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Relationship of demographic characteristics of occupational and physical therapists towards their knowledge and attitude on person-centered care in skilled nursing facilities

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A dissertation submitted in partial fulfillment of the requirement for the degree of Doctor of Philosophy at Virginia Commonwealth University

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Abstract

RELATIONSHIP OF DEMOGRAPHIC CHARACTERISTICS OF OCCUPATIONAL AND PHYSICAL THERAPISTS TOWARDS THEIR KNOWLEDGE AND ATTITUDE ON PERSON-CENTERED CARE IN SKILLED NURSING FACILITIES

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A dissertation is partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University, 2020

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The study aimed to assess the relationship of specific demographic characteristics of occupational (OTs) and physical therapists (PTs) with their knowledge and attitudes towards principles of Person-Centered Care (PCC) in skilled nursing facilities (SNFs). The study further examined if knowledge and/or attitudinal differences exist between OTs and PTs towards PCC. The proposed descriptive study used the Person-Centered Care theory, which is a holistic (bio-psychosocial-spiritual) health care delivery approach. PCC delivers services that are respectful and individualized, allowing negotiation of care, and offering choice through a therapeutic relationship where persons receiving care are empowered to be involved in health decisions at whatever level they desire.

To fulfill the specific aims, the study explored the concepts of PCC in the occupational and physical therapy fields in SNFs. This exploration process guided the development of the

unique theoretical model of PCC in OT and PT practice. Specific attributes of therapists were investigated to assess any correlations with therapists' knowledge and attitudes towards PCC. These attributes included educational achievement, clinical experience, additional educational training and clinical experience in gerontology/ geriatric care, and therapists' type (OT versus PT).

Using non-probability methods of data collection, this co-relational and cross-sectional study recruited a convenience sample of 77 OTs and 66 PTs (N=143) working in SNFs. The study was a one-time web-based survey design utilizing three separate questionnaires for data collection including the Professional Characteristics Questionnaire, the Knowledge of Person-centeredness of Therapist Scale, and the Attitude of Person-centeredness of Therapist Scale. The reliability and validity of the study instruments were established by an expert penal (which included two faculty members of the Department of Gerontology, VCU, and one physical therapist) and pilot data collection.

Descriptive statistics, correlation statistics, multiple regression analysis, followed by posthoc analysis were used to examine the relationship between predictors (therapist type, educational and clinical experience of therapists) and outcome variables (knowledge and attitude of therapists towards PCC). A sequential multiple regression analysis was used to narrow down the best predictor(s) of therapists' demographic characteristics to influence their knowledge and attitude towards PCC. This was followed by moderation analysis using geriatric training and clinical experience in SNFs as moderator variables.

The outcome of the study is helpful for clinical and academic educators to enhance geriatric pedagogy in the OT and PT professions. The study also contributes to narrowing the theory-practice gap regarding the scope of practice of PCC in the OT and PT professions.

Chapter 1: Introduction

Chapter Overview

The first chapter begins with the background and rationale of the study which includes a brief overview of Person-Centered Care (PCC) in the Occupational (OT) and Physical therapy (PT) fields. Following this, information is presented about innovations and gaps in the research. Thereafter, the chapter sets out the study purpose, overarching research questions, and organization of the remaining chapters of the study.

Background and Rationale of the Study

Person-Centered Care is a health care philosophy that aims to empower individuals in successfully managing their health by increasing active participation in their health care decision-making process, including letting them decide when to invite any health care professionals to act on their behalf (De Silva, 2014). Studies indicate that rehabilitation practices in the disciplines of OT and PT have been moving away from traditional medical practices and adopting principles of PCC (Hedberg-Kristensson & Iwarsson, 2013; Cruz, Moore, & Cross, 2012; Leach, Cornwell, Fleming, & Haines, 2010). To better meet the needs of individuals, approaches tailored to their specific needs are required (De Vries, van Ravensberg, Hobbelen, van der Wees, Olde Rikkert, Staal, & Nijhuis-van der Sanden, 2015; Bertilsson et al., 2014; Eyssen, Dekker, de Groot, Steultjens, Knol, Polman, & Steultjens, 2014; Mulligan, White, & Arthanat, 2014; Eyssen, de Groot, Steultjens, Knol, Polman, & Dekker, 2013). Furthermore, the

value of increasing a person's autonomy, active participation, and self-management during their course of rehabilitation therapy has been emphasized (de Vries et al., 2015; Maitra & Erway, 2006; Cott, 2004; Chen, Rodger, & Polatjko, 2002; Law, Baptiste, & Mills, 1995). This is because numerous benefits of PCC practices have been identified, including an increased sense of selfhood (Korner, Ehrhardt, & Steger, 2013), sense of security (Eyssen et al., 2014), safety (Moats, 2007), motivation (Eyssen et al., 2014), and empowerment (Hammell, 2013; Moats, 2007; Mortenson & Dyck, 2006). A person may feel inspired, develop insights leading to behavioral modification, and exhibit better-coping strategies leading to more healthy activities (Berg, Pedersen, Svendsen, Zwisler, Kristensen, & Pedersen, 2011). Using PCC, therapists have been shown to have increased compassionate care, assume increased accountability for continuity of care, and improve their communication skills during therapy (Hammell, 2013; Leach et al., 2010; Cott, 2004). Therapists also learn to relinquish some degree of power to promote shared decision making with the patient, promoting collaborative patient-therapist relationships (Eyssen et al., 2014; Cooper et al., 2008). The results lead towards highly motivated and satisfied healthcare partners and a trustworthy therapy environment, thereby promoting meaningful therapy outcomes (Eyssen et al., 2013; Korner et al., 2013; Wallin, Jakobsson, & Edberg, 2012).

On the other hand, some critics indicate that the PCC approach should be used in general practice but doubt its utility and success in rehabilitation professions such as OT and PT. This doubt may stem from some therapists' belief that the practice of PCC in OT and PT has minimal benefit for persons who have limited cognitive potential (Leach et al., 2010; Moats, 2007). Some suggests that the PCC approach, which aims to strengthen the patient's affective domains (such as increasing empowerment, honoring patients' wishes, and providing them complete

information and respect) requires patients to be cognitively sound and actively involved in the therapy plan of care (Leach et al., 2010; Gzil, Lefeve, Cammelli, Pachouds, & Leplege, 2007). Additionally, some say system variables such as time constraints, cost reduction, and operative efficiency limit the ability of therapists to embrace the principles of PCC (Eyssen et al., 2014). Some therapists oppose PCC due to concerns with their patients' safety, which in turn results in patients' (especially frail) incorrect perception about their physical capacity in their daily lives (Russell, Fitzgerald, Williamson, Manor, & Whybrows, 2002). Some other opponents argue that maximizing physical functional independence is critical to the values of the OT and PT professions requiring the focus of therapists towards the management of physical functional impairment and complex disabilities patterns, and so undermines the scope of PCC (Eyssen et al., 2013; Gzil et al., 2007; Richards & Christian, 2006). Such attitudes or perceptions of therapists towards PCC may arise from their incomplete knowledge, limiting them to explore and expand their knowledge on PCC, and consequently inhibit them from practicing PCC.

Maitra and Erway (2006) note that PCC is not about giving patients what they want, and it is not entirely up to therapists to adopt principles of PCC. Person-Centered Care is a two-way dynamic process which requires the desire and ability of patients to actively participate in the therapy plan-of-care. It also requires the desire and skills of rehabilitation professionals to provide opportunities to their patients to actively involve them in therapy decision-making. The care process cannot be person-centered if patients are neither willing to actively participate nor able to be involved in a shared decision-making process during therapy. Patients must be ready to self-manage their learned skills and coping strategies to restore, compensate and adapt to their functional limitations. Similarly, the care process is not person-centered if patients express eagerness, but therapists are not adept enough, knowledgeable enough, and/or are not willing to

provide opportunities to their patients to involve them in therapy plan-of-care. In other words, any deviation from (a) desire and ability of patients, (b) skills or knowledge of therapists, and/or (c) willingness or attitude towards implementation by therapists could mean a deviation from PCC. These three variables are thought to be critical to developing a mutually therapeutic alliance or partnership between patients and therapists and for the success of a PCC approach in rehabilitation settings (Kjellberg, Kahlin, Haglund, & Taylor, 2012; Marie, 2012; Chen et al., 2002).

Cameron & Mccoll (2015) suggest that recognizing the person to be treated as an expert, in terms of possessing knowledge and ability to make their health care decisions, facilitate learning of PCC. This suggests that PCC approaches are inherent to the needs of a person to be treated, so the burden of adoption of principles of PCC such as development of mutual partnership relies upon the therapists' intent and/or attitude. However, merely having the intent and/or readiness to share information and involve patients in shared decision therapy plans is not enough if the therapist does not possess the required knowledge and/or enabling skills to practice the principles of PCC. Adequate knowledge of PCC offers multiple choices to the patient and an opportunity for the therapist to systematically focus on meaningful PCC approaches and patients' activities for successful therapy (de Vries et al., 2015; Moats, 2007; Falardeau & Durand, 2002; Hammell, 2013). For instance, practicing PCC elements such as providing complete information, empowerment, honoring residents' preferences, and repeatedly discussing therapy plans can allow therapists to negotiate better care options to patients, and build up strong therapist-patient relationships. This in turn may allow better clinical reasoning, coaching, and motivational interviewing strategies to therapists, increasing patients' physical activity participation and self-management (de Vries et al., 2015).

The above discussion indicates therapists' positive attitude towards PCC is an important prerequisite to promoting the active involvement of their patients and to fostering therapist-patient relationships (Hammell, 2013; Marie, 2012). Additionally, therapists might possess the intent to practice PCC but may lack adequate knowledge about the principles of PCC. Inadequate knowledge can limit therapists' skills and discourages them not to practice PCC. It is important to explore both the willingness of therapists to become educated about PCC and how prior knowledge of therapists about PCC leads to a positive attitude towards PCC. Therefore, one must ask the following questions: How knowledgeable are therapists about the principles and operation of PCC behaviors? What are the therapist attitudes towards PCC?

Innovation of the Present Study and Gaps in the Research

Little published research has specifically assessed the knowledge and attitudes of practicing OTs and PTs towards PCC in the SNF environment. Although the concept of PCC has been extensively explored in the literature, including its use in health care settings, less is known about its use in the OT and PT professions. The existing literature indicates that greater emphasis had been put on the measurement of PCC processes and behavioral/psychological aspects of patients rather than the assessment of therapists' knowledge about PCC approaches and their attitudes about PCC (Mulligan et al., 2014; Korner et al., 2013). Many researchers have measured only patients' experience of PCC in settings such as outpatient clinics in urban or semi-rural areas (Kidd et al., 2011; Cooper et al., 2008). Many other researchers assessed either the efficacy or quality of one or the other PCC approaches (De Vries et al., 2015; Eyssen et al., 2014). Some researchers have invested their search to know the meaning of PCC (Law, et al., 1995) while others assessed perceptions and values of varied health professionals towards PCC

(Korner, et al., 2013). Therefore, the knowledge and attitudes of therapists about PCC has yet to be specifically studied in the OT and PT professions in SNFs. This study is an innovative assessment of the knowledge and attitudes of therapists about PCC in SNFs. The outcome of the study may help clinical and academic educators to enhance geriatric pedagogy by analyzing the relevance and scope of practice of various elements of PCC in OT and PT professions.

This study addressed two important shortcomings in the existing body of literature on PCC in SNFs. First, this was the first exclusive study surveying OT's and PT's knowledge and attitudes to PCC in the SNF environment. Second, the study was the first to analyze the relationship of educational and clinical experience of practicing therapists with their knowledge and attitudes to PCC.

Purpose

The purpose of this study was to assess the effect of educational and clinical experience of Occupational Therapists (OTs) and Physical Therapists (PTs) on their knowledge of principles of PCC and their attitudes towards implementing those principles in skilled nursing facilities (SNFs). This study also aimed to explore if there is a correlation between knowledge and attitudes of therapists towards PCC and to examine if any knowledge and/or attitudinal differences exist between OTs and PTs towards PCC. The study answers the following research questions:

1. How knowledgeable are OTs and PTs about the principles of PCC?
2. What are the attitudes of OTs and PTs to PCC?
3. How do therapists' knowledge of PCC affect their attitudes to PCC?

4. To what extent do therapists' professional demographic characteristics (educational level, clinical experience, type of therapist, and additional educational training and experience in gerontology/ geriatric care) predict their knowledge of PCC?
5. To what extent do therapists' professional demographic characteristics (educational level, clinical experience, type of therapist, and additional educational training and experience in gerontology/ geriatric care) predict their attitudes to PCC?

Organization of Remaining Chapters

This dissertation is divided into five chapters. Chapter two contains a review of the literature describing the current research on PCC leading to the development of a model of PCC in the practices of occupational and physical therapy. Also, chapter two reviews the attributes impacting therapists' knowledge and attitudes to PCC. Chapter three describes the methodology of the research study. Chapter four provides details of the results of the study. Finally, chapter five provides a discussion of the outcomes of the study and future directions for research.

Chapter 2: Literature Review

Chapter overview

This chapter begins with an exploration of the origin and definition of person-centered care (PCC) and its theoretical and conceptual principles. The literature on occupational and physical therapists' (OTs and PTs) knowledge and use of PCC practices and their attitudes to adoption of PCC practices is then reviewed. This is followed by an explanation of therapists' professional demographic attributes that may impact their knowledge and attitudes to PCC. Finally, the chapter presents the theoretical model of PCC to be used in this study and presents the study hypotheses.

Origin of Person-Centered Care

The concept of PCC opposes the traditional medical model of care that treats patients as commodities and an object of care rather than as a person (Fazio, 2008). The origin of PCC can be traced to the work of Florence Nightingale in the nineteenth century, who reformed nursing and the medical profession by shifting its focus to the patient rather than the disease (Lauver et al., 2002). In the 1920s and 1930s Prescott Lecky developed the concept of self-consistency, which served as a forerunner to the work of Carl Rogers (Merenda, 2010). Self-consistency theory revolves around ideas of self-help and motivates a person to modify the unity of ideas for a master motive to preserve his/her individuality (Stevens, 1992).

A more extensive development of the concepts of PCC was first introduced by Carl Rogers in 1939 (Falardeau & Durand, 2002). In 1951, his published work 'Self-Theory of Personality' explained how the external environment destroys the image of 'selfhood' thereby resulting in psychological distress in a person (Merenda, 2010). Roger's work emphasizes the importance of a therapeutic relationship between a person and a clinician to create a concept of self. In addition to the therapist-client relationship, Rogers also stressed the importance of empathy, active listening, respect, and an understanding of a person's sense of actualization. The principal notion of Roger's theory of selfhood gave rise to the term 'client-centered therapy' which he described as a therapy that focuses on the client's healing and growth by discovering answers that he or she is looking for. It encourages therapists to create a therapeutic environment in which the client can be more comfortable expressing his/her feelings than merely a passive recipient of the therapists' commands. It stops therapists to make diagnosis, judge clients and provide reassurance and putting the blame of him or her due to underlying medical conditions (Rogers, 1951). The concepts of Roger's theory, however, were initially misunderstood and some professionals believed that the client-centered approach would create a role reversal between the clinician and patient, shifting the health care decision making power completely onto the patient. In 1965, Rogers restated the importance of active presence and interaction between the patient and the provider over any such role reversal (Falardeau & Durand, 2002). The 1987 Omnibus Budget Reconciliation Act (OBRA) imposed regulations on skilled nursing facilities (SNFs) that transformed their practices and mandated minimum standards of care and rights of the residents in nursing homes. Also, OBRA introduced concepts of PCC such as resident-directed care and individualized care plans to improve quality of life and health care provisions for the residents of nursing homes (Hawes et al., 1997).

In 1988, inspired by Rogers, Kitwood first used the term ‘person-centered care’ to manage behaviors of dementia patients (Fazio, 2008). Kitwood emphasized that communication and the relationship between patients and health care professionals should guide the care of dementia patients as opposed to the standard medical approach. The traditional medical approach treats patients with dementia solely as an outcome of neurological insult to the brain while lacking attention to ‘personhood and well-being’ (Fazio, 2008, page 156). With ‘personhood’ as the central aspect of care for patients with dementia, Kitwood’s model encouraged health care professionals to provide care with love (surrounded by elements of comfort, attachment, inclusion, occupation, and identity) as opposed to choosing convenience and efficiency of the treatment process. Thus, Kitwood proposed an improved model of the health care delivery process to emphasize the importance of *how* to provide rather than *what* to provide.

In 1997, the Pioneer Network, a group of long-term care professionals, began to advocate for person-directed care in long-term care settings following on from Kitwood’s earlier work. The Pioneer Network emphasized the values of community and relationship, the importance of the patient as a distinct individual, and the need to focus on how the person was to be treated rather than the tasks to be completed. They encouraged flexibility in health care provider’s clinical attitudes, and an exploration of self-determination of patients to provide a humane, consumer-driven model of care. They initiated culture change models in long-term care settings with goals to create a satisfying and meaningful culture of aging (Fazio, 2008). The values of care espoused by the Pioneer Network were reflective of key concepts of PCC and then spread more widely as they became adopted by the growing culture change movement.

Many national models of culture-change evolved with a focus on the care of the person to be treated. Some of the most common and nationally recognized models of culture-change

include: The Regenerative Community (1977), The Planetree Model (1978), Restraint-Free Individualized Care (1987), Resident-Directed Care (1992), Eden Alternative (1994), The Wellspring Model (1994), and The Green House Project (2003). The underlying similarity in these models of care is the impetus to make an innovative organizational change by providing residents a home-like environment and recognizing them as distinct individuals.

Person-Centered Care: Definition, Synonymous Nomenclature, Components and Characteristics

There is no standard definition of Person-Centered Care (PCC). A wide variety of terms have been used interchangeably to describe PCC including person-directed care, resident-centered care, ideal care, patient-centered medical home model, ideal nursing home, patient-centered care, and client-centered care (Coleman, Medvene, & Haitsma, 2013; Rosemond, Hanson, Ennett, Schenck, & Weiner, 2012; Morgan & Yoder, 2012; Flesner, 2009; Goldberg, Koontz, Rogers, & Brickell, 2012; Fazio, 2008). The terms 'patient-centered care' and 'client-centered care' have often been treated synonymously with PCC in the literature. Mroz et al., (2015) identified an overlap between the patient and client-centered care with few distinguishing features between them. The distinction between these two terms is based on an availability of access to care and coordination of care across time and settings in patient-centered care, and an availability of hope and understanding of possibilities in client-centered care. However, for this study, these two terms have been considered similar enough to PCC to be used as equivalents.

PCC is a health care philosophy that aims to empower individuals in successfully managing their health by increasing their active participation in the health care decision-making

process. Person-Centered Care further allows individuals to decide when to invite a healthcare-professional to act on their behalf (de Silva, 2014).

Person-Centered Care has been labeled in a variety of different ways by researchers, healthcare professionals, and policymakers. In the existing literature, PCC has been described as a 'health care philosophy' (de Silva, 2014), an 'innovation' for quality improvement (Institute of Medicine, 2001), a 'method' to improve job satisfaction (de Silva, 2014), a 'culture-change movement' (Koren, 2010) to transform traditional medical health care model, and an 'approach' to increase, minimize the risk of litigation, and provide holistic care to the patient (Irwin & Richardson, 2006; Institute of Medicine, 2001).

The term 'person-centered care' is also used in different ways based on health care discipline and delivery. For instance, concerning residential care communities, Fazio (2008) refers to person-centered care as a 'health care philosophy' that focuses on changing the practices of traditional medical model or culture. Fazio (2008) indicates that PCC allows health care practitioners to put the person first and develop a relationship with the unique person. It offers appropriate assistance, activities, and interactions that recognize and support the lifelong selfhood of the person. Finally, it fosters a community that can learn more, evolve, grow, and share the individual needs of the identified person (Fazio, 2008).

In a longterm care setting, Zimmerman et al., (2014), defined PCC as "those practices that are centered around and are decided by the resident who lives there (p. 19)." In another study, Zimmerman et al., (2015) described person-centeredness as "Culture and operations that are nurturing and empowering, promote purpose and meaning, and supportive well-being in a relationship-based, home environment (p. 133)". In another review, within the context of LTC, an implied definition of PCC by Koren (2010) summarized PCC as a, "culture-change movement

involving broad-based efforts to transform nursing home practices from impersonal health care institutions into true person-centered homes" improving quality of care and quality of life of residents (p. 1).

Therefore, when attempting to describe PCC, one should keep in mind various contextual factors and variables. Factors include, but are not limited to, the context or setting in which PCC is being defined such as acute care, long term care, hospital, or nursing home. As well, the meaning of PCC can differ from the perspective of the patient, family, policymaker, or a health care professional. Further, the meaning of PCC can differ among various clinicians such as; nurses, occupational therapists, physical therapists, physicians, social workers, and speech therapists. Finally, the meaning of PCC can differ between describing it as a broad holistic view of care or describing it as a single component of care.

Overall, irrespective of the subcomponent and contextual factor focused while describing PCC, the philosophy places the person to be treated in the center of the care process around which all the health care decisions are made. Health care services are to be delivered in a manner that promotes autonomy and provides more information and health care choices to the patient. It is to be noted that a PCC neither means to give patients whatever they want nor to switch the decision-making power from the clinicians over to the patients during the health care delivery process. It is about creating mutual collaboration, balancing the power dynamic between clinician and patients in the planning, developing and the implementation stage of the health care program (de Silva, 2014; Kidd et al., 2011; Moats, 2007; Mortenson & Dyck, 2006; Sumsion, 2005).

In addition to numerous terms of nomenclature that are synonymous with PCC, many different components and sub-components of PCC are evident in the literature (de Silva 2014;

Scholl, Zill, Härter, & Dirmaier, 2014; Morgan & Yoder, 2012). The literature suggests words such as characteristics, components, elements, principles, and/or themes all used interchangeably to describes similar categories of PCC. A systematic review by de Silva (2014) summarizes PCC into three major categories; a broad holistic view of PCC, specific subcomponents of PCC, and specific activities or behaviors of PCC (See Figure 1).

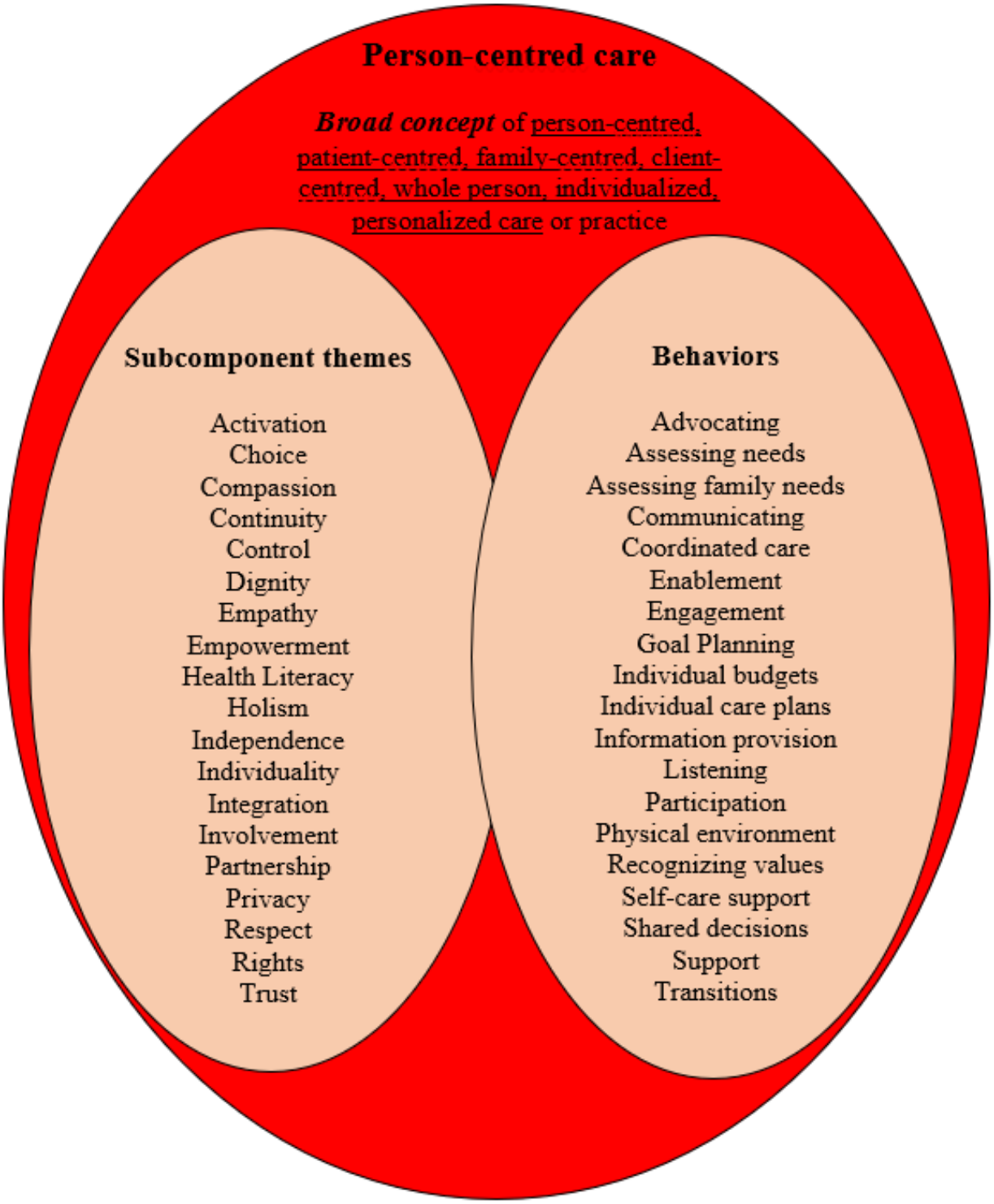


Figure 1

Components, subcomponents, and behaviors of PCC (Adaptive with permission; de Silva, 2014)

Scholl et al. (2014) proposed an integrative model of patient-centeredness and summarized fifteen inter-related dimensions under three broad categories; principles, enablers, and activities (Table 1). The review by Scholl et al., (2014) describes the principles as the underlying key concepts of patient-centeredness that are implemented by a range of specific activities or behaviors and are further strengthened by enablers (components to improve patient-centered care).

Table 1

Integrative model of Patient Centeredness based on Scholl et al. (2014)

Categories	**Inter-related Dimension of Patient-Centeredness**
Principles	Essential characteristics of the clinician
	Clinician-patient relationship
	Patient as a unique person
	Bio-psychosocial perspective
Enablers	Clinician-Patient-Communication
	Integration of Medical and Non-Medical Care
	Teamwork and Teambuilding
	Access to Care
	Coordination and Continuity of care
Activities	Patient Information
	Patient Involvement in Care
	Involvement of Family and Friends
	Patient Empowerment
	Physical Support

Yet, according to Scholl et al., (2014):

> A comprehensive and systematic analysis of existing conceptual definitions of patient-centeredness is lacking, leading to a heterogeneous use of the term, unclear measurement dimensions, inconsistent results regarding the effectiveness of patient-centered interventions, and finally difficulties in implementing patient-centered care. (p. 1)

In conclusion, Person-Centered Care is defined in numerous ways by different health care professionals and disciplines involved in the process of health care and numerous terms are used interchangeably and synonymously with PCC. However, a commonly agreed-upon way of describing the PCC philosophy is required for clinicians for successful development and implementation of principles of PCC practice (Li & Porock, 2014).

For the present study, a combined definition incorporating many definitions as described by Morgan & Yoder (2012) is used:

> PCC is a holistic (bio-psychosocial-spiritual) approach to delivering care that is respectful and individualized, allowing negotiation of care, and offering choice through a therapeutic relationship where persons are empowered to be involved in health decisions at whatever level is desired by that individual who is receiving the care. (p. 8)

Therapists' Knowledge of PCC Practice and Behavior

Research suggests that therapists possess some understanding of PCC, though the knowledge of its various principles and/or components may differ among clinicians (de Vries, et al., 2015; Hammell, 2013; Moats, 2007; Falardeau & Durand, 2002). Studies chiefly describe therapists' knowledge in terms of their successful adoption and use of various strategies of PCC including increased time spent to diagnose a patient's problem, increased negotiation to explore treatment options, enhanced power of the patient in the therapy plan of care, education so patients can be actively involved in therapy, and modification of therapy sessions based upon patient preferences/needs (Hammell, 2013; Moats, 2007; Falardeau & Durand, 2002). Leach et al. (2010) suggest that modification of the existing communication style is a key part of PCC that

facilitates the education of the patient and their family about the nature of the injury, and results in a better understanding of the goal-setting process and PCC.

Some studies indicate that therapists possess knowledge of PCC in terms of their understanding of the increased efficacy and quality care as a result of the adoption of the PCC approach (de Vries et al., 2015, Eyssen et al., 2013). de Vries et al., (2015) developed and assessed the effectiveness of a PCC approach called Coach2Move during physical therapy interventions among older adults. Coach2Move aimed to improve the long-term level of physical activity in mobility-limited older adults. The strategy was developed using systematic studies in the literature and expert consultations. Focus group meetings and a Delphi procedure were used to reach consensus on key elements of Coach2Move strategy. Twelve patients were interviewed, and discussions were held involving two physical therapists to assess the acceptability of the Coach2Move strategy. Thereafter, the potential effectiveness of the strategy was tested measuring the level of physical activity, frailty, quality of life, and mobility before and after treatment. Overall, the personalized and goal-oriented Coach2Move strategy allows increased diagnostic time during PT treatment to improve the longterm level of physical activity in older adults.

Eyssen et al., (2013) explored PCC through a structured Client-Centered Process Model comprising a preset of 8-point action/approaches to train therapists for PCC and found short term differences in quality of therapy by therapists using this PCC approach as compared to usual OT interventions. However, overall Eyssen et al., (2013) question the use of PCC in general due to its negative outcomes such as minimizing gains in clients' physical bodily impairment and gains in functional independence during their activities of daily livings. The study provides

information that occupational therapists possess some knowledge about principles of person-centered care but doubts its utility.

Montalvo (2007) found that educative opportunities were presented to OT students in their academic curriculum but discovered that a lack of enough knowledge about PCC was a barrier to implementation. Mortenson & Dyck (2006) suggest a two-step process to overcome barriers of PCC. The first step requires a careful examination of institutional policies and procedures which hinder or facilitate person-centered practice. This will allow therapists to analyze the power relationship at interpersonal and institutional levels which alters the course of patient care. Thereafter, in Step 2, the therapist must utilize his/her knowledge to advocate for institutional changes to facilitate PCC. Thus, the existing literature about the knowledge of PCC presents therapists' interpretations about its efficacy, quality, or barriers. Although some specific studies have been conducted, little research has been conducted on the knowledge level of PCC among practicing OTs and PTs.

Therapists' Attitudes towards Person-Centered Care

The literature indicates that OTs and PTs possess mixed attitudes towards the adoption of PCC (Carrier, Freeman, Levasseur, & Desrosiers, 2015). The few studies available indicate a negative attitude and limited scope of PCC in existing OT and PT practices. Nationwide, a PCC approach has not been a part of the professional curriculum in these professions (Mudge, Stretton, & Kayes, 2014; Schmitt et al., 2012). Additionally, some researchers claim that these professions must only practice the traditional medical model, with a focus on increasing functional gains by minimizing physical bodily impairment or producing successful clinical outcomes (Cruz et al., 2012, Eyssen et al., 2013, Gzil et al., 2007). Moats (2007) emphasized that

for meaningful clinical results the PCC model is suitable only for individuals with non-cognitive impairments. Mulligan et al., (2014) suggest that the clinicians highly value PCC but in day-to-day practice impose stronger emphasis on the evaluation and remediation of performance skills and bodily functions than the application of PCC.

Presumably, few other studies indicate a positive inclination towards the adoption of PCC approaches (Hedberg-Kristensson & Iwarsson, 2013, Montalvo, 2007). Hedberg-Kristensson & Iwarsson (2013) explored therapists' attitudes and approaches toward PCC in specific relation to provisions of mobility devices. Using a semi-structured interview from 4 PTs and 8 OTs the study reported that therapists acknowledge the necessity of interaction with a person to be treated in rehabilitation, identify obstacles to PCC and use different strategies of PCC during therapy practices. However, therapists believe that the success of the application of PCC varies depending upon the client's capabilities and suggests that old age and frailty may limit the scope of practice of the PCC approach. Also, all the obstacles to practice PCC identified were related to the client, their family, and the organizational practices. Therapists used PCC strategies such as active listening and talking as encouragement, educating and demonstrating strategies, and inviting family members to participate in therapy plan-of-care (Hedberg-Kristensson & Iwarsson, 2013). The findings of their study indicate that therapists are inclined to practice PCC with appropriate patients and advocate for the necessity of creating strategic approaches for successful PCC practices.

Montalvo (2007) also acknowledges an initial inclination on the part of occupational therapy students to practice PCC. Using a self-survey questionnaire about PCC among 44 second year and third-year OT students in psychosocial and physical disability fieldwork settings, Montalvo (2007) found that educative opportunities were presented to OT students in their

academic curriculum, but the outcome reflects a mismatch with PCC treatment priorities in the clinic. The study reported 93.2% of the students stated that PCC was the indicated approach to treatment, but only 50% of them reported that the client priorities were addressed in the clinic. The study also reported an 88.7% discrepancy between students who reported PCC treatment was used than those that stated the chosen treatment methods were not meaningful to the clients. This indicated that OT students acknowledge barriers to PCC, possess insufficient knowledge, and not sure exactly what constitutes PCC. Also, a theory-practice gap in terms of PCC application exists indicating a discrepancy between what is taught about PCC in academic settings and what is implemented in the clinics.

As with the knowledge of PCC by OTs and PTs, some limited research studies have been conducted, but little exploration has been done on the attitudes toward PCC among practicing OTs and PTs.

Demographic Attributes Impacting Knowledge & Attitudes of OTs and PTs towards PCC

The literature identifies various demographic characteristics of therapists related to education and experience that may impact their knowledge and attitudes towards the adoption of principles of PCC.

Education. With advancements in medical technology, the demand for quality therapy services is growing in the rehabilitation practices of occupational and physical therapies. Abilities such as knowledge of therapeutic skills, social adjustment, self-management, and self-education are required by licensed Occupational and/or Physical Therapists for the independent execution of therapy-related duties and to develop clinical competence (Kanada, Sakurai, Sugiura, Hirano, Koyama, & Tanabe, 2016). In the U.S., the Federation of State Board of

Physical Therapy (FSBPT) develops, maintains, and administers the National Physical Therapy Examination to become a Physical Therapist, while the National Board for Certification in Occupational Therapy (NBCOT) develops and administers the exam to certify Occupational Therapist nationwide. The outcome of these national exams is used by each jurisdiction nationwide to grant permission for licensure and to practice as a therapist.

Education within a clinical environment is essential for clinicians to fill the theory-practice gap and improve decision making by engaging in real-world practice (Imms, et al., 2017; Constantine & Carpenter, 2012; Wainwright, Shepard, Harman, & Stephens, 2011). The review of literature suggests that those clinicians with more educational training demonstrate more positive attitudes towards person-centeredness (Constantine & Carpenter, 2012; Bloch, 2004). Constantine & Carpenter (2012) explored the change and/or gains in clinical competence of physiotherapists (synonymous with physical therapist) after the therapists completed a master's degree in their profession. Their study demonstrated increased knowledge, skills, and substantial attitudinal changes in dealing with professional and personal issues thus improving the quality of their clinical services and outcomes. Constantine & Carpenter (2012) identified a need for education that promotes precision thinking of therapists so that the care provided by them can be more patient-centered bringing meaningful clinical and professional outcomes. They defined precision thinking as "an ability to integrate new skills and knowledge" (p. 595). They also indicated that graduates of graduate than bachelor programs, can better review the relevance of pre-therapy expectations far better and demonstrate better ability to be more patient-centered. This indicates that educational achievement may directly impact attitudes and knowledge towards PCC.

Years of overall clinical experience. Like education, the length of clinical experience may be a factor that can lead to different attitudes and behaviors of therapists, and consequently may alter the adoption of person-centered practices (Hedberg-Kristensson & Iwarsson, 2013; Bloch 2004). Wainwright et al., (2011) suggest that both novice and experienced clinicians often made similar clinical decisions, but they used different clinical reasoning processes and reflections on self-assessment to arrive at a clinical decision, which is integrative of their affective, cognitive and psychomotor learning experience. Activities that occurred outside the treatment session such as prior academic and continued education experience, are more likely to mold the behaviors of novice therapists in daily practices. On the other hand, specific reflection-in-action activities, activities that occurred during treatment sessions, and ongoing clinical experience, mold the behavioral of experienced therapists for making immediate decisions during patient-therapist interactions. Wainwright et al., (2011) further mentioned that novice therapists often hold limited recall about a patient's condition and more typically use an unorganized approach with atypical patients which can lead to errors. When faced with clinical dilemmas, novice therapists often use trial and error approaches to minimize uncertainty in clinical decision making. Novice therapists focused on one impairment and functional activity limitation and relied more on external sources such as the medical chart and standard guides to practice PT. On the other hand, experienced therapists were better able to recall health care information about a patient and can practice better observational and interaction skills with patients. They used a forward reasoning approach which helped to selectively hypothesize outcomes of atypical patients. Using a structured system of collecting information about the patient, experienced therapists can focus on multiple impairments and functional limitations (Wainwright et al., 2011). The difference in clinical reasoning abilities and processes by novice

and experienced therapists suggests the potential for difference when it comes to the adoption of principles of PCC.

In an attitudinal study on family-centered practices in a pediatric population, Bloch (2004) indicated that the number of years of clinical experience had strong correlations with a positive attitude towards the person to be treated and his/her family. The experienced occupational therapists were more knowledgeable and comfortable in their roles, and therefore could better exercise person-centered practices than novice therapists. On the other hand, novice clinicians were more focused on treatment strategies and techniques they are still mastering than on person-centered skills (Bloch, 2004). Using Bloch's (2004) analysis of correlation of family-centered practices with the clinical experience of OTs, it can be suggested that it is vital to explore the correlation of length of clinical experience with the behavioral adoption by OTs and PTs of PCC practices.

Therapist Type. Research on the adoption of principles of PCC from clinicians' perspective has been done involving various health care professionals such as Nurses, Occupational Therapists, Physicians, Physical Therapists, Psychologists, and Speech therapists. Only a handful of studies have recruited clinicians from multiple disciplines, but these studies were not intended to compare views among the disciplines with PCC (Dow, Fearn, Haralambous, Tinney, Hill, & Gibson, 2013; Hedberg-Kristensson & Iwarsson, 2013; Korner et al., 2013; Leach et al., 2010; White, Newton-Curtis, & Lyons, 2008). No previous research has conducted and/or suggested any difference between OTs and PTs' knowledge and attitude towards PCC. Given the differences in the focus of the professions, further research is needed to determine similarities and differences in the PCC practices of OTs and PTs.

Special educational training in Gerontology/Geriatric care. Since the 1960s the literature has consistently documented the existence of professional bias and/or therapists' unwillingness to work with older patients (Tomko, 2008). Working with older patients has been perceived as less satisfying and appealing (Taylor & Tovin, 2000). Collins (2013) identified that even though PTs practicing in SNFs and intermediate care facilities have the highest median salary (APTA, 2011), PT graduates have a lower willingness to work in SNF settings. Health care professionals, including physical therapy students, are reluctant to enroll in a geriatric clinical elective during their entry-level education and less than 2% of students opt for such courses (Reneker, Weems, & Scaia, 2016; Hobbs, Dean, Higgs, & Adamson, 2006). However, attitudinal studies on aging suggest that special training in gerontology or geriatric care can improve health care professional's attitudes towards older clients (Blackwood & Sweet, 2017; Tomko & Munley, 2013). In an exploratory study on the perception of PT students towards older adult rehabilitation, Watkins & Waterfield (2010) found evidence of depersonalization while treating older adults and ageism among clinicians. Their finding suggests that a structured element of university-based teaching on geriatric care is needed to counterbalance negative stereotypes towards older adults developed by the PT students during their clinical rotation.

It is documented that if health care professionals feel less competent in dealing with older patients, their therapist-patient relationships are compromised and, consequently, this influences therapy outcomes (Tomko, 2008). Blackwood & Sweet (2017) suggest modifying the entry-level educational requirements of physical therapy programs to include exposing PT students to positive perceptions of aging to develop a knowledgeable and skillful geriatric physical therapy workforce. In a pre and post-test study design, Gray & Walker (2015) reported increased OT and PT student knowledge of gerontology after participating in 12 units of inter-professional

Gerontology training. Tomko & Munley (2013) also reported that clinicians with additional gerontological training and certifications are more likely to recommend comprehensive medical examinations and are more sensitive to the needs of older adults.

The above studies indicate that a structured professional gerontology or geriatric course and/or certification can influence OT and PT student knowledge of gerontology and attitudes towards aging. The improved attitudes developed from these training experiences may impact attitudes of OT and PT towards PCC. Additional educational training in gerontology and/or geriatric care may alter the perception of OTs and PTs to adopt the principles of PCC in SNFs.

Clinical experience in Geriatric care. Clinical decision making is an essential process to deliver effective care of patients. It has been established that the length of clinical experience strengthens the clinical decision-making process (Reneker et al., 2016; Tomko & Munley, 2012; Wainwright et al., 2011). A clinician develops required skills of clinical decision making, such as critical thinking and problem solving, in stages through the experience of academic education and various clinical rotations. However, it is not just the length but also the type of clinical experience in different clinical settings that may alter the clinical reasoning process and care of the patient (Wainwright et al., 2011). This is because a variety of clinical settings offer different stages of clinical experience producing a difference in thought process to reach a clinical decision.

Blackwood & Sweet (2017) explored the perceptions of observed care of 15 first-year physical therapy students enrolled in a 3-year graduate-level Doctor of Physical Therapy program after completing an average of 32.5 hours of training in geriatric PT settings. The students reported the existence of ageism, in the form of negative stereotypes towards older adults, among OTs, PTs, and other clinicians with whom they worked. They identified that

health professionals complain more about working with older adults than younger adults. Negative verbal and non-verbal communication towards older patients were noted by all PT students. Thus, students' clinical experiences may make them more aware of ageism in therapy, but they are also seeing ageism modeled by their mentors.

Gray & Walker (2015) identified that a gerontology course project by OT and PT students involving a group activity and direct one-on-one interactions with older adults positively influenced their attitudes towards aging and their interest in pursuing a career in geriatric care. Tomko & Munley (2012) also suggest that clinical rotations and experience with older adults not only increases knowledge and interactive skills with the geriatric population, but also positively impacts clinicians' attitudes and willingness to work with older adults. Reneker et al. (2016) studied the effect of integrated clinical experience involving exposure to older patients and found that, after 8 weeks of training, DPT second-year students reported a large positive increase in perceptions of quality care, enjoyment, and willingness to work with the older population. Their study also indicated that clinical exposure with older adults resulted in increased curiosity among students to know more about geriatric care. Another study by Beling (2003) revealed graduate students of final semester of physical therapy reported enhanced knowledge and attitudes towards older adults after a structured 32 hours of community-based service-learning course in geriatric rehabilitation as compared to those who completed their geriatric rehabilitation course without service-learning.

The above studies indicate that field experience in gerontology and direct clinical experience in geriatric care significantly impacts OT and PT attitudes towards aging and interest in pursuing a career in geriatric care and so they may also be an important contributor in therapists' knowledge and perceptions of PCC in SNFs.

Person-centered Care in Occupational and Physical Therapy

The previously reviewed literature indicates mixed findings about the understandings of PCC and the extent to which its principles are implemented in the OT and PT professions. There are a limited number of studies that have either explored and/or developed the concept of PCC in these fields. Even fewer studies have assessed the application of PCC approaches in SNFs, leaving many unanswered questions regarding the success of PCC in this setting. For decades, SNFs have been a common institutionalized health care delivery setting offering constant medical care and rehabilitation services. However, substandard quality of care including abuse, neglect, medication errors, fraudulent billing, and overutilization of services in SNFs have been consistent topics of concern (Perkins, 2013). Despite the regulations imposed on SNFs by OBRA (1987) that mandated minimum standards of care and rights of nursing home residents, maintaining quality standards in SNFs is still challenging (United States Government Accountability Office, 2011; Perkins, 2013). The rate of admission to post-acute facilities such as SNFs has been growing over the past two decades as a result of minimizing the length of hospital stays and reducing the economic burden of medical expenses (Osakwe, Larson, Agrawal, & Shang, 2017). Despite the persistent quality concerns, SNFs represent an available option for subacute care, especially for those older individuals who have limited informal caregiver support in the community. SNFs enable continuity of health care delivery from acute hospitals to subacute services and transition to home health services in the community. In pursuit of this, SNFs seek to achieve an individual's highest level of independence through the constant provision of medical care and rehabilitation services through OT and PT. Therefore, SNFs are chosen as target institutionalized setting in this study.

A thorough literature review was conducted to summarize key concepts of PCC in OT and PT. This exploration process allowed the development of the PCC model applicable to the scope of practice of OT and PT profession in SNFs. The summary of the literature review in Table 2 explores the meaning of PCC from the perspective of patients, therapists, and students in OT and PT professions. Only those studies that explored or studied the concept of PCC in the field of OT and PT professions were included. Additionally, two systematic reviews are also included to design the concept of PCC, as these reviews have specifically discussed PCC in the field of OT, thus meeting the inclusion criteria of this study. Table 2 delineates various studies with its purpose, health care discipline, and themes of PCC involved, explored, or implied.

Table 2

Themes of PCC researched in Occupational/Physical Therapy Practices

Author/Country	**Purpose/Study Field**	**PCC themes involved/explored/implied**
1) Leach, et al., 2010/Australia	To describe how goals are set between the therapist and the patient from the therapists' perspective within a subacute rehabilitation setting. Study field: Multiple health care disciplines	Three models of goal setting: 1) *Therapist controlled*: minimal patient and family involvement with focus on patient's physical function improvement (impairment-based assessment) 2) *Therapist led*: (predominates in rehabilitation practices with importance on involving family members, education of patients, education of family members, therapist-patient collaboration 3) *Patient-centered*: goal setting per patient and family's need
2) Korner, et al., (2013)/Germany	To develop a training program for inter-professional shared decision-making (SDM) based upon the preferences of therapists and their patients to enhance their participation during rehabilitation.	1) Patient preferences: • More time for medical encounter • Respect by health professionals • Participation in decision-making • Perception of individuality • Trust in health care professionals

	Study field: Multiple health care disciplines	2) Performance characteristics of professionals: • Communication • Cooperation with interprofessional team • Talking with difficult team members • Motivated health care team • Provide feedback to team member • Delegation of staff • Taking accountability
3) Lindahl, et al., (2013)/Denmark	To evaluate factors of good quality rehabilitation from the perspectives of therapists & persons who sustained a fracture at their working age (32-60 years) Study field: Occupational/Physical Therapy	1) Patient-Therapist partnership 2) Provide control to patients 3) Therapists-clinicians partnership 4) Respect 5) Understanding of continuity of care
4) Law, et al., 1995/ Canada	To define and discuss key concepts and issues fundamental to Person-Centered practice Study field: Occupational Therapy	1) Individual autonomy & choice 2) Partnership 3) Therapist responsibility is to provide information 4 Client responsibility is to participate actively in therapy 5) Enablement: Therapy level process: • Emphasis on listening • Use of language that clients can understand • Provision of information 6) Contextual congruence • Flexibility in treatment approach • Need of clients 7) Accessibility & respect for diversity
5) Chen, et al., 2002/Taiwan	To measure the sensitivity of the Canadian Occupational Performance Measure (COPM) following 1 month of person-centered care in adults with neurological problems Study field: Occupational Therapy	1) Partnership or collaboration between OT & client 2) Respect for client's need and opinion 3) Invite client to actively join the intervention process 4) Compromise & negotiation with client
6) Falardeau & Durand, 2002/ Canada	To explore whether Occupational Therapists use a person-centered approach or not in day-to-day	Proposed two types of PCC models; named, Type-I-Led by client and Type–

	practices and to define the concept of respect and power during a therapist-client relationship. Study field: Occupational Therapy	II-Led by Interaction (or Negotiation-Centered Care), with key areas of focus: 1) Respect 2) Power 3) Relationship 4) Communication/Metacommunication 5) Collaboration 6) Partnership 7) Interdependence 8) Listening
7) Maitra & Erway, (2006)/US	To compare & analyze the difference in the perceptions of OTs and their patients concerning the extent of their involvement in person-centered practice Study field: Occupational Therapy	1) Shared decision making 2) Active Participation 3) Therapy Knowledge 4) Patients' preference
8) Mortenson & Dyck, 2006/Canada	To explore the experiences of therapists while practicing person-centered care and to explain the dynamics of power in the therapist-client relationship within person-centered practice Study field: Occupational Therapy	1) Therapist-client power balance 2) Quality of client-therapist interactions 3)Evaluation of institutional policies/ procedures & health care outcomes 4) Strengthen client's autonomy 5) Focus on client's priority 6) Involve client in decision-making
9) Moats, G. 2007/Canada	To study the relationship between the models of decision-making clinically utilized by OT, and study the issues with person-centered practice and enabling occupation Study field: Occupational Therapy	Proposed a new Person-Centered Negotiated Model of Decision-Making based on their level of cognition of older adults with a key focus on; 1) Patient's autonomy 2) Patient's safety 3) Family's participation
10) Hammell, 2013/Canada	To critically analyze concepts and components of person-centered practice in Canada Study field: Occupational therapy	1) Active engaged listening by therapist 2) Critical awareness of power, privilege, and positioning 3) Cultural humility 4) Kindness, caring, & respect 5) Respect for clients' abilities, knowledge, experience, and strengths 6) Respect for clients' moral right to make choices 7) Striving to foster respectful, supportive relationships with clients 8) Striving to understand the client's' resources, barriers, and constraints to achieving well-being

11) Eyssen, et al., (2014)/ Netherlands	To evaluate the difference in the processes of person-centered therapy with usual therapy approaches that could impact functional outcomes Study field: Occupational Therapy	1)Motivational interviewing (motivate patient) 2)Shared decision making 3)Self-management support 4)Patient education 5)Communication techniques 6)Culturally sensitive care
12) Cameron & Mccoll, 2015/ Canada	To explain the learning of OT students about person-centered practices Study field: Occupational Therapy	Recognize person to be treated or client as an expert in terms of knowledge and power
13) Cott, 2004/ Canada	To explore key components of person-centered rehabilitation among adult patients with long term physical disabilities Study field: Physical Therapy	1) Individualization to clients' need 2) Mutual participation of client and health professionals in decision-making & goal setting 3) Meaningful outcomes to the client 4) Sharing of information and education that is (a) appropriate, (b) timely and (c) according to the clients' wishes 5) Emotional support 6) Family and peer involvement throughout the rehabilitation process 7) Coordination and continuity across the multiple service sector
14) Cooper, et al., (2008)/UK	To generate a definition of Patient-Centered Care from the perspective of patients with chronic low back pain during their Physical Therapy treatment Study field: Physical Therapy	1) Communication 2) Individual care 3) Decision-making 4) Information 5) The physiotherapist 6) Organization of care
15) Kidd, et al., (2011)/New Zealand	To determine the perspective of patients in terms of various components of patient-centered Physical Therapy Study field: Physical Therapy	1) Therapist's ability to communicate 2) Patient's confidence in PT 3) Therapist's knowledge 4) Therapist's professionalism 5) An understanding of people 6) Therapist's Ability to relate progress & outcome transparency
16) Schmitt et al., (2012)/UK	To explore the perception of PT students about person-centered approach and to compare those views with the patients Study field: Physical Therapy	1)Patient empowerment 2)Patient choice 3)Patient information and education 4)Holistic approach 5)Individualization of intervention 6)Family/caregiver 's roles

17) de Vries, et al., (2015)/ Netherlands	To develop and evaluate the acceptability and efficacy of a novel exercise program called the Coach2Move strategy for improving long-term physical activity in deconditioned older adults. Study field: Physical Therapy	1) Personalized goal setting 2) Shared Decision making 3) Physical activity 4) Self-management 5) Motivational interview facilitating activity

The above exploration identifies key themes of PCC in the existing literature, revealing variability in proposed definitions, themes, and constructs. Some researchers have pre-defined the concrete PCC themes (de Vries et al., 2015; Maitra & Erway, 2006; Law et al., 1995), while others tested the success or failure of pre-defined concepts during rehabilitation interventions (Eyssen et al., 2014; Chen et al., 2002; Mortenson & Dyck, 2006). Altogether, after a thorough analysis of the above studies in terms of applicable PCC themes, the researcher of this study developed an implied model of PCC which applies to the current practices of OT and PT in SNFs.

The interconnectedness and commonalities of the literature explored above gave rise to three meaningful themes or categories, outlined in Figure 2. These broad themes or categories are (1) patient characteristics, (2) therapist characteristics, and (3) therapy process elements. *Patient characteristics* refer to patients' expectations from their therapists during therapy. *Therapist characteristics* refer to skills required to meet the expectations of patients and the necessary skills required to carry out the operations of therapy process elements. *Therapy process elements* refer to those operative approaches for the successful adoption and completion of PCC.

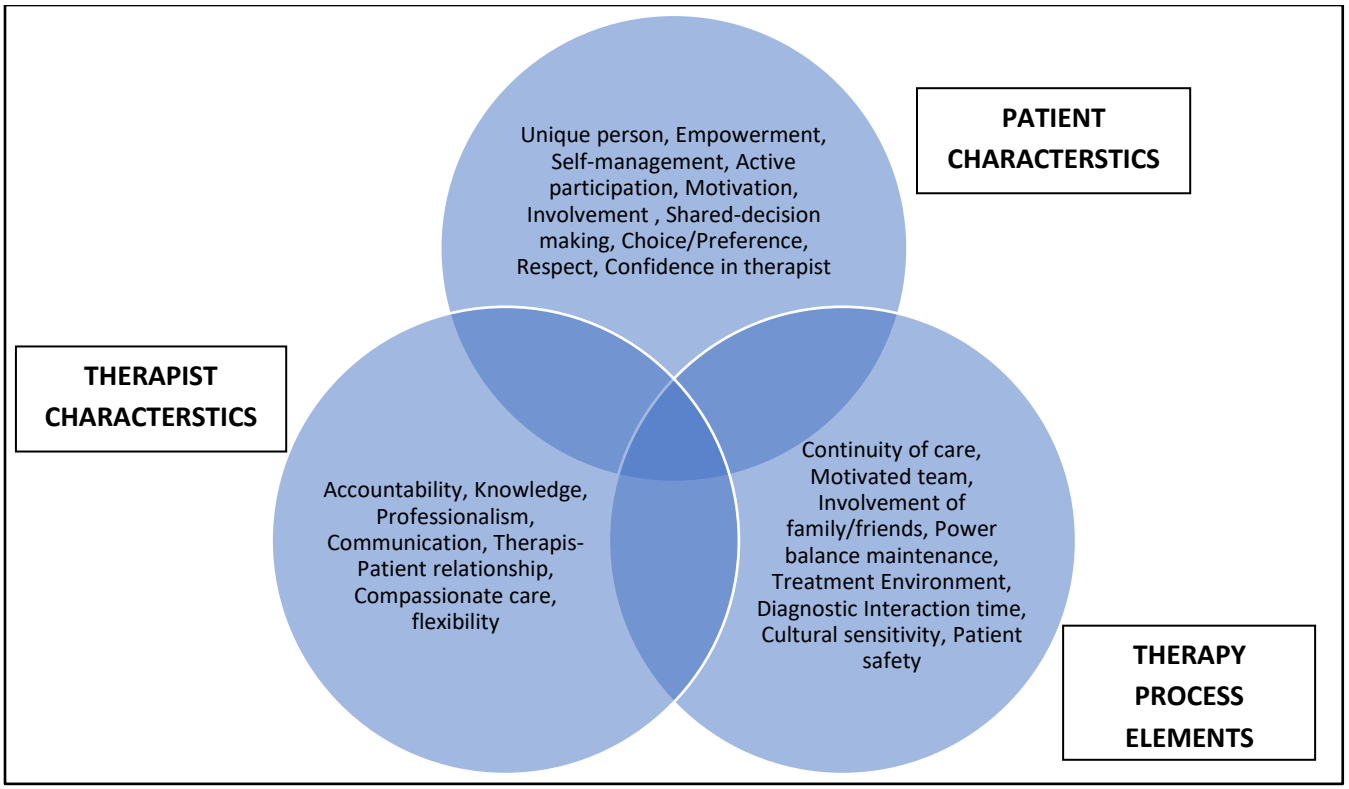


Figure 2

A model of Person-Centered Care in Occupational/Physical therapy practices

This model provides the overall structure for exploring the elements that OTs and PTs should know and appreciate about PCC. Knowledge of the key elements should then lead to improved attitudes toward the use of PCC by therapists with the residents. This study explores the extent of this knowledge and the attitudes of OTs and PTs toward PCC. The question then becomes to what extent the factors identified in the literature affect therapists' knowledge and attitudes.

Hypotheses Development

In the following model (figure 3), based on the literature discussed above, a model of factors affecting Occupational and Physical Therapists' knowledge of and attitudes toward PCC is presented. The primary factors hypothesized to positively influence knowledge of PCC are education, clinical experience, and the type of therapist. The degree of geriatric or gerontological education, and clinical experience in long-term care settings are expected to moderate both these relationships. Additionally, level of knowledge, along with education, clinical experience, the type of therapist, the degree of geriatric or gerontological education, and the clinical experience in long-term care settings, are expected to positively influence the attitudes of therapists toward PCC.

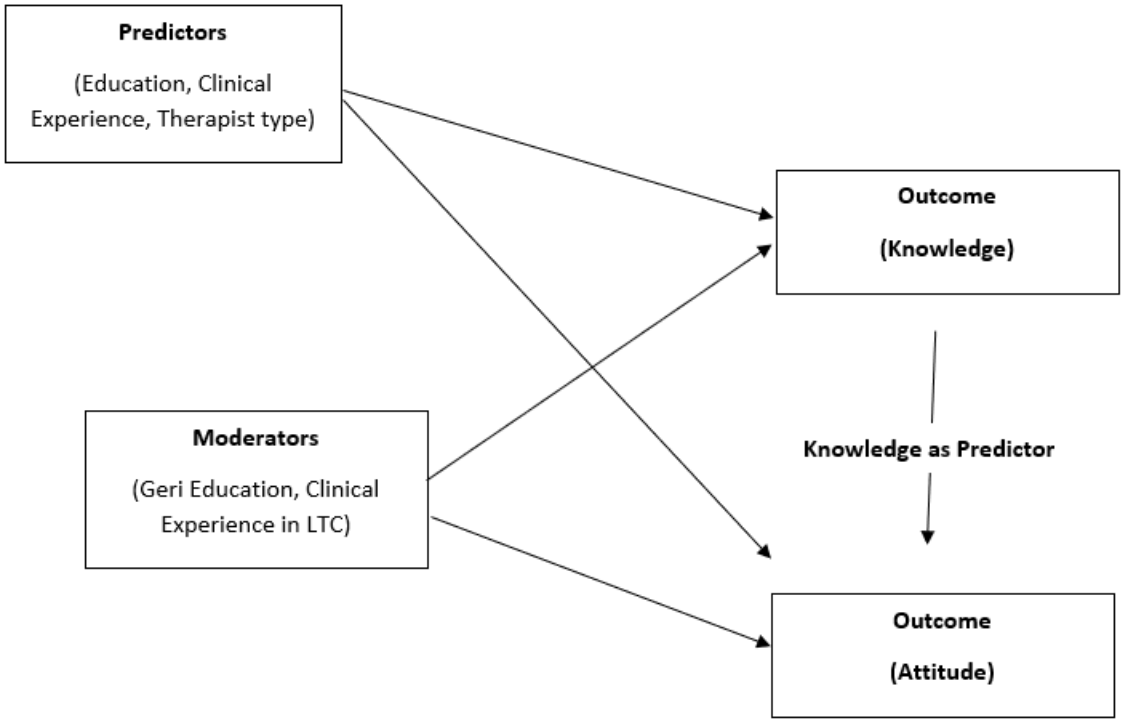


Figure 3

Model of Factors Related to Occupational and Physical Therapists Attitudes toward Person-Centered Care

Based on the above model, the following research questions and hypotheses are proposed:

1. How knowledgeable are OTs and PTs about the principles of PCC?
2. What are the attitudes of OTs and PTs to PCC?
3. How do therapists' knowledge of PCC affect their attitudes toward PCC?
    a. *Hypothesis (H1):* The higher the knowledge of principles of PCC reported by therapists, the more likely they are to possess positive attitudes towards practices of PCC in SNFs.

4. To what extent do therapists' professional demographic characteristics (educational level, clinical experience, type of therapist, and additional educational training and experience in gerontology/ geriatric care) predict their knowledge of PCC?
    a. *Hypothesis_Knowledge (H2):* The higher the educational level of therapists, the higher their knowledge of principles of PCC.
    b. *Hypothesis_Knowledge (H3):* The longer the clinical experience of therapists, the higher their knowledge of principles of PCC.
    c. *Hypothesis_Knowledge (H4).* Therapists with university-based education and/or training in geriatrics or gerontology are more likely to know principles of PCC than therapists without this education and/or training
    d. *Hypothesis_Knowledge (H5):* Therapists with longer clinical experience in SNFs are more likely to know the principles of PCC than therapists without equivalent lengths of clinical experience.
5. To what extent do therapists' professional demographic characteristics (educational level, clinical experience, type, and additional educational training and experience in gerontology/ geriatric care) predict their attitudes toward PCC?
    a. *Hypothesis_Attitude (H6):* The higher the educational level of therapists, the more likely they possess positive attitudes towards the principles of PCC.
    b. *Hypothesis_Attitude (H7):* The longer the clinical experience of therapists, the more likely they possess positive attitudes towards the principles of PCC.
    c. *Hypothesis_Attitude (H8):* Therapists with university-based education and/or training in geriatrics or gerontology are more likely to possess positive attitudes towards principles of PCC than therapists without this education and/or training

d. *Hypothesis_Attitude (H9):* Therapists with longer clinical experience in SNFs are more likely to possess positive attitudes towards the principles of PCC than therapists without equivalent lengths of clinical experience.

Chapter Summary

This chapter has discussed the origin, conceptual and theoretical framework of PCC including its several related definitions, numerous synonymous terms, components, and subcomponents. The concept of Person-Centered Care with a focus on the OT and PT professions has been described. Concerning therapists' existing knowledge and attitudes towards the adoption of principles of PCC in their practices, limited pertinent studies were described to highlight the gap in the literature and rationale for the study, including the paucity of research on the impact of demographic attributes of therapists on their knowledge and attitudes towards PCC.

An overall structure of PCC from the perspective of patients, therapists, and students of OT and PT practices was presented. This structure highlights all the elements that OTs and PTs should know and appreciate about PCC. Based on the literature, a theoretical model of PCC to be used in this study was presented explaining the factors affecting OTs and PTs knowledge of and attitudes toward PCC. Finally, study aims, and hypotheses were presented. Chapter 3 discusses the methodology of the study.

Chapter 3: Methods

Chapter Overview

This chapter describes the research design, setting of the research, population of interest, inclusion-exclusion criteria of the sample, and variables of interest. The study instrument and questionnaire scales (including the procedure to adapt and modify existing study instruments) are discussed. An overview of the data collection procedures is presented along with the types of statistical analyses employed. The chapter concludes with the limitations of this study.

Research Design

The study design proposed to achieve the specific aims of this study is a cross-sectional, correlational, and descriptive web-based survey study design. Cross-sectional research involves collecting measurements at one time rather than longitudinally. As the study is interested in the current state of knowledge and attitudes of therapists toward PCC, a cross-sectional study is appropriate. The lack of comprehensive previous research specifically studying the relationship of therapists' demographic characteristics to their knowledge and attitudes towards PCC in Skilled Nursing Facilities (SNFs) supports the selection of co-relational analysis rather than a full experimental design. As such, a co-relational design does not establish causality. The analytic aspects of the study will focus on the relationships between the demographic variables of therapists, their knowledge, and attitudes to PCC and will explore potential associations or relationships. The web-based survey tool will be built using REDCap (Research Electronic Data

Capture) software introduced by Virginia Commonwealth University, allowing a secure and easy to collect online surveys for the study (Kenneth & Wright).

Population and Sample

Target population. The study will compare perceptions within the groups of Occupational Therapists (OTs) and Physical Therapists (PTs) and between the two groups in the targeted work setting, i.e., Skilled Nursing Facilities (SNFs).

Sampling strategy. Using non-probability sampling methods, a purposive, convenience sample of 60 OTs and 60 PTs was proposed but a sample of 77 OTs and 66 PTs were recruited via phone (Appendix A), social media (Appendix B), email (Appendix C) and announcement fliers (Appendix D). Non-probability or non-random samples are used when speed and convenience are desirable. Further, one variant of convenience, snowball sampling methods, was used to enhance participant recruitment (Polit & Beck, 2012). At each point of contact with the participants, the co-investigator encouraged therapists to spread the study survey flier and survey link among their other OTs and PTs colleagues and friends. Snowball sampling uses the initially recruited research participants to refer or find participants using his/her social network. Once, the initial participant helps to locate another participant, the participant then approaches more participants, starting a self-directed chain referral recruiting mechanism (Sadler, Lee, Lim, & Fullerton, 2010). Although it may cause a selection bias, it is an appropriate method to recruit hard to find participants or to enhance the response level. This is because it benefits from an existing inherent trust among potential participants, which increases the likelihood that the newly identified participants will agree to talk to the research coordinator. This makes snowball sampling an efficient and cost-effective method to recruit those participants, who if approached

directly by the researcher, may result in refusal to participate by the respondent (Sadler et al., 2010).

Sample size. According to the Bureau of Labor Statistics (May 2016), the total numbers of employed OTs in the United States are approximately 118,070 with approximately 10% (12,230) employed in SNFs. In the District of Columbia, Maryland, and Virginia there were a total of approximately 430 OTs, 2,710 OTs, and 2,850 OTs employed respectively. Applying the 10% figure, it was anticipated that a total of 622 OTs could be available for recruitment to this study. Further, the Bureau of Labor Statistics (May 2016) indicates that the total number of employed PTs in the United States was approximately 216,920 with approximately 6.7% (14,400) in SNFs. In the District of Columbia, Maryland, and Virginia there were a total of approximately 670 PTs, 4,850 PTs, and 5,790 PTs employed respectively. Applying the 6.7% figure, it was anticipated that a total of 758 PTs could be available for recruitment to this study. Altogether, it was suggested that a pool of at least 622 OTs and 758 PTs (1,580 total) might have been available to reach out to for recruitment to this study.

Eligibility criteria. OTs and PTs who met the following criteria were accepted into the study; 1) had a current Occupational and/or Physical Therapist license, and 2) were currently working in SNFs (either part-time, full-time or PRN) anywhere nationwide. Licensed OTs and PTs of any age, sex, education, ethnicity, length of employment, and position title (clinical therapist, clinical manager, director of rehabilitation, and others) was included in this study. Any OTs or PTs who are currently not working in SNF either full-time, part-time, or as PRN were excluded from this study.

Power analysis. Power analysis is a method to achieve statistical conclusion validity in quantitative studies. It is used to estimate sample size needs-based own the number of predictors

of the study. As a rule, the largest possible sample is recommended, however, the power analysis minimizes the overall cost of research by limiting the number of needed participants for a study. Power analysis ensures that practical constraints such as time, participants' cooperation, and other available resources are taken into consideration before assessing the appropriate sample size without compromising the statistical validity of the study (Polit & Beck, 2012). Though previous research suggests the unavailability of any gold standard formula to determine the appropriate sample size for non-random sampling, various available methods in the literature are used to calculate the appropriate sample size for this study.

Per Kimmerling (2014), 10% of the target population is recommended for non-random samples. Using this rule, a sample of 63 OTs (10% of 622 OTs) and 76 PTs (10% of 758 PTs), with an estimated total of 139 therapists (63+76) is appropriate for this study. The sample size is also calculated based on the anticipated use of multiple regression analyses. Tabachnick & Fidell (2007) suggests in multiple regression analysis, a convenience sample of N > 50+8 * number of predictors should be appropriate. Using this rubric, approximately 98 (50 + 8*6 variables = 98) licensed OTs and PTs should be recruited. Polit & Beck (2012) also suggest that some experts recommend sample sizes equal to the ratio of 20 to 1 for sequential regression analysis. This indicates approximately 120 participants (20 x 6 predictors) needed for the study.

Further, using Multiple Regression fixed model G*Power 3.10.10 software at α=.05, β= .80, conventional moderate effect size = 0.15, with six independent variables (including therapists' knowledge on PCC, which is an outcome variable in phase 1 and a predictor in phase 2), a priori sample size calculated is 98 participants (Faul, Erdfelder, Buchner, & Lang, 2009). In this study, a conservatively moderate effect size of 0.15 (R^2) is selected, which is smaller than the outcome of the previous study by Bloch (2004), who examined pediatric occupational

therapists' attitudes towards family-centered care and found favorable attitudes with a 16% effect size ($R^2 = 0.16$) impacted by organizational cultures (Bloch, 2004).

The various methods used to calculate the appropriate sample size above indicate that for the study a target sample range of 98 to 139 participants should be enough. For this study, an approximate middle number of a total of 120 participants comprising 60 OTs and 60 PTs was targeted. A total sample of 77 OTs and 66 PTs were recruited to this study. Should the required sample size of the study not be met within four weeks of commencing data collection, additional SNFs in different states were proposed to target.

Variables of the Study

Study variables were derived from the literature and the theoretical PCC framework. This study has three predictor variables (highest level of education, years of overall clinical experience, and therapist type), two moderator variables (gerontological/geriatric education or training, and years in long-term care), and two outcome variables (therapists' knowledge of the therapist regarding PCC and attitudes toward PCC). Additionally, one of the outcome variables, knowledge of the therapist, will act as a predictor in the second phase of the study. The details of each variable are listed below in Table 3. Further, an explanation of the selection of each variable is also described below.

Table 3

Study Variables

Variable	Data type	Measurement
Predictor variables		
1. Highest Level of Education	Categorical	Degrees (BS, MS, transitional postgraduate degree, DPT, OTD, Ph.D.)
2. Clinical Experience	Continuous	Months
3. Therapist Type	Categorical	OT & PT
Moderator variables		
4. Level of Gerontology/Geriatric Education or training	Categorical	Certificate or Degree or formal training from a university or college (Y/N)
5. Clinical experience in Long-Term Care	Continuous	Months
Outcome variables		
6. Knowledge of PCC**	Continuous	Likert Score
7. Attitudes to PCC	Continuous	Likert Score

** Knowledge of PCC will be the outcome in phase 1 and will act as a predictor in phase 2

Predictors.

Education. In this study, therapists' training for two types of educational experiences was investigated to determine its relationship with therapists' knowledge and attitudes toward PCC. These two types of educational experience correspond to two separate time frames of therapist clinical training. The review of the literature indicates that the more educational training clinicians have, the more positive attitudes they may demonstrate towards person-centeredness (Constantine & Carpenter, 2012; Bloch, 2004). There is a paucity of research specifically assessing the impact of educational achievement on increased adoption of PCC in OT and PT professions. Therefore, first educational experience investigated the relationship of therapists' highest level of educational experience in therapy fields; a structured academically awarding degree programs such as Bachelor, Master of Science, Doctor (OTD or DPT or equivalent), doctorate (Ph.D.) or others, towards knowledge and attitude of the therapist in terms of PCC. It

has been suggested that an advanced degree may be more effective in terms of improving clinical skills (Banks, Meaburn, & Phelan, 2013; Constantine & Carpenter, 2012). This may indicate a varying level of relationship of educational achievement with elements of interest of the study and justifies the selection of educational achievement as an important predictor of the study.

Second, the educational experience is also aimed to capture specific points of training such as attending a short CEU-awarding didactic course or conference talks directly related to PCC, or field exposure to PCC during work experience. Ross & Haidet (2011) studied the effect of introducing an educational program on PT students' attitudes towards patient-centered care at Duke University in 2009. They included a required 32 contact-hour course entitled 'Psychosocial aspects of care' for teaching elements of Patient-Centered Care'. At the end of the study, the researchers reported a positive attitudinal change in the students towards themselves, their classmates, and the perspectives of 'others' which is essential in enhancing student learning towards PCC. The study used a qualitative approach and a discrete, focused didactic educational training of students on psychological aspects of patient care. However, the carryover of such training towards attitudinal change in clinical practice was not assessed and needs further exploration. Few other studies indicate that the principles of PCC were acknowledged in therapists' educational curriculum but not into clinical practices, indicating a theory-practice gap towards the adoption of the PCC approach (Montalvo, 2007; Gzil et al., 2007). Due to such mismatch in the literature regarding outcomes of PCC training, the influence of PCC training including specific educational training and/or field exposure to PCC approaches was used as a predictor variable in this study.

Years of overall clinical experience. Research indicates that the length of clinical experience leads to different outcomes and behaviors of therapists (Wainwright et al., 2011), and

consequently may alter the adoption of person-centered practices (Hedberg-Kristensson & Iwarsson, 2013; Bloch, 2004). Experienced therapists are more knowledgeable and comfortable in their roles, and therefore may be more person-centered than novice therapists (Bloch, 2004). Therefore, for attitudinal studies, years of clinical experience could be an important determinant of the behavioral response of working therapists.

Therapist type. Research suggests that therapists possess some understanding of PCC but may differ by discipline in terms of adoption of various principles of PCC resulting in mixed views (Carrier et al., 2015; de Vries et al., 2015; Hammell, 2013; Falardeau & Durand, 2002). Given a lack of existing research, a comparison of OTs knowledge and perceptions of PCC with PTs was exploratory in this study.

Moderator Variables.

A moderator variable is a third type of variable that can explain the strength and/or direction of the relationship between an independent and dependent variable. In other words, a moderator variable can demonstrate the strength of the relationship between the independent and dependent variables for a specific subset of the sample (Breitborde, Srihari, Pollard, Addington, & Woods, 2010). In this study, it may be possible that attitudes of OTs and PTs towards PCC is shaped differently not due to their academic training during Occupational and Physical therapy degree programs but due to their additional knowledge acquired via gerontology or geriatric academic training and clinical experience in SNFs.

Educational training in gerontology/geriatric care. Research indicates that educational training in gerontology/geriatric care can alter the attitudes of clinicians towards older adults and positively impact clinical competence and judgment (Reneker et al., 2016; Tomko & Munley, 2012; Hobbs et al., 2006). Tomko & Munley (2012) suggest that clinicians with additional

gerontological training and certifications are more likely to recommend comprehensive medical examinations and are more sensitive to the needs of older adults. Clinical rotations and experience with older adults not only increase knowledge and interactive skills with the geriatric population, but also positively impact their attitudes and willingness to work with older adults. This justified the selection of educational training in gerontology/geriatric care as an important factor impacting the knowledge and attitudes of therapists towards PCC in this study.

Clinical experience in SNFs. Previous literature also suggests that the type of clinical experience may alter the clinical reasoning process and care of the patients (Reneker et al., 2016; Wainwright et al., 2011). This is because the type of clinical experience may produce differences in thought processes needed to reach a clinical decision. Further, clinical rotations and experience with older adults not only increases knowledge and interactive skills with the geriatric population but may also positively impact clinicians' attitudes and willingness to work with older adults (Reneker et al., 2016; Tomko & Munley, 2012). Therefore, in this study, the relationship between the length of clinical experience of therapists' in SNFs and therapists' knowledge and attitude towards PCC was explored.

Outcome variables.

The two outcome variables of this study were therapists' knowledge of and attitudes toward the principles of PCC. These outcomes were chosen from the literature review in chapter two that indicated that these variables require exploration to promote practices of PCC in SNFs. Prior knowledge of therapists about PCC can incline therapists to acquire positive attitudes towards PCC.

To summarize, in the first and second research questions the assessment of outcome variables, i.e. the therapist's knowledge and attitude towards PCC, is exploratory hence no

hypotheses have been stated. In the third research question, which assesses how therapists' knowledge of PCC affects their attitudes towards PCC; the therapists' knowledge of PCC was a predictor while their attitude towards PCC was an outcome variable. For the fourth and fifth research questions, i.e. to what extent do therapists' professional characteristics predict their knowledge towards PCC, two types of professional characteristics will predict the extent of the relationship between predictor and outcomes, and moderator and outcome variables. First, the relationship between predictors (educational levels and clinical experience in therapy) and outcomes (knowledge and attitude towards PCC) will be separately analyzed. This follows the assessment of the moderation or buffer effect of geriatric education and clinical experience in LTC on outcome variables (knowledge and attitudes towards PCC). Finally, the assessment of similarities and differences in therapists' overall knowledge and attitude is exploratory. The study model is presented in Figure 3.

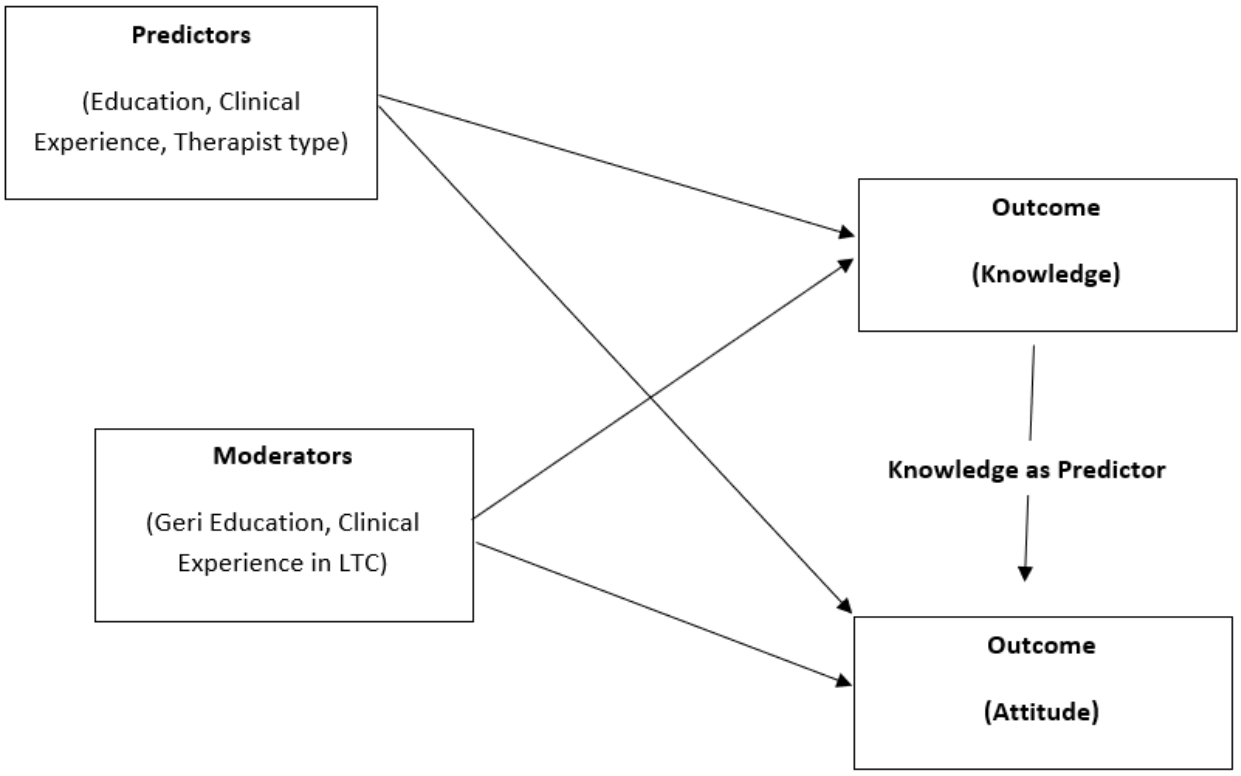


Figure 3

Model of Factors Related to Occupational and Physical Therapists Attitudes toward Person-Centered Care

Study Instruments

Three separate questionnaires were used for data collection (Appendix E-G): the professional characteristics questionnaire (PCQ), the knowledge of the person-centeredness of therapists (PCT-Knowledge), and the attitude on person-centeredness of therapists (PCT-Attitude). These were developed specifically for this study because no single instrument was identified in the literature that appropriately captured elements of the interests of this study. The surveys were designed keeping in mind the ease of use, and the busy schedules of OTs and PTs

in SNFs, with the intent of capturing as comprehensive a view as possible of relevant elements of PCC.

The professional characteristics questionnaire (PCQ) is a 9-item scale (Appendix E), adapted and modified from Bloch (2004), to identify independent and moderator variables of the study that impact knowledge and attitudes of OTs and PTs regarding PCC in SNFs. The questionnaire contains two screening questions to ensure the inclusion-exclusion criteria are met for the study. This is followed by the question items assessing therapists' demographic characteristics relevant to the interests of the study. The questionnaire also collects data on therapists' characteristics regarding their current position at work for future research, although this study does not attempt to analyze data on this variable. Also, the study does not attempt to stratify and analyze participants' characteristics based on their state of therapy practices.

The other two questionnaire scales are designed to assess the outcome variables of the study. The knowledge of the person-centeredness of the therapist (PCT-Knowledge) is a 15-item scale (Appendix F) and the attitude of the person-centeredness of the therapist (PCT-Attitude) is a 24-item scale (Appendix G). Unlike the other questionnaires available in the literature, these survey scales offer unique elements such as: 1) the questions items were developed after a comprehensive literature review designed to be answered by OTs and PTs working in SNFs, 2) each item was modified or adapted from previous literature, and then pilot tested and reviewed by expert panel to accurately reflect the perspective of OTs and PTs towards PCC, and 3) each item reflects only those aspects of PCC which are directly controlled and/or influenced by practicing therapists. Question items which may reflect barriers to PCC are not included in this study. For instance, the residents' characteristics such as lower cognitive status and/or organizational characteristics such as productivity and budget indicate barriers to PCC practices;

and are not included in this study. Step-by-step procedural details of the development of the questionnaire scale to assess the outcome variables of the study are described in the sections below.

Procedure

The development of the study instruments was divided into four steps. *Phase 1* involved understanding the concepts and exploring the key elements of PCC in OT and PT practices via a review of the literature. At the end of this exploration process, the instrument to capture 'Knowledge of Person Centeredness of Therapists' (PCT-Knowledge) was developed. *Phase 2 and 3* involved the development of the second instrument of the study to measure 'Attitudes towards Person Centeredness of Therapists' (PCT-Attitude*).* The study chiefly used the systematic review by Wilberforce et al., (2016) as a guiding study to develop the attitude questionnaire. *Phase 2* involved identifying and narrowing down to six key elements of person-centeredness in therapy to capture the attitude of Occupational and Physical Therapists based on its relevance established from literature review and matching completed with the knowledge questionnaire from phase 1. *Phase 3* involved the generation of questionnaire items to capture the essence of PCT-Attitude that fits under each key element PCC identified in phase 2. The definition of each key element of PCC capturing therapists' attitude and descriptions of its items are described (Table 3). *Phase 4* initial expert panel review of survey items followed by a pilot testing of the questionnaire. After, the pilot testing, the survey items were reviewed and re-modified by the expert panel. This further refined face and content validity of items. To enhance the response rate from the participants, the questionnaire items were minimized as much as possible without compromising the validity of each item. A procedural flow chart of the development of the questionnaire and item generation is outlined below (Figure 4).

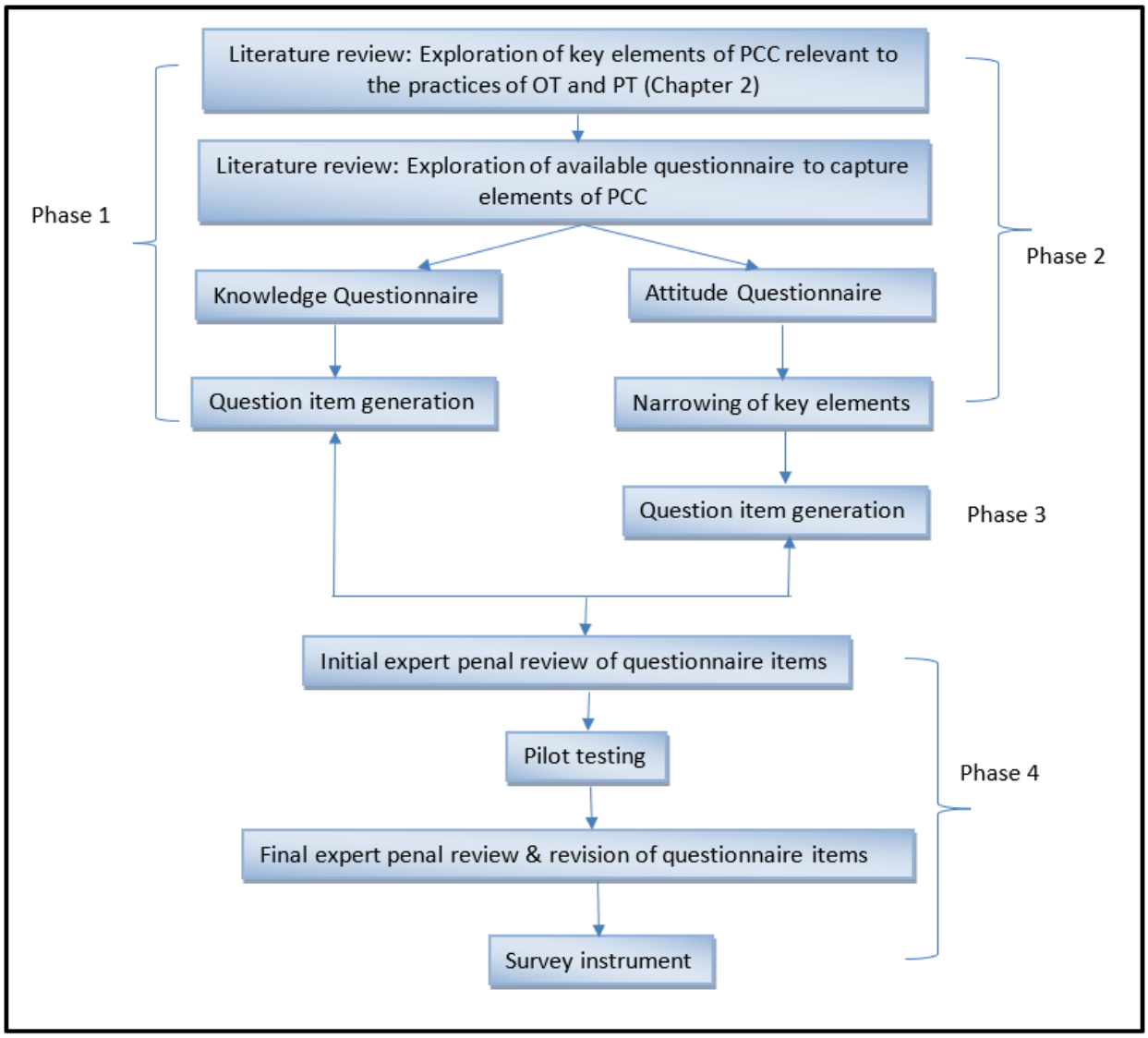


Figure 4

Survey Instrument Development

Phase 1: Exploration of key themes of PCC in Occupational and Physical Therapy

The first phase of the instrument development involved a thorough literature review to identify key elements of PCC relevant to the practices of OT and PT. The literature review (see chapter 2 revealed three interconnected key elements of PCC including (1) patient characteristics, (2) therapist characteristics, and (3) therapy process elements. The *patient*

characteristics element includes sub-elements; unique person, empowerment, self-management, active participation, motivation, involvement, shared decision making, choice/preference, respect, and confidence in the therapist. *Therapist characteristics* include sub-elements *a*ccountability, knowledge, professionalism, communication, therapist-patient relationship, compassionate care, and flexibility. *Therapy process elements* include the sub-elements continuity of care, motivated team, involvement of family/friends, power balance maintenance, treatment environment, diagnostic interaction time, cultural sensitivity, and patient safety. The information obtained from these key elements of PCC was used to develop the instrument, PCT-Knowledge, to measure the outcome variable; therapist knowledge on PCC, of the study.

Therapist Knowledge of Person-Centered Care.

The outcome variable, 'Therapist knowledge of PCC' refers to the extent of awareness, facts, or information regarding PCC and its principles. The knowledge questionnaire was designed from the narrowed key elements extracted from the literature review in Chapter 2. This scale is a self-reported assessment of therapist knowledge of PCC and its elements. The question items include therapists' understanding of essential elements of PCC, their awareness about synonymous PCC terms, their knowledge to promote residents' individualization, their emphasis of active participation and self-management of patients, and their emphasis on providing autonomy to residents, their understanding of the necessity of family involvement and continuity of care, their emphasis on the importance of building good communication and therapist-resident relationship, and honoring residents' preference. Higher scores describe those therapists who possess higher knowledge of PCC and its principles to OT and PT in SNFs. Questionnaire items can be found in Appendix F.

Therapist Attitudes to PCC.

The second outcome variable, therapist attitude to PCC captures therapists' expectations, values, beliefs, likes, and dislikes about the principles of PCC during daily practices. For the attitude questionnaire, the survey items in the existing literature were identified, modified, and/or adapted and divided into six broad subsections as per its necessity established via literature review and found relevant to the practices of OTs and PTs in SNFs (Table 5). Though the attitude questionnaire is multi-dimensional not all the sub-scales are mutually exclusive. For instance, the elements 'know the person' and 'extent of individualized care' are labeled differently but infer similar meaning. Similarly, the elements 'providing complete information' and 'continuity of care' are not mutually exclusive as one may be incomplete without other elements. Therefore, the attitude questionnaire required more in-depth adaption and modification from previously available questionnaire scales (Table 5).

Therapist Attitudes to PCC is a self-reported assessment of therapists' attitudes to PCC and its elements. Higher scores describe those therapists who feel they possess a positives attitude towards PCC and its principles to OT and PT practices in SNFs. Phase 2 and 3 below explains the step-by-step procedure used to develop the instrument to measure the attitudes of Occupational and Physical Therapists towards PCC.

Phase 2: Identifying existing scales and key elements to capture the attitude of Occupational and Physical Therapist about PCC

The literature was reviewed to develop the instrument to capture therapists' attitudes to person-centeredness. Recently in a systematic review, Wilberforce et al., (2016) conducted a quality appraisal of available PCC instruments in the literature. They narrowed them down to eleven PCC instruments used across general, gerontological nursing, rehabilitation, occupational

therapy, and palliative care fields. This study chiefly used the systematic review by Wilberforce et al., (2016) as a guiding study to develop the PCT_Attitude instrument of the study. Wilberforce et al., (2016) included 11 PCC instruments; however, no single instrument can capture all the domains of PCC. Therefore, it was imperative to review, adapt, and modify subscales from many of the available instruments of PCC, to design a comprehensive instrument to measure the attitude of OTs and PTs on PCC. A total of 6 studies with multi-dimensional scales CCRQ (Cott, 2004), ICI (Chappell, Reid, & Gish, 2007), ICS-N (Suhonen, Alikleemola, Katajisto, & Leino-Kilpi, 2012), P-CAT (Edvardsson & Innes, 2010), PDC (White et al., 2008), and PCHC (Dow et al., 2013) were selected. Both the multi-dimensional scales of these instruments and previous literature review suggest multi-domains of PCC. Therefore, this study selected six domains of PCC which were determined necessary to capture the attitude of therapists towards PCC. The development of this instrument was to ensure that each selected domain fulfills the current scope of practice of the therapy field and could identify therapists' attitudes towards PCC in SNFs. Also, each domain was designed to satisfy the definition and key categories of PCC identified in this study's literature review. Items from PCFC (Rose et al., 2007), PCQ (Bergland, Kirkevold, & Edvardsson, 2012), MPOC-A (Bamm, Rosenbaum, & Stratford, 2010), CCCQ (Bruus, Varik, Aro, Kalam-Salminen, & Routasalo, 2012), and two other unidirectional scales (Terada et al., 2013) were reviewed but not considered to be part of PCT-Attitude instrument as these scales were found to be inapplicable to the practices of OT and PT in SNFs.

Though the quality appraisal of these instruments revealed mixed evidence of strong to poor methodological quality, the items were selected if they were found to be deemed necessary

based on the literature review to measure attitudes of PCC. The detail of selected instruments; CCRQ, ICI, ICS-N, P-CAT, PDC, and PCHC are given below in Table 4.

Table 4

Extraction of reliable and valid key elements of PCC from existing questionnaire scales representing attitudes of OTs and PTs

Instrument	Purpose of the tool	Element extracted to develop PCT_Attitude	Methodological quality report by Wilberforce et al. (2016)
Client-Centered Rehabilitation Questionnaire (CCRQ)	To assess person-centered performance of rehabilitation services to improve clinical and quality care in hospitals from the perspective of Occupational Therapist	Know the person, Communication & therapist-patient relationship, Self-management/Decisional control/Shared decision making, Providing the complete information, Continuity of care	Poor internal consistency, good reliability, excellent content validity and no structural validity measure reported
Individualized Care Instrument (ICI)	To assess the extent of individualized nursing care in long term institutions for people with dementia	Know the person, Autonomy, Amount of organizational support, Communication & therapist-patient relationship, Continuity of care	Poor to good internal consistency, Fair reliability, Poor content validity and structural validity measure reported
Individualized Care Scale-Nurse (ICS-N)	To assess the extent of individualized care in long term care wards from the perspective of nursing staff	Communication & therapist-patient relationship, Self-management/Decisional control/Shared decision making, Continuity of care	Fair internal consistency and structural validity, but no reliability and content validity measure reported
Person-Centered Care Assessment Tool (P-CAT)	To measure the extent of long-term aged care and residential care setting being person-centered from the perspective of staff	Treat as a unique person, Amount of organizational support, Communication & therapist-patient relationship	Good internal consistency, content validity, and structural validity and poor reliability measure reported
Person Directed Care (PDC)	To assess person-directed care in residential care, assisted living and home care setting from the perspective of multiple staff groups	Know the person, Communication & therapist-patient relationship	Fair internal consistency and structural validity, good content validity and no reliability measure reported

Person-Centered Health Care (PCHC)	To assess attitudes and beliefs of health care staff on person-centeredness in the hospital setting chiefly including hospital wards, rehabilitation and continence clinics	Treat as a unique person, Communication & therapist-patient relationship	Excellent internal consistency and content validity, good structural validity and no reliability measure reported

In conclusion, six key elements or domains were narrowed down and selected for the PCT_attitude instrument which includes; (1) know the person, (2) extent of individualized care or unique person, (3) communication and therapist-resident relationship, (4) extent of shared decision making, (5) providing complete information, and (6) continuity of care.

Phase 3: Attitudinal elements of PCC; definition, item adaptation and modification

In this phase, the selected elements of attitudes of PCC were defined, and then the question items were identified, adapted, and/or modified that can capture the essence of each of those elements of PCC. The details of each question item modification and adaptions are presented in table 5. The operational definition and details of each attitudinal element of PCC is as follows:

Definitions of Attitudinal elements.

(1) Know the person.

The element 'know the person' of the PCT-Attitude instrument was extracted and modified from ICI, PDC, and CCRQ instruments (Chappell et al., 2007; Cott, Teare, McGilton, & Lineker, 2006; White et al., 2008). This element was a measure of therapists' perception about how well they know the resident they are caring for and their efforts to adopt different ways to obtain information about the resident. The questionnaire items included information regarding residents' past medical, social, behavioral histories, their likes, dislikes, abilities, and skills, which can directly or indirectly influence the resident's ongoing therapy care. It included

therapists' awareness and behavior regarding the inclusion of available information of residents in therapy care planning (Chappell et al., 2007). It included therapists' ease of getting information about their residents which can affect therapists' awareness about residents and influence therapy plan-of-care (Cott et al., 2006). Finally, the resident personality pattern, specific fears, and worries to therapy, preferred routine, and expectations were considered as well (White et al., 2008). Higher scores described those therapists who report they know well enough about the care elements of their residents.

(2) Extent of individualized care or unique person.

For the element 'extent of individualized care or unique person,' a few sub-elements including treat as a unique person, the extent of individualized care, personhood, and extent of personalized care were merged because all these sub-elements infer similar meanings. This element was extracted and modified from P-CAT, PCHC, and PDC (Dow et al., 2013; Edvardsson & Innes, 2010; White et al., 2008). This element was a measure of the perception and efforts of therapists' efforts to facilitate factors of individualization, assess individual values and difference, and to gather elements of individuals' strengths and weaknesses to provide maximum possible individualized care. It covered the concept of personhood that emphasized everyone's unique value, history, needs, wishes, goals, and consequently therapy treatment plans. Higher scores indicated those therapists who feel they provide individualized therapy care to their residents.

(3) Communication and Therapist-Resident Relationship.

The element 'Communication and Therapist-Patient relationship' was extracted and modified from ICI, ICS-N, PDC, P-CAT, and CCRQ (Chappell et al., 2007; Cott et al., 2006; Edvardsson & Innes, 2010; Suhonen et al., 2012; White et al., 2008). This element was a

measure of the extent of therapists' efforts, abilities, competence, and aptness to establish good therapist- resident relationship using a variety of communication skills. It emphasized the importance of establishing a good relationship before the development of a therapy plan of care. Items were designed to measure the extent to which therapists use verbal and non-verbal ways of communication to address the residents' needs, desires, strengths, and weaknesses to impact therapy outcomes. It included how therapists communicate to gather information about residents' feelings, fears, expectations, previous lives, and worries, and then aptly use emotional support to maximize therapeutic benefits. It included therapists' efforts to make residents comfortable by giving equal importance to residents' other interests (such as attending religious sessions and games in the facility) and needs (scheduling therapy around their preferred time to accommodate their rest and sleep) in addition to therapy needs and plans. Higher scores indicated the therapist believes that they communicate well enough with their resident to establish a good therapist resident relationship during the therapy POC.

(4) Extent of Shared Decision Making.

For this element, items from the sub-elements amount of self-management, decisional control, and shared decision making were merged into one subscale. This element was extracted and modified from the ICS-N and CCRQ (Cott et al., 2006; Suhonen et al., 2011). This element was a measure of therapists' perceptions of how much they involve the residents they are caring for in terms of deciding about therapy plans. Cott et al., (2006) defined this element as 'client participation in decision-making and goal-setting' from the client perspective as a concept in which "client defines the importance of goals setting and outcomes and sets the priorities in partnership with health professionals" (p. 1389). This element recognized the resident as an expert in terms of knowledge and power and advocates for the capacity to be involved in

decision making regarding therapy plans (Cameron & McColl, 2015). Items included the extent of therapists' willingness and efforts to encourage or involve residents in shared decision making while establishing goals of therapy. Higher scores indicated the therapist believes that they give liberty to their residents to be involved in decision making while designing the therapy POC.

(5) Providing Complete Information.

This element was extracted and modified from the CCRQ and PCHC scales (Cott et al., 2006; Dow et al., 2013). Cott et al. (2006) suggested the information provided to the resident has to be appropriate, timely, and incorporate their wishes, in a way where all therapeutic education elements are centered on the residents' needs. So, the element 'providing complete information' was a measure of therapists' perception of how detailed and thorough information therapists are providing to the residents they are caring for. Items included the extent of therapists' willingness and efforts to provide all the information whether therapy or non-therapy related to their residents. Higher scores indicated the therapist believes that they have adequately educated their resident and given them adequate information during the therapy POC.

(6) Continuity of Care.

The element 'Continuity of Care' was extracted and modified from the CCRQ, ICI, and ICS-N (Chappell et al., 2007; Cott et al., 2006; Suhonen et al., 2011). Cott et al. (2006) define co-ordination and continuity as concepts in which the "client knows the roles and responsibilities of each team member at each stage of the rehabilitation process including where and how to access information (p. 1389)". This element was a measure of therapists' perception of their willingness and efforts to educate or inform residents, their friends/family, co-workers (such as other therapists, assistants, nurses, social services, and supervisors), about the roles and responsibilities of all involved personnel in the therapy care process and efforts to provide

information that can allow residents to gain access to what services they want when they want. Items included appropriately sharing and/or delegating roles and responsibilities to other colleagues or involved clinicians keeping residents within the loop. It included efforts to include friends and family members as per the residents' wishes and smooth transition of residents' care from SNF to home or community. Higher score indicated the therapist believes that they have covered all areas of continuity of care during and after therapy discharge of the resident and their residents or residents' power of attorneys are well informed about what to do, and where to go with their therapy-related questions during or after discharge from therapy.

Attitudinal Item adaptation and modification

Wherever possible the question items were adapted verbatim from the available literature to enhance the utility, reliability, and validity of the study questionnaire (Table 5). However, some question items were modified to make them more valid to the scope of practice of OT and PT in SNFs. For instance, the question item from the individualized care instrument, the caregiver, *'Feel that the facility you work in makes an effort to include personal preferences into mealtimes'* (Chappell et al., 2007, p. 537) is modified to *'I feel that the facility I work in tries to include personal preferences into therapy schedules.'* A few other questions were modified to add uniformity across the PCT_Attitude questionnaire. The question items in CCRQ were all based on the client's perspective and were worded in the past tense. All such questions were modified to capture therapists' attitudes in the present tense. For instance, the question item *'I was told what to expect when I got home'* (Cott et al., 2006, p. 1397) was referring to the client's opinion. Such items were modified to the therapist perspective in this study; '*I tell residents what to expect during their stay in the nursing home.'* Similarly, the question item *'I received the*

information that I needed when I wanted it' (Cott et al., 2006, p. 1397) was also referring to the client's opinion. This was changed to *'I provide information to the resident that they need when they want*,' reflecting the therapist's attitude. A few negatively worded items were scattered in the questionnaire to cross-check respondent accuracy and minimize acquiescence bias (Salazar, 2015). Table 5 below lists the adaption and/or modification of each question item. A total of 24 questions were finalized along with a few highlighted negatively scored items.

Table 5

Attitudes towards Person Centeredness of Occupational and Physical Therapists (PCT_Attitude)

Subscale	**Original items (Name of Measure)**	**Adapted and/or modified items relevant to therapy practices**
1. Know the person	1. Know their fears and worries (PDC)	I like to explore and ask residents about their fears and worries regarding therapy
	2. Know their preferred routines (PDC)	It's better if I know the preferred routines of the residents that I am caring for
	3. I ask service users what their goals are for this admission (PCHC)	It's good to ask residents what their goals are for this admission
	4. I do not feel like I know each resident as a unique individual (ICI)	*If I must choose, I would rather get the therapy completed than get to know each resident as a unique individual (negative phrase item)*
2. Extent of Individualized care or unique person	5. Residents are offered the opportunity to be involved in individualized everyday activities (P-CAT)	I like to offer residents the opportunity to be involved in individualized therapy activities
	6. Focus on what they can do, more than what they can't do (PDC)	It's good to focus on what residents can do, more than what they can't do
	7. I seek to find out what is important to service users about their health (PCHC)	I prefer to learn what is important to residents about their health
	8. The needs and preferences of service users should be central in health services (PCHC)	*I would rather be efficient and complete the therapy rather than focus on the needs and preferences of residents (negative phrase item)*

3.Communication & therapist-patient relationship	9. Talk with patients about the feelings they have about their health condition (ICS-N)	Talking with residents about the feelings they have about their health condition is what I like to do.
	10. I listen to patients' personal wishes with regard to their care (ICS-N)	*There is rarely time to include personal wishes about their care (negative phrase item)*
	11. I encourage patients to express their opinions on their care (ICS-N)	Encouraging residents to express their opinions and expectations on their care is a good idea.
	12. I give service users and their carers adequate time to talk to me (PDC)	*I think it's more important to complete the therapy rather than to give residents and their carers adequate time to talk about their concerns (negative phrase item)*
4.Extent of Shared Decision Making	13. I give patients the chance to take responsibility for their care as far as able (ICS-N)	It's important to me to give residents the chance to take responsibility for their care
	14. The program staff and I discussed my progress together and made changes as necessary (CCRQ)	*I prefer to get the therapy completed rather than to discuss therapy progress with residents and make changes as necessary (negative phrase item)*
	15. The program staff and I decided together what would help me (CCRQ)	The best way to give therapy is to let therapists and residents together decide what would help them
	16. Make their own choices even if it puts them at risks (PDC)	*I believe residents should make their own choices even if it puts them at risk (negative phrase item)*
5. Providing the complete information	17. I received the information that I needed when I wanted it (CCRQ)	I like to provide information to the residents about what they need when they want it.
	18. I was told what to expect when I got home (CCRQ)	It's best to tell residents' what to expect from therapy services during their stay in a nursing home
	19. I knew who to contact if I had problems or questions during my rehabilitation program (CCRQ)	It's good to tell residents' whom to contact if they had problems or questions during their rehabilitation program
	20. Treatment choices were fully explained to me (CCRQ)	*I would focus on completing a therapy session rather than to fully explain to residents about their treatment choices (negative phrase item)*
6.Continuity of care	21. Ask patients whether they want their family to take part in their care (ICS-N)	It's good to ask residents whether they want their family to take part in their care

	22. Share care approaches that can help residents to do things for themselves (ICI)	I believe in educating and sharing care approaches that can help residents to do things for themselves.
	23. Talk with other staff members in order to find out the meaning behind difficult resident behaviors (ICI)	It is important to talk to other staff members to better manage challenging behaviors that may occur with a resident
	24. Carers given time and adequate assistance to prepare to discharge (PCHC)	*I would complete therapy rather than to give adequate time and assistance to carers to prepare them for resident discharge (negative phrase item)*

Phase 4: Pilot testing, analysis and review

Before pilot testing, each question item was reviewed, approved, and modified by an initial expert panel for both face and content validity. The expert panel included three persons; two faculty members from the Department of Gerontology, Virginia Commonwealth University, and one Physical Therapist. Members of the expert panel of the study discussed the items over numerous months to identify and minimize item redundancy and item clarity. To minimize item redundancy, items using different words to infer similar meanings were removed. For instance, items such as personhood, respect, or personalized care were removed because they are already encapsulated in other items such as unique individuals. Further, to improve item clarity, words such as 'residents' emotional needs,' which encompass numerous interpretations, were not selected. Instead clear words such as fears, anxieties were chosen.

Once reviewed and modified, the survey tool was built using REDCap (Research Electronic Data Capture) software. REDCap is a secure, easy to use web-based application for building, collecting, storing, and managing online surveys (Kenneth & Wright). In addition to the survey tool, survey instructions, and a consent form for participation was developed and attached to the tool. A single survey URL link was created to do pilot data collection.

The pilot data collection used a convenience sample of at least six Occupational and six Physical Therapists working in SNFs. This is based on the previous literature suggestion which indicates that pilot data should be at least 10% of the sample anticipated for the actual study (Connelly, 2008). Since, in this study a total of 120 participants are targeted for recruitment, a sample of 12 participants for pilot data collection is considered enough.

The pilot data participants were recruited verbally by phone and a single URL link was provided to complete the web-based pilot survey. The pilot participants were requested to provide comments on overall survey questionnaires such as specific question items applicability or scope of practice to their discipline and/or length of the survey completion. Once the pilot data was collected, each question item was reviewed and revised by the expert panel. For the knowledge questionnaire around 15 questions and for attitude questionnaire 4-7 questions for each of its six sub-elements are targeted. Overall, the final survey items were targeted to reduce approximately 40-55 items to maximize the response rate.

Instrument Scoring

A standard five-point Likert scale, ranging from 1 to 5 representing 'not important at all' to 'critically important' for knowledge scale, was used to capture responses. A standard five-point Likert scale, ranging from 1 to 5 representing 'disagree a lot' to 'agree a lot' for attitude scale, was used to capture responses. The scoring method of the study is guided by toolkit used by Zimmerman et al., (2014). Zimmerman et al., (2014) designed their toolkit for person-centeredness in assisted living and their scoring method is used in this study to handle missed or unanswered responses. Before using this toolkit, reverse coding was done for all negatively phrased questions by subtracting the question item score from 6.

Steps to calculate a summative score for data analysis are as follows: (1) Step 1; sum of question items: first subtract each negatively phrased question item score from 6, and then summed the outcome with all positively scored items. Use a score of 0 for all 'unanswered and/or missed items. (2) Step 2; the number of responses: Count the number of question items for each principle domain of PCC that were answered (Don't count unanswered and/or missed). (3) Divide the sum of positive and negative question items of step 1 by the sum of the number of responses.

Altogether, the score ranges from 1 to 5 with 1 being the lowest and 5 being the highest possible score. A summative score comprising scores from individual items will be used as a measure to quantify the knowledge and attitudes of the therapist towards PCC. So that, a higher score represents a more knowledgeable and more favorable or positive attitude while a low score represents a less knowledgeable and unfavorable or negative attitude towards PCC.

Data Collection

After receiving approval from VCU's Office of Human Subject Protection, the study announcement flier, containing a web-based URL link for the survey questionnaire, was proposed to distribute via personal contact to the OTs/PTs and the Director of Rehabilitation of targeted SNFs. First, personal visits were proposed to be made by the co-investigator to the selected SNFs within 50-75 miles from co-investigator residence in College Park, Maryland. The Director of Rehabilitation of these SNFs requested to spread the study announcement flier to their OT and PT staff and post the announcement fliers on their notice board. Thereafter, using personal contacts, the co-investigator will be reaching out directly to known OT and PT via phone and/or email and request them to participate in the study. The co-investigator will provide

the announcement flier and encourage therapists to spread the flier among their other OTs and PTs colleagues and friends. In the flyer, therapists who agree to participate in the study will be encouraged to share the URL with other OTs and PTs whom they know.

The researcher will collect all data electronically using REDCAP. All data collection will be targeted to be completed within four weeks. One reminder will be sent approximately 2 weeks after the first distribution of the questionnaire to the OTs/PTs to whom the co-investigator contacted directly via phone or email, followed by a second reminder a week later. The Director of Rehabilitation will also be requested to send reminders to their staff (irrespective of who has completed or not completed the survey) approximately 2 weeks after the first distribution of questionnaire, followed by a second reminder a week later. Should the sample size of the study not be met within four weeks of beginning the data collection, the URL link to collect data will be extended for another four weeks. Additionally, if the first distribution of the questionnaire does not provide the required sample size, more SNFs will be targeted and asked to participate.

Consent and Confidentiality

All participation was voluntary. The participants were able to read a summary of the purpose of the study from the announcement flier before survey completion and login to the provided URL link. No participant names and identifiable information were needed for data collection. However, an optional email ID was requested at the end of the survey only to distribute $10 gift cards after the completion of data collection. The study data will be collected electronically using REDCap software. REDCap maintains data integrity and allows secure and easy exportation to SPSS. All data will be stored in the VCU server and only the co-investigator of the study and Faculty of Department of Gerontology will have access to the data entries.

Compensation

Everyone who completes the survey and provides an optional email address will receive a $10 e-gift card directly via their email address.

Data Cleaning and Analysis.

The latest version of SPSS 26 software will be used for data analysis. Several assumptions will be tested to ensure the study data are clean before applying multiple regression analysis. A correlation coefficient matrix will be calculated and inspected for the relationship between predictors and outcome variables. Presence of outliers, linearity (assumes a linear relationship between predictors and response variables), multivariate normality (assumes that the residuals are normally distributed), homoscedasticity (assumes variance of errors are similar across the independent variables) will be checked using scatter plot, partial regression plots, histogram with superimposed normal curve, and/or normal P-P plot. These plots will be visually inspected, interpreted, removed, and/or transformed as necessary using SPSS statistics (version 26). Further, the presence of multicollinearity will be inspected and corrected using correlation coefficients or tolerance test in SPSS. Below is the description of the data analysis techniques for the specific aims of the study:

Specific Aim 1: How knowledgeable are OTs and PTs about the principles of PCC?

Specific aim 1 is exploratory, therefore, descriptive statistics will be plotted based on the responses of the Therapist Knowledge Scale. Using a five-point Likert scale, the mean score will be used to interpret higher or lower levels of therapists' perceived knowledge of the principles of PCC. If therapists mean score report is either 'very important' or 'critically important' in

response to knowledge questionnaire, then therapists will be considered to possess a higher knowledge of principles of PCC. If therapists' mean score report is 'not important at all, 'somewhat important' or 'neither important nor unimportant', then those therapists will be considered to possess lower knowledge of principles of PCC. Cronbach's alpha value will be calculated to assess therapists' knowledge scale's internal consistency, that is, how closely each set of knowledge items are related as a group.

Specific Aim 2: What are the attitudes of OTs and PTs to PCC?

Like specific aim 1, specific aim 2 is exploratory as well, therefore, descriptive statistics will be evaluated based on the responses to the Therapist Attitude Scale along with each of its subscales. Using a five-point Likert scale, the mean score will be used to interpret higher or lower levels of therapists' attitudes towards various principles of PCC. If therapists' mean score report is either 'very important' or 'critically important', then those therapists will be considered to possess positive attitudes towards the principles of PCC. If therapists' mean score report is 'not important at all, 'somewhat important' or 'neither important nor unimportant', then those therapists will be considered to possess a negative attitude towards the principles of PCC. Cronbach's alpha value will be calculated to assess therapists' attitudinal scale's internal consistency, that is, how closely each set of attitudinal items are related as a group.

Specific Aim 3: How do therapists' knowledge of PCC affect their attitudes toward PCC?

Hypothesis (H1): The higher the knowledge of principles of PCC reported by therapists, the more likely they are to possess positive attitudes towards practices of PCC in SNFs.

Although the study hypothesizes the higher the knowledge of principles of PCC reported by therapists the more likely they are to possess positive attitudes towards practices of PCC, the cause-effect relationship between knowledge and attitudes towards PCC is unknown. It can be argued that one can impact the other and vice versa. Therefore, the relationship between knowledge and attitudinal perceptions will be studied using bivariate Pearson's Product Moment correlation.

Specific Aim 4: To what extent do therapists' professional demographic characteristics (educational level, clinical experience, additional educational training, and experience in gerontology/ geriatric care) predict their knowledge toward PCC?

Hypothesis_Knowledge (H2): The higher the educational level of therapists, the higher knowledge of principles of PCC.

Hypothesis_Knowledge (H3): The longer the clinical experience of therapists, the higher knowledge principles of PCC.

Hypothesis_Knowledge (H4). Therapists with university-based education and/or training in geriatrics or gerontology are more likely to know principles of PCC than therapists without this education and/or training

Hypothesis_Knowledge (H5): Therapists with longer clinical experience in SNFs are more likely to know the principles of PCC than therapists without equivalent lengths of clinical experience.

The relationship between predictors; therapists' demographic characteristics (educational level, clinical experience, additional educational training and experience in gerontology/geriatric care), and the outcome variable; therapists' knowledge will first be explored by examining

correlation coefficients with the continuous variables. Therapists' knowledge scale is calculated on a continuous scale, while the therapists' demographic characteristics are plotted using a combination of discrete and continuous scales. Therefore, Pearson's product-moment correlation will be used to assess the relationship between therapists' clinical experience and knowledge about PCC and therapists' clinical experience in SNFs and knowledge about PCC. The Spearman's rank correlation coefficient will be used to assess the relationship between therapists' level of education and knowledge about PCC, and therapists' level of gerontology education and knowledge about PCC. A sequential multiple regression will be used to determine the best predictor(s) among the therapists' professional characteristics to influence their knowledge of PCC. Moderation analysis will be conducted using a hierarchical multiple regression with interaction terms to examine the strength of moderator variables within the study. Subsequently, a t-test will be performed to analyze significant differences between OTs and PTs in terms of their knowledge of the principles of PCC.

Specific Aim 5: To what extent do therapists' professional demographic characteristic (educational level, clinical experience, additional educational training, and experience in gerontology/ geriatric care) predict their attitudes toward PCC?

Hypothesis_Attitude (H6): The higher the educational level of therapists, the more likely they possess positive attitudes towards the principles of PCC.

Hypothesis_Attitude (H7): The longer the clinical experience of therapists, the more likely they possess positive attitudes towards the principles of PCC.

Hypothesis_Attitude (H8): Therapists with university-based education and/or training in geriatrics or gerontology are more likely to possess positive attitudes towards the principles of PCC than therapists without this education and/or training.

Hypothesis_Attitude (H9): Therapists with longer clinical experience in SNFs are more likely to possess positive attitudes towards the principles of PCC than therapists without equivalent lengths of clinical experience.

The relationship between predictors, therapists' demographic characteristics (educational level, clinical experience, additional educational training and experience in Gerontology/Geriatric care), and the outcome variable, therapists' attitude will be explored using correlation coefficients. Since, the therapists' attitude scale is calculated on a continuous scale, while the therapists' demographic characteristics are plotted using a combination of discrete and continuous scale. Therefore, Pearson's product-moment correlation will be used to assess the relationship between therapists' clinical experience and attitude towards PCC and therapists' clinical experience in SNFs and attitude towards PCC. The Spearman's rank correlation coefficient will be used to assess the relationship between therapists' level of education and attitude towards PCC, and therapists' level of Gerontology education and attitude towards PCC. A sequential multiple regression will be used to narrow down the best predictor(s) of the therapists' professional characteristics to influence their specific attitude towards PCC. A moderation analysis will be conducted using a hierarchical multiple regression with interaction terms to analyze the moderation model of the study, that is, to reveal the strength of the moderation of moderator variables within the study. Subsequently, a t-test will be performed to analyze the significant difference between OTs and PTs in terms of their attitude to the principles of PCC.

Threats to Validity

There are several threats to the validity of this study. The selection of a non-probability sampling method, which may cause problems of accurate sample size, may, therefore impact the conclusion validity of the study. To overcome this issue, the co-investigator utilized various power analysis methods to reach out to the appropriate anticipated sample size for the study. Further, conservatively, the study selected a lower effect size (R^2) of 0.15 to recruit a higher number of participants than needed based on the previous research finding of effect size of 0.16 (R^2) by (Bloch, 2004), who conducted research matching with similar areas of interest of this study. However, as per Polit & Beck (2012) large samples are no assurance of accuracy especially in non-probability sampling methods like this study (p.284). Therefore, a non-probability sampling may undermine the statistical conclusion validity in this study.

Chapter Summary

This chapter explains the proposed research methods that will be used in the study. An overview of proposed research questions and hypotheses, research design, target sample and power analysis, variables of interest along with the procedure to develop study instruments, and scoring is discussed. A convenience sample of 120 OTs and PTs will be recruited and their knowledge and attitudes towards PCC will be assessed in SNFs. Also, data collection strategies, data reduction, and statistical analysis are discussed. Descriptive statistics will include correlation coefficients to describe therapists' knowledge and attitude towards PCC. Multiple regression analysis will be used to predict which of the selected variables of interest can best predict therapists' knowledge of PCC principles and their attitudes towards implementing those

principles in SNFs. Finally, threats of validity to the study and study limitations are discussed. Chapter 4 discusses the result and the statistical analysis of the study.

Chapter 4: Results

Chapter Overview

The purpose of this study was to assess the effect of educational and clinical experience of Occupational Therapists (OTs) and Physical Therapists (PTs) on their knowledge of principles of PCC and their attitudes towards implementing those principles in skilled nursing facilities (SNFs). This study also aimed to explore if there is a correlation between knowledge and attitudes of therapists towards PCC and to examine if any knowledge and/or attitudinal differences exist between OTs and PTs towards PCC. This chapter summarizes the professional characteristics of study participants followed by a presentation of outcomes of the five research study questions.

Study Recruitment

The setting of this target population comprised SNFs, primarily operating in the District of Columbia (DC), Maryland, and Virginia. The District of Columbia contains 18 certified Medicare and Medicaid nursing homes, Maryland contains 226 certified Medicare and Medicaid nursing homes, and Virginia contains 288 certified Medicare and Medicaid nursing homes (*SkilledNursingFacilities.org, 2018*). A convenience sample of SNFs in the District of Columbia, southern Maryland, and northern Virginia, which are commutable from the co-investigator residence in College Park, Maryland were personally visited, and the director of rehabilitation of these facilities was requested to authorize the participation of their staff in the study. Additional SNFs were contacted either via phone or email directly to the Director of Rehabilitation for their facility participation in the study (Figure 5).

Additionally, personal contacts were used to reach out to known therapists working in various SNFs nationwide, and participation of their facility in the study was requested. Further recruitment was conducted via, a private Facebook group (Geriatric OT, PT, and SLP Collaborative group) on the co-investigator personal Facebook page (Appendix C). The geriatric focused collaborative group is a private group available only for occupational therapists, occupational therapist assistants, physical therapists, physical therapists' assistants, speech therapists, and students in these programs. As of October 2019, this group contained more than 30,000 therapists working nationwide in various work settings including SNFs.

Outreach was conducted using an approved study flier (Appendix D; Participants information), phone (Appendix A; Phone script), email (Appendix D), and/or social media (Appendix B; Social Media Recruitment Material). First, the participants received the study flier from the notice board of selected SNFs. The announcement flier was provided to the director of rehabilitation for those facilities whom the co-investigator contacted either via phone, emails, or personal visits. The director of rehabilitation was requested to distribute the study flier to his/her OTs and PTs and post it on the rehabilitation department notice board.

Second, using personal contacts, the co-investigator reached out directly to known OTs and PTs via phone and/or email, and requested them to participate in the study. When contacted via phone, once the initial contact was established with the potential participants, the study flier containing the survey link was provided as per their request and convenience. Some participants requested the study survey link to be sent to them via email while others via text messages. The survey link and instructions were provided directly to the participants contacted via emails.

The flowchart of the selection of target setting and sample is mentioned in figure 5.

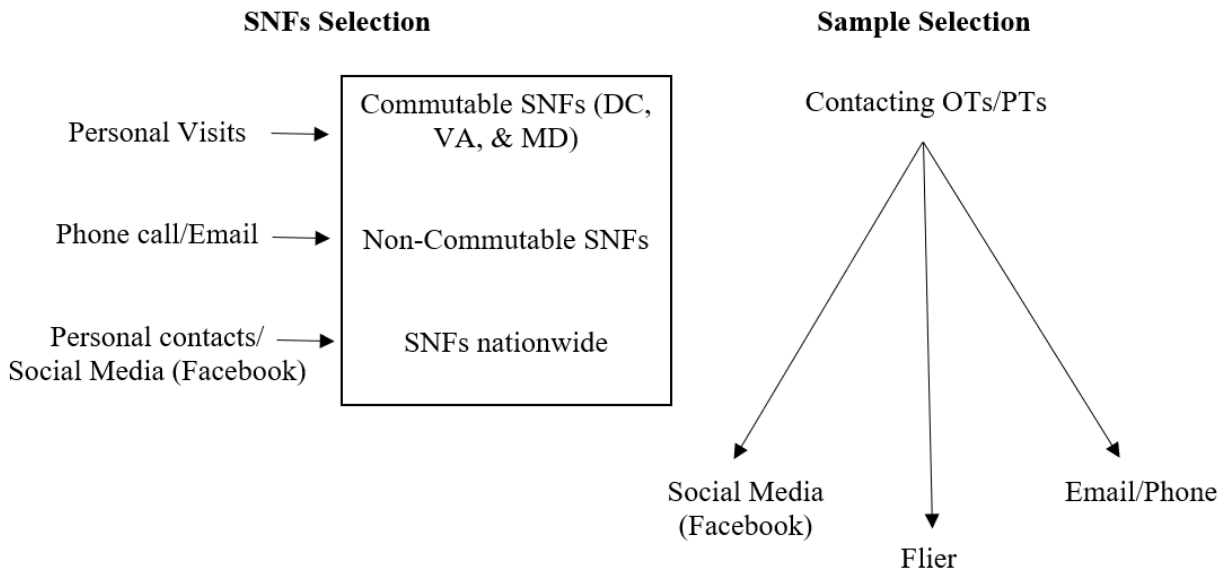


Figure 5

Target setting and sample selection

Pilot Data Collection

The pilot data was collected in August 2019. The purpose of pilot data collection and testing was to enhance the response rate from the participants, and to refine the face and content validity of each question item. A total of 14 participants were contacted on the phone using word-of-mouth by co-investigator. A total of 10 participants' (5 OTs and 5 PTs) responses were collected for pilot data analysis within 1-2 weeks. After pilot data collection, each survey item was reviewed by the expert panel. The participants responded that they were able to complete the survey within 5 to 15 minutes. One participant responded that it took him 20 minutes to complete the survey. After careful analysis of the survey items and participants' comments, it was found that none of the question items needed modification for any of the three scales (demographic, knowledge, and attitude questionnaire) of the study. A few question items in the knowledge and

attitude questionnaires were negatively phrased to avoid acquaintance bias of participants. None of the question items in attitude questionnaire required modification. However, the negatively phrased questionnaire items of knowledge questionnaire scale required revision. The negatively phrased questions of knowledge scale are;

Question item 6 “Honoring residents’ wishes even if it compromises their therapy care”

Question item 10 “Providing residents’ favorite food item as a reward for their therapy participation”, and

Question item 15 “Honor residents’ wish to get non-medically necessary equipment such as power wheelchair if it is covered by their insurance.”

Out of these, one of the question items in the knowledge questionnaire scale; item 6, required re-consideration to enhance the face and content validity of that item. The researchers anticipated the participants’ response to item 6 would be ‘not important at all.’ However, a total of 80% of pilot participants; 5 scored ‘very important’ and 3 scored ‘critically important’, responses were aligned in a positive direction. Surprisingly, it seemed that most participants responded to item 6 ($M = 3.90$, $SD = 1.197$) as a positively worded question item. It might be possible that this question may not truly represent a negative phrase as anticipated. So, after pilot data testing it was decided to treat question item 6 as positively phrase question item.

Data collection

After receiving approval from VCU’s Office of Human Subject Protection (IRB; HM20016346) and establishing contact with SNFs that agreed to participate in the study, the study announcement flier, containing a web-based URL link for the survey questionnaire, was distributed. The study sample was reached via study flier (Appendix D; Participants

information), phone (Appendix A; Phone script), email (Appendix D), and/or social media (Appendix B; Social Media Recruitment Material). At each point of contact with the participants, the co-investigator encouraged therapists to spread the study survey flier among their other OTs and PTs colleagues and friends.

Initially, social media was not used as a medium to reach out to the participants of the study. However, after, three weeks of data collection, a total of 47 OTs and 34 PTs (by the end of September 2019) were enrolled in the study. Therefore, social media was added as a recruitment mechanism. After successfully amending the IRB application, a new social media post was created to post on the closed 'Geriatric OT, PT, and SLP collaborative group.' Participants' instructions were mentioned in the social media post along with the study survey link. A flowchart of data collection is as follows in figure 6.

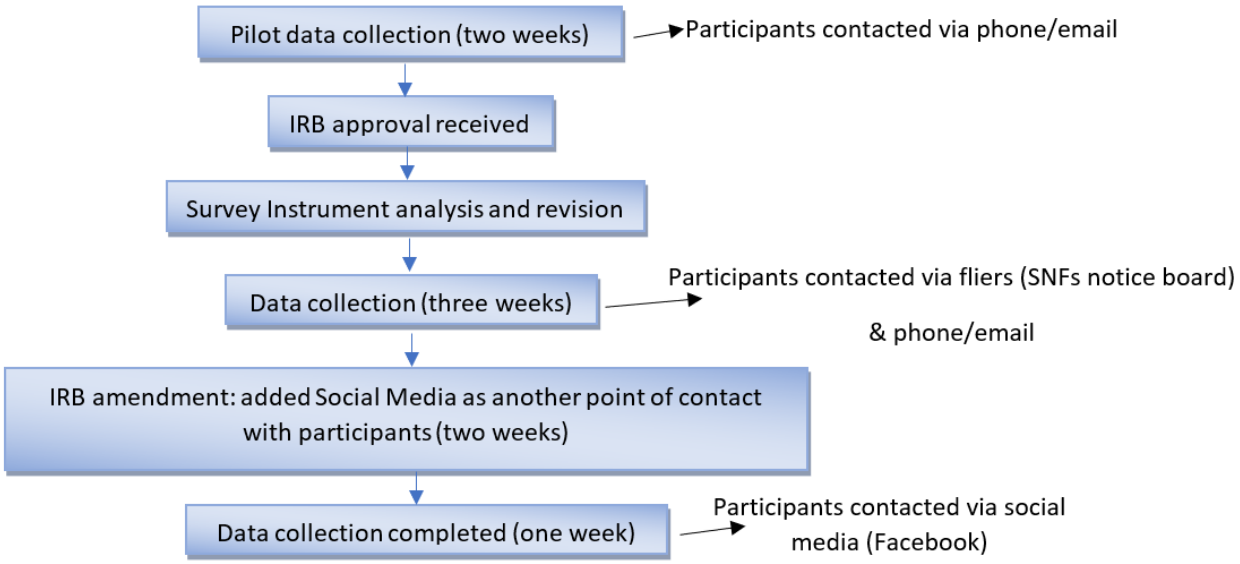


Figure 6

Flow chart of data collection

The researcher collected all data electronically using REDCAP. Data collection was completed within 4-6 weeks. One reminder was sent approximately 2 weeks after the first distribution of the questionnaire to the OTs/PTs to whom the co-investigator contacted directly via phone or email, followed by a second reminder a week later.

Data Cleaning and Preparation

A total of 223 responses were collected, however, 80 entries were incomplete and not included in the final sample. A total of 143 completed survey entries were selected for data analysis. All data entries were verified for accuracy and reasonableness. To fulfill the purpose of the study, the following variables were combined into new categories before data analysis:

Clinical experience of therapists. For this predictor variable, the participants were asked to report their clinical work experience in various settings (Table 8). All these variables met the assumptions to proceed for regression analysis in this study. One of the purposes of this study was to do moderation analysis using clinical experience in SNFs as a moderator variable against the overall clinical experience of therapists. Therefore, the clinical experience of therapists across all clinical settings except SNFs were added together to create a composite sum of clinical experience.

Person-centered care training. The participants were asked to report their educational experience or clinical exposure to principles of PCC in five areas; didactic coursework training PCC, exposure to principles of PCC during formal education (guest speaker, instructors), fieldwork exposure to principles of PCC during clinical practice (team meeting discussion, direct observation of selected aspects of PCC during therapy delivery), any other kinds, and none. After, a careful review of each category, four categories were combined into one variable labeled

'Person-Centered Care Training' and summed so that each PCC training area was given a score of 1 and responses from each PCC training area were combined to create a compositive score. The total outcome score ranged from 0 to 4.

Collinearity assessment

Bivariate correlation analysis through SPSS examined relationships between continuous independent and dependent study variables (Table 6). The only significant correlation ($r = .624$) of note is the correlation between knowledge and attitude. Both were outcome variables of the study which were further analyzed, and the outcomes are reported in the below sections. All other significant correlations were either not the focus on this study (such as a correlation between clinical experience across various settings) or too low to be clinically meaningful (such as correlation of .206 between attitude and clinical experience ALF and correlation of .197 between attitude and clinical experience in all setting except SNFs).

Table 6

Correlations between Study Variables

Variables	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Knowledge	.624**	.054	.063	.147	.106	-.015	.072	.104	-.019	.033	.109	.194	.163
2. Attitude		.010	.123	.138	.079	.054	.028	.206*	-.044	.070	.025	.115	.197*
3. Therapist type (OT/PT)			.856**	.305**	.007	.060	-.003	-.014	.263**	.048	-.205*	-.048	.108
4.Therapist title				.174*	.027	.081	.029	.039	.290**	.149	-.251**	.002	.205*
5. Highest level of education					.058	-.351**	-.104	-.085	-.169	-.224*	-.018	.089	-.139
6. Geriatric Training						.020	.007	.095	.020	-.003	-.047	-.009	.063
7. Clinical experience (SNF)							.402**	.461**	.330**	.427**	.021	-.009	.377**
8. Clinical experience (HHT)								.407**	.365**	.258**	.228*	.120	.641**
9. Clinical experience (ALF)									.269**	.164	.131	.238*	.638**
10. Clinical experience (Out-Patient)										.477**	.034	-.169	.627**
11. Clinical experience (In-Patient)											.073	.049	.619**
12. Clinical experience (School)												.285*	.279**
13. Clinical experience (Others)													.340**
14. Sum of Clinical experiences except SNFs													--

Note. ** $p < 0.01$. *$p < .05$

Descriptive Statistics

This section presents descriptive statistics for independent and dependent study variables.

Professional Characteristics. Total number of participants were 143 therapists (77 OTs and 66 PTs). Table 7 below describes the demographic characteristics of the sample. Within this sample 24% of OTs (*n* =18) and 21% of PTs (*n* = 14) hold bachelors as their entry level degree, 71% of OTs (*n* = 55) and 35% of PTs (*n* = 23) hold master's degree, 5% (*n* = 4) of OTs hold a OTD degree and 41% (*n* = 27) of PTs hold a doctor degree, and 0% (*n* = 0) of OTs and 4.65% (*n* = 2) of PTs hold doctoral/Ph.D. degree. Only 12% (*n* = 17) participants has formal training in gerontology or aging services (1 = bachelors, 13 = masters, and 3 = Other).

The participants were asked to report their educational experience concerning principles of PCC in four areas; didactic coursework training in PCC, exposure to principles of PCC during formal education, fieldwork exposure to principles of PCC during clinical practice, and any other kind not listed. Only 2% (*n* = 3) of participants reported having no prior educational experience or exposure to the principles of PCC. A total of 58% (*n* = 82) participants responded to have at least area of educational experience or exposure to PCC, 22% (*n* = 32) reported to possess at least two areas of educational experience or exposure to PCC, 17% (*n* = 24) reported exposure to principles of PCC in at least three areas and 1% (*n* = 2) reported affirmatively to all four areas of exposure to principles of PCC.

When asked to specify current position or work title, 69 (47.3%) participants responded holding clinical OT position, 3 (2.1%) held clinical OT manager positions, 53 (36.3%) held clinical PT positions, 3 (2.1%) clinical PT manager positions, 12 (8.2%) director of rehabilitation and 3 (2.1%) reported other or faculty position.

Table 7

Demographic Characteristics of Therapists

		OT Frequency	Percent	PT Frequency	Percent
Therapy type	OT/PT	77	54	66	46
Formal degrees	Bachelor	18	12.5	14	10
	Master	55	38.5	23	16
	Doctor (OTD or DPT or equivalent)	4	3	27	19
	Doctorate (Ph.D.)	0	0	2	1
Formal training in	Bachelor	0	0	1	0
Aging services	Master	8	5.6	5	3.5
	Other	1	0	2	0
	Clinical therapist	69	47.3	53	36.3
Current work title	Clinical Manager/Coordinator	3	2.1	3	2.1
	Director of Rehabilitation	4	5.2	8	12.1
	Others	1	1.3	2	3

Participants were asked to report their clinical work experience in various settings (Table 8). All these variables met the assumptions to proceed for regression analysis in this study. The mean clinical work experience in SNFs was 6.16 (SD = 2.25). The mean of 6.16 corresponds to 5-8 years (SD = < 1 year) of clinical experience in SNFs with a range of less of 1 year to more than 15 years of experience. The mean sum of clinical experience of therapists across all other six settings except SNFs was 12.27 (SD = 7.38). Altogether, the clinical experience of therapists ranged from no experience to more than 15 years of experience across all types of work settings.

Table 8

Clinical Experience of therapist across various settings

Work settings	N	Mean	Std. Deviation
Clinical experience (SNFs)	142	6.16	2.25
Clinical experience (In-Patient)	119	3.23	2.45
Clinical experience (Out-Patient)	122	2.97	2.15
Clinical experience (Assisted Living)	121	2.79	2.33
Clinical experience (HHT)	125	2.75	2.26
Clinical experience (Others)	84	1.69	1.84
Clinical experience (School system)	116	1.59	1.32
Sum of all experiences except SNFs	143	12.273	7.38

Knowledge of PCC

Knowledge of therapist towards PCC was measured using a standard five-point Likert scale, ranging from 1 to 5 representing ‘not important at all’ to ‘critically important.’ (total scale range = 3.13 to 5.00). The descriptive statistics of each question item along with an aggregate sum of therapists’ knowledge on PCC is described in Table 9. The knowledge scale demonstrated normal distribution. Cronbach’s alpha for the overall knowledge questionnaire scale was .801 when both positive and negative question items are included as originally presents in the survey scale. The Cronbach’s alpha for knowledge questionnaire scale dropped to .669, when negative phrase question items (item; 10 and 15) were reverse coded to match the positive direction of question items. This indicates that the participants had some acquaintance bias. After deleting, the negative phrase question item 10 and item 15, the Cronbach’s alpha value increased to .746 and .828 respectively.

Cronbach’s alpha value of the range of .7 to .95 is considered an acceptable measure of reliability (Tavakol & Dennick, 2011). The value of alpha beyond .9 indicates redundancy in question items than high internal consistency (Streiner, 2003). Therefore, the knowledge questionnaire scale used in this study possess fair to good reliability.

Table 9

Knowledge of Person Centeredness of OTs and PTs in SNFs

To what degree do you think each of the following is an important component of person-centered care?			Skewness		Kurtosis	
	Mean	SD	Mean	SD	Mean	SD
1) Assessing my residents' unique clinical needs.	4.77	.47	-2.37	.20	7.80	.40
2) Promoting residents' active participation in therapy.	4.55	.64	-1.61	.20	3.53	.40
3) Promoting residents' self-management in therapy.	4.35	.63	-.60	.20	.29	.40
4) Involving family members during resident therapy.	3.99	.81	-.72	.20	.35	.40
5) Repeatedly discussing therapy plans with residents.	4.05	.77	-.74	.20	.60	.40
6) Honoring residents' wishes even if it compromises their therapy care.	3.96	.91	-1.05	.20	1.32	.40
7) Investing in building up a strong therapist-resident relationship.	4.51	.58	-.69	.20	-.50	.40
8) Providing complete information to the residents about therapy.	4.45	.68	-1.11	.20	1.12	.40
9) Adequate referral of a resident to other medical services when needed on time.	4.58	.58	-1.22	.20	1.75	.40
10) Providing residents' favorite food items as a reward for their therapy participation.	3.82	1.07	.30	.20	-.97	.40
11) Negotiating care options with residents during therapy.	3.39	1.06	-.37	.20	-.54	.40
12) Honoring resident preference during therapy plan-of-care.	4.23	.74	-1.04	.20	1.53	.40
13) Providing empowerment to resident in therapy.	4.49	.74	-1.82	.20	4.33	.40
14) Devoting adequate time during therapy assessment.	4.47	.68	-1.32	.20	2.04	.41
15) Honor residents wish to get non-medically necessary equipment such as a power wheelchair if it is covered by their insurance.	2.90	1.41	-.18	.20	-1.32	.41
Total	4.17	.34	-.28	.20	.29	.40

Attitudes about PCC

Attitudes of therapist towards PCC was calculated using a standard five-point Likert scale, ranging from 1 to 5 representing ‘disagree a lot’ to ‘agree a lot’ (total scale range = 3.29 to 5.00). The descriptive statistics of each question item along with an aggregate sum of therapists’ attitude towards PCC is described in Table 10. Overall, the attitude questionnaire scale represented a normal distribution. Scale reliability using Cronbach’s alpha of the attitude scale (24 items) was .795 (Valid = 134, excluded = 9). Therefore, the attitude scale has good reliability.

The attitude scale was further divided into six sub-scales; (1) know the person, (2) extent of individualized care or unique person, (3) communication and therapist-resident relationship, (4) extent of shared decision making, (5) providing complete information, and (6) continuity of care. Table 11 summarizes the mean scores of subscales of therapists’ attitudes towards PCC. Each sub-scale was also analyzed using a 5-point Likert Scale and the score reflected an overall positive attitude of therapists towards the principles of PCC.

Table 10

Attitudes towards Person Centeredness of OTs and PTs in SNFs

Question items			Skewness		Kurtosis	
	Mean	SD	Mean	SD	Mean	SD
1) I like to explore and ask residents about their fears and worries regarding therapy	4.11	.75	-.69	.20	.49	.40
2) It's better if I know the preferred routines of the residents that I am caring for	4.57	.56	-1.14	.20	1.68	.40
3) It's good to ask residents what their goals are for this admission	4.76	.43	-1.20	.20	-.57	.40
4) If I must choose, I would rather get the therapy completed than get to know each resident as a unique individual	4.07	1.06	-.97	.20	.14	.40
5) I like to offer residents the opportunity to be involved in individualized therapy activities	4.55	.53	-.51	.20	-1.11	.40
6) It's good to focus on what residents can do, more than what they can't do	3.85	1.10	-.70	.20	-.42	.40
7) I prefer to learn what is important to residents about their health	4.32	.63	-.36	.20	-.65	.40
8) I would rather be efficient and complete the therapy rather than focus on the needs and preferences of residents	4.09	1.05	-1.38	.20	1.56	.40
9) Talking with residents about the feelings they have about their health condition is what I like to do.	3.71	.91	-.52	.20	.06	.40
10) There is rarely time to include personal wishes about their care	3.76	1.25	-.67	.20	-.68	.40
11) Encouraging residents to express their opinions and expectations on their care is a good idea.	4.43	.65	-1.49	.20	5.24	.41
12) I think it's more important to complete the therapy rather than to give residents and their carers adequate time to talk about their concerns	4.38	.88	-1.84	.20	3.83	.40
13) It's important to me to give residents the chance to take responsibility for their care	4.37	.57	-.19	.20	-.77	.40
14) I prefer to get the therapy completed rather than to discuss therapy progress with residents and make changes as necessary	4.38	.89	-1.66	.20	2.69	.40
15) The best way to give therapy is to let therapists and residents together decide what would help them	4.27	.82	-1.33	.20	2.20	.40
16) I believe residents should make their own choices even if it puts them at risk	3.49	1.04	-.43	.20	-.40	.40
17) I like to provide information to the residents about what they need when they want it.	4.16	.65	-.80	.20	3.07	.41
18) It's best to tell residents' what to expect from therapy services during their stay in a nursing home	4.51	.63	-1.28	.20	2.16	.40

19) It's good to tell residents' whom to contact if they had problems or questions during their rehabilitation program	4.55	.55	-.72	.20	-.56	.40
20) I would focus on completing a therapy session rather than to fully explain to residents about their treatment choices	4.23	.96	-1.22	.20	.78	.40
21) It's good to ask residents whether they want their family to take part in their care	4.35	.62	-.59	.20	.37	.40
22) I believe in educating and sharing care approaches that can help residents to do things for themselves.	4.52	.54	-.49	.20	-.95	.40
23) It is important to talk to other staff members to better manage challenging behaviors that may occur with a resident	4.48	.66	-1.66	.20	5.23	.40
24) I would complete therapy rather than to give adequate time and assistance to carers to prepare them for resident discharge	4.38	.94	-1.80	.20	3.29	.40
Total	4.27	.35	-.21	.20	-.31	.40

Table 11

Attitude subscales

Subscales	N	Mean	Std. Deviation
Know the person	143	4.37	.45
Unique person	143	4.20	.47
Resident-therapist relationship	143	4.10	.54
Shared decision making	143	4.13	.42
Complete information	143	4.37	.45
Continuity of care	143	4.43	.43

Regression analysis assumptions

Violation of normality, linearity or reliability of IVs or presence of outliers, and multicollinearity were assessed. For knowledge of PCC, Kolmogorov-Smirnov test of normality revealed non-significant findings (n =143, p = .056) and Shapiro-Wilk test of normality revealed non-significant findings (n =143, p = 0.317). Also, for attitude toward PCC, both the test of normality; Kolmogorov-Smirnov (n =143, p = .072) and Shapiro-Wilk test of normality (p = .784) revealed non-significant findings; p = 0.216). The histogram and normal Q-Q plots for both knowledge and attitude variables demonstrate normal distribution (Figure 7). The below residual plots for knowledge and attitude variables reveal that the assumptions of homoscedasticity were met with all the points on the scatter plots between -3 to 3 on both x and y axes (Figure 8).

Multicollinearity. Multicollinearity of variables in the analysis was assessed using SPSS multicollinearity diagnostics procedures. The Pearson correlation coefficient values between predictors revealed no correlation values greater than .7 indicating no presence of multicollinearity among predictors (Table 12). Multi collinearity checks using tolerance values also met (Table 2). All tolerance values are > 0.2 and VIF < 10 and average VIF for all IVs near 1.0.

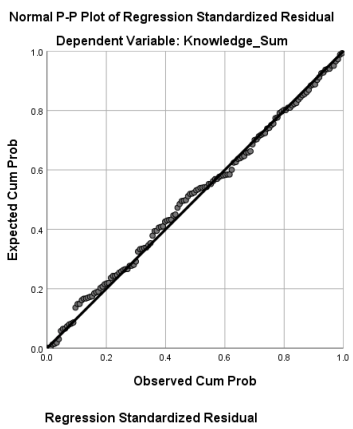
Table 12

Multi collinearity testing

	Tolerance	VIF
Therapist Type	.85	1.18
Highest Level of Education	.77	1.30
PCC training or exposure	.91	1.01
Clinical Experience in SNFs	.73	1.37
Clinical Experience	.82	1.22
Geriatric Education	.99	1.01

**Dependent Variables; Knowledge & Attitude

Multicollinearity was also checked for predictors and moderator variables by creating Mahalanobis distance and corresponding significant *p* values. None of the *p* values were below .001 indicating the study had no outliers for predictors and moderator variables.



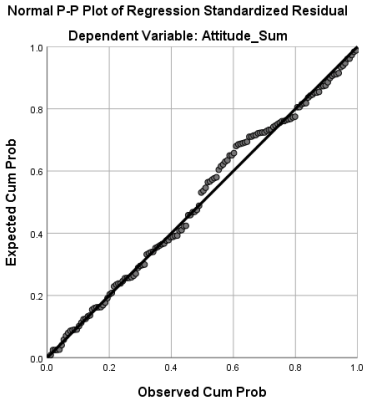
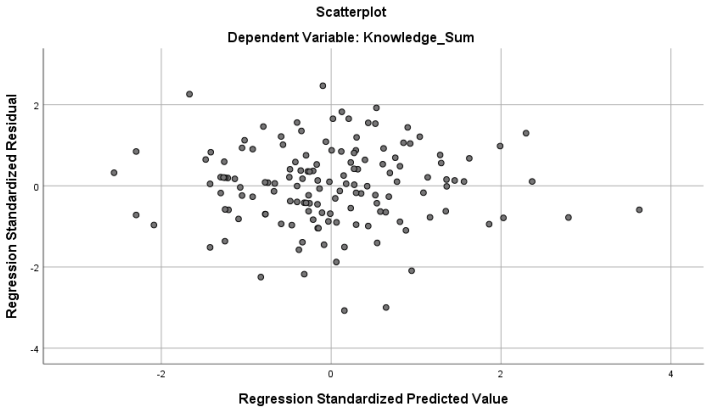


Figure 7

Histograms & Q-Q plots for both knowledge and attitude variables



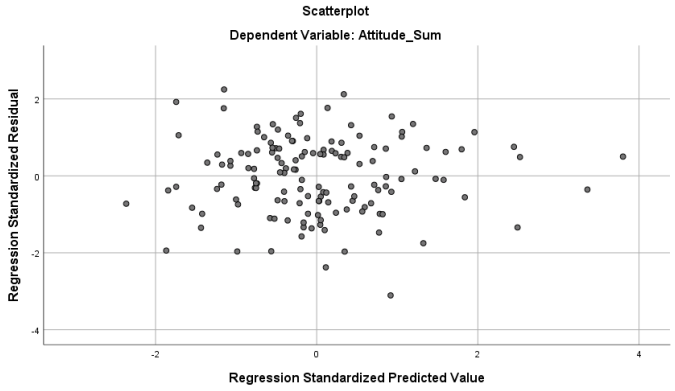


Figure 8

Residual plots for knowledge and attitude variables

Data Analysis: Hypothesis Testing

This section describes the procedures used for testing study purposes, specific aims, and hypothesis. All research questions are answered through a series of descriptive and parametric statistical analysis.

Aim 1: How knowledgeable are OTs and PTs about the principles of PCC?

The mean score of therapists' knowledges towards PCC was M = 4.17 (SD = .34, *n* = 143) reflecting overall high knowledge of principles of PCC possessed by therapists. Within this sample, the mean knowledge score of OTs was 4.16 (SD = .34, *n* = 77) and mean knowledge score of PTs was 4.18 (SD = .34, *n* = 66). Independent t-tests were conducted to determine any differences in knowledge scores between the OTs and PTs. Analysis revealed no significant differences between OTs (M = 4.16, SD = .34, *n* = 77) and PTs (M = 4.18, SD = .34, *n* = 66) in terms of overall knowledge of principles of PCC (t = .47, *p* = .78).

Aim 2: Therapists attitudes toward PCC?

The mean score of therapists' attitudes towards principle of PCC was M = 4.27 (SD = .35, *n* = 143). Within this sample, the mean attitude score of OTs was 4.27 (SD = .36, *n* = 77) and mean attitude score of PTs was 4.26, SD = .34, *n* = 66). Independent t-tests revealed no significant differences between attitude scores of the OTs and PTs in terms of overall attitude towards principles of PCC (t = .11, *p* = .51).

Aim 3: How do therapists' knowledge of PCC affect their attitudes toward PCC?

Hypothesis (H1): The higher the knowledge of principles of PCC reported by therapists, the more likely they are to possess positive attitudes towards practices of PCC in SNFs.

A moderate significant positive correlation was found between the knowledge and attitude of the therapist towards PCC using Pearson product correlation r =.62, p = .000. So, the hypothesis of higher the knowledge the more likely therapists to possess a positive attitude towards principles of PCC was accepted. Due to a significant correlation between knowledge and attitude variables, these variables were examined further. A simple linear regression analysis was conducted to determine the prediction of the therapist's attitude towards PCC as a result of their knowledge of the principles of PCC. The study revealed 39% (r^2 = .39, F = 90.08, p = .000) of total variance in therapists' attitude is accounted for by therapists' prior knowledge on principles of PCC.

Aim 4: To what extent do therapists' professional demographic characteristics (educational level, clinical experience, type of therapist, and additional educational training and experience in gerontology/Aging Services) predict their knowledge of PCC?

To answer this aim, first correlation coefficients were calculated to determine the relationship between the predictors: therapists' demographic characteristics (therapist type, educational level, PCC training, clinical experience, additional educational training and experience in gerontology/geriatric care), and the outcome variable; therapists' knowledge (Table 13).

Table 13

Correlations of Independent Variables and Therapists' Knowledge towards PCC

Independent Variables	N	Knowledge	Level of Significance
Clinical experience (SNFs)	142	.00[a]	.998
Clinical experience (Others)	84	.19 [a]	.077
Sum of all experiences except SNFs	143	.16 [a]	.052
PCC training	143	.20[* a]	.016
Therapist type (OT/PT)	143	.05 [b]	.522
Therapist title	140	.06 [b]	.461
Highest level of Education	143	.15 [b]	.080
Geriatric Training	143	.11 [b]	.207

*p<.05
a Pearson's product-moment correlation
b Spearman's Rho correlation

This was followed by sequential regression analyses. Sequential analysis allowed entering the predictors in the regression equation based on study aims. Six blocks of sequential regression were used to determine the best predictors of therapists' knowledge on principles of PCC with therapist type used as control variables (Table 14). The subsequent predictors were entered in the regression model; the highest level of education, PCC training, Clinical experience of therapists across all settings except SNFs, Geriatric training, and clinical experience in SNFs.

Table 14

Sequential regression analysis to predict best predictors for therapists' knowledge on PCC

DV: Knowledge of principles of PCC				
Predictor	ΔR^2	β (full model)	F	p-value
Step 1				
Therapist type (OT/PT)	.002	.004	.218	.641
Step 2				
Highest level of Education	.017	.119	1.325	.269
Step 3				
PCC training	.035	.163	2.598	.055
Step 4				
Clinical experience (across all settings except SNFs)	.022	.152	2.821	.027*
Step 5				
Geriatric training	.004	.067	2.382	.042*
Step 6				
Clinical experience (SNFs)	.000	-.004	1.971	.074
Total R^2	.080			
F	11.727			
N	143			

*$p < .05$ (from Anova table)

Subsequently two moderation analyses were conducted (Table 15 and Table 16). Before moderation analysis, three predictors (highest level of education, PCC training, and clinical experience across all settings expect SNFs) and one moderator variable (clinical experience in SNFs) were centralized. The two dichotomous variables; one IV; therapist type (OT/PT) and the moderator variable; Geriatric training (Y/N) didn't need centralization. Composite variables using interaction terms (highest level of education * geriatric training) and (clinical experience across all disciplines * clinical experience in SNFs) were created to analyze the moderation effect of geriatric training and clinical experience in SNFs.

Table 15

Moderation Analyses using Geriatric education as moderator variable

DV: Knowledge of principles of PCC						
Predictors	B	SE	B	ΔR^2	R^2	Adjusted R^2
Step 1						
Highest level of Education (standardized value)	.048	.030	.141		.019	.012
Step 2						
Geriatric Education	.098	.090	.093	.007	.026	.012
Step 3						
Education X Geriatric education	-.056	.128	-.039	.001	.027	.006
N = 143						

*$p < .05$

Table 16

Moderation Analyses using Clinical experience in SNFs as moderator variable

DV: Knowledge of principles of PCC						
Predictors	B	SE	β	ΔR^2	R^2	Adjusted R^2
Step 1						
Clinical experience (across all settings except SNFs); standardized values	.062	.036	.180		.026	.020
Step 2						
Clinical experience in SNFs (Standardized value)	-.025	.033	-.072	.006	.032	.018
Step 3						
Clinical experience X Clinical experience in SNFs	.008	.031	.024	.000	.032	.012
N = 143						

*$p < .05$

Hypothesis_Knowledge (H2): The higher the educational level of therapists, the higher their knowledge of principles of PCC.

The study explored two types of therapists' educational experiences to determine its relationship with therapists' knowledge on principles of PCC. The first analysis investigated the relationship between therapists' highest level of educational degree programs (i.e., Bachelor, Masters, Doctorate), with knowledge of principles of PCC. The study revealed a non-significant positive correlation using Spearman's Rho correlation ($\rho = .15$, $p = .08$, $n = 143$) co-efficient

between therapists' highest level of education with their knowledge on principles of PCC. The sequential regression analysis (table 14) revealed non-significant R^2 change of 1.7% ($\Delta R^2 = .017$, $p = .205$, t = 1.275). So, the hypothesis that the higher the educational level of therapists, the higher their knowledge of principles of PCC was rejected.

Second, educational experience was examined to capture specific points of training to principles of PCC (i.e., didactic coursework training, exposure to principles of PCC during formal education, fieldwork exposure during clinical practice and, direct observation of PCC). A Pearson product-moment correlation coefficient revealed low but significant results (r = .201, p = .016, n =143) relationship between therapists' knowledge and their prior educational training and/or field exposure to principles of PCC. To explore further, a sequential regression analysis (Table 14) was conducted to determine the prediction of the therapist's knowledge towards PCC as a result of their prior training on the principles of PCC. The study revealed 3.5% ($r^2 = .035$, p = .061, t = 1.892) of total variance in therapists' knowledge is accounted by therapists' prior knowledge on principles of PCC.

Hypothesis_Knowledge (H3): The longer the clinical experience of therapists, the higher their knowledge of principles of PCC.

Analysis revealed a non-significant correlation (r = .16, p = .05, n = 143) between therapists' knowledge and clinical experience of therapists. Further, sequential regression analysis (table 14) revealed non-significant R^2 change of 2.2% ($\Delta R^2 = .022$, $p = .097$, t = 1.670). Therefore, the hypothesis of longer the clinical experience of therapists higher the knowledge of principles of PCC was rejected.

Hypothesis_Knowledge (H4). Therapists with university-based education and/or training in geriatrics or gerontology are more likely to know the principles of PCC than therapists without this education and/or training.

A sequential multiple regression was employed to determine predictor(s) among the therapists' professional characteristics to influence their knowledge of PCC. The sequential regression analysis revealed that a non-significant 8% change ($F = 1.971$, $r^2 = .080$, $p = .074$) in the therapists' knowledge on principles of PCC is predicted by four predictor variables all together; PCC training, therapist type (OT/PT), highest level of education, clinical experience across various work settings except SNFs and two moderator variables (Geriatric education and clinical experience in SNFs (Table 14). Model 4 including therapist type, highest level of education, PCC training, and clinical experience across all settings except SNFs revealed significant findings ($\Delta R^2 = .076$, $F = 2.821$, $p = .027$). Model 5 including therapist type, highest level of education, PCC training, clinical experience across all settings except SNFs and geriatric training revealed significant findings ($\Delta R^2 = .080$, $F = 2.382$, $p = .042$). However, a further analysis of individual predictor variables revealed none of the individual variables were significant predictors of therapists' knowledge on PCC (Table 14).

A sequential regression analysis using geriatric training as predictor (Table 14) revealed non-significant R^2 change of .4% ($\Delta R^2 = .004$, $p = .422$, $t = .806$) in therapists' knowledge on PCC. When moderation analysis was conducted using therapists' highest level of education and additional education in Gerontology or Aging Services, the contribution from geriatric training increased to non-significant level of .7% ($\Delta R^2 = .007$, $p = .276$, $t = 1.095$), while the interaction

outcome of geriatric training with highest level of education dropped down to non-nonsignificant level of .1% (F =1.304, ΔR^2 = .001, p = .661, t = -.440) outcomes (Table 15). Therefore, the hypothesis of therapists with university-based education and/or training in geriatrics or gerontology is more likely to know the principles of PCC than therapists without this education and/or training was rejected.

Hypothesis_Knowledge (H5): Therapists with longer clinical experience in SNFs are more likely to know the principles of PCC than therapists without equivalent lengths of clinical experience.

Pearson product-moment correlations were calculated to determine relationships between the clinical experience of therapists across various settings and their knowledge towards PCC (Table 17). None of the correlations were found to be significant. Within this sample, none of the correlations were significant separately for OTs and PTs (Table 18).

Table 17

Correlations of Clinical Settings and Therapists' Knowledge on PCC

Clinical setting	N	Knowledge	Level of Significance
Clinical Experience (SNFs)	143	-.01	.925
Clinical experience (HHT)	125	.07	.427
Clinical experience (Assisted Living)	121	.10	.258
Clinical experience (Out-Patient)	122	-.02	.831
Clinical experience (In-Patient)	119	.03	.724
Clinical experience (School system)	116	.11	.245
Clinical experience (Others)	84	.19	.077
Sum of all experiences except SNFs	143	.16	.052

Table 18

Correlations of Clinical settings and OTs/PTs' Knowledge of PCC

	OT			PT		
Clinical setting	N	Knowledge	Level of Significance	N	Knowledge	Level of Significance
Clinical Experience (SNFs)	77	-.08	.505	54	.07	.591
Clinical experience (HHT)	66	.09	.455	59	.05	.707
Clinical experience (Assisted Living)	64	.15	.254	57	.06	.658
Clinical experience (Out-Patient)	63	.09	.509	59	-.11	.406
Clinical experience (In-Patient)	63	.00	.980	56	.07	.635
Clinical experience (School system)	61	.06	.654	55	.16	.247
Clinical experience (Others)	50	.22	.133	34	.17	.339
Sum of all experiences except SNFs	77	.20	.080	66	.19	.389

A sequential regression analysis using clinical experience in SNFs as predictor (Table 14) revealed non-significant R^2 change of .4% ($\Delta R^2 = .000$, $p = .965$, t = -.044) in therapists' knowledge on PCC. When moderation analysis was conducted using clinical experience in SNFs and clinical experience across all other setting except SNFs, the contribution from clinical experience in SNFs increased to non-significant level of .6% ($\Delta R^2 = .006$, $p = .451$, t = -.756), while the interaction outcome of clinical experience in SNFs with clinical experience in other settings dropped down to non-nonsignificant level of .0% (F =1.554, $\Delta R^2 = .000$, $p = .802$, t = .251) outcomes (Table 15). Therefore, the hypothesis of therapists with longer clinical experience in SNFs is more likely to know the principles of PCC than therapists without this education and/or training was rejected.

Aim 5: To what extent do therapists' professional demographic characteristics (educational level, clinical experience, type, and additional educational training and experience in gerontology/ geriatric care) predict their attitudes toward PCC?

To answer this aim, the first correlation coefficients were calculated to determine the relationship between predictors; therapists' demographic characteristics (educational level, clinical experience, additional educational training and experience in gerontology/geriatric care), and the outcome variable; therapists' attitude (Table 19). The outcome of each hypothesis is discussed below.

Table 19

Correlations of Independent Variables and Therapists' Attitude towards PCC

Independent Variables	N	Attitude	Level of Significance
Clinical experience (SNFs)	142	.06 [a]	.495
Clinical experience (HHT)	125	.03 [a]	.759
Sum of all experiences except SNFs	143	.20* [a]	.018
Sum of all PCC experience	143	.19* [a]	.023
Therapist type (OT/PT)	143	.01 [b]	.905
Therapist title	140	.12 [b]	.149
Highest level of Education	143	.14 [b]	.100
Geri Training	143	.08 [b]	.348

*p<.05
a Pearson's product-moment correlation
b Spearman's Rho correlation

This was followed by sequential regression analyses. Sequential analysis allowed entering the predictors in the regression equation based on study aims. Six blocks of sequential regression were used to determine the best predictors of therapists' attitudes towards the principles of PCC with the therapist type used as control variables (Table 20). The subsequent predictors were entered in the regression model; the highest level of education, PCC training, Clinical experience of therapists across all settings except SNFs, Geriatric training, and clinical experience in SNFs.

Table 20

Sequential regression analysis to predict best predictors for Therapists' Attitude towards PCC

DV: Attitude towards principles of PCC				
Predictor	ΔR^2	β (full model)	F	p-value
Step 1				
Therapist type (OT/PT)	.000	-.064	.012	.911
Step 2				
Highest level of Education	.020	.161	1.416	.246
Step 3				
PCC training	.028	.150	2.339	.076
Step 4				
Clinical experience (across all settings except SNFs)	.038	.173	3.235	.014*
Step 5				
Geriatric training	.003	.050	2.660	.025*
Step 6				
Clinical experience (SNFs)	.003	.065	2.285	.039*
Total R^2	.092			
F	13.514			
N	143			

*$p < .05$ (from Anova table)

Subsequently two moderation analyses were conducted (Table 21 and Table 22). Before moderation analysis, three predictors (highest level of education, PCC training, and clinical experience across all settings expect SNFs) and one moderator variable (clinical experience in SNFs) were centralized. The two dichotomous variables; one IV; therapist type (OT/PT) and the moderator variable; Geriatric training (Y/N) didn't need centralization. Composite variables using interaction terms (highest level of education * geriatric training) and (clinical experience across all disciplines * clinical experience in SNFs) were created to analyze the moderation effect of geriatric training and clinical experience in SNFs.

Table 21

Moderation Analyses using Geriatric education as moderator variable

DV: Attitude towards principles of PCC						
Predictors	B	SE	B	ΔR^2	R^2	Adjusted R^2
Step 1						
Highest level of Education (standardized value)	.044	.030	.125		.017	.010
Step 2						
Geriatric Education	.078	.092	.072	.005	.022	.009
Step 3						
Education X Geriatric education	.015	.131	.010	.000	.023	.001
N = 143						

*$p < .05$

Table 22

Moderation Analyses using Clinical experience in SNFs as moderator variable

DV: Attitude towards principles of PCC						
Predictors	B	SE	β	ΔR^2	R^2	Adjusted R^2
Step 1						
Clinical experience (across all settings except SNFs); standardized values	.071	.036	.203		.039	.032
Step 2						
Clinical experience in SNFs (Standardized value)	-.008	.034	-.022	.001	.040	.026
Step 3						
Clinical experience X Clinical experience in SNFs	.002	.032	-.006	.000	.040	.019
N = 143						

*$p < .05$

Hypothesis_Attitude (H6): The higher the educational level of therapists, the more likely they possess positive attitudes towards the principles of PCC.

The study explored two types of therapists' educational experiences to determine its relationship with therapists' attitudes on principles of PCC. The first educational experience investigated the relationship of therapists' highest level of formal education to attitudes regarding principles of PCC. The study revealed a non-significant correlation using Spearman's Rho correlation ($\rho = .14$, p .10, $n = 143$) co-efficient between therapists' highest level of education

with their knowledge on principles of PCC. The sequential regression analysis (Table 20) revealed a non-significant change of 2% ($\Delta R^2 = .020$, $p = .085$, t = 1.732). So, the hypothesis that higher the educational level of therapists, the more likely they possess positive attitudes towards the principles of PCC was rejected.

Second, educational experience was aimed to capture specific points of training to principles of PCC. A Pearson product-moment correlation coefficient revealed low but significant correlation (r = .190, $p = .023$, $n = 143$) relationship between therapists' attitude and their prior educational training and/or field exposure to principles of PCC. To explore further, a sequential regression analysis (Table 20) was conducted to determine the prediction of the therapist's attitude towards PCC as a result of their prior training on the principles of PCC. The study revealed 2.8% ($\Delta R^2 = .028$, $p = .083$, t = 1.747) of total variance in therapists' attitude is accounted by therapists' prior knowledge on principles of PCC.

Hypothesis_Attitude (H7): The longer the clinical experience of therapists, the more likely they possess positive attitudes towards the principles of PCC.

A low but significant positive correlation (r = .20, $p = .02$, $n = 143$) was found between therapists' attitude and clinical experience of therapists. Therefore, the hypothesis of longer the clinical experience of therapists, the more likely they possess positive attitudes towards the principles of PCC was supported. Further, sequential regression analysis (Table 20) revealed non-significant change ΔR^2 of 3.8% ($\Delta R^2 = .038$, p = .058, t = 1.912).

Hypothesis_Attitude (H8): Therapists with university-based education and/or training in geriatrics or gerontology are more likely to possess positive attitudes towards the principles of PCC than therapists without this education and/or training.

A sequential multiple regression was employed to determine predictor(s) among the therapists' professional characteristics to influence their knowledge of PCC. The sequential regression analysis revealed that a significant 9.2% change ($F = 2.28$, $r^2 = .092$, *df1* = 6, *df2* = 136, $p = .039$) in the therapists' attitude towards principles of PCC is predicted by four predictor variables all together; PCC training, therapist type (OT/PT), highest level of education, clinical experience across various work settings except SNFs and two moderator variables (Geriatric education and clinical experience in SNFs (Table 20). Model 4 including therapist type, highest level of education, PCC training, and clinical experience across all settings except SNFs revealed significant findings ($\Delta R^2 = .038$, $F = 3.235$, $p = .014$). Model 5 including therapist type, highest level of education, PCC training, clinical experience across all settings except SNFs and geriatric training revealed significant findings ($\Delta R^2 = .003$, $F = 2.660$, $p = .025$). Model 6 including therapist type, highest level of education, PCC training, clinical experience across all settings except SNFs, geriatric training, and clinical experience in SNFs revealed significant findings ($\Delta R^2 = .003$, $F = 2.285$, $p = .039$). However, a further analysis of individual predictor variables revealed none of the individual variables were significant predictors of therapists' attitude (Table 20).

A sequential regression analysis using geriatric training as predictor (Table 20) revealed a non-significant R^2 change of .3% ($\Delta R^2 = .003$, $p = .564$, $t = .605$). When moderation analysis was added using highest level of therapists' education and Geriatric training, the contribution increased to a non-significant 0.5% ($\Delta R^2 = .005$, $p = .401$, $t = .842$) level by geriatric training,

while the interaction outcome of the two variables dropped down to a non-significant 0% (ΔR^2 = .000, p = .908, t = .116) outcomes (Table 21). Therefore, the hypothesis of therapists with university-based education and/or training in geriatrics or gerontology more likely to possess positive attitudes towards the principles of PCC than therapists without this education and/or training was rejected.

Hypothesis_Attitude (H9): Therapists with longer clinical experience in SNFs are more likely to possess positive attitudes towards the principles of PCC than therapists without equivalent lengths of clinical experience.

Pearson product-moment correlation was calculated to determine relationships between the clinical experience of therapists across various setting and their attitudes towards PCC (Table 23). None of the correlations were found to be significant. Within this sample, none of the correlations were significant separately for OTs and PTs also (Table 24).

Table 23

Correlations of Clinical settings and Therapists' Attitude on PCC

Clinical setting	N	Attitude	Level of Significance
Clinical Experience (SNFs)	143	.05	.525
Clinical experience (HHT)	125	.03	.759
Clinical experience (Assisted Living)	121	.21*	.024
Clinical experience (Out-Patient)	122	-.04	.632
Clinical experience (In-Patient)	119	.07	.449
Clinical experience (School system)	116	.03	.788
Clinical experience (Others)	84	.11	.298
Sum of all experiences except SNFs	143	.20*	.018

Table 24

Correlations of Clinical settings and OTs/PTs Attitude on PCC

	OT			PT		
Clinical setting	N	Attitude	Level of Significance	N	Attitude	Level of Significance
Clinical Experience (SNFs)	77	.04	.764	54	.08	.537
Clinical experience (HHT)	66	.01	.919	59	.04	.737
Clinical experience (Assisted Living)	64	.12	.332	57	.31*	.020
Clinical experience (Out-Patient)	63	-.01	.926	59	-.07	.585
Clinical experience (In-Patient)	63	.06	.640	56	.08	.542
Clinical experience (School system)	61	-.08	.557	55	.13	.349
Clinical experience (Others)	50	.04	.760	34	.20	.260
Sum of all experiences except SNFs	77	.13	.253	66	.29*	.019

A sequential regression analysis using clinical experience in SNFs as predictor (Table 20) revealed non-significant R^2 change of .3% ($\Delta R^2 = .003$, $p = .499$, t = .678) in therapists' attitude towards PCC. When moderation analysis was conducted using clinical experience in SNFs and clinical experience across all other setting except SNFs, the contribution from clinical experience in SNFs dropped to non-significant level of .1% ($\Delta R^2 = .001$, $p = .816$, t = -.234), while the

interaction outcome of clinical experience in SNFs with clinical experience in other settings dropped down to non-nonsignificant level of .0% (F =1.907, ΔR^2 = .000, *p* = .951, t = .061) outcomes (Table 22). Therefore, the hypothesis of therapists with longer clinical experience in SNFs is more likely to possess a positive inclination towards the principles of PCC than therapists without equivalent lengths of clinical experience.

Chapter Five: Discussion and Conclusions

Chapter Overview

This chapter provides a summary of the demographic characteristics of therapists, a review of the problem statement, and study purposes. This is followed by the interpretation of study outcomes relating to the research questions and correlation with the existing body of literature. Then, the chapter summarizes the limitations and conclusions of the study.

Demographic Characteristics

This study aimed to assess the relationship of demographic characteristics (educational background and clinical experience) of therapists with their knowledge and attitude towards the principles of PCC. The analysis included therapist types (OT & PT), two types of educational experience (highest level of therapy education & specialized geriatric education) and two types of clinical experience (a summed generalized clinical experience across various work settings except for SNFs and clinical experience in SNFs) of OTs and PTs working in SNFs. Out of all variables, none of these were significant predictors of either knowledge or attitudes of therapists towards PCC. These findings are in line with previous research by Bloch (2004), who studied similar behavioral patterns of OTs towards family-centered practices. As found in this study, none of the demographic characteristics of OTs in Bloch's study influence OTs behavioral patterns towards family-centered practices.

In addition to educational background and clinical experience, specific points of PCC training were also collected. Though prior PCC training didn't significantly predict the knowledge or attitude of therapists towards PCC, significant positive correlations were associated between PCC training and these two outcome variables.

Research Background and Questions

Person-Centered Care is a health care philosophy that is expected to be adopted by all health care professions. Although the concept of PCC has been extensively explored in the literature, less is known about its use in the OT and PT professions. This study addressed a gap in the literature in terms of the knowledge and attitudes of practicing OTs and PTs towards PCC in SNF settings. The below section discusses the outcome of the study research questions and hypotheses and relates them to the relevance of existing literature.

Knowledge of OTs and PTs about the principles of PCC.

This was the first exploratory study to assess the knowledge of therapists towards PCC in SNFs and then compare such knowledge differences between OTs and PTs. The study explored the therapist's knowledge applicable to the clinical practices of OT and PT fields. Overall, good knowledge of PCC was demonstrated among both groups in this study. This finding is in alignment with research by of Maitra & Erway (2006), who assessed therapists' knowledge towards PCC in terms of their extent of use of client-centered practice on three elements of PCC; providing complete information or education about therapy, discussing treatment options, and involving clients in goal setting. Maitra & Erway (2006), found that OTs used a client-centered approach in four types of facilities (long term care or rehabilitation, hospital outpatient, hospital

inpatient, and nursing homes), and therefore interpreted that OTs possessed basic knowledge of PCC. In another study involving PT students, Schmitt et al., (2012) found that PT students possessed knowledge of some components of PCC (patient empowerment, patient choice, patient information and education, holistic approach, individualization of interventions, and family/caregiver's roles).

Unlike the current study, none of the above studies explored OTs and PTs knowledge on extensive elements of PCC. This study developed a unique knowledge questionnaire scale. The knowledge scale of the study consisted of 15 question items. Each question item except two negatively worded items (items 10 & 15) represents an important principle of PCC (Table 9).

A few question items (items 6, 10, 11, and 15) demonstrated a much lower mean and larger standard deviation than the others indicating less knowledge on these specific topic areas. Item 6 asks about "honoring residents' wishes even if it compromises their therapy care". One explanation might be that this item is posing an ethical dilemma to some therapists. One of the ethical principles of therapy practice, 'beneficence' guides therapists to practice promoting good by preventing harm and removing harm during therapy services (AOTA, 2010). Item 6 of this study might be causing a conflict for therapists that compromising therapy care might result in harming the resident. So, some therapists might be inclined to weigh therapy care moreover residents' choice, resulting in lower scores and higher standard deviation. Item 11 asks about whether encouraging residents to express their opinions and expectations on their care is a good idea. Therapists might be interpreting this question to mean that negotiation of care might not be feasible and efficient practice in SNFs. Both perceptions may represent the therapists' inadequate knowledge of this principle of PCC. Therefore, the importance of negotiating various care options should be emphasized while educating therapists about the principles of PCC.

This study further confirms that both OTs and PTs equally demonstrated good knowledge about the principles of PCC in SNFs. This was expected as the practices of OT and PT in SNFs revolve around similar goals of maximizing resident functional independence and decreasing the burden of care. The OT focuses primarily on maximizing self-care (feeding, oral, dressing, and toilet hygiene) functional independence while PT focuses primarily on maximizing self-mobility (bed mobility, transfers, and ambulation) independence. Both these disciplines participate in care plan meetings and ensure continuity of care of the residents in SNFs. Therefore, the close work proximity of OTs and PTs in SNF explains the similarities in terms of their knowledge of the principles of PCC.

Attitudes of OTs and PTs to PCC.

This study first explored and then summarized six areas of therapists' practices. Based on the therapists' responses the study revealed that therapists possessed a positive inclination towards adoption of principles of PCC while practicing in SNFs. This was in alignment with other studies, which also indicated a positive inclination towards PCC approaches and an advocate for the necessity of creating strategic approaches for successful PCC practices (Hedberg-Kristensson & Iwarsson, 2013; Montalvo, 2007). Using qualitative methodology, Hedberg-Kristensson & Iwarsson (2013) reported that both OTs and PTs acknowledged the necessity of interaction with a person to be treated in rehabilitation, identify obstacles to PCC and use different strategies of PCC during therapy practices. Unlike the current study, their study covered only a few elements of PCC, such as active listening and talking as encouragement, educating and demonstrating strategies, and inviting family members to participate in therapy plan-of-care (Hedberg-Kristensson & Iwarsson, 2013). In another quantitative study, Montalvo

(2007) also acknowledged an initial inclination of occupational therapy students to practice PCC. It was noted that limited previous studies assessing therapists' attitudes towards PCC were either qualitative or captured therapists' attitudes only on few elements of PCC.

This study modified and summarized a unique attitude questionnaire scale incorporating all elements of PCC applicable to therapy practices. The attitude scale of the study consisted of 24 question items. Each question item represented a perceptual element towards the principle of PCC narrowing down to six areas of therapy practices (table 11). A few question items (items 6, 9, 10, and 16) scored much lower mean and larger standard deviations than others.

Lower scores on items 6, 9, and 10 appear to be linked with some of the therapists' reservations to practice PCC due to barriers to PCC. Some therapists believe that the existing practices of SNFs strictly restrict therapists to focus on maximizing resident physical and or mental functional independence. This study was designed to understand therapists existing attitudes towards PCC and understanding the barriers of PCC was beyond the scope of this study.

Finally, a lower mean score on item 16 indicates that some therapists are hesitant to allow residents to make completely independent choices towards if it puts them at risk. This might be imposing an ethical dilemma for therapists about allowing residents to have autonomy versus practicing non-maleficence. The principle of autonomy states the person to be treated has the rights to make his or her own choices while nonmaleficence imposes obligations on therapists to not impose willful harm to their residents (AOTA, 2010). So, some therapists might have been inclined to choose a paternalistic attitude and may perceive that they should stop the resident they are treating from making choices at odds with therapeutic goals. However, a more complete understanding of all principles of PCC could provide a solution to such an ethical dilemma as it will allow the therapist to create a balance between choosing autonomy versus non-maleficence.

Academic counselors and educators on PCC must include a discussion of ethical dilemmas therapists face when using PCC.

The current study confirms that both OTs and PTs equally demonstrated a positive inclination towards the principles of PCC in SNFs. As indicated above, this finding is not surprising as the practices of OTs and PTs in SNFs at times involves the delivery of group, concurrent, and cotreatments to the same resident. Therefore, these two disciplines participate in daily care plan meetings with residents, work towards similar goals such as maximizing resident functional independence, and transitioning residents back to the community and so acquire a similar attitude towards principles of PCC.

Therapists' knowledge of PCC and attitudes to PCC.

It was hypothesized (H1) that the higher the knowledge of PCC principles reported by therapists, the more likely they are to possess positive attitudes toward practices of PCC in SNFs. This study confirmed a significant correlation between therapists' knowledge and attitude towards the principles of PCC. This was the first exploratory study to set up a benchmark for correlations between therapists' knowledge and attitude towards PCC. Further analysis revealed that knowledge on PCC accounted for 39% variance in therapists' attitudes towards the principles of PCC and vice-versa. Since the significant correlation between knowledge and attitude doesn't establish casual relationships, this predicted variance indicates both knowledge and attitude of therapists are significant predictors to each other when it comes to the adoption of the principles of PCC. This provides important evidence to encourage academic institutions to include education on principles of PCC in the curriculum of OT and PT professional and clinical therapists to provide more knowledge on the principle of PCC during clinical practices. Further,

it also encourages academic educators and clinical instructors to address perceptions of OT and PT students towards the adoption of principles of PCC during their academic and field training. In summary, hypothesis 1 was supported.

Therapist's professional demographic characteristics and knowledge of PCC.

The study hypothesized that the higher the educational level (H2) and the higher the clinical experience (H3) the higher knowledge of principles of PCC. This study demonstrated that various types of academic education and clinical experience of therapists were weak predictors of the therapists' knowledge towards PCC. Only prior PCC training (which is training or exposure to at least one of the PCC training area; didactic coursework training, exposure to principles of PCC during formal education, fieldwork exposure during clinical practice and, direct observation of PCC) demonstrated a significant relationship (r = .201, p = .016, N =143) with the knowledge of therapists towards PCC. There was no significant relationship between PCC training (e.g., variance of 3.5% from the sequential analysis) and therapists' knowledge. Even though prior PCC training presents significant correlations changes possess minimal to no meaningful clinical change in therapists' knowledge on principles of PCC.

Previous literature on therapists' knowledge of PCC demonstrates that therapists have good knowledge of PCC regarding increased efficacy and quality care as a result of adopting a PCC approach (de Vries et al., 2015; Eyssen et al., 2013). However, the literature doesn't comment on the impact of therapists' knowledge on PCC. The current study found a low positive significant correlation of prior PCC training with therapists' knowledge of the principle of PCC

suggesting that future interventional studies should focus on assessing both impact on quality care as well as therapists' knowledge towards the principles of PCC.

The sequential regression analysis involving demographic attributes (therapist type, highest level of education, PCC training, clinical experience across other settings, geriatric training, clinical experience in SNFs) demonstrated only a non-significant 8% variance in therapists' knowledge on PCC. Within this, two models revealed significant outcomes; one involving four predictors (therapist type, highest level of education, clinical experience in kinds of work settings except for SNFs, and PCC training) accounts for 7.6%, while other involving five predictors (therapist type, highest level of education, PCC training, clinical experience across all settings except SNFs and geriatric training) accounted for 8% variance in therapists' knowledge on PCC. However, none of the individual variables were significant predictors of therapists' knowledge of PCC. Previous literature indicates that the academic curriculum of therapy students provides some standardized educational opportunities on the principles of PCC (Schmitt et al., 2012, Montalvo, 2007). This indicates that some exposure to PCC approaches at the entry-level programs of OTs and PTs may have helped these professionals to acquire some basic knowledge about the principles of PCC before they become licensed therapists. Therapists may have carried over such knowledge and the addition of a higher degree and/or more clinical experience may not have an additional impact on therapists' knowledge on PCC. In summary, hypotheses 2 and 3 were not supported.

This study also examined the influence of exposure to geriatric education (H4) and clinical experience in SNFs (H5) as predictors of therapists' knowledge on PCC. However, moderation analysis revealed no significant relationships. One reason for these results could be that only 12% (17 out of 143) of the sample of therapists reported completing additional

educational training in Gerontology or Geriatrics. A second moderation analysis using clinical experience (in SNFs and other settings) also revealed no significant interaction between different kinds of work experiences and thus contributed minimal to no impact in predicting variance on the therapist's knowledge. This finding is consistent with Marita & Erways (2006) findings, who also reported no differences between the responses of OTs in terms of their client-centered practices across different work areas. In summary, hypotheses 4 and 5 were not supported.

Therapist's professional demographic and attitudes to PCC.

The study hypothesized that the higher the educational level (H6) and the higher the clinical experience (H7) the more positive attitudes toward principles to PCC. Like the therapist's knowledge of PCC, the study also demonstrated that demographic characteristics of therapists were weak predictors of the therapist's attitudes towards PCC. Low non-significant correlations were reported among predictors and outcomes variables. Only the two predictors; prior PCC training and clinical experience of therapists across all settings except SNFs demonstrated positive relationships with therapists' attitude on PCC. However, both these predictors only predicted 2.8% and 3.8% variance in the therapist attitude. Out of these, prior PCC training or exposure predicts statistically significant change, but such change possesses minimal to no meaningful clinical change in the therapist's knowledge on principles of PCC.

The sequential regression analysis involving six therapists' attributes (therapist type, highest level of education, PCC training, clinical experience across other settings, geriatric training, clinical experience in SNFs) demonstrated only a significant 9.2% (p = .039) variance in therapists' attitude towards PCC. Out of these set of predictors, two more models; one

involving a set of four predictor variables (therapist type, highest level of education, PCC training, and clinical experience in across other settings except SNFs) accounts for 8.6% (p = .014) and other involving a set of five predictors (therapist type, highest level of education, PCC training, and clinical experience in across other settings except SNFs, geriatric training) accounts for 8.8% (p = .025) variance in therapists attitude towards PCC. These variances were too low to claim meaningful clinical impact. A further analysis of individual predictor variables revealed none of the individual variables were significant predictors of therapists' attitude of PCC. In summary, hypothesis 6 and 7 were not supported.

Finally, the study hypothesized that the higher the educational training in geriatrics (H8) and the longer the clinical experience (H9) the more positive attitudes toward principles to PCC. However, moderation analysis revealed no significant relationships. Though, existing literature suggests some specific studies assessed therapists' attitudes towards PCC, none of the earlier studies assessed such a relationship of education and clinical experience with therapists' attitudes towards PCC. It might be possible that in university at an entry-level professional degree in therapy and in SNFs during current practices of therapy, therapists would have been engaged in some learning about the principles of PCC. Therefore, none of the educational and/or clinical experience backgrounds had accounted for attitudinal change in therapists towards PCC. In summary, hypothesis 8 and 9 were not supported.

Limitations

This study has several noteworthy limitations. The first limitation is the use of convenience sampling which can cause a lack of accurate representation of selected OTs and PTs. Secondly, the study uses self-report measures and therefore relies on the participant's

accurate responses. Though, the survey was concise and designed to accommodate busy schedules of therapists and it can be completed from anywhere at any time, therapists may still present with situational contamination such as insufficient time in their busy personal and professional lives or misunderstanding to one or more question item. Some therapists may have felt that the completion of the study survey is their professional obligation and some may have completed simply to receive a gift card. Therefore, it is possible therapists may have over or underreported a question item due to one or the other of these underlying factors. Third, a response bias may exist, including social desirability bias and researcher expectancy bias when the measuring instrument has some ethical bases. It is possible therapists' responses were influenced due to such social desirability when it comes to practicing principles of PCC in SNFs. Fourth, the high outcome scores of knowledge and attitude of therapists towards PCC may indicate some ceiling effect. Ceiling effect is a measurement limitation that can occur in survey design research when an independent variable no more influences the dependent variable. Fifth, this study doesn't measure the residents' perception of PCC, as the study intents to capture therapists' knowledge and attitudes toward PCC due to limited resources. The final limitation is that this study only intends to address those attitudinal aspects of PCC which are directly controlled and/or influenced by practicing therapists. Question items that address barriers to PCC for example due to residents' medical conditions (such as low cognitive status) or organizational practices (such as productivity restrictions) are not included in the questionnaire.

Future Recommendations

This study found that both OTs and PTs demonstrate good knowledge and positive attitudes towards the principle of PCC. None of the demographic characteristics focused in this

study predicted knowledge and favorable attitude towards PCC. This interprets that principles of PCC are equally valued by all therapists of various demographic characteristics. It is possible that despite possessing higher knowledge and positive inclination towards PCC, therapists might still be driven away from practicing PCC due to the barrier of PCC which were not studied in this study. The previous literature also confirms such notion that the critics of PCC oppose its adoption probably solely due to three kinds barriers to PCC; patient side barrier such as the limited cognitive potential of patients (Moats, 2007), organizational practice barriers such as a focus on operational efficiency than PCC (Eyssen et al., 2014), and therapist lack of knowledge and attitudinal barriers such as therapists focus on functional progress than the adoption of PCC (Eyssen et al., 2013; Gzil et al., 2007). This study confirms that therapist possess positive inclination towards PCC, however, that doesn't mean that therapist confirms that they practice principles of PCC. It might be possible that if asked therapists might present positive inclination towards PCC, however, they still choose not to practice PCC due to its restricted use in the SNF environment. In other words, higher knowledge and positive inclination of the principle of PCC might not be translating into therapy practices leaving the theory-practice gap. Therefore, future studies should explore an understanding of the scope of practice of PCC in therapy fields. Also, an observational study by an independent observer to note OT/PTs' behavior on their practicing of PCC can also fill the theory-practice gap on the adoption of the principles of PCC in SNFs. Further, future studies should look at the organizational barriers to understand therapists' behaviors and dominant factors towards the adoption of principles of PCC in SNFs.

This study further confirms that prior PCC training during educational curriculum or field exposure had a small but positive relationship with knowledge and attitudes about PCC. This indicates that PCC training can influence the adoption of the principles of PCC. Longitudinal

future studies should be designed to analyze the impact of PCC training on therapists' attitudes as well as meaningful clinical therapy outcomes.

Conclusion

This study confirms that none of the individual demographic predictors OT and PTs could predict either knowledge or attitudes of therapists towards PCC. Though, the therapists reported an aggregate higher knowledge and positive attitude towards the principles of PCC, an inadequate knowledge and reservation to the adoption of one or more principles of PCC was noted. A lower score of one or more individual question items of knowledge and attitudes scales on PCC indicates the necessity of further education of therapists to acquire a deeper understanding of the principles of PCC.

Key Findings

This study adds the following key points to the existing body of literature.

1. This is the first study that exclusively explored the knowledge and attitude of OTs and PTs in SNFs. None of the previous studies neither researched extensive elements of PCC concerning OT/PT practices nor focused their studies of PCC in SNFs settings. Therefore, assessment of outcome variables of the study (knowledge and attitude of PCC) on the therapy field in SNFs settings are all exclusive exploratory areas in this study.
2. This study exclusively developed a unique theoretical model of PCC which is solely applicable to the clinical practices of Occupational and Physical Therapy. It was found that the existing models of PCC in the literature were quite diverse and not directly applicable to the scope of practices of OTs and PTs. Also, unlike this study, no previous single study encompassed all elements of PCC relevant to the OT and PT practices. After

exploration process (explained in chapter two), the researchers of the study narrowed down to studies applicable to the scope of practices of OT/PT, combined and developed an implied model of PCC (figure 2) which revolves the person receiving therapy (patient characteristics), a person providing therapy (therapists characteristics) and operational interactive elements exist between these recipients and providers (therapy process elements).

3. This is the first study that modified and developed a knowledge and attitude questionnaire scale to assess the knowledge and attitude of OTs and PTs towards PCC. Both, the questionnaire scale developed in this study can provide an objective assessment tool to be used by future researchers to quickly capture all elements of PCC applicable to the practices of OT and PTs. Further, the scales developed proved to possess a good Cronbach's value of reliability and can be used for future studies.
4. Finally, this is an exclusive study, which compared the relationship of professional characteristics of therapists with their knowledge and attitude towards PCC and found that principles of PCC are valued by therapists of different educational background and clinical experience. This indicates that the principles of PCC are critical for therapists and future studies should focus on assessing and removing barriers of PCC adoption in therapy practices.

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Appendix A

Phone script

Hello, my name is Sadashiv Aggarwal, I am a doctoral student in the College of Health Professions at Virginia Commonwealth University and a Physical Therapist working in skilled nursing facility settings since 2011. Currently, I work in Washington DC with Aegis Therapies. I am currently conducting a study for my doctoral dissertation and I am calling to recruit OTs and PTs working in SNFs for one-time 10-15 minutes survey-based questionnaire. The questionnaire can be completed from anywhere at any time and it doesn't collect any identifying information. A compensation of a $10 electronic gift card will be provided to each participant after full completion of the survey if they provide a valid email address. Your participation is appreciated.

Appendix B

Social Media Recruitment Material

Dear Occupational or Physical Therapists,

Virginia Commonwealth University (VCU), Department of Gerontology, Richmond, VA, is conducting a research study titled, "Knowledge and Attitudes of Occupational and Physical Therapists towards Person-Centered Care in Skilled Nursing Facilities". We're asking you to contribute to this research by completing a short (10-20 minutes) one-time survey about Person-Centered Care. Please select your responses based on your interaction with a cognitively intact resident. In appreciation of your time, after the study data collection we will provide a $10 electronic gift card to all participants who complete the survey and provide email id (optional) for gift distribution. Be assured the selection of gift cards will not be affected by your survey responses. All participation is voluntary, and participants can choose to discontinue fulfilling survey questions anytime. Be assured that your responses are anonymous and none of the survey items ask you to identify yourself or your organization name and collect your IP addresses. Thank you in advance for your time and participation. If you have any questions, please feel free to contact Sadashiv Aggarwal at 804-615-7552 or email at aggarwalsr@vcu.edu.

The survey can be opened by clicking the link below:
Knowledge and Attitude towards Person-Centered Care

If the link above doesn't work, please try copy and paste the link below into your web browser:
https://redcap.vcu.edu/surveys/?s=YP4NT4NEKL

Sincerely,
Tracey Gendron, MS, Ph.D.
Chair, Associate Professor,
Department of Gerontology, VCU

Appendix C

Social media hyperlinks and page images

The hyperlink of the social media post is as follows. The hyperlinks are password protected and only the members will have access and be able to view the survey link.

https://www.facebook.com/sadashiv.aggarwal
https://www.facebook.com/groups/Geriatrictherapycollaborative/

The personalized images of social media post are as follows;


Geriatric OT, PT, and SLP Collabo
facebook.com/groups/Geriatrictherapycollaborative/
Search
Sadashiv
Home
Create
Geriatric OT, PT, and SLP Collaborative Group
Closed group
About
Discussion
Announcements
Members
Events
Videos
Photos
Files
Recommendations
Search this group
Shortcuts
Geriatric OT, PT, and S...
OT
SLP
PT
Geriatric - focused Collaborative Group
Joined
Notifications
Share
More
Write Post
Photo/Video
File
More
Write something...
POPULAR TOPICS IN POSTS
SNF (41)
older adults (28)
documentation (18)
functional (14)
jobs (13)
ethics (13)
policies (11)

Appendix D

Participant Information Sheet

Dear Occupational or Physical Therapist,

Virginia Commonwealth University (VCU), Department of Gerontology, Richmond, VA, is conducting a research study titled, "Knowledge and Attitudes of Occupational and Physical Therapists towards Person-Centered Care in Skilled Nursing Facilities". We're asking you to contribute to this research by completing a short (15-20 minutes) one-time survey about Person-Centered Care. Please select your responses based on your interaction with a cognitively intact resident. If you are licensed PT or OT, you can contribute to this research. In appreciation of your time, we will provide a $10 electronic gift card to all participants who complete the survey and provide email id (optional) for gift distribution.

Be assured that your responses are anonymous and none of the survey items ask you to identify yourself. Also, this online survey will not collect your IP addresses. However, an optional email address will be requested to distribute an electronic gift card. A $10 e-gift card will be sent directly to your email after the completion of the study data collection and your email addresses will be deleted from our records once you receive the gift card. Also, be assured the selection of gift cards will not be affected by your survey responses.

The survey will be opened till DATE. It will need to complete in one sitting. Thank you in advance for your time and participation. If you have any questions, please feel free to contact Sadashiv Aggarwal at 804-615-7552 or email at aggarwalsr@vcu.edu.

The survey can be opened by clicking the link below:

https://redcap.vcu.edu/surveys/?s=YP4NT4NEKL

If the link above doesn't work, please try copy and paste the link below into your web browser:

https://redcap.vcu.edu/surveys/?s=YP4NT4NEKL

We'd further appreciate it if you can forward the above link or this email to any of your friend or family member who is also either an OT or a PT in an SNF to help us include the opinions of a broad base of therapists. Any OTs or PTs whom you refer and will complete the survey will be eligible for a $10 e-gift card after the completion of the study survey.

Sincerely,
Tracey Gendron, MS, Ph.D.
Chair, Associate Professor,
Department of Gerontology
Virginia Commonwealth University

Appendix E

Professional Demographics and Characteristics Questionnaire for Therapists

Professional Demographics and Characteristics Questionnaire for Therapists

1. Are you a licensed Occupational Therapist or Physical Therapist?
    - Yes
    - No

    Thank you for your time. The survey is only open to licensed Occupational Therapists or Physical Therapists.
2. Do you currently work in a Skilled Nursing Facility either full time, part-time, or PRN?
    - Yes
    - No

    Thank you for your time. The survey is only open to licensed Occupational Therapists or Physical Therapists who are currently working in SNFs.
3. What is your profession or discipline?
    - Occupational Therapy
    - Physical Therapy
4. What is your current primary position?
    - Clinical OT
    - Clinical PT
    - Clinical OT manager
    - Clinical PT manager
    - Director of Rehabilitation
    - Other (Please specify)
5. What is your level of education in the therapy field? (Check all that apply)
    - Bachelor
    - Master
    - Doctor (OTD or DPT or equivalent)
    - Doctorate (Ph.D.)
    - Other (Please specify)
6. Including your current employment, how many years of clinical experience do you have working in the following health care settings as a therapist (Please select in Years and Months from the drop-down menu)
    - Skilled Nursing Facilities
    - Home-health Therapy Services
    - Assisted-Living facilities
    - Out-Patient Therapy Services
    - Inpatient Therapy Services
    - School-based system
    - Others (Please specify)
7. Do you have any formal training in Gerontology or Geriatrics (e.g., an undergraduate course or minor, or graduate Certificate in Aging Studies/Gerontology, or a master's or Doctorate in Gerontology)?
    - Yes
    - No

    If 'YES', do you possess (Check all that apply)
    - Bachelor (In a gerontology or aging services)
    - Master (In a gerontology or aging services)

- Post-Graduate Certificate (In a gerontology or aging services)
- Doctorate (In a gerontology or aging services)
- Any other specialization certification and/or degree in Aging services (Please specify)

8. Please check which of following educational experiences you have had related to Person-Centered Care (Check all that apply)
    - Didactic coursework in PCC
    - Exposure to principles of PCC during formal education (guest speaker, instructors)
    - Fieldwork exposure to principles of PCC during clinical practice (Team meeting discussion, direct observation of selected aspect of PCC during therapy delivery)
    - None
    - Other (Please describe)
9. What is your PRIMARY current state of practice? (Please write in the box)

THANK YOU!

Appendix F

Knowledge of Person Centeredness of OTs and PTs in SNFs (PCT_Knowledge)

The purpose of this section is to learn about your knowledge of Person Centeredness. Please select your responses based on your interaction with a cognitively intact resident in the usual work scenario.

Questions	Not important at all	Somewhat important	Neither important nor unimportant	Very important	Critically important
To what degree is each of following an important component of person-centered care?	1	2	3	4	5
1) Assessing residents' unique clinical needs.	1	2	3	4	5
2) Promoting residents' active participation in therapy.	1	2	3	4	5
3) Promoting residents' self-management in therapy.	1	2	3	4	5
4) Involving family members during resident therapy.	1	2	3	4	5
5) Repeatedly discussing therapy plans with residents.	1	2	3	4	5
6) Honoring residents' wishes even if it compromises their therapy care.	1	2	3	4	5
7) Investing in building up strong therapist-resident relationships.	1	2	3	4	5
8) Providing complete information to the residents about therapy.	1	2	3	4	5
9) Adequate referral of a resident to other medical services when needed on time.	1	2	3	4	5
10) Providing residents' favorite food items as a reward for their therapy participation.	1	2	3	4	5
11) Negotiating care options with residents during therapy.	1	2	3	4	5
12) Honoring resident preference during therapy plan-of-care.	1	2	3	4	5
13) Providing empowerment to resident in therapy.	1	2	3	4	5
14) Devoting adequate time during therapy assessment for patient involvement.	1	2	3	4	5
15) Honor residents wish to get non-medically necessary equipment such as a power wheelchair if it is covered by their insurance.	1	2	3	4	5

THANK YOU!

Appendix G

Attitude towards Person Centeredness of OTs and PTs in SNFs (PCT_Attitude)

These questions explore your attitude toward Person Centeredness in SNFs. Please select your responses based on your interaction with a cognitively intact resident in the usual work scenario.

Questions	Disagree a lot	Somewhat disagree	Neither agree nor disagree	Agree	Agree a lot
1) I like to explore and ask residents about their fears and worries regarding therapy	1	2	3	4	5
2) It's better if I know the preferred routines of the residents that I am caring for	1	2	3	4	5
3) It's good to ask residents what their goals are for this admission	1	2	3	4	5
4) If I must choose, I would rather get the therapy completed than get to know each resident as a unique individual	1	2	3	4	5
5) I like to offer residents the opportunity to be involved in individualized therapy activities	1	2	3	4	5
6) It's good to focus on what residents can do, more than what they can't do	1	2	3	4	5
7) I prefer to learn what is important to residents about their health	1	2	3	4	5
8) I would rather be efficient and complete the therapy rather than focus on the needs and preferences of residents	1	2	3	4	5
9) Talking with residents about the feelings they have about their health condition is what I like to do.	1	2	3	4	5
10) There is rarely time to include personal wishes about their care	1	2	3	4	5
11) Encouraging residents to express their opinions and expectations on their care is a good idea.	1	2	3	4	5
12) I think it's more important to complete the therapy rather than to give residents and their carers adequate time to talk about their concerns	1	2	3	4	5
13) It's important to me to give residents the chance to take responsibility for their care	1	2	3	4	5
14) I prefer to get the therapy completed rather than to discuss therapy progress with residents and make changes as necessary	1	2	3	4	5

15) The best way to give therapy is to let therapists and residents together decide what would help them	1	2	3	4	5
16) I believe residents should make their own choices even if it puts them at risk	1	2	3	4	5
17) I like to provide information to the residents about what they need when they want it.	1	2	3	4	5
18) It's best to tell residents' what to expect from therapy services during their stay in the nursing home	1	2	3	4	5
19) It's good to tell residents' whom to contact if they had problems or questions during their rehabilitation program	1	2	3	4	5
20) I would focus on completing a therapy session rather than to fully explain to residents about their treatment choices	1	2	3	4	5
21) It's good to ask residents whether they want their family to take part in their care	1	2	3	4	5
22) I believe in educating and sharing care approaches that can help residents to do things for themselves.	1	2	3	4	5
23) It is important to talk to other staff members to better manage challenging behaviors that may occur with a resident	1	2	3	4	5
24) I would complete therapy rather than to give adequate time and assistance to carers to prepare them for resident discharge	1	2	3	4	5

THANK YOU!

Vita

Sadashiv Ram Aggarwal was born on October 20, 1981, in New Delhi, India, and is an Indian citizen. He graduated from Saraswati Bal Mandir High School, New Delhi, India in 1999. He received his Bachelor of Physiotherapy from Guru Gobind Singh Indraprastha University, New Delhi, India in 2004 and subsequently worked as a clinic director in an outpatient clinic in New Delhi, India. He received a Master of Physiotherapy (Major; Osteomyology) from Jamia Hamdard University in 2006 and subsequently taught undergraduate and graduate students of physiotherapy at a university level in New Delhi, India for one year. He came to the USA in 2007 and joined Virginia Commonwealth University (VCU) to pursue higher studies. He served as a teaching assistant in a Doctor in Physical therapy program, VCU for Anatomy class in 2008 and 2009, and in Kinesiology class in 2009. He received another Master of Science (Major; Gerontology) from Virginia Commonwealth University, Richmond, Virginia in 2012. In the Department of Gerontology, he got a publication titled, “Cultural Competence Training for Healthcare Professionals Working with LGBT Older Adults” in 2013. In the Department of Gerontology, he also designed and taught, 1-3 variable credit course; Geriatric Rehabilitation. While enrolled in the Ph.D. program in the Department of Gerontology, VCU, he also started working as a physical therapist in a long-term care setting. He has worked as a physical therapist in multiple Skilled Nursing Facilities in the District of Columbia, Maryland, and Virginia since 2011.