DIGITAL HEALTH

Utilization of online focus groups to include mothers: A use-case design, reflection, and recommendations

Kara Skelton[1] [iD], Retta Evans[2], Jenna LaChenaye[2], Jonathan Amsbary[2], Martha Wingate[2] and Laura Talbott[2]

Abstract

Advances in technology over the past decade have allowed unique methodologies to emerge, enabling the engagement of hard-to-reach populations on sensitive topics in a way that was before thought not possible with traditional face-to-face modalities. This study aimed to use online focus group discussions (FGDs) to explore breastfeeding mothers' use of social media. Results indicate participants had a positive experience with online FGDs, and almost all preferred this method to traditional face-to-face focus groups. We discuss reflections of the online FGD experience, including best practices and recommendations for innovative ways to include time-constrained or hard-to-reach participants, for yielding rich qualitative data.

Introduction

Parenthood can be one of the most stressful, yet rewarding, experiences of a person's life. Mothers, in particular, are faced with a plethora of factors which contribute to high stress and poor mental health.[1] With a recent shift in thought about health and wellness, a focus on health promotion has emerged, and priorities have started focusing on a "two gen" approach.[2] This approach encompasses both parents and children, with a focus on addressing the needs of both on a continuum; one health promotion factor seen on this "two gen" spectrum is breastfeeding. Although numerous studies have provided a foundation for evidence of social networking sites as community building and even stated the use of groups on Facebook as a way for community interaction,[3] there is a lack of knowledge in the scientific community about how breastfeeding mothers influence other mothers online and how, if at all, these influences affect mother and infant health outcomes.

To address this critical gap, this mixed-methods research study was conducted to explore how social media influences breastfeeding mothers' attitudes, knowledge, and behaviors. However, accessing breastfeeding mothers was difficult because of their endless work serving as a caregiver and often working outside of the home, and also as a consequence of another, possibly larger barrier: breastfeeding. The goal was to recruit breastfeeding mothers, yet most could not leave their infant for more than a short amount of time and stated they could not participate in person, but could engage remotely. Further, most mothers' availability was only in the evening hours, after participants' children went to bed. In order to be inclusive, and because of the sensitivity of the topics discussed in this qualitative portion of the study, we selected a newer method of data collection that would allow for inclusion of participants who may otherwise be excluded due to

[1]Johns Hopkins University, Baltimore, MD, USA
[2]University of Alabama at Birmingham, Birmingham, AL, USA

Corresponding author:
Kara Skelton, Johns Hopkins University, 615 N. Wolfe Street, Baltimore, MD 21205, USA.
Email: Kara327@uab.edu

geographical or time constraints, but had vital in-depth experience with our central phenomenon, increasing our ability to collect rich, meaningful data.[4,5]

Advances in technology over the past decade have allowed for unique methodologies to emerge enabling engagement with hard-to-reach populations to discuss sensitive topics in a way that was before thought not possible with traditional face-to-face modalities. These advances include the way people engage in internet-based research and data collection; this method, once employed only by marketing research, is now permeating through to the fields of social and health science.[6]

Online focus group discussions (FGDs) were created to help combat recruitment issues, poor response rates, and increases in costs associated with traditional FGDs,[6] and have been found to generate rich qualitative data.[4,7] However, online FGDs are a novel methodology, with only limited use in certain settings. One of the earliest uses of online FGDs in social science was a study of healthcare professionals who had experience in computer-mediated communication, but were geographically dispersed, and it was determined that an online FGD was appropriate for the study.[8] Over the past 20 years, online FGDs have emerged as a tool for use among diverse populations, and this approach is gaining greater use in populations where the topics are increasingly sensitive, and for those who have limited free time.[4,5,9,10] Further, use of asynchronous scheduling for online FGDs has proven convenient.[10]

The purpose of this paper is to describe the methodology of conducting online FGDs with mothers, reflect on participants' experience of the online FGDs, and to explore potential best practices and methodological areas for improvement. Although there have been online FGDs conducted with pregnant women and women in general, there is very limited use of this methodology with breastfeeding mothers.[9,11] This analysis of the online FGD methodology with mothers provides a significant contribution to a plethora of scientific fields, as there is a current lack of results with cross-sector applicability.

Methods

A purposeful sample of breastfeeding mothers from one pro-breastfeeding social media group was recruited. The Facebook group is a members-only group that has 6300 members and is just over 5 years old. Inclusion criteria were mothers between the ages of 18 and 50 who were currently a member of the online pro-breastfeeding Facebook group, and who were either currently pregnant and intending to breastfeed, currently breastfeeding, or had recently weaned an infant from breastmilk in the past 3 years. It is important to note that for inclusion in this study, breastfeeding was

defined as feeding the infant breastmilk by any form (at-breast feeds or pumping), regardless of exclusivity. This Facebook group stems from an in-person support group based at a mid-sized hospital in Birmingham, Alabama. However, there are no restrictions for joining the group: "any and all breastfeeding moms are welcome," according to the Facebook group description. There are five "administrators" of the group, some of whom have International Board Certified Lactation Consultant (IBCLC) certification, and others who do not have any professional training but are experienced in breastfeeding, either from feeding their children or from other experience (e.g. work experience as a Labor & Delivery or NICU nurse, or from being a lactation counselor or dietician).

Qualitative data were collected through three separate online FGDs, and basic demographic data were collected using an online survey in Qualtrics. Each online FGD was asynchronous and conducted using a secret Facebook group, which provided participants with a safe and confidential place to discuss breastfeeding experiences via social media. Asynchronous scheduling allowed participants to answer questions in their own time, over the course of hours, days, or weeks. For this study, participants had 4 days to respond to the original question and interact with other participants' posts. Researchers had several assumptions: (1) participants were active in the pro-breastfeeding social media group; and (2) they were comfortable using a textual-based asynchronous environment.

Participants

After obtaining IRB approval, participants were recruited through a closed, pro-breastfeeding, online social media group. Recruitment text was posted into the group, and within 48 hours, 24 people emailed to enquire about the online FGDs. Interested participants then completed a three-item screener: (1) Are you a member of the online social media group?; (2) Are you currently pregnant and intend to breastfeed, are you currently breastfeeding, or have recently weaned a child in the past 3 years?; and (3) Are you between the ages of 18 and 50? Written consent (in the form of a document which could be electronically signed or printed off and signed) was obtained from those agreeing to participate. A total of 22 women agreed to participate in the focus groups; they were each randomized to the first, second, or third online FGD. However, one participant did not engage at all in the online FGD, leaving a total of 21 participants This gave a total of six, nine, and six women who were randomized into the first, second, and third focus groups, respectively.

All participants were female, and had at least one child. Two participants were pregnant and intended

to breastfeed their new infant when born. The mean age of participants was 29.7, with a range of 23–40 years of age. Further, 40.9% of participants had a high school diploma or some college, but no degree, and 59.1% had at least a Bachelor's degree. The majority of participants (71.42%, $n = 15$) had been in the specific pro-breastfeeding group for 6 months or more.

Data collection

For each online FGD a secret Facebook group was created, and the participants were sent a link to join the group. The group was only visible to those in the group or who had a link, allowing privacy and confidentiality within the groups as no one else could access the dialog of the online FGDs. A discussion guide was created, which listed the topic to be covered and the questions which addressed that topic. These questions were designed to be open-ended, and to elicit thoughts, feelings, and experiences about social media use and breastfeeding (e.g. How do you think social media impacts your breastfeeding relationship?; Discuss a time that a social media breastfeeding group has impacted a decision or choice you made in regards to breastfeeding; What are some barriers or pitfalls to using social media to post or interact with other mothers about breastfeeding?). Secret Facebook groups were chosen as the platform for the online FGDs, as this study recruited participants who were existing members of a pro-breastfeeding Facebook group, which made them familiar with using the platform. Within Facebook groups, there is also the ability to create "announcements" and "posts," which enabled the moderator to clearly communicate with the participants throughout.

Once in the secret Facebook group, participants were asked to complete an online demographic questionnaire before the online FGDs started. Although profile pictures and names are shown within the secret Facebook groups, procedures for confidential participation were given to participants to preserve their anonymity. The moderator advised participants to make their profile "private" throughout the online FGDs; participants were given instructions on how to change their name to a pseudonym for the online FGDs (if wanted). While everyone agreed to make their profile private, only one participant wished to remain truly anonymous during the online FGDs by changing their name. The online FGDs were designed to be asynchronous, where participants had 4 days to think and respond to the initial questions, and the posts of their fellow participants. The moderator was the principal investigator of the study, who herself has breastfed. It was her decision when, if at all, to prompt further discussion or answer questions which arose throughout

the duration of the online FGDs. Participants were asked to respond to each question, as well as to interact with other participants and share how they agree, disagree, or if it brings up another idea or thought. After the online FGDs, participants were asked to complete another survey about the way the focus group was conducted, including usability, feasibility, and level of interaction. Detailed results from the online FGDs on how social media group use affects breastfeeding mothers will be presented elsewhere.

Data analysis

Qualitative data were analyzed using indicative qualitative content analysis through Nvivo 10^{12} software using emerging themes and categories from the data. During initial coding, in-vivo coding was used for each phrase of the transcript. A main reason for selecting an in-vivo approach to coding was to stay "true" to the data, as this approach summarizes key phrases using participants' own words.[13] This methodology is considered preferable when data are fragmented, as they are in the case of online FGDs. However, results from the evaluations were analyzed using Microsoft Excel and Qualtrics.

Results

Focus group dynamics

Focus group dynamics were mainly consistent across all three online FGDs. However, there were some distinct differences. The first major difference seen across groups is the number of interactions between participants. The lowest level of interaction was observed in the first online FGD, where there was the lowest number of interaction with participants for overall posts and responses; see Table 1 for focus group discussion characteristics. Overall, participants had a high level of interaction, with an average of 92 posts per group across seven questions. The second focus group

Table 1. Focus Group Engagement Characteristics.

	Focus Group 1 ($N = 6$)	Focus Group 2 ($N = 9$)	Focus Group 3 ($N = 6$)
Posts	47	78	46
Responses	22	43	42
Likes	82	123	79
Total Posts and Responses	69	121	88

had the largest number of participants, and also had the largest number of posts, responses, and likes. However, the third focus group had the most interaction for sample size; there were 42 responses to posts, and only six participants in the group.

Participants' evaluations

Of the 21 participants, 14 filled out the online evaluation questionnaire after the closing of the online FGDs. All 14 participants reported they had a positive experience with the online FGDs for the following items: interaction with other mothers, number of questions, length of time the FGD was kept open, and the ability to participate without being burdened. In addition, mothers unanimously reported they felt comfortable with the confidentiality of their responses and interaction with other participants. Twelve participants (86%) felt they were involved in discussion with other participants during the online FGDs, which left two participants who felt they were not deeply involved in discussion with other participants.

When asked if they would prefer an online FGD or a traditional face-to-face focus group, 13 (93%) said they prefer the online FGDs. Participants were also asked to elaborate on why they chose their preference. Most participants discussed how busy they were as a mother and how this, along with other responsibilities, did not allow them an opportunity to participate in face-to-face events. One participant said,

> I work full-time, have a side job canning jellies and pickles, have 2 children, and no free time! It was nice to go through the group and answer questions or read responses at my leisure—it is hard to find time for face-to-face anything.

Another participant discussed her ability to share more personal and honest information, stating, "I feel like it's easier to be honest and open on online boards." Another participant noted how the asynchronous formatting allowed her to think critically about her answers, explaining, "Online allows you time to think about your answers so you include everything. Also I tend to come off as blunt almost to the point of rude if I say something without finding the right words." Speaking to the ease of use and ability to communicate, one participant commented, "I found the online group very simple to use and easier to communicate through."

Participants were asked to describe their experience of sharing their thoughts with other members of the online FGD. One participant stated, "I felt very comfortable interacting with each person in the group, it was a good no-judgment zone." Another stated she felt comfortable answering in any way, as she did not feel

like the moderator was looking for just one type of answer: "I felt very comfortable expressing my views as I did not feel like she was looking for just one type of answer." This shows how the online FGD methodology allowed participants to feel comfortable and safe in expressing their point of view.

Overall, findings from the online FGD evaluations indicate participants had a positive experience, and prefer online FGDs to traditional focus group methods. Participants indicated they felt more comfortable being open and honest in an online format, compared with traditional focus group methods. They also indicated the format was easy to use and allowed them to have a sense of anonymity. This was true for all participants, and cited as their reason for choosing an online FGD.

Discussion

Reflection of using online FGDs

This is one of the first studies using online FGDs to engage mothers with regards to breastfeeding. As it is a sensitive topic, the investigators elected for this innovative methodology to provide more trust, confidentiality, and include a more geographically diverse population.[4-6] Women who were existing members of an online pro-breastfeeding social media group were recruited. Three online FGDs were held through online discussion boards, in which there were six, nine, and six participants, for a total of 21 participants.

From a participant perspective, all but one participant reported a preference to the online FGDs, as was consistent with findings from others.[5,6,14] Participants reported they highly valued the confidentiality of the online FGD format compared with the traditional face-to-face methodology. This is a pivotal methodological finding, as confidentiality and accuracy of qualitative data are so essential. Often, qualitative data can be compromised as people can be scared to report their true feelings or opinions for fear of being judged, sometimes seen through social desirability bias. However, the online format of the FGDs creates the online disinhibition effect, in which one feels a lack of restraint when communicating online in comparison with in-person.[9] It is important to note that although participants' Facebook profiles were private during the online FGDs, the majority did not opt to use a pseudonym. This may be due to the fact the sample was pulled from within the same social media group, from which the members could have already established trust and confidentiality. Participants also reported a positive experience with the asynchronous schedule of the online FGDs, stating this strategy provided convenience and flexibility for them, especially in terms of formulating their thoughts and allowing adequate time to reflect

and respond to others in the online FGD. The online FGDs also had high engagement, in which most people responded to every question, creating a higher level of interaction. Most participants reported having a positive experience of their interaction with other participants.

From a moderator's perspective, online FGDs were easy to manage concurrently. The asynchronous format allowed for more critical thinking about responses and what prompts (if any) were needed to elicit rich data. It was very easy to put the data into an easy-to-analyze format, since responses were already typed. This saved hours of time as there was no transcription of audio recordings, and we believe this is a resource-saving method. This is consistent with other studies that have used online FGDs.[9] In addition, it was very easy to see who was commenting and responding, as well as the number of likes. This was very helpful in determining the level of interaction for each individual online FGD. This is a unique analysis that typical focus group methods do not allow.[7] Further, the asynchronous online FGDs did not have multiple people trying to talk at the same time and other etiquette items that are present and complicate collection of traditional qualitative focus group data. Overall, the experience was very pleasant for the moderator and is a preferred method for future qualitative data collection; this has also been found in previous studies using online FGDs in other topical areas.[4,9]

These findings confirm that online FGDs are ideal for providing participants with an online environment in which they feel comfortable to express their honest views without being judged by others.[5,14] This methodology also provided mothers an opportunity to stimulate self-disclosure and confidentiality for a sensitive topic, which most reported they would not be able to participate in otherwise. The quality of the data was also rich and saturation was reached, which attests to the ability of online FGDs to elicit accurate and quality data.[4,15,16]

Best practices

Areas of best practice already cited in the field include creating a secret group or closed discussion board,[9,10] asynchronous scheduling,[17] the moderator being active, and using pseudonyms. The use of a secret discussion board is preferred over a closed discussion board, so as to only allow participants to see who is in the group.[9] While some studies opt for synchronous scheduling, asynchronous scheduling has been found to be preferred over synchronous and to allow time to elicit better quality data.[17] Being an active moderator throughout the duration of the asynchronous scheduling is also a best practice, as it allows for real-time responses to questions participants have, and to give a chance to probe participants when needed. Lastly, allowing the option for pseudonyms creates the perfect space to allow participants to feel confidential and anonymous. These are all areas of best practices which should be considered when implementing any online FGDs, but it is also important to take into account the participants, setting, and tone of the study.

Areas for improvement

As others mention, a widely known disadvantage to using online FGDs is the lack of nonverbal signals.[14,18] However, the scientific literature is mixed on the loss of these, and there are both positive and negative connotations. One disadvantage to a lack of nonverbal signals is the room for misinterpretation of written communication, which could negatively impact the group dynamic in an online environment.[6] As studies have conducted side-by-side comparisons of traditional focus group methodologies and online FGDs for the same phenomenon of interest,[17] many of the concerns with the loss of nonverbal signals have been addressed. However, there is no evidence that the internet is a subpar alternative, and in fact, many studies show the opposite.[9]

It is also important to remember that not all qualitative studies warrant an online platform; researchers must first determine who the intended audience is, the nature of the phenomenon of interest, and the time constraints and geographical location of participants. The combination of these factors should lead researchers to determine which method is best suited for their study. As mentioned earlier, the intent of this study was to explore social media use among breastfeeding mothers, which made online FGDs, and specifically Facebook, the best platform to use. Other examples include the study of populations where they are close in geographical location or nonverbal signals are being studied.

Conclusion

With the technological advancements that have developed over the past decade, unique platforms have developed which allow for the inclusion of participants who may not be reached through traditional methods of data collection. Asynchronous, online FGDs are a feasible method for capturing qualitative data from people in different geographical locations, or those who have barriers which would keep them from participating in a traditional focus group. Most participants felt the online FGD was more convenient compared with traditional face-to-face focus groups, and provided more anonymity. Further, they reported feeling

very comfortable sharing honest information, and to a higher degree than they would in a face-to-face focus group. This study confirms the feasibility of online FGDs as a valid format for social science and health researchers to use for sensitive topics, such as breast-feeding, for mothers.

ORCID iD

Kara Skelton ⓘ http://orcid.org/0000-0002-4531-0534

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