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Comparing focus groups and individual interviews: findings from a randomized study

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ABSTRACT

Qualitative researchers often have to decide whether to collect data using focus groups or individual interviews. We systematically compare these two methods on their ability to generate two types of information: unique items in a brainstorming task and personally sensitive disclosures. Our study sample consisted of 350 African-American men living in Durham, North Carolina. Participants were randomized into either a focus group arm or individual interview arm, and were asked the same open-ended questions about their health-care seeking behavior. For the item-generating task, we compared data at two levels of analysis – the event and the individual. At the event level, focus groups and individual interviews generated similar numbers of unique items in a free-listing task. When compared on a per-person basis, however, individual interviews were more effective at generating a broad range of items. We also compared the number of data collection events in which personal, sensitive information was disclosed. We found that several types of sensitive and personal disclosures were more likely in a focus group setting, and that some sensitive themes only occurred in the focus group context. No sensitive themes emerged exclusively, or more often in, an individual interview context. Researchers may use these findings to help align their choice of qualitative data collection method with research objectives.

Introduction

Qualitative researchers must often decide whether to use focus groups or individual interviews to elicit experiences, beliefs and opinions from study participants. These two methods draw on a similar technique for collecting data – open-ended questioning with inductive probing of responses – but differ in how they are structured.

Focus groups range in size from 6 to 12 individuals and capitalize on group dynamics to stimulate discussion. Some scholars assert that the interpersonal and interactive nature of focus groups allows them to produce information that might not be gathered from a single respondent (Agar & MacDonald, 1995; Albrecht, Johnson, & Walther, 1993; Greenbaum, 2003; Kaplowitz & Hoehn, 2001; Kidd & Parshall, 2000) and generate a wider range of views and ideas than could be captured through individual methods (Kidd & Parshall, 2000; Kitzinger, 1994; Krueger & Casey, 2015; Powell & Single, 1996; Robinson, 1999). Other researchers posit that individual interviews produce more detail than focus groups, and offer more insight into a respondent's personal thoughts, feelings, and world view (Knodel, 1993; Morgan, 1998). Relatedly, focus groups may produce more 'surface' data in comparison

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to individual data collection contexts (Agar & MacDonald, 1995; Burns, 1989; Holstein & Gubrium, 1995; Powell & Single, 1996).

The majority of methodological research around qualitative methods focuses on the formation and conduct of focus groups and interviews (Agar & MacDonald, 1995; Carey, 1995; Duggleby, 2005; Kaplowitz & Hoehn, 2001; Nunkoosing, 2005; Potter & Hepburn, 2005), addressing questions about how to generate high-quality data. A rather limited body of literature empirically compares the data generated in focus groups with those generated in individual interviews. The studies that do compare focus group and individual interview data rely on varied units of measurement and analysis – and yield mixed results.

To bolster the empirical evidence on the relative data-generating potential of focus groups and individual interviews, we used a randomized controlled design to assign participants to either a focus group or individual interview. Using the same semi-structured interview guide in each setting, we collected qualitative data on health-seeking behaviors among 350 African American men in Durham, North Carolina. The analyses we present here systematically document differences in data generated between focus group and individual interview contexts according to two characteristics: the number of unique items generated in a brainstorming task and the number of data collection events in which personal, sensitive information was disclosed.

Reviewing the evidence

We found 15 articles that explicitly and empirically compare focus group and interview data. Table 1 presents a summary of these articles. Of the 15 articles, seven focus at least one of their analyses on the *number* of items (framed as problems, issues, needs, factors, etc.) generated in each context (Aldag & Tinsley, 1994; Coenen, Stamm, Stucki, & Cieza, 2012; deJong & Schellens, 1998; Fern, 1982; Griffin & Hauser, 1993; Heary & Hennessy, 2006; Rat et al., 2007). Four of these studies found that interviews generated more unique items (Fern, 1982; Griffin & Hauser, 1993; Heary & Hennessy, 2006; Rat et al., 2007); two found that focus groups yielded more distinct items (Aldag & Tinsley, 1994; Coenen et al., 2012); and one found equal numbers of items mentioned by focus group and interview participants, with a difference in the types of issues identified by each method (deJong & Schellens, 1998).

Four of the 15 studies focus more specifically on the number of *sensitive* topics discussed in focus groups vs. interviews (Kaplowitz, 2000; Kaplowitz & Hoehn, 2001; Wight, 1994; Wutich, Lant, White, Larson, & Gartin, 2010). In one set of studies (Kaplowitz, 2000; Kaplowitz & Hoehn, 2001), individual interviews were 18 times more likely to raise socially sensitive discussion topics than focus groups. Similarly, Wutich and colleagues (2010) found that participants provided similar responses in groups and individual interviews for moderately sensitive topics, but generally shared more on *very* sensitive topics in interviews. In another study, Wight (1994) found that adolescent boys provided more sensitive information about sexual mores in interviews than focus groups. Interestingly, these empirical findings differ from practice-based suggestions that focus groups are equal to or better than individual interviews for generating themes on sensitive topics, including health topics (Goldman & McDonald, 1987; Hyde, Howlett, Brady, & Drennan, 2005; Kitzinger, 1994; Morgan & Krueger, 1993).

The four remaining empirical comparisons of interview and focus group data base their comparison more generally on whether similar concepts, issues, or conclusions were identified in each data-set (Namey, Guest, McKenna, & Chen, 2016; Seal, Bogart, & Ehrhardt, 1998; Stokes & Bergin, 2006; Thomas, MacMillan, McColl, Hale, & Bond, 1995). All four found that both interviews and focus groups, overall, generated similar concepts or conclusions. Thomas et al. (1995) cite more frequent mention of concepts in focus groups but no difference in data depth. Seal et al. (1998) found a greater range and depth of themes within the individual context but additional insights from the focus groups. Stokes and Bergin (2006) concluded that interviews provided greater depth and detail, while focus groups offered greater breadth and context, and while Namey and colleagues (2016) found a comparable range and frequency of themes in interview and focus group data, but additionally revealed

Table 1. Summary of empirical research comparing focus group and interview data.

Author(s) and year	Study	Study context	Unit of comparison	Findings/conclusion*
*Studies comparing the **number** of unique items generated*				
Fern (1982)	The use of focus groups for idea generation: the effects of group size, acquaintanceship, and moderator on response quantity and quality. *Journal of Marketing Research*, XIX: 1–13	Sample consisted of members of children's hospital women's auxiliary and a local garden club. Topic was expanding the role of women in the military	Number of ideas	In a free-listing task, focus group participants produced 60–70% fewer ideas each than each individual interview. Ideas generated in focus groups were judged to be of lower quality
		Compared group ($n = 224$ participants across 36 groups) and individual ($n = 64$) contexts	Quality of ideas	
Griffin and Hauser (1993)	The voice of the customer. *Marketing Science*, 12: 1–27	Researchers asked customers about a complex piece of office equipment, in the context of customer needs. Conducted 8 (2-h) focus groups and 9 (1-h) individual interviews	Number of needs	On average, a single focus group identified more needs than a single individual interview. Two individual interviews were equally as effective as one focus group, and four interviews as effective as two focus groups. Concludes that one-on-one interviews are more cost-efficient. Data indicate no synergies by using focus groups
Aldag and Tinsley (1994)	A comparison of focus group interviews to in-depth interviews in determining food choice influences. *Journal of Agricultural and Food Information*, 2: 89–96	Asked Anglo and Hispanic college women about factors influencing their food choices. Conducted 8 focus groups and 28 individual interviews	Number of factors Time Cost	Focus groups required about half the time and money of individual interviews and yielded more factors
deJong and Schellens (1998)	Focus groups or individual interviews? A comparison of text evaluation approaches. *Technical Communication*, 45: 77–88	Evaluated text within a technical document, based on 8 general categories of problems. Compared data from 38 participants in focus groups and 35 individual interviews	Number of problems Types of problems	No significant difference in the number of problems participants detected between contexts (average of 4.5 per person in the individual and 5.3 in the groups), but the *types* of problems identified by each method varied
Heary and Hennessy (2006)	Focus group versus individual interviews with children: a comparison of data. *The Irish Journal of Psychology*, 27: 58–68	Convenience sample of 116 children attending public primary and secondary schools in Dublin Sixty children randomized into a focus group arm (12 groups total), and 56 into individual interview arm Participants were ask to respond to several vignettes depicting children with a range of behavioral disorders	Number of ideas generated Depth of discussion	Individual interviews generated significantly more relevant and unique ideas than focus groups. Focus groups generated more elaboration on ideas
Rat et al. (2007)	Content of quality-of-life instruments is affected by item-generation methods. International *Journal for Quality in Health Care*, 19: 390–398	Study objective was to develop a quality-of-life instrument for patients with lower-limb osteoarthritis. Individual interviews and focus groups were conducted with patients and health professionals	Number of useful items identified	For both health professionals and patients, individual interviews produced more useful items for the scale. And, focus groups contributed to fewer social domains than individual interviews

(Continued)

Table 1. (*Continued*).

Author(s) and year	Study	Study context	Unit of comparison	Findings/conclusion*
Coenen et al. (2012)	Individual interviews and focus groups in patients with rheumatoid arthritis: a comparison of two qualitative methods. *Quality of Life Research*, 21: 359–370	Perceptions and experiences of patients with rheumatoid arthritis – 49 participants in focus groups and 21 in individual interviews. Conducted both inductive (open coding) and deductive (using industry standard categories) coding	Number of categories identified Saturation Time	In both inductive and deductive approaches, focus groups identified significantly more categories than individual interviews and reached saturation in fewer data collection events Focus groups were significantly more time consuming than individual interviews ($t = 9.782$; $P < .001$)

Studies comparing the discussion of sensitive topics

Author(s) and year	Study	Study context	Unit of comparison	Findings/conclusion*
Wight (1994)	Boys' thoughts and talk about sex in a working class locality of Glasgow. *Sociological Review, 42,* 703–737	Adolescent males completed a focus group followed by an individual interview or vice versa	Discussion of morally sensitive topics	Boys were more forthcoming about morally unacceptable ways to treat girls in the interviews; they expressed more macho attitudes in the individual setting when the group session was first, perhaps because social norms had already been set
Kaplowitz (2000)	Statistical analysis of sensitive topics in group and individual interviews. *Quality & Quantity,* 34: 419–431	Ninety-seven residents from the Chelém Lagoon region in Yucatán, Mexico, participated in 1 of 12 focus groups or 19 individual interviews. The discussion guide focused on the local mangrove ecosystem	Number of socially sensitive discussion topics	Individual interviews were 18 times more likely to raise socially sensitive discussion topics than focus groups. The two methods generated complementary, not substitute, types of information
Kaplowitz and Hoehn (2001)	Do focus groups and individual interviews reveal the same information for natural resource valuation? *Ecological Economics,* 36: 237–247	Same study as above	Number of socially sensitive discussion topics	Same findings reported as above
Wutich et al. (2010)	Comparing focus group and individual responses on sensitive topics: a study of water decision makers in a desert city. *Field Methods,* 22: 88–110	Analysis compared individual responses collected using open-ended self-administered questionnaires with responses generated in focus groups. Questions concerned sensitive policy-making topics among water decision makers in Phoenix, Arizona	Amount of information provided on sensitive topics	Participants gave similar responses in group and self-administered questionnaires when discussion topics were moderately sensitive, but provided less information in focus groups for *very* sensitive topics. However, more information was volunteered in focus groups for very sensitive topics when there appeared to be an opportunity for participants to exchange important information or solve a pressing problem

Studies comparing general concepts or conclusions generated

Study	Description	Concepts/themes	Conclusions
Thomas et al. (1995)	Study focused on patient satisfaction with nursing care among patients in North-East England. The sample included both hospital inpatients and recently discharged patients. Individual interviews were conducted with a total of 83 patients. Fifteen focus groups were carried out among a total of 67 patients	Concepts identified Depth of data	All relevant concepts emerged in both individual interviews and focus groups. Concepts were more frequently brought up in focus groups compared with one-on-one interviews. The depth of data did not differ between the two methods
Seal et al. (1998) Small group dynamics: the utility of focus group discussions as a research method. *Group Dynamics: Theory, Research, and Practice*, 2: 253–266	A mixed-ethnicity sample of 44 men, ages 18–43 years, participated in individual interviews a focus groups on the topic of intimate and sexual relationships	Range of themes Depth of themes Thematic dichotomization	Both methods generated similar conclusions. A greater range and richness/depth of themes emerged within the individual context. Interactions in the focus group context provided additional insight beyond the content themes
Stokes and Bergin (2006) Methodology or methodolatry? An evaluation of focus groups and depth interviews. *Qualitative Market Research*, 9: 26–37	Topic centered on business potential of a novel optical frame design. Researchers conducted four focus groups (32 individuals) and eight individual interviews. Researchers then individually re-interviewed eight participants from the focus groups	Issues identified	Both methods identified the same central issues. The groups were unable to match the depth and detail generated by individual interviews and to uncover subtleties in attitudes. The interviews offered less breadth of data and contextual information
Namey et al. (2016) Evaluating bang for the buck: a cost-effectiveness comparison between individual interviews and focus groups based on thematic saturation levels. *American Journal of Evaluation.* 37: 425–440. September 2016	Randomly allocated African American men to 40 focus groups and 40 individual interviews and used a shared guide to collect data on their health seeking behavior	Thematic content Saturation points Cost-effectiveness	Across the focus group and interview datasets, 90% of themes were shared, including all of the codes that were used most often within each data-set (a marker of theme salience). Interviews were more cost-effective in most cases reaching thematic saturation in most cases

*We have attempted to summarize the conclusion of the findings in terms of whether interviews or focus groups seemed to generate more of what was being compared. This conclusion is at the bottom of each cell in bold, and includes 'mixed' for findings that either are not clear or suggest that both interviews and focus groups have specific strengths.

that interviews can be a more cost-effective data collection approach than focus groups for reaching data saturation.

The above studies are important contributions to the methodological literature, and they begin to address Morgan's (1997, p. 12) observation that the relative strengths and weaknesses of focus groups and individual interviews have 'been more the subject of speculation than systematic research.' The empirically-based studies to date, however, vary with respect to their research design, the context in which their data were collected and analyzed, and units of analysis employed (data collection event vs. individual). Additionally, in many of these studies, the participants recruited for focus groups and interviews were demographically different. In others, the same participants took part in both focus groups and interviews, which raises the methodological issue of order effect and pre-exposure to the research question. Only in the Namey et al. (2016) study were participants randomly assigned to data collection method to migitate bias or other types of confounding.

Through the analyses we present here, we aim to add to the methodological evidence-base by comparing focus group and individual interview data generated within a randomized controlled design, with processes explicitly structured to ensure as much consistency as possible across data collection events. Based on the literature reviewed, we look specifically at two areas of comparison between our focus group and individual interview datasets: (1) the range of responses generated in a brainstorming task, and (2) the number of unsolicited disclosures of personal, sensitive information. We have provided a more general analysis of the range of emergent 'content' themes evident in the two datasets elsewhere (Namey et al., 2016).

Methods

The analyses presented here are part of a larger study that examined health-seeking behavior among 350 African American men in Durham, North Carolina. The research was funded by the Patient Centered Outcomes Research Institute (PCORI), which funds 'projects to address gaps in method-ological research relevant to conducting patient-centered outcomes research' (PCORI, 2015). The study was reviewed and approved by FHI 360's Protection of Human Subjects Committee, and oral informed consent was obtained from all participants, individually, before initiation of data collection. Each study participant was provided an incentive of US$40.

Research design

To enhance the rigor of our methodological study, we employed an experimental design in which par-ticipants were randomized to either a focus group arm ($N = 40$ focus groups, containing an aggregate of 310 individuals) or an individual interview arm ($N = 40$ interviews/individuals). We also controlled for potential confounders by minimizing differences in the data collection processes. We kept the data collector, the instrument, and the interview environment consistent across both methods. Further, we employed systematic analytic procedures designed specifically to assess the following two research questions derived from the literature:

RQ1: *Do focus groups or individual interviews generate a broader range of responses in a free-listing activity?*

RQ2: *Do focus groups or individual interviews generate more unsolicited disclosures of personal sensitive information?*

Data collection

We conducted focus groups and individual interviews with African American men, aged 25–65, living in Durham, North Carolina. We collected data from January to May 2013 in a study-dedicated office in downtown Durham. The study team recruited participants through a combination of local stakeholder networks, Craigslist, and flyers posted in public areas and health clinics around Durham. Participants who screened eligible for the study and consented to join were randomized to either the focus group

Table 2. Data collection instrument.

1. How long have you lived in Durham, and have you seen a physician in the past year? **(Warm-up question)**
2. What do you think are the most common health problems in the African American community in Durham? **(Free-listing question)**
3. Let's imagine that I'm new to this country and have never interacted with the medical system here. Describe for me what a typical doctor visit is like.
4. How do you feel about the typical doctor visit here, as you've described it?
5. Please tell me some positive things about a doctor visit.
6. Please tell me some negative things about a doctor visit.
7. What motivates you to see a doctor?
8. Think back to a time when you could have (or should have) gone to the doctor but didn't. What prevented you from going?
9. Research suggests that men are afraid of some medical procedures, particularly prostate exams and testicular cancer screenings. Why do you think this is the case?
10. What are some social beliefs or cultural norms in the African American community that might prevent men from going to the doctor?
11. For the next question, I'd like to show you a graph [graph shows African Americans have higher mortality rates from various chronic diseases]. How does this graph make you feel?
12. What can be done to address these health disparities in the African American community?
13. How could we encourage African American men to seek preventive medical care or treatment for symptoms?

arm or the interview arm. For each focus group we attempted to schedule eight individuals, a number representing the modal recommendation in the literature for group size (Guest, Namey & Mitchell, 2013). We also wanted to keep the focus group size consistent across each data collection event.

To enhance consistency of process across the two arms and for data collection events overall, the same instrument was used for all focus groups and individual interviews. A draft of the instrument was pre-tested among a group of five men from the target population and revised based on their responses. The final instrument contained 13 questions (Table 2).

To further standardize data collection, one experienced data collector conducted all focus groups and interviews. Consistent with typical focus group practice, an assistant was present at each focus group, to administer informed consent and help with logistics. The assistant did not take part in data collection, and was not present for the individual interviews. The data collector followed the same sequence of questions on the instrument for all data collection events. However, per standard procedure in qualitative inquiry, the data collector probed inductively throughout the data collection process. Given the methodological objectives of the research, she did not iteratively introduce ideas from earlier groups into subsequent groups as part of probing. All data collection events were audio-recorded and then transcribed verbatim following a detailed transcription protocol (McLellan, MacQueen, & Neidig, 2003). Two members of the study team (including the data collector) verified the accuracy of the transcripts.

Data analysis

All transcripts were imported into NVivo 10 (QSR International Pty Ltd, 2012), where structural (question-based) codes were applied to each transcript to facilitate extraction of text related to specific questions (Guest, MacQueen & Namey 2012). Analysis of the number of new items generated per data collection event (i.e., research question #1) was straightforward. All of the data from the free-listing question (Question 2 on the guide) were retrieved and coded using an inductively-derived list of common health problems that were mentioned during the focus groups and individual interviews. Related or synonymous problems were combined into a single code (e.g., 'high blood pressure' and 'hypertension' were combined). We then ran a matrix query to determine the presence or absence of all free-list items in each focus group or individual interview transcript (i.e., within NVivo, we generated a table with free-list items on one axis and a listing of focus groups/interviews on other axis). We sorted the resultant matrix first by chronological order of data collection, and then within that by the presence of new items. Working separately with the output for focus groups and individual

interviews, we noted the number of new items that emerged during each new data collection event. We then compared the total number of items generated, on average, per event and per person.

We also analyzed the data while keeping the number of participants in each comparative group equal – i.e., an *n* of 40 – by performing a comparison of 40 interviews and five focus groups. While we typically do not endorse using individuals as a unit of analysis within a focus group data-set, in this case we felt compelled to compare not only on a per-event basis, but also on a per-person basis, given the large discrepancy in the total number of respondents between the two arms and the potential effect of this on the outcomes we measured. We randomly selected five focus groups (from our sample of 40) a total of ten times to create ten unique focus group datasets consisting of five groups (40 participants) each. We then averaged data across these 10 datasets to determine the mean number of items generated per 40 focus group participants.

For the research question related to the disclosure of sensitive personal information, we again worked with transcripts in NVivo 10. Two analysts blinded to the study questions, and who were not involved in data collection, coded the transcripts for this analysis. They used a combination of deductive and inductive analytic approaches. The first phase of the analysis was deductive in that analysts were instructed to look for, and code, only sensitive and personal disclosures in the data (Krippendorf, 2012; Neuendorf, 2002). Note that in our study we were not actively posing questions about sensitive topics; rather, we were seeking instances where personal, sensitive information was offered spontaneously and unsolicited within the context of the general health topic of the data collection. For our analysis, we defined a sensitive and personal disclosure as 'information about one's own experience related to topics that are highly personal, taboo, illegal, or socially stigmatized in nature, which one would reasonably expect people to be reluctant to disclose to a stranger(s), such as in a data collection context.' We further applied the 'dinner party' test to topics that were questionable: i.e., would you expect a stranger to present this information to you in the context of conversation at a dinner party?

Once all transcripts had been reviewed and potential sensitive disclosures tagged, analysts employed an inductive approach to identify specific categories and concepts that emerged *within* the sensitive disclosures. The analysts revisited the text segments already tagged as containing personal and sensitive information, and then inductively coded each tagged segment based on the content of the text. Coding of text segments was not mutually exclusive; in some cases more than one code was applied to the same segment of text. The resulting set of inductive codes described the specific sensitive *topics* of disclosure.

For both the deductive and inductive coding processes, two analysts independently reviewed and coded the data. Inter-coder agreement checks were carried out on every transcript. After each of these checks, the analysts discussed and resolved any discrepancies, resulting in a consensus-coded transcript used in the final analysis. To enhance reliability further, two additional analysts independently reviewed the revised thematic codebook, compared codes against the study definition of 'sensitive,' and made revisions to the coded material accordingly. They then compared their revisions, and discussed and resolved any discrepancies. Finally, to facilitate the comparison of the focus group and interview datasets, we ran a matrix query to determine the number of data sources (i.e., focus groups and individual interviews) that included at least one disclosure of each of the inductively derived 'sensitive' topics. We then compared the proportion of data collection events in which each sensitive theme was identified. Due to small cell sizes, we used a two-tailed Fisher's exact test for these comparisons, with a 5% significance level.

We did not compare the number of personal, sensitive themes across datasets at the individual level because of the nature of our research question. We were interested in whether or not an individual is more likely to disclose a personal and sensitive experience in a group or one-on-one context. Our unit of measurement in this particular analysis is, therefore, binary; either a sensitive/personal experience was disclosed or not disclosed within a data collection event. Furthermore, counting the number of individual participants expressing a response within a group setting is generally not considered good analytic practice, because responses in a group setting are not independent of each other.

Findings

Study participants

We enrolled 350 men in our study: 310 men were randomly assigned to one of 40 focus groups, and 40 men to individual interviews on a rolling basis. The focus groups included six to eight individuals (though only one of the 40 groups had six participants), and averaged 7.75 individuals per group. The median age of the men in our study was 49 years. The majority had completed high school, were unemployed, and had an annual household income less than US$20,000. Overall, the interview and focus group samples were very similar (Table 3).

Breadth of responses

We compared the focus group and individual interview datasets on the number of unique responses to the free-listing prompt 'List all of the common health problems within the African American community' (Question 2 in Table 2). The aggregated list generated from the 40 individual interviews contained 31 items (i.e., health problems), representing an average of .78 items per data collection

Table 3. Participant demographics.

	Individual interviews N=40	Focus groups N=310	Total N=350
Age (years)	(n = 39)*	(n = 309)	(n = 348)
Mean	46	47	47
Median	50	49	49
Range	26-57	25-67	25-67
Highest level of education	(n=39)	(n=306)	(n = 345)
Elementary school	2 (5.1%)	3 (1.0%)	5 (1.4%)
Middle school	5 (12.8%)	15 (4.9%)	20 (5.8%)
High school	24 (61.5%)	205 (67.0%)	229 (66.4%)
Associate degree/tech college	5 (12.8%)	46 (15.0%)	51 (14.8%)
BA/BS	2 (5.1%)	27 (8.8%)	29 (8.4%)
Graduate degree	1 (2.6%)	5 (1.6%)	6 (1.7%)
Other/trade school	0 (0.0%)	5 (1.6%)	5 (1.4%)
Employment status	(n=39)	(n=299)	(n = 338)
Employed	8 (20.5%)	65 (21.7%)	73 (21.6%)
Unemployed	31 (79.5%)	234 (78.3%)	265 (78.4%)
Retired	0 (0.0%)	1 (0.3%)	1 (0.3%)
Annual household income (US dollars)	(n=39)	(n=299)	(n = 338)
< $20,000	32 (82.1%)	235 (78.6%)	267 (79.0%)
$20,000-$40,000	5 (12.8%)	43 (14.4%)	48 (14.2%)
$40,001-$60,000	2 (5.1%)	15 (5.0%)	17 (5.0%)
$60,001-$80,000	0 (0.0%)	4 (1.3%)	4 (1.2%)
>$80,000	0 (0.0%)	2 (0.7%)	2 (0.6%)
Insurance status	(n=34)	(n=247)	(n = 281)
Private	3 (8.8%)	22 (8.9%)	25 (8.9%)
Medicaid	10 (29.4%)	48 (19.4%)	58 (20.6%)
Veterans benefits	3 (8.8%)	19 (7.7%)	22 (7.8%)
More than 1 type of insurance	1 (2.9%)	7 (2.8%)	8 (2.8%)
Uninsured	17 (50.0%)	151 (61.1%)	168 (59.8%)
Has primary care physician	(n=34)	(n=242)	(n = 276)
Yes	17 (50.0%)	125 (51.7%)	142 (51.4%)
No	17 (50.0%)	117 (48.3%)	134 (48.6%)
Has seen a physician in past 12 months	(n=34)	(n=307)	(n = 341)
Yes	22 (64.7%)	217 (70.7%)	239 (70.1%)
No	12 (35.3%)	90 (29.3%)	102 (29.9%)

*The n varies across this table due to non-response

event and .78 items per person. The 40 focus groups (310 individuals) generated a list of 32 items, thus averaging .80 items per event and .10 items per person.

The underlying trends represented in these averages are more clearly observable graphically. On a per-event level, the trend is almost identical between the two methods (Figure 1). Most of the items were generated during the first few data collection events, with the slope quickly declining for both.

Comparing items generated per participant, we see that individual interviews are more efficient. The trend is similar to that at the per-event level – the first few events generated the most results – but the individuals in each one-on-one interview consistently generated more unique items than individuals in each focus group (Figure 2). At no point do the lines overlap.

We also analyzed the data while keeping the number of participants in each comparative group equal – i.e., an *n* of 40 – by performing a comparison of 40 interviews and randomly selected sets of five focus groups, as described above. The mean total number of items identified across the 5-focus group datasets was 22.6. This equates to an average of .56 items per participant, less than the .78 per participant in the interviews.
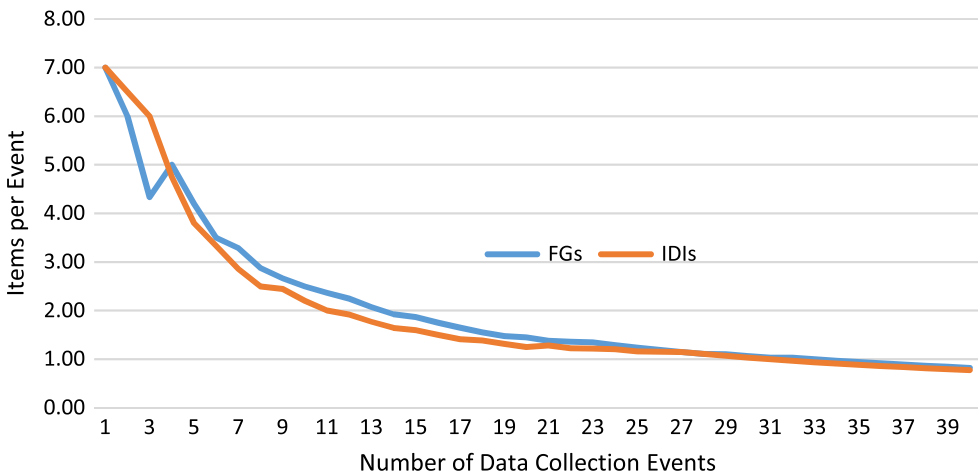

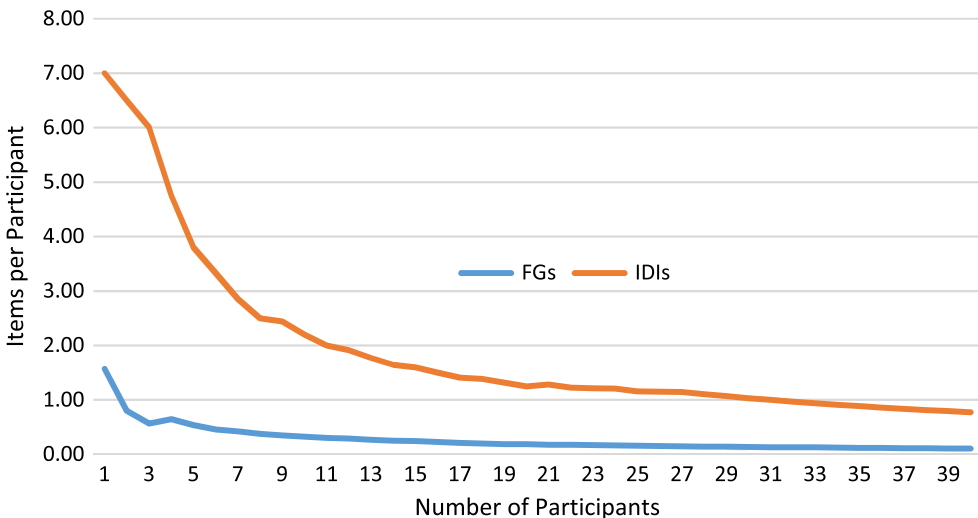Figure 1. New items generated per data collection event.

Figure 2. New items generated per participant.

We also compared the content of the lists produced by each data collection method. As shown in Table 4, the two lists shared 27 (75%) of the 36 items aggregated across datasets. Five health problems were mentioned in the focus groups but not the individual interviews, and four problems were mentioned in the individual interviews but not the focus groups. Problems mentioned in only one type of data collection method are shaded in gray. Of the nine problems that were not common to both lists, six were mentioned in only one of the 80 data collection events, one was mentioned in only two data collection events, and two were raised in just three data collection events.

Sensitive themes

Across both complete datasets (responses to all questions on the guide), we identified a total of 10 categories of (i.e., themes for) sensitive, personal disclosures (Table 5). Two of these themes – homosexuality and sexual abuse – were raised solely in the focus group context. No sensitive themes were identified only in the individual interview context. With respect to frequencies, no themes were identified in more interview events than focus group events. Conversely, four sensitive themes were identified significantly more frequently in focus groups than in interviews (p-value < .05).

Table 4. Frequency of items (health problems) elicited by data collection method.

Item (health problem)	Individual interviews ($n = 40$)	40 Focus groups ($n = 310$)
Abandonment	0	1
Alzheimer's disease	1	2
Arthritis	4	5
Asthma/respiratory	7	6
Cancer (all types)	25	34
Cholesterol	2	13
Dental health	6	7
Diabetes	29	36
Diet/nutrition	25	9
Disability	3	0
Environmental exposure	0	1
Epilepsy/seizures	2	2
Eye issues	6	2
Flu	0	3
Gout	2	3
Headaches	0	1
Heart disease	17	20
Hepatitis (A, B, or C)	7	3
High blood pressure	27	37
HIV-AIDS	19	21
Interpersonal violence	9	2
Kidney disease	3	12
Lack of hygiene	1	0
Liver disease	1	7
Lupus	1	1
Mental health issues	13	23
Obesity	4	13
Polyps	1	0
Sexual promiscuity	2	0
Sickle cell anemia	1	3
Smoking/tobacco use	10	4
Sexually transmitted infections	15	10
Stress	4	4
Stroke	6	11
Substance abuse	26	20
Tuberculosis	0	1
Total of 36 items	31 Items	32 Items
Average # items/event	.78	.80
Average # items/person	.78	.10

Table 5. Comparison of senstive-theme frequencies using Fisher's exact test.

'Sensitive' theme	Definition: Discloses personal experience with …	Frequency: Focus groups (N = 40)	Frequency: Individual interviews (N = 40)	Significance (p-value)
Addiction/substance abuse	Abusing, having a problem with, or being addicted to alcohol or drugs (Drug could be illicit, prescription, over-the-counter, or unspecified)	28	7	<.0001
Homelessness	Having no place to sleep, living on the streets or in a shelter	8	3	NS*
Homosexuality	Being a gay man or engaging in sexual relations with another man	2	0	NS
Incarceration/criminal activity	Having served time in a jail, prison, or penitentiary. Or having admitted past criminal activity	20	3	<.0001
Mental illness	Mental illness and/or treatment, including (but not limited to) depression, schizophrenia, anxiety, panic attacks, and post-traumatic stress disorder	15	6	<.05
Personal health information	A health issue that involves a 'private' part of the body (e.g. penis, bowels) or stigmatization associated with a health condition (e.g. hepatitis C is typically transmitted through sex or injection drug use)	7	6	NS
Sexual abuse	Being the victim of sexual abuse	1	0	NS
Sexual risks	Having multiple sexual partners, being promiscuous, and/or practicing unprotected sex	3	1	NS
Sexually transmitted infections/HIV	Having, or having had, a sexually transmitted infection, including gonorrhea, chlamydia, syphilis, or HIV	3	2	NS
Illicit drugs	Using illegal drugs, including marijuana, heroin, crack, and cocaine (Not necessarily admission of addiction or abuse)	12	2	<.001

Note: NS = not statistically significant.

Discussion

Our results are unique in that they are generated within a randomized research design, in which variability between participants and the data collection context were controlled to the extent possible across the two arms. Our data indicate that, when compared at the level of data collection events, focus groups and individual interviews are very similar in their ability to generate unique items in a simple free-listing task. From a logistical perspective, however, the amount of time and resources needed to obtain these similar results is quite different for the two methods. Focus groups require 6–10 times more participants per data collection event than do individual interviews. Focus groups are also more difficult to schedule, usually require two data collectors, and typically take twice as much time to conduct. Longer data collection events, with multiple speakers, also require more time to transcribe (if transcribing) and analyze. So, although the items-per-event trends are similar for the two methods, individual interviews require much less time and effort to generate the data. When we use the individual participant as the denominator – and when we hold the number of participants constant across the two arms – independent interviews are clearly more efficient at generating a larger breadth of items. This differential is more notable during the earliest data collection events, but persists throughout the course of data collection. This finding is consistent with the majority of empirical research on this topic described in Table 1, but is incongruent with findings of Aldag and Tinsley (1994) and Coenen et al. (2012).

Several research design factors mentioned earlier could account for these differences. For instance, in the Coenen et al. study (2012), the focus groups were conducted in one country and the individual interviews in another, with different interviewers for each country and type of data collection. Socio-cultural and interviewer-style differences are two important uncontrolled variables that could account for the observed differences. Additionally, the study employed an open-coding approach on narratives, whereas the data we present are from a free-listing, brainstorming task. Conducting an inductive thematic analysis on large bodies of text such as transcripts from focus groups and individual interviews requires more subjective interpretation than simply recording the items generated from a free-listing activity. This subjectivity is particularly evident with respect to the level of granularity at which codes are constructed. The more granular the coding, the more likely that differences will be observed. Coenen et al. (2012) identified 897 and 522 'concepts' in the focus group and individual interview transcripts, respectively. Although these concepts were later collapsed into 'categories,' their initial analysis was extremely granular. Our analysis was less granular in nature. In the analysis of our own datasets, for example, we found 93 and 94 emergent 'themes' in the focus group and individual interview transcripts, respectively (Namey et al., 2016).

With respect to sensitive themes, our data are incongruent with trends identified in the three empirical studies discussed earlier. Our data indicate that personal, sensitive disclosures were more likely to occur in focus groups than in individual interviews. This may support Coenen et al. (2012) and others' suggestions that the peer environment may encourage disclosures differently than the interviewer-researcher relationship. We note, however, that the personal disclosures identified in our study were not solicited; rather, we coded the instances where individuals volunteered personal information that was related, but not in direct answer to the research question.

Also, the number of individuals within a focus group event typically ranges from 6 to 12. In our study, focus groups included, on average, 7.75 individuals. We therefore might expect *any* theme to have a higher probability of emerging in a focus group context, simply because more individuals are involved in a single data collection event. However, this probability is difficult to determine because responses are not independent in group discussions. These findings generate interesting questions about how the size of focus groups, group composition, the nature of group dynamics, and the topic of discussion may affect personal disclosures, particularly compared to an individual interview context.

Another factor that could have influenced our findings with respect to sensitive themes is the fact that our data collector was a Caucasian woman and our participants were (typically older) African

American men. It could be that study participants were more comfortable revealing personal and sensitive information in a group setting among individuals with a similar cultural background to their own than in a more intimate one-on-one context with a data collector of a different gender and from a different cultural background. Additionally, some of the study participants had experience participating in group-based substance abuse programs, so they may have been used to talking about sensitive topics in groups. How gender and racial discordance between interviewer and participants, and participant experience in group-based programs, affect the data generated warrant investigation. Other factors that may determine the depth and/or breadth of data generated in qualitative inquiry may be the degree of rapport between data collector and participants and degree of setting comfort. More research is needed to better understand these relationships.

Conclusion

We found that individual interviews were highly effective at generating items in a brainstorming task, and that certain sensitive and personal disclosures were more likely to emerge in focus groups. Notwithstanding, much more methodological research on qualitative methods is needed, and researchers still need to take into account a range of considerations when choosing between focus groups and individual interviews. Several studies, including ours, have shown individual interviews to be as effective as, or more effective than, focus groups for generating a list of topics within a domain. But this capability should not be the sole determining factor in one's decision, unless generating an exhaustive list is the only or primary objective of qualitative data collection. Similarly, what types of information (e.g., sensitive/personal) can be elicited through each data collection modality could be affected by factors other than modality alone, such as the degree of similarity between the interviewer and participants, and past experience of participants. We therefore recommend pilot testing methods on a case-by-case basis until more empirical comparative studies are conducted and published. We also invite qualitative researchers to add methodological analyses to their existing and future research designs to advance the state of the art of qualitative methods. Such steps might include incorporating a randomized design and standardizing conditions across data collection events as much as possible, to allow for more valid comparison.

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References

Agar, M., & MacDonald, J. (1995). Focus groups and ethnography. *Human Organization, 54*, 78–86.

Albrecht, T., Johnson, G., & Walther, J. (1993). Understanding communications processes in focus groups. In D. Morgan (Ed.), *Successful focus groups: Advancing the state of the art* (pp. 51–64). Newbury Park, CA: Sage.

Aldag, L., & Tinsley, A. (1994). A comparison of focus group interviews to in-depth interviews in determining food choice influences. *Journal of Agricultural and Food Information, 2*, 89–96.

Burns, C. (1989). Individual interviews. In S. Robson & A. Foster (Eds.), *Qualitative research in action* (pp. 47–57). London: Hodder and Stoughton.

Carey, M. (1995). Comment: Concerns in the analysis of focus group data. *Qualitative Health Research, 5*, 487–495.

Coenen, M., Stamm, T., Stucki, G., & Cieza, A. (2012). Individual interviews and focus groups in patients with rheumatoid arthritis: A comparison of two qualitative methods. *Quality of Life Research, 21*, 359–370.

deJong, M., & Schellens, P. (1998). Focus groups or individual interviews?: A comparison of text evaluation approaches. *Technical Communication, 45*, 77–88.

Duggleby, W. (2005). What about focus group interaction data? *Qualitative Health Research, 15*, 832–840.

Fern, E. (1982). The use of focus groups for idea generation: The effects of group size, acquaintanceship, and moderator on response quantity and quality. *Journal of Marketing Research, 19*, 1–13.

Goldman, A. E., & McDonald, S. S. (1987). *The group depth interview: Principles and practice*. Englewood Cliffs, NJ: Prentice-Hall.

Greenbaum, T. (2003). The gold standard? why the focus group deserves to be the most respected of all qualitative research tools. *Quirk's Marketing Research Review, 17*, 22–27.

Griffin, A., & Hauser, J. (1993). The voice of the customer. *Marketing Science, 12*, 1–27.

Guest, G., MacQueen, K., & Namey, E. (2012). *Applied thematic analysis*. Thousand Oaks, CA: Sage.

Guest, G., Namey, E., & Mitchell, M. (2013). *Collecting qualitative data: A field manual for applied research*. Thousand Oaks, CA: Sage.

Heary, C., & Hennessy, E. (2006). Focus groups versus individual interviews with children: A comparison of data. *The Irish Journal of Psychology, 27*, 58–68.

Holstein, J., & Gubrium, J. (1995). *The active interview*. Thousand Oaks, CA: Sage.

Hyde, A., Howlett, E., Brady, D., & Drennan, J. (2005). The focus group method: Insights from focus group interviews on sexual health with adolescents. *Social Science & Medicine, 61*, 2588–2599.

Kaplowitz, M. (2000). Statistical analysis of sensitive topics in group and individual interviews. *Quality & Quantity, 34*, 419–431.

Kaplowitz, M., & Hoehn, J. (2001). Do focus groups and individual interviews reveal the same information for natural resource valuation? *Ecological Economics, 36*, 237–247.

Kidd, P., & Parshall, M. (2000). Getting the focus and the group: Enhancing analytical rigor in focus group research. *Qualitative Health Research, 10*, 293–308.

Kitzinger, J. (1994). The methodology of focus groups: The importance of interaction between research participants. *Sociology of Health & Illness, 16*, 103–121.

Knodel, J. (1993). The design and analysis of focus group studies: A practical approach. In D. Morgan (Ed.), *Successful focus groups: Advancing the state of the art* (pp. 35–50). Thousand Oaks, CA: Sage.

Krippendorf, K. (2012). *Content analysis: An introduction to its methodology* (3rd ed.). Thousand Oaks, CA: Sage.

Krueger, R., & Casey, M. (2015). *Focus groups: A practical guide for applied research* (5th ed.). Thousand Oaks, CA: Sage.

McLellan, E., MacQueen, K., & Neidig, J. (2003). Beyond the qualitative interview: Data preparation and transcription. *Field Methods, 15*, 63–84.

Morgan, D. (1997). *Focus groups as qualitative research* (2nd ed.). Thousand Oaks, CA: Sage.

Morgan, D. (1998). *Planning focus groups*. Thousand Oaks, CA: Sage.

Morgan, D., & Krueger, R. (1993). When to use focus groups and why. In D. Morgan (Ed.), *Successful focus groups: Advancing the state of the art* (pp. 3–19). Thousand Oaks, CA: Sage.

Namey, E., Guest, G., McKenna, K., & Chen, M. (2016). Evaluating bang for the buck: a cost-effectiveness comparison between individual interviews and focus groups based on thematic saturation levels. *American Journal of Evaluation, 37*, 425–440.

Neuendorf, K. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage.

Nunkoosing, K. (2005). The problems with interviews. *Qualitative Health Research, 15*, 698–706.

PCORI. (2015). *PCORI – Funding opportunities*. Retrieved October 16, 2015, from http://www.pcori.org/funding-opportunities

Potter, J., & Hepburn, A. (2005). Qualitative interviews in psychology: Problems and possibilities. *Qualitative Research in Psychology, 2*, 281–307.

Powell, R., & Single, H. (1996). Focus groups. *International Journal of Qualitative Health Care, 8*, 499–504.

QSR International Pty Ltd. (2012). NVivo qualitative data analysis Software (Version 10). Doncaster: Author.

Rat, A., Pouchot, J., Guillemin, F., Baumann, M., Retel-Rude, N., Spitz, E., & Coste, J. (2007). Content of quality-of-life instruments is affected by item-generation methods. *International Journal for Quality in Health Care, 19*, 390–398.

Robinson, N. (1999). The use of focus group methodology: With selected examples from sexual health research. *Journal of Advanced Nursing, 29*, 905–913.

Seal, D., Bogart, L., & Ehrhardt, A. (1998). Small group dynamics: The utility of focus group discussions as a research method. *Group Dynamics: Theory, Research, and Practice, 2*, 253–266.

Stokes, D., & Bergin, R. (2006). Methodology or methodolatry? An evaluation of focus groups and depth interviews. *Qualitative Market Research: An International Journal, 9*, 26–37.

Thomas, L., MacMillan, J., McColl, E., Hale, C., & Bond, S. (1995). Comparison of focus group and individual interview methodology in examining patient satisfaction with nursing care. *Social Sciences in Health, 1*, 206–220.

Wight, D. (1994). Boys' thoughts and talk about sex in a working class locality of Glasgow. *Sociological Review, 42*, 703–737.

Wutich, A., Lant, T., White, D., Larson, K., & Gartin, M. (2010). Comparing focus group and individual responses on sensitive topics: A study of water decision makers in a desert city. *Field Methods, 22*, 88–110.