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The Qualitative Report

Volume 11 | Number 3

Article 5

9-1-2006

Focused Group Interviews as an Innovative Quanti- Qualitative Methodology (QQM): Integrating Quantitative Elements into a Qualitative Methodology

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Recommended APA Citation

Grim, B. J., Harmon, A. H., & Gromis, J. C. (2006). Focused Group Interviews as an Innovative Quanti- Qualitative Methodology (QQM): Integrating Quantitative Elements into a Qualitative Methodology . *The Qualitative Report*, 11(3), 516-537. Retrieved from <http://nsuworks.nova.edu/tqr/vol11/iss3/5>

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Abstract

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Keywords

Focus Groups, Qualitative-Quantitative Methodology, QQM, and Qualitative Hypothesis Testing

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Focused Group Interviews as an Innovative Quanti- Qualitative Methodology (QQM): Integrating Quantitative Elements into a Qualitative Methodology

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There is a sharp divide between quantitative and qualitative methodologies in the social sciences. We investigate an innovative way to bridge this gap that incorporates quantitative techniques into a qualitative method, the “quanti-qualitative method” (QQM). Specifically, our research utilized small survey questionnaires and experiment-like activities as part of the question route in a series of five focused group interviews on nutrition education. We show how these quantitative-type activities fit naturally with our question route and contributed to testing the hypotheses within the context of the five important characteristics of focused group interviews. The innovative use of QQM in focused group interviews makes data analysis easier and more transparent and permits collection of richer, more multifaceted data in a cost-effective fashion. Key Words: Focus Groups, Qualitative-Quantitative Methodology, QQM, and Qualitative Hypothesis Testing

The divide between quantitative (positivistic) and qualitative (interpretive) social science methodologies is so dramatic that Andrew Abbott (2001) chose *Chaos of Disciplines* as the title for his book on the evolution of this chasm. Previous attempts to reconcile the perspectives have focused on using one method to complement the other, often called triangulation (Denzin, 1970). This article describes a different approach to bridging this gap. Rather than focusing on the complementarity of the methods, we propose a more direct integration of the methods. Specifically, this article reports on the strategic use of quantitative techniques as part of a qualitative method. This “quanti-qualitative” methodology should not be confused with other more widely-used techniques such as the quantitative coding of qualitative texts (e.g., Grim, Finke, Harris, Meyers, & VanEerden, 2006) to produce such things as complex indices (e.g., Grim & Finke, 2006). Where such coding is a posterior process that extracts quantitative measures or categorical summaries from existing qualitative data, the quanti-qualitative methodology strategically plans for quantitative data collection as an integral part of a qualitative process. Accordingly, we define Quanti-Qualitative Methodology (QQM) as,

- the strategic incorporation of quantitative techniques into a qualitative method in such a way as to make the results more empirically transparent.

We will demonstrate QQM using a focused group interview study we planned in fall 2002 and carried out in spring 2003.

Integrating Quantitative Elements into a Qualitative Methodology

A “focused group interview” (Merton, Fiske, & Kendall, 1990) is a qualitative method in which researchers interactively question a group of participants in order to test theory-driven hypotheses. The term focused group interview is useful as a way of distinguishing academic from market research uses of focus groups. Some market researchers extend the term focus groups to include any group feedback situation, such as using quantitative opinion meters in large groups. The possibility of drawing on such quantitative-type techniques is often overlooked in academia because focus groups are seen strictly as a qualitative method. We will demonstrate the quanti-qualitative method by presenting a focused group interview study that utilized QQM. Specifically, we will describe our focused group interview study that incorporated a short survey and an experiment-like component, in tandem with questions that probe the participants’ subjective experiences. We will discuss our use of QQM within the overall template of the five key characteristics of good focused group interview study design: shared experience, topic saturation, hypothesis testing, question route, and subjective experiences (Merton & Kendall, 1955; Merton et al., 1990).¹ We have also provided extensive supplementary information in notes, which are found at the end of this paper.

Though focused group interviews are squarely a qualitative method, this does not preclude using quantitative techniques such as surveys and experiments. We suggest that using quantitative and qualitative methods in tandem is only somewhat similar to methodological triangulation (cf. Denzin, 1970; Rank, 2004). QQM is similar to triangulation in that it draws on both methods, but it is distinct from triangulation in that the methods are integrated into the same interview protocol. We believe that crossing back and forth between quantitative and qualitative methods in a focused group interview is defensible given the growing recognition that effective interpretation draws on positivist and non-positivist traditions (Denzin, 2004; Lincoln & Guba, 1989; Richardson, 1991). In fact, the two traditions are intertwined and may represent swings of the same pendulum rather than separate paradigms (cf. Abbott, 2000). The close relationship between qualitative and quantitative understanding is eloquently summarized by Thomas Kuhn (1970), “since Galileo, [quantitative] laws have often been correctly guessed with the aid of a [qualitative] paradigm years before apparatus could be designed for their experimental determination” (p. 29). We believe that the two methods are

¹ Merton and Kendall (1955) identified four general characteristics that define how focused group interviews differ from other research interviews (involvement in a shared concrete situation, content analysis that leads to hypotheses, use of an interview guide to test the hypotheses, and a focus on the subjective experiences of the participants). To their list Merton et al. (1990) add a fifth characteristic (topic saturation).

ultimately compatible, and that efforts to integrate them directly have the potential to generate results that speak simultaneously to those who prefer numbers and those who prefer illustrative interpretation. In a colloquial sense, the QQM approach we are proposing is a design that can speak to both the right and left sides of the brain.

We should mention at the onset, however, that our advocacy of “quantitative-type elements” in focused group interviews does not necessitate the use of computer programs nor the imposition of the logic of general survey research. We found computer assisted analysis to only be of limited value in our study, as will be discussed later. Also, we are not suggesting the adoption of general survey research logic, which is based on sampling theory and scale measurement techniques. What we do suggest is that, if done appropriately, the incorporation of quantitative-type techniques can enhance qualitative research. Though we will not be able to demonstrate that qualitative methods can likewise be incorporated into quantitative research, we believe that quantitative research would similarly benefit from incorporating more qualitative methods as part of the interview or experiment. For example, most quantitative personal and phone interviews have at least one open-ended question; however, phone interviewers are often not trained in qualitative techniques such as probing. QQM suggests that quantitative data collectors could also become more adept in probing the context of responses. The advantage would be that such on-the-spot probing could gather data that would normally be done at a later stage (or not at all due to funding or project deadlines).

Our focus in this article is on demonstrating that quantitative activities can be integrated directly into a qualitative method in ways that allow results to be quantitatively supported. We do this by interweaving these activities into the fabric of the question route. We did this because we wanted to have both the subjective opinions of those we interviewed and some empirical measurements related to the opinions expressed. Specifically, we hoped to have numeric data that could speak to the hypotheses we were testing, especially since the research would be reported to multiple stakeholders, some of whom were more likely to respond to numbers and others to qualitative interpretation. Rather than qualitative-quantitative methodological triangulation, which keep the methods separate, we were looking for empirical measures that were a seamless part of the qualitative interview process. We are not arguing against the separate use of the different methodologies, but rather for the strategic integration of the methodologies. One clear contribution of integrating quantitative activities into a focus group is that it makes the data less difficult to analyze and report. This difficulty has long been recognized as a key disadvantage of focus group research (Krueger, 1988). Another advantage is that QQM is a parsimonious approach. It draws on the strengths of both types of methodology within a single design, providing some immediate quantitative findings, which the group itself can further discuss.

The genesis of this unique methodology was the highly quantitative academic environment within which the lead author works. As he worked with his co-authors on designing the question route, he looked for opportunities to incorporate quantitative elements as parts of the focused group interview question route. Rather than accept that the qualitative/quantitative paradigm divide is an unbridgeable gap, we looked for ways to integrate strengths from each research paradigm into a single research act. Furthermore, since our funding, timeline, and personnel allocation for this study were limited, we looked to maximize our resources to obtain data that could speak to the

various stakeholders in the study (academics, food pantry directors, nutritionists, and government officials). We considered that focused group interviews are suited for such an innovative blending of methods particularly because they were initially envisioned as a way to test a research question. Following Merton & Kendall (1955), we approached the use of focus groups as a hypothesis-testing method, rather than merely as exploratory research.

The specific examples we will discuss are drawn from our research study, which included a series of five focused group interviews² conducted in 2003, among clients of food pantries in Pennsylvania, U.S.A., all of whom were obtaining food from their community food pantry, where newsletters were distributed by the Pennsylvania Nutrition Education Program (PA NEP).³ This study⁴ aimed to identify the types of nutrition newsletter content that the reading clientele at Pennsylvania food pantries perceive as relevant in making healthy food choices, and to identify ways that newsletter design and wording affect the likelihood of behavior change. Though this is not a systematic presentation of the substantive results of that research, which we have done elsewhere,⁵ we hope that using a real study as an example of how focused group interviews can seamlessly incorporate quantitative techniques allows this article to be coherent and practical rather than overly theoretical.

Characteristics of Focused Group Interviews that Permit Cross-over Methodology

We will present our examples of the incorporation of quantitative techniques in light of five important characteristics of good focused group interviews. We believe that structuring our discussion in this way will be useful to others interested in focus group

² We interviewed 55 people (3 groups of 12, one group of 13, and one group of 6 = 55). Four of these groups were of mixed gender (approximately 80% female), mixed race (40% African American), and mixed ages (young mothers, middle aged, and retired). White female seniors comprised the fifth client group. Groups convened in Erie, Westmoreland County, Pittsburgh, Norristown (Philadelphia area), and Fayette County. African Americans were over-sampled because they represent a disproportionate number of food pantry users and food stamp recipients in the geographic regions included in the study. The groups were held in a wide variety of geographic locations, representing Pennsylvania's two largest cities and three of Pennsylvania's medium-sized cities/towns.

³ The Pennsylvania Nutrition Education Program (PA NEP) is funded by USDA's Food Stamp Program and local matching dollars. PA NEP Project activities include providing shopping tips, recipes, cooking demonstrations, adult classes, after-school programs, classroom lessons, senior workshops, etc... for low-income Pennsylvanians. Projects working with food pantries usually provide nutrition education when food is distributed to clients. Of the different ways that such education can be provided, nutrition newsletters are frequently used since they provide a cost-effective way to provide information to all clients. Because of the ubiquitous use of newsletters to accomplish this education aim, the relevance of their content, the appeal of their design, and the circumstances of their distribution are important issues to better understand.

⁴ This paper does not report on the overall findings of that study, which we have done elsewhere (Harmon, Grim, & Gromis, 2004). Our study is part of an ongoing inquiry into the effectiveness of nutrition newsletters as a means of education that can result in behavioral changes (e.g., Achterberg, 1988; Fey-Yensan, English, & Museler, 2002; Hoisington, Shultz, & Butkus, 2002; Lancaster, Smiciklas-Wright, Ahern, Achterberg, & Taylor-Davis, 1997; Lutz et al., 1989; Nitzke, Shaw, Pingree, & Voichick, 1986; Palmieri, Auld, Taylor, Kendall, & Anderson, 1998; Ruud, Betts, & Dirx, 1993; Shepherd, Sims, Cronin, Shaw, & Davis, 1989; Stuempler & Marshall, 1999; Taylor-Davis et al., 2000; Verpy, Smith, & Reicks, 2003).

⁵ An abstract of our study was published in the *Journal for Nutrition Education*, and a complete report on the study is under review.

research. This not only allows the merits of our innovative techniques to be clearly seen within the standard elements⁶ of focused group interview methodology, but it also gives the opportunity to discuss ways in which we crossed back and forth between the methods. The five characteristics of good focused group interviews are: participant involvement in a shared concrete situation (shared experience), conducting group interviews until no new information is obtained (topic saturation), content analysis that leads to hypotheses (hypothesis testing), use of an interview guide to test the hypotheses (question route), and focus on the subjective experiences of the participants (subjective experiences) (Merton & Kendall, 1955; Merton et al., 1990).

Shared Experience

In quantitative research, a common task is to construct a statistical model that “controls for” some group within a larger population; a group that has some shared social or economic experience. The typical way that this is done is to ask randomly-selected people to identify themselves. In focused group interview research this control is accomplished by selecting participants⁷ who are already “strategically” homogeneous on

⁶ For an overview of standard practices in focused group interviewing see Krueger and Casey (2000); Merton et al. (1990); and Morgan (1998, 2004).

⁷ From our qualitative study, we were not able to produce generalizable results because the sample used was not a probability sample where “each element has a known, nonzero chance of being included in the sample” (Kalton, 1983, p. 7). Therefore, selection bias becomes a significant problem, making the application of statistical theory to the results of the analysis impossible, (i.e., this study cannot offer estimates of the precision of its findings). Graham Kalton describes three types of nonprobability sampling: convenience, judgment, and quota (pp. 90-91) chosen mainly for reasons of either cost or convenience. The type used in this study is judgment. A judgment sample is an expert selection of the participants, which obtains a balance between numerous important personal characteristics (age, race, sex, location, and parental status) that generally represent the food pantry clientele who are required, by this study, to be homogeneous on the strategic point of being a newsletter reader. With 55 participants in the 5 client focus groups, obtaining a truly random sample (that would also provide the diversity needed within the requirement that each person be a newsletter reader) would have been cost prohibitive and highly unlikely to obtain (no list of newsletter readers exists). Even if a random sample was obtained, the randomly-selected participants would have all had to be available and able to convene at a common place and time. Even though the other types of probability sampling address some of these problems, the extremely small sample size needed for the focus groups and the need for representativeness within an extremely strict criterion (being a newsletter reader) rendered conducting a probability sample impractical. Because of such practical considerations, focus group studies must place a higher priority on strictly controlling for shared experience, (i.e., making sure participants were readers). The sample used was, however, able to include demographic diversity useful to this study: age, race (oversampling of Blacks in regions targeted), sex, location (urban and rural locations), and parental status. Such a perspective is not an entirely indefensible position from a positivist point of view. While not having a probability sample does increase bias, Kalton points out that the problem of bias is related to sample size. In cases with very small sample sizes, Kalton argues that a nonprobability judgment sample has justification. He states, “Consider the comparison of a sample estimator from a judgment sample and that from a probability sample of the same size. If the sample size is very small, the variance of the probability sample estimator will be large, so that in relative terms the bias of the judgment sample estimator may be unimportant.... Thus, for instance, if a researcher can conduct a study in only one or two cities, it is better to select the cities by expert choice than to rely on the vagaries of random chance, which could easily result in an odd sample. If, however, the sample size is increased to 50 cities, then a carefully stratified probability sample would almost certainly be preferable” (p. 91). On the selection of location for the groups, using “expert choice” seems reasonable.

the key qualification of having shared knowledge and experience germane to the research objective.

We recruited participants who both had the shared experience⁸ of receiving supplemental food assistance and were readers of nutrition education newsletters. We specifically recruited food pantry clients who identified themselves as readers of nutrition education newsletters. However, since a \$25 grocery coupon incentive was offered, it is possible that some participated only to receive the incentive. To check for this, we passed out a very short printed survey (see Figure 1).⁹ Using such a quantitative technique seems to run counter to the goal of getting participants to freely express themselves, but we found that it put people less on the spot, especially when answering “no” meant that they actually should not be there. We used an oversized font since some participants were likely to have nutrition-related vision problems.

Figure 1. Short survey.

Nutrition Newsletter Questions (circle answers):		
1. Have you used or read a nutrition newsletter? (If “No”, skip questions 2-5.)	Yes	No
2. If yes, on average would you say you use or read one (circle one):	a) Only once or twice in my life	
	b) Several times a year	
	c) About once a month	
	d) More than once a month	
	e) Other _____	
3. Are the newsletters always given out in your food bag?	Yes	No
4. Do you read them each time?	Yes	No
5. Have you ever shared the information from the newsletter with a friend or family member?	Yes	No

We found that conducting a short survey such as this was an efficient way to check whether our participants had the shared experience of being newsletter readers without having to discuss this point at length. In fact, only two participants indicated that

⁸ Merton et al. (1990) recommend homogeneity on the level of education, since communication is the key element of a focused group interview and people of different educational levels have more difficulty in communicating fluidly than do most other possible differences between people. It was interesting to note that there was no discernable race barrier during the focused interviews. We specifically looked for food pantry clients who identified themselves as readers of nutrition education newsletters. Working with five pantries in different parts of the State, nutrition educators on our team worked with pantry managers to recruit 6 to 12 clients who read the newsletters.

⁹ In one group, however, we conducted this survey orally. The results were not as successful as presenting the survey in printed form. The respondents found it frustrating because they wanted to stop and discuss each question, while we wanted to work our way through the questions fairly quickly in order to probe question 5 in particular. This also brings up the critical importance of effectively moderating the group interview dynamics. This important point has been addressed elsewhere (e.g., Merton et al., 1990; Krueger & Casey 2000), but it is useful to note that we found a group size of 6 to 12 people to be ideal. We had 3 groups with 12, one group with 6, and one with 13. Though we did not find the largest or smallest group to be ineffective, the group with 6 participants benefited less from multiple viewpoints, and the group with 13 showed signs of becoming more like an audience, where only the more vocal members actively participated.

they had not ever read a newsletter. It is possible that more did not, but we felt that the answers were generally honest as was reflected in the high level of engagement in the overall interview. This quantitative technique is used in a different way than surveys of general populations, but it is a legitimate use, and one which produced data that allows us to document the degree to which we adequately controlled whether our participants were homogeneous on the point of having the shared experience of being newsletter readers.

Shared experiences can also be experiences shared in the group itself. An example of a shared group experience is given in the next section on topic saturation. The example is an experiment-like (i.e., quantitative-type) activity, which provided a shared experience that allowed deeper probing of issues than would have likely been possible by relying purely on recall of past experiences.

Topic Saturation

Merton et al. (1990) and others argue that focused group interview methodology must obtain redundancy or “topical saturation,” (i.e., that the research objective should be studied to the point that conducting additional focus groups will not produce significant new findings). This is not dissimilar to other qualitative interviewing situations where initial interviews produce new data, while subsequent interviews produce less and tend to serve the purpose of confirming previous interviews. We incorporated a way to quantitatively check for evidence of topic saturation by looking at the results of an experiment-like activity that provided easily-compared numeric results. The quantitative results also provided a clear way to analyze data obtained from the activity.

This activity had a number of steps, several of which are discussed here.¹⁰ The participants were asked to read three different articles on the best way to thaw a large piece of meat such as a turkey. They were given 5 full minutes to read the articles. A copy of this sheet is shown in Figure 2. Each article was taken from actual nutrition education newsletters, but not newsletters the participants were likely to have seen before. At the end of the 5 minutes, without allowing any discussion, each participant was asked to individually decide which article contained the most practical advice on thawing a large piece of meat, like a turkey or large roast. *Before* discussing the articles as a group, 47% felt that Article #1 was the clearest, 33% chose Article #2, and 22% chose Article #3 (see Table 1).

¹⁰ The steps were as follows: (Step 1). Without reading the articles, only look at them, which one would you rather read? In other words, which one seems the easiest (or most inviting) to read? You can turn your papers over now. [papers were distributed face down] (Step 2). Now, suppose you just bought a large piece of frozen meat (maybe a turkey or a big roast). Read as much of each of the 3 articles as you need to so that you can answer this question, “Which article gives you the most practical advice?” Take about 5 minutes. (Step 3). Now, turn your papers over again so that you can’t see the articles. Tell me how you plan to thaw your 20 lb. Thanksgiving turkey next year. (Which article told you that the most clearly? Is that different from how you knew how to thaw it previously? What made that article/advice stick in your mind?) Let’s go back around to everyone and see if you want to change your vote for the most practical article. (Step 4). Let’s think back to the first question. I have another question similar to the first question that I asked about which article seems easiest. Now that you’ve read them, let’s look at the way each one is written and printed on the page. Don’t think about *what* the articles said, but about the *way it looks*. Number 1 has numbers and dots or bullets; number 2 is similar, but with more information; and number three is just words. Which style (way of printing) did you like the best?

Figure 2. Experiment-like activity prompt

2 WAYS TO SAFELY THAW MEAT

#1 In the refrigerator

- Store raw meat on the lowest shelf to prevent dripping on other foods.
- Allow at least 1 day for large items, such as turkeys and roasts, to thaw.

#2 In a sink under running water

- For larger meats, sink can be filled with lukewarm water but **must be changed** every 30 min.
- Meat should be in a plastic bag.
- Sink should have nothing else in it.
- Do not let the water splash on other surfaces.
- Sanitize the sink after thawing (bleach & water).

Adapted from Serving Safe Food, The Education Foundation

#3

Food Safety Tips
It's turkey time again and proper food handling is the most important thing you can do for your family. Follow these basic tips and everyone will be safe.

Buying a Turkey:

- **Frozen**- Buy anytime but keep frozen until 1 to 5 days before cooking.
- **Frozen Pre-Stuffed**- Buy anytime. Keep frozen until ready to cook. Do not thaw.
- **Fresh**- Buy 1 to 2 days before cooking. **DO NOT BUY PRE-STUFFED.**
- **Pre-cooked**- Serve within 1 to 2 hours.

Thawing a Turkey:

- **Refrigerator**-24 hours per 5 pounds.
- **Cold water**-30 minutes per pound. Change water every 1/2 hour.
- **Microwave**- Use manufacturer's instructions for minutes per pound and power level.

Never thaw a turkey on the counter.
Thawing meat at room temperature will increase bacteria growth and the risk of food poisoning. Always wash hands, cutting boards and any utensils thoroughly after handling raw meat.

Nebraska Cooperative Extension NF92-102
Have a Safe and Happy Thanksgiving!

Tips for a Healthy Thanksgiving

Never thaw a turkey at room temperature.
ALWAYS thaw the turkey in the refrigerator. Allow 1 day to defrost for every 5 pounds of turkey.

Wash your hands, cutting board & counters with hot soapy water, after handling any raw meat.

Stuff the turkey right before you cook it.
Too much bacteria will grow in the stuffing if it is stuffed the night before. To be safe, spoon the stuffing loosely into the turkey cavity right before roasting, or better yet, cook the stuffing separately.

After cooking, refrigerate the turkey within 2 hours.
Wrap it tightly in foil or plastic wrap. It will last safely for 2-3 days in the refrigerator.

After each registered his or her opinion by a show of hands (the moderator counted the votes aloud for the tape recorder as well as the count being written down by the note-taker), the moderator asked everyone to turn their papers face down. The moderator then asked the participants to sum up, in a sentence, the most practical rule for thawing a large piece of meat like a turkey. Overwhelmingly, without any prompting by the moderator, the participants of all 5 groups stated that they would, “thaw the meat in the refrigerator one day for each five pounds.” They were then asked to turn their papers face-up and look at the articles again to recall which one most clearly presented the information they remembered. Of the three articles, only #3 said that advice in those words, and article #2 had somewhat the same wording. They were asked again which article they now considered to be the most practical. *After* the discussion, most participants (56%) found Article #3 the most practical, with just over one-third (35%) choosing Article #2, and only 9% choosing the initial favorite, Article #1. The results summarized in Table 1 give evidence of topic saturation.

Table 1

Evidence of Topic Saturation

Location	Article #	Seen as practical before discussion	↔	Seen as practical after discussion
Norristown	1	1	↔	0
	2	8	↔	9
	3	3	↔	3
Erie	1	7	↔	3
	2	4	↔	4
	3	1	↔	5
Westmoreland	1	8	↔	1
	2	0	↔	2
	3	3	↔	8
Pittsburgh	1	0	↔	0
	2	2	↔	4
	3	4	↔	2
Fayette Co.	1	10	↔	1
	2	3	↔	0
	3	1	↔	13
Totals	1	26 (47%)	↔	5 (9%)
	2	17 (31%)	↔	19 (35%)
	3	12 (22%)	↔	31 (56%)

In 4 of the 5 groups, Article 1 was identified by fewer participants as practical after the discussions, and in the 5th group (Pittsburgh) it was not identified as practical by any participant either before or after the discussion. The losses for Article 1 were redistributed as gains for either Article 2 or 3, both of which had the tip overwhelmingly seen as the most practical piece of advice. The response of one participant captured the sentiment of many, “Now I know the right way to do it—I’ll never do it the wrong way again!” The quantitative results of this experiment-like activity buttressed by such qualitative comments of the participants, speak to one of the important hypotheses we set out to study (i.e., that practical nutrition tips are more likely to change behavior).

Hypotheses

We will now turn our attention to an important use of focused group interviews in academic research; the testing of hypotheses (see Appendix A for brief summary of the main hypotheses of our study). Just as hypothesis testing is a part of qualitative research¹¹ in general (Auerbach & Silverstein, 2003), a central characteristic of focused group interviews is that they are centered on a set of hypotheses (Merton & Kendall, 1955). Usually, these hypotheses are informed by a theoretical perspective.¹² Quantitative

¹¹ cf. Auerbach and Silverstein (2003); Hesse-Biber and Leavy (2004); Krueger (1998); Northcutt (2004).

¹² Hypothesis testing is connected to the issue of theory-driven research. Grounding a specific act of social-scientific research within an overall theoretical model could be considered a defining characteristic of academic research as opposed to other forms of research (Charmaz, 2004; Glaser & Strauss, 1967). “Theory” is sometimes a misunderstood term. A theory may be “grand” and so pervasive that it becomes a “paradigm” (Kuhn, 1970), such as evolutionary biology or past theories which seek to explain wide swaths of human behaviors, such as B.F Skinner’s Behaviorism (1974) or Weber’s Protestant Work Ethic (1930). A theory may be a more middle range theory, which lies somewhere “between the minor but necessary working hypotheses that evolve in abundance during day-to-day research and the all-inclusive systematic efforts to develop a unified theory that will explain all the observed uniformities of social behavior, social organization, and social change” (Merton, 1996, p. 41). In our case, the theory guiding research into nutrition education is closer to a middle range theory. More specifically, it is poly-theoretical or

methods test hypotheses using statistical techniques (Agresti & Finlay, 1997) based on sampling theory (Kalton, 1983) or experimental design (Campbell & Stanley, 1966), and aim to generalize the results to a larger population. Qualitative methods, like quantitative, test hypotheses in ways that are replicable by others, but the aim is to present the results in terms that are applicable or transferable to other similar situations. Transferability, according to Lincoln and Guba (1989), is parallel to the positivistic concept of generalizability, except that it is the receiver (not the sender or researcher) who decides if the results can be applied to the next situation. Next, we will present a hypothesis and an activity used to test that hypothesis, which we believe demonstrates the concept of transferability.

One hypothesis stemming from current nutrition education theory¹³ is that providing straightforward practical advice is more likely to change behavior than providing more in-depth nutritional background information. Some early approaches to nutrition education focused on providing more background information with less attention to practical tips. We wanted to test whether newsletter readers actually preferred practical tips to more in-depth discussions, and whether they identified which was more likely to affect their behavior.

In addition to the experiment-like activity above, we further tested this “practical advice hypothesis” using a holistic activity. Two actual newsletters used by the PA NEP were given to the participants to evaluate. The two were considered examples of quality newsletters, even though they were significantly different in content and format (see Figures 3 and 4). The participants were asked to work in pairs and were given the following introduction: “Here are two nutrition newsletters. Take a few minutes to look at them. Which do you like better and why?”

“transtheoretical” (Prochaska & DiClemente, 1984), meaning that it is a theory which considers that human behavior is complex, involving many social and psychological factors, that draws eclectically from various theories of behavior.

¹³ Achterberg and Miller’s (2004) abstract provide a good summary of the state of theory in the discipline. “Health behavior theories describe the relations among variables influencing a behavior and specify targets for facilitating behavior change. Nutrition education does not have a dominant theory specific to the discipline. Instead, constructs from multiple theories have been borrowed, primarily from the social sciences, and have been applied to describe or predict nutrition-related behaviors. However, current theories do not fully predict behavior or behavior change. A more effective approach may be to integrate distinct constructs from competing theories into one or more polytheoretical models that can be empirically tested and refined into a more comprehensive, tailored theory or set of theories specific to food and nutrition behavior changes. In our view, more than one will be needed to address the complex array of people, issues, and contexts that we routinely address in nutrition education and behavioral interventions.”

Figure 3. Newsletter with front page containing straightforward practical advice.

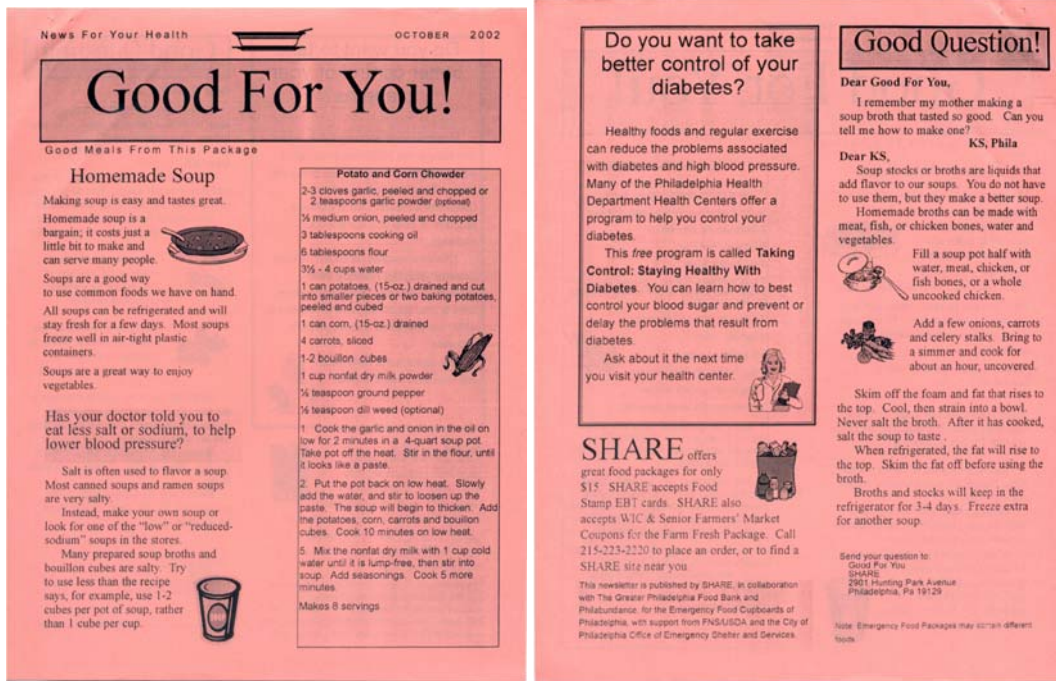
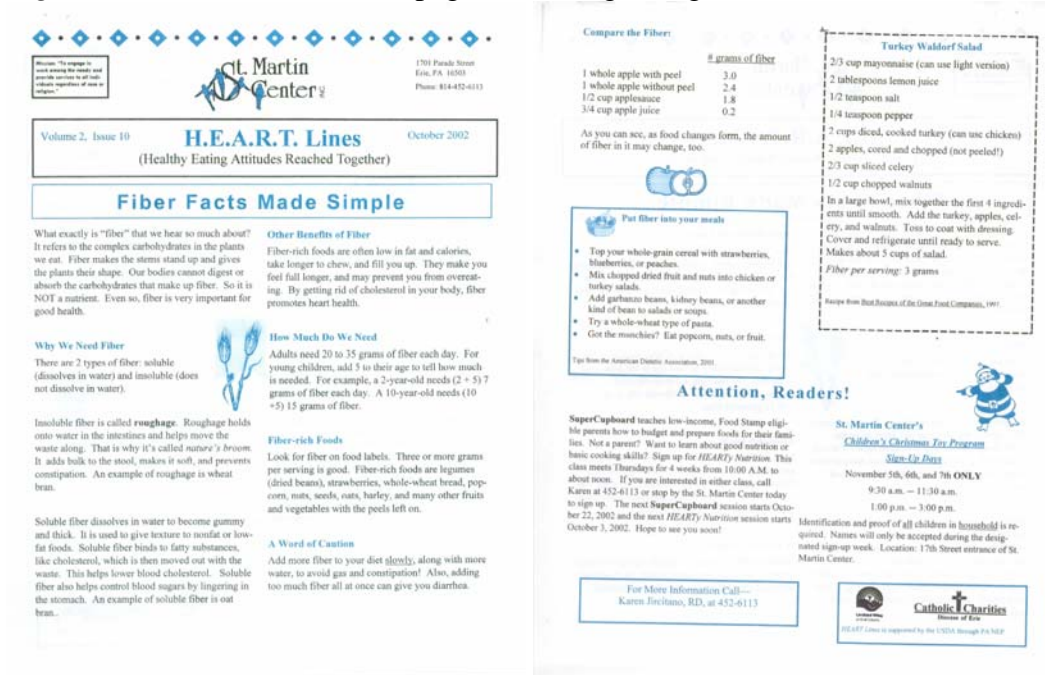


Figure 4. Newsletter with front page containing background information on fiber.



After the discussion among the pairs seemed to have run its course, we probed for which parts of the newsletters were likely to influence their nutrition behaviors. Although there was interest in the longer background article on fiber (see Figure 4), a comment from one participant summed up the consensus of all 5 groups. "I already know I need to

eat better, just tell me how.” Many of the comments focused on the recipes, with participants spending time talking about a Waldorf Salad they had made (see Figure 4), or their favorite homemade soup (see Figure 3), or the question and answer section (see Figure 3), which had practical tips presented in a format similar to a *Dear Abby* column. A telling comment in almost every group came as we wrapped up the activity. “Can we keep these? I want to try out that recipe.”

To all who listened to the tapes and/or read the transcripts, the results were clear. Straightforward practical tips such as recipes and advice columns were identified by the participants as more likely to change their nutrition behavior than the in-depth background article on fiber, which provided little in the way of tips. However, since this activity was not quantitatively-oriented as was the meat-thawing activity, there is no clear set of numbers to point to that backs up this finding. If there were, the results would be easier to demonstrate. While we are not arguing that each activity must have a quantitative element, such an element would be useful when it comes time to analyze the data. The question route design process is the place to plan for the incorporation of such quantitative elements.

Question Route

The fourth distinctive characteristic of a focused group interview is that a question route or interview guide is developed to obtain information that test and probe the hypotheses. The task for a focused group researcher is to create a research instrument that has a clear structure, which allows probing and group discussion in order to obtain information that would be missed in a more rigidly scripted quantitative interview. Having said this, the process is closer to the design of questionnaires and experiments than it is to the procedures used in participant observation.¹⁴

We will now summarize our question route, making note of when quantitative-type techniques were used. It proceeds through four stages of questions: Warm-up, transition, key, and summary or wrap-up. Following this we will describe how we used a computer program to help with one aspect of the analysis.

Warm-up

The question route began with, “What is your least favorite food?” This low-demand question got people comfortable talking with each other and talking about food. This question also gave a way to check whether there may be a “social desirability bias,” such as participants acquiescing to the moderator’s views (Holbrook, Green, & Krosnick, 2003). The moderator always started off and said that his least favorite food was an “over-ripe banana.” Only two respondents mimicked the moderator’s answer out of the 55 participants.

Transition

The second question transitioned closer to our key hypotheses. “When you think about eating right, what kinds of things worry you?” This information was available to

¹⁴ Cf. Jorgensen (1989) for a description of participant observation.

us to evaluate another of our hypotheses that newsletter readers will associate tips related to health concerns with behavior change (see hypothesis 2 in Appendix A). This discussion provided a good amount of data that was able to be captured by a computer analysis of the transcripts (described below).

Key questions

Our key questions related to our main hypotheses. The first key question involved conducting and discussing the short quantitative-type survey described above (see Figure 1). By probing question 5 of that survey, we found that the participants were likely to share newsletters that contained useful recipes or practical health-related tips. They reported sharing the newsletter with friends or family, whom they thought would like the recipes or who had a health concern addressed in the newsletter. This led into the quantitative-type experiment-like activity on thawing foods (see Figure 2) discussed at length above. That activity was followed by an activity that evaluated the wording and format of recipes (see Appendix B for a description of this activity). Our last key question was the activity comparing two newsletters (see Figures 3 and 4). Of these activities, two involved quantitative-type techniques. The important point to make in the design of these activities is that they must be carefully thought out in advance and piloted. A cautionary tale is that we did not pilot the questionnaire (see Figure 1) with a group before using it. We initially asked the questions orally. When it became clear that too much time was spent on questions of lesser interest (Questions 2, 3, and 4), we switched to the printed form so that the moderator could concentrate on probing question 5, which asked about sharing newsletters.

Wrap-up

We had two wrap-up questions. The first was for participants to fill in a blank newsletter template (see Figure 6, discussed more in the next section). The second was a general wrap-up, “Before we break up for the day, is there anything you would like to say about nutrition education newsletters that you haven’t said, but that you think might be helpful for us to know?”

All of the focused group interviews were tape-recorded, transcribed, and saved as electronic documents, making it possible to use a computer¹⁵ to help analyze these data. Computer programs used for analysis of qualitative data are very different from those used for analysis of quantitative data. Instead of making statistical comparisons, we used N6, a qualitative data management program (QSR International, 2002), to look at critical themes and the issues associated with them that came up anywhere during the course of the interviews. Figure 5 presents the results of the analysis related to two recurring themes: health concerns and nutrition concerns. Though we did not exploit N6’s full capabilities, we did find it useful to have a summary of the number of times each concern was mentioned. The cautionary tale associated with this is that context is extremely important, as can be seen by the notes in brackets beside fiber and water below. Further

¹⁵ Partially tongue-in-cheek, Sharlene Nagy Hesse-Biber (1995) addressed the use of computer aided analysis in her article *Unleashing Frankenstein's Monster: The Use of Computers in Qualitative Research*.

analysis could be done, if desirable, to exclude mentions of water when in association with thawing meat.

Figure 5. Results of N6 computer-aided analysis of transcripts.

<p>A. major health concerns</p> <p>Number in parentheses = times mentioned in 5 Client Focus Groups</p> <p>Heart (16)</p> <p>Diabetes (16)</p> <p>Blood pressure (7)</p> <p>Weight (5)</p> <p>B. major nutrition concerns</p> <p>Number in parentheses = times mentioned in 5 Client Focus Groups</p> <p>Fat (53) & Low Fat (6)</p> <p>Sodium/Salt (43)</p> <p>Water (35) [many comments related to thawing turkey]</p> <p>Fiber (29) [related to fiber being topic of newsletter example used]</p> <p>Calories (20)</p> <p>Labels (17)</p> <p>Sugar (16)</p> <p>Vitamin (12)</p> <p>Doctor's advice/Doctor (11)</p> <p>Nutritional analysis (11)</p> <p>Supplements (7)</p> <p>Carbohydrates (6)</p> <p>Protein (6)</p> <p>Grease (3)</p> <p>Balanced Diet (3)</p>

Since focused group interview projects tend to have small numbers of groups, we are not convinced of the need for special software to analyze the data, especially if it requires the investigators to spend many hours learning to use a new software package. In the end, we could have come up with a similar list without the use of special software. Also, since understanding context is important, having the researcher do this manually may be a more appropriate approach for small studies.

Subjective Experiences

As mentioned in the previous section, the first wrap-up activity was to have participants fill in an 8½” x 11” blank newsletter design template (see Figure 6).

Figure 6. Blank newsletter design template.

<p>Nutrition Newsletter</p> <p>Vol. 1 No. 1</p> <p>A newsletter that helps people eat healthier</p>	
1	3
2	
4	5
6	
7	

Prior to conducting the 5 focus groups with food pantry clients, we conducted a focus group in Harrisburg, Pennsylvania, with nutritionists from around the state, who write and produce nutrition education newsletters used in food pantries. Each of these nutritionists was asked to fill in a blank template with the topics considered essential for an effective newsletter. This right brain type activity was successful in the newsletter writers' group. It was not, however, very successful among the 5 client groups. For the most part, the client group participants copied titles from the two newsletters reviewed in the interview (see Figures 3 and 4), or included topics that came up during their particular group. The key difference was that clients did not have the shared experience of designing newsletters. However, they had had direct experiences that informed their discussion for all of the other activities, which resulted in providing us the type of data we were looking for.

Discussion

The greatest benefit to be gained by incorporating quantitative elements into a qualitative focused group interview is that it draws on different ways of knowing. Without overstating the case, it is possible to think of this as a form of methodological triangulation within a single method. Since survey questionnaires do this by allowing open-ended questions as well as closed-ended questions, and since experiments are sometimes done with groups of people, why not allow focus groups to similarly include closed-ended questions and experiment-like activities? The limitation to this is that such quantitative activities should be kept to a proper balance so that they do not negate the greatest advantage of a focused group interview, that is, its potential for generating discussions that can stimulate ideas that an individual alone may not have recollected or generated. Other benefits include making the data easier to analyze and providing very clear shared experiences.

We were pleasantly surprised by the level of energy and commitment that the participants demonstrated during the interviews. Certainly the design controls that focused on bringing strategically homogeneous groups of people together in a non-threatening environment contributed to this. Providing a meal and a thank you gift also seemed to help create a situation where the participants felt that they should contribute. Also, the careful preparation of the question route helped the groups stay engaged and realize that there was a series of tasks that needed to be accomplished. We were also surprised by the value of listening to the recorded interviews as opposed to just reading and analyzing the transcripts. For example, in evaluating what parts of the newsletters were of most use to the clients, the voice recordings captured the high level of animation and interest that was present when the participants discussed the recipes. The initial joyous reaction when seeing a large-font, full-page recipe could not have been captured in just a written transcript.

Through this process we learned several things. First, planning and piloting is essential. Designing focused group interviews that can test hypotheses is a highly iterative process, especially when trying to design a natural-flowing question route that alternates between quantitative and qualitative elements. This process required months of preparation, and numerous versions of question routes. It also required consulting with

numerous subject specialists as well as methodologists. This is especially important when attempting to innovate. Second, we learned that a plan for the analysis of qualitative data is essential. Since qualitative data can be collected without scales and other measures being worked out in advance, a data analysis plan is not always devised at the start. Our own quantitative components and targeted activities, as well as the more subjective feedback activities, were designed with obtaining certain kinds of data. Third, it is fair to say that we may have learned as much about methodological innovation as we did about the hypotheses we set out to test. While this may seem a strange statement to make, many years ago Paul F. Lazarsfeld and Morris Rosenberg (1955) said that the “choice of appropriate indicators is very much a matter of ingenuity, to be exercised anew in every empirical study” (p. 16). Methodological ingenuity not only helped us obtain more analyzable data, but it also made for enjoyable research.

The innovative Quanti-Qualitative Method we have described here does have limitations. First and foremost, it remains a qualitative method. We believe that the incorporation of quantitative techniques strengthens findings, but does not transform them into the type of findings that quantitative researchers would recognize as being generalizable to the entire population. Also, as with any method, moderation is a virtue. The art to this cross-over methodology is finding the right balance between qualitative probing and quantitative measurement. Our experience of finding the balance was positive, using only limited quantitative activities that were used in the context of other activities, which allowed group discussion and probing by the moderator.

Conclusions

We have presented an innovative way of integrating/combining quantitative and qualitative research and analysis methods. This Quanti-Qualitative Methodology (QQM) is especially productive in qualitative studies, such as focused group interviews, that are used for hypothesis testing. Quantitative-type research activities are often overlooked by qualitative researchers, possibly because quantitative-type data gathering may not seem appropriate if statistical generalizations cannot be made from the data. We have shown, however, that there are uses for gathering such quantitative-type data. Examples included using short surveys to confirm that the participants have actually had a shared experience and obtaining summary information without using up valuable discussion time (see Figure 1). Other uses range from conducting experiment-like activities (see Figure 2 and Table 1) that give evidence of topic saturation to using specialized computer programs for post data gathering analysis. The quantitative methods used here do not involve complex statistical modeling or even require a computer. In fact, we do not strongly advocate computer analysis for a focused group study that involves only 5 groups, though it would become more valuable if a study design includes many more groups. We have shown that focused group interviews offer researchers a valuable tool to test theory-driven research hypotheses, and that they are a flexible method that allows for methodological innovation and experiment that can help advance social science research.

Though the divide between quantitative and qualitative social science methodologies will always be present, it is possible to better integrate the methods. The effort to build bridges across a methodological chasm requires innovation and thinking outside the box. QQM offers a way that quantitative-type data collection can be

strategically included as an integral part of a qualitative process. Benefits include making qualitative results more empirically transparent and obtaining richer, multifaceted data in a time- and cost-effective manner. Though the particular study described in this paper is basic, we found that the extra efforts involved in innovation also helped to stimulate better questions, which resulted in better data. If this can be done for a study such as this, it can be done for any study. With that challenge, we conclude.

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Appendix A

Summary of Hypotheses

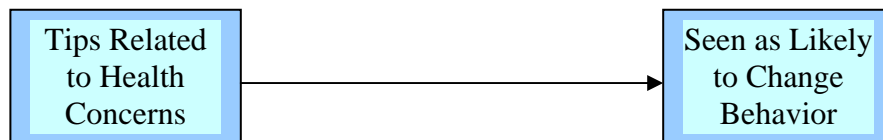
Hypothesis 1: Nutrition education newsletter design and wording that uses color to gain attention, white space to increase readability, font size of 12 pt or larger, full simple sentences, and limited bullets will be identified by newsletter readers to be associated with the likelihood of being read.



Hypothesis 2: Nutrition education newsletter content that gives immediate practical help and/or tips will be identified by newsletter readers to be associated with behavior change.



Hypothesis 3: Nutrition education newsletter content that gives tips related to health concerns will be identified by newsletter readers to be associated with behavior change.



Appendix B

Comprehensible Wording Activity

The activity began with participants working in pairs to identify any words, terms or abbreviations that were confusing or unclear. They were then asked what they do when they encounter a term that they are unsure of. For example, many participants were unsure of the term “defat” from Recipe # 1. They overwhelmingly said that they would not use a recipe with unfamiliar terminology. This exercise also involved taking a vote on which format they preferred. This produced mixed results because there were parts of Recipes # 1, 2 and 3 that were preferred by the participants.

1

Low-Fat Turkey Gravy
Makes 16 1/4 cup servings

1/2 cup defatted turkey drippings, without added salt
3/4 cup low-sodium chicken broth
1/4 cup cornstarch
1/4 cup cold water

- To defat pan juices: pour poultry drippings into a glass measuring cup or bowl and refrigerate until fat becomes solid on the top. Remove fat layer and discard.
- In a large sauce pan, bring defatted pan juices and chicken broth to a boil over medium heat. In a separate bowl, blend cornstarch and cold water together until smooth.
- Stirring constantly, slowly add cornstarch mixture to broth mixture. Continue stirring until gravy is thickened and bubbly.

2

CRISPY BAKED CHICKEN
Serving Size: 4

Ingredients:
2 1/2 pounds whole frying chicken
1 cup cereal flakes
1 cup skim milk
1 tsp. vegetable oil or canola oil (to grease baking dish)

Optional Seasonings:
1 tsp. garlic powder or fresh
1 tsp. dried parsley or fresh
1/2 tsp. chili powder
1/4 tsp. pepper

Directions:
1. Wash chicken inside and out with cold water. Remove skin.
2. Cut chicken into serving-size pieces.
3. Crush cereal with rolling pin or glass. Mix crumbs on a plate with seasonings.
4. Dip each piece of chicken in milk and roll in the cereal crumbs on the plate.
5. Place chicken in lightly greased baking dish. Separate pieces so they do not touch each other.
6. Bake at 400°F for 35-45 minutes.

*Recipe adapted from Penn State University EFNEP Program curriculum

EASY RECIPES

3

Strawberry Muffins

1 cup all purpose flour
1/2 cup whole-wheat flour
1/2 cup sugar
1/2 teaspoon cinnamon
2 1/4 teaspoons baking powder
3 egg whites
1/2 cup apple juice
2 Tablespoons cooking oil
2 Tablespoons unsweetened applesauce
1 cup sliced fresh or frozen strawberries (save out about 12 slices)

Preheat oven to 400 degrees. Grease 12 regular-size muffin cups. Combine dry ingredients in a large bowl. In another bowl, lightly beat egg whites, add apple juice, oil, and applesauce. Stir. Add this mixture to dry ingredients, and stir together until just moistened. Gently stir in all but 12 of the strawberry slices. Divide batter evenly among the muffin cups. Top each muffin with a reserved strawberry slice. Bake for 20 to 25 minutes. Makes 12 muffins.

Nutrient Analysis (1 muffin)
Calories: 122
Fat: 2.5 grams (18% of calories)
Protein: 2.6 grams (8% of calories)
Carbohydrate: 23.0 grams (74% of calories)

4

Ground Beef Pie

5/8 C onion, chopped
2 Tbsp. oil
1 1/2 C flour
1 1/2 Tsp. baking powder
1/2 Tsp. salt
1 Tsp. celery seed
1/4 C onion
1 Egg
1/2 C cold milk
1 onion, chopped
1 lb. ground beef
3/4 Tsp. salt
1/8 Tsp. pepper
2 C green beans, drained
1 lb. Cheddar cheese, drained
1 1/2 qt. Can tomato soup

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Article Citation

Grim, B. J., Harmon, A. H., & Gromis, J. C. (2006). Focused group interviews as an innovative quanti-qualitative methodology (QQM): Integrating quantitative elements into a qualitative methodology. *The Qualitative Report*, *11*(3), 516-537. Retrieved [Insert date], from <http://www.nova.edu/ssss/QR/QR11-3/grim.pdf>
