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Article

Contrasting Internet and Face-to-Face Focus Groups for Children with Chronic Health Conditions: Outcomes and Participant Experiences

David B. Nicholas, PhD
University of Calgary, Central and Northern Alberta Region
Edmonton, Alberta, Canada
The Hospital for Sick Children,
Toronto, Ontario, Canada

Lucy Lach, PhD
McGill University
Montreal, Quebec, Canada

Gillian King, PhD
Bloorview Research Institute
Toronto, Ontario, Canada

Marjorie Scott, BSc, RD
Janeway Children's Health and Rehabilitation Centre
St. John's, Newfoundland and Labrador, Canada

Katherine Boydell, PhD
The Hospital for Sick Children
Toronto, Ontario, Canada

Bonita J. Sawatzky, PhD
University of British Columbia,
Vancouver, British Columbia, Canada

Joe Reisman, MD, MBA
Children's Hospital of Eastern Ontario
Ottawa, Ontario, Canada

Erika Schippel
The Hospital for Sick Children
Toronto, Ontario, Canada

Nancy L. Young, PhD
The Hospital for Sick Children,
Toronto, Ontario, Canada
Laurentian University,
Sudbury, Ontario, Canada

Abstract

In this study the authors examined Internet-mediated qualitative data collection methods among a sample of children with chronic health conditions. Specifically, focus groups via Internet technology were contrasted to traditional face-to-face focus groups. Internet focus groups consisted of asynchronous text-based chat rooms lasting a total of one week in duration. Participants comprised 23 children with cerebral palsy, spina bifida, or cystic fibrosis, who were assigned to either an Internet or face-to-face focus group. Focus group analysis and follow-up participant interviews identified a range of content outcomes and processes as well as participant experiences and preferences. Findings yielded differences in terms of the volume and nature of online and face-to-face data, and participants' affinity to focus group modality appeared to reflect differences in participant expectations for social engagement and interaction. This study identifies both benefits and limitations of asynchronous, text-based online focus groups. Implications and recommendations are discussed.

Keywords: focus groups, online applications, worldwide web, data collection, children, chronic health conditions

Authors' note: All correspondence concerning this article should be addressed to David B. Nicholas, PhD, Faculty of Social Work (Central and Northern Alberta Region), 11044–82 Avenue NW, Edmonton, Alberta, Canada T6G 0T2. E-mail: nicholas@ucalgary.ca. This research was supported by a grant from the Canadian Institutes for Health Research (CIHR). Dr. Young is supported by a Canada Research Chair in Rural and Northern Children's Health from the Canadian Institutes of Health Research.

Introduction

The advancement of the Internet has introduced new possibilities for qualitative data collection. However, relatively little attention has been given to the impact and role played by this form of advanced technology in mediating research products such as the volume and nature of data. To address these emergent questions, this study implemented corresponding methods of web and traditional face-to-face (FTF) focus groups. The processes, data yield, and participant experiences emerging from each focus group modality were contrasted.

Background

Qualitative methods in health research have been used extensively for eliciting perceptions and experiences related to participant health and well-being. As a specific method of qualitative data collection, focus groups have been used to gain insights and opinions of participants on a selected

topic (Gibbs, 1997; Heary & Hennessey, 2002; Rezabek, 2000). Focus groups are recognized for their efficient exploration of perspectives about a topic, sensitivity to issues that may be associated with stigma, accommodation to a range of ideas or communication styles, and articulation of a concise methodology or set of processes to provide commentary on participant opinions (Kitzinger, 1994; Krueger, 1988). A central feature of focus group method is the group, which inherently fosters interactivity, comparison, collaboration and synergy. Group dynamics, discussion and consensus can enrich or impede depth and quality of information yielded, reflective of a range of factors including the interconnection and "chemistry" among individuals in the group. Accordingly, group dynamics might influence information shared and qualitative data produced as groups may facilitate topic exploration in differing degrees and individuals might uniquely process and articulate their perspectives (Gibbs, 1997; Kennedy, Kools, & Kruger, 2001; Kenny, 2005; Kitzinger, 1995).

Focus groups have been valued for their ability to address inherent power imbalances that can emerge in other forms of research such as interviews or questionnaire administration. For instance, interviews might intimidate children or vulnerable groups given that authority over the interview is typically unidirectional and top-down. Accordingly, the interviewer largely determines the boundaries of the interview process by setting the research platform, posing the questions, and directing the focus. Moreover, participants might respond in a manner that they think will please the interviewer, increasing the likelihood of response bias (Heary & Hennessy, 2002).

Focus groups might limit this power differential as control over the meeting is mitigated, in part, by the group in that members can collectively pose ideas, questions, and challenges (Gibbs, 1997; Heary & Hennessy, 2002; Hill, 2006; Kitzinger, 1995; Montoya-Weiss, Massey, & Clapper, 1998). Focus groups inherently create strength in numbers, thus leveling moderator authority and potential participant intimidation (Gibbs, 1997; Hill, 2006). Although the group or members therein might impose pressure or relational challenges on fellow participants, they also might offer gratifying peer sharing, affirmation, and reciprocal support, thereby potentially situating participants as active co-constructors of the research agenda (Charlesworth & Rodwell, 1997; Gibbs, 1997; Kitzinger, 1995).

Attending to children's voices in research

Pediatric research has often missed children's voices, instead relying on parent or health provider perceptions or proxy reports. There is increasing critique of this presumptive perspective, with a growing recognition that children are active agents and commentators on their experience and health care (Darbyshire, MacDougall, & Schiller, 2005; Kennedy et al., 2001). As part of this growing awareness, qualitative methods including focus groups with children have increasingly been used (Morgan, Gibbs, Maxwell, & Britten, 2002), yet with a paucity of corresponding research evaluating their viability and effectiveness (Darbyshire et al., 2005; Gibson, 2007; Heary & Hennessy, 2002; Kennedy et al., 2001; Morgan et al., 2002; Rezabek, 2000). Focus group participation can be an enjoyable experience for children as they explore issues of interest with peers or others who might share mutual elements of personal experience and understanding (Gibson, 2007; Kennedy et al., 2001). On the other hand, focus groups can be challenging for children who have communicative challenges or who live substantial distances from typical settings where individuals can be convened in a group setting (e.g., urban communities, treatment centers).

Ill or disabled children's schedules are often saturated with numerous commitments, including school, homework, and extracurricular activities in addition to medical appointments, treatment requirements, and health-monitoring demands. Children also are generally reliant on their parents for permission, access, and transportation to health-related activities and treatments. Cumulatively, organizing a focus group that both seems worthwhile amid multiple time constraints and fits within children's and parents' busy lives and schedules is difficult and can result in constrained participation rates (Gibson, 2007; Kennedy et al., 2001; Morgan et al., 2002).

In cases in which participant availability, communication, or mobility is limited, there is a risk of systematic exclusion from study participation. Excluding vulnerable populations from participation in research results in diminished input by these persons in the advancement of scientific knowledge, with implications for service delivery, program evaluation, and policy development. In pediatrics there is a concern that children with communication or developmental disabilities might lack opportunity for conveying their lived experience, quality of life, and/or the impact of interventions (Nicholas, 2003). Proxy measures by parents are often used in determining these children's quality of life and outcomes (Eiser & Morse, 2001; Varni, Limbers, & Burwinkle, 2007); however, failing to directly hear the perspectives of these children creates a formidable conundrum and knowledge gap (Eiser & Morse, 2001).

Considerations in implementing face-to-face (FTF) focus groups

Focus groups traditionally have been implemented in a FTF context (Rezabek, 2000), with the moderator and participants in an enclosed space for approximately 1 to 2 hours. This modality introduces both benefits and limitations that can shape and affect the quality of data collected. Practical and theoretical limitations of FTF focus groups are documented in the literature, with potentially magnified impacts when applied to children. Specifically, geographic location, scheduling, organization, and group size can present difficulty, particularly when individuals with differing needs and challenges are involved (Gibbs, 1997; Gibson, 2007; Heary & Hennessey, 2002; Kenny, 2005).

Given that FTF focus group participation is limited to those within proximal distance to the group meeting site (Fox, Morris, & Rumsey, 2007; Rezabek, 2000), the utility of focus groups is often impeded for rural or remote dwellers. The likelihood of group participation might be further decreased for children who depend on their families for transportation and other supports. Group location, accessibility, and atmosphere are critical factors when considering facilitators and barriers to participation for persons with health conditions or disabilities (Fox et al., 2007; Gibson, 2007; Kennedy et al., 2001). Moreover, when a focus group is conducted in a familiar setting, associations and relevant emotions might be elicited. For example, health research often takes place in a hospital setting, which can be anxiety provoking by potentially reminding participants of negative experiences or memories related to acute illness. Participants might be compelled to revert to a patient role with the potential for bias based on identity dynamics and situational meanings. On the other hand, in alternative settings, participants might experience discomfort at being in an unfamiliar setting, affecting their contribution to group discussion (Gibbs, 1997; Gibson, 2007)

Ensuring the appropriate size of a focus group is a delicate balance. Too large a group can be distracting and difficult to manage in terms of participant turn taking, interruption, equal participation, reciprocity, and peer dynamics. On the other hand, smaller groups can lose the "group factor" in not fostering collective idea generation (Gibson, 2007; Heary & Hennessey, 2002). The ideal size for focus groups is a source of continuous debate in the literature; however,

participant age should be a determining factor (Gibson, 2007; Kennedy et al., 2001). For adults, 6 to 10 participants per group are recommended (Gibbs, 1997; Krueger, 1988), whereas smaller groups of 4 or 5 participants are recommended for children (Gibson, 2007; Heary & Hennessy, 2002; Hoppe, Wells, Morrison, Gilmore, & Wilsdon, 1995; Kennedy et al., 2001; Morgan et al., 2002)

In reviewing the pediatric literature, focus group-based studies with children report a range of sample sizes. For example, in a study exploring the experiences of children with asthma, 11 focus groups were conducted, ranging in size from 2 to 7 participants per group (Morgan et al., 2002). A study using focus groups with children with chronic health conditions identified 2 or 3 participants in some of the focus groups (Fox et al., 2007). Even if recruitment is high, logistics, scheduling difficulties, and attrition can result in small focus groups. This is particularly relevant in pediatrics, in which participation rates appear to be low (Fox et al., 2007; Morgan et al., 2002); moreover, health care providers might be hesitant to impose focus group participation on ill children.

Budgeting for the cost of a research project is a central consideration when selecting a data collection method. Focus groups can be expensive as the costs of space, audio/digital recording equipment, and transcription can be high (Kenny, 2005); hence, cost can be a deterrent to this choice of method. In addition, data capture technology (e.g., recording) is at risk of malfunctioning, threatening loss of data. Moreover, audio or digital recording equipment often does not sufficiently record elements such as nonverbal cues and speaker changes; thus, the meaning of these important communicative gestures can be lost in transcription and analysis (Kenny, 2005).

In addition to the practical limitations of FTF focus groups, group dynamics might also present a challenge. Although implementing focus groups may defuse some of the power imbalance within one-on-one (researcher-child) interviews, there are nonetheless multiple and intersecting power imbalances and dynamics in FTF focus groups: adult-child, professional-patient, leader-participant, and dominant-less dominant group members. A hierarchy among participants is identified as an issue within FTF focus groups, particularly with children. FTF focus groups might favor the inclusion of individuals who are highly verbal and articulate by requiring relatively rapid cognitive processing, immediacy of reflection, debating skills, and the ability to respond promptly, sometimes under pressure (Chase, 2000). Social and verbal processing skills are required for participation, and face-to-face group discussion can be intimidating and disempowering for persons who are uncomfortable within group settings and/or cannot maintain the group's communicative pace (Gibbs, 1997; Montoya-Weiss et al., 1998; Morgan et al., 2002). As well, more vocal and dominant members might exert peer pressure on "weaker" members to adopt their opinions, potentially discouraging authentic participation by all in the group and thus controlling group discussion. Such power imbalances can create an unsafe atmosphere that might invoke shyness, self-consciousness, inhibition, anxiety, fear, and ultimately reluctance to express true feelings and honest opinions (Gibson, 2007; Heary & Hennessey, 2002; Hill, 2006; Kennedy et al., 2001; Kenny, 2005; Montoya-Weiss et al., 1998; Morgan et al., 2002; Schneider, Kerwin, Frechtling, & Vivari, 2002). The influence of group dynamics creates the risk of groupthink, social posturing, and social desirability, whereby individual members are influenced by other members and thus might feel compelled to make complimentary comments to gain acceptance (Kennedy et al., 2001; Kenny, 2005; Morgan et al., 2002). Ethical issues arise when the group presence creates an environment where members feel uncomfortable or are compelled to withdraw from participation and/or disguise their actual position on a topic (Gibbs, 1997; Heary & Hennessey, 2002; Kenny, 2005; Montoya-Weiss et al., 1998).

FTF group interaction might be further influenced by individual beliefs, perceptions, stereotypes, expectations, and assumptions. In FTF focus groups, attributes such as gender, race, ability, language, and appearance are thought to potentially create perceived dissimilarity and as such might inhibit stigmatized participants' potential openness and comfort in the group. For example, appearance-related concerns are a noted difficulty when considering children with visible differences within a mixed FTF focus group. The fear of stares, comments, and stigma, common in everyday social situations and often highlighted in a small group or peer context (e.g., bullying), can ignite participant anxiety or fear and thus might discourage a child from actively or honestly participating (Fox et al., 2007). Therefore, facilitator skill in constructively introducing and upholding ground rules fostering group reciprocity and etiquette are essential.

An alternative approach: Online focus groups

The challenges inherent in FTF focus groups invite exploration of alternative formats, such as Internet-mediated groups. The Internet is appealing and intuitive among young people (Fox et al., 2007; Stewart & Williams, 2005), and is increasingly accessible given that online computers are frequently available in homes, schools and/or public venues within communities (e.g., public libraries). Internet focus groups are accessible regardless of participants' verbal communication ability, level of mobility, or geographic location (Kenny, 2005; Oringderff, 2004; Rezabek, 2000).

There are currently two categories of online focus groups, synchronous and asynchronous. Synchronous focus groups are similar to FTF focus groups as they are conducted in real time through chat or videoconference functioning (Fox et al., 2007; Oringderff, 2004; Reid & Reid, 2005; Rezabek, 2000; Schneider et al., 2002; Stewart & Williams, 2005). These groups tend to be faster paced, relying on more rapid communication flow and verbal processing than asynchronous groups (Stewart & Williams, 2005). Asynchronous focus groups do not occur in real time and are often conducted through discussion boards, emails, listservs, and bulletin boards, with participants responding to conversation threads (Rezabek, 2000).

Asynchronous online focus groups are convenient as they can be accessed by participants when and where desired. Without time constraints, participants are able to reflect on group content and consider their responses to questions or ideas (Burton, 2002; Fox et al., 2007; Kenny, 2005; Oringderff, 2004; Rezabek, 2000). Through allowing time to consider and respond to focus group content, this form of data collection offers data depth and richness (Burton, 2002; Fox et al., 2007; Oringderff, 2004; Stewart & Williams, 2005). As well, in contrast to FTF group participants, online participants can express their perspectives without the risk of being interrupted (Stewart & Williams, 2005), and emotions can be communicated through textual cues and symbols (i.e. caps lock, emoticons, abbreviations, etc.; Kenny, 2005). Given these advantages, online focus groups pose a promising alternative to FTF groups (Gibson, 2007; Kenny, 2005; Oringderff, 2004; Reid & Reid, 2005; Rezabek, 2000).

Methodologically, substantial costs are eliminated with online focus groups because participant travel and transcription are not required (Burton, 2002; Kenny, 2005; Montoya-Weiss et al., 1998; Oringderff, 2004; Rezabek, 2000; Schneider et al., 2002). Also, face validity is fostered in online focus groups due to member checking, as participants have continuous access to the data transcript and have ongoing opportunity to reflect on their statements to ensure that meaning is sufficiently captured within the data (Kenny, 2005). Transparency of dialogue, relationship formation, and decision making are similarly advanced as access to the data is prolonged (Fox et al., 2007; Mann & Stewart, 2000).

In addition to the practical benefits of asynchronous online focus groups, there are substantial advantages regarding social dynamics. Specifically, online interpersonal differences and superficial external cues are largely muted, minimizing stereotypes and judgments among group members and moderators. Virtual space allows for a neutral ground and equal footing between participants. Online forums allow participants an opportunity to learn about each other and collaborate in the targeted area of focus without being sidetracked by perceived differences. Accordingly, heterogeneity of the group is increasingly possible and potentially less problematic (Montoya-Weiss et al., 1998; Oringderff, 2004).

As well as decreasing stereotypes, online focus groups might decrease social pressure and member dominance, and allow participants to feel freer to contradict the moderator and/or other members without fear of reproach (Burton, 2002; Kenny, 2005; Montoya-Weiss et al., 1998; Schneider et al., 2002). Recent literature has suggested there might be a decrease in social desirability or groupthink effects in online groups due to less proximity to and potential pressure from peers within the group (Griffiths, 2005). The perceived anonymity afforded by online groups is reported to create a nonthreatening and comfortable environment, a critical requirement for focus group research. In a study examining children's preference for research method, specifically comparing individual interviews and FTF focus groups, participants reported a preference for having sensitive discussions with unfamiliar people. Participants identified concern over confidentiality, particularly when discussing sensitive issues among peers, and worried that rumors would be spread about participants' disclosures (Hill, 2006). In another study comparing FTF and online groups addressing AIDS on college campuses, participants reported greater ease discussing sensitive issues and less concern about peer pressure within the online forum (Massey & Clapper, 1995). Anonymity can reduce inhibitions and encourage freedom of speech, improving focus group data yield by facilitating more open and honest discussion (Burton, 2002; Fox et al., 2007; Kenny, 2005; Montoya-Weiss et al., 1998; Oringderff, 2004; Reid & Reid, 2005; Rezabek, 2000).

Limitations of online use

Despite the reported benefits, technical and logistical challenges are associated with online focus groups. Specifically, technical difficulties with Internet connection and access are noted (Fox et al., 2007; Oringderff, 2004; Schneider et al., 2002), as are security risks, which are of particular concern when considering research with children or vulnerable populations. Risk for security breaches and hacking is a well-documented Internet threat (Burton, 2002; Fox et al., 2007; Oringderff, 2004). As well, individuals with language barriers or reading and writing limitations might be excluded from some forms of online communication. Not all children have the computer skills, hand-eye motor skills, visual tracking skills, and access to technology that are necessary for ease of online participation, although computer augmentation tools are increasingly addressing existing challenges (e.g., keyboarding through eye-tracking).

Although computers with Internet access tend to be present in public venues within most communities, geographic, socioeconomic or other factors might limit availability. Regional differences exist in terms of Internet access and financial resources to obtain computers and augmentation hardware/software, imposing cohort differences within research samples (Burton, 2002; Kenny, 2005; Nicholas, 2003; Oringderff, 2004; Rezabek, 2000; Schneider et al., 2002; Young et al., 2009). Participation in online focus groups necessitates a relatively high comfort level with technology and computer-mediated communication (Rezabek, 2000). Typing elaborate responses can prove tedious or difficult, and can tap participants' energy, interest, or willingness to respond thoroughly, leading to missed, abbreviated, and/or misleading dialogue (Burton, 2002; Fox et al., 2007; Schneider et al., 2002). In a study comparing online and FTF focus groups,

fewer word counts were reported in the online forum. In addition, briefer, more cryptic responses such as "I agree" were used (Schneider et al., 2002). As well, when nonverbal cues are lost, facilitator observation is limited in assessing for participant connection, discomfort, boredom, and/or fatigue, which are important in adjusting the group according to its emergent process and dynamic (Burton, 2002; Gibson, 2007; Montoya-Weiss, 1998; Morgan et al., 2002; Oringderff, 2004; Rezabek, 2000).

Unlike FTF groups, which often span approximately 1 hour, asynchronous online focus groups occur over a prolonged time frame, potentially imposing difficulty maintaining participant interest and involvement (Burton, 2002; Kenny, 2005; Rezabek, 2000; Schneider et al., 2002; Stewart & Williams, 2005). Further, online methods have the potential to introduce systematic bias due to various factors such as overdivulgence or "hyperpersonal" communication as a result of participants' perception of anonymity, potential participant differences in computer keyboarding skills (Nicholas, 2003; Schneider et al., 2002; Young et al., 2009), and/or regional or jurisdictional differences in the availability of computer augmentation for children with communication challenges. Accordingly, it appears that salient issues and the viability and influence of an online focus group need to be considered prior to the determination of the best approach and its implementation.

Summary

As addressed in this review, there are both benefits and challenges across different focus group modalities. These elements suggest that mode of focus group delivery is not neutral and inconsequential; rather, each method imposes strengths and limitations. Despite apparent differences, there is a paucity of research comparing methods, particularly with pediatric populations. Evaluation of each modality's method, impact, and process merit further examination (Fox et al., 2007; Gibson, 2007; Heary & Hennessey, 2002; Kenny, 2005; Montoya-Weiss et al., 1998). To address these gaps, this study examined and contrasted FTF and online focus groups. Aims comprised an examination of focus group processes, outcomes, and participant experience.

Methods

Focus groups were conducted among children with one of three chronic health conditions: spina bifida, cerebral palsy, or cystic fibrosis. These conditions were selected to achieve sample diversity such that conditions represent a wide range of (a) physical and mobility challenges, (b) communication abilities, and (c) health care, rehabilitation, and other support requirements. Given that the study aims centered on the nature and viability of online focus groups for children with illness or disability, it seemed important to include a range of disorders and levels of affected functional status (e.g., development, mobility, communication limitations) in implementing and considering online focus groups. To this end, these three diverse conditions offered a range of child impact and experience.

Participating children were recruited from an earlier phase of this study in which they had completed questionnaires both on paper and online (Young et al., 2009). Prior to study participation, a familiar health care provider informed families about the study. If they were interested in hearing more detail about the study, a research assistant subsequently contacted the family and informed them of the study processes and procedures. Informed consent was then received from parents, and consent/assent was obtained from children. Ethical review and approval was received by participating health care facilities prior to study commencement.

On recruitment, participants were assigned either to an online asynchronous or FTF focus group, each commonly exploring the topic of participants' earlier experience of, and preference for, paper/pen versus online administration of research-based questionnaires (which they had just completed in an earlier phase of the study). Assignment to either the online or FTF focus group modality was based on the availability of a sufficient quorum of children to attend a FTF focus group within regions. If a FTF group was not possible due to low regional sample numbers and/or participant availability (e.g., scheduling difficulty), participants were assigned to an Internet-based group. All groups comprised a mix of children's age and health condition; however, the range was comparable in FTF and online focus groups.

Six focus groups were convened among 8- to 13-year-old children, three FTF groups and three Internet-based groups. Groups were facilitated by an experienced focus group facilitator. FTF focus groups lasted approximately 1 hour whereas online focus groups remained open for 1 week. Online participants were encouraged to enter the focus group a minimum of once a day over the course of the week. Online focus groups were held on a password-protected site, and each participant was assigned an ID number to protect their identity and ensure confidentiality.

Following completion of all focus groups, participants were interviewed regarding their experiences and perceptions related to their respective focus group modality. Interviews were semistructured, digitally recorded, and transcribed verbatim. Transcripts were subjected to content analysis comprising line-by-line coding, concept categorization, and theme generation (Brown & Yule, 1983; Strauss, 1994), assisted by NVivo analysis software (Richards, 1999). Subjectivity and located meanings within the text were elicited (Denzin & Lincoln, 1988; Jutersonke, 2007). Each data set (FTF and Internet focus group) was analyzed independently and then combined to explore potential areas of synergy and dissonance of process, outcome and participant experience across modality. Word counts, contextual issues, group formation processes and dynamics, similarities and discrepancies, outcomes, and participant perceptions and preferences were examined. Qualitative research rigor was fostered through peer debriefing, inter-rater reliability, referential adequacy and negative case analysis (Lincoln & Guba, 1985).

The sample

A total of 23 children participated in focus groups, with 10 children in the FTF groups and 13 children in the online groups. Participants comprised 10 males and 13 females, ranging in age from 8.5 to 13 years (mean = 11 years). Six children had been diagnosed with spina bifida, 10 with cerebral palsy, and 7 with cystic fibrosis, and no differences were found in participation across conditions.

In the process of recruitment for focus groups, we found that children's and families' schedules were heavily subscribed with school and extracurricular activities as well as personal care demands such as medical appointments, treatment requirements, and/or health complications. These elements, as well as geographic distance to FTF focus group sites, which were in urban centres (at or near treatment facilities), substantially limited participant availability for FTF focus groups. Conversely, barriers to online participation included difficulty logging on, technical problems, computer viruses, computer illiteracy, and parent concerns about data security and participant safety.

Computer or Internet knowledge was not used as a criterion in assigning participants to either of the focus group modalities; however, no participants identified any difficulties with computer applications and all reported using the Internet in their daily lives. Participants described multiple purposes for their computer use including e-mail, completing homework, accessing the Internet,

playing games, and engaging in computer-based communication with peers. Several participants had their own e-mail account, and most had access to e-mail through a parent's account. The computer was predominantly used at home or at school, and most participants used the computer independently. All focus group participants had knowledge of Internet navigation, and most described being knowledgeable about Internet security.

Results

Participants reflected on their experiences of participating in earlier tasks of questionnaire completion. Also in subsequent qualitative interviews, they individually conveyed their perceptions about participating in their respective focus groups and addressed preferences for, and opinions about, FTF versus online focus groups.

Volume and social relational nature of data

In terms of volume of data across focus group modality, online focus group participants offered substantially less information than did those in the FTF groups. Volume of responses in the FTF groups comprised a mean total of 4551.5 participant words per group, relative to a mean of 254.3 participant words within the online groups. Children in the online groups thus communicated at a comparative rate of one word for every 17.8 words expressed within the FTF groups, illuminating (a) fewer words and (b) greater efficiency in word use within online description. Patterned differences included less superfluous and side discussions in online focus groups, and fewer superlatives and repetition in identified concepts. Parallel patterns of topics were observed in both modalities.

Regardless of modality, focus groups demonstrated turn-taking and a comparable proportion of speaker dominance and quiescence among group membership. Postgroup follow-up interviews revealed both FTF and online participants who had not "spoken" extensively in their respective group did not feel disquieted and, rather, reported interest in the experience and, in some cases, personal gain from participation. Perceived personal gain included knowledge gain and support incurred from the group. Participants in both modalities appreciated meeting and interacting with children who shared elements of their experience of living with a chronic condition.

Although on the surface it might appear that FTF participants were more engaged in focus group dialogue, these findings might alternatively convey different use of language and interactivity within asynchronous, text-based focus groups. As an example, more of the discussion within the FTF format was relational and peripheral to the research questions. Periodically throughout the FTF focus groups, participants identified areas of personal interest, experiences, day-to-day occurrences, and nonrelated narrative accounts, whereas such dialogue was largely absent in online groups. For example, topics such as school, friendships, and leisure activities were extensively discussed in FTF focus groups.

In contrast, there appeared to be a more honed and direct topical focus in the online focus groups. Whereas FTF participants resonated with and reportedly benefited from their relational process, online participants did not express concern that they lacked such engagement. Different expectations or embedded elements related to social language thus might have been more or less present within the different modalities.

A total of 283 codes were generated from both methods of focus group approaches; however, only 17% of the codes were generated from the online focus groups versus 83% yielded from FTF groups. Relative to online focus groups, qualitative description and the use of illustration and

example were richer within FTF groups, although at times this discussion was peripheral. Accordingly, emergent themes via online text were more direct and cryptic, sometimes lacking contextual detail; a limitation when considering the aim of richness of response in qualitative research. For instance, children in the FTF groups often engaged in open discussion with one another in which they explored similar and diverse perceptions, including greater breadth and depth of themes (e.g., elaboration and application in various facets of daily life). In the online focus groups, children tended to respond directly to the question posed by the facilitator, and did not as commonly seek peer perspectives or elaboration. Concepts and themes generated in the online groups appeared to be a function of a more targeted and analytical style, with less descriptive, elaborative and social use of language. Themes appeared to be linked with participants' social goals and intents of answering questions rather than engaging with peers within the context of the online group.

Beyond the potential for differential uses and approaches of language and dialogue, it is important to recognize that children in the online groups did not form similarly strong relational connections, relative to peers in the FTF groups. They gathered less understanding about the identity and experience of peers and reportedly found fewer points of connection with peers in the group. Although the online group was efficient in addressing the topic of the focus group, participants conveyed challenge in being unable to "put a face to the name" of others on the forum. This invites consideration of ways to reasonably and safely facilitate group dynamics and relational formation in an online focus group context.

Facilitator probing appeared to emerge as an important online focus group function. For instance, attending and inviting language (e.g., "There are no right or wrong answers") and online-relevant ideas and wording by the facilitator appeared to support and stimulate online chat. In one instance within an online group, the facilitator probed, "Remember there are no right or wrong answers. We just really want to hear what you think, so let's 'chat'." Thus followed an active exchange of online "chat" by participants; however, there were few other instances in which facilitator comments explicitly paralleled online method or discourse. We suspect that this is an area for further integration and exploration within online groups.

Perceived benefits of face-to-face groups

Children in the FTF focus groups generally described satisfaction with this modality, citing reasons such as greater awareness of others in the group, immediacy of communication with peers, and ease in expressing feelings and emotions. As an example, a child indicated greater certainty in seeing the person with whom she was communicating. She stated, "FTF groups are better because it's better to know who you're talking to than just to think you know who you're talking to."

Similarly, several children conveyed their perceptions that relative to the Internet, FTF groups offered more nonverbal cues for participants. A child stated, "In person, the others in the focus group actually see how you feel, and . . . the others in the focus group know how you are [explaining] yourself."

Although some children were comfortable with online dialogue, most preferred to express themselves verbally as opposed to relying on keyboarding responses. As an example, a participant stated, "I prefer face-to-face because you don't have to wait to say something. I can just say it right then and there. I don't have to type anything." Another child responded,

> I prefer face-to-face because . . . there would be time for everyone to answer before another question comes up. On the Internet, it would be like a mountain of questions . . . and they wouldn't really get to respond to your point if you're on a different question than they are.

Several children preferred the FTF format because they felt it provided greater opportunity for social interaction with peers, including the possibility for forging friendships. As an example, an exchange between the following child and interviewer illuminates this desire and appreciation for peer interaction.

> *Interviewer:* "You've said you have better communication when you're in an in-person focus group."
> *Child:* "Yeah. Even though I get wobbly in my stomach…because I don't know this person and I really want to tell them how I feel."
> *Interviewer:* "Do you think having the Internet where someone can't see you… might be easier for you?"
> *Child:* "No, not really. They don't know how my hand expressions are, they don't know how my face is looking and they don't know what I'm thinking at all."
> *Interviewer:* "Is there anything good about the face-to-face focus groups?"
> Child: " . . . Meeting new children I've never seen and I can make new friends with them."

Perceived benefits of online focus groups

In contrast to participant preferences for FTF groups, a few children favored online focus groups reportedly because of a perceived sense of anonymity. These participants described a greater degree of perceived privacy in Internet groups which in turn was thought to promote increased honesty and transparency, as illustrated below.

> I think that it is easier to share feelings online. I think I would either not answer questions or I would give answers that were a little less honest if I were in a face-to-face group. In the online group, everyone is the same and you can't see anyone's reaction to what you say. It is hard for me to get the courage to speak in front of people that I know, so I really don't think I would do well in a focus group full of strangers.

As illustrated in this child's comments, the online format offered interpersonal safety and a greater sense of personal security and, in so doing, increased disclosure and transparency. It appeared that children who were shy or hesitant to be in the spotlight preferred online expression, feeling less intimidated by the group and sharing their views in the presence of others. For children that had difficulty keeping pace with verbal dialogue in FTF groups, asynchronous online groups provided an alternative that constituted a manageable and paced speed for reading, reflecting on, and responding to questions and comments. These participants appreciated the opportunity to slowly review and return to posts, and felt that their responses were more thoughtful and representative of their perspectives.

These findings concur with an emerging linkage to understanding the participant and what they hope to gain from participation, whether it be social interaction, communication of opinions, efficiency in time use, convenience, etc. Goals or intents varied, reflecting participants' motives and personality characteristics (social anxiety, shyness, etc.). These appeared to be linked with viability and participant preferences related to focus group modality.

Summary

These findings reveal benefits and drawbacks of online focus group delivery, as well as considerations in planning and structuring child-based focus groups. Children with varying characteristics identified propensities or interests that rendered both modalities amenable, salient and/or appealing. The online focus group decreased the intrusion of the group upon participants' time and other priorities, and did not require attendance at a structured time and place. This offered important benefits that made focus group participation possible to persons living a substantial distance from their treatment centre. On the other hand, participants in online groups generally appeared less satisfied with the quality of online discussion and relationship formation with peers. They looked for ways to 'put a face to the name' of peers, and peer-to-peer communication was less spontaneous and more focused on the task at hand.

Discussion

In this study we found that in general, participants preferred the real-time communication, immediate responsiveness of peers, and social connection afforded in FTF focus groups. However, findings also suggested that online focus groups foster topic focus and efficiency, and are a viable alternative to FTF groups if indicated by a study's aim, context, and participant circumstances. Accordingly, these findings point to differential benefits, limits, applications, and modifications of group modality and speak to researchers' need for careful consideration of important issues in focus group planning such as purpose, composition, set-up, introduction, facilitation, group mediation, and moderator role.

To offset some of the identified challenges in the online group, relationship formation may merit further consideration and planning to optimize members' connections. Depending on the topic at hand, social exchange and emotive expression might be more or less important for topic exploration and participant experience. In text-based focus groups, emoticons, real-time interaction, and participant introductions or bios might contribute to peer identification and network formation.

The possible exclusion of participants with mobility or verbal challenges from FTF groups, an important consideration, can be overcome by online approaches. In advancing online focus group application, there is a growing compendium of available Internet options, some offering visual options, real-time communication and social connectivity. Approaches can be tailored to accommodate study aims and population demographics to optimize data yield and participant inclusion and experience.

For particular populations or regions, children's inclusion in focus groups might be possible only through the mediation of advanced technology. For instance, in this study grouping children with cystic fibrosis was medically contraindicated. The online focus groups overcame this barrier by offering virtual congregation without risk of exposure to airborne infection. Further, in the case of children living in remote regions where access to FTF focus groups is unlikely due to sparse population distribution, online focus groups offer the possibility for study participation. For children with significant mobility or communication challenges limiting traditional focus group participation, Internet focus groups offer an alternative that provides them with the opportunity to convey commentary about their experiences and opinions. Social connection with others who might share similar realities is also possible through online groups, potentially offering cathartic and educational benefits for these children. Important considerations in moving forward include the fit of a study's research questions with focus group method while accommodating contextual elements such as participant access, mobility, communication ability, and online comfort and

proficiency. In light of the emergence of online focus group capacity and the recognition that FTF focus groups are sometimes challenging or untenable, researchers should be flexible in considering the range of possible online approaches. These findings call for prudence in considering aims and population in method design. Such consideration includes questions about population characteristics, potential data yield, type of discourse sought, and the need for real-time responsiveness and social engagement opportunities for participants. Creativity in overcoming barriers is suggested, such as considering online accommodations in overcoming barriers such as the inclusion of online biographies or the use of photography, emoticons, or artwork downloaded by participants.

Application in research with children

Focus group success in part reflects the provision of an environment that is inviting and socially engaging within focus groups. Children need to feel comfortable, valued, and respected in speaking their minds (Charlesworth & Rodwell, 1997; Fox et al., 2007; Gibson, 2007; Kennedy et al., 2001; Kitzinger, 1995; Montoya-Weiss et al., 1998; Morgan et al., 2002). Facilitating effective groups with children reflects attentiveness to child-based considerations such as developmental level, maturity, and experience. Failure to attend to and respect children's unique social location, skills, cognitive and emotional functioning, and needs can result in research methods that are ill-suited and suboptimal in data yield and participant experience (Charlesworth & Rodwell, 1997; Heary & Hennessy, 2002). Focus group design must take into account health-related considerations affecting participation (Heary & Hennessey, 2002) as well as personal factors such as restlessness, distractibility, fatigue, communication needs, comfort, and engagement (Gibson, 2007; Heary & Hennessy, 2002; Kennedy et al., 2001; Morgan et al., 2002). Accordingly, demographics, personality attributes, social skills, and computer affinity and interest are examples of factors that might influence best data collection approach. Further, in online contexts, technical and website considerations (e.g., quality of connection, format, site appearance, etc.) should be matched with specific research goals and participant characteristics (Fox et al., 2007; Hill, 2006; Kenny, 2005; Montoya-Weiss et al., 1998; Oringderff, 2004).

Limitations

The selected sampling strategy of assigning participants to one of the two focus group modalities was based on participant availability and geographic spread. Although this process risks systematic bias, it was pragmatic with the constraints of the study and we ultimately obtained a similar demographic composition across FTF and online groups. Accordingly, we believe that the composition of the FTF and online groups were not substantially different. Notwithstanding this persuasion, we recognize that findings are exploratory and speak to transferability rather than generalizability.

Another caveat in considering findings concerns the topic being discussed within the focus groups. We recognize that the topic of considering the advantages and disadvantages of varied data collection approaches might be of relatively little interest to children. Although this topic reflected the aims and focus of our study (and it reflected a common and recently encountered experience among all the participants), we recommend further examination of online processes and patterns, using topics of greater interest and salience from the perspective of participants. We speculate that a more interesting topic might yield more involvement and animation in online discussion as experience suggests that children commonly engage in and enjoy online environments of interest.

Conclusion

The existing literature and the findings from this study indicate that both FTF and online focus groups are feasible options for collecting data related to children's perceptions and opinions (Darbyshire et al., 2005; Heary & Hennessy, 2002; Hill, 2006; Kennedy et al., 2001). Developmentally, many children enjoy social and peer-based interaction; hence, focus groups offer value in pediatric research by virtue of inherent social exchange and dialogical components. Online focus groups appear to mimic features of the FTF group dynamic. However, they also embody diverse elements including relational barriers, on the one hand, and perceived anonymity on the other, which ultimately may prove beneficial in easing concerns such as stigma or children feeling singled out in a group setting.

Drawing on the work of Lehoux, Poland, and Daudelin (2006), the dynamic socio-cultural context is an important construct in focus group formation. Matching focus group modality with research aim, participant factors and context emerges as a critical process in discerning the relative appropriateness of method such as FTF or online focus group administration. Toward this aim, this study offers considerations with particular applicability for children with chronic health conditions.

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