondent said, by not cutting people off when they were talking, and by using vocalizations like a 'uh-huh' to let the respondent know they were listening. The interviewers suggested that rapport building may be more important for respondents with low socioeconomic status because the interaction that is involved in cognitive interviewing may be more foreign to them.

### *3.2.4 Harder to track instrument navigation*

Tracking navigation through an instrument was more difficult over the telephone. Interviewers had to probe more frequently to ask where the respondent was in the instrument. The telephone cognitive interview protocols needed to have very clear navigation cues such as headings, numbering, color coding so that the respondent and interviewer could easily point out where they were in the instrument.

The telephone cognitive interviews testing Web surveys used a shared screen online where the respondent and interviewer looked at the same document on the screen. The

shared screen was helpful because respondents could read the survey question and say their answer out loud while the interviewer recorded their answer in the Word document that they were both looking at. Misunderstandings or interviewer errors could be corrected when the respondent saw their answers being recorded. In the beginning, some of these projects allowed the respondent to control the mouse but they found that the interviewer lost control of the interview. Respondents wanted to go through the survey quickly and didn't allow for probing after each question. If the interviewer needed to skip around the instrument because of time constraints they had to explain all of this to the respondent to get them to move the mouse where they wanted to go which was frustrating for both the respondent and interviewer. Interviewers quickly realized they needed to take back control of the mouse. However, this limited the ability for the interviewer to see how the respondent navigated through the instrument. The interviewer still had to engage in more probing to find out where the respondent was in the instrument to make sure they were in the same spot.

### *3.2.5 More complicated technology, pre-sending materials, incentives*

There were also logistical challenges relating to technology, sending materials ahead of time, and incentives. More so than in-person interviews, telephone interviews involved more technology. This was especially true when sharing a computer screen, but also when emailing materials ahead of time. People who are not comfortable with computers or do not have Internet access would have a harder time participating in a telephone cognitive interview.

Sending the materials by email was often done so that the materials could be sent right before the interview to minimize the time the respondent has to interact with the material before the interview starts. The interviewer wanted to get the first reaction to the materials in the interview as much as possible. Sometimes the materials were mailed to the respondent ahead of time but then they are exposed to the material longer and also were more likely to misplace the materials by the time the interview happened. This also happened when emailing the materials so occasionally some time was spent at the beginning of the telephone interview resending materials to the respondent.

Another logistical challenge had to do with incentives. Instead of providing a cash incentive right after the interview in-person, incentives after the telephone interviews had to be mailed to the respondent and were usually in the form of a gift card or check. This created more logistical work which was often done by a recruitment firm. This is not ideal for the respondent because they usually prefer cash on the spot. It could, however, be safer for interviewers because then they do not have to carry a lot of cash like they do when traveling for in-person interviews.

### *3.2.6 Harder to test graphics or visuals*

Graphics or visuals in the materials were especially hard to probe without being able to see the respondent look at the image or point out things that were confusing to them. It was also harder for the note takers to keep track of what it was specifically about the graphics that the respondent did not understand.

### *3.2.7 Multi-tasking respondents*

Interviewers also discussed how respondents could be multi-tasking while on the telephone and it would be difficult for them to know what else respondents were doing.



Interviewers did not perceive this to be an apparent problem that they could notice in terms of respondent engagement but they felt this was a reason to keep the interview shorter than in-person.

### **3.3 Quality of the data**

After summarizing some of the benefits and challenges of conducting telephone versus in-person cognitive interviews, the underlying question is how much do these differences matter in terms of the quality of the data? This was difficult to directly assess by asking interviewers. Interviewers talked about the challenges that could lead to a potential loss of information such as losing nonverbal cues, but it was difficult for them to determine how much this mattered when comparing the quality of telephone and in-person interviews. Most interviewers felt that in-person interviews were preferable but that if for some reason they could not do them in-person then telephone would be better than not doing the interview at all. For example, one interviewer summarized this sentiment when he said, “It’s ideal to do them in-person, but if the choice is between not doing it at all or doing it over the telephone, then do it by telephone. But this is always second best.” At the same time, most interviewers felt that the quality of the telephone interview data was good enough compared to in-person interview data because they got what they needed for the analysis; however, they acknowledged that it was difficult to compare without a direct comparison within the same project.

### **3.4 Interviewer preference for telephone or in-person**

Most interviewers still preferred to do the interviews in-person. They preferred in-person interviews because of the benefits of rapport building and nonverbal cues. In addition, talking to somebody in-person is more engaging than talking to someone over the telephone. Some people felt that although they preferred to do them in-person it was more ethical to do them by telephone because it meant accessing disadvantage populations that are usually excluded from cognitive interviews. The benefit of including these populations seems to outweigh any potential loss of information. A couple of people also felt that the telephone interviews were easier to conduct. Largely this was because in their experience they only interviewed clinicians over the telephone and the clinician interviews were easier because they were able to think out loud and verbally process their reactions with less prompting from the interviewer. Interviewers also appreciated not having to travel and the easier logistics when scheduling interviews.

## **4. Discussion**

### **4.1 Summary of findings and trade-offs between telephone and in-person**

Table 2 summarizes the benefits and challenges of conducting telephone versus in-person cognitive interviews. Benefits of telephone cognitive interviewing include better access to busy or disadvantaged populations, ability to get more sample variation, and cost and time efficiencies related to less travel and easier scheduling. Challenges include lost nonverbal cues and the need for more probing; more complicated logistics such as incentives; multi-tasking respondents; and more difficulty testing graphics, building rapport, and tracking instrument navigation.

**Table 2. Summary of the benefits and challenges of telephone cognitive interviews**

<b>Benefits of telephone cognitive interviews</b>	<b>Challenges of telephone cognitive interviews</b>
<ul style="list-style-type: none"> <li>- Better access to busy or disadvantaged populations</li> <li>- More variation in the sample</li> <li>- Cost savings</li> <li>- Less travel</li> <li>- Easier scheduling</li> </ul>	<ul style="list-style-type: none"> <li>- Lost nonverbal cues</li> <li>- More probing needed</li> <li>- Rapport building harder</li> <li>- Harder to track instrument navigation</li> <li>- More complicated technology, pre-sending materials, and incentives</li> <li>- Harder to test graphics or visuals</li> <li>- Multi-tasking respondents</li> </ul>

Table 3 summarizes the trade-offs for when it may be more feasible to use telephone versus in-person cognitive interviews. Interviewers perceived the quality of data to be similar but acknowledged it was difficult to compare without doing both telephone and in-person interviews for the same project. They would rather do the interviews in-person and seemed to think this was still the better approach. However, under certain project circumstances telephone interviews may be the only feasible approach and they would rather do the interviews by telephone than not at all. None of the interviewers raised concerns about telephone cognitive interviewing that would suggest that they should not be done at all. Important factors for consideration are the population of interest, type of material being tested, cost and time constraints, and the need for sample variation.

**Table 3. Trade-offs: When to use telephone versus in-person cognitive interviews**

<b>Telephone may be better for:</b>	<b>In-person may be better for:</b>
<ul style="list-style-type: none"> <li>• Populations that include: <ul style="list-style-type: none"> <li>- Clinician or others with time constraints</li> <li>- Physically disabled</li> </ul> </li> <li>• Sample variation</li> <li>• Text only material</li> <li>• Cost constraints</li> <li>• Quick timeline</li> </ul>	<ul style="list-style-type: none"> <li>• Populations that include: <ul style="list-style-type: none"> <li>- Older people</li> <li>- Blind or deaf</li> <li>- Computer challenged</li> <li>- Low cognitive/verbal ability</li> <li>- Caregiver needs to be present</li> </ul> </li> <li>• Visual/graphics material</li> </ul>

#### *4.1.1 Populations better accessed by **telephone**: Busy professionals, physically disabled*

The biggest trade-off has to do with the population of interest. Some populations seem to be better to interview over the telephone. For example, clinicians or other professionals with time constraints tend to be much easier to interview over the telephone. Part of the

reason has to do with scheduling, but it's also easier to interview them over the telephone because they are able to express their opinions and articulate their thought process in a way that most people are less accomplished with. Telephone cognitive interviewing may be the only way to access people with physical disabilities that prevent them from traveling and when the budget does not allow for interviewer travel. People with physical disabilities may also prefer not to have an interviewer come to their house.

#### *4.1.2 Project characteristics better for **telephone**: sample variation, cost and time constraints*

In addition to the population of interest, there are other trade-offs to consider when deciding to use telephone or in-person cognitive interviewing. If geographic variation is important for the study, then it may be more efficient and cost effective to do them over the telephone if the population is conducive to telephone interviewing. Cost is a consideration in most studies, and if travel were involved then it could be less expensive to do the interviews over the telephone. If the project has a very quick turnaround time, then the benefits of quicker scheduling may make telephone interviewing an attractive alternative.

#### *4.1.3 Populations better accessed **in-person**: older, blind or deaf, lower verbal skills, care-giver present, computer challenged*

In-person interviewing may be better for people who are less articulate because the interviewer has the benefit of reading their nonverbal cues as well. This becomes increasingly true as the level of cognitive impairment increases. At some point there is a level of impairment that prohibits doing a cognitive interview whether in-person or on the telephone. But the in-person method may be able to accommodate people with cognitive impairments better than over the telephone. For example, in one study with people who were elderly and homebound, many of the respondents had some degree of cognitive impairment. The interviewers went to their homes to conduct the interviews and it became clear that the respondents could not understand the response scale so the interviewer drew pictures of smiley faces and frown faces and had the person point to the one that expressed how they felt in response to each question. This would be nearly impossible to do over the telephone. In-person may be better when interviews need to be conducted with a care-giver present as well. It would also be much harder to conduct interviews with blind or deaf people over the telephone whereas it has been done in-person. Interviewing older people with hearing impairments would be harder over the telephone than in-person. Also, with the introduction of computer technology and telephone cognitive interviewing it would be harder to interview people who were computer illiterate or uncomfortable with computers over the telephone.

#### *4.1.4 Project characteristics better for **in-person**: visuals/graphics*

Also, it's important to keep in mind the type of material that is being tested. Material that is mostly text with few visuals or graphics can be done over the telephone but visuals and graphics are much easier to test in-person.

## 4.2 Limitations

This was an exploratory study that looked at the benefits and challenges of conducting cognitive interviews over the telephone. Eight cognitive interviewers were interviewed about their experiences conducting telephone cognitive interviews. Although their feedback was enlightening and provided a good picture of the trade-offs around when telephone cognitive interviewing may be an attractive alternative to in-person interviewing, it may not fully represent the experiences of other cognitive interviewers. When discussing the impact of doing telephone cognitive interviewing on the quality of the data that is collected, it became clear that it was difficult for the interviewers to make this comparison. A more systematic method for comparing quality of data is needed.

## 4.3 Future research

It would be better to compare the data collected by telephone and in-person cognitive interviews within the same project testing the same material. As future research, I plan to do this with the data from a project that is currently underway. This project included both telephone and in-person cognitive interviews with clinicians about their adoption and use of electronic health records. I plan to compare the data collected from the sections that were administered both in-person and over the telephone to evaluate whether the quality of the data is different. Quality of data will be measured by length of responses to probes, number of unique ideas discussed after probing, number of probes needed for comprehension of the respondent's contribution, content of responses, response strategies used by respondent, similar conclusions, comprehension and recall, and similar potential issues identified about the questions.

In addition to telephone cognitive interviewing, other alternative methods should be explored such as using eye-tracking software and remote video interviewing. Some preliminary research combining eye-tracking capabilities with in-person interviews was done in Germany and presented at the recent QUEST conference (Neuert & Lenzner, 2013). They compared in-person cognitive interviews with and without eye-tracking and found that the eye-tracking software was able to detect a few more problematic questions than the interviews alone. Both methods identified a similar number and kind of problem. They concluded that eye-tracking was a useful supplement to an in-person cognitive interview but it was slightly more time consuming.

Also, it would be interesting for future research to compare cognitive interviews of material that is of a sensitive nature between phone and in-person. It's commonly believed that in-person interviews are better at building rapport which is very important when asking about sensitive topics. But we also know that there are social desirability effects when interviewers are involved, so the distance created over the phone could potentially be better for privacy. However, Edgar (2013a) found some evidence that some topics may be perceived as more sensitive over the phone than in-person. Further research is needed to understand whether sensitivity varies by mode differently for testing purposes compared to survey administration and for what topics.

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