

PROFESSIONAL DEVELOPMENT OF PHYSIOTHERAPISTS IN LONG-TERM CARE

Presented by:

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## Abstract

The purpose of this study is to learn about the professional development practices of physiotherapists working in long-term care homes in Ontario. A survey was created based on relevant literature and piloted for this study. The survey included both quantitative and open-ended questions. 44 Physiotherapist responded, which represents approximately 10% of physiotherapists working in long-term care in Ontario.

The results indicate that physiotherapists are isolated from their physiotherapist peers and lack access to communities of practice, professional socialisation, professional culture and social regulation. Although physiotherapists' interactions with interprofessional teams added breadth to their knowledge, these interactions did not enhance their profession-specific skills. Many physiotherapists are seeking professional community and social supports in healthcare settings outside of the long-term care context.

The implications of this study are that physiotherapists, their professional associations, and their college must understand the importance of professional socialization in learning, and ensure that physiotherapists working in long-term care have access to and seek such social support. Physiotherapy service providers in long-term care should provide mentoring, support and opportunities for social learning for their clinicians. Finally, long-term care homes and the Ministry of Health and Long-term care need to ensure that policies provide a better definition of the role of physiotherapists in long-term care.

**Keywords:** professional development, physiotherapist, interprofessional, social learning, long-term care, communities of practice

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## **Definitions**

*Professional development:* Continuing competence, a dynamic process requiring lifelong learning, the incorporation of new knowledge and skills into practice, and ongoing evaluation of practice. It also promotes professional accountability and ensures that the individual takes responsibility for his or her practice (College of Physiotherapists of Ontario, 2008).

*Long-term care:* Long-term care homes are a place of residence for individuals who are no longer independent in self-management or self-care. Most of these residents have complex medical issues and a large population have varying degrees of dementia. The long-term care homes provide 24 hour nursing care and resident supervision, on-call physician care, regular physician visits, meals, laundry, spiritual care and recreation.

## **Introduction**

### **My Story**

My own experiences as a Physiotherapist working in long-term care homes in Ontario led me to this thesis topic. Long-term care homes are a place of residence for individuals who are no longer independent in self-management or self-care. Most of these residents have complex medical issues and a large population have varying degrees of dementia. The long-term care homes provide 24 hour nursing care and resident supervision, on-call physician care, regular physician visits, meals, laundry, spiritual care and recreation. I have been working for 12 years as a Registered Physiotherapist in Ontario, Canada. I have worked in the private practice setting, in the community setting and, in the last five years, as manager of physiotherapy services in long-term care and retirement settings. As part of my role as a manager, I am required to complete chart audits, performance appraisals and monitor the professional practice of physiotherapists. During these activities I realised that there were differences in professional knowledge and experience: younger therapists having more current knowledge and using more outcome measures and older therapists having greater experience yet they lack training and tools to effectively evaluate their practice.

I realized that professional development for physiotherapists who work in long-term care was necessary and I investigated activities for such development to assist my staff. Formulating an approach to seek the results of this research would prove very challenging; there is not only a limited amount of research on geriatric physiotherapy, there is also little opportunity to attend professional development workshops on physiotherapy assessment and treatment of the geriatric client in Canada. I therefore wondered what professional development methods were actually

used by therapists in the long-term care and retirement setting in Canada. I also wanted to know what is the most effective professional development strategy?

To learn more and explore the research on professional development in physiotherapy, I first consulted abstracts. This consultation helped me understand the issues around professional development in physiotherapy; however, the research was focused on hospital and orthopaedic practice and not on the long-term care setting, or if a study included the long-term care setting, then the population was very small. There was no study that uniquely focused on the professional development of physiotherapists in long-term care. In light of this information, I furthered my research by consulting research articles. Again I was able to improve my comprehension of the issues and practices of professional development of physiotherapists in long-term care, but there were no articles that focused entirely on professional development of physiotherapists in long-term care. I was unable to find the answers I was searching for. Research needs to be conducted to investigate how working in long-term care in Ontario affects professional development. And this research should be used to help develop effective and appropriate learning strategies.

### **Statement of the Problem**

The focus of most of the research in physiotherapy has been on the adult population (18-65 years of age) and professional development activities and workshops have been developed around these topics. However, with our aging population there is a greater need to increase professional knowledge concerning older-adults (65 years of age and older) as they often have multiple health issues and prioritizing care becomes more challenging. As well, recognizing demographic trends of the “baby boomer” population, we must ensure that we have enough qualified and trained health professionals to support the ever growing demand.

There are many reasons why we need to increase our knowledge of professional development for physiotherapists working in long-term care. Firstly there are very few physiotherapists that work in long-term care in Ontario. There are 16,885 employed Canadian Physiotherapists (The Canadian Institute for Health Information, 2010), 6,465 practice in Ontario and only 245 or 3.8 percent work in long-term care (College of Physiotherapists of Ontario, 2009).

Secondly, the research and education in geriatric care is insufficient. Cotter, Coogle, Parham, Head, Fulton and Watson (2004) demonstrated in their research that there is a lack of knowledge and research focusing on geriatrics across the healthcare continuum. Physiotherapists who work in long-term care specifically require advanced knowledge and expertise in geriatrics and the complex issues involved in care for residents. There is also research evidence that the geriatric education of new healthcare professionals is inadequate, with older practitioner receiving little or no training and new health professionals receiving one or two courses throughout their academic careers (Goins, Gainor, & Pollard, 2003; Cotter et al., 2004). Compounding this is a lack of professional development in geriatrics for existing therapists there is also a shortage of health professionals with expertise in geriatrics (Cotter et al., 2004). Based on these findings, physiotherapists need further education, research and professional development activities in geriatrics.

Thirdly, the situation is complicated by factors unique to the context of the work environment. These factors are isolated practice, sole therapists working among an interprofessional team and lack of funding to support interprofessional interactions. Generally speaking, physiotherapists work within teams of physiotherapists in clinical and hospital settings. There is research to suggest that physiotherapists in these settings rely heavily on peer-to-peer

consultation to obtain new knowledge (Rappolt and Tassone, 2002; Hall, 2005). It is also important to highlight that physiotherapists employed in long-term care and retirement communities work in isolation from each other, rarely having direct contact with other physiotherapists because of the individual nature of their work.

The physiotherapists in long-term care are however surrounded by other healthcare professionals, such as medical doctors, nurses, health care aids, dietitians and on occasion, occupational therapists. They communicate with their team members either verbally in person, through referrals and through progress notes on the residents chart.

To compound the issue of isolation and lack of peer interactions, there is also lack of funding, both on the nursing care side and on the payment of physiotherapy services. This lack of funding translates into a lack of time to allow for direct interactions with other professionals, with most occurring on paper through the residents chart. If physiotherapists rely on their peer-to-peer interactions, how does limited access to a varied healthcare team contribute to their professional development? How is professional development best addressed in the long-term care setting?

### **Rationale for the Study**

On-going professional development is a legal requirement for physiotherapists in Ontario (College of Physiotherapists of Ontario, 2009). As we saw above, professional development for physiotherapists in the long-term care setting is complicated by a variety of factors, including the relative lack of experienced practitioners; a dearth of research on and education for geriatrics; the fact that physiotherapist in the long-term care settings work with interprofessional health care teams rather than other physiotherapists (thus complicating the typical peer-to-peer learning

relationship); and finally the lack of time physiotherapists in this setting have to interact with healthcare teams.

In order to contextualize and address these issues, as well as to frame the basis for the current study, the following literature review will address 1) professional development in physiotherapy, 2) difficulties in achieving professional development in physiotherapy, 3) how informal professional interactions are key to professional development, and 4) finally how interprofessional interactions contribute to professional development.

## **Literature Review**

### **Professional Development**

This section will define professional development in the context of physiotherapy, will describe professional development activities supported by regulating bodies and the literature, and finally will define the characteristics of lifelong learners, people who continually engage in professional development.

The literature review presents many definitions of professional development. For the purpose of this study the definition from the College of Physiotherapists of Ontario will be adopted. *Professional Development* is defined as: continuing competence, a dynamic process requiring lifelong learning, the incorporation of new knowledge and skills into practice, and ongoing evaluation of practice. It also promotes professional accountability and ensures that the individual takes responsibility for his or her practice (College of Physiotherapists of Ontario, 2008).

The College of Physiotherapists of Ontario has developed a Quality Management Program. A key component of this program is the *Professional Portfolio Guide*, where therapists

are expected to reflect on their current knowledge, information gaps, and create learning goals and finally participate in learning activities related to their learning goals. The following is a list of professional development activities recognized by the College of Physiotherapists of Ontario (2008): achievements, conferences, critical incident analysis, formal education programs, in-services education/rounds, information from the college, learning from patients, mentoring supervising, original published work, personal experiences, professional contacts, project work, reading/journal club, research and development, student supervision, teaching and teleconferences. Although the College of Physiotherapists recognize all of these activities, physiotherapists prefer certain professional development activities and tend to participate in similar activities.

Hall's (2005) doctoral thesis was to identify knowledge, attitudes and skills of lifelong learners and strategies used for lifelong learning. Hall surveyed a randomized cluster sample of 229 physiotherapists and 86 physiotherapy educators from various parts of the United States. Her conclusion included that physiotherapists prefer readily available professional development activities in the workplace. Hall's (2005) survey results describe actual ways in which physiotherapists participate in professional development activities. These include: informal learning activities, such as, consultations with peers after a client visit, seminars, in-services, grand rounds, staff meetings and serving as a clinical instructor. Most of these activities occurred in the workplace and with other physiotherapists. There is a common thread between these professional development activities, which is the social interaction component. Physiotherapists participate more frequently in activities that include social interactions.

In addition, Rappolt and Tassone (2002) did qualitative research on how Canadian Physiotherapists and Occupational Therapists gather, evaluate and implement new knowledge.

They conducted in-depth interviews with 24 randomly selected therapists (13 Physiotherapists and 11 Occupational Therapists). They concluded that therapists gather knowledge primarily by relying on peer-to-peer exchanges either at work or during formal and informal continuing education activities. Their secondary source of information was literature searches. Although Rappolt and Tassone's study was qualitative and nature, it supports the findings from Hall's research.

In further support of the argument of preference of professional development activities that include social interactions, French, (2006) completed a survey of 71 physiotherapists in five acute hospitals in Ireland to determine their current continuing professional development (CPD) activities and their perceived CPD needs. The results suggest that physiotherapists perceive clinical supervision, intensive clinical training, in-service education, short courses and performance appraisal as the most important CPD activities and reading journals, conferences and literature searching to be the least important. The research supports the preference for social interactions for professional development, however certain individuals are more likely to participate than others.

Hall's (2005) survey also included the characteristics of lifelong learners of physiotherapists working or teaching in the United States. Both physiotherapists clinicians and educators described the following characteristics for lifelong learners: commitment to growing as a professional, viewing learning as necessary for personal and professional development, holding a belief that being up to date and competent is important and being open to new experiences. The study also highlighted that lifelong learners must possess the ability to learn on their own, be self motivated and demonstrate critical thinking skills. These therapists were more likely to participate in professional development activities.

In summary, physiotherapists have many opportunities to participate in professional development, both supported by their regulating body and described in some studies. Therapists prefer professional development activities that include social interactions. There are also personal characteristics of individual physiotherapists that make them more likely to participate in professional development activities.

### **Difficulties in Achieving Professional Development in Physiotherapy**

Although professional development is required to maintain licensure and the goal of professional development seems straight forward, there are many reasons why it is difficult to achieve. In physiotherapy, the therapists are not effective consumers of research, they lack self-efficacy and motivation to create change, and their reflective practice is negatively affected by work environment, context and time.

The primary goal of professional development is to translate knowledge or research into practice. The most essential concept of professional development is evidenced-based practice which can be defined as practitioners accessing, learning and utilizing new and emerging theories or practices in their day to day activities. Graham, Logan, Harrison, Straus, Tetro, Caswell et al. (2006) defined this process as *Knowledge Translation* which is “the exchange, synthesis and ethically sound application of knowledge within a complex system of interactions among researchers and users”.

Actualizing this goal is difficult, however, because rehabilitation therapists tend not to be effective consumers of research, and are generally not well equipped to implement new knowledge into practice. Numerous systematic reviews (Onion & Bartzokas (1998); Pennington et al. (2005); Bero (1998); Grimshaw, Shirran & Thomas (2001)) have confirmed that continuing education activities which promote research uptake have achieved non-significant results.

In support of this argument, an ethnographic study of nurses and medical doctors was carried out by Gabbay & le May (2004), it concluded that healthcare professionals rarely accessed and used current research literature to gain knowledge. As part of Hall's 2005 survey, when asked what method of continuing education physiotherapists preferred, they listed, among other choices, searching the internet for evidenced based practices. Hall (2005) emphasized the difference between searching the internet for information and using the internet for the purpose of on-line academic research. It was found that most therapists in the United States had limited access to online journals and academic data bases. In Rappolt and Tassone's 2002 survey, they also found that literature searches were secondary sources of information and in their study, more than half of the participants reporting rarely or never using this type of information. (Rappolt and Tassone, 2002). Physiotherapists are not effective consumers of research, they also lack access to online journals and academic data bases.

As previously mentioned, physiotherapists need to possess certain individual characteristics of lifelong learning to actively participate in ongoing professional development. The problem is that not all physiotherapists possess these characteristics. The result is, although physiotherapist may participate in ongoing education, they may not change their practice as a result. To overcome this issue, regulating bodies have either imposed continuing education credits, or rely on the therapist to self-evaluate and develop their own learning plans. The following paragraph will outline why this may not always be effective because of the following reasons: 1) physiotherapist often lack self-efficacy and 2) they lack motivation to participate in professional development activities.

Over the last decade there has been a shift in professional development activities from passive learning to active learning. The profession wanted to improve accountability and ensure

professional development of its members. There has been a shift from self-directed learning to outcome-based learning (French & Dowds, 2008). In many jurisdictions, like the United States, United Kingdom and other parts of Europe, there has been implementation of mandatory continuing professional development credits. In these jurisdictions, the physiotherapist must participate in a specific number of recognized activities. These activities have been assessed for content and quality to ensure they meet specific requirements for professional development. Physiotherapists may attend out of obligation, but not participate in the course work and change their practice thereafter. French & Dowds argue that such mandatory activities go against adult learning principles such as self-directed learning and self-motivation.

Although most jurisdiction have relied on participation in continuing professional development credits, in others there has also been emphasis placed on the professional being responsible for identifying their learning needs and evaluating the outcome of their learning (French & Dowds, 2008). Physiotherapists in Ontario have been granted self-regulation through the Regulated Health Professions Act for the purpose of protecting the public. “Self-regulation requires the individual physiotherapist to assume primary responsibility for competence” (College of Physiotherapists of Ontario, 2007). Therefore the College created the Quality Management Framework for continuing competence. One element of the Quality Management Framework is the *Professional Portfolio Guide*. *The Professional Portfolio Guide* states that it “recognizes that physiotherapists are competent practitioners, motivated adult learners, able to select and implement continuing education tools and self-directed in achieving a change in knowledge and/or skills that become reflected in practice” (College of Physiotherapists of Ontario, 2008). Physiotherapists in Ontario are responsible for their own professional development; however their level of engagement may not be the same.

Motivation and self-efficacy are key to lifelong learning and positively influence participation in professional development activities. Bandura (2001) states that people need to believe that they can exercise control over their situations and environment. Efficacy beliefs are central to self-regulation and motivation: people must believe they can produce the results they want to achieve and limit the results they would like to avoid, to negate any detrimental effects in the face of difficulties (Bandura, 2001). His work has influenced research on professional development of physiotherapists.

Herold, Bennett & Costello (2005) based on their study on the theoretical framework proposed by Bandura (1997). They wanted to explore the concept of self-efficacy of physiotherapists. They surveyed 517 allied health professionals (physiotherapists, occupational therapist and speech language pathologists) in the state of Kentucky on their confidence in their abilities to change their health care environments. Their research highlights that allied health professional's lack of self-efficacy, which translated into a lack of confidence in their ability to perform activities such as advocacy, lifelong learning and non-clinical work skills. When individuals are not confident in their skills and abilities they are not going to perform those activities successfully. Therefore physiotherapists may not possess the characteristics of lifelong learners and may not believe that they can change their practice after new learning.

Self-efficacy is very important to enhancing professional development, however physiotherapists also need motivation to increase their participation. As mentioned previously, professional development is required to maintain licensure and this should support the motivation to pursue these activities. Swisher and Page (2005) wrote a book on professionalism in physical therapy, they described motivation as a necessary concept for change; the therapist must want to participate in the learning activity in order to have a successful learning experience.

The therapist must also have a plan for practicing a new skill or theory after a learning activity is completed. Although this is addressed in the professional portfolio that is mandated by the College of Physiotherapists of Ontario, it does not ensure that the therapist will incorporate the new skill or theory into practice. It is not uncommon for a physiotherapist to attend a course and not implement change in practice afterwards. Physiotherapists need motivation both to pursue professional development activities and to change their practice afterwards.

It is clear that therapists need motivation to change their practice, but they also need self-reflection to understand their learning needs and to effectively evaluate change in practice after participation in a professional development activity. Self-reflection is a key concept in most professional development frameworks, however not all physiotherapist have the time or the skill to complete this activity. Donaghy and Morss (2000) define reflection in physiotherapy as “the higher order intellectual and affective activities in which physiotherapists engage to critically analyse and evaluate their experiences in order to lead to new understandings and appreciation of the way they think and operate in the clinical setting”. Learning theories on professional development in the physiotherapy literature underline the importance of reflective practice with many references to the work of Schön (1983) and Kolb (1984) who describe “*reflection in action*” and “*reflection on action*”. Schön’s theories differ from Kolb’s as he includes the idea of “*reflection in action*”, that is reflecting on activities while they are occurring or thinking on your feet. “*Reflection in action*” is similar to problem solving as it involves critical thinking during an event or action and immediate modification of practice or behaviours (Clouder, 2000; Cross et al., 2006; Donaghy & Morss, 2000). Richardson (1999) furthers this argument by stating that physiotherapists’ “professional development is dependent upon their ability to be situationally responsive and continually to review and evaluate their work through critical

thinking, clinical reasoning and processes of reflection” (p467). Physiotherapists must react to new circumstances and reflect on their actions to improve their knowledge, experience and ultimately patient care. It is very important for physiotherapists to reflect on their practice and patient outcomes, however many of them do not possess the skills to do this effectively.

Clouder (2000) did a study to determine perception and use of reflection by Physiotherapists in the United Kingdom. Data was gathered by first interviewing 15 practicing therapists and then with the ideas that were generated, fuelling debates among physiotherapists and physiotherapy students and gaining further insight. These debates occurred during four, one hour workshops with 75 students and four, 45 minute workshops with 98 Physiotherapists. One of the limitations of this study is that rigorous data collection was not sought out or achieved. The researchers recorded broad themes from these workshops, and, did not use video or audio recording. Clouder’s findings describe how reflective practice is negatively impacted by increased work pace and time constraints in physiotherapy practice and this is true for clinicians, managers and students. She also suggests that reflective practice is context specific. To support her argument, Hall (2005) postulated that the barriers to completing professional development activities, including cost, time and quality of the activity could be contributing to therapist seeking the information in the work place (p169). These studies support the idea that workplace demands are having a negative impact on self-reflection and professional development.

Although self-reflection is included in professional development activities, Donaghy & Morss (2000) demonstrated through their research that even though journals and portfolios are useful for facilitating reflection, there is no evidence of higher levels of reflection such as critical analysis and reasoning. Donaghy & Morss (2000) developed a theoretical framework for “*reflection on action*” in Physiotherapy. Their theoretical research synthesized literature on

reflection and described the theoretical implications and the importance on the practice of physiotherapy. They developed a reflection model that was used on physiotherapy students in Edinburg, Scotland. The results of the study were non-formal accounts by program educators on the improvement in the quality of reflections demonstrated by their students. The strength of this study could be enhanced by studying outcomes using the reflection model empirically on registered physiotherapists. They concluded that physiotherapists would benefit from more education on proper reflection strategies. Therapists need to have the time to reflect and may need more education to enhance their reflection skills.

The research on professional development of physiotherapists shows that a lot of onus is placed on the individual to champion their own professional development; however that is not always possible. Although many jurisdictions are implementing mandatory professional development, they do not take into account personal motivation or self-efficacy; and therapists may attend educational activities that do not always lead to a change in practice. Finally, physiotherapists need to learn advanced techniques in reflective practice and be allocated the time, during their work day, to reflect on and change their practice. As individual physiotherapists, professional development is entirely dependent on the individual's motivation, self-efficacy and self-reflection, however when the individual is amongst peers, the group can influence their professional development, therefore interactions are a necessary component of professional development.

### **Informal professional Interactions are Key to Professional Development**

It is evident that professional development is not straight forward and there are many barriers to its success. Professional development is limited by physiotherapists' own self-perception and motivation, by their access to online journals and databases, by their knowledge,

time and skill in self-reflection. However we do know that physiotherapists are learning and most of this occurs through interactions among fellow therapists in their workplace. Social learning is key to professional development; it strengthens knowledge translation, it is part of professional socialisation and professional culture and it is strongly influence by context.

It is evident that physiotherapists learn from each other. In Rappolt and Tassone's (2002) study on how physiotherapist gather and use information, the findings demonstrated that physiotherapists use peer-to-peer consultation as a main source of knowledge exchange and assign importance to this information. Hall's survey (2005), also supports these finding and her conclusions further added that physiotherapist prefer readily available professional development activities in the workplace.

Although physiotherapists learn from each other, they do not learn the same things. The knowledge they gain is product of the team they work with and the environment they work in. Richardson (1999) brings forward the idea of *physiotherapy practice culture* which is socially constructed knowledge and practice which includes: artefacts created and used by the profession including language, behaviours, assessment skills, assessment tools and finally research in physiotherapy. She argues that physiotherapist knowledge is constructed by incorporating fact, theories and, professional interactions with clients and other healthcare professionals in the workplace. Physiotherapy practice culture is unique to each work place because the context of practice, politics of practice and differing clientele. What the physiotherapist learns, largely depends on the environment and team with whom they work.

Another theory that describes learning in the workplace is Mezirow's (1990) transformative learning theory that highlights that learning is linked to the circumstance of acquisition and where group members acquire a shared perspective. Mezirow's transformative

learning theory also promotes that the learner values new knowledge within their practice and work environments (McWilliams, 2007). This research supports the idea that social interactions and environment change our knowledge.

Studies show that physiotherapists rely greatly on peer-to-peer interactions for knowledge exchange and dissemination. It helps them participate in their professional practice culture and influences their practice and professional development. Their learning is very dependent on the environment in which they work.

### **Physiotherapists Working in Long-term Care, Interprofessional Interactions**

As previously mentioned there are many barriers to professional development, however most therapists are successful because they rely on peer-to-peer consultation and workplace information to gain knowledge and skills for their practice. Physiotherapists who work in the long-term care setting rarely work directly with other physiotherapists; instead, they work among a team of varied health care professionals.

Goins, Gainor & Pollard(2003) and Rappolt and Tassone's (2002) studies demonstrate that physiotherapists and health professionals who work in the community are isolated from each other and unable to access workplace professional development activities and networking opportunities. The situation for physiotherapists working in rural and community based healthcare is very similar to physiotherapists practicing in long-term care, because they work in isolation from each other, having or little or no contact with other physiotherapists on a day to day basis. They do however work with other healthcare professionals such as medical doctors, nurses, dietitians, personal support workers and on occasion occupational therapists and speech language pathologists.

There is strong evidence to support that physiotherapists learn from peer-to-peer exchanges, however in long-term care they are learning from exchanges with other healthcare professionals and the term to describe this is: *Interprofessional learning*: “learning arising from interaction between members of two or more professions. This may be a product of interprofessional education or happen spontaneously in the workplace or in education settings” (Reeves, 2009).

In reviewing the research on interprofessional learning and its contribution to the professional development of healthcare professionals, it is evident that it takes profession-specific competence for granted. Interprofessional learning research also focuses on prequalified healthcare practitioners or on the relationships between the professionals and does not focus on the professional development of the individual in his or her specific profession.

The goal of much of the interprofessional learning is on learning about other professions, improving communication and collaboration. Currant, Sargeant & Hollett (2007) did a mixed method, pre and post study design evaluating the educational outcomes of interprofessional education in primary health care. Their findings suggest that interprofessional continuing professional development is effective in “enhancing understanding of the roles of other professions, fostering respect and positive attitudes toward interprofessional collaboration, developing team skills, promoting organizational change” (Curran et al., 2007). The studies did not focus on outcomes of learning beyond building collaboration and relationship skills.

Interprofessional learning takes time and requires teams to work together to cause change in practice. Wilcock, Janes & Chambers (2009), argue through their theoretical research on continuing interprofessional education, that for teams to sustain improvements in patient care, they must all participate in continuous practice based learning. They created a conceptual model

of “continuing interprofessional development (CIPD) for continuous health care improvement”. As a team, interprofessionals must “reflect in” and “reflect on” their practices. Wilcock et al., argue that practice based learning should be supported and rewarded in the workplace, because it will forever change the care for the client and enhance the skills for the learner. This is not the case in long-term care.

Most healthcare professionals including physiotherapists strive for interprofessional collaboration, but in reality this is difficult to achieve. Members of interprofessional groups do not necessarily work together on a day-to-day basis; they meet because they perceive value in the interactions and information sharing (Wilcock, Janes & Chambers, 2009; Wenger, 1998).

Interprofessional interactions lead to a greater understanding of the roles of each profession; however they do not necessarily enhance the interprofessional teams professional development and patient outcomes. This leads us to the central questions of the research.

## **Research Questions**

The preceding literature review provides us with a detailed overview of the specific challenges to professional development faced by physiotherapists working in long-term care. These challenges include a lack of professional development activities focusing on geriatrics, physiotherapists lacking self-efficacy and motivation to participate in professional development, professional isolation and limited access to an interprofessional team.

*Professional practice culture* is “the medium through which people's understanding of work practices, attitudes and behaviour are learned and shaped” (Richardson, 1999).

Physiotherapy practice culture is developed through social interactions which take place in physiotherapy departments, such as hospitals, private clinics and rehabilitation departments (Richardson, 1999). Through professional practice culture, physiotherapists’ receive

professional socialisation and professional regulation, which influences their practice and work behaviours. In the long-term care setting, physiotherapists are isolated and do not have access to professional practice culture and professional socialisation in the workplace, however they do interact with an interdisciplinary team or interdisciplinary work culture. Accordingly, this study will focus on:

- 1) What are the ways in which physiotherapists in long-term care settings engage in professional development?
- 2) What effects do the absence of a professional physiotherapist practice culture, and the presence of interprofessional interactions, have on the professional development of physiotherapists?

### **Conceptual Framework**

The literature review examined theories on professional development as they apply to physiotherapy. It is evident that to be active in one's own professional development, one must possess the characteristics of lifelong learning, described by Bandura (2001) and Hall (2005); these include motivation and self-efficacy. One must be able to reflect on one's current knowledge and practice to make changes; this is described by Schon (1983) and Kolb (1984) and their theories on self-reflection. The learner is influenced by his/her workplace, and a group member will acquire a shared perspective of knowledge; this was described by Merizow's (1990) transformative learning theory. Furthermore all these components are essential to professional development. It is also evident from the literature review that physiotherapists are also influenced by their social surroundings and interactions with peers and other colleagues and patients. It is therefore crucial to analyse physiotherapists' professional development through their social interactions and environments, using social learning theories.

Physiotherapists participate in professional development through interactions with their peers, therefore professional development in long-term care needs to be explored considering their social interactions with their interdisciplinary team. Bleakley (2006) states that the research on learning theories in medical education continues to focus on the individual learner, rather than the socio-cultural context of learning. Bleakley further argues that current adult learning theories focus on the individual's construction of knowledge and not on the dynamic interaction between individuals and historical artefacts. He further explains that socio-cultural models of learning are based on the fact that the "mind" is not just the person but the product of society and culture. "The individual is seen as a product of social activity and accounted for in terms of fluid and multiple identities rather than fixed types" (Bleakley, 2006).

Vygotsky has contributed to the knowledge and theories of constructionism. Although his theories have only been available since the 1960s and more widely available in since the 1980s, they are well respected and cited in many educational and psychological research texts (Davydov, 1995). At the heart of this theory is the idea that learning and development at the individual level are the product of social and cultural environments. More specifically, Vygotsky argued that higher mental process appear, first, between people (interpsychologically) in the form of shared activities and, then, individually (intrapsychologically) as the learner 'internalizes' these originally social activities (Davidov, 1995). The social and physical contexts that give shape to individual thinking include conceptual artefacts like language and physical ones like tools and computers, as well as collaboration with peers and teachers. A learner's interaction with his/her environment and with communities of other learners thus play a central role in Vygotsky's ideas . This social constructivist approach is echoed by Kuhn, Greeno, Lave, Simon and Brown (Lui & Matthews, 2005). Vygosky's theory also supports the idea of "the

collective being always larger than the total sum of individual persons” (Lui & Matthews, 2005). In the context of physiotherapy, this means that by interacting and building on one another’s ideas, physiotherapists can produce more knowledge than they could by simply adding up their ideas as isolated individuals. Indeed, it is through such interactions that knowledge is created and advanced.

Vygotsky’s theories have many supporters, however they also have their critics. Fox is one critic of Vygotsky and constructivist theories. Fox (2001) argues, in one of seven broad statements, that the idea of the “social nature of all knowledge”—that all learning and conscious thought are constructed by social factors and social influences—is implausible. He argues that much learning is shaped by memory, perception and direct interactions with the physical environment, and that these are not necessarily socially mediated in the way that social constructivists assert. Philips (1995) on the other hand, argues that constructivism tends towards epistemological relativism. In his article, he compares constructivism to religion, where truth is related to the perspective of the person. He argues that theories of constructivism vary greatly on their viewpoint. Some theories are based on the individual and others are based on the social construction of knowledge. Some theories are based on humans as the creators of knowledge and others on nature as the creator of knowledge. Other critics of constructivism focus on the variations of theories within the literature on constructivism and these criticisms do not always contradict Vygotsky’s theories. In spite of these critiques, Vygotsky’s theories continue to gain wide acceptance within educational literature.

Vygotsky's model lends itself well to the explanation of professional development of physiotherapists. There is evidence to support that social interactions are key to knowledge translation and evidence-based practice. Lomas’ (2007) research suggests that *knowledge*

*translation* depends on interpersonal networks for circulation. He further concludes that there needs to be a process to link research to social networks to disseminate this information because social networks are so effective. Therefore physiotherapists need social exchanges to enhance their knowledge.

Physiotherapists are part of the social and cultural context of the profession of physiotherapy and are affected by the social norms and regulations of this group. They are also part of larger socio-cultural contexts that affects their leaning and behaviour. Collaborative learning occurs when physiotherapists interact with physiotherapists or other healthcare professionals. These collaborations help shape their understanding of patient care, physiotherapy practice, the physiotherapy practice culture and research.

It is important to note that professional development includes not only knowledge about physiotherapy research and techniques but also learning behaviours and people skills that are important for professionals. Professional learning is thus also *professional socialisation* in which “individuals learn the values, attitudes and beliefs of their chosen profession and develop a commitment to a professional career” (Richardson, 1999). Through situational social exchanges physiotherapist assimilate professional values and social consensus of professional behaviours (Lave, 1988: Richardson, 1999).

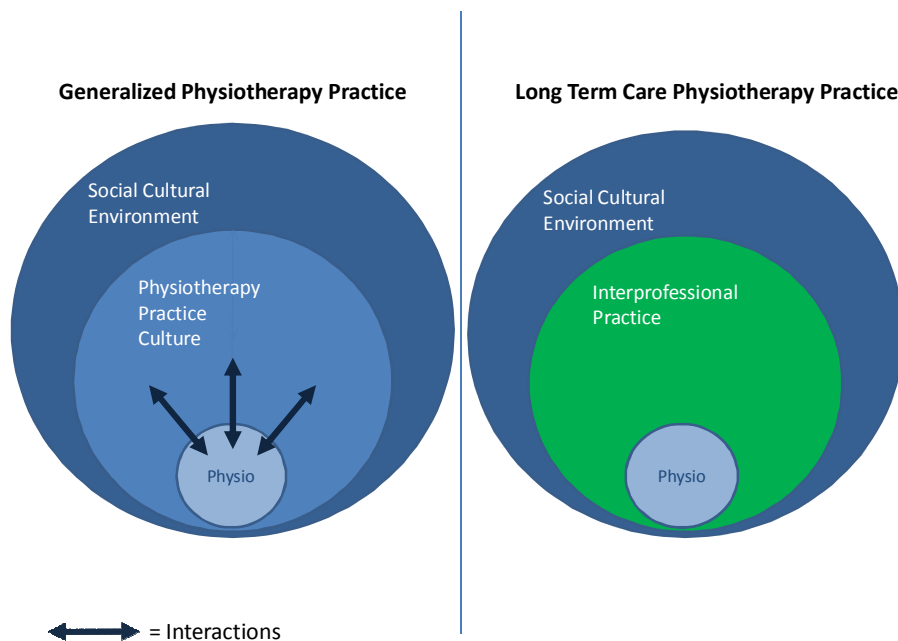
Situational social exchanges lead to another important socio-cultural concept, which is social participation within a community of practice. Communities of practice are “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger, McDermott & Snyder, 2002). A physiotherapy practice culture can be seen as an *unrecognized* community of practice (Wenger et al., 2002) in which members discuss practice issues over lunch and between

consultations with clients. These informal conversations become the main source of knowledge for the group. Their concern is their patients and their passion is physiotherapy.

Physiotherapy clinics or physiotherapists working in hospitals are sometimes referred to as a community of practice. It must be noted that not all interactions are the same. Bleakley (2006) and Wilcock (2009) bring forward Lave and Wenger's (1991) idea that collaborative knowledge production is based on participation and engagement in a community of practice. That is, professionals must have access to, and interaction with, the community they seek to learn from. Wilcock (2009) argues that social learning theories emphasize learning at work and that the theories link continuous professional development as learning through social participation, informally bound by shared expertise and interest. Lave and Wenger's theories support the idea that the individual must perceive value in the social exchange to participate in a community of practice (Lave and Wenger, 1991). If physiotherapists value the knowledge and expertise of their peers, they are more likely to learn from their community of practice.

To represent the connection between the social cultural context and professional development of physiotherapist, two contrasting models were created. The first diagram on the left represents findings from the literature that demonstrate the social and cultural context of learning for the majority of physiotherapists—i.e. those who practice in hospitals or clinics with other physiotherapists (Figure 1).

Figure 1: Current representation of professional development in physiotherapy



This diagram is also based on the constructivist model of knowledge construction. There are three parts to this diagram. First, the physiotherapist is at the centre of the model. The physiotherapist represents the individual learner. The second ring represents the physiotherapy practice culture, which surrounds the physiotherapist (individual learner) and constitutes his or her community of practice. It is important to note that physiotherapy practice cultures are unique to each individual setting. This community of practice both supports and engages the individual physiotherapist's professional development. Both the physiotherapist and the group of physiotherapists contribute to the professional development of this unique practice culture. These various interactions will have two results; 1) the physiotherapist will gather knowledge or skills from the physiotherapist practice culture and/or 2) will contribute knowledge or skill to enhance the practice culture, with each member having a unique contribution to the whole practice culture, which in turns moulds and shapes the future of physiotherapy. This accords

with Vygostky's theory that the collective is greater than the sum of its individuals (Lui & Matthews, 2005). Finally there is the overarching social cultural context which includes regulation and oversight by the College of Physiotherapists of Ontario. Practice cultures are influenced by the culture and societies they exist in and also help shape those cultures and societies.

To better articulate the issues faced by physiotherapists working in long-term care, a contrasting representation was developed to highlight the area that needs to be researched. Physiotherapists who work in the long-term care setting have a very different working context. This is represented in the circle on the right side (Figure 1). As in the first diagram, the physiotherapist is at the center, representing the individual learner. Surrounding the physiotherapist is the interprofessional practice, or members of other professions, such as nurses, medical doctors, occupational therapists, health care aids and dietitians. It should be noted that the only difference between the two diagrams is that the physiotherapist is not supported nor engaged in a physiotherapy practice culture in this work environment. However the physiotherapist is surrounded by and will be affected by the interactions with other healthcare professionals. This is the primary focus of this research and this area will be further explored. Finally, as in the previous diagram, there is the social and cultural context and its effects should be the same on the Physiotherapists professional development. To gain a broader perspective of professional development of physiotherapists and to confirm the hypothetical representation of physiotherapists working in long-term care, a qualitative approach and survey method was chosen.

## Methodology

### Design

In order to explore and describe the professional development of physiotherapists in the long-term care setting, a survey was developed. Its aim was to capture individuals' current practices and perceptions of their personal professional development as well as to explore the influence of the interprofessional work environment on their development and professional practice.

A questionnaire method was chosen over the interview method for collection of information in this study for a number of reasons. First, the author of this study was working in the long term care environment at the time of this study and felt that there could be difficulties recruiting participants because of the author's management role in one of the five major providers of physiotherapy services in long-term care. The author's management role could also lead to potential perceived conflicts of interest or biases. Firstly, as a manager, I could not ask my employees or other employees in our company to participate in a survey, as my position may have biased their responses. Secondly, if approaching physiotherapists working at other companies, my position as a manager of a competitor may have made it seem as though I was seeking information for business purposes; this might also have biased their responses. Because participants remained anonymous under the survey method, it was chosen for this study.

An on-line survey was chosen over a paper-based one as it ensured that no identifying information was gathered on any of the participants, not even their IP address. The author also chose the online survey because of many advantages described in the literature. In Evan & Mathur's (2005) research, they found that online surveys are usually more economical to administer, response time is reduced, data entry and survey administration is reduced and survey

bias is reduced as the reader cannot see the future questions. The major disadvantages of online surveys are perceived security issues and response bias favouring those with computer literacy. New survey software programs, such as Fluidsurveys, ensure security and confidentiality of the collected information. There is, however, a response bias in this study toward those who are computer literate.

Once the survey method was chosen, a review of existing surveys was carried out. There are few studies in the literature that have used survey methodology to explore professional development of physiotherapy. Rappolt & Tassone (2002) used in-depth interviews to gather their information and all their questions were open-ended. Their research questions focused on the individual's learning, however they only had one question regarding the context of work.

Hall (2005) had participants complete 2 surveys. The first was based on characteristics of lifelong learners, which do not accord perfectly with issues and characteristics related to professional development. Some of the survey questions in this study are nonetheless based on the main research conclusions regarding the characteristics of lifelong learners in Hall's research. One question on motivation, for example, is similar to Hall's research question. The second of Hall's surveys, "The Professional Learning Inventory - Physical Therapist Clinicians," was created specifically for her research, to gather data on strategies used by physical therapists in the pursuit of lifelong learning. This tool was based on a review of the literature and on a broad range of continuing professional development activities. This instrument was reviewed by an expert panel of 3 members and piloted (Hall, 2005). The questions were similar to the professional development activities listed by the College of Physiotherapists of Ontario. However, most did not match up well enough for the purposes of this survey. Several questions relating to demographic information were appropriate, though, and they were used in this survey.

French (2006) completed a survey of continuous professional development activities in the acute hospital setting focusing on clinical supervision, intensive clinical training, in-service education, short courses and performance appraisals. Again the continuous professional development activities do not reflect all the activities recognized by the College. Stevenson, Lewis & Hay's (2004) research used both interviews and a questionnaire that focused on outpatient musculoskeletal physiotherapists' attitudes towards evidence-based practice after an evidence-based educational program. Their survey could be used either, though, because it did not specifically look at professional development.

A survey was therefore created specifically for this study based on findings from the literature, including Hall's (2005) research, and on the Quality Management Framework from the College of Physiotherapists of Ontario (College of Physiotherapist of Ontario, 2008). Likert scales were used in Hall's and Stevenson & al.'s questionnaire and similar Likert scales were used in this study. All of the questions in this survey, except two, are closed-ended questions. This ensures that responses can be analysed quantitatively to get descriptions of professional development and attitudes; ordinal and nominal scales were used to analyse trends and frequencies. A four point likert scale was chosen over a five point likert scale to remove the neither/nor category, therefore forcing participants to choose either a positive or negative response. The response choices for the likert scale were: 1) Strongly Agree, 2) Agree, 3) Disagree and 4) Strongly Disagree. This Likert-type scale was not appropriate for all questions, especially those pertaining to the frequency of participation in activity. Therefore other scales were used to track the therapists engagement in activities such as reflection. The response choices for this scale were: 1) Always, 2) Most of the time, 3) Sometimes and 4) Never. Another scale was used to track frequency of interactions, the responses for these questions were: 1) Two

or more times per day, 2) One time per day, 3) One time per week, 4) One time per month, 5) Less than one time per month and 6) Never. The two open-ended questions used in this study were created to gain a more in-depth understanding of physiotherapists' beliefs about how interprofessional interactions affect their professional development and what will enhance their professional development in long-term care in the future.

## **Participants**

The participants in the study were all Physiotherapists working in long-term care facilities in the Province of Ontario, Canada. A request was made to the College of Physiotherapists of Ontario to email the survey to all physiotherapists working in long-term care as indicated on their college registration for the 2011/2012 year. The college did not agree to email the survey to participants because the study did not accord with current college priorities. However the college provided a list of all the physiotherapists working in long-term care and their addresses, as well as demographic information for this group. The request to the ethics committee was for a survey distributed via email. Therefore the researcher approached the Ontario Physiotherapy Association (OPA), a branch of the Canadian Physiotherapy Association (CPA), to email the survey to all of its members. This request was accepted and the invitation to the survey was emailed to all members of the OPA in September of 2011 and an email reminder was sent in October 2011. The original intent of the survey was to use a census sample of the 461 physiotherapists working in long-term care from the list provided by College of Physiotherapists of Ontario (2011). This group was chosen because they are the target population. The physiotherapists will have completed at least a Diploma in Physiotherapy or greater qualifications. A randomized study of these individuals is not possible due to the small sample size (461 physiotherapists) and predicted low response rate. All Physiotherapists that

were members of the Canadian Physiotherapy Association and therefore members of the Ontario Physiotherapy Association who had valid email addresses received an invitation to participate in the survey.

### **Instrumentation**

The instrument that was used to collect data in this study was a self-administered online survey. As previously mentioned, there were no surveys in the literature that dealt specifically with professional development of physiotherapists in the long-term care setting and working in an interprofessional context; therefore a survey was created for this purpose, items in this survey were based on the literature. The goal of the survey was to gather information from the participants on the interprofessional interaction in their work environment and their perceptions of their professional development. Professional development activities recognized by the College of Physiotherapists of Ontario and included in this survey were: achievements, conferences, critical incidence analysis, formal education programs, in-services education/rounds, information from the college, learning from patients, mentoring, supervising, original published work, personal experience, professional contact, project work, reading/journal club, research and development, student supervision, teaching and teleconferences (College of Physiotherapist of Ontario, 2008, p. 5-7). There were questions on their participation in professional development activities and facilitators and barriers to professional development. Questions also pertained to their interactions with other healthcare professionals including the frequency and nature of the interactions as well as the impact on professional development.

The survey tool contained Likert style questions, frequency of participation questions and open-ended questions to gather both descriptive and inferential data. The survey took approximately 15 minutes to complete.

Reliability and validity are necessary to confidently report the results of a survey. “Reliability refers to the consistency or repeatability of a test or measurement” (Netemeyer, Bearden & Sharma, 2003). Most surveys are inherently reliable as you are using the same tool to measure data from each subject. Review of the instrument by an expert panel and focus groups for clarity and conciseness, improves the reliability of items (Rea & Parker, 1997). The survey was reviewed by both the experts and the pilot group. However, to improve reliability, a test-retest of the pilot group completing the survey should have been carried out and analysed to ensure that the responses would be the same over time. Test-retests have their limitations; for instance, if the surveys are completed in a short time frame, the respondent may be subject to the practice effect and respond based on their memory of the questions (Litwin, 1995). To limit the length of the survey, only one measure of internal consistency included.

Validity refers to “the degree that an instrument actually measures what it is designed or intended to measure” (Netemeyer et al., 2003). Face and content validity were ensured by having the survey reviewed by three academics in the field of physiotherapy and one academic expert with advanced knowledge of surveys (Burton & Mazerolle, 2011). “Construct validity is the degree to which an operational measure correlates with the theoretical concept investigated” (Burton et al., 2011). Construct validity was ensured by using theories and concepts described in the literature review in the development of the survey.

The survey was also piloted by three physiotherapists currently working in long-term care in Ontario to determine average duration and to ensure that the survey questions generated appropriate answers.

External validity is the extent to which the results apply to populations different from those in your experiment. The study population is physiotherapists working in long-term care in

Ontario and the study relates to their interactions with interprofessional teams. These results may not be generalizable to other physiotherapy populations or other healthcare professionals in other settings or outside of the province.

## **Procedures**

The following procedures were used to carry out the survey. First a census of physiotherapist working in long-term care was obtained by contacting the College of Physiotherapists of Ontario. The census sample was collected after the 2011 registration at the College of Physiotherapists of Ontario. 461 Physiotherapists indicated on their registration that they currently worked in the long-term care setting. The original intent of the survey was to distribute the survey online. The College of Physiotherapists of Ontario, however, did not provide email addresses of the census sample. The invitation to participate in the survey was thus distributed by the Ontario Physiotherapy Association by email to all of its members. The invitation stated that it was only for physiotherapists working in long term care. All of the physiotherapists who had active email addresses received an email invitation and a link to the online survey. The email inviting the physiotherapist to participate in the study highlighted that their answers were confidential and anonymous. Consent to participate in the research was implied by the physiotherapist completing the survey.

The online survey was uploaded to “FluidSurveys” (online survey software). Next, all physiotherapists who voluntarily participated in the study clicked on a link to FluidSurvey for access to the survey. A reminder email went out to all physiotherapists in the sample three weeks after initial contact. All data was collected for a period of two months in the fall of 2011. All surveys received after this date were not included in the final results of the study.

## **Results and Data Analysis**

The following section will describe and analyse the results of the survey using both quantitative and qualitative analysis. The goal of the survey was to answer the following questions: 1) What are the ways in which physiotherapists in long-term care settings engage in professional development? and 2) What effects do the absence of a professional physiotherapist practice culture, and the presence of interprofessional interactions, have on the professional development of physiotherapists?

The results of the survey were analysed by 1) using descriptive statistics to analyse trends, frequencies and attitudes of physiotherapists working in long-term care for the quantitative data and 2) by analysing themes for the qualitative data. The quantitative data was analysed using IBM SPSS software for predictive analytics. The results include both nominal, ordinal and interval values (O'Leary, 2004). Results were analysed using descriptive statistics and are presented in table format. The qualitative data was analyzed carefully to detect recurrent concepts or themes, then reanalyzed in light of the themes that emerged. Quotes from participants were inserted in the text to support certain trends established through the survey.

Analysis of the data will be framed by topics identified in the literature review, specifically, professional development and physiotherapy, difficulties in achieving professional development, and peer interactions and interprofessional interactions. First, however, I will provide some analysis of the demographics of participants. The analysis of the data is based on the 42 responses of physiotherapists working in long term care. This represents approximately 10% of the total study population. The limited study population poses a threat to the strength of the results; therefore readers must be cautious in their interpretation of the results.

## Demographics

Physiotherapists who responded to the survey and who are working in long-term care in Ontario are presented in these results as well as the demographic information of the census sample of physiotherapists working in long-term care registered for the 2011 and 2012 registration year at the College of Physiotherapists of Ontario. This information will be used to compare the study participants against the census sample from the College of Physiotherapists of Ontario to comment on homogeneity of the sample groups.

Table 1

Demographics of survey respondents by gender

Gender	Survey (n=48)	College of Physiotherapists of Ontario (n=455)
Female	88% (42)	65% (297)
Male	12% (6)	35% (158)

Of the 48 survey respondents 88% (42) were female and 12% (6) were male. This is not consistent with the data from the College of Physiotherapists of Ontario for this study population. The data from the College of Physiotherapists of Ontario has a higher percentage of males than the study population, 12% versus 35%.

Table 2

Demographics of survey respondents by age

Age Group	Survey (n=41)	College of Physiotherapists of Ontario (n=455)
21-25 years	2% (1)	0% (0)
26-30 years	20% (10)	9% (39)
31-35 years	12% (6)	22% (99)
36-40 years	14% (7)	24% (108)
41-45 years	6% (3)	12% (53)
46-50 years	6% (3)	9% (43)
51-55 years	18% (9)	9 % (40)
56-60 years	16% (8)	9% (39)
61-65 years	4% (2)	5% (22)
66 or more	2% (1)	3% (12)

In comparing the survey response with College's data, there are some differences in the distribution of participants across the age groups. For example, in the study population 48% (24) of participants are under 40 years old, whereas and 55% (246) are under 40 in the data from the College of Physiotherapists of Ontario.

Table 3

Demographics of survey respondents by level of education

Highest level of education	Survey (n=49)	College of Physiotherapists of Ontario (n=455)
Diploma	8% (4)	13% (69)
Bachelors Degree	59% (29)	69% (314)
Clinical Masters Degree	6% (3)	
Masters Degree	24% (12)	17% (76) Includes both Masters and Clinical Masters Degree
Clinical Doctorate Degree	2% (1)	
Doctorate Degree	0% (0)	1% (5) Includes both Doctorate and Clinical Doctorate Degree

With regards to the highest level of education, most physiotherapists 59% (29) had bachelors degrees, which is roughly consistent with the data from the College of Physiotherapists of Ontario 69% (314). The rest had diplomas 8% (4), masters degrees 30% (15) and doctorate degrees 2% (1). This is also consistent with Hall's (2005) study in which, 55% had bachelor degrees (8% diploma, 39% masters, 3% doctorate).

Table 4

Demographics of survey respondents by place of work

Place of Work	College of Physiotherapists of Ontario (n=455)
Long-term care Only	56% (255)
Long-term care and Other	44% (200)

A key question that was not asked on the survey, which could shed light on some of the issues, was the physiotherapists' place of work. The physiotherapist's surveyed work either exclusively in long-term care setting or in long-term care and another setting. These other settings could include (but are not limited to) hospitals, private practice, rehabilitation centres, home care or school settings. According to the data from the College of Physiotherapists of Ontario, 44% (200) physiotherapists work in long-term care and another setting. Another finding in the results of the survey was that 50% (24) of respondents had less than five years experience in the long-term care setting. The College of Physiotherapists of Ontario was unable to provide data on the years of experience in long-term care for comparison.

Independent t-tests were used between three independent variables: 1) age of participants above or below 40 years old, 2) years of experience as a physiotherapist below or above 20 years, and 3) years of experience in long-term care, below or above five years' experience) and all 71 dependent variables (survey questions) in the study. The independent variable groupings were similar in size and as close to 50% of participants as possible. In the analysis of the independent t-tests, some differences in the means were found, but none were statistically significant; however significance could be established in some areas with a larger sample size. This emphasizes the need for a larger sample size in future studies and limited generalisability of these results. The following data will therefore be presented for all study participants, because there were no differences in responses based on age, years of experience as a physiotherapist, or years of experience in long-term care.

### **Professional Development**

Physiotherapists respondents participated in professional development according to the College of Physiotherapists of Ontario's Professional Portfolio Guide. The most common

professional development activities they participated in on at least a monthly basis were: learning from patients (questions or conditions) 93% (40), personal experiences (real experiences from which you have learned something) 82% (36), information from the college 78% (34), professional contacts (learning from peers) 77% (34), and finally in-services, education/rounds 77% (33).

This is consistent with the literature as physiotherapists seek out readily available professional development activities and interactions with their peers. Hall's (2005) survey results describe actual ways in which physiotherapists participate in professional development activities. These include: informal learning activities, such as, consultations with peers after a client visit, seminars, in-services, grand rounds, staff meetings and serving as a clinical instructor. Most of these activities occurred in the workplace and with other physiotherapists. Rappolt and Tassone (2002) concluded that therapists gather knowledge primarily by relying on peer-to-peer exchanges either at work or during formal and informal continuing education activities.

One important finding was that 63% responded that they participated in mentoring or supervision on at least a monthly basis. This may be consistent with the fact that 44% of physiotherapists work only part time in long-term care and in another setting the rest of the time. This leads one to ask who they are mentoring or supervising, since working in long-term care typically do not have access to physiotherapy colleagues. Perhaps they are mentoring physiotherapy assistants. One can also ask where they are supervising and/or mentoring other physiotherapists or students. Is it in the long-term care setting or is it only occurring in the other settings? The least common professional development activities that occurred at least on a

monthly basis were: formal education programs 0% (0), research and development 6% (3), and achievements (certification and qualifications) 7% (3).

Hall's 2005 study described characteristics of lifelong learners among Physiotherapists in the United States based on a survey of Characteristics of Lifelong Learners in the Professions and the Professional Learning Inventory. In this study, almost all physiotherapists reported that they possessed lifelong learning skills. Physiotherapist clinicians described the following characteristics for lifelong learners: commitment to growing as a professional, viewing learning as necessary for personal and professional development, holding a belief that being up to date and competent is important and being open to new experiences. The study also highlighted that lifelong learners must possess the ability to learn on their own, be self motivated and demonstrate critical thinking skills. These therapists were more likely to participate in professional development activities.

Table 10

Characteristics of lifelong learners

	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
I consult my peers after challenging patient consultations	<b>57% (24)</b>	<b>38% (16)</b>	5% (2)	0% (0)	n=42
I believe that being up to date is important	<b>65% (28)</b>	<b>35% (15)</b>	0% (0)	0% (0)	n=43
I am a self motivated learner	<b>60% (26)</b>	<b>37% (16)</b>	2% (1)	0% (0)	n=43
I am open to new experiences	<b>70% (30)</b>	<b>30% (13)</b>	0% (0)	0% (0)	n=43

In contrast to Hall's study, these results indicate that a strong majority of physiotherapists possess characteristics of lifelong learners. Perhaps this can be attributed to the way the information was gathered in the survey as compared to Hall's 2005 study. "Members of the professional association were more likely than non-members to pursue lifelong learning activities outside of work, read professional journals, use electronic information systems, attend regional/state/national meetings and network with colleagues. These findings may be related to a greater commitment to professional development (Hall 2005, p 173)". The current study population was gathered through the Ontario Association of Physiotherapists, this could explain the differences.

### **Difficulties Achieving Professional Development**

As part of their professional development physiotherapists need to gather and evaluate new information and apply this to their practices. Physiotherapists in this study do not use peer reviewed information as a primary source of information for professional development. 93%(40) reported consulting the internet versus 69% (30) who reported consulting peer reviewed literature over the internet on at least a monthly basis. Hall (2005) emphasized the difference between searching the internet for information and using the internet for the purpose of on-line academic research. The internet is a source of a variety of information, however not all sites are reputable and provide peer reviewed information. 28% (12) of respondents reported reading peer reviewed journals less than yearly. 33% (14) reported using the internet to access peer reviewed literature less than yearly. Therefore, between 28 and 33% of physiotherapists use peer reviewed information yearly or less for the purpose of professional development. To further this argument, 43% (18) reported having access to online academic databases yearly or less frequently. Interestingly the survey was sent to members of the Canadian Physiotherapy

Association which provides free access to online academic database to all of its members. It is possible that the survey was forwarded to non members or that respondents did not have knowledge of this service or did not know how to use it, or did not have access to the internet.

This finding that many physiotherapists rarely consult academic databases and peer-reviewed articles is consistent with current literature. In an ethnographic study of nurses and medical doctors, Gabbay & le May (2004), concluded that healthcare professionals rarely accessed and used current research literature to gain knowledge. As part of Hall's 2005 survey, it was found that most therapists in the United States had limited access to online journals and academic data bases. Rappolt and Tassone's 2002 survey also found that literature searches were secondary sources of information and that more than half of the participants reported rarely or never using this type of information (2002, p. 172). These findings seem to indicate that physiotherapists are not effective consumers of research and that they also lack access (or knowledge of access) to online journals and academic data bases.

Motivation and self-efficacy are key to lifelong learning and positively influence participation in professional development activities. Swisher and Page (2005) describe motivation as a necessary concept for change; the physiotherapist must want to participate in the learning activity in order to have a successful learning experience. Physiotherapists must also have a plan for practicing a new skill or theory after a learning activity is completed.

Table 12

## Motivation and Self-reflection

	Always	Most of the time	Sometimes	Never	Total
I am motivated to enhance my knowledge of geriatric specific resident care	<b>64% (25)</b>	28% (11)	8% (3)	0% (0)	n=39
I am motivated to practice new skills in long-term care	<b>51% (20)</b>	33% (13)	15% (6)	0% (0)	n=39
I am motivated to change my treatment approaches and techniques	<b>49% (19)</b>	36% (14)	18% (7)	0% (0)	n=40
I reflect on my interactions with clients in the workplace	<b>56% (22)</b>	41% (16)	3% (1)	0% (0)	n=39
I reflect on my interactions with clients outside of the work place	<b>45% (17)</b>	21% (8)	34% (13)	0% (0)	n=38
When presented with a new diagnosis or problem, I reflect on my knowledge	<b>72% (28)</b>	28% (11)	0 (0%)	0% (0)	n=39

As demonstrated in Table 12, Motivation and Professional development, the respondent's motivation decreased as the objective of changing practice became more focused.

Physiotherapists were motivated to learn, but were less motivated to actually practice new skills or treatment techniques.

Efficacy beliefs are central to self-regulation and motivation; people must believe they can produce the results they want to achieve and limit the results they would like to avoid (Bandura, 1997).

Table 13

## Self-efficacy

	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
I believe that I have control to change my practice	37% (14)	53% (20)	13% (5)	0% (0)	n=39
I believe that if I implement change, it will have a positive impact on resident care	37% (14)	61% (23)	3% (1)	0% (0)	n=38
I believe I have the control to change my work environment	19% (7)	54% (20)	27% (10)	0% (0)	n=37
I feel that I am able to self reflect on my knowledge and seek information as needed	42% (16)	55% (21)	3% (1)	0% (0)	n=38
I feel that I critically analyse and evaluate my experience and change my practice accordingly	27% (10)	65% (24)	11% (4)	0% (0)	n=38

These responses are consistent with the research, where therapists feel more confident and in control of aspects related to treating clients, outcomes and practice and less confident in changing their work environments. Herold, Bennett & Costello (2005) based their study on the theoretical framework proposed by Bandura (1997). They reported that most of the health professionals felt at least 'very confident' to perform activities related to designing client

treatments based on functional outcomes. Herold et al. (2005) also reported that only 3% of the respondents felt totally confident to perform all activities related to evidence-based practice. 5% of respondents in this survey indicated that they were not at all confident to perform tasks related to evidence-based practice.

Although Physiotherapists need to be motivated to change their practice, they also need the ability to reflect on their own skills and knowledge to create professional development plans and to change their practices. Physiotherapists reported reflecting on their interactions with clients in the workplace always 56% (22), most of the time 41% (16), and sometimes 3% (1). With regards to reflection on interactions with clients outside of the work place, physiotherapists did this less often, 45% (17) reported always, 21% (8) most of the time, and 34% (13) sometimes. When presented with a new diagnosis or problem, 72% (28) of physiotherapists surveyed reported always reflecting on their knowledge and 28% (11) reported most of the time. Not one respondent reported never reflecting in all categories and this is not consistent with previous research. Perhaps there is a difference between reflection on a situation, new knowledge or skills and reflecting with the intention to change practice. On the other hand, the survey questions could have been more specific to show frequencies of reflection based on the number of patients on current caseload. For example, if you assess four clients and treat four clients in a day, what is the total number of clients for which you reflect on your treatment and make modifications as a result? This may have demonstrated that in some circumstances physiotherapists are not reflecting or changing their practice.

Physiotherapist report reflecting almost always; however, they are less consistent with the application of their reflection in or on their practices. Most physiotherapists felt able to reflect on their own knowledge and seek information as needed 42% (16) strongly agreed and 55% (21)

agreed. On the other hand, only 27% (10), strongly agreed and 11% (4) disagreed with the following statement: I feel that I critically analyse and evaluate my experience and change my practice accordingly. This is surprising as therapists feel that they have the control to change their practice, but feel less able to critically analyse their work experience and change their practice as a result.

This study also identified barriers to completing professional development in the work environment. The physiotherapists identified time available at work 84% (33), time available outside of work 72% (28) and cost of professional development activities 69% (27) as being the most significant barriers to completing professional development. These responses are consistent with the literature. Hall (2005) reported barriers to completing professional development activities included cost, time and quality of the activity. Contrary to this research, physiotherapists in this study feel that the quality of professional development activities 67% (26) facilitated their professional development. They also perceived that both working with other physiotherapists 97% (38) and working with an interdisciplinary team facilitated their professional development equally. It is interesting that there was no perceived difference between physiotherapists and interdisciplinary teams facilitating professional development.

### **Peer Interactions and Interprofessional Interactions**

The literature supports that physiotherapists rely on peer interactions for professional development. The study questions included a section on peer interactions in the long-term care environment. There were some unexpected results in this section. Firstly, physiotherapists who responded to this survey had more interactions with peers than anticipated. 44% (17) reported interacting with other physiotherapists in their work environment on a weekly basis. It is worth noting that this percentage corresponds with the College of Physiotherapists of Ontario's 44% of

physiotherapists who work in long-term care and another setting. One might then speculate that their interaction with other physiotherapists occur in these other settings.

87% (33) of physiotherapists felt that they are part of the workplace team and 81% (31) felt that they are part of the workplace culture; however this is not consistent with their interactions with the interprofessional team. 38% (14) of physiotherapists felt isolated from their peers. 7% (3) of physiotherapists reported having limited interactions with nurses, personal support workers and other non regulated health professionals (restorative care or dietary aids). This latter finding is surprising as these professionals are the primary care givers for the clients in the long-term care setting. Physiotherapists also reported limited interactions with the interprofessional team, interacting with the following one time per month or less: physicians 56%, Occupational Therapists 58%, Dietitians 68% and Speech Language Pathologists 90%.

When asked what kind of interactions they participate in, physiotherapists reported face to face exchanges as the most frequent 85% (33), followed by communication notes 33% (13) and email 28% (11), these interactions occurring two or more times per day. The interactions they participated in least (one time per month or less) are team meetings 58% (22), care conferences 46% (18) and telephone conversations 26% (10). It is concerning that physiotherapists are not participating in team meetings or care conferences as these are forums where the therapists will have interactions with the interdisciplinary care team and or families. This is where important care decisions are made for the client.

84% (36) of those surveyed felt that their interactions with other regulated professionals enhances their professional development and 97% (37) of physiotherapists value their interactions with other healthcare professionals. To get a better comprehension of how physiotherapists value the interactions with their interprofessional peers, we asked them to

respond to how frequently they modified their treatments or patient care after interactions with the interdisciplinary care team. 50% (19) reported sometimes, the others reported always 16% (6), most of the time 34% (13). To compare the value they place on information from their interdisciplinary peers, we asked them if they had practice questions, how often they would they seek information from a physiotherapy colleague versus an interdisciplinary colleague. 38% (14) reported that they would always seek information from a physiotherapist versus 8% (3) from an interdisciplinary colleague. This may suggest that physiotherapists value other physiotherapists' input over information provided by an interdisciplinary colleague—at least with respect to questions involving practice or perhaps they are just more comfortable speaking with other physiotherapists.

### **Qualitative Analysis**

To gain more insight and depth, we asked respondents two open-ended questions in the survey. We wanted to understand how interprofessional interactions affected their professional development. Creswell (2007) describes the process of qualitative data analysis as “coding the data (reducing the data into meaningful segments and assigning names for the segments), combining the codes into broader categories or themes and displaying and making comparisons in the data graphs, tables, and charts”. The qualitative responses in this study were first coded manually, highlighting similar words and themes; second, categories emerged from the responses and were included in a table; third, the codes were assigned to matching categories; and finally the results were displayed in table format listing all the codes corresponding to the category, the category and the frequency of codes/responses. This process was carried out several times to ensure all data was represented accurately. Please refer to Table 19 and Table 20 in the appendix for a full representation of codes and categories. Computer-based analysis of qualitative data is

appropriate when dealing with large volumes of data (Creswell, 2007); in this study, however, the quantity of data was limited and so computer-based analysis was unnecessary. After a thorough analysis, certain themes emerged from this qualitative data. When asked how do interprofessional interactions affect your professional development, most physiotherapists reported that their professional development was affected by interprofessional interactions 93% (26). 39% (11) reported that it broadened the scope of information, insights and new perspectives on the clients and it enhanced their knowledge and or care provided to the client “by assessing new [and or] different points of view and knowledge bases”. 18% (5) reported it was affected “positively”. Other responses included “[interprofessional interactions] help me reflect on how I can help the patient achieve more with other professions” and “[interprofessional interactions help me] think and act more professionally”.

In order to try to understand how to enhance professional development in the future, physiotherapists were asked what they believed would enhance professional development in the long-term care setting in the future. 35% (11) physiotherapists believed that more courses in the specific area of geriatrics are necessary. Some also believe that professional development would be enhanced by courses on documentation and regulations in long-term care, courses combined with nursing staff, and courses that combined networking opportunities. Only one physiotherapist described that reducing the distance to courses or having them available in their city would be beneficial. Although most physiotherapists believe more geriatric specific courses are required, only some physiotherapists believe that more geriatric research is needed. Another main theme that emerged was more time or opportunities to interact with the interprofessional team, through meetings and day-to-day interactions. One physiotherapist suggested having

“forum for making changes in [long-term care and retirement homes] for [physiotherapists] who often work in isolation”.

There were a couple of unexpected responses. One was based on the role of physiotherapy and the other on the quality of physiotherapy. Physiotherapists believe that the role of physiotherapists in long-term care needs to be more defined, respected and understood. One physiotherapist stated that there are differences in the role of physiotherapists from one long-term care facility to another. This is interesting as the role of the other regulated health care providers employed by the home is very well defined and this may be in part due to strong national organizations such as the Canadian Nurses Association or the unions such as the Ontario Nurses Association. The physiotherapist’s role is not clearly outlined in the Ontario Regulation 79/10 made under the Ontario Long-term Care Act 2007 (2010). This may be because physiotherapists are a self-regulated profession and they themselves evaluate and decide the appropriate course of treatment or care for residents. Physiotherapists are also not unionized nor are they employed by the long-term care home, but rather work under contracts with service providers of physiotherapy services to long-term care homes. They are also not managed by the home and therefore may not be included in the homes policy and procedures.

Another unexpected finding is that some physiotherapist chose to vent their frustrations with the service providers of physiotherapy services in long-term care, “[physiotherapists need] forums to empower [physiotherapists] working for designated [physiotherapy] clinics where monopolies now control most of the [long-term care] contracts so that [physiotherapists] don't have a voice”. The author speculates that the role of the physiotherapist is influenced by the individual long-term care homes, the physiotherapy service providers, and by the role the physiotherapists would like to play in the home.

One respondent did not answer the question and stated “Most people in [long-term care] do not understand the role of physiotherapy. At least twice a year we have to in service the facilities. Obviously, the Ministry of [Long-term care] does not understand that we are upheld by a College and that our documentation needs to be sound”. This statement may imply that the perceived value of physiotherapy among other interprofessional team members may have an impact on how frequently they interact with the physiotherapists and physiotherapists interact with them. Perhaps this may not be a unique perspective and the relationship between professional respect and interactions among interprofessional team members in the long-term care setting needs to be further explored.

The quality of physiotherapy services was brought up by a couple of physiotherapists. It is interesting as they are comparing quality of care in long-term care to private practice. It is evident that Ontario Hospital Insurance Plan fee for service funding model at \$12.20 a treatment is not in line with the professional fees most physiotherapist collect in private practice, which range from \$90 to \$120 an hour. At a lower fee rate, the length and delivery of treatment will be different as a result of funding available for the service.

Another aspect that needs to be considered is the quality itself as it relates to the treatment provided to the client. Current delivery of physiotherapy treatments in long-term care is provided mainly by physiotherapy assistants under the supervision of a physiotherapist. Physiotherapy assistants in Canada are not regulated, but have a college diploma as a certification. They are not trained in assessment and may miss subtle changes in a resident’s condition that would require a change in care or treatment. This issue may need to be addressed in another study. The results of this study provide us with a broader perspective of the professional development of physiotherapists in long-term care, however the following section

will explore the results through social learning theories and their impact on learning and professional development.

### **Discussion**

This chapter will interpret and discuss the above results in order to answer the following research questions: What are the ways in which physiotherapists in long-term care settings engage in professional development? What effects do the absence of a professional physiotherapist practice culture, and the presence of interprofessional interactions, have on the professional development of physiotherapists?

In this chapter, the findings will be discussed as they relate to relevant literature and the conceptual framework developed above, in particular the social nature of learning and current theories of constructivism. The themes that emerged could not easily be fit into the pre-existing framework employed in the results section. As a result, nine new theme categories have been developed for this chapter: 1) Physiotherapists working in long-term care are isolated from their peers, 2) Physiotherapists who work in long term lack mentors, modeling and professional socialisation, 3) Physiotherapists have difficulties with knowledge translation, 4) Physiotherapists rely on informal learning through communities of practice, 5) Physiotherapists working in long-term care do not have access to physiotherapy communities of practice, 6) The nature of communities of practice in long-term care, 7) Physiotherapists working in long-term care have limited access to an interprofessional community of practice, 8) Physiotherapists who work in multiple settings access external communities of practice, 9) There needs to be more clarity of the role of physiotherapists in the long-term care setting.

### **Isolation from Peers**

Based on the analysis, the first major theme in this study was that physiotherapists working in long-term care are isolated from their peers. Roughly half the physiotherapists in this study reported feeling isolated from their peers, and half the physiotherapists reported working with other physiotherapist on a monthly basis or less often. Nearly 20% reported never working with other physiotherapists.

This sort of isolation can have very negative impact on physiotherapist's informal social learning. Social learning theories assert that social interactions are a crucial component of learning. Unfortunately, in health professions education and development, there is often little understanding of the social component of learning. Bleakley (2006) argues that medical education still focuses too much on the individual learner and needs to focus more on social learning theories and the social-cultural context of learning.

A recent study by Ajjawi & Higgs (2008) illustrates the impact of professional isolation on physiotherapists, albeit in differing contexts. In a study on physiotherapists' development of clinical reasoning skills, they conclude that "learning in the workplace may be limited for practitioners working in isolation, such as in sole practitioner private practices and some rural/community settings". Working in long-term care can be similar to sole practitioners in private practice, because therapists are isolated from their peers. This is also consistent with the hypothetical representation of physiotherapists working in the long-term care setting described in the conceptual framework.

### **Lack of mentors, modeling and professional socialisation**

The second theme that emerged from the analysis is that physiotherapists lack mentors, modeling and other forms of professional socialisation in the long-term care setting. It is

important to note that approximately a third of participants had less than five years experience as Registered Physiotherapists and half had less than five years experience in long-term care. This is a time in their professional career, that most physiotherapists need support from supervisors, mentors and peers to shape their clinical practice skills and professional identity. We need to ensure that these therapists are adequately supervised and mentored to ensure competency and quality of care. Managers in charge of physiotherapy service delivery in the long-term care setting typically manage several locations at the same time and have limited contact with the physiotherapists they supervise. This means that physiotherapists in this context rarely benefit from the sort of mentoring, role modeling or professional socialization enjoyed by those in other settings.

*Professional socialisation* is the socially constructed values, beliefs and norms that are associated with each profession. Modelling behaviour during social interactions is an important part of professional socialization. “Modelling [is] used to learn to perform practical skills, communication skills and importantly, thinking (or reasoning) skills, in a way similar to that of mentors and colleagues” (Ajjawi & Higgs, 2008). Socialization with mentors and peers is also crucial to challenging learners’ preconceived values and behaviours. This often occurs during professional schooling; however it also occurs in the workplace. “Students already have their own sets of values and beliefs, which may change during the socialisation process to reflect the values the profession holds in high esteem. The change in values will lead to a change in behaviour and to the formation of a professional identity” (Ajjawi & Higgs, 2008). In the long-term care setting, because of isolation, there are no mentors or peers to challenge or to model attitudes, values and behaviours; this may have a negative impact on the professional socialisation of physiotherapists in this field.

Another important aspect of professional socialisation is professional or social regulation. As an individual learner, one is not always capable of assessing his or her own limitations or gaps in knowledge. This was a conclusion in Eva & Regehr's (2005): "Self assessment does not appear to be a stable, global skill that is easily acquired or developed but rather it is situationally bound and context specific; therefore, feedback from 'reliable' others is necessary to inform our ability to judge our actions and decisions". Physiotherapists in long-term care lack such *reliable others* and the feedback loop they offer. This may negatively influence their ability to critically reason and reflect on their practice. Social regulation and professional socialisation are lacking and this is consistent with the conceptual representation of physiotherapist working in long-term care.

### **Difficulties with Knowledge Acquisition, Construction and Translation**

Physiotherapists working in long-term care have difficulties with knowledge acquisition, because they lack opportunities for formal education, student training and research uptake. Few practicing long-term care physiotherapists reported working with physiotherapy students during the students' professional schooling. And while many physiotherapists reported a need for more courses and professional development activities on geriatric care, only a low percentage actually participated in formal education and certificates of achievement in geriatrics.

Physiotherapists also have difficulties with research uptake. It was clear in past studies that literature searches were not the preferred source of information for physiotherapists to gain knowledge (Rappolt and Tassone, 2002, Hall, 2005). One would anticipate that, with increased access to databases and search tools, this information would be accessed with greater frequency. However, physiotherapists are accessing internet information at a greater frequency than peer

reviewed information. Social regulation by professional bodies and peers, which would push physiotherapists to prefer peer-reviewed information, appears to be lacking.

Knowledge construction is also difficult to achieve in the long-term care setting. Cotter & al. (2004), reported that there is a lack of knowledge and research focusing on geriatrics in healthcare. To ensure there is content available for the geriatric courses, research in geriatric physiotherapy needs to be completed. However, only 6% of surveyed physiotherapists reported participating in research on at least a monthly basis and 17% stated participating on at least a yearly basis. The lack of research may thus be linked to the low level of research participation. This situation is further complicated by the fact that research is usually focused on a unique intervention and not broad treatment approaches.

Knowledge translation is influenced by characteristics of the learner, however, simply possessing the appropriate characteristics does not always lead to a change in practice. Indeed, analysis in this study suggests that respondents had characteristics of lifelong learners, such as motivation described by Swisher and Page (2005) and self-efficacy described by Bandura (1997). A finding that may have implications on practice was that although physiotherapists reported being motivated to increase their knowledge, they were less motivated to change treatment approaches or techniques. When exploring self-efficacy, physiotherapists felt that they had control to change their practice, but felt less able to critically analyse their work environment and change their practice as a result. Knowledge translation is also affected by interpersonal networks for circulation (Lomas, 2007), therefore physiotherapists need social learning opportunities to gain and translate knowledge.

## **Informal Learning Through Communities of Practice**

Another theme that emerged was that Physiotherapists in long-term care prefer informal social learning. Physiotherapists in this study were more likely to participate in activities that were social in nature, such as personal experiences, professional contacts and in-services and educational rounds, which usually occur in settings with multiple therapists as part of communities of practice.

Physiotherapy practice culture is socially constructed knowledge and practices: “Working in a culture influences the learning of professional practice, including clinical reasoning. Culture is the medium through which people's understanding of work practices, their attitudes and behaviour (including critical thinking and decision-making) are learned and shaped” (Ajjawi & Higgs, 2008). Physiotherapy practice culture reinforces and influences individual behaviour, while at the same time the collective action of individuals defines that culture. Physiotherapy practice culture is unique to each work place because the context of practice, politics of practice and differing clientele.

Such informal social learning, however, requires participation in *communities of practice* (Lave and Wenger, 1991; Bleakley, 2006; Wilcock, 2009; Wenger et al., 2002). And physiotherapy practice culture can be seen as a community of practice. Collaborative knowledge production is based on participation and engagement in a community of practice, where learning is greatly enhanced by exchanges and collaboration with peers, colleagues, role models and patients. “The impact of the cultural and environmental context created and supported by the community (which includes health professionals, patients and caregivers) was found to influence the participants learning of clinical reasoning” (Wenger, 1998). Physiotherapists are seeking

learning that occurs in a social setting, where they are engaging and collaborating in communities of practice.

### **Lack of Access to a Community of Practice**

A related and crucial theme that emerges from this study is that physiotherapists working in long-term care do not have access to a physiotherapy community of practice. They are socially isolated, have limited interactions with physiotherapy peers, lack mentors, modeling and professional socialisation, and lack participation in communities of practice. While physiotherapists in the study reported being positively influenced by both interaction with both physiotherapists and other health professionals, they sought information more frequently from physiotherapy peers. This could imply that physiotherapists are placing greater value on information from peers and the perceived value of information is a key part of engaging and participating in a community of practice. Social learning theories (Davydov, 1995; Wenger, 1998) support the idea that participation in a community of practice is fundamental to learning; lack of access to communities of practice will therefore have a negative impact on the learner. Although, physiotherapists are not accessing communities of practice with other physiotherapists, they are interacting with the interprofessional team in the long-term care setting.

### **Nature of Communities of Practice**

The nature of communities of practice in the long-term care setting was another theme that emerged from the study. The majority of physiotherapists in this study report interacting with nurses and unregulated healthcare aids or personal support worker on a daily basis. This is in contrast to their limited interactions with physicians, occupational therapists, speech pathologists and dietitians.

In a previous study on social networks amongst multidisciplinary teams in long-term care in Ontario, the central role of the nurse was highlighted: “The potential power and influence of the higher status nurses is apparent in their linking position between all of the other subgroups [nursing team, healthcare aids and other health professionals]” (Cott, 1997). This study also reported health professionals’ frequent interaction with higher status nurses and limited interactions with one another. In a more recent publication, the Registered Nurses Association of Ontario’s newsletter on best practices in long-term care, a community of practice initiative in long-term care is described with no involvement of other healthcare professionals (2008). This leads the author to speculate that if there is a practice culture in long-term care, then it is one of nursing and only involves collaboration with other professions when needed because the nature of the work.

Another feature of the community of practice in long-term care can be seen through physiotherapists’ and other health professionals’ participation in team rounds and care conferences. Team meetings and care conferences usually occur on a weekly basis in long-term care homes, however half of the physiotherapists in this survey reported participating only monthly or less often. It is concerning that many physiotherapists are not participating in team meetings or care conferences, as these are forums where the therapists will have interactions with the interdisciplinary care team, patients and families. However, it is obvious in the response of the survey that these meetings are frequently occurring without physiotherapists. This may have a negative influence on the efficacy of interprofessional teams, since the interaction of differing professional perspectives is thought to be required for optimal patient care.

### **Limited Interprofessional Community of Practice**

Physiotherapists who work uniquely in the long-term care setting only have access to a limited, interprofessional community of practice; however when they actually participate in interprofessional teams, they value their interactions.

Interestingly, physiotherapists in this survey reported feeling a part of the workplace culture; however, not all their interactions reflected this. In the long-term care environment, health professionals do not all work on the same days or the same times (Cott, 1997). There are few to no meetings with all health professionals present to discuss practice issues. It seems as though physiotherapists are working in the long-term care environment, but not participating deeply in the workplace culture or community of practice.

On the other hand, when asked how the interactions with the interdisciplinary team affect their professional development, physiotherapists reported that it broadened their scope of information, enhanced their knowledge and helped them achieve more for the resident. The literature review described the difference between interprofessional education around roles and responsibilities (Currant et al., 2007) and working towards patient outcomes through communities of practice (Wilcock et al., 2009). The author believes that the interaction with the interprofessional team helps to clarify roles and responsibilities of each profession; however the interdisciplinary teams do not always work together on common goals and or projects to enhance patient care. Therefore interprofessional interactions may have a limited an impact on physiotherapists' professional practice and development.

Limited access to an interprofessional community of practice is not consistent with the conceptual representation of physiotherapists working in long-term care. The author hypothesised that physiotherapists in long-term care settings would have access to an

interprofessional team and thereby participate in a community of practice that would influence their professional development. It appears, however, that they have limited access to this community of practice and that they are seeking a community outside of the long-term care setting.

### **Access to External Communities of Practice**

A major theme that emerged through the analysis is that physiotherapists who work in multiple settings appear to access physiotherapy peers and communities of practices outside of the long-term care setting. More physiotherapists had interactions with their physiotherapy peers than anticipated at the beginning of the research process. There is, however, a notable correspondence between the numbers of those who reported working in other contexts and those who reported interacting with other physiotherapists on a weekly basis (in both cases, approximately 44%). Although the study cannot demonstrate that the therapists who work in other settings are the same as the ones who are interacting with other therapists, it seems likely.

The literature review demonstrated that motivated physiotherapists who are lifelong learners are more likely to seek and engage in communities of practice (Hall, 2005). An alternative interpretation could be that those who report interacting with other physiotherapists are actively seeking out a professional community of practice, regardless of where they work.

Access to social learning has been shown to be positive for physiotherapists; however, physiotherapists who access external communities of practice should ensure that they have a clear understanding of the differences between practices. They should also ensure that they are constantly reflecting on how participating in one community may affect the other.

Access to external communities of practice was not included in the conceptual representation of physiotherapists in long-term care. This is a new insight and must be

incorporated in the new model. This area may also be explored in future research, studying isolated healthcare professionals access to external communities of practice and the influence on their professional development and professional roles.

### **Role of Physiotherapists in Long-term Care**

The role of physiotherapists in long-term care needs to be better defined. When asked what could enhance their professional development in the future, physiotherapists answered greater clarity on their role in this practice setting. In communities of practice, each member has a sense of what their influence, engagement and participation has on the culture and community (Lave and Wenger, 1991). This is not the case in the long-term care setting for physiotherapists. Some physiotherapists report their role differing from one long-term care home to the next. If the practice culture in long-term care was better developed, there wouldn't be so many differences across settings. A third of physiotherapists report not having ability to control their work environment, leading one to think that they are not part of the decision making process and that they may not have the ability to influence their work environment. Lack of control or self-efficacy can impact the engagement and motivation which are part of belonging to a community of practice (Bandura, 1997).

Many themes emerged from this study, such as the isolation of physiotherapists working in long-term care, the absence of physiotherapy communities of practice, the lack of interprofessional communities of practice in long-term care, and also that physiotherapists are seeking external communities of practice. These themes, framed by insights from social learning theories, highlight some important challenges for physiotherapist education in long-term care settings. They also suggest a number of implications for practice, policy, education and future research.

## **Conclusion**

The following chapter takes a wider view and describes some of the challenges posed by these findings and the implications for policy and education. The third section articulates a new model of professional development, one based on this research and designed specifically for physiotherapists working in the long-term care setting. The fourth section will describe areas for future research.

## **Challenges**

As we have seen, there are many challenges associated with working in the long-term care environment that have a negative impact on professional development: physiotherapists working in isolation, lack of peers and mentors, difficulties with knowledge construction and translation, lack of student education in the long-term care setting, lack of communities of practice and physiotherapists seeking knowledge through social interactions in other practice settings. They are not, however, the only challenges. Compounding them are factors of 1) policy and regulations, 2) payment structures, 3) services delivery models and contracts, and 4) professional development guidelines from the College of Physiotherapists of Ontario.

### **Policies and Regulations.**

Currently all long-term care homes must follow the Ontario Regulations under the Long-Term Care Homes Act (2010). However the actual policies associated with the regulations are created by the individual homes or by the owners of multiple homes. Although the Ministry of Health and Long-term care audits compliance with the Regulations, not all homes are compliant in all areas all of the time. This creates subtle differences in service delivery and patient care. With regards to interprofessional practice, although policy may be in place to support these interactions and meetings, it is clear that it is not happening all the time in all long-term care

homes. Also, because the policy is written at each home, the role of physiotherapists in long-term care is not consistent.

### **Payment Structures.**

A prominent issue is that the current funding model does not support all of the regulations. The physiotherapy remuneration model is a fee-for-service model under which the fee allocated for each service is \$12.20. The expectation is that the physiotherapists assesses and treats all residents in the home. In contrast, physiotherapists in private practice have a billable rate hour of \$90-\$120. To ensure the financial viability of the Physiotherapy Services Contract providers, the focus of treatment is on frequency and not necessarily on quality. This may also negatively impact interactions with other healthcare professionals. Finally, the nursing associations have been lobbying the government for years to increase funding in the long-term care setting to improve patient care. The regulations have increased the accountability and services in the long-term care homes, however have not provided adequate funding to support these initiatives.

### **Service Delivery Models and Contracts.**

Another challenge expressed by participants in this survey is the provision of physiotherapy services in long-term care by physiotherapy service providers. Currently there are five large service delivery providers who hold most of the market share. As previously mentioned, these large service providers focus on frequency of service, rather than quality of service. Most long-term care homes sign up with these large service providers because they have more money based on the funding model and pooled resources, and therefore are able to provide more services, such as education to the homes. Participants in this survey reported they wanted a change in the funding model to support physiotherapy services: “changing funding to allow best

case treatment rather than emphasis on frequency of visits”. It is clear that the current funding model encourages frequency of visits over quality of visits.

Most of the large service providers have managers in charge of regions and multiple service locations and not all of these managers are physiotherapists. This model makes it difficult for managers to adequately supervise and mentor multiple physiotherapists and to assess performance, competency and quality of services provided.

Participants in this survey chose to use the open-ended questions responses to vent their frustrations with the physiotherapy service providers. Physiotherapists need a “forum to empower physiotherapists working for Designated Physiotherapy Clinics where monopolies now control most of the long-term care contracts so that physiotherapists don’t have a voice”. It is evident that the large physiotherapy service providers have control over the long-term care market and can chose to have a positive or negative impact on service delivery. However they are not currently able to supervise, mentor or support physiotherapists adequately.

#### **Guidelines from the College of Physiotherapists of Ontario.**

Finally, the College of Physiotherapists has developed a Quality Management Framework that includes the Professional Portfolio and audits of professional practice and professional development. In a section of the professional audit, the physiotherapists must demonstrate through their Professional Portfolio that they have completed professional development activities; however no individual activities are mandated. Isolated physiotherapists may choose professional development activities that do not include social learning. Although many challenges are present, there are measures that can be taken, such as mandating social learning, to enhance professional development in long-term care.

## **Implications**

This survey has explored professional development in the long-term care setting, highlighting the need for social learning and challenges associated with achieving professional development. It is clear that there is a deficit of social learning in the long-term care setting. If we accept that this is the most influential and sought out form of learning, then we must address this deficit in this setting. Based on this study, the author believes that this deficit could be addressed by action on the part of the following stakeholders: 1) professional associations and physiotherapists, 2) universities and researchers, 3) the owner of long-term care homes, 4) the physiotherapy service providers and, 5) the College of Physiotherapists of Ontario.

Firstly, physiotherapists and their professional associations must ensure that physiotherapists have access to social learning forums and geriatric courses, and they also must lobby the government for changes to the funding of physiotherapy services. These social learning forums could take the form of nights of education, videoconferencing, teleconferencing, monthly in-person meetings, or social media forums such as Facebook. The professional associations should also educate physiotherapists on the effects of isolation on their learning and clinical reasoning, as well as on strategies to counter its effects such as seeking professional social contact and peer support for their professional development.

In addition, the professional association should host and promote more courses with geriatric-specific content. To ensure that there is content for the courses that are aimed at the geriatric population and also in preparation for large geriatric population that is anticipated in Canada, researchers and universities should devote more funds and resources for research on the geriatric population.

Another important factor that must be addressed by physiotherapists, their professional associations and the government is the funding mechanism for the delivery of physiotherapy services in long-term care, which promotes treatment frequency and not necessarily quality. The author believes that the funding mechanism needs to be reviewed by all parties to ensure that funding promotes quality care and patient outcomes.

The owners of long-term care facilities should incorporate policies that ensure that the interprofessional teams are present at the same time and in the same location to discuss patient care and outcomes. The healthcare team should be present at patients' yearly care conferences and team meetings. These policies should be sought out during the Ministry of Health and Long-term care audits. There should also be government funding to support these initiatives to ensure successful adoption of interprofessional care in long-term care.

Physiotherapy service providers also need to ensure that professional socialisation is available to their therapists. Providers need to be accountable for assessing clinical competency, quality and performance of their therapists. They need to ensure they provide opportunities for professional development to their staff. The corporations in charge of service delivery in the long-term care setting should also support their staff through peer mentoring and supervision.

Finally, the College of Physiotherapists of Ontario should mandate or strongly recommend social learning activities for physiotherapists working in long-term care. This should be included in the professional audit process and should be a part of these physiotherapists professional portfolio. This should also be true for isolated physiotherapists working as sole practitioners or rural therapists.

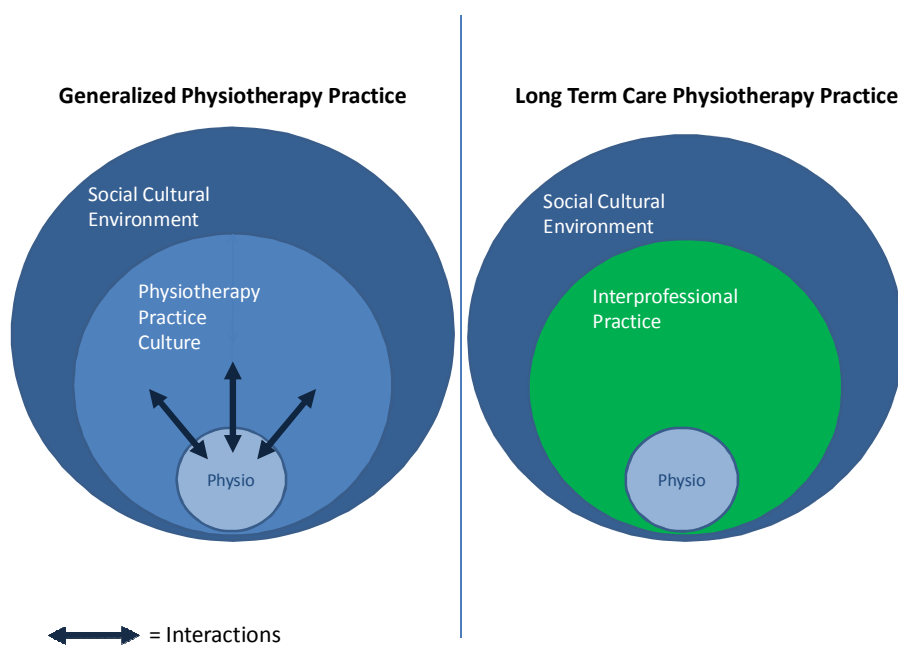
Although this research was focused on physiotherapists working in the long-term care setting in Ontario and only reflect this unique population, the results of this study may apply to

similar health care professions in which people are isolated from their peers, such as Medicine, Occupational Therapy, Dietetics and Speech Language Pathology.

### **Model of Physiotherapy Professional Development in Long-term Care**

The physiotherapists' role in most practice settings is defined by policy and a strong practice culture. In contrast, the role of physiotherapists in long-term care lacks clarity, a community of practice and professional socialisation. To represent the connection between the social cultural context and professional development of physiotherapists, two contrasting models were created at the beginning of the research to guide the hypothesis and the study.

Figure 1: Current representation of professional development in physiotherapy



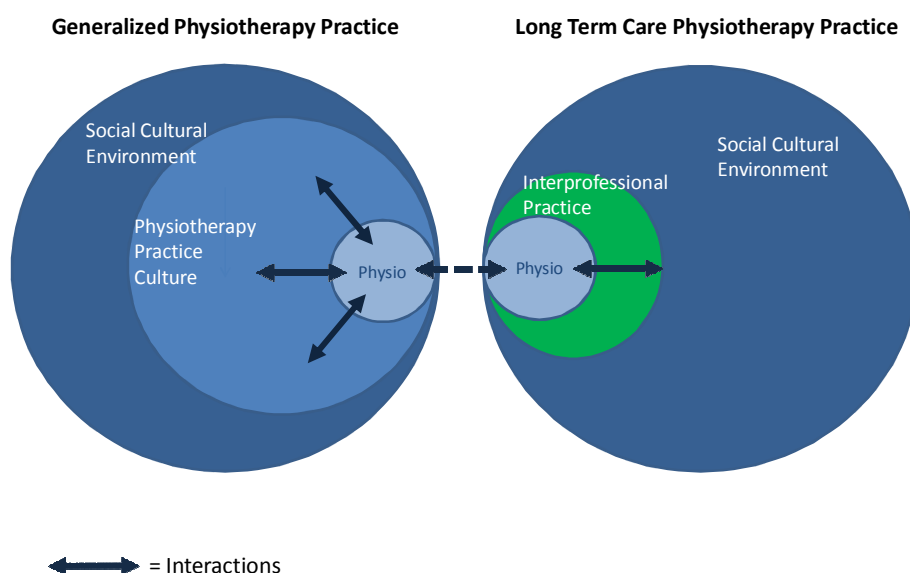
In the left half of the diagram, the individual physiotherapist learner is at the centre of the model. The second circle represents the physiotherapy practice culture, which surrounds the physiotherapist (individual learner) and constitutes his or her community of practice. Finally, the

largest circle is the overarching social cultural context which includes regulation and oversight by the College of Physiotherapists of Ontario.

To highlight the differences in the practice setting, a contrasting representation was developed on the right side. As on the left, the physiotherapist is at the center, representing the individual learner. Surrounding the physiotherapist is the interprofessional practice, or members of other professions, such as nurses, medical doctors, occupational therapists, health care aids and dietitians. It should be noted that the only difference between the two sides is that the physiotherapist is not supported nor engaged in a physiotherapy practice culture in the long-term care environment. However the physiotherapist is surrounded and affected by the interprofessional interactions with other healthcare professionals. Finally, as on the left side, there is the social and cultural context and its effects should be the same on the physiotherapist's professional development.

After completing the study, the conceptual model was revised to reflect the interpretations of this research.

Figure 2: A new model of professional development through professional socialisation in the long-term care setting



The diagram in Figure 2 represents the new model of professional development for physiotherapists through professional socialisation in the long-term care setting. The difference between this model and the first model is the size of the impact of the interprofessional practice culture and the sources of information the physiotherapists are seeking to support their professional development. As you can see in figure 2, some physiotherapists are gaining access to knowledge from peers in other practice settings or practice cultures. This information may or may not be appropriate in the long-term care setting. They are also influenced, to a lesser extent than anticipated, by the other healthcare professionals in long-term care. While this interaction may impact their practice, it does not shape professional skills and behaviours that are unique to the physiotherapy practice.

## **Contributions and Future Research**

The following study provided a broader understanding of the professional development of physiotherapists in the long-term care setting. It is evident however that certain findings could be further explored through future research.

Although there is research on professional development of physiotherapists, the following study provided specific study of physiotherapist's professional development in long term care. A unique survey was created to understand the professional development practices of physiotherapists in long term care and their interactions with the interprofessional team. This could be used by other researchers for future research.

This study provides support and demonstrates Lave and Wenger's (1991) theories on communities of practice. However, further research could be carried out on physiotherapists seeking outside communities of practice to determine their level of engagement in the community of practice: are they speaking to a member of a community of practice, are they legitimate peripheral participants as newcomers or full participants as old-timers or masters in the outside community and to determine the effect on their professional development.

A more in depth analysis of the effects of interprofessional interactions on professional development should be conducted. This study could include the observation of interactions and a detailed analysis of professional development activities occurring after these interactions. Professional development activities could be recorded through chart audits, journaling or through interviews.

The author also believes that a study should be undertaken to understand the implications of working in multiple practice settings on the professional development of

healthcare workers and the effects this has on their participation in a community of practice, attitudes, values and behaviours.

Another study could focus on self-reflection after interprofessional interactions and the impact on direct patient care. This study could be completed through direct observation of interactions and chart reviews for a better description of change in practice.

Finally, the College of Physiotherapists of Ontario should monitor the frequency of participation in their published list of professional development activities. This could provide a baseline for further research into professional development of Physiotherapists in Ontario.

### **Study Limitations**

The limitations in the study include instrumentation, survey dissemination and sample size. The survey was created for this study and although it was reviewed and piloted, there may still be some issues surrounding validity and reliability of all questions. The survey was developed respecting existing principles and guidelines on survey construction in the literature. The information obtained by the survey method may also be different from information that could be obtained by direct observations and interviews. Because of the choice of survey method, there is also a limitation of non-response bias. The study can also be subject to the bias of the researcher; to minimize this, the data was reviewed by a third person and biases were discussed in the text. The study results are only valid for physiotherapists who are working in long-term care in Ontario and who are members of the Canadian Physiotherapy Association (and therefore the Ontario Physiotherapy Association).

If the study were to be conducted again, the author would ensure that the questionnaires would be mailed or emailed to the entire census sample and to ensure maximal participation in the study. A question at the beginning of the survey should have been added to distinguish

physiotherapists working uniquely in long-term care and those working in multiple settings as this may have the greatest influence on the answers provided.

If this survey was to be carried out again, strategies to increase the number of respondents would be needed to enhance the statistical significance of some of the results. Unfortunately, the small sample size made it difficult to analyse the statistical differences between the responses of younger and older physiotherapists, as well as the responses of physiotherapists with more or less than 5 years experience.

Although there were some limitations in this study, we still have a broader and more detailed description of physiotherapists' professional development and the social nature of their learning in the long-term care setting.

### **Concluding Remarks**

I endeavoured this research to gain a better comprehension of professional development of physiotherapists in long-term care. Through the literature review, the collection of data and analysis, I gained a broader perspective of professional development of physiotherapists in long-term care and the challenges faced by physiotherapists working in this practice setting. It was evident that physiotherapists rely on informal social learning for professional development. They also need a physiotherapy community of practice or practice culture to enhance their clinical reasoning skills and provide social regulation.

This study started with the premise that physiotherapists who work in long-term care are isolated from their physiotherapist peers but had access to a community of practice or professional culture amongst the interprofessional team. The premise was the basis for the two research questions in this study:

1. What are the ways in which physiotherapists in long-term care settings engage in professional development?
2. What effects do the absence of a professional physiotherapist practice culture, and the presence of interprofessional interactions, have on the professional development of physiotherapists?

In pursuing the research questions, the data derived by the physiotherapist's responses to the survey suggests that physiotherapists are engaging in professional development in many ways; however they prefer professional development activities that are social in nature. The results of the survey support the hypothesis that there is an absence of physiotherapy practice culture in the long-term care setting, and highlights how physiotherapists are adapting to this absence. A major theme that emerged in this study is that physiotherapists are seeking external communities of practice in response to their absence in the long-term care practice setting. Their interactions with interprofessional teams had a limited effect on their professional development; however it provided them with more breadth of information regarding their clients. The primary implication of this study is that the College of Physiotherapists of Ontario and professional physiotherapy associations must recognize the social aspect of learning and they must incorporate social learning in professional development activities and standards. All stakeholders must support social interactions of these therapists to enhance their professional development, patient care and outcomes.

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## Appendices

## Appendix A

### **Survey of Professional Development of Physiotherapist working in long-term care facilities**

The purpose of the following survey is to investigate and develop a greater understanding of professional development practices of Physiotherapists working in long-term care facilities amongst interprofessional teams.

The Ontario Physiotherapy Association has agreed to email this invitation directly to its members. The research team will not have access to any personal contact information of any physiotherapists, whether they choose to participate or not. If you agree to participate in this study, your confidential answers will be conserved for a period of 5 years in a secure location by the project supervisor, in accordance with the University of Ottawa rules.

Please answer all of the questions as honestly as possible. If you don't complete your survey, your answers will be excluded from the study. But once you have completed the survey, you will be unable to opt out of the study. You may ask questions of the researcher at any time and you may refuse to answer any of the questions without any negative consequences.

#### Demographics:

##### Gender:

- Female
- Male

##### Age Group:

- 21-25 years                       26-30 years
- 31-35 years                       36-40 years
- 41-45 years                       46-50 years
- 51-55 years                       56-60 years
- 61-65 years                       66 or more years

##### Highest Level of education

- Bachelors Degree
- Clinical Masters Degree
- Masters Degree
- Clinical Doctorate Degree
- Doctorate Degree

##### Specialisation:

- Arthritis Society of Canada Course
- Advance Practice
- Other (please describe): \_\_\_\_\_

Years of Experience as a physiotherapist

- 0-6 years
- 7-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 26-30 years
- 31-35 years
- 36 or more years

Years of experience in long-term care:

- 0-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 26-30 years
- 31-35 years
- 36 years or more

Professional Development Courses Taken (please check all that apply)

- Mackenzie
- Manual Therapy
- NDT
- Acupuncture
- Neuro-Mobilization
- Mulligan
- Myofascial
- Cardiorespiratory
- Sarhmann
- Vestibular Rehab
- Other: (please specify)\_\_\_\_\_

Professional Development

According to the College of Physiotherapists of Ontario, professional development is defined as: *continuing competence, a dynamic process requiring lifelong learning, the incorporation of new knowledge and skills into practice, and ongoing evaluation of practice. It also promotes professional accountability and ensures that the individual takes responsibility for his or her practice* (College of Physiotherapists of Ontario, 2008, p3).

How often do you participate in the following professional development activities? Please check the appropriate boxes.

(From the College of Physiotherapists of Ontario, Professional Portfolio Guide, 2009, p5-6)

	Daily	Weekly	Monthly	Yearly	On Occasion	Never
Achievements (Certificates, Qualifications)						
Attending conferences						
Critical incident analysis						
Formal education programs (Recognized educational institutions)						
Information from the college (College website, Communiqué)						
In-services education/rounds						
Learning from patients (Questions or conditions)						
Mentoring supervising						
Original published work (Journal articles, posters or abstracts)						
Personal experiences (Real experiences from which you learned something)						
Professional contacts (Learning from peers)						
Project work (Projects that contribute to your knowledge)						
Reading/journal club						
Research and development						
Student supervision						
Teaching						
Teleconferences						

Please read the following statements and rate them on the following scale.

	Strongly Agree	Agree	Disagree	Strongly Disagree
I consult my peers after challenging patient consultations				
I believe that being up to date is important				
I am a self motivated learner				
I am open to new experiences				

Please read the following statements and rate them on the following scale.

	Daily	Weekly	Monthly	Yearly	Never
I consult peer reviewed literature over the internet for new and up to date information					
I consult the internet for new and up to date information					
I read peer reviewed journals					
I have access to online academic databases					

Please read the following statements and rate them on the following scale.

	Always	Most of the time	Sometimes	Never
I am motivated to enhance my knowledge of geriatric specific resident care				
I am motivated to practice new skills in long-term care				
I am motivated to change my treatment approaches and techniques				
I reflect on my interactions with the clients in the workplace				
I reflect on my interactions with the clients outside of the work place				
When presented with a new diagnosis or problem, I reflect on my knowledge				

Please read the following statements and rate them on the following scale.

	Always	Most of the time	Sometimes	Never
I believe that I have control to change my practice				
I believe that if I implement change, it will have a positive impact on resident care				
I believe I have the control to change my work environment				
I feel that I am able to self reflect on my knowledge and seek information as needed				
I feel that I critically analyse and evaluate my experience and change my practice accordingly				

My professional development is negatively impacted by the following:

	Strongly Agree	Agree	Disagree	Strongly Disagree
Work Pace				
Time available at work				
Time available outside of work				
Cost of professional development activities				
Quality of professional development activities				
Work place demands				
Work environment				
Working with other physiotherapists				
Working within an interdisciplinary team				
Other (please describe)				

How often do you interact with the following group? Please check the appropriate boxes.

	Two or more times per day	One time per day	One time per week	One time per month	Less than one time per month	Never
Physiotherapists in your work environment						
Registered Nurses or Registered Practical Nurses						
Physicians						
Occupational Therapists						
Speech Language Pathologists						
Dietitians						
Health Care Aids or Personal Support Workers						
Non-Regulated Health Professionals (Recreation, Restorative Care, Dietary Care)						

What kind of interactions do you participate in with members of the interprofessional team (Physiotherapists in your work environment, Registered Nurses or Registered Practical Nurses, Physicians, Occupational Therapists, Speech Language Pathologists, Dietitians, Health Care Aids or Personal Support Workers or Non-Regulated Health Professionals)? How often do they occur?

	Two or more times per day	One time per day	One time per week	One time per month	Less than one time per month	Never
Face to face direct exchange						
Referral						
Communication notes						
Telephone						
Email						
Care conferences						
Team meetings						
Other						

Please read the following statements and rate them on the following scale.

	Strongly Agree	Agree	Disagree	Strongly Disagree
I feel that I am a part of the work place team				
I feel that I am part of the work culture				
I feel that my interactions with other regulated professionals enhances my professional development				
I value the interactions with other healthcare professionals				
I feel isolated from my peers				

Please read the following statements and rate them on the following scale.

	Strongly Agree	Agree	Disagree	Strongly Disagree
I modify my treatment or patient care and after interactions with the interdisciplinary team				
If I have a practice question, I will seek information from a physiotherapy colleague				
If I have a practice Question, I will seek information from an interdisciplinary colleague				

1. How do interprofessional interactions affect your professional development?

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2. What do you believe will enhance professional development in the long-term care setting in the future?

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## Appendix B

### Invitation to participate in the study – EMAIL

#### Description of Project

I am a graduate student at the University of Ottawa in the Faculty of Education. I am currently conducting a research project as part of the requirements for an M.A. in Education. My focus in this project is to investigate and develop a greater understanding of **professional development practices of Physiotherapists working in long-term care facilities**.

If you are a Physiotherapist working in long-term care, we would appreciate your participation in this study. Your participation in this project will require you to fill out a convenient online survey on “FluidSurvey” (see link below) regarding your professional development practices. FluidSurvey is a Canadian Online survey software with strict privacy and security protocols. They use encryption and other advanced technologies to secure your responses. Your answers will only be accessible to the research team, and even they will not have access to any personal identifying information. For more information on FluidSurvey’s privacy and security measures, please click on the following link: <http://fluidsurveys.com/about/privacy/>

The survey will take approximately 10-15- minutes. Your participation in the research is entirely voluntary and your responses will be anonymous.

Finally, if you wish not to participate in the study at all, you may simply ignore the link provided below.

By clicking on the following link and completing the survey, you have consented to participate in this study.

Link to survey: <http://app.fluidsurveys.com/s/professional-development-of-pts-in-ltc>

Any inquiries about the research study should be addressed to the research supervisor. Any information requests or complaints about the ethical conduct of the project can be addressed to the Protocol Officer of the Social Sciences and Humanities Research Ethics Board at the University of Ottawa, [Personal information removed].

Professor Supervising Research Project  
Dr. Angus McMurtry  
[Personal information removed]

Thank you in advance for your participation.

Principal Investigator  
Marice Prior  
[Personal information removed]

Should you wish to contact the Research Management Services regarding the study please find their contact information below

Responsable d'éthique de la recherche / Protocol Officer for Research Ethics  
Bureau d'éthique et d'intégrité de la recherche / Office of Research Ethics and Integrity  
Université d'Ottawa / University of Ottawa  
[Personal information removed]

## Appendix C

### **Survey Reminder – PT Professional Development in the long-term care setting**

If you are a Physiotherapist working in long-term care, we would appreciate your participation in this study. The focus in this project is to investigate and develop a greater understanding of **professional development practices of Physiotherapists working in long-term care facilities.**

Your participation in this project will require you to fill out an online survey on “FluidSurvey”, regarding your professional development practices. The survey will take approximately 10-15 minutes. Your participation in the research is entirely voluntary and your responses will remain anonymous.

By clicking on the following link and completing the survey, you have consented to participate in this study.

Link to survey: <http://app.fluidsurveys.com/s/professional-development-of-pts-in-ltc>

Any inquiries about the research study should be addressed to the research supervisor. Any information requests or complaints about the ethical conduct of the project can be addressed to the Protocol Officer of the Social Sciences and Humanities Research Ethics Board at the University of Ottawa, [Personal information removed].

Professor Supervising Research Project  
Dr. Angus McMurtry  
[Personal information removed]

Principal Investigator  
Marice Prior  
[Personal information removed]

Should you wish to contact the Research Management Services regarding the study please find their contact information below

Responsable d'éthique de la recherche / Protocol Officer for Research Ethics  
Bureau d'éthique et d'intégrité de la recherche / Office of Research Ethics and Integrity  
Université d'Ottawa / University of Ottawa  
[Personal information removed]

**Tables**

Table 1

Demographics of survey respondents by gender

Gender	Survey (n=48)	College of Physiotherapists of Ontario (n=455)
Female	88% (42)	65% (297)
Male	12% (6)	35% (158)

Table 2

Demographics of survey respondents by age

Age Group	Survey (n=41)	College of Physiotherapists of Ontario (n=455)
21-25 years	2% (1)	0% (0)
26-30 years	20% (10)	9% (39)
31-35 years	12% (6)	22% (99)
36-40 years	14% (7)	24% (108)
41-45 years	6% (3)	12% (53)
46-50 years	6% (3)	9% (43)
51-55 years	18% (9)	9% (40)
56-60 years	16% (8)	9% (39)
61-65 years	4% (2)	5% (22)
66 or more	2% (1)	3% (12)

Table 3

Demographics of survey respondents by level of education

Highest level of education	Survey (n=49)	College of Physiotherapists of Ontario (n=455)
Diploma	8% (4)	13% (69)
Bachelors Degree	59% (29)	69% (314)
Clinical Masters Degree	6% (3)	
Masters Degree	24% (12)	17% (76) Includes both Masters and Clinical Masters Degree
Clinical Doctorate Degree	2% (1)	
Doctorate Degree	0% (0)	1% (5) Includes both Doctorate and Clinical Doctorate Degree

Table 4

Demographics of survey respondents by place of work

Place of Work	College of Physiotherapists of Ontario (n=455)
Long-term care Only	56% (255)
Long-term care and Other	44% (200)

Table 5

Demographics of survey respondents by specialisation

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Specialisation (n=48)	
Advanced Clinician Practitioner in Arthritis	2% (1)
Advance Practice	0% (0)
Other	10% (5)
No specialisation	88% (42)

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Table 6

Demographics of survey respondents by years of experience as Physiotherapists

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Years of experience as a Physiotherapist (n=48)	
0-5 years	27% (13)
6-10 years	8% (4)
11-15 years	8% (4)
16-20 years	15% (7)
21-25 years	6% (3)
26-30 years	21% (10)
31-35 years	10% (5)
36 or more years	4% (2)

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Table 7

Demographics of survey respondents by years of experience in long-term care

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Years of experience in long-term care (n=48)	
0-5 years	50% (24)
6-10 years	27% (13)
11-15 years	10% (5)
16-20 years	2% (1)
21-25 years	10% (5)
26-30 years	0% (0)
31-35 years	0% (0)
36 or more years	0% (0)

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Table 8

Demographics of survey respondents by professional development activities taken to date

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Professional development courses taken to date (n=46)	
Mackenzie	67% (31)
Manual Therapy	63% (29)
NDT	22% (10)
Acupuncture	46% (21)
Neuro-Mobilization	15% (7)
Mulligan	37% (17)
Myofascial	28% (13)
Cardiorespiratory	33% (15)
Sarhmann	41% (19)
Vestibular Rehabilitation	26% (12)
Theraband Academy	24% (11)
Other	41% (19)

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Table 9

Demographics of survey respondents by professional development activities (From the College of Physiotherapists of Ontario, Professional Portfolio Guide, 2009, p5-6)

	Daily	Weekly	Monthly	Yearly	On Occasion	Never	Total
Achievements (Certificates, Qualifications)	0% (0)	0% (0)	7% (3)	37% (15)	49% (20)	7% (3)	n=41
Attending conferences	2% (1)	4% (2)	9% (4)	42% (19)	38% (17)	4% (2)	n=45
Critical incident analysis	5% (2)	12% (5)	7% (3)	15% (6)	27% (11)	34% (14)	n=41
Formal education programs (recognized educational institution)	0% (0)	0% (0)	0% (0)	23% (10)	48% (21)	30% (13)	n=44
Information from the college (College Web Site, Communiqué)	7% (3)	14% (6)	57% (25)	9% (4)	14% (6)	0% (0)	n=44
In-services education/rounds	5% (2)	28% (12)	44% (19)	12% (5)	9% (4)	2% (1)	n=43
Learning from patients (Questions or conditions)	51% (22)	28% (12)	14% (6)	2% (1)	5% (2)	0% (0)	n=43
Mentoring or supervising	34% (15)	9% (4)	20% (9)	18% (8)	18% (8)	0% (0)	n=44
Original published work (Journal articles, posters or abstracts)	0% (0)	0% (0)	19% (8)	0% (0)	30% (13)	51% (22)	n=43

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Personal experiences (Real experiences from which you have learned something)	36% (16)	32% (14)	14% (6)	5% (2)	14% (6)	0% (0)	n=44
Professional contacts (Learning from peers)	14% (6)	36% (16)	27% (12)	9% (4)	14% (6)	0% (0)	n=44
Project work (Projects that contributed to your knowledge)	0% (0)	0% (0)	14% (6)	25% (11)	45% (20)	16% (7)	n=44
Reading/journal club	2% (1)	7% (3)	41% (18)	5% (2)	25% (11)	20% (9)	n=44
Research and development	2% (1)	2% (1)	2% (1)	11% (5)	39% (17)	43% (19)	n=44
Student supervision	5% (2)	0% (0)	11% (5)	23% (10)	41% (18)	20% (9)	n=44
Teaching	10% (4)	7% (3)	21% (9)	7% (3)	31% (13)	24% (10)	n=42
Teleconferences	0% (0)	2% (1)	45% (20)	25% (11)	23% (10)	5% (2)	n=44

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Table 10

## Characteristics of lifelong learners

	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
I consult my peers after challenging patient consultations	57% (24)	38% (16)	5% (2)	0% (0)	n=42
I believe that being up to date is important	65% (28)	35% (15)	0% (0)	0% (0)	n=43
I am a self motivated learner	60% (26)	37% (16)	2% (1)	0% (0)	n=43
I am open to new experiences	70% (30)	30% (13)	0% (0)	0% (0)	n=43

Table 11

## Knowledge acquisition through peer reviewed literature

	Daily	Weekly	Monthly	Yearly	Never	Total
I consult peer reviewed literature over the internet for new and up to date information	2% (1)	23% (10)	44% (19)	19% (8)	14% (6)	n=44
I consult the internet for new and up to date information	2% (1)	42% (18)	49% (21)	7% (3)	0% (0)	n=43
I read peer reviewed journals	2% (1)	12% (5)	58% (25)	16% (7)	12% (5)	n=43
I have access to online academic databases	12% (5)	21% (9)	24% (10)	19% (8)	24% (10)	n=42

Table 12

## Motivation and self-reflection

	Always	Most of the time	Sometimes	Never	Total
I am motivated to enhance my knowledge of geriatric specific resident care	64% (25)	28% (11)	8% (3)	0% (0)	n=39
I am motivated to practice new skills in long-term care	51% (20)	33% (13)	15% (6)	0% (0)	n=39
I am motivated to change my treatment approaches and techniques	49% (19)	36% (14)	18% (7)	0% (0)	n=40
I reflect on my interactions with clients in the workplace	56% (22)	41% (16)	3% (1)	0% (0)	n=39
I reflect on my interactions with clients outside of the work place	45% (17)	21% (8)	34% (13)	0% (0)	n=38
When presented with a new diagnosis or problem, I reflect on my knowledge	72% (28)	28% (11)	0 (0%)	0% (0)	n=39

Table 13

## Self-efficacy

	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
I believe that I have control to change my practice	37% (14)	53% (20)	13% (5)	0% (0)	n=39
I believe that if I implement change, it will have a positive impact on resident care	37% (14)	61% (23)	3% (1)	0% (0)	n=38
I believe I have the control to change my work environment	19% (7)	54% (20)	27% (10)	0% (0)	n=37
I feel that I am able to self reflect on my knowledge and seek information as needed	42% (16)	55% (21)	3% (1)	0% (0)	n=38
I feel that I critically analyse and evaluate my experience and change my practice accordingly	27% (10)	65% (24)	11% (4)	0% (0)	n=38

Table 14

## Barriers to professional development

	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
Work Pace	18% (7)	38% (15)	36% (14)	8% (8)	n=39
Time available at work	28% (11)	56% (22)	13% (5)	3% (1)	n=39
Time available outside of work	18% (7)	54% (21)	23% (9)	5% (2)	n=39
Cost of professional development activities	18% (7)	51% (20)	26% (10)	8% (3)	n=40
Quality of professional development activities	3% (1)	31% (12)	54% (21)	13% (5)	n=39
Work place demands	21% (8)	46% (18)	31% (12)	3% (1)	n=39
Work environment	18% (7)	33% (13)	41% (16)	8% (3)	n=39
Working with other physiotherapists	0 (0%)	3% (1)	62% (24)	36% (14)	n=39
Working within an interdisciplinary team	3% (1)	0 (0%)	62% (24)	36% (14)	n=39

Table 15

## Frequency of interactions with the interprofessional team

	Two or more times per day	One time per day	One time per week	One time per month	Less than one time per month	Never	Total
Physiotherapists in your work environment	23% (9)	8% (3)	13% (5)	21% (8)	18% (7)	18% (7)	n=39
Registered Nurses or Registered Practical Nurses	68% (27)	18% (7)	8% (3)	5% (2)	2% (1)	0% (0)	n=40
Physicians	2% (1)	10% (4)	32% (13)	30% (12)	18% (7)	8% (3)	n=40
Occupational Therapists	10% (4)	5% (2)	30% (12)	20% (8)	28% (11)	10% (4)	n=41
Speech Language Pathologists	0% (0)	5% (2)	5% (2)	2% (1)	25% (10)	62% (25)	n=40
Dietitians	0% (0)	5% (2)	28% (11)	10% (4)	28% (11)	30% (12)	n=40
Health Care Aids or Personal Support Workers	70% (28)	20% (8)	2% (1)	5% (2)	2% (1)	0% (0)	n=40
Non-Regulated Health Professionals (Recreation, Restorative Care, Dietary Care)	57% (23)	20% (8)	18% (7)	0% (0)	5% (2)	2% (1)	n=41

Table 16

## Nature of interactions with the interprofessional team

	Two or more times per day	One time per day	One time per week	One time per month	Less than one time per month	Never	Total
Face to face direct exchange	85% (33)	5% (2)	5% (2)	3% (1)	3% (1)	0% (0)	n=39
Referral	26% (10)	15% (6)	31% (12)	23% (9)	5% (2)	0% (0)	n=39
Communication notes	33% (13)	33% (13)	15% (6)	4 (10%)	8% (3)	0% (0)	n=39
Telephone	15% (6)	23% (9)	36% (14)	5% (2)	8% (3)	13% (5)	n=39
Email	28% (11)	15% (6)	31% (12)	13% (5)	8% (3)	5% (2)	n=39
Care conferences	3% (1)	8% (3)	44% (17)	13% (5)	18% (7)	15% (6)	n=39
Team meetings	5% (2)	13% (5)	24% (9)	29% (11)	16% (6)	13% (5)	n=38
Other	18% (3)	18% (3)	18% (3)	12% (2)	6% (1)	29% (5)	n=17

Table 17

## Belonging and value of participating in an interprofessional team

	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
I feel that I am a part of the work place team	53% (20)	34% (13)	13% (5)	0% (0)	n=38
I feel that I am part of the work culture	42% (16)	39% (15)	18% (7)	0% (0)	n=38
I feel that my interactions with other regulated professionals enhances my professional development	47% (18)	47% (18)	5% (2)	0% (0)	n=38
I value the interactions with other healthcare professionals	66% (25)	32% (12)	3% (1)	0% (0)	n=38
I feel isolated from my peers	8% (3)	30% (11)	51% (19)	11% (4)	n=37

Table 18

Value of information provided by interdisciplinary team members

	Always	Most of the time	Sometimes	Never	Total
I modify my treatment or patient care after interactions with the interdisciplinary team	16% (6)	34% (13)	50% (19)	0% (0)	n=38
If I have a practice question, I will seek information from a physiotherapy colleague	38% (14)	35% (13)	27% (10)	0% (0)	n=37
If I have a practice question, I will seek information from an interdisciplinary colleague	8% (3)	34% (13)	58% (22)	0% (0)	n=38

Table 19: Categories and frequency that emerged from the following question: How do interprofessional interactions affect your professional development?

Responses	Categories	Frequency
1. Increase my knowledge and development, broadens scope of information, broader view and points you may not have thought of previously, broadens perspective, enhances my knowledge, enhances it, enrichment new/different points of view and knowledge bases, broaden and balance it, enhances my ability to provide quality care, broaden and enhance knowledge of a particular condition, learning	Enhances and broaden's knowledge and perspective	11
2. Positively, positively, positively, in a good way, strongly	Positively	5
3. Provide insight sometimes new perspectives, get to know resident in depth, provide multiple views of clients situations/solutions, give other perspective of care	Enhanced perspective	4
4. Think and act more professionally	Professionalism	1
5. Understand the impact of each profession, Help the patient achieve more with other professionals	Understanding professions	2
6. Assessing and treating the patient as a whole and not just therapy, assessing	Better assessments	2
7. Keep abreast of new practices	New practices	1
8. Stimulation and growth	Personal stimulation and growth	1
9. Affect the logistics of care, ie charting	Logistics of care	1
10. Do not affect my professional development	No effected	1

Table 20: Categories and frequency that emerged from the following question: What do you believe will enhance professional development in the long-term care setting in the future?

Responses	Categories	Frequencies
1. specific conferences related to long term, geriatric related conferences	Conferences	2
2. More course offered on that specific area of practice, more inservices, more professional development opportunities, teleconferences and inservices, geriatric courses, geriatric related courses, We need more courses studies focusing on geriatrics, LTC documentations, Ministry of Health regulations on LTC, more educational programs, education courses that combine nursing staff and physio staff together, Better educational programs with networking opportunities face to face, more geriatric courses, Webinars	Courses or other professional development activities	11
3. inter-disciplinary communication, more time interacting with multidisciplinary team, more interaction with staff, interprofessional interactions, Multidisciplinary meetings, team meetings [more time]	More interactions	5
4. reading up on current research, articles regarding geriatric research available in the literature, Increased research for that population, geriatric related reading	Literature and research	4
5. Electronic documentation	Electronic documentation	1
6. More staffing	Increased staffing	1
7. internet access, Making information more readily available	Information access	2
8. A more appropriately defined role of the physiotherapist, also a better definition for PT's role - every LTC PT has a different role compared to another, better recognition of our role and interdisciplinary connection with team, Respect for physiotherapists and knowledge of physiotherapy	Definition of the role of physio in LTC	4

9. interprofessional care planning	Interprofessional care planning	1
10. [If professional development activities] were offered in geriatric field and in my town or closer towns	Proximity of courses	1
11. LTC/RH/geriatric meeting opportunities with others [physios I think this is what the meaning is] working in same environment, Linking with hospitals, other homes, etc. in order to provide more PD opportunities	Networking	2
12. forum for making changes in LTC/RH for PTS who often work in isolation, forum to empower PTS working for designated PT clinics where monopolies now control most of the LTC contracts so that PTS don't have a voice	Forums for change	2
13. Changing funding to allow best case treatment rather than emphasis on frequency of visits, More financial resources to provide more effective treatments and increase staff ratios to residents, stop fee per visit so that patients can receive quality Physiotherapy.	Funding changes	3
14. Less ridiculous charting for Ministry requirements. 60% of my day is spent on a computer and not with residents	Charting requirements	1
15. I work in private practice and occasionally see clients in long term care - basically because they are not getting specific high quality PT in LTC, I see mostly CVA clients and the PT working in LTC do not have any specific training in this area - I try my best to pass on my knowledge to them - but they don't have any time to treat - they basically assess and pass off a generalized, non specific program to the patients. Residence receive PT in name only. Linking with hospitals, other homes, etc. in order to provide more PD opportunities	Quality of service	3
16. more time allotted for professional development, I see mostly CVA clients and the PT working in LTC do not have any specific training in this area - I try my best to pass on my knowledge to them - but they don't have any time to treat - they basically assess and pass off a generalized, non specific program to the	Time	1

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patients. Residence receive PT in name only

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