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CRITICAL REFLECTION ON PRACTICE DEVELOPMENT

Researcher as instrument: a critical reflection using nominal group technique for content development of a new patient-reported outcome measure

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Abstract

Background: This article presents a critical reflection on the application of the 'researcher as instrument' concept within a study employing the nominal group technique. Twelve community-dwelling older adults were recruited to generate a list of items for a new patient-reported outcome measure on perceived ability to recover balance. The ontological position and epistemological stance of the first author are presented to provide a philosophical context of his lens and biases of his reflection.

Aim: The article aims to share reflective insights into the process of taking the role of researcher as instrument, to highlight the concept's strengths and limitations for other researchers and demonstrate how it is applied from the perspectives of a physiotherapist conducting person-centred research with older clients.

Conclusions: Essential practice skills such as reflectivity and reflexivity are necessary for a researcher as an instrument to build a trusting relationship with participants in person-centred research. Novice researchers should explore their philosophical orientation to develop their research methodology and methods.

Implications for practice:

- Researcher as instrument can be applied to conduct the nominal group technique
- In person-centred research, researchers need to critically reflect on their roles to build trust with participants during the planning and delivery of their methods, being reflective and reflexive
- Consideration of one's ontological and epistemological position allows growth in research learning

Keywords: Research as instrument, person-centred practice, participatory methods, nominal group technique, critical reflection, older adults, falls prevention

Introduction

'Researcher as instrument' refers to the researcher as an active participant in the research process (Hammersley and Atkinson, 1995). Novice researchers may find this difficult to comprehend, depending on their epistemological and ontological stance. For example, quantitative researchers might see the role of a researcher as theoretically non-existent in their work. The use of the researcher as an instrument to collect data is a paradigmatic incongruence (Smith and Heshusius, 1986; Sechrest and Sidani, 1995). However, in person-centred practice research, there is an emphasis on principles such as collaboration, inclusion and participation of each person to contribute to the body of knowledge (McCormack and McCance, 2017). This approach prompts my question: *'How can being researcher as instrument apply such important principles to my research method using the nominal group technique (NGT) with a group of older people?'* This article aims to demonstrate how my (SL-HS's) work as an active participant helped to develop trust with older people who were involved in one stage of the multiphase research to develop a patient-reported outcome measure. This article was prepared as part of my doctoral studies.

My ontological and epistemological positions

A researcher's ontological position (the nature of being) and epistemological stance (the nature of knowledge) will define the methodological approach (how knowledge can be best learned) and the methods adopted (Crotty, 2005). Methodology, however, can be aligned to critical social sciences, with, for example, enlightenment, empowerment and emancipation prioritised by those focused on person-centred care (Manley and McCormack, 2003). The ability to embrace person-centred practice development within each of our paradigmatic stances can inherently create a more significant and more profound influence for our research outcomes.

As a physiotherapist, I seek to apply both objectivist and interpretivist clinical skills in my research. I propose that the traditional Cartesian materialist conception of the body, where it is understood purely as a physical mechanism (Dennett, 1991), is insufficient when trying to understand a person's problem. My work to develop a useful and relevant patient-reported outcome measure (PROM) on balance recovery confidence for clinical practice is predicated on the belief that older people can express themselves and provide some phenomenological understanding of their body. This aims to address the limitations of reductionist paradigms, which, in this case, mean many healthcare professionals assume an understanding of near-falls and the recovery of balance, leading to the views of the older person not being sought. However, the building of trust, respect and rapport with the older people is crucial for the success of the research; treating trust as a currency is pivotal to many positive outcomes (Terry and Kayes, 2019). Pragmatism has emerged as my ontological position. A pragmatist researcher focuses on the anticipated outcome of the research – the actions, situations and consequences of inquiry (Creswell, 2013). This approach prompts the researcher to pay attention to the application of 'what works', and to solutions to problems (Patton, 2014). In this sense, my broader research has taken the form of pluralistic inquiry, applying methods such as NGT and measurement theories such as classical test theory and item response theory to varying stages of my work to enhance relevance, comprehensiveness and comprehensibility.

Reflecting on my journey as researcher as instrument

Reflecting on my pragmatic stance and work as a novice researcher, I asked myself: 'What should I do to enable better outcomes for my research?' The other questions of 'So what?' and then 'What should I do better for the next study?' should be reflected on after the completion of the study. This reflective model adapted the three questions of Rolfe's model: What? So what? Now what? (Rolfe et al., 2001). Besides Rolfe's model, Schön's (1983) reflection-in-action and reflection-on-action is applied for my critical reflection. The key aspect of Schön's model is a reflective narrative with a series of questions about the situation. My reflection is presented using the following three aspects of the study:

1. Preparation of participants
2. Preparation for the facilitation
3. Dealing with the unexpected circumstances

1. Preparation of participants

The 'What?' question

The question reflected on was 'What was done to prepare the participants?' In this study, we recruited 12 Singapore-based older adults living in the community, who were purposively sampled from a previous study (Soh et al., 2020a). They understood the essential concepts of the research and were able to provide relevant views to generate a list of items for the PROM. However, this did not imply they would be candid and forthcoming with their answers during the discussion.

So what?

I reflected that the older adults would need to be empowered and trust that their opinions would be respected. I would need to enable them to see how a cooperative learning experience can improve the quality of research (Johnson and Johnson, 2013). I considered that a clear and honest briefing session for the older adults would prepare them adequately, while allowing further reflection on any concerns they might have (Schön, 1983). As the principal investigator, I conducted individual, face-to-face meetings with older adults who were eligible for inclusion, to explain the research and the procedures of the NGT. They were informed about the study objectives and their role as 'experts' – a role that confers respect and empowerment on the participants (De Vet et al., 2011). Most questions raised by the older adults were covered by the participant information sheet but additional uncertainties such as, 'Are rest breaks scheduled?' or 'What if I have nothing more to add to the discussion?' suggested I should give further attention to their mental and emotional wellbeing. Older adults may easily be mentally fatigued during the study or be anxious about their roles (Yu et al., 2010; Sim and Waterfield, 2019). I needed to be aware the participants might need reassurance – indeed, it is any researcher's ethical responsibility to minimise potential discomfort among participants.

Now what?

From this preparation, the most critical learning point was the need to build rapport with the older adults before I could introduce my agenda. During my meetings, I had to adjust my briefing process to allocate adequate time to this, and I later reflected that this was about showing respect to them as persons. I asked myself how this process of building trust helped me in the preparation of the older adults. I realised that if the participants trust the researcher and have a greater sense of belief in their ability to contribute in the study, less clarification is needed. A higher level of perceived self-efficacy among the older adult participants in the research could help ensure a successful outcome of the study.

2. Preparation for the facilitation

The 'What?' question

The question reflected on was 'What was done to prepare the facilitators and the environment?' I recognised that the trusting relationship with the older adult participants needed to be maintained through the research. In conducting the NGT, the facilitators and the environment would need to be carefully prepared to preserve the trust and thereby encourage successful research outcomes.

So what? (facilitators)

The facilitators' credibility is enhanced by being an expert on the topic under discussion, or an experienced non-expert (Glaser, 1980). A member of the wider study team and I acted as facilitators, and I took the role of lead facilitator with the aim of providing consistent leadership (Gallagher et al., 1993). Both facilitators developed and used the topic guide for the NGT. Discussions on personal views about technical rationality and the study's objectives were held before the session. Technical rationality relates to how the application of professional knowledge can shape our thinking (Schön, 1983). These discussions were crucial to help the facilitators recognise that their roles as 'experts' should not be allowed to influence the views of the older adult participants. There should not be any sense of power imbalance or undermining of participants' opinions (Sim and Waterfield, 2019).

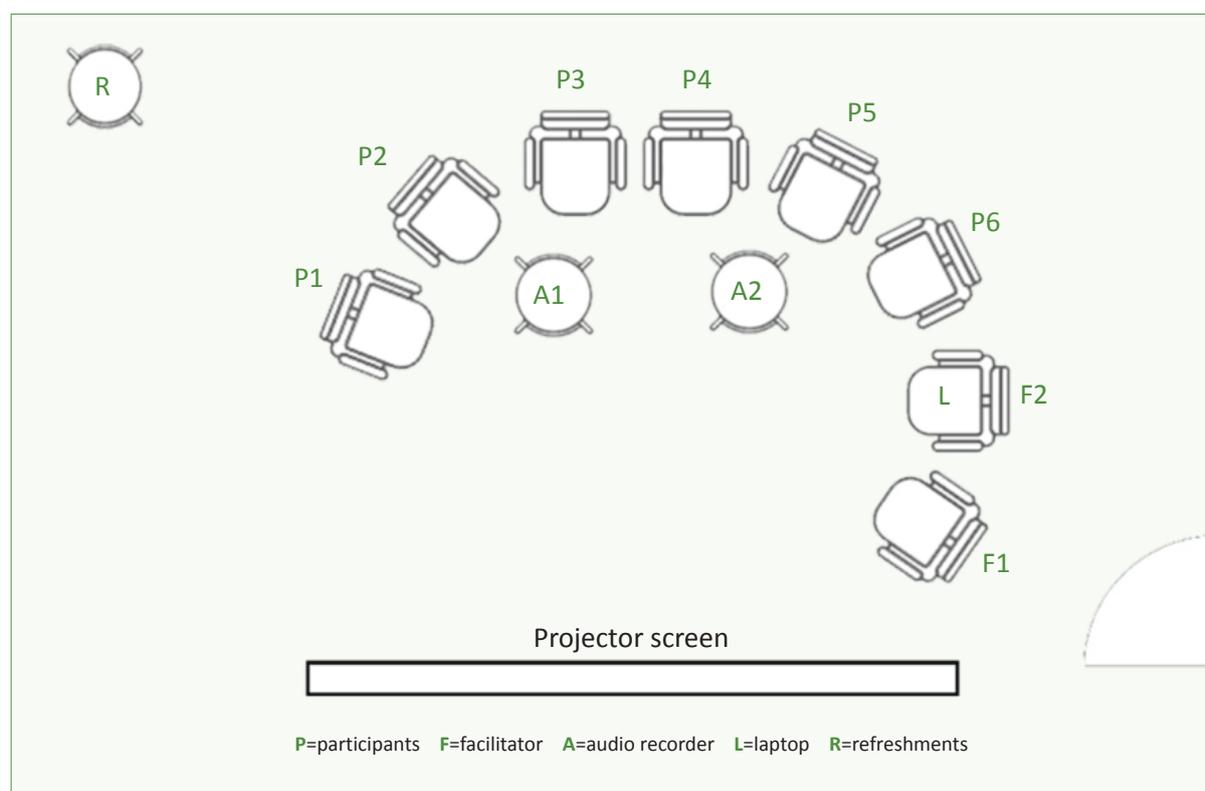
Now what? (facilitators)

The respect displayed by the facilitators for the older adults maintained their trust in the process. The dual facilitator/researcher role could be compared with the skills of a tightrope walker: balancing newly acquired knowledge from the older adults with existing knowledge (Schön, 1983). The professional behaviour of the facilitators allowed the execution of appropriate facilitation techniques. I concluded that open and candid conversations between facilitators or researchers on topics such as roles, responsibilities and facilitation techniques are necessary for NGT.

So what? (environment)

The research environment had to be conducive to the wellbeing of the older adult participants and to the proper delivery of NGT. We ensured the room was brightly lit and sufficiently air-conditioned to ensure comfort for participants and interviewers. A sign was placed outside the door to avoid unnecessary disruption. Tables and chairs were arranged in a wide semi-elliptical orientation, facing the projector screen (Figure 1). The screen was clearly visible to display participants' ideas; a technical trial was conducted on the screen using relevant software to ensure participants and facilitators had no issues reading displayed text. Light refreshments were prepared to ensure participants were comfortable in the setting.

Figure 1: Layout arrangement for a focus group discussion conducting the nominal group technique



Now what? (environment)

An important learning point was that attention should be given to preparing the environment. A relaxed and comfortable environment can help foster open and honest dialogue (Nyumba et al., 2018). A proper, professional-looking set-up can strengthen participants' belief that they are contributing to the study as an 'expert', and consistency of thoughts, actions and the physical environment can strengthen the trust relationship between researchers and participants. The researcher as instrument must be adept at recognising that various interactions, such as physical interaction between participants and the environment, play a role in bringing participants into a world of inquiry where their perspectives are truly valued as sources of discovery (Schön, 1983).

3. Dealing with unexpected circumstances

The 'What?' question

The question reflected on was: 'What can a researcher as instrument do during unexpected circumstances?' Reflexivity relates to the degree of influence exerted by a researcher, intentionally or unintentionally, on the research process and findings (Jootun et al., 2009). The continuous process of reflection by the researcher on their values, preconceptions, behaviour or presence, and those of the participants, can enhance the quality of research extending understanding of how our positions and interests affect the research process (Jootun et al., 2009). To be reflexive, researchers adjust what they do and how they do it as a consequence of learning from their reflections at that moment.

So what?

An example to illustrate this reflexivity was the facilitators' ability to modify their facilitator characteristics during the focus group sessions. Both facilitators initially adopted 'objectivist', 'neutrality' and 'affirmative' characteristics. The objectivist characteristic was taken to accept that the ideas presented by participants were factual, in the sense that the ideas did exist. For neutrality, the facilitators avoided extensive commentary during the session. The affirmative characteristic was expressed with smiles or nods, to illustrate support. The facilitators' common statements included: 'Thank you for your idea, can (name of next participant) now share your idea?', and 'Okay, thanks for sharing'.

Close to the end of the NGT discussion stage, the facilitators realised the participants had not raised some of the ideas that had been anticipated, which arose from previous work (Soh et al., 2020b). This posed a dilemma for the facilitators, who wondered whether the range of items generated by the participants was sufficiently comprehensive. This led them to adopt another characteristic, 'naivety'. This characteristic is defined as 'not engaged on one side of an argument or another, neither affirming nor disapproving of respondents' stories' (Pezalla et al., 2012 p 8). Questions were phrased as innocuously as possible, for example 'You spoke about x, how about y?' or 'What do you think of z?' The ideas suggested by the facilitators were discussed among participants, with some taken as relevant, and others as irrelevant because they proposed situations in which older adults would not be able to recover their balance. This approach did not undermine the trust and rapport built with the participants and was acceptable in NGT. The opportunity to obtain immediate feedback is a unique feature of NGT, when compared with other group decision-making processes (Table 1). The next NGT phase - ranking - allows participants to select which items were most important to them, as detailed in the NGT procedure (McMillan et al., 2016) (Table 2).

Table 1: A comparison of the group decision-making processes (Potter et al., 2004)

Attribute	Delphi	Focus groups	Brainstorming	NGT
Face-to-face group meeting process	X	✓	✓	✓
Generates a large number of ideas	✓	~	~	✓
Avoids focusing on a single train of thought	✓	✓	X	✓
Encourages equal input from all participants	✓	X	X	✓
Highly structured process	✓	~	X	✓
Meetings can usually be completed in one to two hours	X	✓	✓	✓
Avoids 'quick' decision making	✓	X	X	✓
High degree of task completion	✓	~	X	✓
Provides immediate feedback	X	~	~	✓
Measures the relative importance of ideas generated	✓	X	X	✓
Needs facilitation by an experienced leader	X	✓	X	✓

✓ = Yes X = No ~ = Maybe

Table 2: Conducting the Nominal Group Technique (NGT)

Phase	Session	Remarks
1	Pre-session preparation	First, the selection of a sample is crucial. The researchers must select a sample of people who have the experience, expertise and insights into the problem that is being explored. Second, the researchers need to develop an appropriate question or a series of questions for the nominal group to fulfil the objectives of the study. Third, the study team should establish an internal consensus on the set-up and session procedure, agreeing on the sitting arrangement for the participants, administrative and technical issues, the facilitator(s) style of managing the participants, and so on. A session guide should be developed and agreed among the researchers to cover these points
2	Introduction	The facilitator will welcome all participants and reiterate the aims and objectives of the session. The facilitator will inform the participants that the consensus-based approach allows the researchers to have a fuller understanding of the subject matter, and the views expressed by the participants will be analysed by the researchers. The roles of the facilitators and participants will be outlined during self-introductions. The session should be audiotaped as this will be helpful for cross-checking against written information, facilitating the data-coding process for qualitative analysis and verifying data results in quantitative analysis
3	Silent generation	The facilitator will ensure a conducive environment, asking for no conferring between participants, who are to silently reflect and record down their ideas in response to the questions given by the facilitator. They can write as many ideas as they wish on a blank piece of paper. This phase should take approximately 10 minutes
4	Sharing an idea	The facilitator will go round all participants, asking each to share a single idea that they have written during the silent period. The idea will be displayed in presentation mode, on a flipchart, whiteboard or laptop with a screen projector. The written ideas should be visible and easily read by the participants. The facilitator should ensure that the idea presented is as intended by the participant. In this phase, there will be no discussions about the item by the other participants. Participants may request to miss a turn and then present a new idea during the next round. All ideas will be documented from each of the participants in turn until there are no more ideas from the participants are left, to achieve saturation. This phase may take about 30 to 45 minutes
5	Discussion	The purpose of the discussion is to clarify, elaborate, defend or dispute the ideas presented and to add any new ideas that may emerge. The group may suggest new ideas for discussion but may not eliminate any ideas. The facilitator will emphasise that participants do not need to agree with all ideas listed and participants may ignore specific ideas by voting on their personal preference in the next stage. The facilitator will read out all the ideas presented, one at a time to ensure all participants understand them, and check if any discussion was needed. At this stage, some ideas have the potential for amalgamation and will be grouped with agreement from all participants
6	Ranking	Each participant will identify five ideas that they consider most important from the total list of ideas and write them on a personal priority sheet. These items will be given a ranking according to personal preferences using a points-based system, with most points allocated to the idea viewed as being of greater importance – for example, the most important idea gets five points and the least one point. If necessary, re-ranking can be done until no further changes are seen in the most important ideas. Although there is no anonymity for participants during the group discussions, individual scoring on the ranking sheets remains confidential
7	Post-session analysis	The analysis of data can be carried by researchers using a combination of qualitative and quantitative methods. Inductive content analysis (Patton, 2014) of data enables the verification of information collected during the session. This includes the use of individual response sheets (written comments), facilitator recorded information (information on the flipchart, whiteboard or laptop) or audio transcripts (recordings). The quotes from participants during discussion can be extracted and coded for qualitative analysis. The quantitative analysis of data is processed with the participants' scoring and ranking methods, and the results can be produced with a hierarchy of identified statements. Researchers consider this as an exploratory step from which the outcomes can be further tested (Potter et al., 2004)

Now what?

All researchers need some degree of reflexivity to manage unexpected circumstances. In this example, the facilitators adopted an appropriate characteristic to help build a fuller understanding of the topic without undermining the meticulous effort of building rapport and trust with the older adults. The facilitators maintained professional behaviour throughout the NGT. Researchers can enhance their reflexivity through internal dialogue and constant scrutiny of 'what I know' and 'how I know it' (Jootun et al., 2009).

Reflection on limitations

One of the limitations identified through my reflective journey was that, ideally, more time would have been allocated to building trusting relationships with participants. The use of NGT can be more restrictive than other consensus-based methods, and the sole choice of the naivety characteristic by the facilitators in response to an unexpected situation might have limited any additional input from the participants. Finally, my reflection might be circumscribed by my pragmatist philosophical lens and bias; different researchers may have more open ontological and epistemological stances.

Conclusions

The authors believe this is the first paper demonstrating that researcher as instrument can be applied in the use of NGT for the development of a patient-reported outcome measure. The researcher-as-instrument approach needs to embody reflectivity and reflexivity to build trust with participants, while incorporating the collaboration, inclusion and participation principles of person-centred research. For researchers, establishing their philosophical orientation in advance of the research can help to contextualise and clarify the findings.

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