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Using Emphasis-Purposeful Sampling-Phenomenon of Interest–Context (EPPiC) Framework to Reflect on Two Qualitative Research Designs and Questions: A Reflective Process

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Abstract

A satisfactory research question often signifies the beginning point for many researchers. While this can be true for quantitative studies because of pre-defined research questions, qualitative research questions undergo series of revisions through a reflective process. This reflective process provides the framework for the subjectivity associated with qualitative inquiry. The continuous iterative reflective process is an essential component for developing qualitative research questions that correspond with the various qualitative study designs. Although qualitative inquiry is term exclusively subjective, there is a need to use a framework in developing qualitative research questions. The Emphasis- Purposeful sampling- Phenomenon of interest – Context (EPPiC) framework guides qualitative researchers in developing and revising qualitative research questions to suit a specific qualitative approach. This article addresses both the development of a research question using the “EPPiC framework” and demonstrate how to revise the “developed” research question to reflect two qualitative research design. I developed a qualitative research question for Sally Thorne’s Interpretive Description design using the EPPiC Framework and subsequently revised the research question to suit a grounded theory design.

Keywords

Qualitative Inquiries, Reflexivity, Research Questions, EPPiC Framework, Interpretive Description, Grounded Theory

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A satisfactory research question often signifies the beginning point for many researchers. While this can be true for quantitative studies because of pre-defined research questions, qualitative research questions undergo series of revisions through a reflective process. This reflective process provides the framework for the subjectivity associated with qualitative inquiry. The continuous iterative reflective process is an essential component for developing qualitative research questions that correspond with the various qualitative study designs. Although qualitative inquiry is term exclusively subjective, there is a need to use a framework in developing qualitative research questions. The Emphasis- Purposeful sampling- Phenomenon of interest – Context (EPPiC) framework guides qualitative researchers in developing and revising qualitative research questions to suit a specific qualitative approach. This article addresses both the development of a research question using the “EPPiC framework” and demonstrate how to revise the “developed” research question to reflect two qualitative research design. I developed a qualitative research question for Sally Thorne’s Interpretive Description design using the EPPiC Framework and subsequently revised the research question to suit a grounded theory design. Keywords: Qualitative Inquiries, Reflexivity, Research Questions, EPPiC Framework, Interpretive Description, Grounded Theory

Introduction

While quantitative research questions are often developed and finalized at the beginning of the research, qualitative research questions are constantly revised throughout the research process (Berger, 2015; Gentles, Charles, Ploeg, & McKibbin, 2014). The initial research questions are often borne out of the desire of the researcher to understand the experiences and perceptions of individuals concerning a phenomenon under study. Experiences and perceptions are better understood through a subjective inquiry of the qualitative methods. Since the individual experiences of a phenomenon evolve over time, it is important that qualitative researchers incorporate an ongoing process of questioning and revising the research questions to capture the changes in the social interactions (Agee, 2009). In addition, qualitative researchers revised their initial questions through the process of reflexivity, which is described as the process researchers examine their own roles and perspectives in the inquiry process (Gentles, Jack, Nicholas, & McKibbin, 2014).

Recently, participants’ involvement in research has been encouraged, hence participants are sometimes invited to collaborate in developing research questions relevant to their needs (Agee, 2009). Given this development, constant revision of research questions between researchers and participants are inevitable because this process creates stronger and pragmatic research questions. Revising a qualitative research question does not only provide pragmatic questions, it also increases the credibility, interpretability and applicability of the research findings in a different context. The revision of qualitative research questions and documenting the process provides a degree of trust for users and other researchers in a different

context. It also provides that audit trail process that could enable other readers to interpret qualitative research findings relative to their context. When revising a qualitative research question, researchers should ensure that every revision reflects the core elements and coded language of a particular qualitative research paradigm (Baxter & Jack, 2008). Therefore, this reflective article demonstrates how to revise a research question to reflect two qualitative research designs. In the first section, I provided a background and rationale to a hypothetical research area. In the second section, I demonstrated how to use the *Emphasis-Purposeful Sampling-Phenomenon of interest-Context* (EPPiC) framework to reflect the core elements and coded language for developing qualitative research questions, selecting an appropriate qualitative research design and sampling techniques. In the third section, I revised the research question stated in section two to suit another qualitative research design, describing the design and the appropriate sampling techniques supporting my decision with evidence from the literature.

Background and Rationale to Physiotherapist Role in Care Transition for Older Adult with Hip Fracture

Population aging is an emerging demographic shift across the globe, and this shift is more prominent in industrialized nations like Canada, Australia, USA, UK, and Japan (Anderson & Hussey, 2000). In Canada, there are more people aged 65 years than children under the age of 15 years (Statistics Canada, 2016), and it is projected that this would increase by 42% in 2020 (Anderson & Hussey, 2000). Consequently, conditions associated with old age including hip fracture, stroke, osteoarthritis, rheumatoid arthritis, and dementia, are also likely to increase in prevalence (Reinhardt, 2003).

Hip fractures are projected to be a worldwide health problem in the near future (Auais, Morin, Nadeau, & Finch, 2013; Morin, Lix, Majumdar, & Lesile, 2013). Worldwide, the estimated number of hip fractures is expected to reach 6.3 million in 2050 (Cooper & Baker, 1995). In Canada alone, almost 30,000 hip fractures occur each year, and by 2041, this number is expected to exceed 88,000 (Leslie et al., 2009). This increase has associated high healthcare cost to the Canadian government (Leslie et al., 2009). A 2012 Canadian study estimated the average direct attributable cost in the first year after hip fractures to be \$36,929 in women and \$39,479 in men. This translates into \$1.1 billion spent by health systems in Canada on hip fracture patients during the first year alone. For those who survive the first year, costs remain high into the second year (\$9,017 for women, \$10,347 for men; Morin et al., 2012).

The majority of older people who survive a hip fracture have residual mobility disabilities (Shumway-Cook, Ciol, Gruber, & Robinson, 2005). Often, these residual mobility disabilities are not accounted for during transition of care from one setting to another (Penrod et al., 2004). For instance, Polnaszek et al. (2015) reported that physiotherapy recommendations were completely omitted in 53% (322/611) and partially omitted in 47% (286/611) of patients; less than 1% (3/611) of patients had no omissions in the discharge summaries. These omissions are related to mobility issues such as level of assistance with sitting and standing and omission in medical devices recommendation. Similarly, Thomas et al. (2010), in an observational study reported that walking aid use after discharge following hip fracture is rarely reviewed and often inappropriately reported. Arguably, lack of explicit or active role of physiotherapists during care transition among older adults with hip fracture could be the reason for this significant omission (Kalu, Maximos, Sengiadi, & Dal Bello-Haas, 2019). Therefore, understanding the role of physiotherapists in enhancing mobility for older adult during care transition is warranted.

The Emphasis-Purposeful Sampling-Phenomenon of interest–Context (EPPiC) Framework

The EPPiC framework guides the development of qualitative research questions (Jack, Campbell, Landeen, & Strachan, 2019). Prior to developing research questions, it is often advisable to state a broad study aim which can be redefined through a reflexive process (Agee, 2009). Therefore, the board study aim used in this article was: *To understand and describe how physiotherapists enhance mobility for older adults.*

The E-Emphasis

The E-Emphasis component of the framework often guides the choice of the coded languages appropriate for the different type of qualitative designs (Jack et al., 2019). Table 1 shows examples of “coded languages” for six selected qualitative research design. Based on the purpose stated above, the emphasis of my proposed study was “to explore and understand.”

Table 1. Shows Emphasis-Purposeful-Phenomenon of interest- Context (EPPiC) coded languages for six selected qualitative designs				
Qualitative design	Emphasis	Purposeful sampling	Phenomenon of interest	Example of a research statement
Qualitative description	To describe, identify	Heterogenous sampling	Uptake and delivery	What factors influence the access of primary healthcare services for older adults living with cerebral palsy in three provinces in Canada?
Interpretive description	To describe, understand	Maximum variations	Clinical problems	How do healthcare workers working in the rural communities provide health and social service information to older adults living with cerebral palsy?
Phenomenology	To described lived experience (descriptive) or meaning of lived experience (interpretive)	Homogenous sampling	Experience	Among older adults (>65years) living with cerebral palsy, what is the meaning of living alone in an independent housing? (Interpretive) What is the lived experience of older adult living with cerebral palsy when transitioning from home in the community to a long-term care facility? (Descriptive)
Grounded theory	To understand, explain “process”- social & psychological process	Theoretical sampling	Process	What psychological process explains how older adults living with cerebral palsy, residing in rural communities in Ontario, make choice of a long-term care facility?
Case study	To describe, explore, explain, understand	Extreme, typical & critical case	Update, delivery of implementation	How does the Slow-Stream-Transition Program facilitate the smooth transition of older adult living with cerebral palsy from their home into a long-term care facility?
Ethnography	To explore, describe & explain culture context or social structures	Extreme, typical & critical case	Values, beliefs, culture	What are the shared beliefs and health practices of older adults living with cerebral palsy in a long-term care facility?
Adapted from Jack et al. (2019). Examples of context include, population-based context, geographical (e.g., location), political (e.g., World War II or during new policy), economic (e.g., poverty), socio-cultural (e.g., marriage rites, clothing styles, kinship practice).				

P-Purposeful Sampling

P-purposeful sampling is often the sampling choice used in a qualitative study. A researcher should not only state the population to be sampled but should clearly state certain characteristics of the sampled population. For instance: *How do physiotherapists enhance mobility for older adults?*

This sampling may seem purposive, but it did not provide the characteristics of the physiotherapists and the older adults to be involved in this study. For instance, the physiotherapy profession has several specialties including orthopedic, sports, women health, geriatrics and so on. Therefore, clearly stating the characteristics of the physiotherapists to be sampled would enhance interpretation and applicability. I revised the question to accommodate the physiotherapists' characteristics: *How do geriatric physiotherapists enhance mobility for older adults?*

Also, owing to the heterogenous nature of older adults' illness characteristics, trajectories and pattern, it will be clearer to describe the characteristics of the older adults in the research question. This reflexive process is important because qualitative evidence aimed to provide in-depth evidence while being specific to the population characteristics would provide information for the application of the findings of such a study in a similar context. Therefore, I revised the research question to: *How do geriatric physiotherapists enhance mobility for older adults (≥ 65 years) with hip fracture?*

With this revised research question, it was clear that I will sample geriatric physiotherapists and older (≥ 65 years) adults with hip fracture. Typically, the purposeful sampling could be any of the strategies including, criterion, extreme/deviant case/ intensity, homogeneous, typical case (Patton, 2015). Notably, these sampling strategies must best suit a particular qualitative design. For example, in a phenomenological study, it is always advised to choose a homogenous sampling to understand the meaning the participants give to their lived experience. You can choose to study a typical case or extreme sampling in a case study design. The choice of the type of the purposive sampling depends on the aim of study. For a detailed explanation see Patton (2015).

The Pi- Phenomenon of Interest

The Pi-Phenomenon of Interest describes the incident, activities, process, values, perceptions, attitude, beliefs and experiences of health, illness, healthcare treatment, program, service (Jack et al., 2019). A qualitative research question must contain the phenomenon of interest. The phrase “**how do**” in the last revised research question provided an idea of the phenomena of interest. The phrase “**how do**” asked the question of “in what means or method” an activity or event is performed based on the participants' experiences. Often times the phenomenon of interest could be related to the emphasis on the EPPiC framework (Jack et al., 2019). Using the initial study aim: to understand and describe (emphasis) **the activities or process (phenomenon of interest)** by which physiotherapist enhance mobility for older adults.

The C-Context

The C-Context as defined in the Oxford dictionary, refers to statements, ideas, or entities that surround an event and provides resources for its appropriate interpretation and/or clarification. In a qualitative inquiry, the context influences the experiences of a phenomenon and provide insights into the interpretation of the experiences. In the sample provided above, I can choose to link the context to the purposive sample (population-based context) or clearly state the context as geographical (e.g., location), political (e.g., World War II or during new

policy), economic (e.g., poverty), socio-cultural (e.g., marriage rites, clothing styles, kinship practice). If I choose to link my context to sampling, the research question could be revised to: *How do geriatric physiotherapists working in the in-patient rehabilitation units enhance mobility for older adults with hip fracture?* On the other hand, if I choose to describe a geographical context, the research question could be revised to: *How do geriatric physiotherapists working in inpatient rehabilitation unit enhance mobility for older adults with hip fracture transitioning from hospital to their home in the community?*

While a researcher is allowed to decide on whether the context should link to sampling, geographical, political, economic, or socio-cultural context depends on several factors including the overall aim of the study, the philosophical paradigm of the research. For instance, while an ethnographic researcher may focus more on the geographical and political context than context relating to sampling, a global health policy researcher may focus more on economic context and political context than geographical.

Through iterative reflexive process, I noticed my professional perceptions, values and assumption as a physiotherapist, which I called my subjective I “profession-advocates” influenced my research question (Kalu, 2019; Peshkin, 1988). The current research question-how do geriatric physiotherapists working in inpatient rehabilitation unit enhance mobility for older adults with hip fracture transitioning from hospital to the home in the community?- may not provide the information for physiotherapists’ role in enhancing mobility during care transition. Therefore, I revised my research question to reflect my assumptions: *How do physiotherapists, working within geriatric in-patient rehabilitation units, prepare older adults (≥65 years) with hip fracture for transfer to their home in the community?* The above research question has coded languages for Interpretive Description methodology (Thorne, 2016). While this is the starting question in this article, the research question would be iteratively revised. Throughout this article, in-patient rehabilitation unit would be referred to as inpatient rehab.

Research Question for Sally Thorne’s Interpretive Description Design

How do physiotherapists, working within geriatric inpatient rehabilitation units, prepare older adults (≥ 65 years) with hip fracture for transfer to their home in the community? With the stated research question above, I intend to use Sally Thorne’s Interpretive Description (ID) methodology because it is an inductive method that provides an integrative description of a phenomenon through the lens of the researcher’s professional philosophical practice (Thorne, 2016). ID methodology was originally developed by nursing scholars as an alternative qualitative methodology for generating applied knowledge for solving clinical problems which are often characterized by human health and illness experiences (Thorne, Kirkham, & Macdonlad-Emes, 1997). However, the ID methodology is now being used by other health applied disciplines because it allows for disciplinary focused questions with the aim of solving a clinical problem (Thorne, 2016). The ID methodology places emphasis on its ability to answer clinically based research questions through the lens of researchers professional philosophical practice principles, and also its capacity to yield practical solutions for easy applicability in the research context (Thorne, 2016).

I perceive the appropriateness of the ID methodology in my study in four ways. First, my research is an identified clinical problem that has not been adequately studied (Thorne, 2016). This is an identified clinical problem because previous quantitative findings have shown that despite innovative mobility enhancement strategies, older adults experience decline in mobility when discharged to their home (Chase, Lozano, Hanlon, & Bowles, 2018; Rantanen, 2013; Webber & St. John, 2017). Along with the complex nature of mobility (WHO, 2001), and the desire to understand empirical evidence of the quantitative findings (Creswell & Poth, 2018), ID is appropriate for my study. Second, ID is appropriate for my study because it is a

practice, goal-oriented methodology that could provide insight and understanding of the relationships and patterns associated with the decline in mobility as older adults with hip fracture move from inpatient rehabilitation to their home (Thorne, 2016). Third, ID's flexible approach to borrow methodologies from other qualitative methodologies offers a coherent strategy to conceive, design and implement research capable of solving clinical problems (Hunt, 2009; Thorne, Kirkham, & O'Flynn-Magee, 2004;). This flexibility helps to identify themes and patterns that will inform clinical understanding building on the researcher and object of study relatedness (Thorne et al., 1997; Thorne et al., 2004). Finally, ID allows me to explore my research using both the theoretical and disciplinary orientation of my profession. The recent theoretical orientation in the physiotherapy profession is the holistic approach of using the International Classification of Functioning, Disability and Health, specifically, the biopsychosocial model of illness approach to understanding or solving any health challenge (World Confederation for Physical Therapy, 2018). This holistic approach builds on the core disciplinary principle of physiotherapy practice which centers on *functional ability* of patients. In my study, I will explore "the preparation experience" of the physiotherapists by focusing on preparation targeted towards improving mobility (*functional improvement*) of older adults with hip fracture and mobility issue. The disciplinary orientation of physiotherapy practice would give me the lens to interpret and provide a practical recommendation for solving the problem of mobility decline during care transitions, a core feature of ID.

Purposeful Sampling for Sally Thorne's Interpretive Description

Purpose sampling is a general approach to sampling in a qualitative inquiry that aims to identify participants who share the same experience of a central phenomenon of study (Patton, 2015; Thorne, 2016). Thus, this sampling procedure allows me to identify individual participant experiences that would contribute to the shared understanding of physiotherapy experience in preparing older adults with hip fracture and mobility issue for transition to their home in the community. I would employ criterion and theoretical sampling in recruiting participants (Thorne, 2016). Criterion sampling would be used for initial interviews followed by theoretical sampling (Matthew-Maich, Ploeg Jack, & Dobbins, 2013):

1. **Criterion sampling:** Participants would be invited to participate in the study if they meet the following criteria; (a) a licensed physiotherapist with a minimum of 5 years' experience in the geriatric in-patient rehab in a hospital in Ontario, Canada (Ajjawi & Higgs, 2007); (b) self-identified as having worked as an active member of a home discharge team for older adults with hip fracture and mobility issue; (c) employed full time and (d) proficient in English language. These criteria are to ensure that physiotherapists who have relevant experience in preparing older adults with hip fracture and mobility issues were captured (Creswell, 2007).
2. **Theoretical sampling:** Thorne (2016) suggested theoretical sampling for ID because this sampling strategy helps to build evolving theoretical variations that develop a more complex interpretation of patterns that provides a practical solution to the clinical problem studied. Theoretical sampling entails concurrent collection and analysis of data, and subsequent seeking maximum variation in the findings to provide a better understanding of emerging themes (Strauss & Corbin, 1994). I will focus my initial interviews among participants that met the above mention criteria. Subsequently, I would use geographical location (urban or rural) of the hospital in Ontario, physiotherapists' role (e.g., line management

and management role) and characteristic of mobility issue to find maximal variation during data collection and analysis. It is also possible I will sample *case note* and *conduct participant observation* as a method of data collection in this study.

Research Question for Grounded Theory

Typically, preparing older adults after hip surgery for transfer to another care setting is predominantly a nurse's role (Glenny, Stolee, Sheiban, & Jaglal, 2013), but because of the increasingly mobility problem associated with this category of older adults (Rantanen, 2013), it is possible that physiotherapists would occasionally be involved during the transfer process to enhance mobility. Therefore, it is important to understand how experienced physiotherapist transfer older adults with hip fracture and mobility issues from inpatient rehab to their home in the community. Therefore, the purpose of this study is: *To develop a psychosocial understanding in the form of a substantive theory that explains how physiotherapists' in the in-patient rehabilitation unit prepare older adults with hip fracture and mobility issues for transfer to their home in the community.* The purpose of the study has been changed from the purpose stated earlier in this article: *To describe and explore how physiotherapists enhance mobility for older adults*, therefore, the **E-Emphasis** on the present study focuses on explaining rather than exploring or describing stated earlier for ID as the research design. The ID would not be able to explain the various variations and connections throughout the preparation process in details (Thorne et al., 2004). Therefore, it is evident that the change is reflected in the research question (Creswell & Poth, 2018). The revised research question 2 is: *What psychosocial process explains how physiotherapists in the inpatient rehabilitation unit prepare older adults with hip fracture and mobility issues for transfer to their home in the community?* Table 2 shows the first research question and second research question using the EPPiC framework.

EPPiC	First Question	Revised Question 1(ID)	Question 2 (GT)
E	Description and exploration "How do".	Description and exploration- "How do"....	Explanation- "what is" and how PTs"
P	Physiotherapist	Physiotherapist in in-patient rehabilitation	Physiotherapist in in-patient rehabilitation
Pi	Mobility enhancement for older adults	Preparing older adults with hip fracture and mobility issue for transfer	Preparing older adults with hip fracture and mobility issue for transfer
C	Inpatient rehabilitation to community	In-patient rehabilitation to older adult's home in the community.	In-patient rehabilitation to older adult's home in the community
E-Emphasis, P-Purposeful sampling, Pi-Phenomena of interest, C-context, ID- Interpretive description, GT- Grounded theory, PTs- Physiotherapist			

I would employ grounded theory (GT), adapting the constructivist approach to inductively generate a theory based on symbolic interactionism (Charmaz, 2006; Matthew-Maich et al., 2013). This approach is appropriate because of its evolving nature that allows flexibility in understanding the stages (*causes/strategies*) and variations (*conditions/context*) of actions across participants' experience of the phenomena (*core phenomena*) (Corbin, 2009; Gentiles, 2015). More importantly, GT is suitable for studying individual process, interpersonal relationship and reciprocal effects between individuals and social process (Charmaz, 2006; Corbin & Straus, 2008; Glaser & Strauss, 1967). For instance, this method allows me to study the psychosocial processes including personal experience, emotion, prejudice and interpersonal

and inter-professional collaborations of physiotherapists in transferring older adults with hip fracture and mobility to their home. I choose Charmaz (2006) approach over Glaser (1978) and Strauss and Corbin (1990) approach because Charmaz approach embraces constructivism. While Strauss and Corbin (1990) approach GT through both constructivism and post positivism, Glaser (1978) focuses more on post-positivism approach. The constructivism approach paradigm of inquiry allows me to understand the social reality of the physiotherapists experience while acknowledging group constructs of socially shared meaning (Guba & Lincoln, 1994; Charmaz, 2006). The symbolic interactionism process allows me to apply the principle of reflexivity while allowing the participants experiences to shape the direction and form of the research (Snow, 2001).

Purposeful Sampling for Grounded Theory

I would employ purposive criterion based and maximum variation sampling for my initial sampling followed by theoretical sampling (Charmaz, 2006; Corbin & Strauss, 2015). The criteria for selection, phenomenal and demographic variations have been described in the first section of this article. However, some criteria listed might be relaxed during the theoretical sampling process in order to allow for complete development of emerging theory (Charmaz, 2006). The major difference between theoretical sampling in ID and GT is that ID does not follow the “classical” theoretical sampling process but borrows some concept that allows the researcher to answer the clinical problem identified (Thorne, 2016). On the other hand, theoretical sampling in GT follows the classical process described by Glaser and Strauss, (1967), although with modifications to allow for flexibility (Charmaz, 2014). For instance, theoretical saturation and constant comparative method of data analysis was not emphasized or have different meanings in ID and GT (Charmaz, 2014; Creswell & Poth, 2018). Saturation is reached in GT when all concept in the substantive theory developed are understood and can be substantiated from the data (Charmaz, 2006).

Another key concept identified by Charmaz (2014) was that theoretical sampling is not *solely* sampling to reflect population distributions, finding negative cases and sampling until no new data emerged, rather purposively seeking data that provides a useful analytic understanding of categories and links surrounding the core phenomena. The hallmark of theoretical sampling in GT is to provide more concrete explanation to the categories during theory development (Draucker, Martsof, Ross, & Rusk, 2007). According to Charmaz (2014), theoretical sampling strategies include (a) conducting initial interviews and identifying categories; (b) using memos to start theoretical sampling to develop properties of categories and its range of variation; and (c) applying doubt abductive reasoning process, which allows the researcher to doubt the “may be” idea during memoing (Hanse, 2007; Kelle, 2014). This “may be” often comes through an iterative reflexive process throughout the research process.

Conclusion

This article has provided an example on how to develop and revise research questions with a coded language appropriate to a specific qualitative study design (Figure 1), sampling techniques, strategies and sample size. The two research designs I discussed in this article were interpretive description and grounded theory. While this article is a reflexive experience in conducting qualitative research, it has provided a framework for early qualitative researchers to reflexively revise their research question to suit the specific qualitative study design of choice.

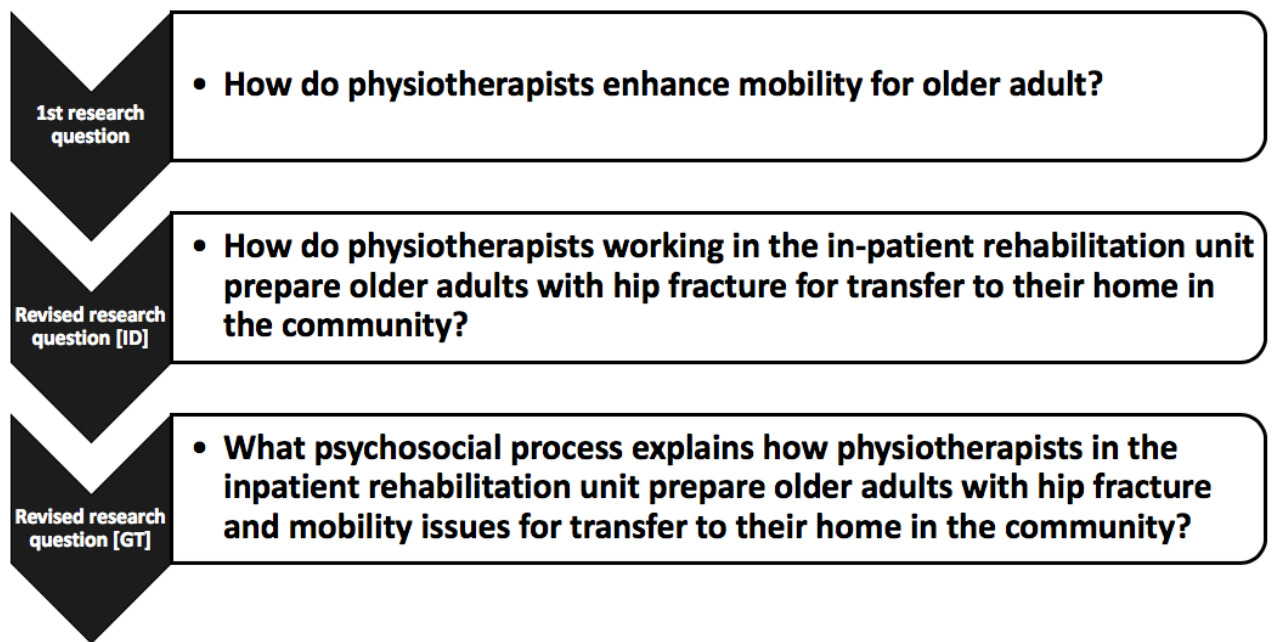


Figure 1 shows the first question, revised questions for interpretive description [ID] and grounded theory [GT] qualitative design.

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