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Combining individual interviews and focus groups to enhance data richness

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Abstract

Title. Combining individual interviews and focus groups to enhance data richness.

Aim. This paper is a presentation of the critical reflection on the types of findings obtained from the combination of individual interviews and focus groups, and how such triangulation contributes to knowledge production and synthesis.

Background. Increasingly, qualitative method triangulation is advocated as a strategy to achieve more comprehensive understandings of phenomena. Although ontological and epistemological issues pertaining to triangulation are a topic of debate, more practical discussions are needed on its potential contributions, such as enhanced data richness and depth of inquiry.

Method. Data gathered through individual interviews and focus groups from a study on patterns of cancer information-seeking behaviour are used to exemplify the added-value but also the challenges of relying on methods combination.

Findings. The integration of focus group and individual interview data made three main contributions: a productive iterative process whereby an initial model of the phenomenon guided the exploration of individual accounts and successive individual data further enriched the conceptualisation of the phenomenon; identification of the individual and contextual circumstances surrounding the phenomenon, which added to the interpretation of the structure of the phenomenon; and convergence of the central characteristics of the phenomenon across focus groups and individual interviews, which enhanced trustworthiness of findings.

Conclusion. Although the use of triangulation is promising, more work is needed to identify the added-value or various outcomes pertaining to method combination and data integration.

Keywords: cancer information-seeking behaviour, focus groups, grounded theory, individual interviews, qualitative approaches, research methods

Introduction

The purpose of this paper is to discuss the implications of combining qualitative methods within a single study. In the nursing literature, the combination of multiple methods to study the same phenomenon is most often designated as triangulation (Loiselle *et al.* 2007). Although, the triangulation of qualitative methods continues to be advocated as a strategy to increase understanding of a phenomenon, little attention is given to the types of data each method provides

and the impact of subsequent data combination on knowledge generation. Failure to recognize the implications of combining methods can lead to research resource misuse and methodological chaos (Morse 1999).

Recently we conducted individual interviews and focus groups to explore people's patterns of information-seeking behaviour (ISB) in cancer (Lambert & Loiselle 2005). During the initial analysis, we began to reflect critically on the use of these methods separately and in combination. In this paper we present the outcomes of this reflexive analysis to further stimulate discourse on the use of these methods and their contribution to knowledge acquisition. The discussion moves beyond the nature of knowledge generated to include pragmatic issues of method triangulation. It is based on an epistemological position that underscores the importance of various types of knowledge to obtain a comprehensive understanding of complex nursing phenomena.

Background

Individual interviews as a data collection method

Individual interviews are the most widely-used data collection strategy in qualitative research (Sandelowski 2002, Nunkoosing 2005). Researchers typically choose individual interviews to collect detailed accounts of participants' thoughts, attitudes, beliefs, and knowledge pertaining to a given phenomenon (Fielding 1994, Speziale & Carpenter 2003, Loiselle *et al.* 2007). This approach assumes that if questions are formulated correctly, participants' expressions of their experiences will reflect their reality (Morse 2000, Sandelowski 2002, Macdonald 2006). There is also the presupposition that participants will be able to formulate answers to the questions (Macdonald 2006).

Although assumed to be a 'generic' data collection method, individual interviews come in a variety of forms (e.g. structured, semi-structured) (Bernard 2002). Each interviewing approach assumes a philosophical orientation and may be more or less appropriate according to context and the qualitative methodology retained (Fielding 1994). For instance, grounded theory's underlying philosophical assumption (i.e. symbolic interactionism) implies reliance on semi-structured rather than structured interviews (Fielding 1994, Duffy *et al.* 2004). Ethnographic studies, on the other hand, use informal interviews (Macdonald 2006).

Although individual interviews contribute in-depth data, the assumption that words are accurate indicators of participants' inner experiences may be problematic. Interviewees may choose to withhold certain descriptions–or alternatively, embellish them–particularly if the 'truth' is inconsistent with their preferred self-image or if they wish to impress the interviewer (Fielding 1994). Such considerations raise the issue of whether interviewee-interviewer characteristics (e.g. demographics) should, at times, be matched (Fielding 1994). Also, although interviewers may wish to adopt a rather neutral role, they may inadvertently demonstrate a preference for a particular perspective and, in the process, bias the findings.

Focus groups as a data collection method

Focus groups are used by researchers worldwide to explore a range of phenomena (e.g. Brajtman 2005, Oluwatosin 2005, van Teijlingen & Pitchforth 2006). The primary goal of this method is to use *interaction data* resulting from discussion among participants (e.g. questioning one another, commenting on each others' experiences) to increase the depth of the inquiry and unveil aspects of the phenomenon assumed to be otherwise less accessible (Freeman *et al.* 2001, van Eik & Baum 2003, Duggleby 2005). Group interactions may accentuate members' similarities and differences and give rich information about the range of perspectives and experiences. However, regrettably, more often they are used as an 'inexpensive' substitute for individual interviews (Hollander 2004, Barbour 2005), and group transcripts are analysed for the content of 'individual' discussion (Hydén & Bütow 2003). Increased attention to interaction analysis and the unique insights obtained about the phenomenon in this process are critical to reach the full potential of this method (Freeman 2006).

Focus group data are the product of context-dependent group interactions (Hollander 2004, Duggleby 2005, Lehoux *et al.* 2006). Hollander (2004) discusses four types of social contexts that may be created within a group and influence members' interactions (type and amount): (1) associational context (i.e. a common characteristic that brings the participants together), (2) status context (i.e. positions of participants in local or societal status hierarchies), (3) conversational context (i.e. flow of the discussion and types of discussion within the group), and (4) relational context (i.e. degree of prior acquaintance with participants). According to the contexts created within a particular group, participants may or may not disclose certain information (Kidd & Parshall 2000, Hollander 2004). If focus groups are seen as a 'social space' where participants construct their experiences based on how the discussion evolves and how participants interact, then an additional layer of data may be obtained (Lehoux *et al.* 2006). Stevens (1996) suggests a series of analytical questions to identify the nature of group interactions. These include: 'How closely did the group

adhere to the issues presented for discussion? Why, how, and when were related issues brought up? What statements seemed to evoke conflict?' (p. 172). Similarly, Lehoux *et al.* (2006) propose an analytical template to understand group interactions and ask, for instance: To what extent do the interactions among participants represent broader social contexts (e.g. age, gender)? How do dominant participants affect the contribution of other participants? How do participants respond to passive participants? Also, Hydén and Bütow (2003) suggest conducting an interaction analysis by examining whether an individual is interacting as a member of the group or as an individual in a group context and how these interactions may shift throughout the session. Therefore, rather than labelling certain interactions among participants as group consensus, a finer-grained analysis might reveal important aspects of the phenomenon of interest (Stevens 1996, Lehoux *et al.* 2006).

Integrating focus group and individual interview data

Although attention is increasingly placed on the combination of quantitative and qualitative methods, fewer authors (Barbour 1998, Morse 1999) have explicitly addressed the implications of combining qualitative data collection methods. The disproportionate number of methodological papers addressing qualitative–quantitative triangulation vs. qualitative–qualitative triangulation may be due to a misperception that combining methods within the same research paradigm is less paradoxical than integrating methods across paradigms (Barbour 1998). However, researchers also need to be explicit about the reasons for combining qualitative methods, as these can involve potentially divergent epistemological assumptions (Barbour 1998) and an *ad hoc* combination of methods may threaten the trustworthiness of findings (Morse 2003).

A search of the CINAHL database (1984–2007) using the keywords 'focus group' and 'individual interview' reveals that many researchers favour the combination of these methods. Although focus groups and individual interviews are independent data collection methods; their combination can be advantageous to researchers as complementary views of the phenomenon may be generated. A reading of nursing studies reveals three broad rationales for this combination: (1) pragmatic reasons, (2) the need to compare and contrast participants' perspectives (parallel use), and (3) striving toward data completeness and/or confirmation (integrated use).

Some researchers combine both methods for practical or pragmatic considerations. For instance, individual interviews may be offered to participants unable or unwilling to attend a focus group (e.g. Rees *et al.* 2003, Taylor 2005). This type of combination may lead to fewer refusals or withdrawals, as individuals can choose the method that is most convenient for them. However, each method's particular contribution to the understanding of the phenomenon is often not explicitly analysed – similar, dissimilar or complementary data are not taken into account. Also, consideration should be given to whether individuals participating in one type of interview are any different in relation to the phenomenon of interest than those participating in the other method.

Others use focus groups and individual interviews in parallel to explore the phenomenon of interest. Each method is used with a different group of participants, and the data from one method do not influence the implementation of the other. For example, if the aim of a study is to evaluate the process and outcomes of a health education programme, focus groups may be used with nurses who implemented the programme and programme participants may be interviewed individually (e.g. Leung *et al.* 2005). Although data source triangulation may provide different views about the same phenomenon and contribute to the credibility of the findings (Loiselle *et al.* 2007), the rationale for selecting a particular method for a sub-group of participants is often not explicit. For instance, why is a sub-group of participants interviewed individually and not invited to take part in a focus group (or vice versa)? In addition, it may be challenging to determine if disparate views are expressed because different sources of data are used or because different methods are implemented.

Individual interviews and focus groups also may be combined for the purposes of data completeness and/or confirmation (Adami 2005, Halcomb & Andrew 2005). When seeking data completeness, it is assumed that each method reveals different parts of the phenomenon of interest (complementary views) and contributes to a more comprehensive understanding (expanding the breadth and/or depth of the findings). For example, individual interviews may be used to explore personal experiences, whereas focus groups may be used to examine opinions and beliefs about the phenomenon (Molzahn *et al.* 2005). Sandelowski (1995) argues that triangulation with the intention of completeness in fact defies the original metaphor of a triangle. The term 'triangulation' should be reserved for when methods are combined for the purpose of confirmation. Rather, the metaphor of a 'crystal' better represents the integration of a phenomenon's multiple dimensions. A crystal is three-dimensional, changes and has multiple facets and angles, whereas a triangle is two-dimensional, fixed and rigid (Sandelowski 1995, Tobin & Begley 2004).

When authors combine individual interviews and focus groups for confirmation, the data obtained by one method are anticipated to corroborate those acquired with the other.

Some authors first obtain individual interview data and then carry out focus groups to confirm the findings (e.g. Plack 2006). Alternatively, others initially implement focus groups and later verify these findings with individual interview data (e.g. Dick & Frazier 2006). However, combining methods for confirmatory purposes may inadvertently lead to an erroneous hierarchy of evidence, where one data collection method is judged to yield more 'accurate' findings than the other (Barbour 1998). Also, combination for confirmation assumes that there is a 'reality on which it is possible to converge' (Sandelowski 1995, p. 572), an assumption that is typically challenged within the qualitative paradigm.

Overall, when integrating focus group and individual interview data, the trustworthiness of the findings may be threatened if each method's particular methodological underpinnings are overlooked and the data sets are assumed to be equivalent (Barbour 1998, Tobin & Begley 2004). To increase the rigour of method combination, consideration should be given to the correspondence of the study aims with the data collection methods, the rationale underpinning the combination of methods, and the epistemological assumptions of each method and their compatibility. Also, authors need to specify the relative weight of each data set (e.g. hierarchical, equal value) and identify the particular insights into the phenomenon obtained from each method and the added-value of the combination.

The study

Aim

We undertook a grounded theory study (Lambert & Loiselle 2005) to explore the ISB patterns of individuals diagnosed with breast, prostate or colorectal cancer.

Method

Consistent with grounded theory methodology, we conducted semi-structured interviews and focus groups. Participants were recruited from two ambulatory oncology clinics of a university-affiliated public teaching hospital in Montreal, Canada. All individual interviews were conducted between November, 2005 and September, 2007 and lasted from 20 minutes to 2·5 hours. Individual interviews and focus groups ($n = 31$) were not conducted in a predetermined sequence. That is some interviews were conducted prior to focus groups, others took place iteratively with focus groups, and approximately half of the interviews were conducted after the focus groups. Eight focus groups were conducted from January to June 2006: four with women diagnosed with breast cancer, two with men diagnosed with prostate cancer, one with men diagnosed with colorectal cancer, and one with men and women diagnosed with colorectal cancer. A moderator (the first author) and a co-moderator were present for each focus group. The focus groups lasted for 1·5–2·5 hours. Informed by our previous work on ISB (Loiselle 1995, Loiselle *et al.* 2006, Lambert & Loiselle 2007), a semi-structured interview guide was developed for use with both focus groups and individual interviews. The questions explored different aspects of ISB, including the motivation to seek cancer-related information and the type of information sought. All interviews were tape-recorded with participants' permission and transcribed verbatim. Ethics approval was obtained from the university and hospital ethics review boards. All participants in the study signed an informed consent.

Methodological observations

Initially, we combined individual interviews and focus groups for pragmatic reasons. Simply, participants who refused or were unable to participate in a focus group were invited to take part in individual interviews. However, as we proceeded with data analysis we noted that different types of data were collected according to the method, and their combination contributed to a more nuanced understanding of the phenomenon than initially anticipated. The focus then became to investigate how the combination of methods enhances our understanding of ISB patterns. In this particular context, data triangulation led to: (1) a productive iterative process whereby an initial model of the phenomenon guided the exploration of individual accounts and successive individual data further enriched the conceptualisation of the phenomenon, (2) identification of the individual and contextual circumstances surrounding the phenomenon, which added to the interpretation of the structure of the phenomenon, and (3) convergence of the central characteristics of the phenomenon across focus groups and individual interviews, which enhanced the trustworthiness of findings.

Iterative process guiding the exploration of the phenomenon

When comparing the transcripts from the focus groups and individual interviews, two levels of understandings of the phenomenon were noted. The focus group data reflected a general understanding of the range of ISB patterns and contributed to developing an initial model of the phenomenon. This model was subsequently used to guide the exploration of the phenomena as the study progressed. The individual interviews supplied detailed descriptions of how

individuals proceeded through a particular ISB pattern, and further enriched the initial conceptualisation of the phenomenon. Thus, the separate data sets were mutually informative.

At the outset of the study, we assumed that participants would describe variability in information-seeking. However, we did not know how many ISB patterns would emerge. The second or third focus group led to the formulation of a general model pertaining to ISB pattern and substantiated the claim that 'differential ISB patterns' were present within this group. In fact, this initial model contained most of the patterns that emerged throughout the study. Many follow-up individual interviews were required before a similar range of ISB patterns was identified. During individual interviews, the interviewer used this model as a guide by considering whether and how an individual ISB pattern was embedded in the overall model or context of 'differential ISB patterns'. In this way, individual patterns were not explored in isolation.

Focus group findings helped to determine the most pertinent questions to be further explored during an individual interview. For instance, choosing the 'best' treatment was identified in the first few focus groups as a key motivation to pursue information-seeking intensely. According to the pattern identified in an individual interview, this motivation was more or less explored – the interviewer pursued in-depth exploration of this motivation only if pertinent for the pattern described. By concentrating only on the relevant aspects of a pattern, the interviewer optimized the time spent in the interviews. The data from individuals were found to be particularly important when fine-tuning the descriptions of a pattern. They allowed us to zero-in on a particular ISB pattern and further differentiate it from others. From the general model of ISB patterns, we were able to move back and forth between individual and group data, putting forward hypotheses about the phenomenon that were further explored through either individual or group interactions.

Interactions among focus group participants were key in developing the initial model of the phenomenon. As the focus group discussions progressed, participants were more likely to associate with members of the group sharing similar ISB, while differentiating from those who described disparate approaches to information-seeking. Also, we found that some types of interactions were more likely to occur among individuals sharing the same approach to information-seeking, while other interactions occurred among individuals thought to be different. Thus, considering the specific types of interactions among participants served to further delineate ISB patterns. The types of interactions identified across the focus groups included: validating or challenging interactions (e.g. argumentation, agreement), clarifying interactions (e.g. asking others to explain their opinion), criticizing interactions (e.g. lack of informational support), contrasting interactions (e.g. comparing experiences with cancer information), supporting interactions (e.g. commendation), venting interactions (e.g. expression of frustration), and information exchanging interactions (e.g. seeking/giving advice). Figure 1 gives an example of a challenging/clarifying interaction among women with breast cancer and underscores the importance of interaction analysis. Here, participant FG7-03 was most pro-active in seeking information about cancer. Both FG7-01 and FG7-02 showed a middle-ground approach to information-seeking, whereas FG7-04 sought information the least in comparison to the other group members.

Context as adding further structure to the phenomenon

Combining individual interview and focus group data also contributes to an enhanced understanding of the structure of the phenomenon. Structure is defined within the context of grounded theory analysis as 'the circumstances in which problems, issues, happenings, or events pertaining to a phenomenon are situated or arise' (Strauss & Corbin 1998, p. 127). Although within both data sets similar antecedents to a pattern of ISB were identified, the extent to which these factors were delineated or interpreted by participants differed. An individual account typically offered a concrete perspective or narration of the antecedents that motivated a pattern – participants clearly described how they proceeded through a set of circumstances contributing to information-seeking. Although during focus groups similar antecedents were mentioned, these were not necessarily described with the same level of detail. Rather, the animated discussions among group members exposed the contextual dimension of antecedents and provided a wider-angled lens to interpret individual-level data. For example, across methods, treatment-related decision-making was identified as an important antecedent to seeking cancer information. The analysis of individual data showed how participants might have proceeded through the decision-making process (procedural description) and how this was related to cancer information-seeking. Focus group discussions did not emphasize the actual process of decision-making, but rather broad contextual factors that might have been involved (e.g. physicians' preferences for patient involvement). Figure 2 provides a concrete example of the discussion that occurred in the focus groups about decision-making. Here, participant FG6-03 sought intense information as the oncologist did not give clear indications as to the best treatment, whereas participant FG6-02 did not experience the same context of care and was identified as describing an intermediary

FG7-02: There are a lot of people giving you advice as well and people trying to compare themselves to you. And saying why are you getting chemo […] how long is your radiation treatment is it 30 seconds, is it 45, and I thought, I don't know how long is my treatment nobody told me how long it was. I only know that I'm going through it, like I'm not you know that precise. I assume the doctor knows what they are doing

FG7-03: That's quite interesting because I asked how long the [everybody laughing] and I know that I got 43 seconds from one angle and 44 seconds from another I don't know if it's…

FG7-02: (cuts) What's the difference?

FG7-03: I wanted to know it's a total of one minute and a half and it's a total of 4500 Grassman, They call it Grassman p. 9-10 […] It's just different coping strategies.

FG7-01: That's exactly it

FG7-03: What works for you …

FG7-01: That's right and that's amazing because like you really did what my daughter did [daughter is a medical student], you know. I can't imagine having to do that because if she wasn't there and I would have probably done what you did. P. 11 […]

FG7-02: I know a friend she had breast cancer and she's the one that called me and said how long is your radiation treatment? I don't know maybe a minute in all, I don't know [...] well you better ask him and you better find out. And I said Why? What is it going to change, well you had to know. To me it doesn't mean anything you know, maybe to my doctors it means something but to me whether it's 30 seconds or…

FG7-04: (Cuts) If they tell 32 would you argue with 35 or 30 that's my point was [02: Yeah! Yeah!] What's the use who am I pretending to be here. Questioning their medication, what they are giving me, I had to ask certain questions, why are you giving me this to block my hormone instead of this to eliminate them, you know. Things like that P.18

[FG7 = Focus group #7 with women with breast cancer n=4]

Figure 1 Example of a focus group interaction emphasizing different approaches to information-seeking about cancer.

approach to information-seeking. FG6-03 did not give an actual description of her decision-making process, however much information was obtained about the context of care that 'obliged' her to participate in decision-making and why these factors were not as relevant for FG6-02. Overall, this interaction further contributed to a contextualized description of the process of decision-making.

Characteristics of the phenomenon further delineated across focus groups and individual accounts

Analysis of the focus group data led to the identification of a model for the phenomenon, which was substantiated by individual interview data. However, as the essential characteristics of the various ISB patterns were compared across data sets, some discrepancies arose. This instigated further analysis of the process to elucidate the nature of each ISB pattern. Particularly, certain characteristics were prominently identified from the individual interview data and not mentioned or elaborated upon by participants of the focus groups who were thought to share the same pattern. The focus group findings seemingly provided a 'partial' picture of each pattern when compared to what appeared to be the pattern's equivalent description obtained from individual interviews. It was unclear how these discrepancies should be interpreted and whether similar patterns were in fact captured by each method. Such considerations were particularly important when determining how many patterns were described by the participants and whether certain descriptions should be collapsed into the same pattern.

Apparent variations in meaning were better understood when we further attended to the process by which the patterns' descriptions emerged according to each method. The individual interview context allowed most questions included in the interview guide to be systematically explored. That is, each dimension of the concept that the interviewer hoped to address was explored. Obviously, focus groups did not allow the exploration of all questions included in the interview guide. Rather, focus group participants spontaneously discussed dimensions of the concepts relevant to the group conversation and according to the specific type of ISB patterns discussed; the group progressively co-constructed the various components and meaning of the phenomenon. Each focus group elucidated particular characteristics of a pattern

FG6-03: I guess I had to become involve in the decision making process I guess a sense that…

FG6-02: Nothing was clear

FG6-03: I had a very small tumour but it was acting aggressively so I became atypical, what was interesting is that they didn't know how to treat me, because I didn't fit into a sort of very neat little package because they don't know what to do with me […] So what do we do? P. 7 […] Nothing was clear so therefore I felt that I just couldn't sit back and wait for somebody to say do this and this and this way. When I sensed there wasn't you know there wasn't agreement […] so you're right it's that whole notion of the…

FG6-02: Unknown

FG6-03: The unknown and then who is controlling this and how much input. Do you know what I am saying? You just put everything in the hands of the doctors. You sort of need to work with them almost like a partnership it's sort of like which is kind different when usually you go to the doctor if your arm is broken. You don't even think twice about just you arm is broken there going to fix it they're going to set it right! There is probably not many options and all of a sudden with cancer you start to realize there is not one… You know it depends on who you are, your background your this, your that, there is just…

FG6-02: That's what I say I was lucky I had that…I had someone in charge right away because they knew what it was in my case. They relieved some of the feel because the doctor X took charged, the doctor X also then I said Oh! I'm in good hands. I thought both the doctors were terrific so I didn't have that unknown, I knew as much because they could tell me the rest was just things I wanted to know for myself. The unknown would have killed me.

[FG6 = Focus group #6 with women with breast cancer n=3]

Figure 2 Example of a discussion among focus group members emphasizing the contextual dimension of antecedents to information-seeking about cancer.

and discussed 'a' version of the phenomenon as relevant in that group context. As a result, a characteristic of a pattern might or might not have been discussed by all members of a group or might not even have been raised by a particular group. Therefore, it was not optimal to initially consider participants' group conversations separately – assuming that interview questions had been explored – and compare these with individual interview data. However, when all focus group data were taken together and summarized, we did obtain a more 'complete' picture of each pattern as discussed across groups. When this alternate approach to analysis was adopted, most pattern characteristics were corroborated across methods and data convergence became appropriate as a mean to increase the trustworthiness of findings.

Discussion

The main challenge addressed in this paper pertains to the optimal integration of individual interview and focus group data. In the examples given, side-by-side and non-hierarchical comparisons of the data sets revealed overlapping and rich complementary findings that contributed to a coherent and more nuanced understanding of ISB patterns.

Morse (1999, 2002) emphasizes that the qualitative 'tool box' offers multiple methods to choose from to enhance the exploration of complex phenomenon, and she advocates for the competent use of multiple qualitative methods within a single study and within a programme of research. Researchers are encouraged to use multiple qualitative methods to enhance the analysis of a phenomenon and to broaden its conceptualization (Morse 1999, 2002). However, the unskilful mixing and matching of methods may threaten the trustworthiness of findings (Morse 1999, Tobin & Begley 2004, Rolfe 2006). Although authors may contend that multiple methods were used to obtain a more in-depth understanding of the phenomenon, the essence of that enhanced understanding is rarely explicitly presented. Hence, the practical discussion about the added-value of the integration of multiple qualitative methods presented in this paper is timely.

Even if few papers explicitly elaborate on the combination of qualitative methods, there are many papers in the nursing literature discussing the epistemological and methodological benefits and potential drawbacks of triangulation (e.g. Breitmayer *et al.* 1993, Sandelowski 1995, Tobin & Begley 2004). These are useful to guide a reflection on approaches to method combination and to avoid common methodological mistakes. For instance, we avoided claiming that one method might be better at uncovering the essence of the phenomenon, that convergent findings supported the validity of methods used, or that the 'strengths' of one method offset the weaknesses of the other (Massey 1999). Although we do not claim that triangulation may be used as a form of validity,

What is already known about this topic

- Whereas individual interviews are often the undisputed 'gold standard' of qualitative data collection methods, focus groups are increasingly favoured by nurse researchers to explore participants' experiences in an interactive format.
- Triangulation of qualitative methods is a research strategy generally anticipated to contribute to a more thorough exploration of complex phenomena, but limited consideration has been given to the process, function, and outcome of such activities.

What this paper adds

- Main considerations when integrating individual interview and focus group data include the purpose of data integration, the types of data collected through each method, and the insights into the phenomenon obtained across data sets.
- Data integration also involves moving back and forth between the data sets to discover data convergence, divergence and complementarity.
- During this process, to promote methodological integrity, recognition of the epistemological underpinnings of method triangulation is key (e.g. convergence and implications for the validity of methods).
- When performed rigorously, the integration of individual interview and focus group data is a productive strategy that leads to an enhanced description of the phenomenon's structure and its essential characteristics.

we acknowledge that the data may be similar, different or complementary, and that the combination of methods is useful to understand the different representations of the phenomenon. Findings from this study were integrated into a workable model to account for diverse ISB patterns, such that similar or complementary findings increased our level of confidence in some of the concepts and areas of disagreement were further interpreted.

In research environments where resources are increasingly scarce, researchers need to be explicit about the added benefits of investing resources in the use of multiple data collection methods within a single study. In our study, the integration of data sets led to an iterative process of data collection and analysis and enhanced understanding of the structure and essential characteristics of the phenomenon within the context of cancer. Moezzi (2007) also found that focus groups were particularly useful at cataloguing the range of participants' experiences and that individual interviews contributed to a detailing of these experiences. In addition, we note that for this type of combination to be fruitful, attention must be given to the nature and context of focus groups that are more productive (e.g. that facilitate and enhance interactions among participants and that create a context encouraging the sharing of similar or differing views). Moreover, individual interviews should build on the information gathered through focus groups. Hall and Rist (1999) did not find their focus groups to be particularly useful in answering the research questions and, therefore, additional qualitative methods were used. However, the authors acknowledged some limitations in the implementation of the focus groups (e.g. type of participants, timing) which may have contributed to their unproductiveness.

Sands and Roer-Strier (2006) identify five types of data obtained in their study through data triangulation (i.e. different data sources): (1) same story, same meaning (when similar interpretations of the phenomenon are provided); (2) same story, different interpretations (when similar answer to questions are provided but a different meaning to the phenomenon is ascribed); (3) missing pieces (when information is provided by one participant but not another); (4) unique information (when some information is only reported by one participant); and (5) illuminating (when data are different but not contradictory). Although the focus of Sands and Roer-Strier (2006) is on data triangulation and not on method triangulation, we have documented similar findings. For instance, our discussion about the different levels of interpretations of the phenomenon (individual vs. contextual) bears some resemblance to what Sands and Roer-Strier (2006) describe as 'same story, different interpretations' or 'illuminating'. In addition, Pamphilon (1999) contributes The Zoom Model, which can be applied to the combination of methods discussed in this paper. The Zoom Model underscores that three levels of meaning may be found in participants' narrations of a phenomenon: macro-zoom (corresponding to the socio-historical dimension, collective meanings), meso-zoom (reflecting personal level of values), and micro-zoom (which examines emotions and characteristics of voice). The combination of these three levels of meaning reveals the complexity of the phenomenon better than any one level of meaning alone (Pamphilon 1999). These types of data were also identified in our study across methods. For instance, the focus groups were particularly useful at uncovering macro-level data. In combination with the findings presented in this paper, the findings of Sands and Roer-Strier (2006) and the model by Pamphilon (1999) are helpful tools to guide the identification and categorization of the different data obtained through each method and their combination.

Vandermause (2007) raises challenges, comparable to those identified in this paper, to consider when using multiple methods, including identification of a method fitting the question and the intended study outcome(s) and the combination of methods while maintaining methodological rigour. Furthermore, Vandermause (2007) emphasizes that the complexity of healthcare phenomena calls for innovative combinations of qualitative methods that include multidisciplinary – different methods implemented by researchers from several disciplines – and multi-media research – integrating, for instance, poetic interpretation with theatrical or photographic interpretation. This type of research raises additional challenges, including the coordination of a process that permits different researchers to work together effectively and to arrive at a consensus for data interpretation (Vandermause 2007). Hence, methodological discussion providing guidelines for the rigorous combination of qualitative methods is needed to further address such complex, yet increasingly common, research designs.

Conclusion

Future discussion about method triangulation may be most productive when efforts are directed towards the identification of the various types of knowledge obtained (Foss & Ellefsen 2002, Jones & Bugge 2006). Future studies could benefit from the development of a matrix of findings that would identify the data obtained by each method across themes and categories. The visual depiction of a matrix can assist researchers in systematically comparing the data sets, thereby enhancing the identification of the various levels of data and their mutual contribution to an enhanced understanding of the phenomenon (Averill 2002, Farmer *et al.* 2006).

Author contributions

SL and CL were responsible for the study conception and design. SL and CL were responsible for the drafting of the manuscript. SL performed the data collection and data analysis. SL and CL obtained funding and CL also provided administrative support. SL and CL revised the paper. CL supervised the study.

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References

Adami M.F. (2005) The use of triangulation for completeness purposes. *Nurse Researcher* **12**(4), 19–29.

Averill J.B. (2002) Matrix analysis as a complementary analytic strategy in qualitative inquiry. *Qualitative Health Research* **12**(6), 855–866.

Barbour R.S. (1998) Mixing qualitative methods: quality assurance or qualitative quagmire? *Qualitative Health Research* **8**(3), 352–361.

Barbour R.S. (2005) Making sense of focus groups. *Medical Education* **39**, 742–750.

Bernard H.R. (2002) Interviewing: unstructured and semistructured. In *Research Methods in Anthropology* (Bernard H.R., ed.), Altima Press, Walnut Creek, CA, pp. 203–209.

Brajtman S. (2005) Helping the family through the experience of terminal restlessness. *Journal of Hospice and Palliative Nursing* **7**(2), 73–81.

Breitmayer B.J., Ayres L. & Knafl K.A. (1993) Triangulation in qualitative research: evaluation of completeness and confirmation purposes. *Image: Journal of Nursing Scholarship* **5**(3), 237–243.

Dick K. & Frazier S.C. (2006) An exploration of nurse practitioner care to homebound frail elders. *Journal of the American Academy of Nurse Practitioner* **18**, 325–334.

Duffy K., Ferguson C. & Watson H. (2004) Data collection in grounded theory-Some practical issues. *Nurse Researcher* **11**(4), 67–78.

Duggleby W. (2005) What about focus group interaction data? *Qualitative Health Research* **15**(6), 832–840.

van Eik H. & Baum F. (2003) Evaluating health system change–using focus groups and a developing discussion paper to compile the "Voices from the field". *Qualitative Health Research* **13**(2), 281–286.

Farmer T., Robinson K., Elliott S.J. & Eyles J. (2006) Developing and implementing a triangulation protocol for qualitative health research. *Qualitative Health Research* **16**(3), 377–394.

Fielding N. (1994) Varieties of research interviews. *Nurse Researcher* **1**(3), 4–13.

Foss C. & Ellefsen B. (2002) The value of combining qualitative and quantitative approaches in nursing research by means of method triangulation. *Journal of Advanced Nursing* **40**(2), 242–248.

Freeman T. (2006) 'Best practice' in focus group research: making sense of different views. *Journal of Advanced Nursing* **56**(5), 491–497.

Freeman K., O'Dell C. & Meola C. (2001) Focus group methodology for patients, parents, and siblings. *Journal of Pediatric Oncology Nursing* **18**(6), 276–286.

Halcomb E.J. & Andrew S. (2005) Triangulation as a method for contemporary nursing research. *Nurse Researcher* **13**(2), 71–82.

Hall A.L. & Rist R.C. (1999) Integrating multiple qualitative research methods (or avoiding the precariousness of a one-legged stool). *Psychology & Marketing* **16**(4), 291–304.

Hollander J.A. (2004) The social contexts of focus groups. *Journal of Contemporary Ethnography* **33**(5), 602–637.

Hydén L.C. & Bütow P.H. (2003) Who's talking: drawing conclusions from focus groups-some methodological considerations. *Social Research Methodology* **6**(4), 305–321.

Jones A. & Bugge C. (2006) Improving understanding and rigour through triangulation: an exemplar based on patient participation in interaction. *Journal of Advanced Nursing* **55**(5), 612–621.

Kidd P.S. & Parshall M.B. (2000) Getting the focus and the group: enhancing analytical rigor in focus group research. *Qualitative Health Research* **10**(3), 293–308.

Lambert S.D. & Loiselle C.G. (2005) Refinement of a questionnaire to assess individuals' patterns of health information-seeking behaviour. *Canadian Oncology Nursing Journal* **15**(4), 262–263.

Lambert S.D. & Loiselle C.G. (2007). Health information-seeking behavior: a concept analysis. *Qualitative Health Research* **17**(8), 1006–1019.

Lehoux P., Blake P. & Daudelin G. (2006) Focus group research and "the patient's view". *Social Science and Medicine* **63**, 2091–2104.

Leung C.M., Ho G.K.H., Foong M., Ho C.F., Lee P.K.K. & Mak L.S.P. (2005) Small-group hypertension health education programme: a process and outcome evaluation. *Journal of Advanced Nursing* **52**(6), 631–639.

Loiselle C.G. (1995). *Self-Evaluation and Health Information-Seeking: A Study of Self-Assessment and Self-Protection Motives*. Unpublished Doctoral Dissertation, University of Wisconsin, Madison.

Loiselle C.G., Lambert S.D. & Cooke A. (2006) The searching, processing, and sharing of breast cancer information by women diagnosed with the illness. *Canadian Journal of Nursing Research* **38**(3), 82–104.

Loiselle C.G., Profetto-McGrath J., Polit D.F. & Beck C. (2007) *Polit & Beck Canadian Essentials of Nursing Research*, 2nd edn. Lippincot Williams & Wilkins, Philadelphia, PA.

Macdonald M.E. (2006) Qualitative interviewing: a few whats, hows and whys. *Paper presented at a Videoconference Meeting of the CIHR Strategic Training Program in Palliative Care Research*, Montreal, QC.

Massey A. (1999) Methodological triangulation, or how to get lost without being found out. *Studies in Educational Ethnography* **2**, 183–197.

Moezzi S. (2007) Combining personal perspectives and women's knowledge: combining focus group and semi-structured interviews. *Poster presented at the 8th International, Interdisciplinary Advances in Qualitative Methods Conference*, Banff, Canada.

Molzahn A.E., Starzomski R., McDonald M. & O'Loughlin C. (2005) Chinese beliefs toward organ donation. *Qualitative Health Research* **15**(1), 82–98.

Morse J.M. (1999) Qualitative methods: the state of the art. *Journal of Advanced Nursing* **9**, 393–406.

Morse J.M. (2000) Researching illness and injury: methodological considerations. *Qualitative Health Research* **10**, 538–546.

Morse J.M. (2002) Qualitative health research: challenges for the 21st century. *Qualitative Health Research* **12**, 116–129.

Morse J.M. (2003) Principles of mixed methods and multimethod research design. In *Foundation of Mixed Methods Research: Integrating Quantitative and Qualitative Techniques in the Social and Behavioral Sciences* (Tashakkori A. & Teddie C., eds), Sage, Thousand Oaks, CA, pp. 189–203.

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

Oluwatosin A. (2005) Focus group discussion: an essential tool in community health nursing research. *West African Journal of Nursing* **16**(2), 30–36.

Pamphilon B. (1999) The zoom model: a dynamic framework for the analysis of life histories. *Qualitative Inquiry* **5**, 393–410.

Plack M.M. (2006) The development of communication skills, interpersonal skills, and a professional identity within a community of practice. *Journal of Physical Therapy Education* **20**(1), 37–46.

Rees C.E., Ford J.E. & Sheard C.E. (2003) Patient information leaflets for prostate cancer: which leaflets should healthcare professionals recommend? *Patient Education and Counselling* **49**, 263–272.

Rolfe G. (2006) Validity, trustworthiness and rigour: quality and the idea of qualitative research. *Journal of Advanced Nursing* **53**(3), 304–310.

Sandelowski M. (1995) Triangles and crystals: on the geometry of qualitative research. *Research in Nursing and Health* **18**, 569–574.

Sandelowski M. (2002) Reembodying qualitative inquiry. *Qualitative Health Research* **12**, 104–115.

Sands R.G. & Roer-Strier D. (2006) Using data triangulation of mother and daughter interviews to enhance research about families. *Qualitative Social Work* **5**, 237–260.

Speziale H.J. & Carpenter D. (2003) *Qualitative Research in Nursing: Advancing the Humanistic Imperative*. Lippincott, Philadelphia, PA.

Stevens P.E. (1996) Focus groups: collecting aggregate-level data to understand community health phenomena. *Public Health Nursing* **13**(3), 170–176.

Strauss A. & Corbin J. (1998) *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Sage Publications, Thousand Oaks.

Taylor B. (2005) The experience of overseas nurses working in the NHS: result of a qualitative study. *Diversity in Health and Social Care* **2**, 17–27.

van Teijlingen E. & Pitchforth E. (2006) Focus group research in family planning and reproductive health care. *Journal of Family Planning and Reproductive Health Care* **32**(1), 30–32.

Tobin G.A. & Begley C.M. (2004) Methodological rigour within a qualitative framework. *Journal of Advanced Nursing* **48**(4), 388–396.

Vandermause R. (2007) Multidisciplinary multi-media multiple-method interpretative research: challenges in getting started. *Presented at the 8th International, Interdisciplinary Advances in Qualitative Methods Conference*, Banff, Canada.

