Exploring Physiotherapists' Understanding of the Bobath Concept in Education and Clinical Practice

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ABSTRACT

The purpose of this study was to explore how physiotherapists working in stroke care understand their role(s) in the context of clinical practice and how this is mediated by their post-licensure educational experiences. Specifically the study focused on their experiences with the Bobath Concept, a well-developed post-licensure neurology physiotherapy program. This study was oriented within sociocultural theory as a way to understand how the experiences and interactions of physiotherapists mediate their professional practice and their sense of professional identity in a way not previously studied in physiotherapy literature. In order to honour the voices of the participants, this study drew on hermeneutic phenomenology and used a principled data analysis tool to present an understanding of the interrelationships involved in stroke care from their perspectives. Four physiotherapists participated in this study by responding in writing and orally to a clinical case and participating in an in-depth interview regarding their professional roles and experiences. The findings suggest that these physiotherapists understand the Bobath Concept as a professional stance which informs their practice and contributes to an ethos of caring, which is reflected in the ways they understand their roles in clinical practice.

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CHAPTER 1: INTRODUCTION

Context

The purpose of this study was to explore how physiotherapists who work in the area of stroke care understand their role(s) within the context of clinical practice, and how this is mediated by their post-licensure educational experiences. As a senior physiotherapist with more than 15 years of clinical and teaching experience in stroke rehabilitation, I have a personal and professional interest in exploring the ways that physiotherapists view their role(s) in clinical practice. In particular, I was interested in investigating how the Bobath Concept, a well-developed post-licensure neurology physiotherapy program, is understood by physiotherapists and how this understanding is reflected in their physiotherapy clinical practice. The Bobath Concept highlights an integrated approach and recognizes the importance of assessing and treating each patient as a unique individual based on their unique expression of symptoms. It is a concept of assessment and treatment that is taught and practiced internationally.

My interest, both in conducting research and in the Bobath Concept, stems from a professional experience that had a profound effect on me. In 2000, the hospital where I work hosted a Bobath Concept Basic course with instructors from England, Germany and Canada. One of the patient volunteers on this 3-week course included a 34-year old Australian man who had suffered a left-sided cerebral stroke while conducting his doctoral studies at the University of Ottawa. His stroke had resulted in significant physical deficits. He was unable to walk and required assistance for getting in and out of his wheelchair, toileting and other activities of daily living. His health care team from another rehabilitation facility had determined that his recovery had plateaued, and they

were making plans for discharge. However, while participating in the Bobath course as a patient volunteer, his treatments led to further recovery, and he requested an assessment by the stroke team at our hospital. As the physiotherapy representative on the assessment team, I advocated on his behalf based on the progress I witnessed him make during the Bobath course. Our team agreed to admit him to our inpatient stroke unit. On the patient's request, he was assigned to my physiotherapy caseload. His 5-week inpatient stay at our hospital resulted in significant functional changes. By the time he was discharged back to his student residence at the University of Ottawa, he was walking independently with a cane, managing his personal care and using public transportation. However, he had limited use of his right arm. He resumed his doctoral studies and continued with outpatient physiotherapy treatment. He continued to make gains with his balance, endurance and right arm movement. This patient was a firm believer in the Bobath Concept as a treatment philosophy given his personal experience with a team of therapists who were experienced in the Bobath Concept.

Over the course of treatment, this patient taught me a great deal as well. He continuously challenged me as a clinician, and was influential in my decision to apply to graduate studies in order to study the Bobath Concept as it is experienced in clinical practice. He once stated to me that the Bobath Concept would change the world of physiotherapy and stroke rehabilitation, but that we needed to move beyond the limits that seemed to bind physiotherapy research studies and therefore prevented the Bobath Concept from being recognized for what it had to offer. I understand that he saw the value of the Bobath Concept from a patient's perspective, to which I agree having had the opportunity to witness some significant results of treatment based on the Bobath Concept.

I also am interested in considering the perspective of the physiotherapist and how the Bobath Concept influences us. Physiotherapists educated in the Bobath Concept report informally that this experience fundamentally changes their practice. As a clinician, I know that my experiences with the Bobath Concept have enabled me to develop and to progress patients further, resulting in better outcomes and recovery. Also, I have witnessed this influence in numerous other physiotherapists who have participated in Bobath Concept courses. In the context of an introductory course in qualitative research methodology, I was able to interview two physiotherapists with training in the Bobath Concept to explore their perceptions of what it means to be a Bobath-trained physiotherapist and how this perception influences their understanding of their role(s) in the rehabilitation of stroke survivors. The participants in the research study assignment clearly identified that they incorporate the Bobath Concept into treatment because of the results they achieve, which serves as sufficient evidence for them to continue to use this concept to guide their clinical practice. This small research study assignment contributed to the methodology of the present research study.

My past professional experiences have reinforced my need to know more about the Bobath Concept and how it affects the practice of physiotherapists. From my perspective, this is a matter of some urgency since the chances of suffering a stroke are increasing as the Canadian population ages (Heart and Stroke Foundation of Canada, 2006). In 2006, the Heart and Stroke Foundation of Canada estimated that more than 50,000 strokes occur every year and that approximately 300,000 Canadians are living with the effects of stroke. Of stroke survivors, 75% require rehabilitation treatment to address residual impairments and disabilities. A large part of that rehabilitation treatment

is provided by physiotherapists together with other members of an inter-professional team of physicians, nurses, occupational therapists, speech-language pathologists and psychologists. In stroke rehabilitation, physiotherapists address the physical and functional effects of stroke by facilitating recovery of movement control, mobility, balance and function.

In the present study, because I was interested in researching how the Bobath Concept is understood by physiotherapists and how it informs their clinical practice from the perspective of the physiotherapists, I designed a research study to address the following research questions:

1. How do physiotherapists trained in the Bobath Concept and working in the area of stroke care understand their role(s) within the context of clinical practice?
2. How are their post-licensure educational experiences reflected in the ways that they understand their role(s)?

Professional education of physiotherapists

In order to understand the educational context of physiotherapy, in this section I provide a brief overview of pre-licensure physiotherapy university education to understand how physiotherapists begin to be socialized into their professional practice. I then describe the available options for post-licensure physiotherapy neurological education.

Pre-licensure university education

Traditionally, all physiotherapy pre-licensure university programs share a similar framework. Coursework includes reading and lectures on disciplinary subjects such as anatomy, physiology and pathology and related clinical approaches including diagnostics, symptoms and treatment. In order to understand more about pre-licensure physiotherapy neurology education, I contacted three colleagues at the University of Ottawa, McMaster University and the University of Toronto respectively to learn about their neurology programs (see Appendix 1). The course descriptions in Appendix 1 share a generic course framework with emphasis on critical thinking and clinical reasoning. Each of my colleagues identified the Accreditation Council for Canadian Physiotherapy Academic Programs (ACCPAP), whose mandate is to oversee both a national exam and a core university curriculum, as guiding the development of the course curriculum at their academic institution. Each further explained that the specific content of physiotherapy pre-licensure neurology courses is also heavily influenced by the specialty knowledge and experience of the course instructor, access to clinicians working in the field for clinical teaching purposes, and course instructor treatment philosophy and background.

Adding to the development of disciplinary knowledge from the coursework, pre-licensure physiotherapy education includes a practical component. This involves practical sessions in which students are supervised to practice assessment and treatment using a "see-one, do-one" approach. In addition, pre-licensure physiotherapy education includes clinical placements in locations such as hospitals and community-based clinics. During clinical placements, students are supervised in practice by licensed physiotherapists for a 4-6 week period. Clinical placements constitute an important

aspect of physiotherapy pre-licensure practical education. They immerse students into the collective experience of becoming a physiotherapist including exposure to assessment, treatment and documentation techniques. Clinical placements also assist in the development of effective interpersonal skills required to interact with health care professionals, patients and families. Pre-licensure physiotherapy students are required to complete a certain number and variety of clinical placements to ensure adequate exposure to three major areas of physiotherapy clinical practice, which include orthopedics, neurology and cardio-respiratory.

Following completion of university coursework and clinical placements, eligibility for physiotherapy licensure requires successful completion of a 2-day multiple-choice exam focusing on disciplinary knowledge and an 8-hour structured clinical exam, which uses standardized patients and standardized evaluation. By the time of licensure, most physiotherapists recognize that their pre-licensure education has provided them with basic clinical competencies. At this point they are encouraged to participate in further educational experiences in order to develop their clinical expertise.

Post-licensure education programs

The College of Physiotherapists of Ontario Quality Management Framework (2007) mandates all licensed physiotherapists to develop and maintain a professional portfolio and utilize goal-setting tools to demonstrate ongoing professional development. Physiotherapy professionals describe themselves, and are socialized to be, life-long learners (Ontario Physiotherapy Association, n.d.; Price, 2000). Generally, physiotherapists make decisions regarding ongoing post-licensure education based on their clinical interests. Most physiotherapy post-licensure courses are similar to pre-

licensure courses, including didactic lectures and practical sessions to allow participants to practice hands-on techniques. While some aspects of post-licensure physiotherapy education, such as the orthopedic stream, have well-established educational programs, the neurology stream offers few. Appendix 2 provides a summary of established physiotherapy post-licensure education programs for neurology.

As seen in Appendix 2, there are four post-licensure physiotherapy education programs that focus specifically on neurological conditions including the Bobath Concept, Motor Relearning Program, Vestibular Rehabilitation and Systems Balance. Three of the programs, Motor Relearning Program, Vestibular Rehabilitation and Systems Balance, involve short courses using a standardized course program. The Bobath Concept is a well-developed post-licensure educational program for physiotherapists working in neurology that includes introductory and advanced level courses over an extended period of time. It is considered to be a problem-solving approach used in the assessment and treatment of individuals with damage to their central nervous system (Brock, Goldie & Greenwood, 2002; International Bobath Instructor Training Association (IBITA), 2008; Raine, 2006).

Based on the work of Berta Bobath, a British physiotherapist, and her neurophysiologist husband, Karel, the Bobath Concept emerged in the 1940s (Bobath, 1990). According to Berta Bobath, the Bobath Concept should be understood less as a definitive treatment program and more as a professional stance. In contrast to many other physiotherapy post-licensure courses, such as Motor Relearning Program, Vestibular Rehabilitation and Systems Balance, the Bobath Concept does not teach specific treatment techniques. Instead, the Bobath Concept focuses on the development of

physiotherapists' analysis and understanding of normal movement control. The Bobath Concept adopts an ecological perspective, which understands that consideration of the interaction of multiple systems acting on the patient's movement is required to effectively address their unique needs and as such, there is no standard treatment applicable to all patients with central nervous system damage such as stroke.

As can be seen from Appendix 2, the Bobath Concept offers a more expansive education compared to the three other education programs listed, each of which generally offer a few days of training. The Bobath Concept offers introductory as well as advanced courses for physiotherapists to further expand their skills. All Bobath Concept courses are based on guidelines established by an international governing body called the International Bobath Instructor Training Association (IBITA). As well, advanced courses in the Bobath Concept can be designed to address specific neurological diagnoses or specific symptoms addressed in physiotherapy. In the following chapter I will review existing literature on the Bobath Concept as it relates to stroke care.

CHAPTER 2: REVIEW OF RESEARCH

In this review of the research I begin with considering research studies in which the Bobath Concept has been compared with other neurological physiotherapy interventions to determine effectiveness. The majority of literature on the Bobath Concept primarily takes the form of this type of comparison study. Following this, I extend the review to consider systematic reviews of the Bobath Concept and articles related to physiotherapy study design and professional development as a way to provide a rationale for the present study.

Comparison studies involving the Bobath Concept

In an effort to determine whether treatment based on the Bobath Concept is effective, a number of stroke physiotherapy research studies have compared treatment based on the Bobath Concept to other treatment approaches (Langhammer, 2000; Lum, Burgar, Shor, Majmundar, & Van der Loos, 2002; Mudie, Winzeler-Mercay, Radwan & Lee, 2002; Platz, Eickhof, van Kaick, Engel, Pinkowski, Kolok, & Pause, 2005; Wang, Chen, Chen, & Yang, 2005). Langhammer (2000) conducted a randomized double-blind study looking at outcomes for patients treated using the Bobath Concept versus Motor Relearning Progamme (MRP), an approach developed in Australia that utilizes task-oriented strategies (Carr & Shepherd, 1987). This study showed that patients treated with MRP had shorter length of stay and improved scores on two variables, but that overall both treatment groups showed statistically significant improvements on most of the variables measured.

In another study, Lum and colleagues (2002) studied robot-assisted movement training in comparison to what was called conventional treatment for upper limb rehabilitation. The conventional treatment included treatment based on Bobath's original publications (Bobath, 1971, 1978). The authors of this study identified that both treatment groups made statistically significant improvements in the variables measured, but they also identified a number of study limitations including large differences in baseline measures of the patient participants (Lum et al, 2002). Also in 2002, Mudie et al designed a randomized controlled pilot study to compare 3 treatments used to retrain sitting symmetry, which included treatment based on the Bobath Concept, task-specific reach activities and feedback training. Although this study demonstrated support for the effectiveness of treatment based on the Bobath Concept as compared to the two other treatment interventions, the authors identified limitations of this study related to small sample sizes, and therefore cautioned against generalizing the findings.

Two studies published in 2005 compared the Bobath Concept to orthopaedic treatment (Platz, Eickhof, van Kaick, Engel, Pinkowski, Kolok, & Pause, 2005; Wang, Chen, Chen, & Yang, 2005). Platz et al (2005) compared a treatment intervention called ArmBASIS, a repetitive training technique to treatment based on the Bobath Concept to determine if one intervention was more effective in developing motor control in paretic arms of stroke patients. Patient participants were offered augmented treatment time in which either ArmBASIS or Bobath Concept treatment was provided. For this study treatment based on the Bobath Concept was provided by physiotherapists with no training in the Bobath Concept other than reading a study manual. The investigators used 3 outcome measures that assessed muscle tone and motor abilities of the arm. They

determined that ArmBASIS was superior to achieve better motor control in the short term but that there was no evidence for long-term benefits.

Wang et al (2005) used a single blind randomized controlled trial methodology to determine effectiveness of treatment based on the Bobath Concept versus what was termed an orthopaedic approach on stroke patients' movement. Treatment based on the Bobath Concept was provided by one of two physiotherapists with basic training in the Bobath Concept. Content of the orthopaedic approach included passive, active and resisted movements and repetitive practice of functional activities including transfers, bed mobility and gait within parallel bars. Their findings of this study were mixed in that the outcome measures used noted bigger improvements for the Bobath Concept group for some measures, but overall the authors did not find that one treatment was more effective.

As well as experimental studies, a number of larger review-based studies have investigated the effectiveness of the Bobath Concept. Luke, Dood and Brock (2004) reviewed studies of the Bobath Concept for post-stroke upper extremity treatment and found no differences between the Bobath Concept and other interventions used. The most recent review (Kollen, Lennon, Lyons, Wheatley-Smith, Scheper, Buurke, Halfens, Geurts & Kwakkel, 2009) to determine the effectiveness of the Bobath Concept in treatment included 16 out of 2263 possible articles based on predetermined criteria not elaborated on within the article. Their review found overall no evidence for superiority of the Bobath Concept but also concluded that there was no evidence available to support any approach as superior due to significant methodological shortcomings in the articles reviewed.

Paci (2003) conducted a systematic literature review to determine if there was sufficient evidence available to accept that the Bobath Concept is effective and whether it is more effective than other treatments for adults with stroke. A systematic literature review involves searching for and providing summary information on research studies of a specific topic that conform to strict criteria, such as study design and inclusion criteria, to ensure rigor of data studied as a way to make judgements about intervention efficacy. Of the 15 studies identified, Paci (2003) found no evidence demonstrating the Bobath Concept as an optimal treatment type, nor was there any evidence of its non-efficacy. He identified that:

> …physiotherapy depends on the expertise of the physiotherapists, their understanding of the implications of the theory on which the Bobath approach is based and upon the current framework of the approach at the moment of the study. (Paci, 2003, p.6)

In his statement above, it seems that Paci (2003) was attempting to articulate his concerns regarding the research to date involving the Bobath Concept and how results are interpreted as well as challenging researchers to consider the research context for future studies.

Studies calling for more research

A review of studies that compare the effectiveness of the Bobath Concept to other neurological physiotherapy interventions concludes that, to date, it is not possible to distinguish the efficacy of one approach over another due to inconclusive findings based on existing scientific research on the topic (Eich, Mach, Werner & Hesse, 2004; Langhammer, 2000; Langhammer & Stanghelle, 2000; Lum, Burgar, Shor, Majmundar &

Van der Loos, 2002; Mudie, Winzeler-Mercay, Radwan & Lee, 2002; Platz, Eickhof, van Kaick, Engel, Pinkowski, Kolok & Pause, 2005; VanVliet, Lincoln & Foxall, 2005; Wang, Chen, Chen & Yang, 2005). As well as reiterating the need for more research on the Bobath Concept, the authors in each of these studies identified a number of reasons to explain the apparent lack of evidence to support the Bobath Concept. These reasons included possible insensitivity of the outcome measures used to assess change, patient population heterogeneity as well as variability in therapist skill level and experience with the Bobath Concept (Wang et al, 2005).

A partial explanation of the inconclusive nature of the research findings may stem from the fact that, to date, the majority of research studies on physiotherapy interventions for stroke care have been large-scale studies that were not designed to understand clinical practice from the physiotherapists' lived experience. While some studies present only the experiment findings, a number of other researchers began to identify methodological reasons to explain why differences among the approaches were not evident (Paci, 2003; Wang et al, 2005; Luke et al, 2004; Kollen et al, 2009). A review of these studies reveals that much of the literature on stroke physiotherapy tends to use large-scale, randomized controlled trials in which the variables measured are extracted from the patient participants. The focus of these research studies is consistently patient-related, based on an assumption that patient outcomes are related to the efficacy of the physiotherapist.

Historically, physiotherapists have been professionally educated and guided to conduct research based on a medical model, which is guided by an empiro-analytical framework (Higgs & Titchen, 1995). Within the past 20 years questions have been raised as to whether an empiro-analytical medical model is sufficient for a number of health

professions, including physiotherapy (Parry, 1991; Richardson, 1992). Researchers have begun to suggest that the continued use of this paradigm is partly responsible for the dissonance between philosophical bases for clinical practice and research.

In the health science literature generally there is a tendency for research to be based on positivist assumptions which tend to be reductionist in nature, focused on single factors and therefore less attentive to contextual factors (Ahn, Tewari, Poon & Phillips, 2006). Thornquist (2001) describes the emphasis on positivist assumptions as a hierarchy, in that the patient is of less value compared to those factors that can be observed and measured. She goes on to argue that this leads to increasing decontextualization in which "relevant phenomena are removed from specific personal and social contexts" (Thornquist, 2001, p. 144). This argument is echoed by clinicians who consider the positivist paradigm as offering a narrowed perspective, one that offers limited applicability due to lack of understanding of the clinical context. Part of this clinical context includes understanding the physiotherapists' experiences and perspectives, yet there appears to be very little research oriented to this understanding.

In an extensive overview of research articles from 1966 to 2006 on the continuing professional development of physiotherapists, French and Dowds (2008) concluded that there is limited research into the effect of continuing professional development on physiotherapy practice despite the increasing importance placed on continuing professional development. In my own attempt to look at this literature, I focused a literature search on physiotherapists' post-licensure learning experiences. This search resulted in a limited number of studies that tended to focus on new graduates adjusting to clinical practice and issues around professional socialization (Miller, Solomon,

Giacomini & Abelson, 2005; Solomon & Miller, 2005; Tryssebaar & Perkins, 2001). The lack of literature related to physiotherapists' learning experiences may be due in part to the fact that a positivist paradigm doesn't fit with studies of individuals' experiences and thus rejects the uniqueness of human contexts (Manley, 1991). Schon (1983) has argued that professional practice requires a combination of different paradigms including those that are more interpretive in nature. It would appear that there is a growing need for health science literature to incorporate qualitative research studies as a way to investigate issues around topics such as professional development and professional practice.

In their 2007 article, Greeenfield, Greene and Johanson argued for increased use of qualitative research methods in physical therapy studies to facilitate a contextual and inductive approach that considers the "exigencies of clinical practice and unpredictability of human nature" (p. 45). The authors go on to argue that the use of qualitative research methods provides a mechanism to help understand the tacit knowledge involved in clinical practice that is key to patient care. This argument is in part related to the understanding that the notion of health is socially constructed and influenced by social, cultural, spiritual as well as physical factors (Jette, 2006).

Despite inconclusive findings in the research regarding its effectiveness, the Bobath Concept continues to expand and is currently used internationally by many physiotherapists working in stroke care (Davidson & Waters, 2000; Nilsson & Nordholm, 1992, Ogiwara, 1997; Stevenson, Barclay-Goddard & Ripat, 2005; Turner & Whitfield, 1999). This suggests that there is a need for research that will assist in more fully understanding how physiotherapists themselves experience and practice the Bobath

Concept in their work with stroke patients. Physiotherapists trained in the Bobath Concept perceive that how they are trained is unique and as a result, impacts on their clinical practice. This has not translated to adaptations in research methodology used for studies involving the Bobath Concept, nor has it translated into studies that focus on the experience of physiotherapists with the Bobath Concept. It appears that research designs typically used in physiotherapy studies have not allowed for, nor have they included the experiences and contextual variables of clinical practice. Therefore it would appear that research studying how the Bobath Concept affects physiotherapists' understanding of their role(s) in the context of clinical practice would be useful in informing future studies and their methodology to better reflect what they aim to study.

Rationale for the study: A sociocultural orientation

Presently the physiotherapy literature is lacking in studies that consider the perspective of the physiotherapist. Recently there has been a greater call for health science literature to incorporate qualitative research methods to address contextual factors involved in clinical practice. My own personal and professional experiences with the Bobath Concept, including informal reports from physiotherapists regarding the effect of their experiences with the Bobath Concept on their clinical practice led me to design a research study to address the following two research questions:

1. How do physiotherapists trained in the Bobath Concept and working in the area of stroke care understand their role(s) within the context of clinical practice?
2. How are their post-licensure educational experiences reflected in the ways that they understand their role(s)?

In order to address these research questions I adopted a qualitative research design. According to Denzin and Lincoln (2005):

> Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasize the value-laden nature of inquiry. They seek answers to questions that stress how social experience is created and given meaning. (Denzin & Lincoln, 2005, p. 10)

My focus on the experiences of physiotherapists and the meaning they give to their experiences in informing their clinical practice is an application of qualitative research as described above by Denzin and Lincoln (2005). This focus is one that is, to date, not highly represented in the physiotherapy literature, and not represented at all in physiotherapy literature related to the Bobath Concept.

Using a qualitative research design, I oriented my study within sociocultural theory. Sociocultural theory originated with the work of Russian psychologist, Lev Vygotsky (1978) and is based on the notion that human development and learning takes place through interactions in cultural, historical and social contexts, and those interactions are mediated by symbolic systems such as language as well as material artifacts. Research oriented by sociocultural theory adopts the view that knowledge construction involves a dynamic interdependence of social and individual processes. Vygotsky's genetic law of development states: "All higher psychological functions are internalized relationships of the social kind and constitute the social structure of personality" (as cited in Valsiner, 1987, p.67).

Following Vygotsky, Wertsch (1991) further developed the role of semiotic mediation as a way to connect the external, internal, social and individual worlds through social and individual functioning. Wertsch viewed action as a gateway to the analysis of

human mental functioning because he believed that humans come into contact with and create their surroundings based on the actions or activities in which they engage (Wertsch, 1991). Further, Wertsch noted that human action typically uses mediational means, which he called "semiotic mechanisms", to shape action, resulting in a fundamental relationship between the two. Semiotic mechanisms are representational activities used by an individual to assist in the appropriation of knowledge and can include unique tools and language specific to the context. In the case of physiotherapists semiotic mechanisms can include documentation methods and professional language. In turn, Wertsch proposed that these representational activities are linked to culturally shared systems and developmental activities. Given Wertsch's emphasis on a fundamental understanding that semiotic devices are used to mediate action, he suggested that certain aspects of mental functioning are tied to communication processes. As such, he emphasized the link between social, communicative processes and human mental processes. Drawing on the work of Bahktin, Wertsch argued that mental processes occurring within an individual, even in isolation, are the influenced by communicative processes. This position further developed the notion of voice as an important component of sociocultural theory, in which every utterance produced by an individual incorporates more than one voice, resulting in dialogicality or multi-voicedness.

Research oriented by sociocultural theory looks to understand how cultural traditions and social practices regulate and transform mental processes, and is therefore concerned with the cultural, historical and institutional situatedness of mediated action, including attention to how and why particular voices are more pronounced in certain settings. (Wertsch, 1991). This has led researchers whose work is oriented by

sociocultural theory to undertake studies of activity in situated contexts with a focus on the role of discursive practices in the development of knowledge. Bleakley (2006), a researcher in the field of medical education, noted that generally, the most common learning theories applied in health science education focus on the individual and do not consider the sociocultural context for learning. Sociocultural theory suggests that learners are influenced by social and historical contexts and that learning is distributed across people and artifacts through participation and collaborative knowledge production (Bleakley, 2006).

For the present study, I was interested in attending to the voices of physiotherapists as they described their educational and clinical experiences in stroke care, especially those related to the Bobath Concept, as a way to understand the semiotic mechanisms, or mediational means, they use in professional practice. In order to answer the research questions, this study adopted a perspective oriented within sociocultural theory. This perspective allowed me to understand how the professional and personal experiences of the physiotherapists mediate the activity of their professional practice and their sense of professional identity. At the same time it adopted a qualitative approach in order to understand the lived experiences of the physiotherapists from their perspectives. More specifically I drew on hermeneutic phenomenology since my focus was on understanding the experiences of the PTs from their perspective in a way that also considered my perspective as a researcher.

In order to respond to the research questions, data collection included 2 phases: 1) responding to a clinical case, and 2) participating in an individual in-depth interview. Full details of the data collection and analysis phases are described in the following

chapter. With respect to the in-depth interview I applied an adaptation of Gilligan's *Listening Guide* (Gilligan, Spencer, Weinberg & Bertsch, 2003) as an analytic tool. This allowed me to consider different aspects of the physiotherapist's responses in a principled way in order to provide a more nuanced understanding of their experiences, which aligned well with the notions of voice and mediation that are central to sociocultural theory. A more detailed description of the Listening Guide adaptation follows in the Methodology chapter. A visual representation of the conceptual framework developed for this study is presented in Appendix 3.

CHAPTER 3: METHODOLOGY

Since I was interested in understanding the experiences of the physiotherapists from the perspective of the physiotherapists themselves, the study design was based on a phenomenological approach (Creswell, 2007; Moustakas, 1994; Polkinghorne, 1983; van Manen, 1990). The goal of phenomenological research is to describe the essence of a phenomenon, which is derived from several individuals' lived experiences of the phenomenon (Creswell, 2007; Polkinghorne, 1983). This is a perspective that aligns well with sociocultural theory and its focus on voice as a mediational mechanism through which to inform learning and development within social, historical and cultural contexts. Phenomenology offers a way to give voice to the participant in attempting to understand, from their perspective, the meanings derived from their experiences.

Within a version of phenomenology based on the work of Edmund Husserl (Laverty, 2003), there is an assumption that the researcher's biases, experiences and personal judgement can be bracketed out, or suspended, in order to see, and therefore represent, the phenomenon clearly (Laverty, 2003; Polkinghorne, 1983). However, in this research, I did not assume that my biases and experiences could be bracketed out. Rather, I assumed that my own professional and personal experiences were an integral part of the study, and throughout the course of the research I acknowledged and reflected on the ways that they related to the study. Therefore I situated this study within hermeneutic phenomenology, which is described as:

> A descriptive (phenomenological) methodology because it wants to be attentive to how things appear, it wants to let thing speak for themselves; it is an interpretive (hermeneutic) methodology because it claims that there are no such things as uninterpreted phenomena. (van Manen, 1990, p. 180)

Hermeneutic phenomenology recognizes the assumptions and experiences of the researcher as integral to the interpretive process (Laverty, 2003; van Manen, 1990) and therefore aligned well with my perspective and offered to me a way to incorporate my experiences into the data collected and information gleaned from this study. Van Manen (1990) describes hermeneutic phenomenology as the study of lived experience, a reflection on experience that is lived through, and a search for the fullness of living, taking into account sociocultural and historical traditions that give meaning to our ways of being in the world. He suggests the word "thoughtfulness" as best describing phenomenology, as it involves "a heedful, mindful wondering about the project of life" (van Manen, 1990, p. 12). As such, van Manen suggests that hermeneutic phenomenology is a principled form of inquiry more than it is a research method. Van Manen (1990) considers hermeneutic phenomenological method as different from content analysis because he views phenomenology as being discovery-oriented. Therefore the method of hermeneutic phenomenology is seen as having a path that is discovered as a response to the question at hand versus a set of pre-defined procedures.

Assumptions of the researcher

I am a registered physiotherapist with over fifteen years of clinical and teaching experience in the area of adult neurological rehabilitation including stroke and acquired brain injury. I have taken numerous post-licensure physiotherapy courses to develop my clinical skills, including programs and certification in the areas of motor relearning, orthopaedics, myofascial release, craniosacral therapy, neuro-developmental therapy and fitness training for neurological clients. In addition, I have extensive post-licensure

training in the Bobath Concept and I am presently working to become a qualified Bobath Concept instructor. As a senior physiotherapist, I have teaching responsibilities associated with my day-to-day practice. I have supervised 18 pre-licensure physiotherapy students in clinical placement. I am both personally and professionally interested in understanding how physiotherapists experience their practice and how physiotherapists' post-licensure educational experiences are reflected in their practice. At the same time, I have particular interest in understanding how experiences with the Bobath Concept are reflected in physiotherapists' practice. In fact, it is my experiences with the Bobath Concept that motivated me to undertake this research since both my professional experiences and informal discussions with colleagues have highlighted a common perception that the Bobath Concept is a different approach in stroke care not yet documented in the research literature. One challenge for me as a researcher was to understand the biases or preconceived notions that I may have regarding the Bobath Concept and its influence on clinical practice. As a consequence, I kept a reflective journal throughout the research to record and reflect on these assumptions and biases and how they were a component of the interpretive process.

Participants

Participants in this study included 4 registered physiotherapists who had greater than 2 years of clinical experience in stroke care. The participants had post-licensure training in the Bobath Concept evidenced by participation in a Bobath Concept Basic Course in the Assessment and Treatment of Adults with Hemiplegia. They also had undertaken other post-licensure physiotherapy education evidenced by certificates of completion of those programs. To recruit physiotherapists for this study, I distributed a

recruitment text (Appendix 4) to all Ottawa-area health care facilities and private neurological physiotherapy practices. The recruitment text identified the goal of the study, inclusion criteria, number of participants needed and my contact information. In all cases, participants had opportunity to contact me with questions. Participants were selected on a first come, first served basis. During the recruitment process, I ensured that I had no formal or supervisory relationship with any of the participants.

Ethics and access

To ensure that ethical standards were followed in this study, I applied for ethics approval to the Research Ethics Board of the University of Ottawa. Ethics approval was obtained on April 14, 2010. Once participants had expressed their interest in volunteering for the study and had been completely informed about the study, I asked each participant to sign a consent form (Appendix 5) describing the purpose and format of the study, estimated time requirements to participate, a guarantee of anonymity and information on data collection, storage and use. The consent form requested that participants indicate their desire to receive a copy of the study results.

Data collection

This study included 2 phases, which included responding to a clinical case and participating in an individual in-depth interview. Four data sources in total were used: 1) participants' written response to the clinical case, 2) audio-recording of the clinical case discussions, 3) audio-recording of individual in-depth interviews, and 4) my own reflective research journal.

Responding to the clinical case

In order to learn about the experiences of physiotherapists with training in the Bobath Concept who work in stroke care and how these experiences inform their clinical practice, I started by having them respond to a typical clinical case. An established routine in physiotherapy practice is responding to a written clinical presentation of a client in preparation for meeting them face-to-face for a physiotherapy assessment. The clinical case used in this study is a tool that I developed based on my clinical experience. I distributed the clinical case to 3 registered physiotherapists, each with greater than 10 years of clinical experience working in stroke care, who verified its appropriateness. In this way, they also served as an expert panel. The input of these physiotherapists helped to ensure the representativeness of the clinical case.

Once participants were fully informed of the study and had signed the consent form, they were provided with the clinical case and its accompanying instructions (Appendix 6). In order to accurately reflect clinical practice, the physiotherapists were provided approximately 20 minutes to read and make notes on the information provided in the clinical case. In addition to their written response to the clinical case, I wanted to record the physiotherapists' oral commentary on their written responses, which took the form of a clinical case discussion and took place after they had written their notes on the clinical case. Appendix 7 includes an interview guide used to assist in structuring the clinical case discussion. I anticipated that these 2 data sources would provide me with information about physiotherapists' usual activities as well as a reflection of what their notes convey, what they attend to in a written clinical case and what is important to them

as clinicians. These 2 data sources were collected within a single time period of approximately 1 hour.

In-depth interview

In order to understand more fully the background, training and experiences of the physiotherapists and how they saw themselves in their clinical role(s), I conducted individual in-depth interviews with each of the participants. The focus of the in-depth interview was to develop a biographical profile of the physiotherapists' clinical and educational experiences and to engage them in discussion regarding how these experiences have influenced their understanding of their role(s) in clinical practice as a way to address the research questions posed in this study. According to van Manen:

> Use of interviews as a data collection method, when used in a hermeneutic phenomenological study serves as a means to explore and gather stories of lived experiences of participants as told in their own words (van Manen, 1997).

Each audio-recorded individual in-depth interview took approximately one hour and was conducted at a time and place of convenience for the participant. I made use of an interview guide (Appendix 8), but my aim was to engage in a collegial discussion rather than researcher-led interview. Therefore I allowed for flexibility within the discussion so that I could use probes to address emergent questions, issues or ideas. It was my expectation that the written responses to the clinical case, the clinical case discussions and the in-depth interviews would provide adequate data to address the research questions.

Reflective journal

Throughout the research study I maintained a reflective journal, which served as a way for me to reflect on and record my experiences, thoughts and insights throughout the research process. It allowed me to incorporate my perspective and voice into the process as it unfolded as a way to enhance the understanding of how practicing the Bobath Concept in physiotherapy clinical practice plays out. As well, the act of journaling assisted me in understanding the ways that my biases and assumptions were embedded in the interpretive process (Laverty, 2003). I wrote regularly regarding my experiences and thoughts as the study progressed, typically writing after meeting with the participants and during the analysis phase.

Analytic approach

Traditionally in qualitative research, a process called triangulation is used to validate a study's findings (Creswell, 2007). Richardson and St. Pierre (2005) have proposed that there are more than 3 sides by which to approach data, suggesting a process called crystallization. The prismatic imagery of a crystal suggests a multitude of dimensions, colours and angles from which data can be considered. Further, prisms contain properties of both internal reflection and external refraction, which can create different colours, patterns and arrays depending on the direction from which they are viewed. "Crystallization provides us with a deepened, complex and thoroughly partial understanding of the topic." (Richardson & St. Pierre, 2005, p. 963). I anticipated that the various data sources for this study as well as the different analyses used for each phase of the study would facilitate a process of crystallization.

In this study, the clinical case response analysis involved determining what the physiotherapists wrote in their notes of the clinical case and common themes in their commentary. The analysis of the in-depth interviews included using an adaptation of Gilligan's *Listening Guide* (Gilligan, Spencer, Weinberg & Bertsch, 2003) for the analysis of the in-depth interviews. The *Listening Guide* is a principled approach by which once can consider transcripts in specific ways. Gilligan et al (2003) suggest three different iterations of the transcripts: 1) "plot" to demonstrate the important elements of the topic for the speaker, 2) "I poems" to highlight how the speaker talks about herself in relation to the topic, and 3) "contrapuntal voices" to identify the presence of other, potentially contradictory, voices within their commentary.

The *Listening Guide* adaptation used for this study mirrors the steps suggested by Gilligan et al (2003). In the first pass of the data, the focus was on highlighting information pertaining to the plot or the important elements of the physiotherapists' experiences by their own account. The second iteration involved identifying the emotive expressions of the physiotherapists with regards to their experiences with the Bobath Concept as a way to be alerted to and have a sense of how they spoke regarding them, their interventions and their learning. Finally, the third pass through the individual in-depth interviews identified the multiple voices evident in the physiotherapists' text including those of patients and colleagues. This part of the analysis looked to address the research questions by attempting to understand the different layers of physiotherapists' expressed experience related to the research questions posed. The multiple readings and foci inherent to use of the *Listening Guide* would allow for a deeper understanding of the experiences of the physiotherapists which, when considered along with their response to

the clinical case, would allow for patterns to emerge through the multiple levels of interpretation brought into the analysis, each of which reflect one another, thus suggesting an element of trustworthiness.

In order to address trustworthiness in this study, a number of processes were undertaken. The clinical case was forwarded to three physiotherapists with extensive clinical experience for their assessment to determine that the clinical case was representative of a typical stroke case. As indicated each of the physiotherapists on the expert panel signed a form indicating their agreement of the representativeness of the clinical case. The participants were offered an opportunity to review their interview transcripts as a way to engage in member checking as well. They were asked to indicate their desire to receive copies of their interview transcripts on the consent form, which were sent to them in the mail. One of the four participants indicated a desire to review her transcripts but she offered no feedback or corrections to the researcher. Finally, the multiple data sources and the multiple analytical techniques (i.e. thematic analysis and application of the *Listening Guide*) also provided another means of ensuring trustworthiness.

CHAPTER 4: CLINICAL CASE RESPONSE -ANALYSIS & FINDINGS

Data collected during the first phase of this research study included physiotherapists' written notes on the clinical case, transcripts of their oral commentary on the clinical case and excerpts from my reflective journal. Data collection and analysis occurred concurrently so that I could integrate any emergent questions or themes into the subsequent in-depth interview with the physiotherapists or make use of my reflective journal to reflect on them. Traditionally, analysis methods used in phenomenological research include reading and memoing, describing and classifying significant statements, interpreting as a way to develop a description and representing the essence of the experience (Creswell, 2007). My goal in analyzing the data in this study was to represent the essence of the experience from the physiotherapists' perspective. In this study, I drew on a dynamic and interpretive process to develop a description of physiotherapists' understanding of their lived experiences and how these are reflected in their clinical practice. Based on van Manen's (1990) proposed method of phenomenological research this process involved studying the information provided by each of the data sources in order to identify emergent structural themes, which in turn became the content from which the analysis evolved.

The following sections will provide a profile of each of the physiotherapists who participated in the study regarding their educational and clinical background, followed by a description of each activity of the clinical case response phase of the study and presentation of the corresponding activity findings.

Participant profiles

This section introduces the reader to the 4 physiotherapists who volunteered to participate in this study. It should be noted that pseudonyms have been used to ensure participant anonymity.

Rosie graduated from Queen's University in 1989. She worked in a local children's hospital for the first 10 years of her career with a clinical focus on cardiorespiratory physiotherapy. She then transitioned into neurological community-based, private practice and has owned her own practice since 2008. Rosie has extensive post-licensure education in cardiorespiratory therapy, the Bobath Concept as well as many other approaches.

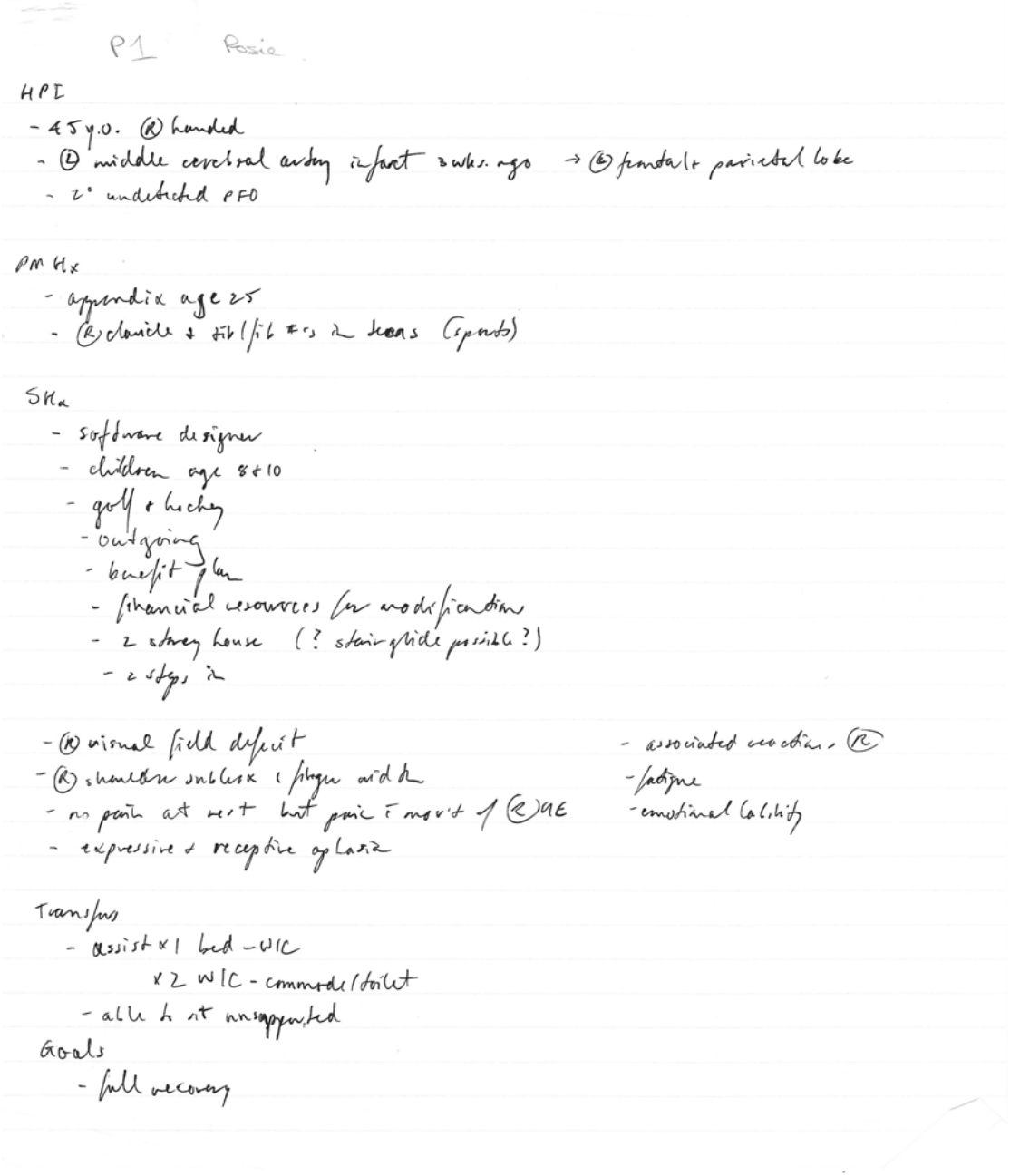
Faith is a 1997 University of Ottawa graduate. After graduation, she worked in a southwestern Ontario hospital then worked out-of-province in a small community hospital. Since returning to Ottawa a few years ago, Faith has been working in neurological private practice. Faith has focused much of her post-licensure education on neurology courses as her practice has been primarily in neurology.

Susan is a qualified Bobath Concept Basic course instructor. She graduated from the University of Toronto in 1981 and worked the first few years of her career in a Toronto rehabilitation hospital. She and her family relocated to Ottawa, and for a brief time, Susan worked in a local rehabilitation and long-term care facility. After this, Susan started a neurological private practice in the Ottawa area with a colleague, where she remained for about 9 years until her family returned to the Toronto area. Susan presently owns and operates her own neurological private practice in a suburb of Toronto. Susan has extensive post-licensure education in NDT, the Bobath Concept and myofascial release.

Mona graduated from Queen's College in Glasgow, Scotland in 1988, after which she worked for 2 years as a rotating physiotherapist within a large infirmary in Scotland. Mona came to Canada for the purpose of a 1-year work abroad experience beginning in a large teaching hospital in Toronto where her practice included stroke and HIV. She remained in this setting for 5 years before moving to Ottawa. In Ottawa, she worked in a number of contract positions within rehabilitation facilities before beginning to work with one of the local private neurological practices. Mona has a varied post-licensure education resume including research and quality management, NDT, the Bobath Concept, craniosacral therapy and myofascial release.

Part 1: Notes written in response to the clinical case

The first phase of this study included providing the physiotherapists with a written clinical case of a stroke patient. The physiotherapists were given up to 20 minutes to review the clinical case independently and to make notes on it as they would normally do in their clinical practice. Analysis of this data source therefore included listing what the physiotherapists took note of from the clinical case, and noting how the physiotherapists organized their notes from the clinical case. The following page includes an example of the notes written by one of the physiotherapists in the study, Rosie.


P1 Rosie

HPI
- 45 y.o. (R) handed
- (L) middle cerebral artery infarct 3 wks. ago → (L) frontal + parietal lobe
- 2° undetected PFO

PMHx
- appendix age 25
- (R) clavicle + fib/fib fxs 2 teens (sports)

SHx
- software designer
- children age 8 + 10
- golf + hockey
- outgoing
- benefit plan
- financial resources for modifications
- 2 storey house (? stair glide possible?)
- 2 steps in

- (R) visual field deficit
- (R) shoulder subluxx 1 finger width
- no pain at rest but pain + movt of (R) UE
- expressive + receptive aphasia
- associated reactions - (R)
- fatigue
- emotional lability

Transfers
- assist x 1 bed - WC
  x 2 WC - commode/toilet
- able to sit unsupported

Goals
- full recovery

The overall focus of the notes written by the physiotherapists was to copy what was considered by them to be important information. This included details such as the type and location of the patient's stroke, the patient's past medical history and social history. The data points noted by the physiotherapists were primarily those pieces of information that are diagnostic in nature, related to the patient's past and present medical

situation and his social history .The physiotherapists' written notes regarding the clinical case primarily took the form of terms copied from the clinical case, written in point form. Rosie focused her notes on what she considered to be important information under general headings provided in the clinical case, including history of present illness (HPI), past medical history (PMHx), social history (SocHx), transfers and goals, plus another seven points identifying some of the clinical case assessment findings related to the patient's perception, right shoulder subluxation, pain, fatigue, emotional lability, associated reactions and communication status. Faith made note of six items from the clinical case, all of which were again related to the pertinent points for her from the written case including that the patient is "right hemi". Faith broke down upper and lower extremity findings, noted that the patient had "sensory loss", and noted "right visual" but had no other notation along with these terms.

Mona's notes added an additional elaboration from the notes of the other physiotherapists. Mona's written notes included items that she highlighted to herself as flags or reminders. These included a note to consider the possible impact of the patient's past medical history on his present functioning. For example, Mona questioned whether the patient's remote clavicle fracture had an impact on his alignment, whether there was a pre-existing leg length discrepancy as a result of his past tibia-fibula fracture, and she flagged a potential scarring from his appendectomy. In a section called "functional retraining", Mona noted the patient's goals of skating and golf. In this way, it appears that Mona considers the patient's interests in her notes as possible ways to incorporate them into his functional retraining. In another section called "housing" she noted that the patient's home had stairs, some with railings and some without. In her notes Mona made

reference to a few issues that she planned to address with the patient, including providing education about shoulder subluxation and pain as well as providing a handout on emotional lability. Mona also identified some outcome measures she would consider for this case. One final note in Mona's written response included the term "neglect". During the interview Mona commented that she wondered if the patient had an issue with neglect (i.e. of the affected visual field or limbs) as she noted that the clinical case did not provide information about this possibility. It should be noted that Susan did not write any notes prior to the interview about the clinical case, although she certainly appeared to have taken note of details from the clinical case as she referred to them throughout the interview.

During the clinical case interview the physiotherapists commented on the nature of their notes. When probed about how she goes about using the information from the clinical case, Rosie actually comments on her lack of notes on the clinical findings from the clinical case, saying:

> I didn't take a whole bunch of notes on that bit. I noted it but I'm gonna kinda see what I think about that part of it. (Rosie, clinical case interview)

Rosie, like the other physiotherapists goes on to discuss that patient findings can be variable depending on a number of different factors, thus reinforcing her desire to assess the patient individually, certainly acknowledging the data from the written clinical case, but not having it supercede her own clinical findings in her assessment.

Further analysis of the written notes taken by the physiotherapists leads to the observation that there is generally no indication of treatment in their written notes.

Instead the physiotherapists note diagnostic information related to the nature of the stroke and information regarding the patient's past medical history and their present social situation. The only possible exception is Mona, who makes note of what she thinks may be possible educational needs for the patient and family related to shoulder subluxation, pain and emotional lability. It appears that Mona uses her written notes to both highlight important clinical findings as well as for the purpose of tracking reminders for her to consider during her assessment with the patient.

The lack of treatment-focused notes written by the participants suggests that, for these physiotherapists, treatment is not based solely on patient symptomology. This is further reinforced within the clinical case interview text in which each of the physiotherapists consistently expresses a preference to perform their own assessment and a desire to have the patient present versus relying solely on the information in the written clinical case. The expressed preference to perform their own assessment with the patient present over a reliance on the written information in the clinical case speaks to the physiotherapists' understanding that a patient's assessment findings are highly variable and influenced by many factors, and that their own assessment findings are necessary in order to more fully inform the patient's needs in treatment. Therefore, these physiotherapists have not, at the time of reading the written clinical case, formulated at treatment plan for the patient.

Each of the physiotherapists' clinical case discussions contain references to the different theoretical assumptions of the Bobath Concept, but their written notes do not. The fact that the physiotherapists wrote very few notes could be a reflection of their present work setting. All of the physiotherapists in this study work in a private practice

setting. Most of the physiotherapists noted that they typically do not receive much detail regarding new patients to their caseload, nor do they receive detailed information unless they request it themselves after their initial visit with the patient.

When I reflect on the content of the written notes, I am not surprised by what the physiotherapists wrote. The notes I write in preparation for a patient assessment look very similar to those provided in this study. I too may write reminder notes as questions to ask or specific items to assess for myself but generally these personal notes would not reflect any type of treatment plan or treatment focus. I see the purpose of these notes as highlighting for me information that I deem important as I prepare for my initial contact with a patient. Knowing the area affected and the source of the stroke triggers for me expectations about possible findings that I know are typical for that particular stroke. This further helps me to begin to formulate my approach with the patient in the assessment.

Beyond the source and type of stroke, the written information I note does not serve as the sole source of information on which I base my clinical practice, and I tend to re-assess most of the assessment items. This is partly due to College of Physiotherapists of Ontario requirements and partly due to my desire to observe, hear and feel for myself as a way to assess for differences or variability in the findings, as well as to give me a greater understanding of the patient's condition. There are many unwritten aspects to the assessment that are not captured in the clinical notes but once noted, remain in my head and body for subsequent sessions with the patient because they are so influential to how and what I do in treatment. These include factors such as how the patient responds to my personality, my approach, my voice, my hands and the environment. Medical notes aim

to provide a snapshot in time of the patient, which definitely serves a purpose, but is not in accordance with how I go about assessing and treating a patient, and I think that this notion is supported by the physiotherapists' comments more than their notes on the clinical case.

The tendency to retrieve the diagnostic, pre-existing medical history and social information related to the patient follows an ingrained practice of the physiotherapists, which is a practice that begins to be formed during pre-licensure education. Although the physiotherapists generally do not identify their pre-licensure neurology education as being highly influential regarding their clinical practice with stroke patients, it becomes evident from the written notes taken by them that the tendency for their pre-licensure education to focus more on assessment is indeed reflected in how they formulate their written preparation for working with the patient. The first part of Phase 1 in this study provided a way to begin discussion around how the physiotherapists understand assessment and clinical practice, which took place in the second part of Phase 1.

Key findings from notes written in response to the clinical case

Review and analysis of the physiotherapists' written notes on the clinical case shows that the physiotherapists tend to focus on noting diagnostic information related to the patient's present and past medical history as well as their social history, which includes information about housing, social and financial support and vocation. Generally the physiotherapists note little other information with the exception of possible further assessments they may consider doing in their face-to-face session with the patient. The physiotherapists make no indication regarding intervention in their written notes, nor do

they make reference to the Bobath Concept. It should be noted that in this study, only three of the four physiotherapists wrote notes in response to the clinical case.

Part 2: Clinical case discussions

All of the physiotherapists agreed that the clinical case mimics what they see in clinical practice. They commented that the clinical case provided more information than they usually receive in their practice setting, which is private, community-based practice. In terms of their verbal response to the clinical case, I noted that the physiotherapists did not seem to know how to begin the discussion in response to my questions related to how they formulated their response. Most of the physiotherapists either needed prompts to begin their verbal response to the clinical case or asked clarifying questions before beginning. Although as the researcher I question whether their difficulty had more to do with the wording of the question versus an inherent difficulty in verbalizing how they work clinically, it is worth noting that clinicians are rarely asked about how they conceptualize their assessments. More often they are asked only to provide the details of their findings. From the clinical case discussions, a number of themes emerged which demonstrate how the participants view their clinical practice. The themes identified in turn informs a response to the research questions which sought to explore how neurological physiotherapists trained in the Bobath Concept understand their role(s) in clinical practice and how this understanding has been influenced by their post-licensure educational experiences. The three main themes identified and elaborated on in the following pages include: 1) presence of the patient, 2) whole-person focus, and 3) assessment and treatment.

Presence of the patient

The first theme relates to the physiotherapists' preference to have the patient present for assessment versus relying on the written assessment finding information provided in the clinical case. The physiotherapists consistently commented on wanting or needing the patient present to feel fully able to respond to the clinical case. Rosie talks about the fact that she is interested in the written clinical findings but more for comparison purposes to her own findings as a way to determine if there are differences and possible reasons for any differences.

> So if I'm faced with a chart that's filled with others' clinical observations, I certainly do look through them and if there's something particular that jumps out at me then I would note it…I really want to see that for myself because that's really gonna change depending on you know, what sort of environment you're in, is it noisy, is the person having a bad day, are they nervous or upset, are there other things going on around them. (Rosie, clinical case interview)

In her discussion, Rosie acknowledges the written clinical findings, but highlights how various factors can influence findings, leading her to want to perform her own assessment. Faith's comments echo those of Rosie as she describes her desire to conduct her own assessment as a way to glean more information about the patient, again recognizing that the written findings can be dependent on other factors.

> I need the patient here…to try to umm, assess him better I guess…this is a good general picture but I'm not sure exactly where I would go. I'm like, well it depends on a lot of things… (Faith, clinical case interview)

In Faith's response, she uses the term "general picture" to describe what the written clinical case findings offer. This speaks to a level of specificity that Faith prefers in her assessments. Susan and Mona make similar comments about their preference to perform

their assessment and to have the opportunity to make their own observations as these observations provide them with important information.

> I guess because I am visual I've got the man in my head (laughs)… (Susan, clinical case interview)

> I don't go with what I read, I go with what I clinically see…. (Mona, clinical case interview)

As revealed in these excerpts, the physiotherapists identify their preference to perform the patient assessment themselves for the purposes of making their own observations, which serve to further inform their overall understanding of the patient and his movement, including the effect of various influences. As the therapists talk more about their response to the clinical case and the type of information they would look to gather in their assessment or what they see as potentially missing from the clinical case information, they provide insight into why they so strongly desire to have the patient present. They discuss issues around a lack of specificity of information provided in the written clinical case as well as an absence of the type of information that they would seek within their own assessment of the patient. In each of the following comments by Rosie, Faith and Mona, there is reference to a lack of specificity around the qualitative aspects of the patient's movement control.

> …it did note that he has difficulty turning over but that's not specific enough to me in terms of what the difficulty is… (Rosie, clinical case interview)

> …I need to know more…it's great information but I'd like to know how he's, how he's sitting…it doesn't tell me enough. (Faith, clinical case interview)

> …It doesn't tell me the quality of movement, which is related to efficiency of movement, but I would get that from my own assessment. (Mona, clinical case interview)

These comments demonstrate that the physiotherapists are interested in information beyond which that is generally provided in an assessment using typical assessment tools related to a patient's functional capacity. Their clinical interest goes beyond whether a patient is capable of performing a movement and focus on understanding the movement strategies that the patient uses in order to perform the movement. As Mona states above, she equates quality and efficiency of movement. These physiotherapists understand that improving a patient's movement efficiency will also lead to better balance, safety and greater functional ability. For these physiotherapists the patient's presence is paramount in order to capture a more complete picture of the patient's issues, which for these physiotherapists is focused on qualitative aspects of the patient's posture, alignment and movement. As these physiotherapists are biased to assess movement, it appears that the more objective assessment findings from the written clinical case are of limited value to them and to how they go about determining their interventions.

Whole-person focus

The physiotherapists demonstrate a strong focus on the multi-system, whole person composite consideration of the human, and their attention to this notion is reflected in the ways that they assess and treat their patients. This notion comes up regularly within the clinical case interview text, as participants discuss how their approach, based on their experiences with the Bobath Concept, is more system-based and

less compartmentalized. The participants note that this system-based focus is one of their biggest changes to their clinical practice post-licensure.

> …for me it becomes about treating a human being, not about treating a knee or a stroke or treating a sore back…my post-graduate education has been more aimed at…looking at those functional movements and the components of that movement which we didn't really learn anything about in university.. (Rosie, clinical case interview)

Rosie identifies "treating a human being" and understanding movement control as a large focus of her post-licensure education and as something that has developed with her ongoing educational and clinical experiences. Her comments suggest that she has changed her focus from treating a diagnosis to treating a human based on the movement patterns they use, regardless of their diagnosis. In turn this leads to an overall more holistic understanding of how she practices clinically.

> The biggest difference I think is it's not system…the whole body system. The whole person…they definitely look at different things, opening my mind. (Faith, clinical case interview)

Faith's use of the expression "whole body system", suggests that she has a perspective that considers the interaction and influence of various systems on a patient and their movement. Susan discusses the same idea but expresses it in relation to some of the assessment tools used.

> I've come to realize that that doesn't always happen because on the basis of normal movement, we all move a little differently…a stage of recovery implies to me that a mechanical process has been put into place that's created it and I don't think we move that way. I think we need to assess individuals as individuals based on the basis of better movement control. (Susan, clinical case interview)

Susan's statement makes reference to the concerns she has with applying various functional outcome measures with standardized expectations to movement. She sees this as creating a "mechanical" view of human movement, which she sees as removing the individualistic nature of human movement.

Two physiotherapists use body diagrams in clinical practice. Body diagrams are a documentation format introduced in Bobath Concept courses as a way for therapists to begin to consider and document various systems in their clinical observation and assessment as a way to assist in their clinical reasoning for treatment. For a given patient a body diagram may be used to note temperature and appearance of the skin, alignment, underlying muscle activity and responses, and may be done at the beginning and at the end of a session as a way to monitor changes. Body diagrams allow for a more inclusive composite of the patient, which can be used along with the patient's feedback and can serve as a substitute for the written descriptions that most clinicians are accustomed to using in clinical practice. I now use body diagrams regularly in clinical practice although it took some time for me to integrate them into my work, partly due to the charting standards required of me as a hospital-based physiotherapist. I contacted our provincial physiotherapy college to request their review of my body diagrams along with my clinical notes to ensure that I met the provincial standards and their feedback was overwhelmingly positive. This led to an adoption of body diagrams in our hospital as accepted documentation. Today, the majority of physiotherapists working in neurology at my facility regularly use body diagrams in their charting.

Rosie is perhaps one of the most vocal participants in discussing the holistic nature of her clinical practice and she identifies that a whole-person approach is growing increasingly important as the population ages and overall patient complexity increases.

> I have a lady now who's had a stroke, she's had a knee replacement, she has arthritis and she say could have a fall and have a sprained ankle, so it's all about treating a whole human being and having the ability to assess how one uh, issue is related to another…so you know, it affects the way you look at a whole person. (Rosie, clinical case interview)

Rosie uses a specific clinical example above to illustrate her point the value that using a more integrated approach has for her in clinical practice. The fact that she identifies with specific clinical scenarios indicates how the approach has allowed her to consider her patients' multiple issues in treatment.

Within each of the clinical case interviews, there were comments made by the physiotherapists that highlight their perspective which is includes a holistic consideration of each patient. For these physiotherapists this holistic consideration includes an understanding of the influence of various systems acting together to affect how patients move and interact with the environment. The physiotherapists identified that this whole-person consideration has developed for them with experience and education, and it has had an impact on the ways they practice, including for some, the ways in which they document their findings. As well, this consideration leads the physiotherapists to rely heavily on their own assessment findings as they have fully adopted an understanding that assessment findings are more meaningful to them when accompanied by a context, which can be provided by noting possible influences on the patient findings. It appears that these physiotherapists strongly identify with a whole-person, multi-system approach to their patients.

Assessment and treatment

When asked about how they would begin to formulate a treatment plan for the patient portrayed in the clinical case, the physiotherapists provided few details of specific treatment. Instead, they focused on specific components of the patient's movement control that they would consider in treatment. The combination of few written notes, the expressed desire to have the patient present and the lack of specificity regarding treatment interventions indicates that for these physiotherapists, treatment is not based or focused solely on symptomology. Treatment, like assessment, for these physiotherapists tends to be more focused on the whole person composite, which is evidenced by the consideration of possible impact of the patient's past medical history on his present alignment and movement and consideration of the multiple factors that can influence how a patient is behaving and moving in a given session. This theme is further reinforced in the participants' responses to the question about developing an initial treatment plan for the patient, in that the participants describe a lack of boundary between assessment and treatment.

> There wouldn't have been a differentiation between treatment and assessment…the minute I start putting my hands on, I'm looking towards improve what I would potentially see..it becomes an assessment-treatment sort of program…so to say I would do an assessment and the next time I'm gonna start treatment…that's not the approach that I would take. My first assessment would last as far as I felt I needed to do it and then provide the treatment…and that would be continuous throughout the whole duration of the program. (Susan, clinical case interview)

Susan provides a clear picture of how she goes about incorporating treatment into her assessment and how the two activities are really not differentiated in her approach. Susan uses a continual, cyclical approach in which she makes her observations, offers an

intervention, assesses the response and continues to process from there. She identifies within this discussion that other physiotherapists tend to delineate assessment from treatment, which is acknowledged by dividing sessions accordingly. Susan's comment above demonstrates her understanding of assessment and treatment as being less differentiated and more fluid in nature, where one influences and informs the other. Faith speaks to the same idea, suggesting that she does not have a plan in place regarding patient treatment until the patient arrives and she has had a chance to observe and assess.

> …you know when it says treatment plan, it really depends on when I see them, kind of thing. It's not like I say okay they're gonna come in and we're gonna do quads over roll 10 times or sit to stand and then step up on a step…it depends on what they give me to start with…I never really have a treatment plan. Is that wrong (laughs)? My treatment is to assess as I go. (Faith, clinical case interview)

Again Faith suggests that her approach involves working with the patient in their present state, incorporating assessment with treatment and basing her intervention on her present assessment findings.

The responses provided by the physiotherapists above resonate with me as a physiotherapist for whom the Bobath Concept is integral to my clinical practice. I need to have the opportunity to try various interventions to see what works best for the patient that I have in front of me. Even my clinical progress notes are reflective of this clinical practice, as I tend not to write specific prescriptive treatment plans with numbers of repetitions but instead document according to the identified treatment goals for the particular treatment session, the interventions trialed and the result. In this way if I try an intervention that is not successful, then I document it as a reminder to not try it again. This documentation, in my opinion, allows for freedom of judgement on the part of the

clinician and does away with a technical, prescriptive approach to treating the patient. In my view, this approach is more responsive to the individual and it is challenging to me as a clinician to continuously problem-solve to improve the patient's outcome versus falling into an easy routine of creating a standardized exercise or treatment program.

Summary of clinical case response

Phase 1 of this study, which included the physiotherapists' clinical case written notes and discussion, sheds light on the physiotherapists' typical practice in preparing to do a stroke patient's assessment including how they use clinical information provided and their own notes. As well this activity enabled the physiotherapists to elaborate on their understanding of what they seek to discover in an assessment and the purposes that their assessment serves for them in clinical practice. The three themes identified from the components of phase 1 are closely linked and therefore, inform each other.

The participants first identified a desire to have the patient present versus considering the written information provided as their first indication of their strong focus on a whole-person approach which considers a multi-system composite of the patient in order to begin their clinical reasoning process to make decisions about ongoing treatment. This illustrates that, for these physiotherapists, treatment is not focused solely on the presenting symptoms of the patient, but is instead situated in the various multi-system influences on the patient and the resultant impact on their ability to function. The physiotherapists expressed that assessment and treatment is ongoing in their practice, with no delineation between the two. As a result, their treatment is also fluid and variable

depending on how the patient presents at the time they see the patient and how they respond to the intervention.

CHAPTER 5: IN-DEPTH INTERVIEW – ANALYSIS & FINDINGS

As described in the methodology section in Chapter 5, I used an adaptation of the *Listening Guide* (Gilligan et al, 2003) as a way to consider the individual in-depth interview transcripts. Using the *Listening Guide* allowed me to look at the interview data in 3 different ways and, by doing so, helped me to represent the essence of the physiotherapists' experience. It was my hope that, by using an adaptation of the *Listening Guide*, I would be able to more fully understand how physiotherapists view themselves and their role(s), how this has been influenced by their post-licensure educational experiences, and how their experiences with the Bobath Concept are evident within their discussion about their clinical practice. In this way, listening to the messages provided by the physiotherapists informed an understanding of how physiotherapists make meanings based on the points they note from the clinical case, how they select those points, what they do with those points to make decisions, as well as how their post-licensure educational experiences have informed their understanding of their role(s) and how they are represented in the context of clinical practice. In this way the *Listening Guide* allowed me to be attentive to the ways that the physiotherapists use language and how they make sense of their lives as an interpretive experience, which is considered vital in hermeneutic phenomenology (Laverty, 2003). Gilligan (2003) suggests that this multi-faceted consideration of the same transcript offers a more encompassing analysis of the individual. The goal of my adaptation of the *Listening Guide* used in this study was to present a more developed analysis of the physiotherapists' experiences in a way that has not previously been done with interview data in the physiotherapy literature. The

following sections will provide a description of the three iterations used for this study and discussion of the findings from the in-depth interview transcripts.

Professional roles and values of the practice

The intention of this iteration is to highlight the important topic elements embedded within the discussion. For the purposes of this study, I aimed to use the first iteration to uncover the physiotherapists' self-reported values of the practice of the Bobath Concept as a way to determine the ways in which they understand their professional role(s) in clinical practice. For example, I attended to the content aspects of their discussion including what they spoke about. In this way the elements of the practice of the Bobath Concept that are of value or importance to the physiotherapists could be identified. Within this iteration, there are echoes of the themes identified in the first phase, especially the whole-person and systemic nature of the physiotherapists' approach, which they identified as being guided by their experiences with the Bobath Concept.

Systemic approach

The physiotherapists attribute their experiences with the Bobath Concept as highly influencing the way they practice. Each of the physiotherapists in this study has a minimum of thirteen years of clinical experience primarily in the field of adult neurology. Each of them demonstrates an ability to reflect on their practice and in doing so, clearly and consistently identifies the effect of their experiences with the Bobath Concept on the ways that they practice clinically. A consistent message provided by the physiotherapists in both the clinical case interview and the in-depth individual interview relates to their recognition that the Bobath Concept is truly holistic in nature as it considers the

interaction and effect of multiple systems and multiple influences on a patient's movement, posture and activity. This notion surfaced in the clinical case interview of Activity 1, but in the in-depth interview the physiotherapists provided more descriptive and detailed information. They see this as a unique perspective offered to them as a result of their experiences with the Bobath Concept. Rosie identifies this as one of the changes to her clinical practice as a result of her experiences with the Bobath Concept.

> I think it's the fact that you're looking at the whole person that they're immediately engaged...and once you start to talk to them about the whole, about their whole body and how it works together, they will always say "you know what, I knew those things were related...So as soon as you start talking about their whole body and how it interacts, people get that and they feel that, and so then they're, then they're engaged in the process. (Rosie, in-depth interview)

In the above discussion, Rosie describes how her patients respond to her approach. She points out that the effect of this approach on her patients includes a more immediate and deeper level of engagement from them in treatment sessions. Rosie suggests that the way she can describe the integrated aspects of the patient's movement to them during their sessions provides the patient with a sense that Rosie is considering a more inclusive representation of the patient in a way that other physiotherapists do not.

The physiotherapists express that this whole-person, systemic consideration is a major development for them in how they conduct their clinical practice, and they clearly identify the Bobath Concept as being a crucial influence on their approach. Because they identify with the whole-person, multi-system approach and because they so strongly link this approach with their experiences with the Bobath Concept, they describe the Bobath Concept as being synonymous with a systemic and holistic approach.

> So it affects everything, every facet of physiotherapy is Bobath, should be Bobath if you think about it…that's what I think. (Faith, in-depth interview)

In her statement, Faith suggests that the Bobath Concept incorporates an approach that, for her, is integral to the entire practice of physiotherapy. From this statement, it becomes apparent that Faith believes so strongly in this systemic, whole-person approach that she believes it should be a common approach within all physiotherapy clinical practice. Later in our interview, Faith expands on this idea and specifically suggests that all physiotherapists should be educated in the Bobath Concept as part of their pre-licensure education.

Mona identifies the approach to movement analysis offered within her Bobath Concept educational experiences as being a critical influence on her clinical practice. She notes this aspect as being a defining component to her understanding of the Bobath Concept.

> …what I'd like to think is a consistency of qualitative movement analysis...That is Bobath and that will not change depending on…it doesn't matter how many courses I take. (Mona, in-depth interview)

Mona suggests in this excerpt that the focus on quality of movement in analyzing movement patterns serves as a critical and consistent aspect of the Bobath Concept for her. It is this aspect that, for Mona, is the common feature in all of her experiences with the Bobath Concept, including different course instructors, and it is this aspect that guides her clinical practice regardless of the therapeutic intervention she may offer.

In their discussions the physiotherapists make a strong connection between the Bobath Concept and a more fully integrative and holistic approach to their clinical practice. Given this connection, it is not surprising to see how the whole-person nature of the physiotherapists' approach informs their perceptions of their role(s) in clinical practice.

> My role….is basically to help them achieve function. Whatever that may be. Whatever they decide…that is my job is to help them to, to maximize their potential in terms of functional recovery. (Rosie, in-depth interview)

> I'd like to be able to maximize their functional capacity…and I want to maximize their movement capacity in such a way that you know, their movement becomes more efficient, they're more balanced and they're more effective in their daily life. (Susan, in-depth interview)

Rosie and Susan focus in their role descriptions on the part they play in assisting patients to improve their level of function and maximize their recovery potential. Use of the term "function" implies moving beyond addressing a specific impairment that a patient may present with to addressing how that impairment affects the patient's ability to manage within a broader context. In this way, they see their role as not simply to increase or modify the patient's movement, but also to address how changing the patient's movement will improve their overall effectiveness in that person's typical activities in daily life. This demonstrates a more integrative understanding of the role they have in their work with patients. Faith and Mona expand on this role description in suggesting other components to their role, such as education and community integration.

> My role……..is to…..assist with them to feel normal movement…My role is to educate them, is to encourage them, basically getting them back to what they could do before….as much as they can. (Faith, in-depth interview)

> Facilitator…of everything…and anything. Whatever that means to the client. What are their goals? What are their needs? And that is so individual. Education. Community integrator. What can you do to get them to become a member of society…not look at therapy being the only, the be all and end all of life. (Mona, in-depth interview)

In their descriptions, Faith and Mona identify a multi-faceted aspect of their role, which includes educating and advocating for their patients as well as assisting with community integration. Faith identifies the importance of encouraging the patient as he/she progresses in his/her recovery as part of her role as well. In another part of the interview Faith talks about the fact that therapy is hard work for patients and rehabilitation is generally a long journey, one that requires a positive attitude and perseverance. She sees herself as having a key role in helping encourage her patients to continue working along the journey. Mona sees community integration as being an important component that will allow patients to move beyond a "patient" role to one in which they see themselves as being able to function and contribute within the community at large. Mona uses the term "facilitator" as an umbrella term to describe the various activities she sees as part of her role, whether it is to facilitate a movement pattern using her handling skills, to facilitate the patient's understanding through education or to facilitate community integration through addressing the patient's movement-related issues in a functional way.

The common themes related to the physiotherapists' roles include terms such as facilitation, recovery, function, education and community integration. The use of these terms suggests that the physiotherapists view their role as moving beyond treating a symptom to consideration of how the symptom affects the broader realm of patient functioning within a social context for the purpose of community integration. So just as

the physiotherapists use an integrated, systemic, whole-person approach in treatment, they do so with a more integrated, systemic, whole-person understanding of their roles as physiotherapists working in stroke care, roles that incorporate a broader understanding of movement for the purposes of a larger social and functional context and, as such, are holistic in nature as well.

Sense of community

The physiotherapists in this study identify a connection between their experiences with the Bobath Concept and a sense of community that they share with other clinicians who have experience in the Bobath Concept. This sense of community and shared understanding is another suggested value of the practice of the Bobath Concept, one that the physiotherapists see as being unique to this approach. Each of the physiotherapists appears to highly value this sense of community and the connections they make with colleagues and course instructors. This aspect is important for the physiotherapists' ongoing understanding and integration of the Bobath Concept into their clinical practice. It should be noted that 3 of the 4 physiotherapists in this study have, at one time or another, been part of a local physiotherapy neurological interest group that meets monthly for the purpose of ongoing informal clinical education and sharing. The local neurological interest group had and continues to have an ever-changing population of physiotherapists who attend as able and according to their interests and needs.

The physiotherapists identify their experiences with the neurological interest group as well as their experiences with colleagues as being highly influential to their clinical practice. Mona specifically identifies the "neuro interest group" in her discussion.

> When I transferred up here and…I got involved with the neuro interest group...an unbelievable bunch of physios who were dedicated to their clients but dedicated to continuing their education, and sharing...that was a phenomenal time for all of us...So the courses were one component but it was the interest group that kept that, the practical component, the questions that you had, the, the, the problem-solving…they really worked beautifully together to take home what we learned on courses and apply it in everyday life…I've always learned from peers because peers are so important. I've always had mentors. (Mona, in-depth interview)

Although Mona includes the value she places on mentors and her peers in her own development, really for her the neuro interest group experiences seem to be instrumental to her learning and her clinical advancement. In the above statement, Mona suggests that although the courses were an important component of her learning, it has been the community offered within the neurological interest group that has assisted her to continue her learning beyond the limits of a course.

The physiotherapists use the term "mentorship" but use it in a way that describes a coaching or clinical expert/advisory role that colleagues have played in their development. Rosie identifies the value of working with colleagues who practice similarly in her ability to integrate the Bobath Concept into her practice once she had taken the formal course.

> So at about year 8 of my career I think, was when my colleague took the Basic course…And about 2 years later I took my Basic Bobath course umm, and uhh, was working uhh, in an environment where everyone was practicing the Bobath concept, so I had lots of people to mentor me. (Rosie, in-depth interview)

Rosie, who had come from a job where she was a sole practitioner, identifies the value for her that colleagues had on her ongoing development in the Bobath Concept. Later in our discussion, Rosie talks about the questions she had after her Basic course experience

and she attributes her colleagues with assisting her to integrate all she learned in the course into clinical practice. Rosie clearly identifies the value of working within a community of similarly educated and similarly minded colleagues in terms of clinical integration. Faith and Susan also identify colleagues and mentorship within their reflection although in slightly different ways.

> …then basically a lot of mentoring when I came to Ottawa...hands-on that was key for me so you know…that was, uhhh, a big thing to have other people treat me to know how it feels to be treated…so if I know how difficult it is, you know I know how difficult it is for my patients and that makes it good in terms of specific-ness, specificity. (Faith, in-depth interview)

For Faith, mentorship came not just from sharing ideas and answering questions but also from having the ability to be treated by her colleagues, therefore providing Faith with a different way of understanding the impact of treatment based on the Bobath Concept. This likely speaks to Faith's understanding that experiencing hands-on treatment herself enabled her to learn in a different, meaningful way for her personally, in that being able to experience treatment and handling allowed Faith to more fully integrate the importance of handling specificity in treatment. Susan identifies a similar experience but the value for her came through working together with a colleague and taking time to feel and understand what was happening for her in treatment sessions. Susan, as well, describes the mentoring she experienced through her Bobath Concept instructor training program.

> Once I started to meet up with xxxx I really kinda opened my eyes to the idea of actually feeling and getting a response which was really quite instrumental in terms of changing a little bit how I approached my treatment and made a huge difference in the outcome that I had in my treatment. I met up with xxxx who offered me an opportunity to become a Bobath instructor, which then meant a series of tutorials and opportunities to work with

> xxxx and she mentored me into becoming this tutor and continuing in that process. (Susan, in-depth interview)

Although both Faith and Susan describe the importance of the "feeling" aspects of integrating the Bobath Concept into their clinical practice, for Faith this was in relation to experiencing hands-on treatment and its effect on herself while for Susan, it was in relation to having some guidance in her treatment sessions with patients to better understand what she was feeling and to respond appropriately to it. In both situations, the sense of community created by doing this was an important aspect of each physiotherapist's ongoing understanding and integration of the Bobath Concept into their clinical practice. This sense of community is highly valued by the physiotherapists and is something they consider to be unique in relation to other approaches.

Framework for clinical practice

As a result of their experiences, the physiotherapists in this study share a perspective in which they consider the Bobath Concept as offering them a framework to assess and treat patients with stroke. They in fact appear to value the lack of emphasis on specific techniques in Bobath Concept courses, and they acknowledge an understanding of the Bobath Concept's purpose of offering an approach to assessment and treatment. Susan is concise in describing her understanding of the Bobath Concept.

> …it's [i.e. the Bobath Concept] a movement concept for me…it's a concept of understanding and an analysis of movement. (Susan, in-depth interview)

In her description, Susan articulates her understanding that the Bobath Concept is for her a concept of understanding movement control, movement components and movement

analysis. As such, when Susan describes the various technique-oriented courses she has taken, she notes that her purpose in taking them is to further develop her skills to address the patient based on her understanding of movement analysis.

> It [i.e. the Bobath Concept] brings it back to the basics. It actually makes everything simple. It's so simple…it's so simple in terms of the concept. It's my method to get the end result…it's my problem-solving, it's the way that I make my decisions of what I'm going to be doing. (Faith, in-depth interview)

Faith also describes the Bobath Concept as being the method she uses to assist with problem-solving and decision-making in her clinical practice. She describes the Bobath Concept as simplifying her approach, indicating that this concept helps her to organize herself by providing a framework for her approach.

Rosie, below, indicates in our discussion that she incorporates the Bobath Concept into her approach with all of her patients, neurological diagnosis or not. In the excerpt below, she explains her reasoning in applying the Bobath Concept to all of her patients.

> …the commonality is that everyone moves...and everyone has issues with alignment, with postural control…the more experience that I gain, the more I realize that it doesn't really matter what the underlying issue is, what you need to address is the same, is how that person moves. (Rosie, in-depth interview)

It appears that Rosie has developed a broad integration of the Bobath Concept and movement analysis, which she uses with all of her patients based on an understanding of the common movement aspect to all humans. Rosie's comment demonstrates the way in which the Bobath Concept, for her, provides a framework in which to assess and treat patients more than it suggests a treatment approach or intervention. Given this

understanding, Rosie sees value in applying her understanding of the Bobath Concept to her entire caseload regardless of their diagnosis.

The physiotherapists see the lack of exclusivity of treatment techniques as an invitation to expand their clinical skills according to their own preferences. As such, they demonstrate a directed approach to their ongoing learning and an ability to integrate their clinical skills into this framework. In speaking with the physiotherapists, they each describe numerous and varied technique-based courses they have taken, and they each describe these course experiences as being integrated into the Bobath Concept context of their clinical practice. This in turn speaks to another value of the practice of the Bobath Concept identified by the physiotherapists, the notion that it is, more than anything, a framework into which they can fit their existing and developing clinical skills.

As described earlier, the physiotherapists identify what the Bobath Concept has offered in the way of improving their outcomes with their patients. Each of the physiotherapists also describes a sense of comfort in their clinical skills, one that is not threatened by other therapists or other approaches. Rosie and Faith describe this confidence in different ways:

> I know that if I get your husband or your wife in better alignment, I know that they're gonna move better. And that's what we ultimately want….um, and we can give it a try and if you don't like it, you're welcome to go try other methods…I'm not opposed to other treatment methods. (Faith, in-depth interview)

> I feel pressure on myself that I need to help them because no one else has been able to but that's me putting pressure on myself 'cause I just feel bad for these people...if I can even change that a tiny little bit in the first session, then they're like wow. And they'll inevitably say well that's better than the other therapist did in 12 weeks. (Rosie, in-depth interview)

It seems that the way the physiotherapists with experience in the Bobath Concept have been educated is one that is inclusive with respect to use of techniques and interventions, and one that recognizes the individual differences in skills and knowledge that physiotherapists bring to a therapist-patient interaction. It appears that this understanding flows into the way that the physiotherapists view their own practice and that of other clinicians.

From their comments, it is apparent that their holistic and integrative approach allows them to more confidently assess a patient with issues beyond their neurologic diagnosis. Rosie, below, in talking about her ability to treat the human being that walks into her clinic despite the person's diagnosis, acknowledges that some physiotherapist specialists may not have the same confidence in their abilities.

> …not well I only do joint mobilizations so I can only address joint issues. Or I can only address back pain or neck pain or whatever it may be...you know, there are many quote unquote orthopedic therapists that would freak out if someone with a severe brain injury walked into their clinic…. (Rosie, in-depth interview)

Rosie's comments resonate with me as a physiotherapist who works in a clinical setting that has approximately thirty physiotherapists working in different areas of physiotherapy clinical practice. I have heard many co-workers comment that they don't know what to do with stroke patients and are reluctant to work with them. Mona also makes reference to the specialization process in our discussion, and she comments that it frightens her because of her concern that specialization will create physiotherapists who will only be able to practice within very strict limits.

Faith's description of the Bobath Concept as simplifying the process for her, speaks to a sense of the Bobath Concept offering a framework in which to assess and address patient issues. Her comment expresses within it a sense of empowerment and quiet confidence that Faith has in being able to treat her patients.

> …you know, like other therapists are like ooh neuro,oh I don't want to touch it. They're scared of it because they don't learn anything in school… I just talked to my other physio friends and they're like "oh yeah, that makes sense"…and I'm "you can do it" and they're like "no I can't". Oh yes you can. You can treat like that. Yes you can. (Faith, in-depth interview)

Faith has found herself in discussion with other physiotherapists who obviously see something unique in Faith's approach, and they appear to see it as something beyond their level of ability, which is in opposition to Faith's understanding that the Bobath Concept actually makes assessment and treatment "simple". It would appear that, for the physiotherapists, much of the value attributed to the Bobath Concept for their professional practice relates to its holistic and integrated approach. This approach facilitates for them an integrated, systems-based consideration of the patient's issues within their sessions over a focus on the specific diagnosis that brought them to physiotherapy in the first place.

I believe that this is what has facilitated physiotherapists with a background in the Bobath Concept to use the same treatment approach and principles with non-neurological patients although the Bobath Concept is considered to be an approach for patients with central nervous system (i.e. neurological) damage. It makes sense that an approach that is holistic and integrates the various systems that work to create and guide human movement can be applied in any clinical situation. Yet this is in direct opposition to pre-licensure physiotherapy curriculum and the majority of post-licensure education, which is

directed at addressing specific diagnoses or specific body parts. The physiotherapists in this study recognize this as they discuss their pre-licensure educational experiences.

The initial response given by the physiotherapists when asked about their pre-licensure neurology education was that they could not remember what they learned in university. Once they thought back though, they were able to identify some of the content and reflect on their experience. Although the physiotherapists responded that their pre-licensure neurology education was minimally influential on their clinical practice, they are able to acknowledge that their pre-licensure education gave them foundational knowledge and background and some basic tools for assessment, but little focus on treatment. The physiotherapists identify a tendency for their pre-licensure education to be "mechanical" and "compartmentalized". Rosie comments on the difference between her pre and post-licensure education.

> Well I'd say in terms of my university study…it gave me the basics of anatomy and physiology…we did study all the systems…But it's not until my post-graduate educational activities that you really learn to put that all together…because even though you're studying the whole person, you're not taught to treat a whole person. You're taught to compartmentalize the person…we're not taught to think that way...And in the end may be the death of our profession if we don't smarten up. (Rosie, in-depth interview)

Rosie certainly alludes to the holistic approach that has been an integral part of her post-licensure clinical development, and her comments are supported and echoed by the other physiotherapists in their interviews. A stronger message is heard though in this comment by Rosie and it relates to the tendency for physiotherapists to be taught early on to "compartmentalize" patients, or focus specifically on only one aspect of their functioning and movement. Rosie expresses confidence in the unique ability that she sees

physiotherapists as having in being able to address patients in a more integrated way but our lack of doing so due to the ways in which we are educated. She strongly expresses her concerns about the future of the physiotherapy profession if it does not address the ways in which we are educated and practice.

Susan also identifies the tendency for physiotherapists to be educated in what she calls a "mechanical" way. She sees this, in part, as a way to ease and objectify evaluation of pre-licensure physiotherapy students. As Susan indicates:

> …it is difficult to evaluate something that is more interpretive in nature… (Susan, in-depth interview)

Mona sees one of the values of her pre-licensure education as providing her with a desire for ongoing learning.

> I think the degree program that I went through, was excellent. Did I come out knowing everything? No. Did I come out knowing that I didn't know everything? Absolutely…I think that really helped build a foundation for continuing education...I knew I knew something but I knew I didn't know it all. (Mona, in-depth interview)

Mona's reflection on her pre-licensure physiotherapy education shows her ability to consider that her pre-licensure education equipped her with tools to continue learning and the recognition of the importance of doing so. This is a slightly different perspective than that offered by the others in which they focus more on the specific content taught.

The inclusive nature of the Bobath Concept stands out as different from other physiotherapy approaches. My experiences with the Bobath Concept resonate with this identified value. I remember starting out as a licensed physiotherapist and beginning to take the orthopedic stream of manual therapy courses, which focus on developing mobilization and manipulation skills for the vertebral column and joints. I remember the

instructor being very particular about our position and the part of our hand we used for each technique. I had difficulty mimicking the position dictated by the course instructor and she commented that I couldn't do it then I would "never be a manual therapist". I have always found the value in the Bobath Concept's underlying principle regarding treatment focuses on addressing the problem versus the intervention choice and the emphasis on aligning the actual intervention to the analyzed problem you are trying to address.

Summary: Professional roles and values of practice

Based on the physiotherapists' discussions there are a number of values of the practice of the Bobath Concept that emerge from the in-depth interviews. The physiotherapists place great value and importance on the whole-person, multi-system perspective of the patient. This perspective informs not only their intervention but also their perception of their role in the rehabilitation and recovery of stroke patients. The whole-person perspective of these physiotherapists is adopted not only in relation to patients, but also in relation to other clinicians. The physiotherapists consistently refer to the extent to which they value the skill and perspective of other clinicians in developing their skills. The physiotherapists express confidence about their skills and they also recognize the skill and expertise of other physiotherapists. In this way it appears that these physiotherapists have adopted the inclusive nature that the Bobath Concept supports and encourages.

As well, the physiotherapists highlight the way in which they integrate the Bobath Concept into their clinical practice. This is accomplished by using the Bobath Concept as a framework in which to use all of their existing and developing clinical skills. The

framework offered to them for their assessment and clinical practice creates for these physiotherapists a professional stance in which they can incorporate the holistic nature of the concept in the ways they assess and treat their patients. Although the physiotherapists identify the value of the Bobath Concept as providing a framework for analysis and clinical reasoning, in their discussions they allude to the ways that this framework also guides their understanding of their clinical practice.

Finally, the physiotherapists identify a strong sense of community as part of their experiences with the Bobath Concept, community with instructors, colleagues and what they describe as mentors. They place value on the shared learning environment created in Bobath Concept courses and, for these physiotherapists, the learning environment created in their local neurological interest group. This speaks to the role they have as physiotherapists in ongoing learning and in knowledge sharing.

Professional stance

In the second iteration of the analysis of the in-depth interviews, I sought to highlight the personal effect of the participants' experiences with the Bobath Concept on their practice. In this way I focused on the emotive statements made by the physiotherapists related to how they felt about their experience of learning, expertise and empowerment.

The physiotherapists describe varying accounts of their initial exposure to this approach. For some it came via initial exposure to Neuro-Developmental Therapy (NDT) due to the fact that NDT courses were the only ones available in Canada at that time, which eventually expanded to more specific Bobath Concept courses. All of the

physiotherapists also had exposure to the Bobath Concept through work colleagues, which was an important aspect of their learning experience. Susan's experience stands out as somewhat different given that her initial practice setting included a colleague who was in the NDT instructor training process.

> …I had the opportunity to meet up with xxxx who is a Bobath instructor, NDT instructor. At that point in time she was actually in training so during my actual professional work at the hospital I had an opportunity to have a lot of experience with somebody first off who was Bobath-trained herself as well as additional courses where she was facilitating with some additional training coming in from some pretty high level NDT instructors from the United States and that was I guess my first experience. (Susan, in-depth interview)

Susan had initial experiences with a colleague with an added level of training in the field but also exposure to a number of different physiotherapists who came to her facility to teach courses. Susan's initial experience could almost be described as an immersion in NDT. The other physiotherapists describe experiences with their colleagues that take the form of learning and growing together in their understanding. Faith's experience was one in which a number of her colleagues attended the same course and had the opportunity to return to their facility and together integrate what they learned into their practice.

> At Windsor Regional Hospital I had the opportunity to go to an NDT course, so I took the 1 week course...and after that I was very lucky to you know start looking at neuro in a different way. So NDT was a big thing...it was a good thing for that particular hospital too because it enlightened people…(Faith, in-depth interview)

For Faith, this educational experience was an opportunity for her own development and was a valuable experience for the therapy staff from her facility as a whole, as she identifies this experience as one in which the staff opened themselves to other

perspectives of patient care. Mona's focus in describing her initial exposure relates to the value added for her in her clinical practice. She identifies not only a different perspective from which to consider patients but also one in which she came home with specific techniques.

> I think the 3-week NDT one 'cause that exposed me to the whole other level of looking at the body….and that was one where I actually…I think the first one where I actually came away with clinical techniques. (Mona, in-depth interview)

Two of the physiotherapists recall and discuss some negative aspects of their initial Bobath Concept learning experiences. Although Mona's first exposure to a formal Bobath Concept course was not positive, she expresses the reasons for continuing with it.

> My first exposure to a Bobath course was a nightmare…it was not a good experience but I kept on plowing on 'cause I felt there was validity and logic to it. It made sense to me. (Mona, in-depth interview)

Mona describes in the in-depth interview a course experience in which the instructor was not open to the clinical background Mona brought to the course and a patient treatment partner who did not work well with Mona. Neither of these factors, however, affected Mona's outlook on the Bobath Concept itself and what she felt it had to offer to her in clinical practice. Although Mona has not taken a course with the particular instructor since, she has continued to develop her understanding of the Bobath Concept based on her initial sense of the logic it had to offer. Rosie, on the other hand, describes her experience in her Basic course and even gives it a name.

> The Bobath wall (laughs). We all hit the Bobath wall…I think I'm fortunate in that I had a bit of an introduction to the idea umm before going to the formal training...I remember about you know, the end of the first week I'm going to die, like I can't take this in…you basically end up at some point in there thinking that

> you don't know anything…the adjustment coming back from there after the 2 weeks of, of hell, umm was difficult because it's almost like, it's almost like you don't know how to walk anymore, like you don't know what to do. So I don't honestly know how I got through that (laughs). I guess I got through it with the support of my colleagues who you know who were more experienced and, and you know I had a lot, obviously a lot of questions. Umm it's almost like before you didn't even know what to ask and now I had a billion questions, so uhh, yeah it was a real transition period of probably you know a year before you feel like you even know anything again. Umm and you kind of want to go back and apologize to all your patients you treated (laughs). (Rosie, in-depth interview)

Rosie expresses an experience that was both overwhelming for her as well as somewhat unnerving in terms of her understanding of her clinical practice to that point in time. What she describes above is a situation in which she suddenly realizes the potential to expand her clinical practice but is perhaps overwhelmed with how to do so. This is definitely an experience to which I can personally relate, although it happened more strongly for me on my first 3-week NDT course (which is considered to be the equivalent of the Basic course). I recall it in my reflective diary.

> What I remember most about that course was the Tuesday of the second week when I just I guess hit my saturation point and just really became very emotional…feeling overwhelmed like I couldn't do it and what was wrong with me, etc, etc…Now since I have been in the tutor training and have been involved in these courses, I see that my response was very typical-I'm sure part of it is just fatigue and being saturated with information, but it happens regularly. (Tracey, reflective diary)

What is "the Bobath wall" and what accounts for this feeling? Before offering a perspective, it is worthwhile to outline how education in the Bobath Concept is provided. Bobath Concept courses are post-licensure courses available internationally to physiotherapists, occupational therapists and speech language pathologists. The

International Bobath Instructor Training Association (IBITA) is the governing body that oversees education and training provided in the Bobath Concept. IBITA sets guidelines for course content including number of required hours, division of time between lecture and practical content, instructor: participant ratios and progression of courses. Neuro-Developmental Therapy (NDT) follows the same theoretical foundation as IBITA but is a North American evolution of the Bobath Concept with its own association in the United States and Canada. IBITA considers NDT and Bobath Concept courses to be equivalent for the purposes of course pre-requisites. Although not considered a pre-requisite, IBITA recommends that clinicians take an "Introduction to Normal Movement" course as their first exposure to a course in the Bobath Concept. These introductory courses are 2-3 days in length and provide an overview of the theoretical concepts of the Bobath Concept. More than 50% of the course time is devoted to practical sessions during which course participants analyze each other's movement patterns and postural control in sitting and lying. Participants do not treat patients during the introductory course but observe treatment sessions with patients conducted by the course instructors.

The "Basic" course is a short form for the course title "Basic Course in the Assessment and Treatment of Adults with Hemiplegia". The Basic course is an intensive course that is 15 days in length. Traditionally the 15 days have been split into a 10-day session followed by a 3-4 month interval before the final 5-day session. During the time between sessions, participants complete a project, which generally involves a case study with a patient from their clinical practice. The Basic course includes systems-based neurophysiology lectures, practical sessions to further develop observation, analysis and handling skills, daily patient treatment sessions with a partner under the supervision and

guidance of an instructor, and observations of patient treatment sessions conducted by the course instructors. The number of participants is capped to ensure an instructor to participant ratio of no more than 6:1. During Basic courses, participants have frequent meetings with course instructors for feedback including a final meeting during which feedback on the project and overall progress during the course is discussed. It is suggested that once participants complete their Basic course, they wait at least 6 months before taking an Advanced Bobath course. This is advised mainly as a more formal recognition that it takes time for participants to integrate what they have learned during the Basic course and it serves as encouragement for Basic course participants to explore and expand their clinical practice on their own time. Advanced courses are 5 days in length and tend to be focused on specific neurological diagnostic groups (e.g. incomplete spinal cord injury), specific aspects of movement control (e.g. gait or upper extremity function) or a specific system (e.g. autonomic nervous system). Advanced courses also include maximum 1 lecture per day, patient treatment sessions conducted by participant pairs, observation of patient treatment sessions conducted by course instructors and they are heavily focused on practical sessions to further advance participants' observation, analysis and handling skills. In recent years as a way to respond to lack of time and financial resources available to clinicians to take week-long courses, shorter courses have been developed and are available to assist clinicians to further develop their skills. Beyond this formally recognized course structure, clinicians have few other educational opportunities unless they decide to participate in the instructor training program.

I think the notion of the "Bobath wall" has a lot to do with the overall nature of the Basic course in that it is not focused on techniques. For many clinicians, Bobath

Concept courses are the first that they may have experienced a true multi-system approach focused on understanding movement analysis over an emphasis on specific techniques for treatment. As such, clinicians may be left questioning the nature of their practice to date and feeling as though they have not addressed their patients as holistically and individually as once thought. This certainly was my experience. Rosie's words very clearly describe the experience I had in my first long course as well. What accounts then for physiotherapists continuing to take Bobath Concept courses? It appears that the systemic, whole-person approach resonates with the physiotherapists as something that could be best described as a "good fit" for them. Susan specifically alludes to the notion of "good fit" in her comment below.

> I personally find that this concept has really worked for me…I tried different techniques, different sort of approaches. I've done many courses in different disciplines. I find that the Bobath Concept works for me personally and allows me to be really efficient in my outcome…I think it's more about finding what really fit for me as an individual…(Susan, in-depth interview)

Susan describes an ongoing pursuit of advancing her clinical skills, which includes different courses and different mentors, all for the purpose of finding an approach that was comfortable and effective for Susan as an individual. Susan describes a moment of clarity in which it all seemed to come together for her, resulting in more effective treatment. Mona, as described previously, identified the value she saw in the Bobath Concept, which served as the catalyst for her to continue her learning. She goes on to say again later quite simply:

> It made sense to me. (Mona, in-depth interview)

Faith describes a similar perspective to that of Mona as she identifies the notions of common sense and simplicity aspects of the Bobath Concept for her.

> It [the Bobath Concept] brings it back to the basics. It actually makes everything simple. It makes it not so scary…I think, because it's alignment…it's easier now. And it should be….it should have been easier a long time ago…it's so simple in terms of the concept…Definitely it brought everything together…like I said it's so basic. It's not like it's rocket science. It's, it should be the basis of everything. (Faith, in-depth interview)

Faith's comments above speak to her understanding of the Bobath Concept as providing a framework for her to organize her problem-solving in clinical practice and to keep herself focused on certain aspects of the patient's presentation, which for her, results in a less overwhelming situation which can occur when presented with a complex patient in which it is difficult to determine how to begin. It appears that Faith uses a couple of basic principles to organize her approach, which allows her to keep her approach simple and organized in her mind. In saying, "it should be the basis of everything" Faith is testifying her belief that the framework offered by the Bobath Concept could and should be provided to all pre-licensure physiotherapists as the basis for physiotherapy practice.

Thus, we hear from the physiotherapists' descriptions of their experiences that the Bobath Concept is a good fit for them clinically and personally. The Bobath Concept makes sense to them and helps them to feel less overwhelmed in clinical situations by simplifying the approach and therefore making the situation "less scary". It appears that the notion of the Bobath Concept being a good fit relates to the earlier idea expressed by the physiotherapists that the Bobath Concept offers a framework to address stroke patients and does not dictate the treatment interventions used, therefore allowing clinicians to incorporate the skills they have, skills that have likely led to success in

treatment previously. For Rosie, it appears that the system-based approach integral to the Bobath Concept is what resonates for her and her learning experience. She sees this as an approach that has empowered her in her clinical practice, so much that she expresses with confidence that her experiences with the Bobath Concept enable her to address any patient, no matter the diagnosis.

> …I can treat whatever walks in the door. That's what it means to me. That I can treat a human being in whatever state that they enter my clinic...I can analyze what's happening and help them...I believe that I can address it, whatever it is…(Rosie, in-depth interview)

Rosie describes a level of confidence in her abilities to help any patient that struck me as a significant statement of empowerment. After our interview, we spoke further on the notion of empowerment and Rosie elaborated that she only feels this confident about her ability to treat any diagnosis as a result of her experiences with the Bobath Concept and her developed understanding of how different body systems interact. This suggests therefore that empowerment develops from taking a systemic and holistic approach.

Faith describes her relation with the Bobath Concept with obvious passion.

> I feel blessed. I am truly blessed. I am really blessed. The doors have been opened...I think I was meant to…you know how sometimes you have that feeling in life, okay I'm meant to be with that patient population. I felt that from the beginning…I wouldn't be treating the same way. I mean not 'cause I wouldn't want to, just didn't know. (Faith, in-depth interview)

Faith sees her experiences as having led her to treat patients in a different way than she would treat without her experiences with the Bobath Concept. She describes her experiences as being a blessing to her and a way that doors have been opened to her in her clinical practice. Although she describes an affinity to this particular patient

population from an early stage, she adds that the Bobath Concept has allowed her to grow and treat in a different way. Mona describes a similar sense that her experiences have all led her to the place in which she presently finds herself and she identifies the positive aspects of the process for her.

> It's funny…the path happened for a reason and…it actually, where I'm at right now is fantastic. (Mona, in-depth interview)

I also feel that the Bobath Concept along with all of my experiences have led me to the clinician that I am today. Because so many of my experiences have been in relation to the Bobath Concept, I have a difficult time considering how I might practice without the experiences I have had. I was moved by Faith's expression of what her experiences have meant for her. She has been significantly impacted by her experiences and expresses it in a deeply personal way in comparison to the other physiotherapists. I have a personal and emotional response similar to Faith, and I think part of this relates to the fact that our Bobath Concept experiences have included being treated by course instructors and having the opportunity to experience how significant treatment based on a multi-system understanding can be. I have also observed patient treatment sessions and conducted patient treatment sessions that have been very powerful, and being empowered with the sense that I can have that kind of impact in treatment is significant. Rosie describes this impact differently, focusing instead on her level of confidence to address any patient who comes to her clinic regardless of their diagnosis. Susan too tends to be more pragmatic in her expression of her experiences with the Bobath Concept and of the physiotherapists in this study, has experienced the Bobath Concept on a different level through her instructor training. For her, the process has been all about finding what fits

for her clinically with the goal of improving patient outcomes. Mona offers a different perspective. Throughout the interview Mona makes reference to or describes feelings of stress and anxiety, so much that she has changed career paths due to this. This seems to carry-over into her initial experiences with the Bobath Concept courses, which she describes as "a nightmare".

> I hated being a student. I hated being a new grad and…actually most of my career, I've been extremely stressed. Thinking that I'm not giving my clients…what they deserve. I've always been that way. Ehhmm, and for a long time I've been very stressed about where I am clinically, 'cause I don't think I'm where I should be… That's what's driving me to be better and better. (Mona, in-depth interview)

Mona describes herself as being highly stressed both as a student and as a licensed professional, but she is able to identify the positive aspect to this tendency, which include a drive to constantly improve. Mona goes on to identify her experiences with the Bobath Concept through the neurological interest group and through a specific course instructor as specific highlights to her experiences.

> Because we were very fortunate to have the Rehab Centre and ehh, the neuro interest group who got together to bring xxxxx over, and that was a phenomenal relationship that we could access resources at the Rehab Centre for the 3-week courses to allow us to financially bring in a phenomenal tutor. So it's only been….I can only say it's been a positive exposure to xxxxxx and everything she had to offer. (Mona, in-depth interview)

In the interview Mona speaks positively regarding her initial NDT course experience, describing it as one that changed the way she looked at patients and led to collaboration with colleagues. Mona is also the physiotherapist who feels so strongly about the impact of the neurological interest group on her clinical practice and her learning. It would appear that for Mona, course experiences that foster a collaborative

and collegial approach are most meaningful. Mona's positive attitude toward one instructor in particular compared to others echoes my experiences as well. I have taken Bobath Concept courses with at least 5 other instructors and know their style so much that I make decisions about taking courses based on the instructor and how they fit with my learning style.

The responses of the physiotherapists regarding their experiences resonated with me personally as I reflected on my experiences with the Bobath Concept in considering this iteration. With years of experience and education, I have come to understand the Bobath Concept as it is defined: "a problem-solving approach to assessment and treatment of disturbances of tone, movement and function following damage to the central nervous system" (IBITA, 1996). Although initially I remember feeling a little confused after my first normal movement course and unsure of how to integrate what I learned on that 2-day workshop into my clinical practice, I was certainly intrigued and hungry to learn more about it. After taking a couple courses with different instructors, it became very clear to me that every instructor in the Bobath Concept has his/her own unique treatment techniques and methods to address a patient's problems, but these are based on a common understanding of how they analyze a patient. I think that is part of what drew me to the Bobath Concept. It was one of the first courses that I took that welcomed the past experience and the clinical skills I already possessed and allowed me to find ways to integrate my skills into a different, and in my mind, more specific analysis of a patient's movement and their main problems.

The Bobath Concept has given me a path to follow in terms of my continued learning and development. It has allowed me to gain a better understanding of the types

of courses and techniques that work for me personally. As a result, I now search out ongoing learning that will easily integrate into my present practice. I feel that I have a much more specific approach to assessing each individual patient, which is always based on an understanding of expectations of movement patterns. Based on my understanding and experience with the Bobath Concept, I have expanded my clinical practice and use the Bobath Concept in addressing all of my patients regardless of whether or not they have damage to their central nervous system. This is based on my understanding that efficiency of movement is a common need for all patients. So what does the Bobath Concept mean to me? It means freedom: freedom to incorporate all of the skills I have to address patients. It means empowerment because my experiences with the Bobath Concept have improved my confidence in my abilities and in my ability to assess, treat and have something to offer any patient regardless of their diagnosis. It also means ongoing learning, as I know that I can take the same Bobath Concept course more than once and always learn something new. It also means ongoing learning because it has helped me to determine the types of courses I want to take to improve my clinical practice. Finally it has given me a way to more fully understand individual patients and their movement and to address them on a deeper level, resulting in better outcomes than I have been able to achieve with my patients, despite their increasing complexities.

Summary: Professional stance

The analyses of the physiotherapists' emotional responses in relation to their experiences with the Bobath Concept are as individual as the clinicians themselves. Despite the highly individualistic nature of their descriptions and a full recognition that it is impossible to describe a standard Bobath Concept experience given its inclusive,

whole-person nature, there are similarities discussed by the physiotherapists in this study. Each of the physiotherapists describes strong feelings and strong responses but do so along different veins and with a different focus. Key findings from the in-depth interviews pertaining to the affective aspects of the Bobath Concept on the physiotherapists' professional practice include the ways in which the physiotherapists were exposed to the Bobath Concept, a sense that the Bobath Concept is a good fit with their practice that empowers them as clinicians and the value of the shared learning facilitated by the Bobath Concept.

The process of developing their skills in the Bobath Concept has been varied for each of the physiotherapists. Some of them clearly remember and describe feelings of frustration and stress, and relate these to feeling as if they don't know anything and questioning their clinical practice. Given the common experience described and my own experiences with these feelings as well as observing them occurring in other clinicians during courses, it would appear that these feelings are a natural part of the process of development for the clinicians. Yet the overwhelming experience described by the physiotherapists is overridden by a sense of confidence in their practice and empowerment to treat their patients. There is a sense that the Bobath Concept has been influential to their formation of their clinical practice because it is seen as a good fit for them as individuals and a good fit with their clinical skills. The physiotherapists describe the Bobath Concept as making sense to them, being common sense and simplifying things for them as clinicians. Rosie's sense of empowerment along with Mona's descriptions of her struggles within her academic and professional careers yet her drive to improve and her positive outlook regarding the Bobath Concept suggests that the Bobath

Concept fundamentally situates the physiotherapists professionally to be confident about the support they can provide.

Multiple Voices: Patients, instructors and colleagues

The third analytic iteration in this study was designed to capture and identify the presence and influence of other voices in the perspective of the physiotherapists. The notion of multi-voicedness, or dialogicality, is a key consideration in sociocultural theory. According to Wertsch (1990) the notion of voices reflects an understanding that human mental functioning is tied to communication as communicative processes are considered to be an example of semiotic mechanisms used by humans to mediate our learning and development. Wertsch recognized that every utterance produced by an individual includes more than one voice, thus reflecting the dialogic nature of our mental processing. He further highlighted the notion of heterogeneity of voices. He suggested that particular voices tend to be more prevalent in certain situations, and he went on to suggest that consideration should be taken to understand why certain voices are invoked in certain settings (Wertsch, 1990). This iteration allowed me to more fully conduct the analysis from a sociocultural theory and phenomenological perspective by facilitating a consideration of the dialogical elements in the physiotherapists' voices.

For the physiotherapists in this study, the "other" voices heard in their speaking take the form primarily of voices of their patients, course instructors and colleagues. The physiotherapists have described in previous excerpts a deeper level of engagement from their patients as a result of using an integrative and holistic approach based on the Bobath Concept. They also describe one of the values of the Bobath Concept is the sense of community that they share with colleagues with similar experiences and with various

Bobath Concept course instructors. It is then not surprising to find these voices present within the physiotherapists' discussions.

The voice of patients comes out in 3 of the 4 physiotherapists' transcripts. Often Rosie, Faith and Mona use clinical scenarios and take on the voice of their patients when attempting to illustrate a point.

> One of my patients actually asked me today, she said, do you plan what you're doing like last week for what you're gonna do this week? And I'm like no, and she's really? I'm like no. Really, why don't you? And I'm like cause what would be the point? 'Cause I don't know what state you're gonna walk through the door in. You could have fallen down the stairs yesterday for all I know so…I need to treat the human being who walks through the door in whatever state they're in. (Rosie, in-depth interview)

In this part of our discussion, Rosie is ventriloquating one of her patients as part of her explanation around her lack of pre-determining her treatment plans. In this case it takes the form of a conversation she has with one of her patients.

Wertsch describes ventriloquation as "a process whereby one voice speaks *through* another voice or voice type in a social language" (Wertsch, 1990, p. 59). In this way, he sees words used in language as belonging only partially to the speaker, recognizing the influence of others' voices in human understanding and learning. It would appear that, for the physiotherapists, using the patient perspective or clinical scenarios is a comfortable and familiar way for them to communicate, one that allows them to integrate their knowledge and communicate the holistic nature of their clinical practice, and one that values and includes the voice and perspective of their patients.

Integration of the voice of the patient resonates with me and as I listened to the physiotherapists speak I heard patient voices. I know that I frequently turn to clinical

situations in my teaching and I too make use of ventriloquation. I also fully acknowledge that it has been patients that have challenged me and encouraged me in advancing my clinical practice. For me it is that connection with my patients that keeps me passionate about the work I do.

> . My patients have better outcomes and they also support me-they just seem to put trust in something that is beyond my level of trust. It's hard to explain but it's like my patients are the ones to encourage me and to give me the confidence to try what I try. And it's like my gut tells me something, somewhere to go, I go there, it makes a change, and the patient says "that's exactly it, how did you know?"…and I can't explain it, I just know. (Tracey, reflective diary)

In discussing her role with patients, Mona describes herself as a "facilitator" and I asked "facilitator of what?" In her description Mona acknowledges that her role changes depending on the patient and their unique needs, but that she is charged with finding ways to ensure that she can make a connection in her approach to incorporate their needs.

> Whatever that means to the client. What are their goals? What are their needs? And that is so individual… So it's meeting them at what their needs are. (Mona, in-depth interview)

For these physiotherapists, even more than patient voices, they incorporate other voices including those of colleagues and course instructors. It appears from their commentary that these physiotherapists align aspects of their course experiences with the course instructor and begin to consider those aspects as belonging to that instructor. Rosie's discussion below is a good example of the ways that she views different instructors' course focus in relation to her own experience.

> I took my Basic course I took with xxxxxx…I mean the concept is still sort of there in terms of looking at postural control, at

> looking at functional movement and components of that movement, but I think the big thing xxxxx gave us was alignment, looking at alignment and base of support. Base of support was not something even that I remember even from my Basic course. (Rosie, in-depth interview)

In this excerpt, Rosie describes an experience with an instructor who presented an aspect of the Bobath Concept that Rosie does not recall from her Basic course with a different instructor. Rosie describes each instructor as having different strengths, but identifies more strongly with a specific instructor and later in the interview, describes it as "Patty's approach". Susan in her Bobath Concept instructor training also describes a similar experience in which one instructor was able to offer a different perspective, which for Susan, filled some gaps in her understanding.

> When I moved to Ottawa and I met up with xxx, that again helped me to open and understand that you know, ah, that's what I was missing in that other concept and now I need to start again to refine a little bit further and even in that, under the direction of xxxx that initial sort of period of time, I mean that, definitely I still felt that I was missing something… until I finally met up with xxxx. (Susan, in-depth interview)

Both Rosie and Susan describe different scenarios in which a different instructor had a different perspective or interpretation of the Bobath Concept. It probably goes without question that the course instructors seem to determine the physiotherapists' perception of the value of the course for them personally. In Susan's statement above, she demonstrates part of her process as finding the fit she needed for her skills at the time. Susan demonstrates a real level of reflection and an unfaltering pursuit for mentors to improve her skills and to fill the void she saw in her practice. The fact that the course instructor has such an impact on the physiotherapists, Rosie describing it as "Patty's way" implies that the Bobath Concept is a somewhat interpreted approach, flexible and

adaptable to the skills and expertise of the individual instructor. Therefore, the individual expression of the instructor's interpretation of the Bobath Concept will carry with it greater meaning for some clinicians over others.

For this group of physiotherapists, especially Faith and Mona, the voices of their colleagues are clearly present in their interview text, which highlights how integral these collegial voices are to their experiences and their learning. The presence of collegial voices highlight the importance placed on the notions of mentorship, shared learning and learning community by these clinicians.

> I had 2 sessions a week, one with xxxx and one with xxxx…and they're 2 Bobath trained, very different styles and that's a big thing too…to know that there's…the same analysis, like concept but different styles…and to know that there's, you know not necessarily one style that's better than the other because they're both very good therapists...xxxx and xxxx the first ones to say "where's the base"…always back to the base. Base, base, base. (Faith, in-depth interview)

> The path that I took working at xxxx opened me up to xxxx and the neurologic, you know the neuro interest group...so basically it opened up a whole other avenue, so I'm really glad. (Mona, in-depth interview)

The excerpt from Faith's transcripts demonstrates that their physiotherapist colleagues have different styles using the Bobath Concept which Faith acknowledges and appreciates for the value it brings to her own learning. Mona alludes to the idea that her exposure to a particular work setting introduced her to a specific colleague, which she perceives as influencing her clinical practice and career path.

Summary: Multiple voices

The presence of other voices, particularly those of patients, colleagues and course instructors are evident in each of the physiotherapists' discussions. The presence of these voices highlight the importance of shared learning and the influence of shared learning on the individuals' experiences and development of their understanding of the Bobath Concept. It appears that patient voices help to reinforce learning points for the clinicians, therefore demonstrating the reasoning and value of ventriloquation. Collegial voices appear to inform the physiotherapists' understanding of the Bobath Concept in the context of clinical practice, likely due in part to the sense of shared practice experience. As a result these voices can help to integrate what's learned in courses into the reality of clinical practice. The voices of course instructors seem to provide the initial, perhaps idealized, view of the Bobath Concept and appear to offer to the physiotherapists a goal to work toward and a point of reference. The voices of colleagues seem to be able to reinforce this within the context of reality in which they practice, while patients' voices offer to them a different yet equally meaningful perspective. The multiple voices identified as being present in the voices of the physiotherapists appear to serve as a professional resource for the physiotherapists in their understanding and integration of the Bobath Concept into their clinical practice.

CHAPTER 6: DISCUSSION

The purpose of this study was to explore and understand how physiotherapists working in stroke care understand their role(s) in the context of clinical practice and how this is mediated by their post-licensure educational experiences, specifically their experiences with the Bobath Concept. This study was conducted using a theoretical orientation informed by sociocultural theory as a way to understand how the experiences and interactions of physiotherapists mediate their sense of professional identity and their activity of neurological physiotherapy practice in a way not previously studied in physiotherapy professional practice literature. A sociocultural theoretical orientation allowed for the identification of the symbolic and material practices and tools that make a difference for the professional practice of the physiotherapists in this study.

What motivated me to undertake this study was a sense, based on my personal experiences and on other physiotherapists' comments about their experiences, that the Bobath Concept has a transformative effect on how we practice as physiotherapists, coupled with a frustration in the ways that the Bobath Concept has been studied thus far. Therapists with knowledge of the Bobath Concept recognize the holistic and integrative nature of this philosophy in which patients are assessed and treated on an individual basis based on an understanding of movement control, and this is generally translated to the patient experience.

The research literature to date has been inconclusive regarding the effectiveness of the Bobath Concept in stroke care compared to other neurological physiotherapy approaches. Despite a lack of endorsement for the Bobath Concept within the research

literature, this approach continues to be used internationally by physiotherapists working in stroke care and is considered by them as highly influencing their practice (Davidson & Waters, 2000; Nilsson & Nordholm, 1992, Ogiwara, 1997; Stevenson, Barclay-Goddard & Ripat, 2005; Turner & Whitfield, 1999). Physiotherapists with training in the Bobath Concept report that this experience has a significant impact on their clinical practice and leads them to feel more effective in treating stroke patients. Therefore this study aimed to understand the impact of the Bobath Concept on clinical practice based on the lived experiences of physiotherapists, thus studying the Bobath Concept in a unique way to that which is currently presented in the research.

It was encouraging to hear the voices of the physiotherapists in this study as they described their experiences working in the Bobath tradition. It was also interesting to hear how those experiences resonated with and validated my own experiences. The physiotherapists described different and unique ways that they use the Bobath Concept and different experiences with the Bobath Concept. From these individuals' descriptions a number of consistent and specific characteristics emerged regarding the way that the Bobath Concept has informed the practice of the physiotherapists in this study. What we see and learn from the data in this study contributes to a more nuanced understanding of the effects of the Bobath Concept on physiotherapists and their clinical practice.

Research question 1

This part of the discussion addresses research question one which asked: "how do physiotherapists trained in the Bobath Concept and working in the area of stroke care understand their role(s) within the context of clinical practice?"

Integration of the Bobath Concept into clinical practice for the physiotherapists in this study provides for them a framework by which to guide their approach to patient care. In describing their understanding of the meaning of the Bobath Concept, they highlight its focus on analysis, problem-solving and clinical reasoning based on an understanding of movement control. The physiotherapists also describe the Bobath Concept as a holistic, patient-centred approach that recognizes the influence and interaction of various systems on a patient's movement and functional abilities. By using a systemic approach, the physiotherapists identify the importance of the patient's presence in order to facilitate a comprehensive and specific assessment of the individual, which flows naturally into treatment. The physiotherapists do not differentiate assessment and treatment as separate activities in their clinical practice as they see each activity informing the other, resulting in one fluid, integrated and ongoing activity.

The physiotherapists identify a sense of community offered through their experiences with the Bobath Concept as an added value to their practice. In addition to their formal course experiences, most of the physiotherapists in this study also participate or have participated in a local neurological interest group, which was initiated following the first Bobath Concept courses offered in this region. Each of the physiotherapists in the study identified a collegial atmosphere within their work setting, within Bobath Concept course settings and within the neurological interest group setting. Within formal Bobath Concept course settings, course participants are respected for and encouraged to share their skills and perspectives, thus creating a non-threatening environment, conducive to shared learning. The physiotherapists in this study identified the shared

learning environment created in the formal and informal Bobath Concept learning settings as crucial to their ongoing growth.

My experience with the Bobath Concept is similar to those described by the physiotherapists in this study. I too have participated in the neurological interest group described previously, and I have had the experience of learning from the other physiotherapists in the group in an environment that is non-threatening and focused on sharing. I agree with the sense that, because the Bobath Concept supports the development of expertise in understanding normal movement principles and components, there is a need to continuously work on improving our skills of observation and analysis, which requires practice and experience. The highly practical and group-oriented nature of Bobath Concept courses reinforces a value for this aspect of clinical practice and professional development. It appears that, for these physiotherapists, the learning settings created by their Bobath Concept experiences reflects the notion of a learning community as elaborated on by Wenger (1998). Wenger, a sociocultural theorist, described a learning community as a group of people who share common beliefs and who actively engage in learning from each other (Wenger, 1998). Drawing on the work of Wenger assists in understanding the importance the physiotherapists in this study place on the sense of community in learning about the Bobath Concept the value of this sense of community with respect to their professional development.

Because the physiotherapists understand the Bobath Concept as being concerned with integrated analysis and problem-solving, a learning community environment allows them to deepen their understanding of movement control and their skill in various treatment techniques. This has an empowering effect on the physiotherapists that

positively influences their confidence in the clinical setting as they view the Bobath Concept as being a straight-forward, common sense approach that is a good fit for them. As well they feel empowered by their ability to apply the same approach to a variety of diagnostic groups, thereby opening them the potential to address a variety of patient populations in their clinical practice versus limiting them to specific diagnostic groups.

As well as the learning community created through their experiences with the Bobath Concept, the influence of course instructor, colleague and patient voices is heard in the physiotherapists' perspectives on their practice. The physiotherapists use ventriloquation as a demonstration of the presence and integration of multiple voices into their growing understanding and conceptualization of the Bobath Concept. As such, the multiple voices present in the voices of the physiotherapists themselves can be understood as representing a professional resource for them in their clinical practice. This professional resource provided by the multiple voices present in the voices of the physiotherapists in this study aligns with Vygotsky's notion of the mediational means by which our mental functioning is shaped.

> Mediation is the key in [Vygotsky's] approach to understanding how human mental functioning is tied to cultural, institutional and historical settings since these settings shape and provide the cultural tools that are mastered by individuals to form this functioning (Wertsch, 1994, p. 204).

Research question 2

This part of the discussion addresses research question 2 which asked: "how are their (i.e. the physiotherapists') post-licensure educational experiences reflected in the ways that they understand their role(s) in clinical practice?"

Each of the physiotherapists in this study describes the Bobath Concept as having a significant impact on their clinical practice. They believe the Bobath Concept has provided them with a truly holistic approach to stroke care, one that they believe their patients note and appreciate. Ultimately the physiotherapists extend this holistic understanding to their perception of their roles in clinical practice, which is demonstrated in the terms they use to describe their roles. It appears that the title "physiotherapist" encompasses many activities, responsibilities and roles for these clinicians, which has likely been modeled by their background in providing integrated, multi-system and holistic stroke care.

Sociocultural theory looks to understand how social practices and cultural traditions regulate and transform human mental processes such as learning and development (Vygotsky, 1978; Bahktin, 1986; Wertsch, 1990; Wenger, 1998). Considering a sociocultural theoretical orientation in relation to this study, it appears that there are a number of symbolic and material practices and tools, or mediational means, that are considered to be unique to the Bobath Concept. These mediational means include the focus on a system-based, integrative approach in which assessment and treatment is ongoing and shared learning is facilitated, and the resultant common understanding of language used in the approach. As well, use of tools such as body diagrams highlights and reinforces the integrated approach physiotherapists with training in the Bobath Concept use in addressing their patients. The myriad of techniques that clinicians are free to incorporate into their practice is a demonstration of the minimization of focus on specific techniques, and instead is testament to the integrative nature of the

Bobath Concept. As such, a wide variety of techniques could be considered as tools that are symbolic of the Bobath Concept.

Beyond the material tools used, the voices of patients, colleagues and course instructors are key mediational means used by the physiotherapists in developing their understanding of the Bobath Concept. As such, these voices can be considered as professional resources for the physiotherapists. The multiple voices, along with the learning community created both in formal and informal settings, serve as symbolic mediational means by which the physiotherapists come to understand and become socialized into the practice of the Bobath Concept, which ultimately informs and molds their clinical practice.

The research literature to date on the Bobath Concept has primarily taken the form of randomized controlled clinical trials and case studies, and generally offers little or inconclusive support for the Bobath Concept in physiotherapy clinical practice. Yet the Bobath Concept continues to be identified by physiotherapists worldwide as guiding their clinical practice in stroke care. The physiotherapists in this study spoke about their pre-licensure physiotherapy education as being minimally influential to their clinical practice as licensed professionals, due mostly to the compartmentalized approach used. This supports the findings in a study by Stevenson et al (2005) in which Canadian physiotherapists who work with stroke patients identified their pre-licensure education and the scientific literature as less influential on their practice than practically-oriented courses and experience. Importantly, we learn from the physiotherapists in this study that the Bobath Concept is in no way in opposition to their disciplinary knowledge. In fact, it appears that the Bobath Concept, in some small way, validates the foundational

knowledge experienced in their pre-licensure education, and leads to a professional stance that includes and incorporates all disciplinary knowledge in a highly integrative way. This was evidenced in the physiotherapists' clinical case analysis, which required them to draw on those pre-licensure bodies of knowledge as a way to begin their analysis and discussion.

The professional stance adopted by physiotherapists as a result of their experiences and understanding of the Bobath Concept is one that offers a framework for physiotherapy clinical practice that is focused on understanding the integrated systemic nature of human movement control over treatment techniques. Furthering this understanding, assessment and treatment for these physiotherapists are not seen as separate activities but are instead ongoing, each informing the other. Finally this professional stance also includes a sense of community for these clinicians, one that involves shared learning for the purpose of growth. This appears to lead to an overall ethos of caring for clinicians whose practice is based on the Bobath Concept.

Because the Bobath Concept looks beyond specific impairments and considers the whole person, the focus in this approach is highly integrative. As such, physiotherapists do not consider themselves to be trained to only treat a specific population or specific impairment, and they feel more effective in addressing their patients. As a result, the physiotherapists describe feeling empowered in their clinical practice, and confident in their skills and ability to treat their patients and to progress them further before reaching their limits of expertise. As well, physiotherapists are open to expanding the variability of treatment techniques used in patient care, leading them to describe the Bobath Concept as being a good fit for them in clinical practice. Based on the information provided by

the data sources in this study, it appears that the professional stance and ethos of caring offered to the physiotherapists as a result of their experiences with the Bobath Concept have a significant impact on their understanding of their roles in stroke-related clinical practice.

Contributions of the study

This study incorporated a qualitative approach oriented by sociocultural theory as a way to look more broadly to understand how physiotherapists' experiences with the Bobath Concept and other mediational means informs their clinical practice. The results of this study add to the growing body of literature pertaining to the Bobath Concept which, to date, includes primarily positivist, controlled clinical trials comparing the Bobath Concept to other neurological physiotherapy approaches and literature in which current advances in neuroplasticity is integrated into the theoretical underpinnings of the Bobath Concept. This study contributes to existing studies of the Bobath Concept by going beyond the current knowledge base through its inclusion of direct interviews with physiotherapists regarding their experiences. More broadly, this study also contributes to a limited number of qualitative studies used to study physiotherapy clinical practice, and supports the argument for increased consideration of these types of studies in the medical professional literature.

Using an adaptation of Gilligan's *Listening Guide* offered a principled approach to analyze the data collected for this study from a sociocultural theory and phenomenological perspective. It provided a framework that involved multiple iterations and therefore multiple perspectives from which to consider the data. As a result, the data analysis provided greater breadth of understanding of the physiotherapists' experiences.

The *Listening Guide* adaptation allowed the analysis to focus on content as it emerged, as suggested by van Manen (1990), by virtue of the multiple iterations. Finally, the *Listening* Guide was valuable in offering a way to consider the notion of dialogicality of voices heard in the voices of the physiotherapists.

This study offers support for the value and importance of qualitative studies oriented by sociocultural theory in health professional research. The results of this study could be used to inform future studies within health professional literature, especially studies of how health professionals learn. As more and more inter-disciplinary schools of thought are promoted within academic settings, it appears that the time has come for the professional literature to consider the value of looking beyond positivist research methods in order to provide multiple perspectives of an issue. Use of tools such as the *Listening Guide* could offer a principled way to consider qualitative data in multiple ways with a shifting focus, resulting in more detailed descriptions of participants' experiences. For researchers who may not be comfortable with the notion of more "open-ended" content analysis, the *Listening Guide* should be thoughtfully considered as an analytic tool.

More specifically, the results of this study suggest avenues for further research aimed at understanding how the Bobath Concept influences neurological physiotherapy practice. This includes conducting studies with patient volunteers on Bobath Concept courses to consider their experiences and perspective of treatment with the Bobath Concept, as well as studies of neurological units in hospitals whose clinicians incorporate the Bobath Concept into their practice to understand the impact of the Bobath Concept from administrative and clinical perspectives. Research of this type is increasingly

important as health care systems are mandated to improve service and outcome efficiencies in the face of ongoing resource shortages, and as influential bodies such as the Ontario Stroke System begin to address stroke rehabilitation in its aim to ensure equitable access to effective stroke care for all Ontarians. Studies in which multiple perspectives are considered, including listening to the voices of patients and clinicians, may help to further inform administrative decisions such as funding, which are often based on study results.

From a theoretical perspective, given both the systemic approach adopted by the Bobath Concept as well as the complex activity systems that are implicated in its practice, it might be useful to study the Bobath Concept drawing on complexity science or systems-biology. Such a theoretical orientation would allow us to consider the emergent and dynamic nature of the clinical decision-making process at multiple levels and how those influence one another. This is what Berta Bobath anticipated for the Bobath Concept. She believed that the Bobath Concept would evolve with increased scientific knowledge and clinician contributions (as cited in Mayston, 2008). By stating that "the Bobath Concept is not finished" (Bobath, 1990), Berta Bobath voiced her conviction that ongoing scientific advances would help to mould the Bobath Concept to ensure its future relevance to clinicians. It appears that her vision continues to have meaning as the physiotherapists in this study articulated the influence that the Bobath Concept has had on their clinical practice. Further studies of similar research design considering theoretical orientations that align with the systemic nature of the Bobath Concept may assist to develop the significance of the Bobath Concept in physiotherapy

clinical practice. In a small way, I hope that this study honours the vision held by Berta Bobath.

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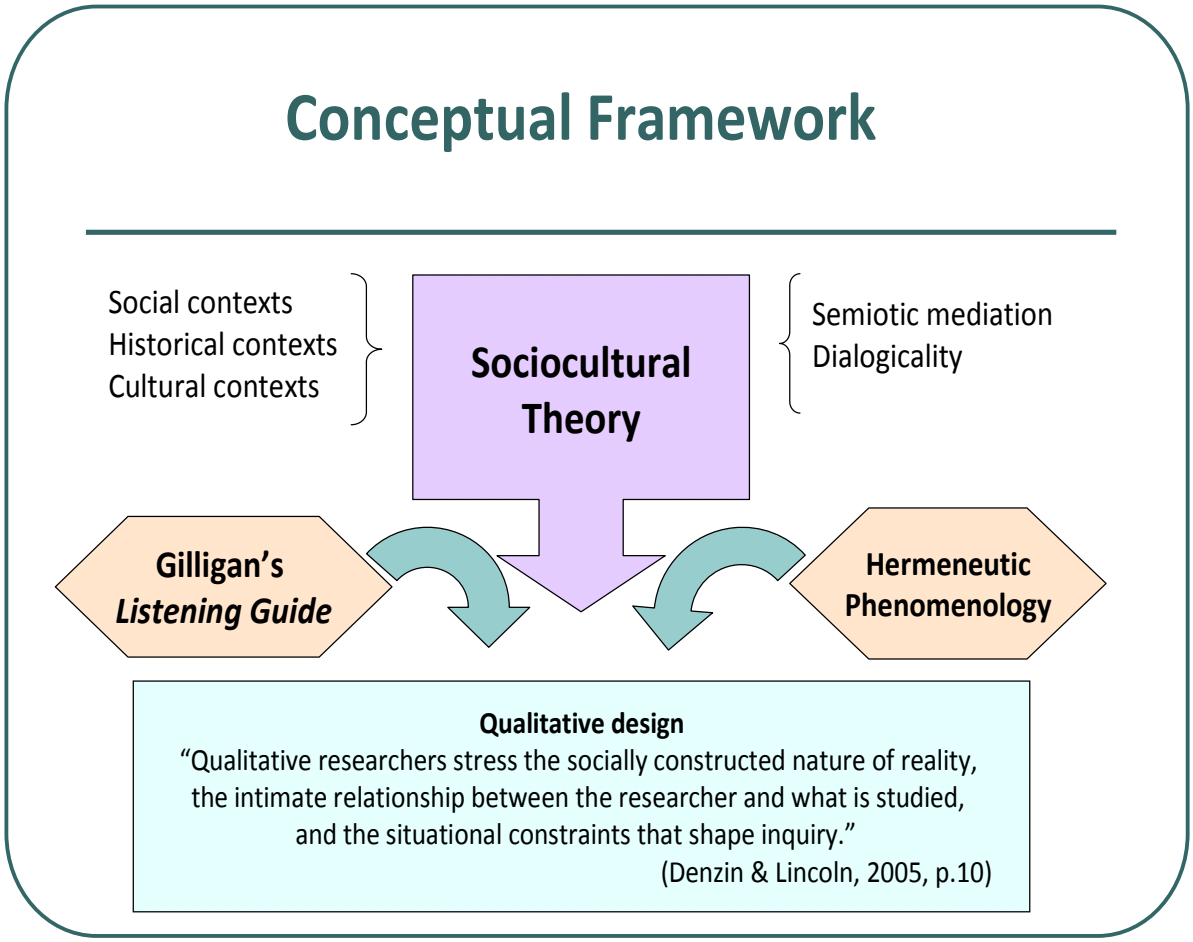
APPENDIX 1. PRE-LICENSURE PHYSIOTHERAPY NEUROLOGY COURSE DESCRIPTIONS

Academic Institution	PHYSIOTHERAPY NEUROLOGY COURSE
University of Toronto	The Physical Therapy Best Practices Curriculum is committed to the development of highly competent academic practitioners who will be equipped with the knowledge, skills and attitudes to provide best practices in both private and public funded environments. This competence will entail acting on the professional principles and general strategies embedded in the practice of Physical Therapy. Central to the goals of the program is the assumption that graduates will be able to gather and analyze evidence, identify professional issues, render sound decision-making, exercise good judgment and engage in evidence-based practice. Graduates will practice in unique, complex situations that demand insights and understanding of conflicting values and ethical stances in varied social, cultural and organizational contexts. They will be expected to develop confidence, competence and ethical sensitivity towards individuals and groups and demonstrate these attributes in their clinical practice. The Best Practices Curriculum challenges the students to engage in systematic inquiry, fosters critical thinking, enhances moral reasoning, encourages problem solving and nurtures the integration of scientific knowledge, physical therapy skills and professional attitudes. The Department seeks applicants who display the fundamental attributes that will develop practitioners congruent with the educational philosophy of the program. (University of Toronto, n.d.)
University of Ottawa	Introduction aux activités neuromusculaires : Activité réflexe, posture et équilibre, mouvement d'atteinte et de préhension. Théories du contrôle moteur et support neuro-anatomique du contrôle moteur. Principes de l'apprentissage moteur. Évaluation de l'équilibre, de la sensation, de la coordination et du tonus musculaire. (University of Ottawa, n.d.)
McMaster University	Unit IV tutorial course will further develop the knowledge, skills and behaviours that are essential for physiotherapy management of clients with neurological disorders across the lifespan. Theories of movement control and execution, neuroplasticity and development will be examined and combined with critical evaluation of the clinical literature to determine effective and efficient physiotherapy management. Unit IV clinical skills course will provide students with the advanced clinical reasoning and skills to assess and treat individuals with neurological disorders. Students will use standardized measures and models of practice to design physiotherapy goals and implement management. (McMaster University, n.d.)

APPENDIX 2. POST-LICENSURE PHYSIOTHERAPY NEUROLOGICAL EDUCATION

Course Title	Course Length	Course Details
Bobath Concept Neurodevelopmental Therapy (NDT)	• Introduction: 3-5 days • Basic Certification: 15 days • Advanced courses: 3-5 days in length, specific topics	• Introduction: lectures, demonstrations and practicals • Basic Certification: lectures, demonstrations, practicals and patient treatment sessions • Advanced: in-depth lectures, demonstrations, practicals and patient demonstrations related to specific topics (e.g. upper extremity, gait, other neurological patient populations)
Motor Relearning Program (MRP)	• 3-day course (3rd day optional practical)	• Standardized course program, 2 days lecture with optional 3rd day practical
Vestibular Rehabilitation Evaluation and Management of Dizziness and Balance Disorders	• 2-day course with additional optional 3rd day for specialty training	• Standardized course program of lecture and demonstration • 3rd optional day offers specialty training
Systems Balance Assessment to Rehabilitate Neurological Patients	• 2-day course • Advanced training: 1-2 days total	• Standardized course program with lectures, demonstrations and practical

APPENDIX 3. CONCEPTUAL FRAMEWORK



APPENDIX 4. RECRUITMENT TEXT

UNIVERSITY OF OTTAWA RESEARCH STUDY

A research study is being conducted that explores how physiotherapists respond to a clinical case of a stroke patient. This research study requires 4 registered physiotherapists who are proficient in English and who have at least 2 years of clinical experience in the area of adult stroke/acquired brain injury.

Specifically, the study needs 4 registered physiotherapists who have completed a Bobath Concept Basic Course in the Assessment and Treatment of Adults with Hemiplegia as well as at least one other physiotherapy post-licensure educational course not based on the Bobath Concept.

If your experience matches the group above, then your participation is requested!

Participation will include the following:

1) a 1-hour time period in which you will respond in writing to a written clinical case of a stroke patient followed by a discussion with the researcher about your written response, and
2) an individual interview with the researcher of up to 1 hour duration during which we will discuss your clinical and educational experiences.

If you are interested in participating in this study or if you would like more information about the study, please contact:

XXXXXXXXXXX

XXXXXXXXX

APPENDIX 5. CONSENT FORM (ON LETTERHEAD)

XXXXXXXXXX
Faculty of Education
University of Ottawa
Tel: XXXXXXXXXX
Email: XXXXXXXXX

XXXXXXXXXX
Faculty of Education
University of Ottawa
Tel: XXXXXXXXXX
Email: XXXXXXXXXX

Title: The Bobath Concept in Physiotherapy Clinical Practice

Description of Project

I, XXXXXXXXXX, am a graduate student at the University of Ottawa in the Faculty of Education. I am conducting a research project for my thesis under the supervision of XXXXXXXXXX. The focus of my research is to explore how physiotherapists who work in stroke care understand their role(s) in the context of clinical practice.

Participants in this study include physiotherapists such as yourself. If you agree to participate in this project you will participate in two activities. In the first activity, you will be asked to respond in writing to a clinical case study of a stroke patient, as you would normally do in your clinical practice, followed by a discussion with the researcher about your written response to the clinical case. In the second activity, you will participate in an individual interview with the researcher where we will discuss your clinical and educational experiences. Each activity will take approximately one hour. Each interview will be audio-recorded to provide a record of our conversation. Your written response to the clinical case will be collected as part of the data for this study

also. If desired, you can receive a copy of your interview transcripts in the mail as a way to ensure that the transcripts accurately reflect our discussions.

Your participation in the research is entirely voluntary and you are free to withdraw at any time. This means that even though you agree initially to participate in each activity, you can withdraw from the study at any point. You may ask questions of the researcher at any time and you may refuse to answer any of the questions without any negative consequences.

Your participation in this research is greatly appreciated, and it is meant to be an interesting experience. The results of this study will be presented in my thesis final report and may be included in publications and/or conference presentations. Your identity will remain confidential: a pseudonym will be used and no identifying information will be provided. All data will be kept in a secure place and will be destroyed 5 years from the date of thesis submission. The end date for the data conservation period is December 31, 2015.

Any inquiries about the research study should be addressed to XXXXXXXXXX. There are two copies of the consent form one of which you may keep. 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, XXXXXXXXXXX.

If you are interested in participating please read and sign the consent form on the following page. If you would like to receive a copy of your interview transcripts, please check the box indicating your preference.

Informed Consent

I have read the letter describing the research project. I understand the purpose of the study and what is required of me, and I agree to participate. I have been assured that my participation is voluntary and that my identity will remain confidential. I agree to participate, and I am aware that I am free to withdraw from the study at any time without any negative consequence.

I am aware they any inquiries about the research study should be addressed to: XXXXXXXXXX.

I am aware that there are two copies of this consent form, one of which I may keep.

I am aware that any concerns about the ethical conduct of this project may be addressed to the Protocol Officer of the Social Sciences and Humanities Research Ethics Board at the University of Ottawa, XXXXXXXXXX.

Participant's signature:_____ Date: _____

Principal
Investigator's signature:_____ Date : _____

Please circle one: I do/ do not prefer to have a copy of my interview transcripts.

If yes, please provide your mailing coordinates:

_____

APPENDIX 6. CLINICAL CASE DIRECTIONS AND TEXT

Directions for the Clinical Case

Attached you will find a documented stroke clinical case. I would like you to respond in writing to the clinical case as you would normally do in your clinical practice. You will have up to 20 minutes to review the case and make your notes. Following this, you will be asked some questions about your written response as a way to offer some commentary on your response. You will be asked to speak about your analysis process including your thoughts about other information you would seek to discover in your analysis, as well as consider an initial treatment plan to address the issues identified as a result of your analysis. Your response will be audio-recorded. It is expected that this activity will take approximately one hour to complete.

Stroke Clinical Case

History of Present Illness (HPI)

Mr. C is a 45-year old, right-handed male who suffered a left middle cerebral artery (L MCA) infarct 3 weeks ago today. Upon further investigation, the etiology of Mr. C's stroke was found to be embolic in nature secondary to a previously undetected patent foramen ovale. CT scan confirmed a left MCA infarct affecting the left frontal and parietal lobes.

Past Medical History (PMH)

Mr. C was previously healthy other than a remote appendectomy (age 25) and previous right clavicle and tibia-fibula fractures related to sports activities in his late teen years.

Social History

Mr. C is a non-smoker who occasionally uses alcohol (i.e. 5-6 beers over a weekend). Mr. C has a computer engineering degree and is employed by a local high-tech firm as a software designer.

He is married with 2 young children (aged 8 and 10). His wife is in good health and works full-time with a private consulting company.

Mr. C and his wife are both drivers.

Mr. C enjoys playing golf and hockey in his free time. He also volunteers with his children's sports teams. His wife describes him as a "nice guy who would help anyone", "athletic", "involved with his kids" and "incredibly creative and intelligent".

Financially, it appears that Mr. C has resources for home assistance and renovations upon discharge if needed. He has a full benefit plan from his work as well.

Home accessibility

Mr. C lives with his family in a 2-storey house with a main level powder room. The bedrooms and main bathroom are on the second floor with 14-step access (1 railing left ascending). There are 2 steps to access the front entrance of the home, no railing.

Present status

Mr. C has been transferred to a rehabilitation facility as he is considered to be medically stable. He presents with the following:

- Right-sided hemiparesis
    - Right UE: Chedoke-McMaster stage 2 arm and hand
    - Right LE: Chedoke-McMaster stage 4 leg, 3 foot
- Sensory loss, right UE more affected than right LE
    - Very poor light touch awareness of right UE, light touch awareness of right LE
    - Proprioception intact at level of right elbow and right ankle

- Right visual field deficit
- Increased flexor tone in right UE with associated reactions of right elbow flexion with effort, stress
- Right shoulder subluxation of approximately 1 finger width
- No c/o pain at rest, but Mr.C shows signs of pain with passive movement of right UE or attempts at active movement of right UE
- Moderate expressive aphasia and signs of receptive aphasia (inconsistently follows 2-step commands)
- Fatigue and emotional lability (especially when around family members)
- Frustrated ++ re: communication difficulties

Functionally, his status on admission is the following:

- Requires 1 person assistance for bed ↔ wheelchair transfers
- Requires 2-person assist for wheelchair ↔ commode/toilet transfer (i.e. has 1-person assist to stand then 2nd person switches wheelchair for commode)
- Able to sit unsupported with supervision at bedside-low tone trunk with tendency to fall to right
- Requires 1-person assist to stand-tends to weight-bear only through left side and fixates himself with left UE. Is able to transfer weight to centre and slightly to right with ++ stabilization support.
- Non-ambulatory at present
- Requires assistance to propel wheelchair secondary to visual field cut (i.e. tendency to hit objects, walls on right side)
- Able to roll independently with effort onto right side, though reports right shoulder pain when lying directly on right shoulder. Needs assistance to get comfortable on right side. Requires light 1-person assist and verbal cueing to protect right arm to roll to left.
- Requires light 1-person assist to transition from sitting ↔ lying

Patient Goals:

Mr. C wants to be able to return home, return to work and have a full recovery. His wife reports that she plans to take Mr. C home "no matter how things turn out".

Based on this information you are asked to analyze it and determine a physiotherapy plan of care for Mr. C.

APPENDIX 7. CLINICAL CASE RESPONSE DISCUSSION GUIDE

1) Tell me about how you went about formulating your response to the clinical case.
2) Take me step by step through your written response to the clinical case.
3) What other information would you look to gather during your assessment?
4) What types of things generally guide your approach to clinical assessment of stroke patients?
5) How have your educational experiences guided your approach to clinical assessment of stroke patients?
6) How have your experiences with the Bobath Concept affected your approach to clinical assessment of stroke patients?

APPENDIX 8. INDEPTH INTERVIEW GUIDE

This is a guide only for the interviews (i.e. other questions will emerge based on the responses of the participants to these questions).

Introduction: provide background information on study and offer opportunity to ask questions

1) Tell me a little about your physiotherapy background (e.g. university attended, year of graduation, past and present work experience).

2) Tell me about your pre-licensure neurology training.

3) Tell me about your post-licensure neurology training.

4) Tell me about your experiences with your post-licensure training (i.e. how were you introduced to it, courses taken and course experiences, how you went about incorporating it into your practice and any barriers or facilitators to doing so).

5) Tell me about your experiences with the Bobath Concept (e.g. how you were introduced to it, course experiences and how you find you integrate it into your clinical practice).

6) What things influence your analysis and treatment?
    a. How does your pre and post-licensure neuro training influence your analysis and treatment?

7) What do you see as your role in the rehabilitation/recovery of stroke patients?

8) Is there anything else you would like to add?