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Collaborative Interrelational Healthcare Research: A Conceptual Framework Informed by a Qualitative Enquiry

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Abstract

Background: Interprofessional education is an important precursor to developing collaborative interprofessional healthcare teams. Both have been studied extensively. Less is known about factors contributing to successful interprofessional research. This study examined the perspectives of members of an interprofessional healthcare research team regarding their involvement as research team members.

Methods & Findings: Phase 1: Semi-structured one-on-one interviews were conducted with research team members. Interviews were audiotaped and transcribed verbatim. Each transcript was analyzed using a comparative contrast approach. Concepts emerging from the data were categorized broadly under the following themes: raison d'être, key elements of an interprofessional research team, communication, unavoidable logistics, and what is the value? Phase 2: Upon completion of the analysis, a preliminary conceptual framework for conducting interprofessional healthcare research was proposed and presented to the research team. Phase 3: A validation process was undertaken to further define the framework.

Conclusions: Key components of the conceptual framework included values (trust, respect for each other, and common interest[s]) and structural prerequisites (expertise in the topic area, funding, team leadership time, associated workload, organized and co-ordinated management, and forums for multi-modal communication).

Keywords: Interprofessional; Interrelational; Qualitative; Research; Teamwork

Introduction

Healthcare delivery models based on interprofessional approaches to care are increasingly recognized globally as a means to achieve health goals in primary healthcare and chronic disease management [1-3]. In order for health professionals to provide care within interprofessional models, interprofessional education is recognized as an important precursor to the development of collaborative interprofessional healthcare teams [4-8]. Interprofessional education has been defined as any type of educational, training, teaching, or learning session in which two or more health and social care professions learn interactively [9]. The rationale for interprofessional education is that learning together enhances future working together [7].

Although healthcare research teams are increasingly interprofessional, there is limited research regarding interprofessional research. Interprofessional research has been defined as the collaboration of two or more health professionals in the research process, including setting the research agenda, designing or implementing a research study, or evaluating published work [10]. Another definition refers to a process in which researchers from different professional and disciplinary back-

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grounds collaborate together over time on a research project. They work independently on different phases and components, within their own areas of expertise and in parallel or sequentially with others. Within other phases, these researchers come together to share knowledge, debate issues, and synthesize findings [11]. Both definitions refer to professionals and/or disciplines. However, many funding bodies require evidence of service user or client involvement in the research process [12]. For example, parents of children with disabilities have been involved as service users in an interprofessional research project [12]. Likewise, it has been proposed that interprofessional research include both the traditional academic researchers as well as clinical practitioners, to promote development of clinically relevant research that can be applied to practice [13].

To support the application of interprofessional research, in which professional knowledge and expertise can be shared, some identifying characteristics of interprofessional research have been identified. These characteristics include a) collaboration among health professionals and researchers to identify the research agenda and evaluate the impact of interventions, b) recognition of the contribution of different professionals through their respective knowledge bases and professional experiences, c) open channels of communication, and d) removal of professional hierarchies in the research process [10].

With respect to the current research study, the unit of study was a large research team comprising professionals from a variety of disciplines, as well as health service users and other stakeholders. The team had been convened for approximately two years to work on a multiphased research program on peer support, a complex healthcare intervention, for individuals with a chronic disease. Due to the size of the research team (21 members) and the wide variety of professional and other backgrounds (academic qualitative researchers, cultural anthropologist, rheumatologists, physiotherapist, social worker, clinical epidemiologist, knowledge translation experts, health promoters, nurse, health service users living with the chronic disease under study, representatives of non-governmental organizations) the team was recognized as a source of knowledge regarding interprofessional research teamwork.

This research study aimed to examine the perspectives of members of the large interprofessional research team described above to ascertain their perspectives regarding their involvement as research team members. The overall goal was to develop an understanding of key elements that contribute to high-functioning interprofessional healthcare research teams, so as to develop a conceptual framework. Specifically, development of a conceptual framework was undertaken to inform development of a body of knowledge regarding similar future complex interprofessional healthcare research.

Methods

A qualitative research approach was utilized, as it allowed for expression of meanings, experiences, views, and attitudes of participants [14–17]. Qualitative research is interpretive, with its goal being to understand the meaning of social events in their natural settings [14,15,17]. One view regarding qualitative research is that it

has been recognized as a prerequisite or accompaniment to good quantitative research, especially in areas that have received little previous investigation [15,16]. For this particular study, a qualitative research approach enabled the researcher to gain a richer understanding of the perspectives of members of the interprofessional research team.

As a methodological framework, van Manen's approach to phenomenology with specific guidelines for conducting phenomenological inquiry and analysis was utilized for this study. This approach involves six distinct research activities:

1. turning to a phenomenon of particular interest to the researcher;
2. investigating experience as we live it, rather than how we conceptualize it;
3. reflecting on the essential themes that characterize the phenomenon;
4. describing the phenomenon through the art of writing and rewriting;
5. maintaining a strong and oriented relation to the phenomenon; and
6. balancing the research context by considering parts and whole [18,19].

The research consisted of three phases:

1. qualitative interviews;
2. development of a conceptual framework; and
3. validation process.

Phase 1: Qualitative interviews

Participant recruitment

Purposive sampling—identifying individuals most likely to provide information relevant to the research question—was undertaken [15,20]. Members of the research team were recruited via an email from the team's project manager (second author), informing them that this research was being conducted by an independent researcher (first author) who would contact them in one week with an emailed invitation to participate in an interview. For those who did not respond to the first email, a second email and/or telephone call was made by the independent researcher requesting participation.

Inclusion/exclusion criteria

Participants were eligible for this study if they had involvement as a member of the large research team studying peer support, a complex healthcare intervention, for individuals with a chronic disease. There were no exclusion criteria.

Research Ethics Board approval was obtained from Sunnybrook Health Sciences Centre, Toronto, Canada, the institution of the principal investigator of the research team (third author).

Procedure

Semi-structured one-on-one interviews were conducted with members of the research team by an independent researcher with a healthcare background, experience in qualitative research, and an interest in learning more about interprofes-

sional research (van Manen's first research activity—turning to a phenomenon of particular interest to the researcher) [19]. Informed written consent was obtained from all participants prior to each interview. Interviews were conducted either in person or by telephone based on an interview guide. Questions were both reflective and experiential in nature, as outlined in Figure 1 (van Manen's second research activity—investigating experience as research participants lived it) [19]. Probes were used as necessary for response elaboration.

Figure 1
Interview Guide

Introduction/Background Information
Please start by introducing yourself and describing your role in the peer to peer mentoring study …
Probes regarding …
- stakeholder group you represent;
- professional and/or personal (e.g., consumer) background;
- experience working as member of interprofessional team.

Factors Related to Becoming a Stakeholder Research Partner
Please share any reasons for wanting to be involved in this study … Probes regarding …
- Reflecting back, what benefits did you expect to gain from your involvement?
- Reflecting back, what contributions did you expect to make?
- Were there any surprises?

Stakeholder Experience
We are interested in your actual experiences related to being involved in the peer to peer mentoring study from a number of perspectives including
- Your time commitment: please comment on the length of time involved, your actual time commitment (more or less than expected).
- Your contributions to the study: any differences between actual and anticipated?
- Benefits gained from participating: any differences between actual and anticipated? Could you comment on any new things learned or people met?
- Your experiences related to sharing information back and forth between the research group and your stakeholder group?
- Your experiences related to sharing (giving and receiving) information amongst the research team?
- Your perspectives regarding the interprofessional/stakeholder complement of the members of the research team?
- Overall what was the most meaningful part of the research participation experience? Least meaningful?
- Your thoughts regarding the leadership of the research team?
- Your thoughts regarding the dynamics of the research team?

Future Involvement
Regarding future involvement, what if any, are your plans for ongoing involvement in this project?

Other
Are there any further comments/suggestions that you would like to add?

The interviews were audiotaped and transcribed verbatim. Data collection continued until all members of the research team who consented to participate were interviewed. Data were entered into QSR NUD*IST2 N6 (QSR International [Americas] Inc., Cambridge, MA), a software package used to help organize qualitative data.

Analysis

Each transcript was analyzed by the researcher using a comparative contrast analysis approach for emergent concepts related to the research objectives [21]. Transcripts were analyzed or coded line by line by identifying words and groups of words that addressed the research objectives. These words and groups of words were categorized into concepts. During the early stages of analysis, a second independent researcher, with experience in qualitative research and coding, independently analyzed and developed concepts for three transcripts. The primary researcher (first author) and the second independent researcher then reflected on and developed an understanding of the emergent data and associated concepts. This process aimed to minimize bias related to interpretation of emergent data (van Manen's third research activity—reflecting on the essential themes that characterized interprofessional research) [19].

In addition, each interview transcript was analyzed prior to the next interview in an "analyze as you go" approach that allowed for potential modifications of the interview guide, thereby contributing to study rigour [20]. Based on this approach, the questions remained unmodified. However, additional questions were added regarding team leadership and team dynamics.

Phase 2: Development of a conceptual framework

Based on the emergent data, a conceptual framework for conducting high functioning interprofessional healthcare research was drafted. The framework included components that were categorized as either values or structural prerequisites. Components of the framework that were categorized as values related to concepts of what ought to be and what was likely to affect behaviours and attitudes toward interprofessional healthcare research. Similarly, components of the framework that related to concrete entities or activities were categorized as structural prerequisites. Details regarding the conceptual framework are reported in the results and discussion sections.

Phase 3: Validation process

Upon interview completion and subsequent transcript analysis, a report was written summarizing the emergent themes and results (van Manen's fourth research activity—*describing the phenomenon of interprofessional research through writing and rewriting*) [19]. This report was circulated to the research team participants for review. Approximately two weeks later, an in-person meeting and web-based conference was held with participants (van Manen's fifth research activity—*maintaining a strong and oriented relation to the phenomenon*) [19], in this case, the members of

the interprofessional research team. Emergent themes and results were presented by the researcher (first author) in two categories: values and structural prerequisites necessary for successful interprofessional healthcare research.

Participants then undertook a pen and paper validation process to reflect on the values and structural prerequisites identified. They added any values or structural prerequisites represented in the data but deemed missing from the report and/or oral presentation. Each value and structural prerequisite was then rated by individual participants on an "importance" scale as very important, important, or not important (van Manen's sixth research activity—*balancing the research context by considering parts and whole*) [19]. The ratings were consolidated by the researcher, and where there was variation in ratings a consensus/majority approach was employed. In addition, participants were given the opportunity to review this manuscript, as part of the validation process, with an invitation to provide feedback on the proposed conceptual framework. None of the feedback provided by participants disagreed with the components as presented.

Results

Phase 1: Qualitative Interviews

Participants

Twenty-one members of the research team convened around peer support for a chronic disease were pre-identified by the principal investigator and project manager as potential participants. Of the 21 research team members, 19 participated. Of the 19 participants, 13 had professional research and/or clinical involvement, four represented stakeholder groups, and two were health service users. Eighteen were female and one was male. One research team member refused, citing lack of time as reason for refusal, and the other team member did not return calls or emails.

Emergent themes

Five main themes emerged from the interviews: 1) raison d'être; 2) key elements of an interprofessional research team; 3) communication—the thread that binds; 4) unavoidable logistics; and 5) what is the value?

Raison d'être

Reasons for involvement in the research team varied: some were professional in nature, whereas others were more altruistic. For example, participants anticipated a number of benefits to arise, including learning from others on the team with different backgrounds:

> Because you learn from people who come from anthropology, or ethnography, or whatever the different fields are, so it's a mutual process. [Participant 10]

> I thought it would be another interesting way to help our patients in this area. [Participant 11]

From a professional perspective, participants were motivated to be involved in the research team to make professional contacts, as well as produce publications.

> In fact, to be honest, having an opportunity to work with [Project Manager] was one of my primary reasons … she is marvelous, and I had never done anything like this before and she encouraged me, and I thought this would be a good learning experience for me and something that I could bring back to the milieu that I work in. [Participant 11]

> Because we live in a quote, unquote, "perish or publish" type of world, I did hope to get some publications out of it. [Participant 10]

As members of the research team, participants did anticipate contributing to its overall goals. Expected contributions varied, depending on their professional background and whether they belonged to a non-governmental stakeholder group or were a consumer. Expected contributions included input and opinions based on the individual's experience, actual research activities, and duties of a managerial nature.

> Being a person who wakes up with arthritis every day and goes through their life … with arthritis, just being able to always bring back the team to what reality is for someone with arthritis, and I thought that I'd be able to do that. [Participant 1]

> Certainly, it would be in the sense of my research skills and, you know, ability to do research, but also project management skills. So to be able to drive the process, identify collectively what the goals of the project were going to be, how to take those goals and develop them into some kind of a research plan, and then action it. [Participant 16]

Others described the team as an opportunity to be exposed to a senior researcher, such as the principal investigator, and an external expert, as motivating factors for their research involvement.

> So, probably you know, [PI] has such a great reputation as a researcher, and this was, I think, a pretty large study and involved a lot of … different researchers … so it was just a really great opportunity to be involved. [Participant 3]

Key Elements of an Interprofessional Research Team

Learning from each other was repeatedly expressed as a realized benefit of research team participation.

> Yes, team benefits; it's been delightful working with the younger staff people, the people coming on board because they do come from different backgrounds. … I delight in interdisciplinary work because I think it really is key for moving any discipline forward. … I think it really changes the outcomes that we come up with, because everybody has that perspective to contribute during the analytic phases. [Participant 10]

Making new professional connections through research team involvement was also reported as a defining feature of interprofessional research. In addition, valued connections were those with the health service users on the research team.

> I think on the people side, I've come to know some really wonderful people from doing this, to know more deeply the consumers as well as the scientists, to better understand those who work at the NGO, getting to know people in a deeper way and in a more personal way. [Participant 15]

The depth and richness of the interprofessional research participation was also highlighted by research team members:

> It's been a much more three-dimensional and … varied experience than I initially thought. [Participant 12]

As noted earlier, the research team was composed of individuals from a variety of backgrounds. Very few had little to no exposure to some form of interprofessional team, and all provided perspectives that support the value of a range of backgrounds on research teams.

> So, looking back … where I trained … you have always worked as part of an interprofessional team. … if you think about the definition of interprofessional education, it is learning from and about each other. [Participant 13]

> I think our research is broader and deeper if we have an interprofessional team, so it is kind of taking clinically and bringing it to my research. [Participant 15]

Participants proposed key characteristics of high-functioning teams and what contributed to effective teamwork. These included having time and taking time to build teams and work cohesively, as well as taking time to reflect on what has already been undertaken, in order to learn from barriers and facilitators.

> Actually, I have been very impressed with the way the team has had that kind of approach of, you know, what can we learn here? Can we reflect on this? So I think that has been a very important aspect of the teamwork, a very valuable aspect of the teamwork, that kind of reflexivity and willingness to learn. (Participant 14)

Participants unanimously said that a varied professional complement of research team members was important for producing research outcomes that were broader and deeper. Inclusion of health service users as part of the research team was also considered very important.

> [It was important] that we actually involved patients, because that was actually pretty unique, I think, even in interprofessional collaboration. … Often times people do bring a patient in to say, "Well, you know, this is the patient's perspective," and the patient tells their story, but to actually have the patients involved in the designing of it is slightly different. … And I thought that was actually a real strength … and something that we should be highlighting. (Participant 13)

Specifics related to how various team members interact was considered important for producing successful research outcomes. The following quotes illustrate that several factors are important for optimal team dynamics. These factors include opportunity to voice opinions, including receptivity of opinions; commitment and responsiveness by team members; fair and democratic processes; non-hierarchical structure; transparency; and shared problem-solving/shared ownership.

> I think, in terms of collaboration, we certainly did that when we were designing the program that everybody's voice mattered and … everybody's contribution mattered. (Participant 13)

> There was complete transparency, you know, including with the wrinkles as well as the successes. So, you know, you really felt that you were a full participant and … problems were brought to the table for shared problem solving. (Participant 7)

> You could feel intimidated by the intellectual capacity of some of the folks there, but they certainly didn't make anybody around the table feel that way. … Everyone was pretty much on the same level. (Participant 6)

With respect to leadership, participants spoke of team leadership qualities that foster opportunities for productive, meaningful research. The qualities for effective leadership included an inclusive/egalitarian approach, strong interpersonal (including communication) skills, advanced organizational skills, visionary capacity, and ability to be reflective. In addition, it was suggested that effective leadership relies on sound infrastructure with organized and efficient management and co-ordination. Ability to exercise authority, as necessary, was also noted to be part of a team leadership role.

> The infrastructure that she has put into place, the systematic way that we have been able to move forward in different domains and sequentially has been very good. … What [PI] has been very good at is establishing an infrastructure that keeps the wheels of the project going. (Participant 10)

> [PI] is very egalitarian in her approach and really tried to involve everyone. (Participant 3)

Communication—the thread that binds

Given that the research team under study was large and members were geographically distributed across Canada and internationally, information-sharing was instrumental in keeping all research team members up to date on the status of various aspects of the research. Overall, the manager of the study was described as a key person for sharing of information related to all aspects of the research study.

> Information-sharing came via [Project Manager] was my experience. So [she] was the conduit; if there was information to be shared, it was usually via [Project Manager]. (Participant 13)

The methods of communication varied by stage of research and activity. Email communication was most frequently utilized to keep research team members informed. Other forms of communication included telephone, videoconferencing, and face-to-face meetings. Face-to-face meetings took two formats. Full research team meetings were held approximately twice per year. Smaller subgroup meetings were held as needed (e.g., for curriculum development, qualitative research analysis). All communication methods were deemed important by participants, given the size of the research team and the large number of subprojects. Timing of meetings was not always convenient, particularly meetings held on weekends and evenings. However, some team members preferred evening and weekend times due to their busy schedules or because this work was done on a volunteer basis outside of their work.

> We did face-to-face meetings, we did teleconferences, we did a lot of email communication. … The easiest way to communicate to a large [group of] people was email, but sometimes we did need to do face-to-face, and sometimes you kind of get going along in your day-to-day stuff, and the biggest challenge was sometimes there might be a bit of a breakdown in communication. (Participant 16)

Meetings were an important forum for bringing members of the research team together and enabling team members to get to know each other and to learn about areas of expertise and the nature of stakeholder representation. Meetings provided a venue for sharing progress in a very multi-faceted research project.

> What we tried to do was have team meetings because people go off and do some small group work and then come back together, and we would have people share their progress to date, you know, from their small group with the larger group. So that was kind of a formal process that we did. … Every couple months we would come together as a team and share progress. (Participant 15)

Participants recommended that knowledge gained as a result of the research experience be shared with many audiences.

> I was keen that thought be given to giving [the funders] the feedback so that they know what [a] success it has been. And the fact that we have this evaluation, likewise, I think is a major plus … [in terms of] audiences, so that is patients, policymakers … practitioners (non-medical and medical subspecialties). … I think the press is an important constituency … [and] stakeholder groups. (Participant 18)

Unavoidable logistics

The day-to-day organizational and managerial aspects of conducting a large-scale interprofessional research project included challenges such as time and associated workload.

Many participants had multiple competing demands.

> The time commitment, I think … it's been more than I anticipated, and yet … looking back on it now, it makes sense that … the time that we've put in is absolutely necessary. (Participant 12)

Participants identified some challenges common to academic research, including authorship concerns, lacking dedicated time to write papers for publication, competing time commitments, and funding shortfalls. Those challenges that have not been addressed in other concepts are reflected in the following quotes:

> [An external expert] came in and walked through the same issues of authorship with us on a couple of occasions, because that was getting in the way of our progress and getting in the way of building the trust and did a marvelous job … . She demonstrated how to get out of this problem, and then it made it much easier next time we had an issue to actually not need external support but be able to work it out internally. (Participant 15)

> I think there will be separate publishable papers, which leads to the other part, of when do you find the time to write the papers? (Participant 10)

> Yes, the scope of this project is huge, and I think … that was a bit of a surprise, or maybe we just haven't done enough of these projects. … This is probably the first one that we have worked on with a CIHR grant, and truly this project is bigger than most RCTs that I ever participated in, yet the budget is $100,000; essentially, the work has been incredible, the time commitment has been incredible, not just for me but for others. … And we are trying to do it with … essentially no money. (Participant 5)

What is the value?

This theme—*What is the value?*—is the counterpart to the first theme—*Raison d'être*—in which participants spoke about their respective reasons for being involved on the research team. Overall, participants perceived their participation to

be worthwhile. Overwhelmingly, participants suggested that relationships built as part of interprofessional research teamwork were extremely meaningful.

> I would say for me it's the relationships; I truly enjoy working with the people that I work with on this research team. I have learned so much from them and it's quite incredible. (Participant 1)

The anticipated benefit of learning from a variety of professionals as well as non-governmental stakeholders and health service users was realized.

> The most meaningful, I guess, is just having a whole new research team. … It has been great to have … that network and have access to perspectives that I don't have with other research groups, so that has been great; and also, you know, the fact that it's got me to take on to learn new skills has also been a great benefit. (Participant 17)

Phase 2: Conceptual framework

Based on the emergent data, a conceptual framework for successful interprofessional healthcare research was developed. Values are used to explain how and why various realities matter. Values are ideas, images, or notions that attract us because of the good they articulate [22]. Values emergent from this study included *trust*, *common interest(s)*, and *respect for each other*. Structural prerequisites support successful research outcomes produced by interprofessional healthcare research teams. Those emergent from this study included *team leadership*, *expertise in the topic area*, *organized and co-ordinated management*, *funding*, *time/associated workload*, and *forum for multimodal communication*.

Table 1.

Importance ratings provided by participants of validation process for values and structural prerequisites of conceptual framework for interprofessional healthcare research

Value	Very Important	Important	Not Important
Trust	8/13	5/13	0/13
Common Interest(s)	8/13	4/13	1/13
Respect for Each Other	8/13	5/13	0/13
Other: Commitment	0/13	1/13	0/13
Other: Willingness to Learn	0/13	2/13	0/13
Structural Prerequisite	**Very Important**	**Important**	**Not Important**
Team Leadership	11/13	2/13	0/13
Expertise in Topic Area	5/13	8/13	0/13
Organized/Coordinated Management	11/13	2/13	0/13
Funding	9/13	4/13	0/13
Time/Associated Workload	10/13	3/13	0/13
Forum for Multi-modal Communication	4/13	9/13	0/13
Other: Ethics	0/13	1/13	0/13

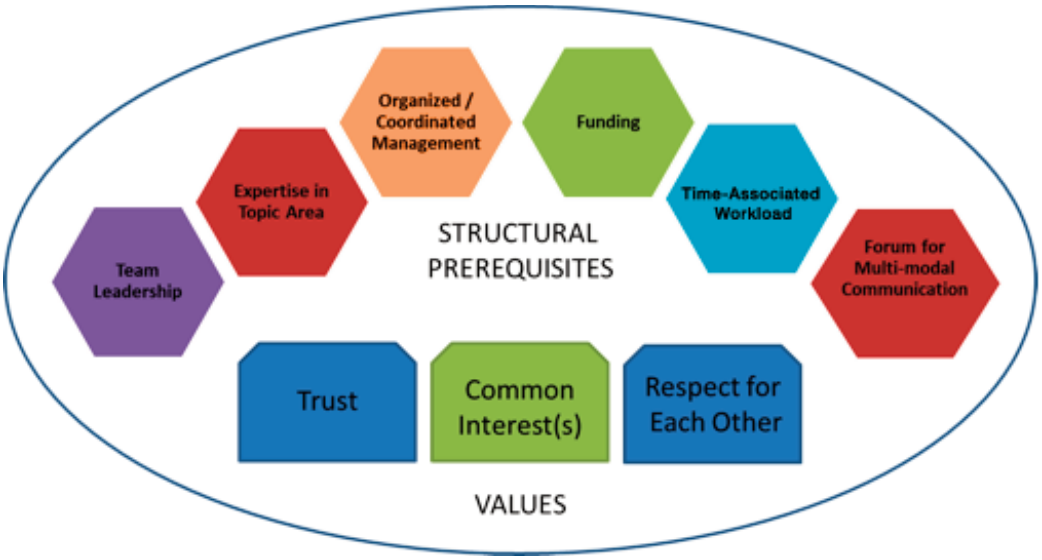
Phase 3: Validation process

Thirteen of the 19 participants interviewed also took part in the validation process. All of the aforementioned values and structural prerequisites were considered important and necessary components of a conceptual framework for interprofessional healthcare research teams. In addition, commitment and willingness to learn were suggested as additional values by one and two participants, respectively. Ethics was suggested as an additional structural prerequisite by one participant. Importance ratings for the values and structural prerequisites are presented in Table 1. For example, 8 of 13 participants suggested that trust was a "very important" value to be included in a conceptual framework for interprofessional healthcare research. All 13 participants agreed that these additional values and prerequisite should not be included in the framework due to the low frequency of suggestion.

A schematic outlining a conceptual framework for healthcare research that includes professionals, health service users, and stakeholders is illustrated in Figure 2.

Figure 2.

Conceptual framework for interrelational healthcare research



Discussion

Our research demonstrated that interprofessional collaboration among diverse research team members with common interests (early inflammatory arthritis and peer mentoring) contributed to a richer learning experience. Similarly, a "community of inquiry" involving individuals with different knowledge and understanding of acute stroke resulted in shared knowledge that generated new knowledge [13]. Other research teams, studying psychological wellbeing of patients with rheumatoid arthritis [10] and transitional rehabilitation for older people [11], found that one of the real benefits from interprofessional research was synergistic learning from each other and ultimately making sense of different findings.

In order for individuals from a variety of professional and other backgrounds to learn from each other, we propose several necessary structural prerequisites. *Expertise*

in the topic area can take many forms, such as clinical expertise with a disease, methodological expertise, or lived experience with a disease.

A *forum for multimodal communication* is important for a number of reasons. The diversity in communication modalities is important to connect research team members separated by geographical location and for saving the time and expense required for face-to-face meetings. Some in-person meetings appear important to foster and establish team relationships. The manner in which communication occurs is also key for establishing respect among team members. Having an opportunity to openly voice opinions, and ensuring that opinions are heard and considered, are equally important. These findings are supported by the recommendation that maximizing links between researchers at the start and elements of good team behaviour, such as good communication and "politeness," are important [11].

Participants were unanimous regarding the necessity of an inclusive and egalitarian approach to *team leadership*. This contrasts with other authors who reported that seniority and experience do help in establishing parity of esteem, especially when researchers from less dominant disciplines like anthropology and social work collaborate with researchers from more dominant disciplines like medicine [11]. Qualities necessary for strong interprofessional research team leadership included an inclusive/egalitarian approach, strong interpersonal skills, advanced organizational skills, visionary capacity, and ability to be reflective.

The research team studied included health professionals, researchers, health service users, and other stakeholders. Health service users included individuals with inflammatory arthritis, whose contribution was felt to be critical for informing the research agenda. Stakeholders also included non-governmental organizations with an interest in chronic diseases. Participants repeatedly expressed the importance of these nonprofessional groups, especially health service users, in enriching the research experience and outcomes. We have been unable to find any reference or term in the literature that applies to healthcare research that importantly includes health service users and other stakeholders. Our suggestion is that this type of research be termed collaborative interrelational healthcare research, since it extends beyond inclusion of professionals.

In addition, the participants of our study suggested that effective leadership relies on sound infrastructure with *organized and co-ordinated management*. This notion is supported by other authors [13,23].

Funding is another necessary structural prerequisite for research activities to occur. Participants of our study suggested that funding is often underestimated relative to the research tasks at hand.

Time, or lack thereof, and the *associated workload*, required to conduct research as well as to disseminate the findings, were challenges identified. Researchers who also have clinical and teaching roles may find participation challenging [13]. Our results concur with a previously made recommendation that value be placed on the processes involved both in undertaking research projects and in disseminating findings [13].

Underpinning the structural prerequisites, three values emerged as fundamental for successful collaborative interrelational healthcare research: *trust*, *respect for each other,* and *a common interest(s)*.

Trust has been defined as "the relinquishing of one's personal choice or power in the expectant hope that another party will honor the elements of the social contract between the parties" [24]. *Trust*, in the context of collaborative interrelational healthcare research, is closely linked with respect for each other. Within an explicit team culture of mutual respect, trust is more likely to develop among team members and, in turn, facilitate the research process undertaken by the research team. For example, research team members expressed having trust that processes adopted for inclusion on future grants would be conducted in a fair and equitable manner. Likewise, inclusion as an author on peer-reviewed publications should be based on an objective, transparent, well-articulated, and therefore trusted, process. Hubbard et al. [13] suggests that a high level of interprofessional collaboration is required for dissemination of research findings, including peer-reviewed publications and presentations.

Respect for each other, as a value, spanned various aspects of research team involvement, including team dynamics, authorship on peer-reviewed publications and grants, and feeling free to express opinions at meetings. Similarly, Hubbard et al. [13] proposes that an interprofessional team approach that respects and values the input of other team members is an important strategy to overcome professional differences. Interprofessional research is characterized by all research team members contributing to the research agenda, with minimization of any professional hierarchy, and with an open culture of participation endorsed such that professional knowledge and expertise can be shared [10].

The *common interest(s)* value is intricately related to the structural prerequisite expertise in the topic area. However, common interest denotes that research team participants altruistically value that the outcome(s) of the research will lead to the better good.

Methodological approaches for this study were utilized for their inherent strengths. For example, an independent qualitative researcher who was not part of the research team under study was employed in an effort to eliminate any element of bias. In addition, independent coding of three of the transcripts by a second independent researcher, with experience in qualitative research and coding, was also undertaken to eliminate bias and introduce potential differences in interpretation of data. Subsequent discussion between the two researchers (van Manen's third research activity) allowed for reflection and reconciliation of themes. Finally, a member-checking validation process with the participants provided opportunity for further discussion and verification of interpretation of results. Limitations included the realization that research team members may have been hesitant to voice opinions that may jeopardize future professional working relationships; some interviews were conducted in-person and others via telephone, which may have altered the interviewer/interviewee relationship; and only 13 of 19 participants of the qualitative interviews participated in the member-checking validation process. In addition, as 18 of 19 participants were female, it is important to recognize that results may have been different had there been more males. To our knowledge, the conceptual framework outlined in Figure 2 is novel. Consequently, it is acknowl-

edged that the proposed framework is provisional, and further study is required to verify our results, as well as to measure the effectiveness of the conceptual framework for successful collaborative interrelational healthcare research.

In summary, a conceptual framework is proposed for collaborative interrelational healthcare research that includes health professionals, researchers, health service users, and other stakeholders. This conceptual framework is grounded on qualitative data from participants with varied backgrounds and has undergone a stringent validation process. It is suggested that other such research teams consider this conceptual framework in the early stages of team assembly. In-person meetings and/or Web conferences in which team values and structural prerequisites are openly and transparently discussed from the start are predicted to assist in avoiding challenges and barriers that may arise when people with differing perspectives collaborate on common interests. Upfront discussion followed by subsequent implementation of agreed-upon values and structural prerequisites is predicted to foster interrelational healthcare research by high-functioning teams.

References

1. Goldman, J., Meuser, J., Lawrie, L., Rogers, J., & Reeves, S. (2010). Interprofessional primary care protocols: A strategy to promote an evidence-based approach to teamwork and the delivery of care. *Journal of Interprofessional Care, 24*(6), 653–665.
2. Gilbert, J.H.V. (2010). Editorial: The global emergence of IPE and collaborative care. *Journal of Interprofessional Care, 24*(5), 473–474.
3. Barr, H. (2010). Commentary: The WHO Framework for Action. *Journal of Interprofessional Care, 24*(5), 475–478.
4. Morison, S., Johnston, J., & Stevenson, M. (2010). Preparing students for interprofessional practice: Exploring the intra-personal dimension. *Journal of Interprofessional Care, 24*(4), 412–421.
5. Bridges, D.R., Davidson, R.A., Odegard, P.S., Maki, I.V., & Tomkowiak, J. (2011). Interprofessional collaboration: Three best practice models of interprofessional education. *Medical Education Online.* URL: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3081249/pdf/MEO-16-6035.pdf . [February 6, 2012].
6. Furness, P.J., Armitage, H., & Pitt, R. (2011). An evaluation of practice-based interprofessional education initiatives involving service users. *Journal of Interprofessional Care, 25*, 46–52.
7. Thistlethwaite, J. (2012). Interprofessional education: A review of context, learning and the research agenda. *Medical Education, 46*, 58–70.
8. Thannhauser, J., Russell-Mayhew, S., & Scott, C. (2010). Measures of interprofessional education and collaboration. *Journal of Interprofessional Care, 24*(4), 336–349.
9. Reeves, S., Zwarenstein, M., Goldman, J., Barr, H., Freeth, D., Hammick, M., Koppel, I. (2007). Interprofessional education: Effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews,* Issue 4. Art. N.: cd002213. URL: http://acmd615 .pbworks.com/w/file/fetch/47834116/ip_education_cochrane.pdf [February 6, 2012].
10. Ryan, S., & Hassell, A. (2001). Interprofessional research in clinical practice. *Nurse Researcher, 9*(2), 17-28.
11. Hart, E., Lymbery, M., & Gladman, J.R.F. (2005). Methodological understandings and misunderstandings in interprofessional research: Experiences of researching transitional rehabilitation for older people. *Journal of Interprofessional Care, 19*(6), 614–623.
12. Hutton, E., & Coxon, K. (2008). Involving parents as service users in an interprofessional research project. *Journal of Interprofessional Care, 22*(6), 661–663.
13. Hubbard, I.J., Vyslysel, G., & Parsons, M.W. (2009). Interprofessional, practice-driven research: Reflections of one "Community of Inquiry" based in acute stroke. *Journal of Allied Health, 38*(2), e-69–e-74.
14. Denzin, N.K., & Lincoln, Y.S. (1994). *Introduction: Entering the field of qualitative research. In Denzin, N.K., & Lincoln, Y.S. (Eds.), Handbook of qualitative research* (pp. 1–17). Thousand Oaks: Sage.

15. Wright, J.G., & McKeever, P. (2000). Qualitative research: it's role in clinical research. Annals of the Royal College of Physicians and Surgeons of Canada, *33(5), 275–280.*
16. Martin, D.K., & McKneally, M.F. (1998). Qualitative research. In Troidl, H., Spitzer, W., McKneally, M.F., McPeek, B., Mulder, D., Wechsler, A.S, Balch, C.M., Cruess, R.L., & Goligher, J.C. (Eds.), *Principles and practice of research: Strategies for surgeon investigators* (pp. 235–241). New York: Springer-Verlag.
17. Pope, C., & Mays, N. (1995). Reaching the parts other methods cannot reach: An introduction to qualitative methods in health and health services research. *British Medical Journal, 311*(6996), 42–45.
18. Earle, V. (2010). Phenomenology as research method or substantive metaphysics? An overview of phenomenology's uses in nursing. *Nursing Philosophy, 11*, 286–296.
19. van Manen, M. (1997). *Researching lived experience: Human science for an action sensitive pedagogy,* 2nd edition. London, ON: Althouse Press.
20. Mays, N., & Pope, C. (1995). Rigour and qualitative research. *British Medical Journal, 1995*(311), 109–117.
21. Strauss, A.L., & Corbin, J.M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques.* Newbury Park, CA: Sage.
22. Ogletree, T.W. (1995). Value and valuation. In *Encyclopaedia of Bioethics*, 3rd edition. (pp. 2515–2520). New York: Macmillan.
23. Watkins, C., Gibbon, B., Leathley, M., Cooper, H., & Barer, D. (2001). Performing interprofessional research: The example of a team care project. *Nurse Researcher, 9*(2), 29–48.
24. Caldwell, C., Davis, B., & Devine, J.A. (2009). Trust, faith, and betrayal: Insights from management for the wise believer. *Journal of Business Ethics, 84*(S1), 103–114.