University of Alberta

Identifying the factors contributing to Canadian physiotherapists' decisions to supervise physiotherapy students: Results from a national survey

by

Mark David Hall

A thesis submitted to the Faculty of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
in
Rehabilitation Science

Faculty of Rehabilitation Medicine

Fall 2013
Edmonton, Alberta

Abstract

Clinical education is a critical component of physiotherapy student training; however, clinical coordinators report increasing difficulty in securing sufficient, appropriate clinical placement experiences for students to meet national education requirements (Baldry Currens & Bithell, 2000). Although research evidence is limited, stressors in the workplace and a dislike of student evaluation procedures are among the key reasons for the reluctance of physiotherapists to supervise students (Creaser, 2006; Davies, Hanna, & Cott, 2011).

A survey instrument was developed, validated and administered to Canadian physiotherapists to identify the contributors to their decisions to supervise physiotherapy students. In total, 3148 physiotherapists from diverse practice areas and practice settings representing all Canadian provinces and territories completed the survey. Six factors (Clinical Instructor Feelings of Stress, Student Contribution to Workplace Efficiency, Dislike of the Assessment Instrument, Student Preparation and Attitude, Clinical Instructor Preparation to Evaluate, and Professional Role & Responsibility) emerged from an exploratory factor analysis as contributors to supervisory decisions. Significant differences were present in the identified factors between supervising and non-supervising physiotherapists and across geographic regions; however, the effect sizes were small.

Stress emerged as the most influential contributor to the decision to supervise a student; however, many of the identified factors were associated with, and exacerbated, clinical instructor stress. Enhanced supervisor training is one

strategy that may mitigate some of the stress associated with student supervision. The challenges associated with supervising students in private practice were also highlighted in this study, providing a perspective that has been missing from the literature related to clinical education. Despite differences in healthcare delivery, population demographics, and individual physiotherapy program delivery across Canada, there appear to be small differences between supervising and non-supervising physiotherapists across regional and practice boundaries. The influence of a physiotherapist's beliefs about their professional role appears to be more influential in the decision to supervise students than this study suggests, and provides new directions for future research. A multipronged approach, that includes all stakeholders in physiotherapy clinical education, is needed to resolve the issues of student placement capacity and to make the supervision of students a less stressful and a more rewarding undertaking.

Acknowledgments

The completion of my PhD would not have been possible without the support of a number of people who deserve my thanks. Firstly, thank you to my parents, Jane and Hilton Hall, who have afforded me numerous opportunities in life, and who encouraged me to pursue a career in physiotherapy. Thank you to my friends and colleagues in the Faculty of Rehabilitation Medicine who have supported and encouraged me along this road. Thank you to Dr. Todd Rogers for your mentorship and encouragement, and for sharing with me your knowledge of surveys, statistics and factor analysis. To Dr. Teresa Paslawski, thank you for being my sounding board, for your invaluable advice and for your friendship. I have appreciated our discussions over the last few years. To my committee member Dr. Trish Manns, thank you for your thoughtful feedback, wise counsel, and encouragement. To my supervisors Dr. Cheryl Poth and Dr. Lauren Beaupre, thank you for your mentorship and guidance over the last three and a half years. I have appreciated the time and energy you have dedicated to the planning and execution of my project. Thank you for reviewing many drafts of my dissertation. for your feedback and for your encouragement, I could not have done this without you both. Finally, thank you to my wife Dr. Jill Hall, who has been my steadfast supporter and biggest cheerleader, I love you.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

AB	Alberta
ACCE	Academic Coordinator of Clinical Education
AGM	Annual General Meeting
APP	Assessment of Physiotherapy Practice
APTA	American Physical Therapy Association
BC	British Columbia
BScPT	Bachelor of Science in physical therapy
CCPUP	Canadian Council of Physiotherapy University Programs
CI	Clinical Instructor
CIHI	Canadian Institute for Health Information
CPA	Canadian Physiotherapy Association
CPI	Clinical Performance Instrument
DCE	Director of Clinical Education
FTE	Full Time Equivalent
JDM	Judges Discrepancy from the Median
KMO	Kaiser-Meyer-Olkin
MA	Master of Arts
MB	Manitoba
M.Ed	Master of Education
MHA	Master of Health Administration
MMT	Master of Manual Therapy
MPA	Master of Public Administration

MSc	Master of Science
NACEP	National Association for Clinical Education in Physiotherapy
NB	New Brunswick
NPAG	National Physiotherapy Advisory Group
NL	Newfoundland and Labrador
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
ON	Ontario
PEI	Prince Edward Island
PTA	Physical therapist/physiotherapist assistant
PEAC	Physiotherapy Education Accreditation Canada
QC	Quebec
R	Range
SK	Saskatchewan
US	United States
VAS	Visual Analogue Scale

Chapter I

Introduction

Clinical education is a critical component of physiotherapy training; it allows students to develop and apply the necessary knowledge, skills and behaviours learned in the classroom in a clinical setting, under the supervision of a licensed physiotherapist (Baldry Currens & Bithell, 2000; Canadian Physiotherapy Association, 2008; Lekkas et al., 2007; Miller, Pace, Brooks, & Mori, 2006; Rogers, Lautar, & Dunn, 2010; Rose & Best, 2005). Clinical education, also known as clinical placements or fieldwork, is common in many other health science disciplines and permits the professional socialization of students (Öhman, Hägg, & Dahlgren, 2005) as they prepare to enter the workforce as competent entry-level health practitioners (Rogers et al., 2010). An essential feature of clinical education is the willingness of supervising physiotherapists, termed clinical instructors (CI), to provide quality placement experiences where they have the time available and skill set necessary to observe, evaluate and provide feedback on student performance. A meaningful and positive learning environment is created when CIs have time available for discussion and the provision of feedback, have a good interpersonal relationship with the student and an enthusiasm for teaching (Jarski, Kulig, & Olson, 1990).

A pressing dilemma facing physiotherapy, and many other health science programs in Canada and beyond, is a shortage of quality clinical placement experiences (Baldry Currens & Bithell, 2000; Mooney, Smythe, & Jones, 2008; Rodger et al., 2008; Smith, Corso, & Cobb, 2010). A significant contributor to the

shortage of placements is the fact that only a small percentage of registered physiotherapists participate in the clinical education of physiotherapy students. Numerous factors influence the number of clinical placements available to schools with both increasing enrolments and decreasing placement numbers common in many health science disciplines (Rodger et al., 2008; Smith et al., 2010). A lack of training infrastructure and training positions coupled with increasing patient acuity, staff workloads and burnout are cited as reasons for decreasing placement numbers in health science programs across Canada (British Columbia Academic Health Council, 2005; Health Council of Canada, 2005). These and other factors may influence physiotherapists' decisions to offer to supervise a physiotherapy student; however, literature in this area is limited and is typically qualitative in nature which limits its generalizability. Fewer placement numbers place increasing strain on physiotherapy training programs as schools struggle to secure sufficient clinical placement opportunities. Of particular concern to schools is the effect of increasing student enrolment on an already strained training environment.

In physiotherapy, the academic faculty member responsible for securing and managing clinical education opportunities is the Academic Coordinator of Clinical Education (ACCE), a role that has become more challenging to execute in recent years. Through networks and partnerships with the clinical community the ACCE attempts to obtain clinical placement opportunities that will allow physiotherapy students to meet program and licensing requirements (American Physical Therapy Association, 2011). Placement numbers ebb and flow depending

on staffing and resources in the health care environment; physiotherapy placement numbers have been steady or seen a slight decline in recent years as training programs have increased their enrolment to meet the demand for physiotherapists in the healthcare environment. An approximate 15% increase in enrolment numbers between 1999 and 2009 (Canadian Institute for Health Information, 2011) and continued program expansion in schools in Ontario, Quebec, Alberta and British Columbia (National Association for Clinical Education in Physiotherapy report, 2011) may potentially push the limits of placement capacity.

Until 2010, the ACCE at the University of Alberta had been responsible for securing roughly 480 clinical placement opportunities for physiotherapy students each year in a variety of practice settings. In an effort to meet increased demand for physiotherapists in Alberta, the Department of Physical Therapy increased its enrolment from 80 to 94 students in 2011 and increased to 110 students in 2012 (B. Martin, personal communication, May 2011). The extra 30 students for 2012 means an additional 180 clinical placements are required each year, a 38% increase over 2010. Anecdotally, ACCEs from across Canada report similar difficulties in securing placement experiences for students in their programs and a reluctance of physiotherapists to supervise physiotherapy students (e.g. National Association for Clinical Education in Physiotherapy, 2007; Norman et al., 2013).

In addition to workplace demands and changes in the acuity of the healthcare environment, the Clinical Performance Instrument (CPI, American

Physical Therapy Association, 1997), the instrument used to evaluate physiotherapy students on clinical placement, has also been reported to impact physiotherapists' decisions to supervise students. An e-mail comment from one Alberta physiotherapist to the ACCE summarises concerns related to student placement opportunities and the CPI:

> I had one further comment regarding placements and what would assist in [our] ability to take more students. The performance evaluation tool needs to be reconsidered. It is redundant, too subjective and extremely time-consuming to be done well. It needs to be shortened and made more objective (A. Hebert, personal communication, 19 May 2011).

At national meetings, ACCEs from across Canada report similar concerns from supervising therapists in their own jurisdictions, the assessment instrument is "time consuming", "too long" and "too American" and some therapists might go so far as to say the CPI is a barrier to supervising students (S. Murphy, personal communication, 22 September, 2011).

Pressing Need for Empirical Evidence

A pressing issue is the limited literature regarding Canadian physiotherapists' attitudes and opinions of clinical education in general. Where studies have been completed, they have been small scale, qualitative studies, not necessarily generalizable to the physiotherapy population as a whole (e.g. Davies et al., 2011) or representative of the Canadian context. In some instances, studies are completed and not published, reducing dissemination of key information. In her master's thesis, Creaser (2006) explored the impact of the CPI on

physiotherapist's workloads in Nova Scotia and New Brunswick. Findings from this unpublished study corroborate concerns expressed by many ACCEs who report that therapists in their jurisdictions find the CPI time consuming and not always applicable to the Canadian context.

Davies, Hanna and Cott (2011) conducted focus groups and key informant interviews with a convenience sample of public practice physiotherapists in Toronto, ON. They identified stress related to time and space limitations, apprehension with having to deal with challenging students, and a decrease in flexibility with having the student around as significant barriers to supervising students (Davies et al., 2011).

These important findings capture the opinions of only a small group of Canadian, public practice physiotherapists. There is a need for a national study that can provide generalizable empirical evidence of the factors that may contribute to physiotherapists' decisions to become involved in clinical education. A survey design appears most appropriate to efficiently gather this information from a large and diverse population of Canadian physiotherapists. No validated instrument exists to explore this topic; therefore, following a systematic and stepwise approach this study developed, refined and administered a survey instrument to investigate the contributors that impact Canadian physiotherapists' decisions to supervise physiotherapy students.

The general lack of empirical evidence related to physiotherapy clinical education in Canada, makes it difficult for educators and policy makers to reach informed decisions regarding the clinical training and evaluation of physiotherapy

students. Evidence related to the benefits of and barriers to student supervision has been reported in a limited and localized capacity; however, the factors that contribute to Canadian physiotherapists' decisions to supervise physiotherapy students had not been explored on a national scale. Developing adequate clinical education capacity is a common concern among Canadian physiotherapy programs. As physiotherapy schools across Canada increase their enrolment to meet current and future health workforce needs, the factors affecting physiotherapists' decisions to offer clinical placements have national importance for physiotherapy education and training.

The overall goal of this study was to provide a national, cross-sectional perspective of the issues affecting both public and private practice physiotherapists with respect to clinical education, and to begin to address the gaps in the literature on this important topic.

Chapter II

Literature Review

Clinical education has been described as the process of helping students obtain the required knowledge, skills and behaviours in clinical settings (e.g. hospitals or private clinics) that meet the standards set by health science education programs or accreditation bodies (Rose & Best, 2005). Clinical education is a multifaceted partnership between the education institution, its academic staff and students, and the clinical sites and the clinicians who work there (Mooney et al., 2008). It is essential for students to gain the practical experience they require in order to graduate as competent practitioners. However, the continued need for increased placements numbers, the small number of supervising therapists, and the contributors to physiotherapists' decisions to supervise students is of concern to all physiotherapy programs. The following sections will define physiotherapy clinical education in Canada; describe the roles of the partners involved, namely the ACCEs and supervising physiotherapists; discuss the evaluation of physiotherapy students on clinical placement; and highlight the current challenges related to shortages of clinical education opportunities for physiotherapy students. Thereafter the rationale for this study, a description of survey research, and statement of research questions will end this chapter.

Physiotherapy Clinical Education in Canada

Clinical education, the practical application of knowledge and skills learned in the classroom to a clinical setting, is a crucial component of physiotherapy education programs (Baldry Currens & Bithell, 2000; Canadian

Physiotherapy Association, 2008; Lekkas et al., 2007; Öhman et al., 2005). Clinical placements comprise a significant portion (roughly one third) of physiotherapy training and are a requirement for program accreditation in Canada and in other countries (Australian Physiotherapy Council, 2009; Commission on Accreditation in Physical Therapy Education, 2011; Physiotherapy Education Accreditation Canada, 2012). Under the supervision of a licensed physiotherapist, clinical education provides students with real clinical experiences that cannot be reproduced in the classroom or laboratory environment (Baldry Currens & Bithell, 2000). Clinical placements are necessary for the professional socialisation of physiotherapy students and foster personal and professional growth as they progress through the practice continuum from novice student to entry level graduate (Bartlett, Lucy, Bisbee, & Conti-Becker, 2009). Moreover, these clinical experiences are essential for the acquisition of knowledge, skills and behaviours necessary to join the workforce as competent, independent physiotherapy practitioners (Bartlett et al., 2009; Canadian Physiotherapy Association, 2008; Jarski et al., 1990).

Physiotherapy schools in Canada must ensure their students receive at least 1025 hours of supervised clinical education experiences in order to meet accreditation requirements, and to enable their students to sit the Physiotherapy National Exam required for licensure (Canadian Alliance of Physiotherapy Regulators, 2010). This amounts to approximately 28 weeks of clinical placements which are typically integrated throughout physiotherapy curricula and

vary in length from one to eight weeks (National Association for Clinical Education in Physiotherapy, 2010).

Within the 1025 hours requirement for supervised clinical practice are additional provisions related to area of practice and practice setting. Each student must spend sufficient time (at least 100 hours) in each of the core areas of cardiovascular and respiratory, musculoskeletal, and neurological physiotherapy in order to achieve competence with conditions typically treated by physiotherapists (Clinical Education Guidelines Working Group, 2011). In addition, each student must acquire experience in three practice settings or contexts: (a) acute care (typically in a large urban hospital), (b) rehabilitation or long term care facilities (can also include school based or home based care), and (c) ambulatory care (typically private or public out-patient clinics, Clinical Education Guidelines Working Group, 2011).

Partner: The Clinical Instructor. While on clinical placement, physiotherapy students are supervised by a fully licensed physiotherapist (Clinical Education Guidelines Working Group, 2011; Government of Alberta, 2011). These licensed practitioners play an essential part in the education and training of physiotherapy students (Canadian Physiotherapy Association, 2008; Mooney et al., 2008). Supervising therapists must constantly juggle their time in order to fulfil their many roles, including the provision of patient care, administrative duties and providing effective student supervision and mentorship (Baldry Currens & Bithell, 2000; Mooney et al., 2008; Öhman et al., 2005). In Canada and the United States (US) the supervising physiotherapist is typically called the

clinical instructor (Rogers et al., 2010); in other professions, and other countries, clinical educator, clinical teacher or preceptor may be used (Rose & Best, 2005).

McAllister (1997, as cited in Rose & Best, 2005) defined a CI as a professional who engages in a:

> Teaching and learning process which is student focused and may be student led, which occurs in the context of client care. It involves the translation of theory into the development of clinical knowledge and practical skills, with the incorporation of the affective domain needed for sensitive and ethical client care. Clinical education occurs in an environment supportive of the development of clinical reasoning, professional socialisation, and life-long learning. (p.3)

Although in some jurisdictions in Canada a small honorarium is paid to CIs, in most cases the position is voluntary and physiotherapy training programs are dependent on the goodwill of physiotherapists who offer to supervise physiotherapy students. Without their commitment to clinical education, schools would be unable to adequately train physiotherapy students.

Partner: Academic Coordinator of Clinical Education. Clinicians are supported in the role of student supervision, and connected to the university, by the ACCE. At some schools in Canada and many in the United States, the term Director of Clinical Education (DCE) is used. For the purposes of this dissertation, ACCE will be used. The ACCE is an academic faculty member within the physiotherapy department with a number of responsibilities related to clinical education, and who may also have additional roles related to teaching and

research (American Physical Therapy Association, 2011; Clouten, 1991). The ACCE is a liaison between the clinical community and the academic faculty, and works collaboratively with clinical sites to secure appropriate clinical placement experiences (American Physical Therapy Association, 2011; Philips, McPhail, & Roemer, 1986).

The ACCE manages all aspects of the clinical component of the physiotherapy curriculum both within the physiotherapy department and in the community. Internally the ACCE is responsible for securing appropriate learning experiences for students, developing and refining clinical education policies, educating students about the clinical aspects of the program, counselling students about clinical placement choices, mediating conflict, and remediating performance issues of students on placement.

Externally the ACCE identifies clinical sites that would provide an appropriate learning environment for students, recruits CIs at each of the clinical sites, educates CIs about the supervision and evaluation of students, and advises CIs during periods of poor student performance (American Physical Therapy Association, 2011). The ACCE must also review the clinical performance of each student, and ensure that students meet competence requirements during each clinical placement in order to progress through the program as expected.

Governance: National Association for Clinical Education in Physiotherapy. In Canada, the ACCEs from each of the 14 physiotherapy schools, their assistant ACCEs and regional representatives form, and are members of, the National Association for Clinical Education in Physiotherapy

(NACEP). The objectives of NACEP are to: 1) promote clinical education in the broad context of education, practice and research, 2) develop policies that advance national collaboration in clinical education, 3) provide advice on clinical education issues, and 4) establish a national assessment/evaluation process for clinical education supported by on-going research and evaluation (National Association for Clinical Education in Physiotherapy).

To better situate NACEP and clinical education within the context of physiotherapy education in Canada a brief overview of the governance structure is provided. Canadian physiotherapy education is governed by four key stakeholders connected through the National Physiotherapy Advisory Group (NPAG), which together maintain and advance physiotherapy practice and training curricula. The four partners include the Canadian Council of Physiotherapy University Programs (CCPUP, comprising the heads of each of the 14 schools), the Canadian Alliance of Physiotherapy Regulators-"the Alliance"(comprising the Alliance CEO and the registrars of each of the provincial and territorial regulatory colleges and is responsible for the administration of the physiotherapy national exam required for licensure), Physiotherapy Education Accreditation Canada (PEAC, the body responsible for accrediting each of the physiotherapy education programs), and the Canadian Physiotherapy Association (CPA). Figure 1. is a graphic representing these partnerships as well as the placement of clinical education components (NACEP, ACCEs and CIs) within the governance structure.

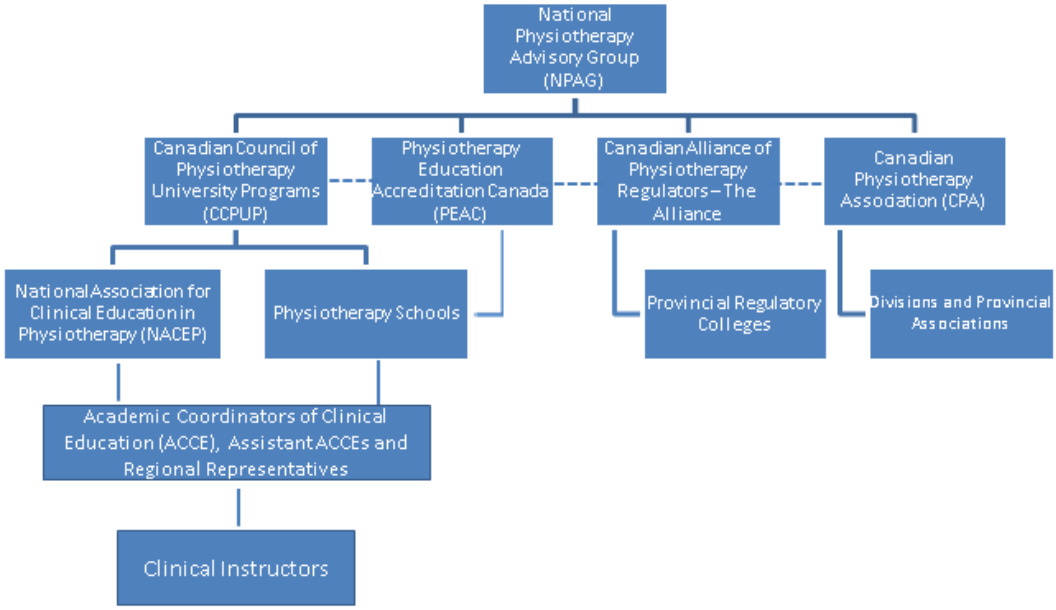


Figure 1. Governance structure for Canadian physiotherapy education

Assessment of Student Performance

During clinical placements students are assessed on an ongoing basis by their CIs, and the other health professionals with whom they come into contact. Assessment has a number of important functions in addition to providing focus and direction for student learning (Keating, Dalton, & Davidson, 2009). Assessment involving the collection of data on student performance gives supervising physiotherapists the opportunity to provide the student with feedback regarding their knowledge and skills which in turn allows the student to gauge his/her own performance, develop a plan to improve in areas of weakness and ultimately achieve his/her educational goals (Keating et al., 2009).

Epstein and Hundert (2002) defined professional competence as "the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the

individual and community being served" (p.226). Assessment has two broad categories, formative and summative, which contribute to the development of professional competence. Formative assessment is typically less formal, it provides feedback on performance that is not graded, it is intended to provide reassurance on their current clinical practice, it encourages reflection, and it guides and supports future learning (Epstein, 2007; Keating et al., 2009). Summative assessment is typically more formal, it provides an account of the student's performance at a particular point in time, it is used to make a judgement on a student's overall competence, and it may relate to a particular set of standards (Epstein, 2007; Myers, 2004).

During physiotherapy clinical placements, supervising physiotherapists guide and mentor students to deliver safe and effective patient care. Through observation of performance and the provision of feedback the student is enabled to become independently competent. A formal summative evaluation with written feedback is completed halfway through the placement and again at the end. At these two formal occasions the CPI is used to assess the student's competence and compare it to the standards set by the individual physiotherapy program as well as to the national standard. On both occasions the student is also required to complete a self-evaluation using his/her own CPI. During discussions about performance at midterm and final both the CI's and the student's CPIs are compared and discussed.

Assessment of competence is an integral component of health science training programs, and is particularly important in physiotherapy as licensed

physiotherapists are first line practitioners and do not require a physician order to assess and treat patients (Keating et al., 2009). The standard to which Canadian physiotherapists are held is determined by the *Essential Competency Profile for Physiotherapists in Canada* (National Physiotherapy Advisory Group, 2009).

Essential Competency Profile for Physiotherapists in Canada. The Essential Competency Profile for Physiotherapists in Canada, hereafter referred to as the Profile, was developed by the NPAG and its partner organizations. The third edition was released in October 2009 after extensive consultation with leaders in physiotherapy education and practice, practicing physiotherapists and other stakeholders. The Profile describes the essential competencies or abilities required for competent physiotherapy practice by graduating physiotherapists, and for licensed physiotherapists throughout their careers (National Physiotherapy Advisory Group, 2009). The Profile comprises seven key roles in physiotherapy practice, physiotherapist as: (1) Expert, (2) Communicator, (3) Collaborator, (4) Manager, (5) Advocate, (6) Scholarly Practitioner, and (7) Professional. Embedded within each role are a number of key competencies which outline the important objectives or skills to be performed. In order for physiotherapists to practice in a safe and effective manner, competence in each of the seven roles must be demonstrated (National Physiotherapy Advisory Group, 2009).

The Profile, together with the Entry-to-Practice Physiotherapy Curriculum Guidelines (Council of Canadian Physiotherapy University Program, 2009), forms the basis for physiotherapy entry-level education in Canada. Through the accreditation process, each physiotherapy school is continually monitored and

assessed to ensure it is compliant with a specified set of accreditation standards. Standards and guidelines are developed to ensure schools graduate competent practitioners ready to enter the workforce; the standards for accreditation are based in part on the Profile, and the Entry-to-Practice Physiotherapy Curriculum Guidelines (Physiotherapy Education Accreditation Canada, 2010).

The Clinical Performance Instrument. Physiotherapy students in Canada are evaluated using the Clinical Performance Instrument (CPI), a 24 item assessment instrument intended to assess the performance of physiotherapy students on a continuum as they progress from beginner students to entry-level practitioners (Adams, Glavin, Hutchins, Lee, & Zimmerman, 2008; Task Force for the Development of Student Clinical Performance Instruments, 2002). The CPI was developed by the American Physical Therapy Association (APTA) to be consistent with two key APTA publications related to physical therapy education and practice in the United States: the Guide to Physical Therapist Practice, Volume 1: A Description of Patient Management (American Physical Therapy Association, 1995), and A Normative Model of Physical Therapist Education (American Physical Therapy Association, 1997). The Guide to Physical Therapist Practice describes the scope and breadth of physiotherapy practice including patient care, and A Normative Model of Physical Therapist Education describes the preferred content for physiotherapy curricula, practice expectations and educational objectives and is used by physiotherapy schools and clinical sites.

The CPI measures 24 aspects of clinical performance, or performance criteria, that together encompass physiotherapy clinical competence including:

safety, communication, examination skills, treatment skills, delegation to support personal and adherence to legal and ethical standards (Task Force for the Development of Student Clinical Performance Instruments, 2002). Each performance criterion is measured on a 100mm visual analogue scale (VAS), anchored on the left by *Novice Clinical Performance* and on the right by *Entry-Level Performance*. Additional checkboxes were added after pilot testing to the right and left of the VAS to allow clinicians to indicate *With Distinction*, for those criteria in which student performance exceeded entry level expectations, and a *Not Observed* box if the student did not have the opportunity to demonstrate skills measured by that criterion (Task Force for the Development of Student Clinical Performance Instruments, 2002).

Following its release, members of NACEP adopted the CPI as the national instrument to evaluate students on clinical placement. Over a period of three years all schools, 13 at the time, transitioned to the CPI with the last school, Dalhousie University, coming online in 2004 (G. Wainwright, personal communication, 31 May, 2011).

Clinical Placement Shortages

A pressing dilemma facing many physiotherapy schools is the continued challenge of securing sufficient clinical placement opportunities for physiotherapy students (Miller et al., 2006; Norman et al., 2013; Rodger et al., 2008). Changes within the healthcare system in recent years (e.g. increased patient acuity, staffing shortages) have made physiotherapists' decisions to supervise a student more difficult, and therapists are often reluctant to take on the additional work (Rodger

et al., 2008). The responsibilities related to student supervision are often in addition to the physiotherapist's normal work duties and are typically without pay. On a national level, the decrease in student placement offers puts physiotherapy schools in a difficult situation as many have increased their enrolment in order to meet health workforce shortages. A lack of placements puts student education in jeopardy; without clinical placements, students will not be able to meet the requirements for graduation and licensure.

According to the most recent statistics from the Canadian Institute for Health Information (CIHI) published in October 2011, 18 473 physiotherapists have active licenses and are registered with provincial regulators (the report does not include physiotherapists in the Northwest Territories or Nunavut as there are no regulators in these territories, Canadian Institute for Health Information, 2011). At present, only a small percentage of licensed physiotherapists supervise physiotherapy students. For example, in Alberta approximately 25% of licensed physiotherapists (450 of 2200) participate in, and are responsible for, the clinical education of between 95 and 110 physiotherapy students studying at the University of Alberta each year. Each student must complete six placements, therefore some therapists are called upon to supervise more than one student a year and in some cases up to 10 students a year.

The majority of clinical placement experiences are reported to be positive (e.g. Hall, McFarlane, & Mulholland, 2012), and yet only a small number of physiotherapists agree to participate in clinical education. The factors underlying such a small percentage of physiotherapists who decide to supervise students are

not well understood and literature in this area is limited. Although not specifically investigated, studies have highlighted a number of factors that may contribute to physiotherapists' decisions to supervise physiotherapy students; these include staffing shortages, CI stress, a love of teaching, institutional culture and the assessment instrument (e.g. Creaser, 2006; Davies et al., 2011; Öhman et al., 2005). These contributing elements are present in all healthcare systems across the country and may play a significant role in clinical placement numbers. These elements are expanded upon in the following sections.

Health human resource challenges. In September 2000, First Ministers in Canada agreed on a vision, a set of principles and an action plan to renew the health care system in Canada. This accord aimed to improve the quality and accessibility of healthcare, as well as develop strategies to sustain health care delivery by ensuring the supply of needed health care professionals (Health Canada, 2006). In response, the Health Council of Canada convened a Health Human Resources Summit in 2004 to further examine the complex issue of health human resources and identify solutions to this problem (Health Council of Canada, 2005). A report from an environmental scan for this summit identified a number of key issues in a variety of areas related to the training of health care professionals. From an education standpoint these include: 1) a lack of supply in all professions, 2) too few training positions, and 3) a lack of infrastructure to support increased enrolment. From a workplace perspective: 1) heavy workloads and staff burnout, 2) early retirement, 3) insufficient recruitment and retention

strategies, and 4) inequitable distribution of personnel were seen as major challenges to training and retaining new staff (Health Council of Canada, 2005).

The report presents a catch 22 situation that requires attention. There is a lack of supply and a shortage of training positions for physiotherapist students, which is coupled with heavy staff workloads and a deficiency in infrastructure in the clinical environment needed to cope with increased enrolment numbers. Over the last decade, many physiotherapy schools have increased their enrolment to meet physiotherapist shortfall predictions. Collectively, Canadian physiotherapy schools have increased their output from 622 annual graduates in 2000 to 713 in 2009 (Canadian Institute for Health Information, 2010). However, schools face increasing challenges to find sufficient, appropriate placement opportunities necessary to train an increased number of students.

Challenges in student supervision. A number of researchers (e.g. Baldry Currens & Bithell, 2003; Öhman et al., 2005) highlight the growing concerns expressed by clinicians related to the supervision of students. The reasons for the lack of student placement numbers are many and complex. It appears to be more than therapists just refusing to supervise a student; it is a response to the number of pressures within the healthcare system that compromise physiotherapists' abilities to deliver patient care, perform administrative duties and provide appropriate mentorship and supervision to a student (Mooney et al., 2008). A report by Rodger et al. (2008) highlights a number of issues related to clinical education across many disciplines in a variety of countries. The report, which focuses on rehabilitation science disciplines, sourced a number of papers

illustrating challenges in clinical education; staff shortages, an increased acuity and complexity of the healthcare environment, reorganization of health care delivery models and a lack of funding are all cited as reasons for a decrease in clinical placement opportunities (Rodger et al., 2008). These findings are supported in Canada by the Health Council of Canada environmental scan (Health Council of Canada, 2005) and by other Canadian studies investigating factors affecting placement numbers (e.g. Thompson & Proctor, 1990).

In their frequently cited paper, Baldry Currens and Bithell (2000) explored the barriers to increased numbers of clinical placements in the National Health Service within one region in the United Kingdom. The researchers used in-depth interviews and focus groups to explore the attitudinal and organisational barriers to clinical placements. A purposive sample of physiotherapists working in the public sector, recent graduates and physiotherapy students discussed their perspectives of the benefits and challenges of, and their roles in, clinical education (Baldry Currens & Bithell, 2000). More experienced CIs believed that clinical education was a core responsibility of physiotherapists and that most physiotherapists should be involved in the training of students, except for a small minority who would do it badly. Despite it being a core responsibility both physiotherapists and physiotherapy managers stated that patient care was their priority and would dictate the number of students they could accept. Newer graduates were uncertain if clinical education was a core responsibility and felt that it should be optional. The benefits of student placements were the ability to recruit students for employment, and that students being present enhanced

practice. However, the presence of students also created tension, as physiotherapists felt stressed due to a lack of time and the pressure this placed on them to get their other duties completed. Additionally, managers questioned the contributions that students made to efficiency and productivity of the physiotherapy service (Baldry Currens & Bithell, 2000).

The ambivalence of whether the supervision of students was a core responsibility of physiotherapists was a concern for the researchers, and one they felt raised important questions for the profession. Enhanced support from managers, universities and professional bodies was posited to lead to greater recognition for the role of CI, and would encourage participation in this important role. A joint effort is necessary from all stakeholders in physiotherapy education and practice to investigate solutions for increased clinical placement capacity (Baldry Currens & Bithell, 2000).

Similar findings were evident in Sevenhuysen and Haines (2011) qualitative survey study in Australia. An online survey with five open ended questions was sent to supervising physiotherapists working in six hospitals and other community rehabilitation sites in October 2008. Questions pertained to the advantages, disadvantages, and barriers to clinical placements, and whether clinical education was a core role of physiotherapists. Data were analysed using a framework approach (Pope, Ziebland, & Mays, 2000), from which themes in the data were charted according to a theoretical framework before being mapped for interpretation (Sevenhuysen & Haines, 2011).

Similar to findings from Baldry Currens and Bithell (2000), most (89%) of the survey respondents believed clinical education to be a core role of physiotherapists, and their principal motivation for supervising students was out of duty or responsibility, although some did feel it was forced upon them. The preparedness and the attitude of the student played a key role in whether the clinical placement was viewed as positive or negative. Professional development and keeping up to date were the most frequently reported benefits of supervising students. A lack of time to supervise students and complete caseload requirements led to stress and reduced job satisfaction, which were seen as the primary barriers to student placements (Sevenhuysen & Haines, 2011).

Physiotherapists appeared to have a strong sense of duty to provide clinical placement experiences, which they identified as being driven internally by a professional responsibility or externally by a job description. Most physiotherapists surveyed believed that clinical education was a core professional responsibility; however, despite the benefits of student supervision, a number of challenges were identified that require greater support for and training of CIs (Sevenhuysen & Haines, 2011).

The benefits and challenges specifically faced by physiotherapists involved in clinical education have also been reported elsewhere. Öhman and colleagues (2005) conducted a qualitative study in Sweden to explore supervising physiotherapists' perceptions of the role of the CI. Purposive sampling was used to recruit male and female participants from different physiotherapy practice areas and practice settings. Five focus groups were conducted; due to illness and work-

related commitments focus group sessions had low participant numbers of between two and five physiotherapists. In addition, all were employed in the public sector with no representation from private practitioners.

Focus group findings indicated that therapists felt the role was both stimulating and stressful (Öhman et al., 2005); working with students stimulated their learning, challenged them and kept them up to date with their professional knowledge (a source of continuing professional development). The most stressful factor was a lack of time - a lack of time to care for their patients and a lack of time to provide appropriate supervision for students. This was frustrating to physiotherapists as many felt a professional duty to educate physiotherapy students. They also felt unsupported by employers who viewed student supervision as very important, but failed to facilitate it through scheduling or altered workloads.

Similar findings related to supervisor stress, employer support and obtaining new knowledge were identified in a recent Canadian study by Davies, Hanna and Cott (2011), who conducted focus groups and key informant interviews with a convenience sample of physiotherapists in Toronto, ON. Sites sampled were two large hospitals in the Toronto area. No attempt was made to include physiotherapists from private practice.

Three main categories emerged from focus group sessions and interviews including (1) perceived barriers to supervising students, (2) perceived benefits of supervising students, and (3) the influence of institutional culture. The main barrier to supervising students was conveyed as stress; stress associated with

factors believed to be beyond physiotherapists' control. These were related to time and space limitations, apprehension with having to deal with challenging students, and a decrease in flexibility with having the student around (Davies et al., 2011).

The culture at the work site related to clinical education had some bearing on how people felt about students and the amount of support (or lack thereof) that physiotherapists perceived to receive from their employers. Institutions with a culture that valued and encouraged clinical teaching provided a level of support that seemed to mitigate, to some extent, the negative factors associated with supervising a student. The opposite was true at sites in which physiotherapists felt unsupported by their employer, and were often less likely to offer a placement for a student. Without institutional support, and depending on the manager, some physiotherapists were expected to attend training for clinical education on their own time. Eventually these physiotherapists stopped participating in clinical education activities (Davies et al., 2011).

Similar themes of stress, employer support and recognition, and professional benefits appear to be evident in the studies described. However, each provides the perspective of public sector physiotherapists only, and offers opinions of a select group of CIs involved in clinical education. Private practitioners, and physiotherapists who choose not to participate in clinical education, are not represented in these studies. In Canada, these two groups reportedly comprise significant numbers of practising physiotherapists (Canadian

Institute for Health Information, 2011) and their perspectives are not represented in the literature.

Dissatisfaction with the assessment instrument. The pressure to secure additional placements, due to growing student enrolment across Canada, has focussed increased attention on the CPI and the assessment of physiotherapy students in recent years. Many ACCEs across Canada report that CIs are dissatisfied with the instrument used to assess students on placement, the CPI. Dissatisfaction centers on the length of time it takes to complete the CPI and its applicability to the Canadian context, however, there is little documented evidence regarding CIs' satisfaction with the CPI. During its development, user satisfaction related to the amount of time to complete the CPI was neutral. Developers believed satisfaction would improve with use and further training (Task Force for the Development of Student Clinical Performance Instruments, 2002) little follow-up has been done on user satisfaction with respect to the CPI.

An exploration of Nova Scotia CIs' experiences and perceptions of the CPI was undertaken in a master's thesis (Creaser, 2006). The focus was on determining the impact of the CPI on clinicians' workload, its use, and the relevance of the CPI to clinical education. Using purposive sampling, Creaser invited CIs with experience using the CPI to participate in focus group sessions. A total of three sessions were held in Halifax, NS and Saint John, NB with 16 CIs from the public sector who represented a variety of practice areas, and one private practitioner (Creaser, 2006). Through purposive sampling an attempt was made to include physiotherapists with experience using the CPI who would provide rich

description of their experiences. Both public and private practice physiotherapists were approached but only one private practitioner agreed to and was able to participate in the focus group sessions. Creaser decided not to include comments from this lone private practitioner in data analysis. The absence of private practitioner data means a key physiotherapy demographic was not represented in this study. Private practitioners account for roughly 40% of licensed Canadian physiotherapists (Canadian Institute for Health Information, 2011).

Findings from focus group sessions revealed a number of areas of concern related to the assessment instrument including: the subjectivity of the VAS, the length of time to complete the instrument and the language and context of the tool. These key findings substantiate comments related to the CPI made by other practicing physiotherapists across Canada. Respondents considered the CPI to be too long and found themselves repeating their observations in more than one section. Two excerpts from focus group sessions in Creaser's thesis summarise these views:

> Yeah, the redundancy by the end of it, I'm tired and I don't have any comments to say that I haven't already said in the previous 18 questions. I fade in the end. (Focus group participant, Creaser, 2006, p. 93)

> I find there are a lot of items that don't apply to us in a general hospital facility, lots of things about financial institutions and, to me, the tool seems very American, that it would fit more in an American institution or…a more private setting. (Focus group participant, Creaser, 2006, p.91)

The findings from Creaser's study corroborate some of the anecdotal accounts heard by ACCEs across the country – that some physiotherapists are dissatisfied with the evaluation process of physiotherapy students on placement, and that the CPI may be a barrier to clinical placement offers. However, this study represents the opinions of a select group of Nova Scotia physiotherapists from public sector health care institutions, and is not necessarily representative of Canadian physiotherapists in general. Further study into this area of clinical education on a broader scale is required.

In summary, few studies have been published that explore the issues prevalent in physiotherapy clinical education in Canada. Those that are published have been small-scale qualitative studies that have explored the opinions of specific groups of physiotherapists – typically from public sector institutions. Study participants are also often clinicians who are active in the supervision of students. Missing from many of these studies are the opinions of the roughly 40% of Canadian physiotherapists working in the private sector (Canadian Institute for Health Information, 2011) as well as an investigation into the reasons for the small numbers of physiotherapists who agree to supervise students. These reasons are not well understood and are typically anecdotal in nature. There was, therefore, a need for empirical evidence to substantiate these claims.

The highlighted qualitative studies and anecdotal reports often identify personal and professional (e.g. stress, professional commitment), contextual (e.g. physical space, staffing shortages, time), evaluation (e.g. assessment instrument, time to evaluate), and student (e.g. preparedness, training) factors which

contribute to the issues identified in clinical education. However, the link between these factors and physiotherapists' decisions to supervise physiotherapy students had not explicitly been explored. The goal of this study therefore, was to identify the contributing factors that influence Canadian physiotherapists' decisions to supervise physiotherapy students, and to generate empirical evidence on this important topic.

Survey Research

Canada is a large and diverse country with physiotherapists practising in each province and territory, in rural and urban locations, and in various practice settings and areas of practice (Canadian Institute for Health Information, 2011). As a result, the collection of in-depth data in the form of interviews or focus groups that would provide representative data of the Canadian physiotherapy population would have been challenging and not financially feasible for this project. For this reason a survey design appeared to be the most appropriate method to obtain input from a cross-section of practising Canadian physiotherapists about the factors that contribute to their decisions to supervise students. Survey research involves the collection of data to produce statistics about a target population by asking specific questions of members of that population (Fowler, 2009). This can be achieved through a number of methods including: telephone interviews, face-to-face interviews, and paper- or web-based formats in which respondents answer questions directly on the survey instrument or questionnaire. Additionally, the use of a survey permits the statistical comparison of groups of respondents, e.g. supervisors and non-supervisors or

physiotherapists across different geographic regions (Czaja & Blair, 2005).

Although technological advances in recent years have made the collection of survey data easy and cost effective, including every member of the target population in a survey is not always feasible and thus a sample of the population is obtained. When collecting data from a sample of the population it is hoped that the characteristics of the target population are present in the sample to the same extent that they exist in the population (Czaja & Blair, 2005; Fowler, 2009).

According to Fowler (2009), the accuracy of the statistics produced from the data generated from a survey, and the extent to which those statistics are representative of the population, can be limited by measurement error. Two important sources of error exist in survey research: error associated with respondents of the survey, and error associated with the answers given. Therefore care should be taken during survey development to minimize potential sources of error in order to maximize the inferences that can be drawn from the results of the survey (Bradburn, Sudman, & Wansink, 2004; Czaja & Blair, 2005; Fowler, 2009).

In sum, clinical education is a critical component of physiotherapist training; however, numerous challenges exist in securing enough appropriate clinical placement opportunities necessary for students to graduate. A limited number of studies have reported on the barriers to obtaining placements, but they are neither representative of the Canadian physiotherapy population nor comprehensive of the issues contributing to the decision to supervise a student. A survey design was most appropriate to achieve a comprehensive understanding of

the challenges pertaining to physiotherapy clinical education in Canada, and to answer the study's research questions.

Statement of Research Questions

1. What are the factors that contribute to Canadian physiotherapists' decisions to supervise a physiotherapy student on clinical placement?
2. To what extent do supervising physiotherapists differ from non-supervising physiotherapists?
3. To what extent do the identified factors influencing Canadian physiotherapists' decisions to supervise physiotherapy students differ across the geographic regions?
4. To what extent is the current assessment instrument a contributor in the decision to supervise a student?

Chapter III

Survey Development and Validation

The use of surveys has become widespread in today's society as they are an efficient means of gathering a large amount of information on a wide variety of topics in a short period of time (Vogt, 2007). In order for the results of survey research to be interpreted, the survey instrument needs to be a valid and reliable measure of the construct of interest (DeVellis, 2003; Czaja & Blair, 2005). The incorporation of attitude scales into the survey within this study introduces an added layer of complexity. Attitudes, those feelings we have towards an object, are often difficult to measure as they are subjective, they exist only in a person's mind and they have no "true" answer (Bradburn et al., 2004).

Prior to presenting the findings, this study provides validity evidence for an instrument that measures the attitudes that contribute to Canadian physiotherapists' decisions to supervise a student, and begins to address the lack of available instruments for this purpose. To enhance the validity of the instrument so that it measures what is intended to be measured – the attitudes of Canadian physiotherapists towards the supervision and evaluation of physiotherapy students, this chapter describes a stepwise process for item development, validation and pre-testing and begins by describing both the advantages and limitations of survey research. The procedures involved in the national administration of the survey and the subsequent data analysis are described in Chapter Four.

Advantages of Survey Research

Surveys allow for the economical collection of large amounts of information in a relatively short period of time from a defined sample of the population of interest with the intention of generalizing the findings to the broader population (Coughlan, Cronin & Ryan, 2009; Czaja & Blair, 2005; Fowler, 2009). The use of surveys permits both simple and complex statistical analyses of data, which may then be used to test hypotheses or investigate causal relationships between variables, and between variables and members of the population (Coughlan et al., 2009; Czaja & Blair, 2005; Fowler, 2009). The introduction of web-based surveys has created additional benefits and advantages compared with other survey methods (e.g. paper or telephone). These benefits and advantages include: (1) low cost, (2) reduction of data entry errors, (3) population access, (4) timely data collection, (5) skip response patterns, (6) and a variety of visual and auditory aids that can be incorporated into the survey instrument (Coughlan et al., 2009; Czaja & Blair, 2005; Schmidt, 1997).

Web-based surveys are economical as they eliminate the costs of a) interviewers in face-to-face or telephone surveys, b) printing of survey instruments, c) postage of survey instruments to the target sample as well as return postage, and d) data entry (Coughlan et al., 2009; Czaja & Blair 2005; Schmidt 1997). In web-based surveys, respondents enter their responses directly into the survey instrument eliminating the need for data entry, which reduces the error associated with this process (Coughlan et al., 2009; Schmidt, 1997).

In addition, the geographic distribution of the population of interest, as is

the case in Canada, has no bearing on the distribution of the survey. A diverse national sample is no more costly or difficult to administer than a sample that is densely concentrated in one small area (Czaja & Blair, 2005; Schmidt, 1997), a computer with access to the internet and valid email address is all that is needed.

Web-based surveys also allow for timely collection of survey data in comparison to mail or face-to face surveys (Coughlan et al., 2009; Czaja & Blair, 2005; Schmidt, 1997). Mail surveys take time for the questionnaire to reach recipients and time for the completed questionnaire to be returned (Coughlan et al, 2009; Czaja & Blair, 2005), and face-to-face surveys are time intensive as they require time to train interviewers, time for travel to the interviewee's location, and then time to return the survey instrument and to enter data (Czaja & Blair, 2005). Web-based surveys are sent almost instantaneously to all members of the sampling frame and with almost instantaneous return of data once the participant responds (Czaja & Blair, 2005).

New technologies have also enabled additional advantages for web-based surveys that may enhance the survey usability or respondent experience including skip patterns which allow for items to be skipped based on the respondents previous answers, and the addition of images, animations and sounds to the survey that may aid in survey completion (Czaja & Blair, 2005).

Limitations of Survey Research

The goal of survey research is to produce statistical estimates of characteristics of a population of interest (Czaja & Blair, 2005; Fowler, 2009), but despite their many advantages, self-report surveys also have a number of

limitations. The limitations of survey research relate to sources of error in survey findings; without careful attention to reducing sources of error during instrument development, the statistics produced from a survey may not accurately reflect the characteristics of the population of interest. Survey research is prone to two main sources of error: (1) error associated with survey respondents, and (2) error associated with the answers given by respondents. The first source of error has two components: sampling error and bias. The second is associated with item design, respondents' understanding of the items, and the knowledge they have to answer them (Czaja & Blair, 2005; Fowler, 2009). Both sources of error are described in the next section, beginning with error associated with survey respondents.

Error associated with survey respondents. Sampling error is the chance variation in the characteristics of the sample compared to the target population, and is considered random error. Since not all members of the population are usually included in the sample, some variability between the sample and the population will exist. The sampling procedures employed to collect data, and the members of the target population who are included in the sampling frame (i.e. those who have a chance of being selected to participate in the survey), can impact how closely the sample resembles the target population from which the sample was drawn (Czaja & Blair, 2005; Fowler, 2009).

Bias is the degree to which survey responders differ from the target population as a whole. The extent to which all members of the target population have a chance of being included in the sampling frame will impact how

representative of the population the sample is. Additionally, how the sample is selected and whether that process is random will also impact the representativeness of the sample (Fowler, 2009). In this study, the target population was all practising, Canadian physiotherapists licensed with a provincial or territorial regulatory College. Through an agreement with the Colleges, each registered practising physiotherapist was included in the sampling frame and had an equal chance to participate in the study.

A key metric often used to assess the quality of survey results is response rate, defined as the number of surveys completed as a fraction of the total number of surveys administered (Czaja &Blair, 2005; Fan & Yan, 2010). Nonresponse is a significant potential source of error in survey research (Ary, Jacobs, & Sorensen, 2010; Czaja & Blair, 2005; Fowler, 2009). Nonresponse may bias the results of the study; non-responders may have a systematic difference to responders which may be related to education, intelligence or interest in the survey topic, or may have differing attitudes and experience to responders (Ary et al., 2010; Czaja & Blair, 2005). This may have implications for results which are intended to represent the entire population of interest (Czaja & Blair, 2005).

The extent to which bias exists is dependent on the percentage of those sampled that do not participate in the survey and also how different those non-responders are to the population as a whole (Fowler, 2009). A relatively small percentage (roughly 25%) of Canadian physiotherapists supervises physiotherapy students. The reasons why physiotherapists choose not to supervise students, and if the CPI is one of those reasons, were of interest in this study. The extent to

which non-supervising physiotherapists respond to the survey will likely have an impact on the results.

A number of incentives and strategies have been suggested to encourage participation and improve survey response rate. These include: (1) making contact and inviting potential respondents before the survey is sent out, (2) personalization of the invitation, (3) the use of reminders and follow-ups, and (4) incentives for participation (e.g. a gift card, Fan & Yan, 2010). Each strategy was considered for use in the present study.

Error associated with survey answers. There are a number of reasons for error associated with survey answers, including: respondents not understanding an item as intended by the item writer, respondents not having the information needed to answer the item, or respondents providing answers in a way that makes them appear different to what they truly are (Czaja & Blair, 2005; Fowler, 2009). In this study, it was anticipated that respondents would have the information necessary to respond to the items related to their decisions to supervise students, and the supervision of students is not deemed to be a controversial topic. Therefore, minimal time was spent reducing error associated with these two sources. However, during the development of the survey instrument considerable time was spent reducing the error associated with the understanding of the items in this survey. In this study a stepwise process of construct identification, item development and validation, and item pre-testing was employed to minimize this source of error.

Survey Development

Several considerations informed the development of a three-part survey for this study. Among the most important was the need to better understand how to enhance the capacity for individual physiotherapists to supervise students. This is because clinical education is an essential component of physiotherapist training and the need to secure sufficient, appropriate clinical placements for a growing number of students is a priority in many physiotherapy schools. The factors that contribute to a physiotherapist's decision to supervise a student, and how those factors can be addressed to increase clinical placement capacity, are of interest to many stakeholders in physiotherapy education, and are the focus of this survey.

The survey development process was undertaken between January 2010 and August 2011 and resulted in a survey instrument with three sections: (1) attitudinal items related to the supervision and evaluation of students that were considered contributors to physiotherapists' decision to supervise students, (2) items related to the development of a new assessment instrument based on Canadian competencies, and (3) background items related to respondent demographic information, physiotherapy training, and workplace area of practice and practice setting. This dissertation is limited to reporting findings from sections 1 and 3, which contribute directly to the study's research questions. Several questions informed the development of items to be included in the survey, namely what were the constructs to be measured by the items, which items would adequately represent the constructs, and what scales would be appropriate to rate

each item? The following section describes the constructs to be measured, the development of survey items and the choice of scale used in the survey.

Identification of constructs. The research questions posed in this study relate to the attitudes of Canadian physiotherapists towards the supervision and evaluation of students on clinical placement and how these attitudes contribute to the decision to supervise a student. A review of the literature related to clinical education in physiotherapy and other health professions identified a number of themes highlighting the barriers to and benefits of clinical education. These findings from the literature were augmented by anecdotal reports from Canadian physiotherapists (as reported by ACCEs) who recognized a number of elements in clinical education that contributed to their decision to supervise a student. Together, these two sources of information were used to identify the constructs to be measured by the survey. The constructs were categorized into Personal and Professional, Context, Evaluation and Student; specific items were then developed to measure each construct.

Item development. In a similar approach to the identification of constructs, the literature related to clinical education and anecdotal physiotherapist reports were used to generate items that were categorized under each of the constructs of interest. Several considerations were taken into account during item development including: the format and content, the representativeness, and the specific wording of items.

Items developed for each construct were intended to be a homogenous subset that reflected the underlying construct. Each item is a measure of the

strength of that construct, and the content of each item should reflect the construct of interest (DeVellis, 2003). Care was taken so that items in each scale were internally consistent and reflective of the underlying construct, and together were representative of the construct of interest. To further enhance the reliability of the scale, a measure of redundancy was included to increase the number of potential items for the scale and to draw upon common content across a number of items. By substituting one or two words in a sentence it is possible to capture the construct of interest by portraying the construct in different ways (DeVellis, 2003).

During item development, attention was given to the wording of items because of the potential for wording to have a significant impact on the nature of answers given by respondents (Bradburn et al., 2004). Improperly designed items are not likely to provide reliable or valid information and yet, too often questionnaires are developed without much consideration for the way in which the items are constructed (Bradburn et al., 2004). To improve the clarity and meaning of survey items, and therefore generate meaningful responses, the development of items should follow a set of design rules (Bradburn et al., 2004). Once the items were developed, ratings scales appropriate for the measurement of attitudes were reviewed.

Scale selection. This survey intended to measure physiotherapists' attitudes towards the supervision and evaluation of physiotherapy students. Attitudes exist on a continuum between the extremes of agreement and disagreement or favourableness and unfavourableness towards the target of

interest (Ary et al., 2010; Wiersma & Jurs, 2009). By measuring attitudes, other researchers have attempted to place subjects along that continuum (Wiersma & Jurs, 2009). A number of scaling methods exist in the measurement of attitudes; one of the most common is the Likert scale which was used in this study (Ary et al., 2010; DeVellis, 2003). Likert scales are subject-centred, summated rating scales comprising a series of statements about a single attitude or construct (Bradburn et al., 2004; McIver & Carmines, 1981). A number of items were developed related to the supervision and the evaluation of students on placement. Statements in the scale were intended to be replications of one another; in order to gauge attitudes, consistency among responses was sought.

Typically, a Likert response format has five points; each point on the scale indicates varying degrees of endorsement of the statement. One extreme of the scale has a favourable response and the other extreme an unfavourable response with respect to the attitude of interest, whereas the intermediary points are left blank. There is considerable debate in the literature regarding the use of Likert scales and the assumption that Likert scale data is interval in nature. Some authors (e.g. Jamieson, 2004) maintain that Likert scales are ordinal level data and should not be analysed using parametric statistics. Other authors (e.g. Carifio & Perla, 2007; Norman, 2010) state that in many instances the distances between anchor points are assumed to be equal; furthermore by anchoring only the extremes of each scale, respondents will divide the distances between the remaining points equally resulting in an equal interval scale (Lam & Klockars, 1982; W.T Rogers, personal communication, February 2010). The analysis of a single Likert item

should occur infrequently (Carifiio & Perla, 2007); a single Likert item does not constitute a scale. Likert response items that are developed to measure an attitude represent an underlying continuum (Carifio & Perla, 2007; Likert, 1974; Norman, 2010). It is the summation of a number of items representing the attitude of interest that constitutes the Likert scale, which is considered to be interval level data (Carifio & Perla, 2007; Norman, 2010). Therefore, in this study, a Likert response scale was used with only the extreme anchors labeled.

The items in the survey relate to reasons why a physiotherapist may or may not decide to supervise a student. It was therefore assumed that for the vast majority of items, the item would be applicable to the respondent. The survey software used to administer the survey allowed for not applicable to be used in an all or none fashion; since it was believed that the majority of items were applicable to all respondents, a choice was made to not use not applicable to encourage participants to respond to each item.

Following item and scale development, the survey was given to two colleagues who were not involved in the study for review. The colleagues were asked to review the survey and provide feedback related to format, clarity and readability of the items. Minor changes to the wording of items and overall survey format were made as a result of this feedback.

Validation Procedures

A number of acceptable methods are used in the validation of survey instruments, including: focus groups, expert panels, survey pre-testing and pilot testing (e.g. Ary et al., 2010; Bradburn et al., 2004; Czaja & Blair, 2005;

DeVellis, 2003). For reasons explained previously, representative focus groups of Canadian physiotherapists were not used during survey development or testing, and because of timing constraints and potential issues with respondent fatigue survey pilot testing was also not used in this study. The validation procedures in this study involved an expert panel review and survey pre-testing. The use of an expert panel to review a survey prior to its use is well established (e.g. Ary et al., 2010; DeVellis, 2003). The intended outcomes from an expert review are related to content and construct validity (DeVellis, 2003). In particular, the expert panel can provide evidence of how items in the attitude scale are relevant to and representative of the domain of interest or construct, in addition to providing feedback related to the clarity, conciseness and readability of items in the scale and survey. Pre-testing of survey items forwards further evidence of the validity of the survey by examining whether survey items are understood by respondents in the manner intended by the item writer (Bradburn et al., 2004; Czaja & Blair, 2005). The following section describes these two processes; an expert panel review followed by survey pre-testing in the form of cognitive interviewing. The Health Research Ethics Board of the University of Alberta granted approval for the collection of data from members of NACEP and practising physiotherapists for the purposes of survey development and validation.

Expert panel review. A review of the survey by experts who have worked extensively with the construct of interest is an invaluable component of survey design that serves to enhance the content validity of the survey (DeVellis, 2003). The panel provides evaluations of item relevance to the construct and whether the

items included in the scale are representative of the construct of interest. The expert panel can also provide further evaluation of the clarity and conciseness of the survey items (DeVellis, 2003). This section will describe the formation of the expert panel, the procedures for item rating, the analysis of ratings, and item changes that occurred as a result of this process.

The ACCEs at each of the 14 Canadian physiotherapy schools, as well as any assistant ACCEs and regional coordinators, were considered experts in the field of Canadian physiotherapy clinical education for the purposes of this investigation. The ACCE is the academic faculty member who has demonstrated competence in clinical education and curriculum development, and is responsible for the management of the clinical education component of a physiotherapy program (American Physical Therapy Association, 2011). Each ACCE, assistant ACCE and regional representative is a member of NACEP, the association of physiotherapy clinical education faculty at the national level, and all were approached to participate in the study as judges.

Procedures for item rating by the expert panel. An electronic package (see Appendix 1) was sent via e-mail to the 19 members of NACEP on 31 May 2010 requesting their participation in the study as judges. Each package contained an information letter and consent form, a web-based working copy of the survey (www.surveymoneky.com), the survey in Microsoft Word, an instruction sheet, and a content review form. Each judge was provided with a standardised set of instructions outlining the tasks for rating the survey items. Judges were sent the draft survey, in both a web-based and paper format; this was to allow them to see

how the survey would look to prospective respondents and to review the format. Judges were asked to both respond to and review each item. Responding to the item encourages judges to pay closer attention to the items (W.T Rogers, personal communication, February 2010). Judges were asked to rate items based on three key areas: (1) relevance to the domain of interest i.e. rate the degree of fit of the item within the domain on a scale of one to five (five being the highest), (2) whether the items they rated 4 or 5 together completely represented the domain, and (3) item clarity, wording and readability.

Judges were also asked for any other comments related to the items or the scale, and to add additional items which they felt added to the representativeness of the scale. Once the content review forms were received, note was made of any comments, and item ratings were tabulated. Any additional item suggestions were added to the relevant scale and the survey was revised based on feedback from the expert panel. The revised survey was sent out to all members of NACEP for a second round of evaluation of relevance and representativeness using the same procedures. Only the new items suggested by judges in Round 1 were reviewed in Round 2. Again, ratings for each item in Round 2 were recorded and comments regarding the wording of items noted.

Analysis of the ratings of the expert panel. To generate evidence that all judges fully understood the task required and the domain being assessed, agreement among the judges was calculated. The statistic used in this analysis was the judges' discrepancy from the median (JDM). Ideally, all of the judges would agree with each other on all items and each judge should have a JDM of zero.

However, perfect agreement among all judges is unlikely and discrepancies are expected. A judge with a substantial deviation from the median score was considered an aberrant judge and may indicate someone who did not fully understand the rating process or the domain being assessed. If any aberrant judges are identified, the ratings from these judges are eliminated from further analysis (W.T Rogers, personal communication, February 2010)

The JDM was represented by:

$$\mathrm{JDMj} = \sum_{k=1}^{k} \left| \mathrm{X_{kj}} - \mathrm{Md_k} \right|$$

Where X_{kj} is the rating given by judge *j* to item *k;*

Md_k is the median of the ratings given by the *J* judges to item *k*;

K is number of items; and

$|Xkj - Mdk|$ is the absolute value between the rating given by judge *j* to item *k* and the median of the ratings given by the *J* judges to item *k*.

(W.T Rogers, personal communication, February 2010)

Once any aberrant judges had been removed, ratings from the remaining judges were used to determine item fit. Two factors were examined: (1) item ambiguity and (2) the mean and median values for items with low ambiguity. Item ambiguity was assessed using the range, R, of the judges' ratings for each item: $R_k = X_{kjH} - X_{kjL} + 1$, where $\mathrm{X_{kjH}}$ is the highest rating for each item and $\mathrm{X_{kjL}}$ is the lowest. Agreement among judges results in a rating of 1; ratings of less than three are acceptable. Items with higher ratings were reviewed for clarity of meaning and comments from judges regarding that item, if any, were considered. Item fit was

assessed using measures of central tendency for each item to determine if the judges believed that the item belonged within the scale it was placed. Mean and median values were calculated for each item; items with mean or median scores of less than 4.0 were selected for review.

Results of the expert panel review. Thirteen NACEP members returned the consent forms and content review forms for the first round of ratings and 15 members returned the forms from the second round. Of the 15, 13 judges provided background information related to their experience as a physiotherapist and as a member of NACEP; this information is presented in Table 1. Judges have varied experience both in years as physiotherapists and in their roles as members of NACEP.

Table 1

Background Information for Expert Panel.

Judge	Years as a physiotherapist	Years as NACEP member	Highest degree earned
A	35	4	MSc
B	15	8	MSc
C	28	8	MHA
D	25	7	BScPT
E	27	13	MPA
F	37	12	M.Ed
G	27	13	BScPT
H	17	4.5	MSc
I	22	3	BScPT
J	34	3	M.Ed
K	38	21	MA
L	22	3	MSc
M	13	6	MMT

Note. BScPT – Bachelor of Science in physical therapy, MA-Master of Arts, M.Ed-Master of Education, MHA–Master of Health Administration, MMT-Master of Manual Therapy, MPA-Master of Public Administration, MSc–Master of Science

The JDM was calculated after ratings were returned from the first round review and is presented in Table 2. Judges are represented numerically in order to protect their identity. On review, one judge (#12) had a score significantly higher than the next highest judge (72 vs. 54) and did not provide any significant comments for this deviation. This judge was deemed to be an aberrant judge and

ratings from this judge were removed from further Round 1 analysis. Median scores were recalculated, and JDMs for the remaining judges recalculated, and reviewed. There was no outlying deviation from the median, and all scores were retained.

Table 2

Summary Scores for JDM for Round 1.

Judge	JDM Round 1
1	21
2	9
3	45
4	25
5	23
6	33
7	8
8	53
9	48
10	16
11	54
12	72
13	8

Summary ratings for the JDM for Round 2 are presented in Table 3. On review of ratings from the second round, two judges had higher scores than the next highest judge (36 and 32 vs. 25) but were deemed acceptable and no ratings

were removed from Round 2. Measures of ambiguity and central tendency were calculated to determine fit of each item.

Table 3

Summary Ratings for JDM for Round 2.

Judge	JDM Round 2.
1	10
2	13
3	14
4	14
5	20
6	25
7	14
8	17
9	10
10	19
11	32
12	36
13	15
14	25
15	17

Members of NACEP gathered for an Annual General Meeting (AGM) in July 2010 in St. Johns, NL where the survey was tabled for discussion. Members who had not submitted content ratings were invited to participate in the discussion

and signed consent forms. The discussion was audio recorded. The survey was discussed in general terms and feedback was provided regarding general content and layout. Thereafter, specific items with a high ambiguity score, or mean or median score below 4.0 were discussed and written comments about each of these items shared with the group. Revisions were made to these items to improve their relevance or clarity; decisions regarding changes to an item were made based on group consensus. By the end of the meeting, members of NACEP indicated they were satisfied that the items contained in the survey were relevant to and representative of the attitudes towards the supervision and evaluation of Canadian physiotherapy students.

Following the AGM in St Johns, the survey was again refined and the final draft was circulated to members of NACEP for final comments. Minor formatting and wording suggestions were made, and members responded positively to the final draft.

Survey Pre-testing

The second validation procedure employed in the development of the survey instrument was pre-testing. Survey pre-testing is considered to be an essential component of survey research (Bradburn et al., 2004; DeMaio, Rothgeb, & Hess, 1998; Willis, 2005) which aims to minimize the response error, since the accuracy of the survey itself is very much dependant on the accuracy of the answers given (Tourangeau, Rips., & Rasinski, 2000). Surveys are susceptible to error (Bradburn et al., 2004; Willis, 2005); errors may relate to sampling, non-response, the interviewer, the response, or a processing and interpretation error

(Willis, 2005). Thus, pre-testing was undertaken to decrease the likelihood of error related to the content and wording of items, so that the respondents answered the questions in the manner that the item developer intended (DeMaio et al., 1998; Willis, 2005). Survey pre-testing was in the form of cognitive interviewing, a combination of the *think aloud interview* and *verbal probing.* This section describes the procedures employed in the selection and recruitment of participants for the cognitive interviewing, the collection of interview data and subsequent data analysis, followed by the findings, and revisions made to the survey.

Participant selection criteria and recruitment. All English-speaking, Alberta physiotherapists were eligible to participate in the cognitive interviewing component of this study; however, convenience sampling was used to ensure that both actively supervising physiotherapists who have used the CPI and non-supervising physiotherapists were part of the sample. Physiotherapy education and training is relatively standard across the country and physiotherapists are not expected to have differing levels of understanding of student supervision and evaluation concepts based on the area of practice or the practice setting in which they work.

In the winter of 2012, information and recruitment letters (Appendix 2) were sent out using the existing University of Alberta, Department of Physical Therapy contact lists with a request for interested parties to contact the author. Letters were sent to both private and public facilities in Edmonton. A small

incentive (i.e. a $10 coffee gift card) was offered to physiotherapists to enhance participation.

Data collection and analysis. Each interview was conducted in-person and audio recorded for transcription. Interviews began with a scripted introduction related to the purpose of the interview. The interviewer encouraged the participants to think aloud as he or she answered the questions in the survey. The questions were read aloud by the interviewer exactly as they were written in the survey instrument to ensure consistency among interviews. Where participants hesitated or seemed unsure of the answer, the interviewer asked probing questions to encourage the participant to verbalise the difficulty in answering the question. During the interview, the interviewer made descriptive notes of any questions that posed difficulty, and noted suggestions for modification based on respondent feedback (Willis, 2005).

Following the first round of four interviews, transcripts were reviewed in conjunction with the descriptive written comments made during each interview. Items were compared across interviews and problems with item clarity and understanding were identified. On the basis of the answers to the probes and the descriptive notes taken during the interview, items were changed to improve clarity and understanding. The revised survey was then tested with four other physiotherapists. After these four interviews, the transcripts and written comments were analyzed.

Results and survey refinement. Eight physiotherapists agreed to participate in the pre-testing of the survey instrument. The physiotherapists

represented acute care (n=2), rehabilitation (n=4), long term care (n=1) and private practice (n=1) serving a mix of patient age groups including paediatrics (n=2), adults (n=4) and older adults (n=2). All but one physiotherapist had supervised a physiotherapy student in the last three years.

A small number of items were identified for revision and changes were made to each item to improve understanding following each of the two rounds. From Round 1, the changes to wording were from duty to responsibility in item 2(i), formative to informal in item 4(e), and my service to my practice setting in 5(f) and 5(g). It was also noted that in questions 7 and 9 it was not clear that the CPI was not aligned with Canadian practice standards; amendments were made to make this alignment more explicit. Finally, two items were added to the demographic section in response to one part-time paediatric therapist, whose role consisted of a significant amount of administrative work, who suggested the addition of demographic items to capture full-time or part-time work status as well as percentage of time that was devoted to direct patient care. After the second round of cognitive interviewing, only two clarifying changes were made: if the CPI was completed outside of work time in item 4(g) and ACCE was amended to clinical coordinator at the University in item 18 (For final English Survey see Appendix 3).

Following survey refinement, the entire survey, the information letter and the consent form were translated from English into French by a professional translator. Thereafter the translation was verified; each document was reviewed and edited by two Francophone members of NACEP; as NACEP members they

had a thorough understanding of the issues pertaining to clinical education and were aware of the appropriate language used for concepts related to clinical education. For each document the French translation was compared to the original English version and each document was edited to improve wording related to the physiotherapy context. Changes were suggested to the word for senior student – expérimentés was changed to chevronnés throughout the survey as chevronnés was more commonly used to describe the level of student in this context (For final French survey see Appendix 4). In addition, minor grammatical changes were made to the information letter.

Chapter IV

Methods

The goal of this study was to identify key contributors to Canadian physiotherapists' decisions to supervise physiotherapy students. A survey research design was used to gather information related to issues in physiotherapy clinical education from which the factors contributing to the decision to supervise students were identified. Chapter four describes the methods employed in the administration of the survey and outlines the procedures used in analysis of the survey data. The chapter begins with the recruitment of study participants and the administration of the survey, and subsequently details the procedures for data analysis including exploratory factor analysis and a comparison of factor scores for supervising and non-supervising physiotherapists.

Ethical Considerations

Prior to recruiting participants, the study was granted approval by the Health Research Ethics Board of the University of Alberta. A copy of the survey information letter in English and French is found in Appendix 5 and 6. All practising Canadian physiotherapists registered with a provincial or territorial (where applicable) regulatory College, as well as those physiotherapists in the Northwest Territories and Nunavut on contact lists with the CPA and Universities of Alberta and Manitoba's physiotherapy departments, were considered eligible for participation in this study and were included in the sampling frame. The survey was anonymous; completion of the survey implied respondent consent to

participate in the study as per the approval of the Health Research Ethics Board of the University of Alberta.

Participant Recruitment and Survey Procedures

At the November 2011 registrars' meeting of the Canadian Alliance of Physiotherapy Regulators the study was presented to the registrars of each of the provincial physiotherapy Colleges. Practising physiotherapists are required to register with the regulatory College in each province (or territory where applicable). Regulators collect e-mail addresses from registrants, and in most jurisdictions an e-mail address is required to access member services such as registration renewal. The registrars were asked to release their member e-mail lists to a third-party survey administration service, Test Scoring and Questionnaire Services, a division of Academic Information and Communication Technologies at the University of Alberta, for the purpose of participant recruitment. Citing privacy concerns, the registrars declined to release member names or e-mail addresses for the survey, but all agreed to send an electronic survey link to their membership, as well as two follow-up reminder e-mails on specified dates.

A number of strategies were initially planned to enhance the response rate e.g. a personalised pre- survey notice, (Fan & Yan, 2010; Kaplowitz, Hadlock, & Levine, 2004) and two targeted reminder follow-up e-mails to those physiotherapists that had not responded (Fan & Yan, 2010; Kaplowitz et al., 2004; Lee, Frank, Cole, Mikhael, & Miles, 2002). However, since access to the Colleges' membership lists was not provided, control over the administration of the survey and reminder e-mails was retained by each College which resulted in

inconsistencies in survey administration among provinces and territories, and an inability to create personalized e-mails and targeted reminders.

In the spring of 2012, a marketing campaign was initiated to raise the awareness of the survey in each province in order to increase response rate. Regulatory Colleges were asked to place pre-scripted notices in their spring newsletters informing physiotherapists of the upcoming survey, and CPA divisions and physiotherapy programs in each jurisdiction were asked to send a similar pre-scripted notice through their contact lists with encouragement for physiotherapists to complete the survey in late May 2012. As an added incentive, a draw for one of four $50 gift certificates was included for those that completed the survey (Fan & Yan, 2010).

Test Scoring and Questionnaire Services at the University of Alberta converted the English and French versions of the survey instrument along with their respective information letters and consent forms to a web-based format. A URL link was then created and embedded in an introductory e-mail that was drafted in both English and French (Appendix 7). In the week of 7 May 2012, a survey package comprising the pre-scripted introductory e-mail with information letter and a URL link to the survey was sent to each College, and to contacts in the Northwest Territories and Nunavut, with instructions to send the e-mail to their members on Monday, 14 May 2012 and for confirmation to be provided to the author.

On 14 May 2012, the survey was sent to physiotherapists in all provinces and territories except in Manitoba and Newfoundland & Labrador, where it was

sent on Wednesday 16 May 2012, and in Saskatchewan, which was sent on Tuesday 22 May 2012. In Prince Edward Island the date that the survey was sent to physiotherapists was not recorded. In total, the survey was sent to 18110 physiotherapists with valid e-mail addresses in each of the 10 provinces and the Yukon as well as an unknown sampling of physiotherapists in the Northwest Territories and Nunavut.

Despite assurances from Colleges about the administration of the survey, there were also inconsistencies with respect to survey reminders. The Colleges of New Brunswick and British Columbia sent out two e-mail reminders as requested, the College in Alberta sent out one reminder after two weeks, and both the Colleges in Quebec and Ontario refused to send out any reminders, citing other regulatory business. It is not known when, or if, reminders were sent by the Colleges in the other provinces as there was no response from those jurisdictions. Following a national NACEP meeting during the second week of the survey being open, NACEP members were encouraged to send reminders out through their contact lists to promote participation in the survey. The survey remained open for a total of three weeks from the initial e-mail of 14 May 2012 and closed for all provinces and territories on 4 June 2012.

Data Analysis

A number of standardised procedures are accepted practice in the analysis of survey data and construct validation, e.g. exploratory factor analysis, item response theory and Rasch modeling. It was believed that multiple components contributed to the decision to supervise students and thus multiple factors were

expected. Because Rasch modeling focuses on the identification of one construct and the placement of respondents along that continuum, in this survey exploratory factor analysis was chosen. Additional methods of construct validation, including confirmatory factor analysis and the use of representative focus groups to triangulate factors would have added to the methodological rigor of this study, but were beyond the scope of this dissertation.

Data were analysed in three phases: (1) data cleaning and exploration, (2) exploratory factor analysis of scale data, and (3) comparisons of factor scores for pre-determined groups, i.e. supervising vs. non-supervising physiotherapists and comparisons of supervisors and non-supervisors across geographic regions.

Phase 1. Data cleaning and exploration. In Phase 1 of analysis, data were cleaned and scanned for extreme response styles. An extreme response style is present if a respondent selects the extreme anchor based on some bias and not on the content of the item (Paulhaus, 1991). Cases were scanned for respondents who selected either all 1s or all 5s; since items were both positively and negatively worded it was assumed that these respondents did not read the items before answering. Respondents who read each question and specifically chose extreme responses (both 1s and 5s, which were therefore extremely negative or extremely positive toward the target afferent) were not removed. These respondents do not necessarily represent response bias, but are “valid indicators of extreme opinions” (Paulhaus, 1991).

Cases were also scanned for missing responses. In instances where the majority of responses (more than 50%) were missing, the entire case was deleted.

Question 1, which was intended to group supervising and non-supervising physiotherapists, had a surprisingly high number of missing responses (approximately 500); however, many of these respondents did answer a demographic question (Question 20) about the number of students supervised in the last three years. These two items were cross referenced and data were imputed for Question 1 if Question 20 was answered. Once cleaned, data from the English and French surveys were merged into one dataset.

The performance of individual items was assessed through an item analysis. Descriptive statistics, including frequencies, measures of central tendency, standard deviation and range, were analyzed to determine if items spread respondents to the extremes of each scale and if the mean was close to the middle of the scale (DeVellis, 2003).

Phase 2. Exploratory factor analysis. A number of sources of validity evidence have already been documented for the scales within this survey. Measures of content and construct validity have been provided by the judgement panel during survey development (DeVellis, 2003) and additional validity evidence was collected through the pre-testing of the survey instrument in the form of cognitive interviewing. Exploratory factor analysis was conducted on the attitude scales to generate a further component of construct validity by identifying the constructs measured by the attitudinal scales of the survey (DeVellis, 2003).

The purpose of factor analysis is to reduce a large number of variables to the smallest number of factors containing the maximum amount of information in a format that is interpretable (Gorsuch, 1983; Tabachnick & Fidell, 1989).

Through a process of extraction and rotation, correlated items load together to form a factor and together represent an underlying variable (Field, 2009). By examining and interpreting the items that load onto a particular factor, the factor is given a name that represents the underlying variable explained by the items. Factors are often named according to the item with the highest loading coefficient as these items are often the most similar to the underlying variable (DeVellis, 2003). The process of factor analysis (factor extraction, rotation/transformation and interpretation) is iterative in nature with a goal of achieving a parsimonious and interpretable solution. While in practice the processes of extraction and rotation or transformation occurred in an interconnected fashion, each step will be described separately.

Factor extraction. Factor extraction is the process of grouping similar or related survey items together so that together the items represent an underlying variable. An important component of factor extraction is determining the correct number of factors that should be extracted (Gorsuch, 1983), and is the topic of this section. Prior to extraction, the Kaiser-Meyer-Olkin (KMO) measure established the sampling adequacy for the 53-item survey, KMO = .89, indicating excellent data for factor analysis (Kaiser, 1970). Bartlett's test of sphericity, χ^2 (630) = 31564.92, $p < .001$, indicated that the correlations between items were large enough for principal components analysis. Additionally, Box's M test of equality of covariance matrices was conducted to determine if the data from supervising- and non-supervising physiotherapists, and physiotherapists from different geographic regions, could be analyzed together. A statistically

significant result was evident in both cases ($p < .001$); however, the calculated test value in each case was small with $F = 2.17$ (df1=1,431, df2 10,469,961.79) for supervising and non-supervising physiotherapists and $F = 1.30$ (df1 =5,724, df2 = 6,134,951.70) across the geographic regions. The significant results were likely due to the large sample size and degrees of freedom; it was concluded that the data could be analysed as one sample.

In order to address concerns raised by those in the field who have stated that a major difficulty with factor analysis is knowing the correct number of factors to extract (e.g. Cattell, 1966), three methods or rules were used: (1) a scree plot (Cattell, 1966), (2) the Kaiser-Guttman (K-G) rule of roots greater than or equal to 1.0 (Guttman, 1954; Kaiser, 1970) and (3) image analysis (Guttman, 1953) followed by varimax rotation (Kaiser, 1958). Principal components extraction is a common procedure in exploratory factor analysis, particularly since the estimates of communality are unknown (Gorsuch, 1983), and was used for the first two rules. With image analysis all components were extracted and then rotated using varimax; the extraction was analysed beginning with the last component. The first component with at least two variables loading onto it was determined to be the number of factors to retain (W.T Rogers, personal communication, June 2012).

Analysis of the scree plot indicated five possible factors (Figure 2), the K-G rule identified 10 factors, and image analysis followed by varimax rotation indicated three factors. In their paper comparing the K-G rule and scree plot, Hakstian, Rogers and Cattell (1983) concluded that with a large sample size (n >

250) and mean communality of 0.60 or greater, both the K-G rule and scree test should produce results that are near correct. When the mean communality is lower the scree test tends to overestimate the number of factors and the K-G rule is less accurate. With this sample the communalities were unknown, therefore a range of solutions were produced with 3 through 10 factors.

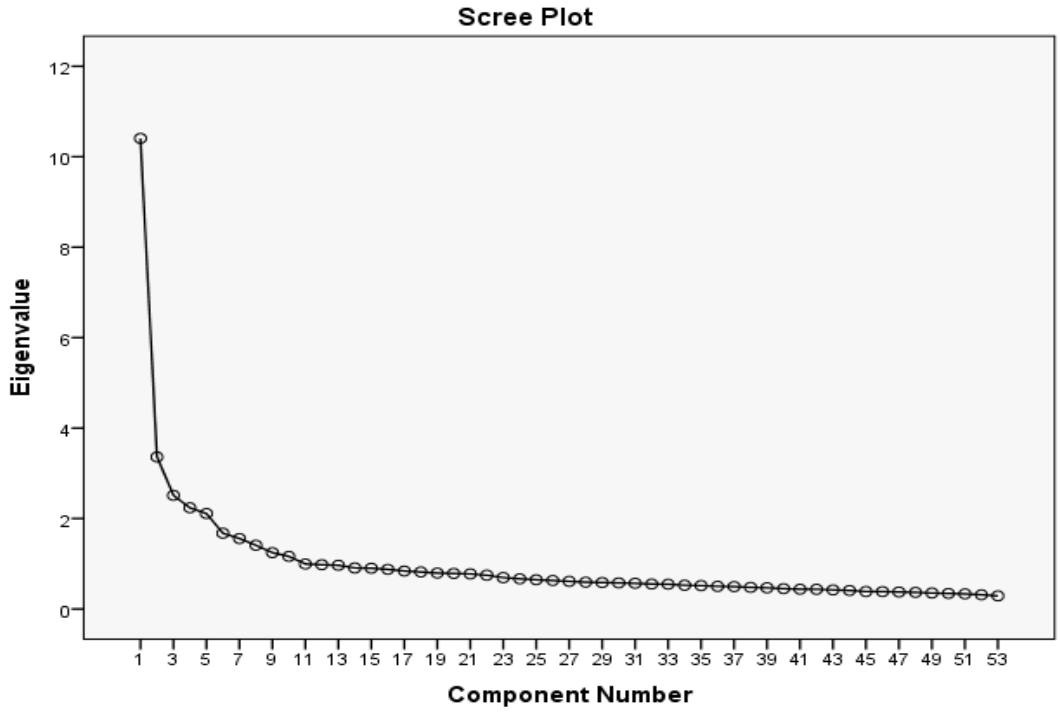


Figure 2. Scree Plot for all 53 Items in the Survey

Principal components extraction extracts both common and unique variance in each item. Since only common variance among items is of interest, once the range of factors to extract had been identified, each factor analysis was performed using a principal axis extraction.

Factor rotation. Although factor extraction is used to determine the most appropriate number of factors to examine, the output is often not easily

interpretable. Factor rotation is the process by which clusters of items that relate to an underlying variable are grouped together while loading substantially on only one factor. Thus, the process of rotation enhances the interpretability and clarity of a solution in a manner such that the relationships between the items do not change, but the way in which they might be viewed changes (DeVellis, 2003).

Each principal axis extraction was rotated with varimax (Kaiser, 1958) to produce an orthogonal solution, and was also transformed with direct oblimin (Carroll, 1957) to produce an oblique solution. Each solution was examined for simple structure (Thurstone, 1947) and interpretability. Gorsuch (1983) has suggested that during factor interpretation only those important or "salient" variables should be considered; in order for a variable to be considered salient, i.e. that a relationship between the factor and the variable exists, a minimum loading of the absolute value of 0.30 is advised (Gorsuch, 1983). Therefore for both varimax and direct oblimin solutions, loadings of less than $|0.30|$ were suppressed.

Following an examination of each output, it initially appeared that the five factor solution with direct oblimin transformation was the best fit with respect to simple structure and interpretability. However, elements of both efficiency and professional role appeared to load on the same factor. In an attempt to separate these two elements a six-factor extraction was performed. The resultant six-factor solution produced separate factors for the elements of efficiency and professional role, and this six-factor structure was deemed to be the best solution (Appendix 8).

On close examination of the pattern matrix, a number of variables attempted to load onto factors but did not reach threshold (e.g. item 2u on factor 1), and there was complexity in four variables with items loading onto two factors simultaneously. Through an iterative process, each variable that attempted to load on a factor was individually deleted from the analysis and the six-factor principal axis extraction with direct oblimin transformation was performed again. For each factor analysis, the solution was examined and variables that attempted to load onto factors but did not reach the .30 threshold were eliminated. In total, 13 variables that attempted to load onto factors but did not meet threshold were removed and four items which loaded onto two factors, and where the factor loadings were similar, were systematically deleted. Of the 17 items that were removed, six were from Question 2 and related to level of student and time required to supervise students, nine items were removed from Question 3 which dealt with the work setting and issues of compensation, and two items related to the CPI were removed from Question 4.

Three methods were used again to confirm the number of factors to extract from the dataset since 17 items had been removed from analysis. The scree test (Figure 3) was ambiguous and indicated three or seven factors, image analysis with varimax rotation indicated seven factors, and K-G rule indicated eight factors. Principal axis extraction followed by varimax rotation and direct oblimin transformation was performed for six, seven and eight factors; however neither the seven nor eight factor solution improved the outcome. Once the final factor

structure had been established, correlations between the factors were calculated to determine the magnitude of the relationship, if any, among the factors.

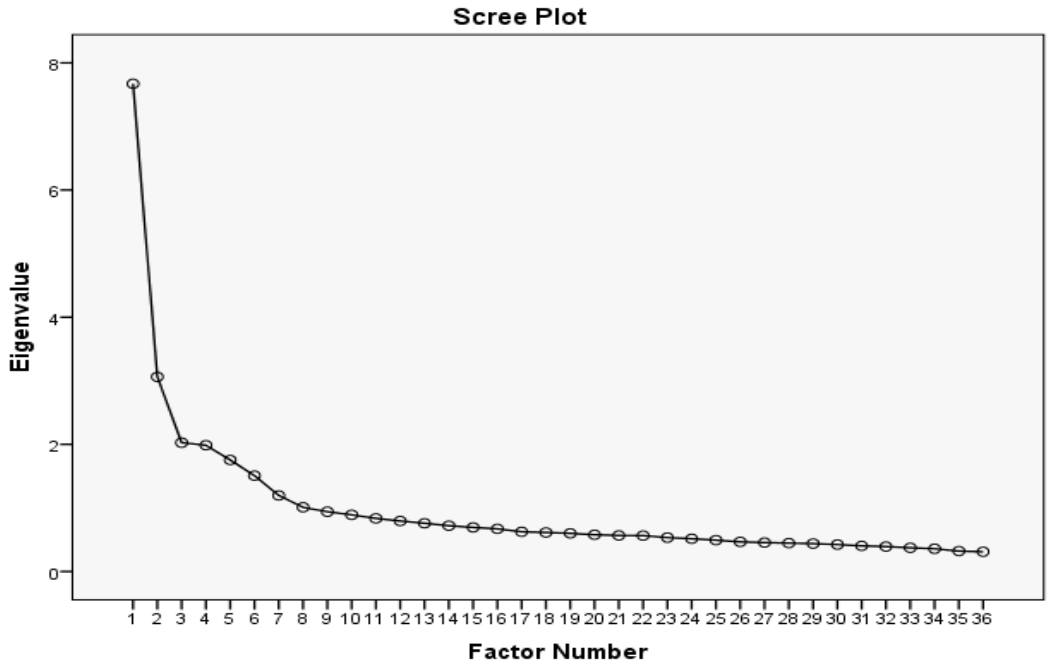


Figure 3. Scree Plot for the Reduced 36 Items

Reliability and item analysis. Following the identification of factors, the performance of the items within each factor and the reliability of the scale of items were evaluated. The mean and standard deviation for each item was examined within the context of each factor. Because the polarity of negatively worded items had been reversed, an item mean above 3.0 indicated a positive endorsement of the item while a mean below 3.0 indicated negative endorsement.

The internal consistency of each factor was examined through the calculation of Cronbach's alpha, with a value of .80 desirable (Field, 2005; Nunnally, 1978). Further evidence of the reliability of the scale was provided by the correlation between each item and the total score for the factor minus the item

(Corrected Item-Total Correlation), and the value for Cronbach's alpha if an item was deleted from the scale (Alpha if Item Deleted). For a scale to be considered reliable the Corrected Item-Total Correlation should be positive, i.e. items should correlate with the total, and values should be greater than .30 (Field, 2005). An item with a low or zero correlation is called an undifferentiating item and likely does not measure what the other items in the scale are measuring; such an item should be removed from the scale (Likert, 1974). The items were also examined for improvement to the value for Cronbach's alpha if an item was deleted; no substantial change to this value indicated that all items contribute positively to the overall reliability of each scale (Field, 2005).

Directed content analysis. Although the items included in the survey were believed to represent the contributors to the decision to supervise a student, they may not have fully captured all of the issues. Opportunities were provided for respondents to leave comments about the contributors to their decision to supervise students that were not addressed in the survey. These comments were analysed using directed content analysis (Hsieh & Shannon, 2005).

The aim of directed content analysis is to validate or further explain an existing theory or theoretical framework (Hsieh & Shannon, 2005). In this study directed content analysis was used to further validate the results of the exploratory factor analysis. The respondents' comments were coded deductively using the six identified factors as the organizing structure; the items within each factor served as operational descriptors for the code (Hsieh & Shannon, 2005). Items that were not explicitly represented by the six factors were flagged and analysed once initial

coding was complete. The flagged comments were examined to determine if they fit within the six-factor coding structure or if they represented a new category. Although they were not necessarily sub-categories of the factors, where possible, the new categories were aligned with the existing six factors.

Enhancing rigour. In an effort to enhance procedural rigour, and address concerns related to reliability and validity, a peer debrief and external audit were conducted. First, a doctoral candidate with training in qualitative research methodology was consulted to audit both the process of the directed content analysis (i.e. a review of the respondent comments and an examination of how comments were coded and categorized), and the findings of the analysis to determine whether or not the findings were supported by the data (Creswell, 2007; Lincoln & Guba, 1985). Thereafter, a debriefing session was conducted with the consultant to discuss and explore the coding process, how comments were assigned codes, and how new codes and categories were created. Subsequently the conclusions drawn from the data and any biases that may have influenced those conclusions were discussed (Lincoln & Guba, 1985).

Phase 3. Comparisons of groups. A dichotomy exists within the profession of physiotherapy with respect to the supervision of students such that not all physiotherapists participate in clinical education. This study proposed to identify the contributors to the decision to supervise students and to compare them for these two groups, as well as to identify differences across the geographic regions in Canada where variable models of health care delivery, government support and education institution may influence the decision to supervise. The

process for comparing factors across groups is described below and begins with the estimation of factor scores.

The estimation of factor scores allows for a comparison of the scores for each factor between respondents or groups of respondents. Factor scores were estimated for each subscale of items using simple unit weighting (Comrey & Lee, 1992; Grice, 2001). Weights of -1 or +1 were assigned to salient items in the pattern matrix based on polarity of the coefficient. In the case of items with cross loading, the higher coefficient was assigned a weight of +1 or -1 and the lower coefficient a weighting of 0. Due to the range in standard deviations for individual items (0.77 – 1.30) items were first converted to z-scores ($M = 0$, $SD = 1$), then weighted (+1, -1, 0) and summed to produce a factor or scale score (Comrey & Lee, 1992; Grice, 2001).

Comparison of supervising and non-supervising physiotherapists. Supervising and non-supervising physiotherapists were identified based on the response to the first question, "Have you supervised a physiotherapy student in the last 3 years?". A three year time frame was chosen as it took into account leaves i.e. maternity or sick leaves, job changes or changes in work environments and would allow physiotherapists to resume or start supervising students if that was their intention. Physiotherapists who had not supervised a physiotherapy student in the three years prior to the survey were considered non-supervisors.

The demographic information for the two groups of physiotherapists was compared, and similarities and differences between the two noted. Factor scores were examined for outliers; respondents with z-scores greater than 3.30 or less

than -3.30 were considered outliers for each factor score and were removed from analysis. According to Levene's test, heterogeneity of variance was noted in factors 2 ($F_{(1,2958)}$=3.86, p=0.49), 3 ($F_{(1,2924)}$=148.70, p<0.001) and 6 ($F_{(1,2962)}$=12.93, p<0.001). Violation of this assumption can reduce the risk of a type-I error when the larger variance is associated with the larger sample size and increase the risk of a type-I error when the larger variance is associated with the smaller sample size (Glass & Hopkins, 1996). Therefore, Welch's t test was conducted on factors 2, 3 and 6. Thereafter independent samples t-tests were conducted to compare each of the factor scores for supervising and non-supervising physiotherapists. An alpha level of .05 was used for all statistical tests.

Comparisons of supervising and non-supervising physiotherapists across geographic regions. Differing models of health care delivery, government support and the education institution across Canada may influence the decision to supervise a physiotherapy student. Therefore, factor scores were compared for supervising and non-supervising physiotherapists across five geographic regions. The 10 provinces and 3 territories were grouped according to natural and common regional groupings and university catchment areas. The five regions are British Columbia (British Columbia and the Yukon), the Prairies (Alberta, Saskatchewan, Manitoba, Northwest Territories and Nunavut), Ontario, Quebec, and Atlantic (Nova Scotia, Newfoundland and Labrador, Prince Edward Island, and New Brunswick). The response rates for supervisors and non-supervisors were not

consistent across the geographic regions; therefore, factor scores for both supervisors and non-supervisors were compared across the regions.

Factor scores were again examined for outliers; respondents with a z-score greater than 3.30 or less than -3.30 were removed from analysis. According to Levene's test, the homogeneity of variance assumption was violated in factors 1 and 3 for non-supervising physiotherapists; however, the ratio of the largest to the smallest variance was well below the suggested limit of 10 and the ratio of largest to smallest sample sizes was less than 4:1. Therefore, homogeneity of variance was assumed and Analysis of Variance (ANOVA) was conducted followed by post hoc pairwise comparisons using Tukey's test with a Tukey-Kramer modification to control for the unequal sample sizes. The alpha level for all statistical tests was set at .05.

Chapter V

Results

Multiple factors were found to contribute to physiotherapists' decisions to supervise students from the analysis of the national survey. The six contributing factors are identified as: Clinical Instructor Feelings of Stress, Student Contribution to Workplace Efficiency, Dislike of the Assessment Instrument, Student Preparation and Attitude, Clinical Instructor Preparation to Evaluate, and Professional Role & Responsibility. The analysis revealed the presence of significant differences in factor scores between supervising and non-supervising physiotherapists in general, as well as across geographic regions. However, the mean differences between groups were small.

The results of the study are presented in this chapter in five sections beginning with a description of the sample followed by findings of the exploratory factor analysis, then a description and interpretation of the factors. Thereafter, a comparison of factor scores for supervising and non-supervising physiotherapists is presented. A comparison of factor scores for supervising and non-supervising physiotherapists across geographic regions concludes this chapter.

Description of the Sample

In total, 3148 Canadian physiotherapists completed the survey, approximately 63% (n=1895) of whom indicated they had supervised at least one student in the last three years (4% missing). Respondents represent each Canadian

province and territory; both English and French speaking physiotherapists participated in the study (See Table 4).

Table 4

Survey Response Rates by Province and Territory, Number of Supervisors per Province, and Language of Completion

Province/Territory	E-mail addresses	Responses	Response rate (%)	Supervisors (%)	French (%)
British Columbia	3022	804	27	406 (53%)	0.4
Alberta	2172	314	15	192 (64%)	0.3
Saskatchewan	646	84	13	61 (76%)	0
Manitoba	825	166	20	122 (77%)	1
Ontario	7180	921	13	595 (67%)	2
Quebec	2839	479	17	311 (67%)	88
New Brunswick	502	178	36	89 (52%)	29
Nova Scotia	636	153	24	89 (63%)	0
Prince Edward Island	‡	3	¥	3 (100%)	0
Newfoundland and Labrador	254	27	11	15 (58%)	0
Yukon	34	4	12	4 (100%)	0
Northwest Territories	*	4	¥	3 (75%)	0
Nunavut	*	1	¥	1 (100%)	0
Missing		10		124 (4%)	
Totals	**18110**	**3148**	**17**	**63%**	**16**

Note. ‡= Data not provided; *= No regulatory college, numbers not known; ¥= Unable to calculate

The mean response rate was 17% with individual provincial and territorial response rates ranging from 11% to 36% as summarized in Table 4. The percentage of survey respondents reporting having supervised a student during the last three years differed by location in the country and ranged from 52% in British Columbia to 100% in the Yukon, Nunavut, and Prince Edward Island.

In addition to representation from each province and territory, the sample reflects physiotherapists who practice across geographical areas. The majority (80%) worked in an urban area and the remaining respondents in rural (18%) and remote (2%) areas. These findings are similar to statistics provided for the Canadian physiotherapy population; however, a higher percentage of rural physiotherapists responded to the survey than is evident in the population (see Table 5).

Table 5

Geographical Distribution Based on Place of Work for Survey Sample and Canadian Physiotherapy Population

Variable	Sample	Population*
Urban	2,513 (80%)	15,484 (92%)
Rural	318 (18%)	692 (4%)
Remote	49 (2%)	709 (4%)

Note.* indicates values based on most recent CIHI Physiotherapy population statistics for 2010 (Canadian Institute for Health Information, 2011).

Similarities are also noted between demographic variables for the survey sample and those of the national physiotherapy population. The majority of the sample were female (83%) with a mean age of 42.41 years and an average of

17.87 years of experience as a physiotherapist, which are similar to population parameters (see Table 6).

Table 6

Demographic Information for Survey Sample and Canadian Physiotherapy Population

Variable	Sample	Population*
Gender		
Female	2,607 (83%)	13,098 (78%)
Male	520 (17%)	3,787 (22%)
Mean age (years)	42.41 (10.62)	41.70
Mean years of experience	17.87 (11.36)	-

Note.* indicates values based on most recent CIHI Physiotherapy population statistics for 2010 (Canadian Institute for Health Information, 2011). Standard deviation for the age and years of experience of the survey sample appears in parenthesis beside the mean, standard deviation for the Canadian population is not available.

The survey sample reflects physiotherapists who practice across practice settings, areas of practice, and across the lifespan (see Table 7). Sixty-three percent (n =1,983) of respondents worked full time, a further 10% (n = 298) worked a 0.80 Full Time Equivalent (FTE). Only 56% (n = 1765) of physiotherapists spent 90% or more of their time working clinically with patients. Because physiotherapists are able to work in multiple practice areas and practice settings, participants in the present study were instructed to select all that apply for these two categories; however, the CIHI statistics for the national physiotherapy population are representative of primary employment only.

Table 7

Workplace Characteristics for Survey Sample and Canadian Physiotherapy Population

Variable	Sample	Population*
Work Full-Time	1,983 (63%)	4,520 (63%)
Practice Area		
MSK	1,940 (62%)	4,488 (43%)
General Practice	1,000 (32%)	3,046 (29%)
Neurology	918 (29%)	643 (6%)
Cardiorespiratory	528 (17%)	158 (2%)
Practice Setting		
General Hospital	1,045 (37%)	3,406 (30%)
Rehabilitation Facility	497 (18%)	858 (8%)
Private Practice	885 (32%)	4,658 (42%)
Community Settings	276 (10%)	1,018 (9%)

Note.* indicates values based on most recent CIHI Physiotherapy population statistics for 2010 (Canadian Institute for Health Information, 2011).

Despite differences in reporting of workplace variables, many similarities exist between the survey sample and physiotherapy population statistics (Canadian Institute for Health Information, 2011); therefore, the sample of the survey can confidently be interpreted as being representative of the national population.

Comparison of supervising and non-supervising physiotherapists.

Approximately 60% of respondents had supervised a physiotherapy student in the last three years and were considered to be actively supervising physiotherapists. Supervising and non-supervising physiotherapists were similar in many of the demographic variables measured. Both groups had similar proportions of males to females, and had similar mean age and years of experience (see Table 8).

Table 8

Demographic Characteristics for Supervisors and Non-Supervisors

Variable	Supervisors	Non-Supervisors
Supervised a student in the last 3 years	1895 (60%)	1129 (36%)
Gender		
Male	328 (17%)	163 (14%)
Female	1553 (82%)	959 (85%)
Mean age (years)	41.95 (10.12)	43.09 (11.35)
Mean years of experience	17.32 (10.76)	18.71 (12.27)

Note. Standard deviation for age and years of experience appear in parenthesis beside the mean.

Supervisors and non-supervisors were also generally comparable for workplace characteristics; however, supervisors were more likely to work full-time and spend 80% or more of their time working clinically. Non-supervisors were more likely to work in private practice and had a higher percentage of respondents working in a rural or remote location (see Table 9).

Table 9

Workplace Characteristics for Supervisors and Non-Supervisors

Variable	Supervisors	Non-Supervisors
Full time work	1294 (69%)	609 (54%)
Clinical caseload ≥80%	1403 (74%)	733 (65%)
Geography		
Urban	1243 (66%)	645 (57%)
Suburban	327 (17%)	207 (18%)
Rural and remote	318 (17%)	364 (23%)
Practice setting		
Acute hospital	752 (40%)	263 (23%)
Rehabilitation facility	382 (20%)	92 (8%)
Private practice	395 (21%)	433 (38%)

Comparisons of supervising and non-supervising physiotherapists across geographic regions. Respondents from the 10 provinces and 3 territories were placed into five groups according to natural and common regional groupings and university catchment areas: British Columbia, the Prairies, Ontario, Quebec, and the Atlantic regions. Comparisons of demographic variables across the five geographic regions revealed many similarities and some interesting differences; demographic information for both supervising and non-supervising physiotherapists is presented in Table 10. Although the regions were quite comparable for several of the variables, there were some notable differences for Quebec and British Columbia in particular. For example, the mean age for supervising therapists in the Prairies, BC, Ontario and Atlantic region was

between 41.32 and 44.73 years, the highest being in BC. However the mean age for supervisors from Quebec was 37.75 years. A similar finding is present and for mean years of practice which ranged between 16.77 and 19.64 years for the four regions, again with BC the highest while Quebec supervisors had a mean of 14.32 years of practice.

The percentage of supervising physiotherapists who worked greater than a 0.8 FTE was quite comparable across the regions; however, both the Atlantic region and Quebec were higher than the rest, with Quebec having the highest at 92%. More variability was present for non-supervising physiotherapists but Quebec again had the highest percentage of physiotherapists working greater than 0.8 FTE with 80% (see Table10).

Table 10

Demographic Variables for Supervisors and Non-Supervisors by Geographic Region

Variable	Geographic Region				
	BC	Prairies	Ontario	Quebec	Atlantic
No. of Supervisors	410 (51%)	379 (67%)	595 (65%)	311 (65%)	196 (54%)
Age (years)					
Supervisor	44.73 (10.68)	41.74 (10.51)	42.60 (9.71)	37.75 (9.14)	41.32 (8.64)
Non-Supervisor	44.51 (11.35)	43.65 (11.71)	44.03 (11.24)	37.66 (9.96)	42.74 (11.06)
Years of Practice					
Supervisor	19.64 (11.70)	17.15 (11.17)	17.61 (10.61)	14.32 (9.16)	16.77 (9.55)
Non-Supervisor	19.47 (12.75)	19.61 (12.71)	19.88 (12.30)	13.83 (10.06)	18.37 (11.52)
FTE ≥ 0.80					
Supervisor	321 (80%)	297 (79%)	459 (80%)	275 (92%)	165 (86%)
Non-Supervisor	235 (67%)	94 (58%)	189 (69%)	113 (80%)	111 (78%)
Clinical caseload ≥80%					
Supervisor	303 (78%)	267 (75%)	440 (78%)	242 (80%)	149 (79%)
Non-Supervisor	248 (74%)	91 (59%)	184 (69%)	106 (76%)	102 (72%)

Note. Standard deviation for age and years of practice appear in parenthesis below the mean

Exploratory Factor Analysis

Six factors emerged from the exploratory factor analysis of the survey items contributing to Canadian physiotherapists' decisions to supervise physiotherapy students. The factors were (1) Clinical Instructor Feelings of Stress, (2) Student Contribution to Workplace Efficiency, (3) Dislike of the Assessment Instrument, (4) Student Preparation and Attitude, (5) Clinical Instructor Preparation to Evaluate, and (6) Professional Role & Responsibility. Together these factors represent the multiple and complex issues that must be taken into consideration by Canadian physiotherapists and that ultimately contribute to the decision to supervise a student.

The six factors account for 50% of the variance in the items of which 21% is attributed to Factor 1 (i.e. Clinical Instructor Feelings of Stress). There were 2% non-redundant residuals with absolute values greater than 0.05. The pattern matrix is presented in Table 11, and demonstrates the full six-factor solution with loading coefficients less than $|0.30|$ suppressed. The solution was produced from a reduced 36-item scale and contained no items with loadings below $|0.30|$, one triplet, one doublet and complexity in two items (4a and 4h). Each of the factors contained between 2 and 10 items, with pattern coefficients ranging from 0.31 – 0.79.

Table 11

Pattern Coefficients and Communalities for Exploratory Factor Analysis with Direct Oblimin Transformation for the 36-Item Scale (N=2736)

Item	Factor						Commu
	1	2	3	4	5	6	nalities
2eR I feel stressed when I supervise students	.65						.49
2vR I am worried my practice will be evaluated or criticised when the student is with me	.65						.46
2hR I am intimidated by the new knowledge the student brings	.61						.42
2sR I feel unprepared to supervise students	.57						.49
5bR Worried I will get a challenging student	.51						.31
4kR Stressed making judgements about student performance	.50						.38
2tR I feel apprehensive supervising students due to a previously negative experience	.41						.28
2cR Supervising is a burden	.39						.42
2lR Only supervise students because my manager or professional practice leader says I must	.37						.29
2j. As an experienced physiotherapist I have a lot of knowledge to offer students	.32						.30

(Continued)

Item	Factor						Communalities
	1	2	3	4	5	6	
2k. Supervising students makes me more efficient, I am able to get more done		.69					.55
2p. Junior students make me more productive overall		.68					.51
2q. Senior students make me more productive overall		.61					.44
4iR Dislike CPI			.79				.62
4bR CPI takes too long to complete			.77				.59
5cR Students unprepared to work in my practice setting				.68			.49
5g. Senior students have the academic preparation to work in my practice setting				.57			.43
5f. Junior students have the academic preparation to work in my practice setting				.54			.37
5a. I feel most students have the right attitude to work in my setting				.51			.39
5eR Students lack professionalism				.49			.27
3cR Caseload too complex for students				.45			.31
5d. I feel students are committed to the profession				.40			.28
4j. I feel adequately prepared to use the CPI					.68		.48
4d. I am provided with appropriate guidelines and expectations to evaluate a student on placement					.66		.47
4f. The evaluation process is clear					.66		.51

(Continued)

Item	Factor						Communalities
	1	2	3	4	5	6	
4a. I feel prepared to evaluate students on placement	.31				.57		.58
4h. I am comfortable evaluating a student on clinical placement	.36				.53		.55
3i. The physiotherapy program at the University adequately prepares me to supervise their students					.39		.26
4e. There is sufficient time for providing the student with informal feedback					.37		.28
2i. Supervising students is my responsibility to ensure sustainability of my profession						.62	.42
2b. Supervising students allows me to “give back” to the profession						.62	.42
2a. I find supervising students to be a rewarding experience						.53	.49
2x. Supervising students is part of my job as a physiotherapist						.48	.38
2g. Supervising students encourages me to evaluate my practice decisions						.45	.27
2d. Supervising students allows me to keep current with the latest (best practice) information						.39	.26
2f. I like the recognition I get from the profession for supervising students						.35	.19

The use of an oblique transformation of factors permits a degree of correlation between the factors. The correlation matrix for the six factors is presented in Table 12. The highest correlation is present between Factor 1 and Factor 5 ($r = 0.37$); this moderate relationship indicates that supervisors' feelings of stress are, at least in part, related to their views of how well prepared they were to evaluate students on placement. The next highest correlation is found between Factor 5 and Factor 6 ($r = 0.35$) indicating that if physiotherapists believe it is part of their professional role to supervise students, then they will likely undertake the necessary training and preparation to ensure they are able to evaluate students.

Table 12

Factor Correlation Matrix Following Oblique Transformation

Factor	1	2	3	4	5	6
1	1.000					
2	0.016	1.000				
3	0.021	0.13	1.000			
4	0.169	0.247	0.100	1.000		
5	0.370	0.077	-0.033	0.269	1.000	
6	0.254	0.274	0.014	0.317	0.348	1.000

The internal consistency of each scale was examined using Cronbach's alpha. Internal consistency was good ($\alpha > .80$) for Factors 1 and 5, and was acceptable ($\alpha > .70$) for Factors 2, 3, 4 and 6. Two measures, Cronbach's Alpha if Item Deleted and Corrected Item-Total Correlation, were calculated to provide further evidence of the reliability of the scales. No substantial increase in alpha

could have been achieved by deleting items in any of the six scales. The Corrected Item- Total Correlations were positive and greater than .30 for items in all scales and range from .32 - .65. Findings from both of these measures indicate enhanced reliability of the six scales. A full item analysis for items in each scale can be found in Appendix 9.

Composite factor scores were calculated for each of the six factors using the simple unit-weight method. Descriptive statistics for each scale along with Cronbach's alpha are presented in Table 13. Higher scores indicated a more positive view of each factor. The mean for each scale is close to zero with slight deviations in both skewness and kurtosis. Given the large sample size, and assumptions from the central limit theorem, effects on statistical tests were not anticipated as a result of these deviations.

Table 13

Descriptive Statistics and Cronbach's Alpha for Each Factor

Factor	N	Items	M	SD	Skewness	Kurtosis	α
1	2985	10	0.02	6.11	-.37	-.15	.82
2	3082	3	0.01	2.47	.05	-.08	.76
3	3046	2	-0.01	1.81	.05	-.76	.78
4	3041	7	0.01	4.51	-.26	.31	.76
5	3011	7	0.06	4.77	-.15	.12	.81
6	3084	7	0.01	4.42	-.51	.70	.74

Factor Description and Interpretation

In this section, each factor is first described and then an interpretation is provided based on the items loading within each factor. Respondent comments, emphasising both the positive and negative attributes of each factor, were identified through directed content analysis. Exemplars of these comments are provided to enhance the understanding of each of the factors. Categories identified through directed content analysis that are aligned with the six factors are presented with each factor.

Factor 1 – Clinical Instructor Feelings of Stress. Clinical Instructor Feelings of Stress emerged as the first factor and is comprised of 10 items capturing physiotherapists' feelings of stress and anxiety related to the supervision of students. This stress appears to be related to physiotherapists' feelings of the added workload of having to both supervise a student and complete their job related tasks, their fears of being judged by students because their knowledge may not be current or skill set may be weak, or their concern that supervising students might be a burden that has been imposed upon them. Moreover, a fear of the unknown and the possibility of being stuck with a challenging or struggling student add to their daily stress.

Written comments from survey respondents further expanded upon this factor, and both positive and negative comments were recorded. In total, 124 comments were classified under the Clinical Instructor Feelings of Stress category, a further 259 comments that referred to aspects of supervision and the work environment that ultimately led to an increase in CI stress were also

included in this factor. These comments were placed in nine categories: Timing/Vacation, Staffing, Lack of Time, Employer/Team Support, Space, Loss of Income, Private Practice Ethics, and Personal.

Stress seemed to arise as a result of the added work that was perceived to be present when physiotherapists had a student with them. The comments expressed stresses related to increased workload, the "juggling" of existing caseloads, feelings of being overwhelmed, and the stress caused by a challenging student. These feelings of stress were exacerbated by a lack of physical space to accommodate students, a lack of employer and team support to enable appropriate student supervision, and staffing shortages -both real and those due to staff vacations.

> I feel it is difficult to take on the commitment of supervising a student when there are staff shortages and lack of coverage during vacations etc. This adds enough stress to the job and makes me feel like I would not have adequate time to effectively supervise/train a student. (Respondent comment, Staffing)

A number of respondents commented on a lack of time, not enough time to complete tasks when a student was with them and the stress that this caused them. For example:

> I think the biggest roadblock for me is the worry that I will not be able to complete the tasks required of me in the time expected [by] my clients, families etc., due to the extra time spent on teaching. (Respondent comment, Clinical Instructor Feelings of Stress)

Additionally, CI's stress was evident in the fear of working with a struggling student and the extra time and emotional energy that was required during the placement when this occurred. Even though this happens infrequently, a lasting impression is left with the therapist:

> Having had a weak student this adds to the stress level and your ability to ensure all the patients are seen while still supervising the student and providing feedback along the way to keep them progressing. It is a lot of work and personally I have put in overtime during those 5 weeks to ensure that patient care gets done. It is exhausting. (Respondent comment, Clinical Instructor Feelings of Stress)

One category unique to private practitioners was related to the loss of income associated with supervising a student and the stress that this caused. This was particularly so with junior students, who are not able to see as many patients in a day, or students who are struggling in the placement and thus require more of the supervising physiotherapist's time – therefore taking time away from patient care. In each case, respondents reported a substantial loss in earnings which made it difficult to justify having a student with them; for example:

> It is difficult in a private practice setting to have the time to teach clinical skills, especially to someone at a junior student level. Patients paying privately don't always consent to paying full price to have a student learning new skills on their bodies. I find I ended up running way behind, as I would be teaching as I was going along, which is why I found supervising a student stressful. If I was compensated for my time, I could

> see less patients in an hour, to allow for a good learning experience for the student (Respondent comment, Loss of Income).

Not all respondent comments were negative; a number of respondents acknowledged that stress may be part of the experience, particularly at the beginning, but ultimately the placement was a rewarding experience and the discomfort experienced at the beginning was outweighed by the overall positive outcome. A small number of respondents described the importance to the profession that students have good clinical placements even if there is some added stress and discomfort:

> Although I have had negative experiences, and despite the fact that there are times I am concerned/stressed that a student will challenge my knowledge etc. I feel it is very important to provide students with clinical placements – and so I ignore the stress and occasional discomfort. It is important for our profession. Having good clinical instructors while I was a student and knowing how important the clinical experience was to my learning has made me want to try to provide good experiences for the students. (Respondent comment, Clinical Instructor Feelings of Stress)

Feelings of stress experienced by CIs appear to be multifactorial and a substantial contributor to the decision to supervise students. Many different facets related to the work environment and the student appear to lead to an increase in CIs' feelings of stress. There are many physiotherapists who may choose not to supervise students due to a belief of increased stress when students are with them, and there are others that acknowledge that stress may be part of the encounter and

agree to supervise students nonetheless.

Factor 2 – Student Contribution to Workplace Efficiency. In general, it appears that students are not perceived to contribute to workplace efficiency, and in fact appear to make supervising therapists less efficient – particularly junior students. Student Contribution to Workplace Efficiency emerged as the second factor and comprised three items which relate to the efficiency and productivity of physiotherapists when a student is with them. This factor includes items that target efficiency related to specific levels of student, i.e. junior and senior.

Six respondents made comments that directly referred to workplace efficiency; additional comments coded under the Student Preparation and Attitude factor captured elements of student performance and efficiency that related to preparation and level of training. Of the six comments received, four referred to the supervising therapist being slowed down by the student, and two reported patients not receiving as effective or efficient care, for example "I feel students slow me down and decrease the quality of care provided to my patients" (Respondent comment, Student Contribution to Workplace Efficiency).

Comments also referred to student preparation and student performance which may result in a loss of productivity and an inability to complete caseload requirements if CIs have to spend time teaching students, or if students were not as efficient in managing a caseload. These comments begin to highlight the relationships that exist between physiotherapist productivity, student performance and training, and the potential increases in CI stress when caseload demands are pressing:

> Due to our own staffing, we try to spend time with the student and help them learn with each case, but when a caseload is high, which it often is, we need students that are prepared and able to learn quickly as we struggle to manage the remaining caseload that the student does not see…..We do what we are able to do, but it is challenging. (Respondent comment, Student Preparation and Attitude)

Although the majority of comments referred to a decrease in efficiency, one therapist did mention a collective increase in productivity for a department as a result of the contribution of a student: "One question asked if having students makes me more productive. It doesn't make me more productive but it might make our whole department more productive (especially a more senior student)" (Respondent comment, Student Contribution to Workplace Efficiency). Although this is the second factor that was extracted it did not generate many comments, perhaps because the items representing this factor adequately captured CI's opinions on this topic.

Factor 3 – Dislike of the Assessment Instrument. Dislike of the Assessment Instrument emerged as the third factor, and is comprised of two items which describe physiotherapists' dissatisfaction with the current assessment instrument, the CPI, and the amount of time it takes to complete it. The emergence of this factor begins to address the question of whether the CPI is a contributor to the decision to supervise physiotherapy students.

Eighty comments were coded as belonging to Factor 3 and validate a general dislike for the CPI. Many comments relate to the time required to

complete the instrument as well as its repetitive nature. Some respondents report that the CPI is a barrier to their supervising of students, and state that if a more user friendly instrument were available, they would supervise more students.

> I have long considered the evaluation tool to be vague, lengthy, and awfully time-consuming. Another tool that has opposite characteristics would be a pleasure rather than an absolute chore to complete and could attract other physiotherapists in becoming supervisors. (Respondent comment, Dislike of the Assessment Instrument)

Only two comments portrayed the CPI in a positive light and noted that it did have some redeeming qualities; however, they noted that it still took too long to complete and was not always clear:

> I feel that the CPI asks some good questions and helps direct the evaluation process but overall is too long and there are a number of pages that do not apply. These pages make it confusing at times for both students and supervisors. (Respondent comment, Dislike of the Assessment Instrument)

Factor 4 – Student Preparation and Attitude. Factor 4 was named Student Preparation and Attitude and comprises seven items that pertain to factors related to a student which may contribute to the outcome of the placement. Included among the student's academic preparation was, the adequacy of the student's training as well as the student's attitude and professional behaviour - which are seen as key components of physiotherapy practice (Bartlett et al., 2009; Canadian Physiotherapy Association, 2011).

A substantial number of comments (n=225) were coded as belonging to this factor and relate in particular to student preparation for complex caseloads, the level of student i.e. senior vs. junior, and student attitude. In many cases respondents felt that students did not have the academic training to work with complex, often neurological or paediatric caseloads. This was frequently in relation to the level of student, but some physiotherapists commented that even senior students were not adequately prepared for their work environment. For example:

> I find students wherever they attend University, are not prepared well by their Universities to treat any neuro condition other than CVA. Weak students junior or senior, find their placements challenging. My colleagues and myself put hours of unpaid time and effort into creating a positive, supportive environment for students to learn in, but this lack of preparation means that students always add to my work and rarely do I ever feel that I can leave them "in charge" while I catch up on things. (Respondent comment, Student Preparation and Attitude)

A number of respondents also noted a difference in student preparation since the introduction of an entry-level master's degree, and perceived that students trained at the baccalaureate level had better hands-on skills:

> I really feel that students in the current MScPT program are much less clinically prepared for their placements and to work as new grads when compared to the former 4 year BScPT students. The MScPTs are pretty good at evaluating the research literature and doing assessments under

> guidance but they really don't know how to integrate their assessment findings into a cohesive treatment plan, don't know how to progress treatments, and generally have really poor clinical skills. (Respondent comment, Student Preparation and Attitude)

The perspective of the private practitioner was also apparent in this factor, particularly with respect to students' proficiency in an environment in which patients were paying privately for physiotherapy service and two codes, Loss of Income and Private Practice Ethics, comprising 57 comments also appeared to fit with this factor. Many respondents had ethical challenges charging patients for a service that was not provided by a licensed professional, thus students were often given extra time to treat patients resulting in a decrease in productivity and revenue for the clinic, ultimately affecting the CI's wages. For example:

> I own a private practice and am concerned that if I did not have a senior student the level of care would not be enough to justify the patient paying for the service OR I would have to book extra time to make up for the level of care and then I would lose money each hour. As it stands we book 60 minute assessments and 30 minute treatments which is great if you have someone who has at least some basic experience. (Respondent comment, Student Preparation and Attitude)

Additionally, student attitude was noted among a small number of respondents who perceived a sense of entitlement and an "attitude of superiority" (Respondent comment, Student Preparation and Attitude,) by some students. This may reflect attitudes of some members of the current generation of students, or

may be related to students in a master's program perceiving that their training and qualifications are superior to physiotherapists trained at the bachelor's level.

The issue of a weak or struggling student has been raised in other factors, e.g. Clinical Instructor Feelings of Stress, and was raised here too. Some respondents felt that being guaranteed of getting a *good* student would make physiotherapists more inclined to supervise:

> If one could guarantee that every student will be competent and motivated, it would be easy to accept to supervise them regularly. However because there are ill-prepared and unmotivated students out there and there is always a chance you may end up with one, it is understandable that a therapist may hesitate before agreeing to take on another student....I certainly do! (Respondent comment, Student Preparation and Attitude)

Again not all responses were negative; however, those that were positive towards students still emphasized the need for a positive attitude, the motivation to learn and for a demonstration of engagement on placement:

> I find it is more the student's personality that I respond to more often than whether or not they are junior/senior. The senior students usually need less guidance so that was why I agreed more strongly with those questions, however, I have loved all the students I have had over the years that had the right attitude and work ethic. (Respondent comment, Student Preparation and Attitude)

Factor 5 – Clinical Instructor Preparation to Evaluate. The fifth factor to emerge was named Clinical Instructor Preparation to Evaluate and comprises seven items that relate to physiotherapists' opinions of their own preparation to evaluate a student on clinical placement. These items include both preparation to use the assessment instrument, the CPI, and preparation to evaluate the student through the University's provision of clear guidelines and instructor training.

Forty-four respondent comments were coded under this factor, many of which pertained to support from the University in dealing with challenging or struggling students and having the skill set to manage that situation. The struggling student has been associated with causing increased stress and anxiety for some CIs, particularly those without appropriate supervisory training to deal with challenging situations:

> Want to avoid a situation where negative comments have to be given to a student (i.e. professionalism, appropriateness, dress code or attendance) Also, [I] feel anxious about having to fail a student due to lack of skill. [I] lack confidence in my skill and don't want this to be evident to a student. (Respondent comment, Clinical Instructor Preparation to Evaluate)

Some respondents commented that clear and standardized guidelines would assist in the evaluation of students, while others felt the University had an obligation to prepare them by sharing information about a student's previous unsuccessful performance. A comment by one physiotherapist summarized the benefit of appropriate preparatory training and clear evaluation guidelines:

> If I was given clear guidelines and instructions as to what the expectations of the student and myself were, in terms of learning objectives, marking schemes and student skill-set, I would feel more prepared and willing to take students. This way I could prepare my caseload appropriately and provide a more optimal environment for the student. (Respondent comment, Clinical Instructor Preparation to Evaluate)

The request for additional information regarding student performance may be difficult to achieve. Schools must negotiate local privacy laws and balance student privacy and the fairness of a clean start with a therapist's need to know a history that may or may not have an impact on the present placement. Many comments were related to the struggling student; however, more support from the University specifically emphasizing how to manage struggling students may mitigate the need for student-specific historical information.

The category, Comfort with Supervision, comprising 44 comments relating to mostly newly graduated physiotherapists' readiness for supervision appeared to fit with this factor. Respondents felt they did not have the clinical experience necessary to take on a student. For some this was due to the amount of time since graduation – "I graduated in 2010 and as such feel that I need to develop my own clinical skills, reasoning and efficiency prior to taking a student" (Respondent comment, Comfort with Supervision), while for others it was level of comfort with their clinical area that made them hesitant to supervise a student, for example: "I feel like I don't have enough experience in my current setting to offer a placement to students" (Respondent comment, Comfort with Supervision).

Although the components in this factor appear different, they relate to a need for comfort and competence with both supervisory and clinical skills to effectively supervise and evaluate a student.

Factor 6 – Professional Role and Responsibility. The final factor identified by the exploratory factor analysis was named Professional Role and Responsibility and comprises seven items. These seven items focus on the responsibility of physiotherapists to supervise physiotherapy students as part of their role as health professionals. Items capture elements of professional practice, including reflection and continual professional learning to stay current, as well as their opinions of recognition for their efforts by the profession.

A total of 125 comments were coded with this factor through directed content analysis. The vast majority were extremely positive about the personal rewards associated with supervising students, from being able to pass along one's own positive experiences – "Having a very strong and excellent mentor has influenced and shaped who I am as a physiotherapist, I want to be able to provide that same mentorship to other new therapists" (Respondent comment, Professional Role and Responsibility) to finding it "a great way to recharge my physio batteries" (Respondent comment, Professional Role and Responsibility).

A number of respondents noted how important the job of supervisor is for the profession, and the need to share collective experiences with the next generation. Almost all of the comments were positive, despite the extra work that supervising may bring, with positive spin offs for the supervisor, the profession, the student, and employers as exhibited by these two quotes:

> I feel it is an important part of the job, but it does add stress and burden of making sure they have a good learning experience and that I meet their learning style. There are upsides of working with excited enthusiastic students who provide good ideas. I like showing students how interesting and fun my job is. I feel it is a good way to recruit. (Respondent comment, Professional Role and Responsibility)

> Over more than two decades of supervising students I have come to take great pleasure in working with them as they make huge and exciting discoveries about themselves and their chosen profession. It's a privilege to share the journey. (Respondent comment, Professional Role and Responsibility)

There were 53 comments, some of which were quite negative, that pertained to recognition and compensation for the work done by supervisors in both the public and private sectors in the supervision of students. These comments were coded as Recognition which appeared to align with this factor. There was a sense from some respondents that since extra work goes into supervising students some form of compensation, monetary or otherwise, should be paid for the expertise provided and would make the experience more meaningful:

> In this private practice setting, any evaluation and feedback is extra in the day (unpaid, outside of work hours). This is a commitment that could be compensated to make the experience more worthwhile than just "giving back to the profession". (Respondent comment, Recognition)

However, this was not the case for all respondents with some finding "the thought of payment to supervise students [to be] distasteful" (Respondent comment, Recognition) and one other therapist now feeling the need to provide a more enhanced supervision experience because of remuneration:

> I do not like the fact that we get some $ compensation to supervise students ($50.00/wk. of placement). It puts more pressure to provide a hugely stimulating experience, when we know most of the time, our work can sometimes be fairly straightforward, especially if you have a similar diagnosis based caseload. (Respondent comment, Recognition)

The feelings of a need for recognition were apparent from a number of therapists as a *thank you* for providing a service, but not all felt that monetary compensation was necessary. Access to the university's library and e-journal collections, and recognition that supervision may be a form of continuing competence were also highlighted as ways to be recognized.

Categories Not Aligned with Factors

In total, 1792 respondent comments were analysed and categorised using directed content analysis. Eighteen categories were used to categorise respondent comments. All but two categories, Part-Time Work and Work Type, aligned with the six factor structure (A full factor and category organization can be found in Appendix 10). These two categories highlighted two specific reasons why physiotherapists did not supervise students. Part-Time Work, comprising 145 comments, pertained to those physiotherapists who worked part time and therefore did not offer to supervise a student. This was sometimes qualified and

either they had offered to supervise and the offer had not been used or there was no one else at the facility that could share a placement to fulfill a full-time placement. For example, “I am a sole therapist in a small clinic and currently only work part time, so unable to provide a full time placement to a student” (Respondent comment, Part-Time Work).

Work Type, comprised 129 comments, and highlighted physiotherapists who worked in unusual or specialised, often non-clinical roles that they assumed would be unsuitable for a student. These included researchers, administrators, professional practice leads and advanced practice. For example,

> To work as a consultant (the position I work in, with no clinical contact with clients), one needs at least 10 years of practise, in a variety of settings, and thus it would not be appropriate for students to do a placement in this situation. (Respondent comment, Work Type)

Enhancing Rigour. The findings of the directed content analysis (i.e. the categories described throughout the results section and diagrammed in Appendix 10) were found to be plausible based on feedback from the peer consultant who reviewed the methods sections of the study, the survey data and the analysis of respondent comments. In reading through the results chapter and respondent comments she noted an overarching sense of stress related to student supervision. She commented on the interconnected nature of the contributors to the decision to supervise a student and how a number of them cause an increase in physiotherapist stress.

Comparison of Factor Scores for Supervising and Non-Supervising Physiotherapists

Composite factor scores were calculated for each of the six factors using the simple unit-weight method. Independent samples t-tests were conducted to compare each of the factor scores for supervising and non-supervising physiotherapists. Statistically significant differences were present in each of the factors except for Factor 2; the results are presented in Table 14. Although significant differences were present, the effect sizes (*r*) were small (<0.30, Cohen, 1992).

Table 14

Comparisons of Supervising and Non-Supervising Physiotherapists by Factor

Factor	Group Mean		*t*	*df*	*r*
	Supervisor	Non-supervisor			
1	0.93 (5.89)	-1.55 (6.15)	10.69***	2869.00	.04
2	-0.04 (2.48)	0.08 (2.41)	-1.33	2363.76	.03
3	-0.38 (1.87)	0.64 (1.49)	-16.31***	2617.29	.09
4	0.62 (4.42)	-0.95 (4.49)	9.25***	2919.00	.03
5	1.11 (4.57)	-1.74 (4.59)	16.07***	2889.00	.08
6	0.55 (4.21)	-0.88 (4.67)	8.36***	2114.07	.03

Note. *** = $p \leq 0.001$, *r* = effect size. Standard deviations appear in parenthesis beside the group mean.

The results indicate that supervising physiotherapists tend to have a more favourable attitude towards stress and anxiety associated with supervising students, and feel more prepared to evaluate them, than non-supervising

physiotherapists do. Supervising physiotherapists appear to regard supervision of students as part of their role and responsibility as healthcare professionals, as well as having a more positive view of student preparation and attitude. With respect to the CPI, non-supervising physiotherapists have a more favourable view of the instrument than supervising physiotherapists do. Both supervising and non-supervising physiotherapists appear relatively neutral with respect to efficiency when a student is with them on placement.

Comparisons of Factor Scores for Supervising and Non-Supervising Physiotherapists across Geographic Regions

Statistically significant differences were present across the geographic regions in all factors except Factor 4 for supervising physiotherapists, and in Factors 1, 3, and 5 for non-supervising physiotherapists; however, the effect sizes were small. There was no region with consistently high or low mean scores, with considerable variation in factor scores among the regions. A full table of ANOVA results can be found in Appendix 11. Relevant findings are presented in the following section.

Significant differences were present across the regions in Factor 1, Clinical Instructor Feelings of Stress, for supervising physiotherapists, $F_{(4,1819)} = 3.35$, $p = .01$, partial $\eta^2 = 0.007$. Post hoc analysis revealed that only physiotherapists in Ontario ($M = 1.50$, $SD = 5.92$) and the Prairies ($M = 0.08$, $SD = 6.16$) differed in their views about stress related to student placements. There were also significant differences present in Factor 1 for non-supervising physiotherapists, $F_{(4, 1031)} = 4.86$, $p = 0.001$, partial $\eta^2 = .02$. Post hoc analysis

revealed differences between Ontario (M = -0.34, SD = 5.60) and Quebec (M = -3.03, SD = 5.90), with Quebec physiotherapists having the most negative opinions of stress related to supervising students.

Factor 2, Student Contribution to Workplace Efficiency, demonstrated significant differences across the geographic regions for supervising physiotherapists only, $F_{(4, 1849)} = 3.42$, $p = 0.009$, partial $\eta^2 = 0.007$. Post hoc analysis identified differences between BC (M = -0.37, SD = 2.47) and both the Prairies (M = -0.17, SD = 2.47) and Ontario (M = 0.13, SD = 2.51). Supervising physiotherapists in British Columbia had the most negative views related to efficiency of students on clinical placements.

Factor 3, Dislike of the Assessment Instrument, demonstrated significant differences for both supervising ($F_{(4, 1859)} = 26.92$, $p<0.001$, partial $\eta^2= .055$) and non-supervising physiotherapists ($F_{(4, 1047)} = 2.67$, $p = 0.031$, partial $\eta^2= .010$. Post hoc analysis for supervising physiotherapists revealed significant differences between BC (M = -0.94, SD = 1.76) and the four other regions (Prairies [M = -0.41, SD = 1.83], Ontario [M = -0.47, SD = 1.80], Quebec [M = 0.48, SD = 1.88] and Atlantic [M = -0.24, SD = 1.94]) as well as between Quebec and the Prairies, Ontario and the Atlantic region. Post hoc analysis of non-supervising physiotherapists identified significant differences only between BC (M = 0.44, SD = 1.58) and Ontario (M = 0.78, SD = 1.41). Based on these findings the physiotherapists in BC appear to be the least positive about the CPI, which is consistent with reports from the ACCE at the University of British Columbia who cites the CPI as the reason some physiotherapists in BC refuse to supervise

students. What is also interesting is the positive regard held by supervising physiotherapists in Quebec where it has recently been discovered that some schools are using their own assessment instruments and not the CPI.

Significant differences were also present in Factor 5,Clinical Instructor Preparation to Evaluate, for both supervising ($F_{(4, 1840)} = 4.70$, $p = 0.001$, partial $\eta^2 = .010$) and non-supervising physiotherapists ($F_{(4, 1028)} = 8.75$, $p<0.001$, partial $\eta^2 = .033$). Of supervising physiotherapists only those in Ontario (M = 1.71, SD = 4.30) and the Atlantic region (M = 0.27, SD = 4.78) differed in their views on preparation to evaluate students with Ontario physiotherapists feeling more prepared than Atlantic physiotherapists. Non-supervising physiotherapists in Quebec were the most negative about their preparation to evaluate students with Quebec physiotherapists (M = -3.54, SD = 4.66) significantly different from BC (M = -1.86, SD = 4.50), the Prairies (M = -0.94, SD = 4.71), Ontario (M = -1.00, SD = 4.17) and the Atlantic region (M = -1.56, SD = 4.62).

The final factor, Factor 6 – Professional Role and Responsibility, demonstrated significant differences for supervising physiotherapists only, $F_{(4, 1852)} = 54.31$, $p = .011$, partial $\eta^2 = .007$. Post hoc analysis indicated that supervising physiotherapists in Quebec (M = 1.06, SD = 3.95) had more positive opinions about their roles and responsibilities related to clinical education than physiotherapists in the Prairie regions (M = 0.20, SD = 4.15) did.

Chapter VI

Discussion

The primary goal of this study was to identify the contributors to Canadian physiotherapists' decisions to supervise students. The results present a picture of Canadian physiotherapy clinical education that is both multifactorial and complex. Multifactorial, because of the multiple contributors that appear to influence the decision to supervise a student, and complex due to the interconnected and multifaceted nature of these contributors, with no simple resolution apparent. The findings from the survey data suggest that six factors: Clinical Instructor Feelings of Stress, Student Contribution to Workplace Efficiency, Dislike of the Assessment Instrument, Student Preparation and Attitude, Clinical Instructor Preparation to Evaluate, and Professional Role and Responsibility, influence the decision to supervise a student. The study highlights significant differences between supervising and non-supervising physiotherapists, and among physiotherapists in different geographic regions in Canada. However, the actual differences and effect sizes are small – a noteworthy finding considering the variability in education and healthcare delivery across the country.

The Discussion is organized into nine sections; the chapter begins by highlighting the stresses associated with supervising students and working in healthcare as well as the necessity for improved supervisor preparation, followed by the need for a review of the assessment instrument. Thereafter, the commonalities across practice and regional boundaries are presented, followed by a discussion on professional role and responsibility, and then the perspective from

private practice. This chapter ends with a discussion of the implications for clinical education stakeholders, limitations of the study, implications for future research, and a conclusion.

Working in Healthcare and Supervising Students is Stressful

Stress experienced by CIs emerged as the most influential contributor to the decision to supervise a physiotherapy student. This finding is not unexpected considering that stress within the realm of clinical education has been highlighted elsewhere (e.g. Davies et al., 2011; Maloney, Stagnitti & Schoo, 2013; Öhman et al., 2005). However, my study provides additional details regarding the reasons for stress related to clinical education, and further extends the notion of its multifactorial nature. Both Davies et al. (2011) and Öhman et al. (2005) identified that the stress associated with supervising students was a barrier to participating in clinical education. Respondent comments in my investigation expanded upon the causes of stress related to student preparedness, and provided evidence of the interconnected nature of the factors. The interconnected nature of stress is also evident from the items that load onto Factor 1, Clinical Instructors Feelings of Stress.

In my study, two components of stress for supervising physiotherapists emerged from the findings: (1) the feelings of stress associated with supervising a student - those feelings of being judged, of feeling unprepared to supervise a student, or the fear of getting a challenging student, and (2) the feelings of stress associated with a demanding work environment, and completing caseload assignments in addition to providing mentorship and supervision to a student. But,

stress itself must not be considered in isolation. Six factors were identified in this study, each with multiple components, attesting to the complex and multifactorial nature of the decision to supervise a student. A number of those factors (e.g. Student Preparation and Attitude) also appear to amplify CI stress.

In my study, respondents highlighted a number of causes of stress including: student performance and attitude, workload and workplace pressures, and a lack of preparation to supervise and evaluate students. While many of the causes of CI stress are outside of the control of physiotherapy schools, the recognition of those factors that are within schools' control provides a starting point from which we can begin to address them. Effective supervisor training, that which provides practical information for developing successful student supervision experiences, is one mechanism that may mitigate some of the stress associated with student supervision and may also lead to improved clinical education experiences (Hanson, 2011).

In my study, supervising physiotherapists had a more positive view of their preparation to evaluate students than did non-supervising physiotherapists, and views regarding preparation to evaluate students were positively correlated with clinical instructor feelings of stress. Therefore, effective preparation of physiotherapists for the supervision and evaluation of students should lead to decreased feelings of stress associated with student supervision and perhaps more needs to be done to better prepare current and potential CIs for the role of supervisor and educator in the clinical setting. However, despite supervisor training provided by physiotherapy schools in Canada, and the many online

supervisor training resources that are freely available (e.g. www.preceptor.ca), it is apparent that some physiotherapists do not feel adequately prepared for their roles as supervisors and educators in the clinical setting. A lack of, or inadequate, training to supervise a student appears to be a substantial contributor to CI stress as is evident by the items loading onto Factor 1. These items include feelings of being unprepared to supervise a student, feelings of intimidation of the new knowledge that a student brings and that the supervisor's practice will be judged as a result, as well feelings of stress and worrying about getting a challenging student.

The need for and importance of clinical educator/preceptor training has been reported for a number of health disciplines including: nursing, medical education, speech language pathology and occupational therapy (e.g. Hanson, 2011; Higgs & McAllister, 2005; Kettenbach, 1999; Macleod, 2012; Maloney, et al., 2013; Yonge, Ferguson, Myrick, & Haase, 2003). Supervisor training is viewed as a both an enabler for effective and positive clinical placement experiences (e.g. Higgs & McAllister, 2005; Maloney et al., 2013; Yonge et al., 2003) and a lack of training as a barrier to participation in clinical education (e.g. MacLeod, 2012; Maloney et al., 2013). However, little literature related to this topic exists for physiotherapy.

The nursing literature has a number of examples of the necessity for preceptor preparation for the role of supervising nursing students in the clinical setting as one component of successful placement outcomes and enhanced learning experiences for students (e.g. Allen & Simpson, 2000; Myrick, Luhanga,

Billay, Foley, & Yonge, 2012; Yonge et al., 2003). Myrick and colleagues (2012) explored the effectiveness of a training program for nursing preceptors, and the perceptions of participants about their preparedness to supervise a student. Workshop attendees had a better appreciation for the role of the preceptor following the workshop and better understood the expectations of the placement experience, which gave them confidence for the supervisory process that they might not have had (Myrick et al., 2012). Maloney and colleagues (2013) identified that training for the role of supervisor enhanced supervisors' clinical education experience, and that formal training about being a clinical educator and specific information on clinicians' supervisory role, rights and responsibilities would enable them to be more effective educators in future (Maloney et al., 2013).

Allen & Simpson (2000), however, reported that many mental health nursing preceptors in their region felt unprepared for the preceptor role. As a result, the demands placed on them and the lack of time to complete clinical and supervisory work caused stress and negativity (Allen & Simpson, 2000). When supervisor training workshops were provided, attendance was often poor and was attributed to a lack of management/administration support to attend. It was also proposed that information about workshops never reached their intended audience because managers did not want to deal with requests for time away from clinical work (Allen & Simpson, 2000). Employer support, also identified in my study, has been reported in the physiotherapy literature as a contributor to participation in clinical education (e.g. Davies et al., 2011). Without employer support,

supervisors perceived the supervision of students to be more stressful (Maloney et al., 2013), and clinicians were unlikely to use personal time to attend supervisor training sessions. This ultimately impacted their decision to participate in clinical education experiences (Davies et al., 2011).

Further, preparatory workshops do not necessarily always meet the needs of prospective supervisors. Allen & Simpson (2000) reported that when clinicians did attend workshops, they did not always feel that they had the information necessary to appropriately manage the clinical education experience (Allen & Simpson, 2000). Attendees requested additional and clearer information about student educational course content and clinical placement expectations that would better enable them to manage the learning experience. Attendees felt that better preparation to both assess a student on placement and also to deal with students who were failing would assist them in their roles as preceptors and mitigate some of the negative attitudes towards students and reduce preceptor burnout (Allen & Simpson, 2000).

Higgs and McAllister (2005) have highlighted the dilemmas faced by speech language pathology CIs who found it challenging to play multiple roles (i.e. educator, clinician) when they lacked the skills to manage their time, their caseload, and the clinical education experience (Higgs & McAllister, 2005). The researchers believe that successful clinical education experiences can be achieved through ongoing professional development opportunities for clinicians which teach the skills required to effectively manage the clinical placement experience (Higgs & McAllister, 2005). My study has highlighted the link between

supervisor training and stress; however, the principles of time- and placement management, and the practical application of these principles which may assist in reducing CI stress, may be lacking from current CI training programs.

The issue of the failing or struggling student was raised in this study, and has been raised elsewhere (e.g. Davies et al., 2011; Luhanga, Yonge, & Myrick, 2008; Öhman et al., 2005), and is substantial contributor to supervisor stress. Yet, it is apparent that many supervisors are not adequately prepared to deal with the struggling student (Allen & Simpson, 2000; Bearman et al., 2012). Clinical instructors without adequate training to deal with struggling students report using more of the same strategies used with all students when a student is struggling. The *more and more* strategy may not necessarily address the issues that are creating challenges for students, and CIs were not necessarily implementing strategies that may assist students to be successful (Bearman et al., 2012).

Teaching CIs to deal with struggling students, and giving the CI specific strategies to deal with these situations, has had positive effects. Ilott (1995) reported on the benefits expressed by occupational therapy CIs following attendance at a workshop on dealing with the struggling student. Workshop attendees received strategies to specifically manage these challenging student situations and received information on the importance of failing a student where necessary. This specific training to deal with the struggling student was seen as the most valuable component of supervisor training even one year after the session (Ilott, 1995); however, not all training sessions provide this type of specific information with practical implementation strategies.

It is evident from the findings of this study, and from the literature from multiple disciplines (e.g. Allen & Simpson, 2000; Bearman et al., 2012; Higgs & McAllister, 2005; Myrick et al., 2012), that supervisor training is a critical component of the success of clinical placements and a contributor to clinicians decisions to supervise students. However, the findings from my study and others (e.g. Allen & Simpson, 2000) indicate that clinicians do not always feel adequately prepared for the supervisor role, which contributes in increased stress in the clinical environment when a student is present. This is compounded when clinicians are not aware that assistance is available because information about training and support may not necessarily be forwarded on to them by their employers. Although workshops and resources are available in Canada, it is apparent that more needs to be done to inform potential clinicians about these resources, and also to ensure that the information provided in workshops is relevant to the issues faced by supervisors and meets their needs. This is particularly so for dealing with challenging students. A review of current offerings across the country is necessary. Engagement with the clinical community about expectations and needs for supervisor training will assist physiotherapy schools in providing workshops and resources that enable CIs to appropriately, and successfully manage the clinical education experience, to deal with difficult students, and to ultimately reduce the stress associated with supervising students.

Providing specific and practical strategies for managing the clinical placement may also assist with recruitment and retention of clinicians interested

in being a CI who don't feel they have the tools necessary to accomplish the task effectively. These may include timetable templates and placement flow maps that may assist CIs with time management, and with having a plan for structuring the placement that will allow them to provide appropriate student supervision and mentorship, while also allocating enough time to complete their clinical caseloads. General placement management strategies may also include readily accessible online manuals or workshops containing an overview of the placement process, the importance of orientation to the work environment, and the need for and appropriate methods of providing the student with formative and summative feedback to assist their learning. Clear guidelines for student expectations and information regarding course content will provide CIs with a foundation of what students have covered in the academic program at a specific point in time, and what skills and behaviours they can expect to see at each stage of their clinical placements. Additionally, schools could link clinical sites to enable information sharing of the logistics of how placements are managed at each site, of how to make placements work with respect to day-to-day management of students and caseloads, and potentially of billing practices.

Specific information on dealing with the struggling student should be incorporated into all supervisor training sessions, even during introductory sessions. Advanced sessions could include instruction on student performance assessment, the use of counselling approaches, e.g. motivational interviewing (Miller & Rollnick, 2002; Hamada, Martin & Batty, 2006) to elicit changes in student behaviour that lead to improved performance, and the need for and

benefits of student failure (Ilott, 1995). Faculty visits to clinical sites to meet with and discuss the placement with both students and CIs, and telephone call check-ins have also been shown to improve CI satisfaction particularly when students are struggling (Luhanga, Yonge, & Myrick, 2008).

Enhanced supervisor training opportunities may assist CIs in dealing with some of the stresses associated with supervising a student; however, the student is a substantial component of the clinical education experience. It is the challenging student, that is a student with a poor attitude or poor clinical skills, or a combination of the two that emerged from this study who had also been identified elsewhere as a contributor to CI stress (e.g. Bearman, Molloy, Ajjawi, & Keating, 2012; Davies et al., 2011). Clinical education is a partnership between student and CI. While improved supervisor training programs is one strategy that may alleviate CI stress, better preparation of students for the clinical environment may add further benefits.

Students are prepared for the clinical environment from an academic perspective but may not always be sufficiently prepared from a clinical education perspective, e.g. acting on feedback from supervisors, preparation for the placement experience, seeking assistance if struggling. Better preparation of students prior to placements with respect to expectations for performance, attitude, and accountability may alleviate some of the challenges associated with clinical placements and allow for the placement to proceed more smoothly. This may also be linked to education about the professional role of physiotherapists to supervise students and may focus on the purpose of supervision, how to

effectively manage a placement experience, how to delegate tasks, and how to provide feedback. This is turn may encourage more graduates to participate in clinical education down the road.

Additionally, physiotherapy schools may need to be better gatekeepers and prevent unsuitable students going out to clinical sites. Faculty often identify struggling students in the classroom even before students participate in clinical placements. Perhaps schools should provide some form of remedial support before a student goes into a clinical environment to prevent the significant stresses associated with the struggling student from occurring.

What my study further contributes is the opinion that students in general appear unprepared for the complexities of today's healthcare environment. This lack of preparation was often directed at junior students, but some physiotherapists also felt that schools were not even preparing senior students well enough for complex patients - particularly paediatric or neurological patients, and patients with multiple medical problems. As a result of this perceived lack of student preparation, physiotherapists felt they had to spend more time teaching students which led to a decrease in their efficiency.

Students have been reported to increase productivity and efficiency (e.g. Bristow & Hagler, 1997; Dillon, Tomaka, Chriss, Gutierrez, & Hairston, 2003), and although some physiotherapists in this study did note an increase in departmental productivity, the majority perceived a decrease in their individual productivity and efficiency as a result of their supervisory responsibilities. Student preparedness, or lack thereof, ultimately added to CIs' feelings of stress, as they

often ran out of time to complete their assigned caseloads. These findings are consistent with Hanson's 2011 study in which occupational therapists described a lack of student preparation for the clinical environment as a source of frustration for CIs, and a barrier to student placements.

Although Canadian physiotherapy schools follow national curriculum guidelines (Council of Canadian Physiotherapy University Program, 2009), the document is not prescriptive of the application of curriculum content, nor does it dictate the extent to which students must be prepared academically prior to entering the clinical environment for a placement. These decisions are made by schools on an individual basis. During the upcoming national review of the physiotherapy curriculum scheduled for 2014, leaders in physiotherapy education should evaluate the extent to which current curriculum content and student training are meeting the demands of contemporary practice. In particular, a review of current practice related to paediatric and neurological populations, and the extent to which programs prepare students to work in these areas, may be warranted; the involvement of the clinical community who work in these clinical areas may provide valuable insight into the needs of working with these populations. Clearer communication with, and education of, the clinical community about the content covered within these areas, and the principles of research evidence employed to support which content is included in the curriculum and why, may also be necessary.

Noteworthy was that study respondents highlighted workplace contributors, most notably a lack of time to complete caseload and administrative responsibilities, which were aggravated when a students was present, and intensified their feelings of stress. A lack of time has been reported elsewhere as a contributor to supervisor stress and a barrier to student placements (e.g. Davies et al., 2011; Sevenhuysen & Haines, 2011; Öhman et al., 2005). Supervising physiotherapists reported the extra time required to mentor and teach students, particularly challenging students, impacted their ability to complete all assigned work resulting in non-clinical duties being neglected (Sevenhuysen & Haines, 2011). Besides advocating for more practical supports for supervising clinicians, physiotherapy schools may have limited impact on the workplace factors which may cause CI stress. It is hoped that enhanced supervisor training and student preparation for the clinical environment may alleviate the additional stresses that may be caused when a student is present, and allow CIs to complete their supervisory and caseload responsibilities in an appropriate time frame.

Need for a Review of Current Assessment Instrument

The Clinical Performance Instrument (CPI) has, for many years, been anecdotally reported to influence physiotherapists' decisions to supervise students. In recent years, as other stresses within the clinical environment have increased, these anecdotal reports have become more frequent with some CIs refusing to supervise students if the CPI is used. But, research findings to support these reports have been limited (e.g. Creaser, 2006), until now. My study provides empirical evidence of the CPI as a factor in the decision to supervise students, and

validates the general dislike of the instrument. Survey respondent comments decry its repetitive nature, and the length of time it takes to appropriately complete the instrument. These findings are similar to those reported by Creaser (2006), and highlight a need for change in the evaluation of Canadian physiotherapy students on clinical placement. At a national level, ACCEs have held discussions in recent years about the evaluation of students on placement and the need to adopt or develop a new assessment instrument to replace the CPI. However, they have lacked the empirical evidence that this study provides in order to make appropriate, informed changes.

Beyond the scope of this dissertation, yet part of a larger study conducted concurrently are the findings from survey items pertaining to the development of a new evaluation instrument which informed focus groups sessions conducted across Canada. These sessions explored physiotherapists' perspectives on the need for, and format of a new clinical assessment instrument. Clinician engagement regarding the format, length, and training to use a new instrument is critical to its success and adoption. A concise, clear, and easy to use instrument will remove at least one barrier to student supervision, and hopefully persuade those CIs discouraged by the CPI to participate in clinical education.

Professional Role and Responsibility

Professional Role and Responsibility emerged as the sixth factor to influence physiotherapists' decision to supervise students; however, a physiotherapist's beliefs about their professional role, and their responsibility to the profession, may be more influential in the decision to supervise students than

is represented by the findings of this study. Based on personal experience as an ACCE, what is often observed in practice is that regardless of workplace pressures, in a given facility where employer policies, caseload demands, staffing, and other contextual factors are constant, and students come from the same university, there are physiotherapists who choose to supervise students and physiotherapists who choose not to.

Physiotherapists' professional responsibility towards the supervision of students has also been reported elsewhere. Both Baldry Currens and Bithell (2000) and Sevenhuysen and Haines (2011) reported that most supervising physiotherapists believed that clinical education was a core professional role, and had a strong sense of duty to the profession. However, this responsibility was sometimes eroded by workplace demands (Baldry Currens & Bithell, 2000) and the drawbacks associated with supervising students, that it typically led to an increased workload and feelings of stress, were a barrier to increased student placements (Sevenhuysen & Haines, 2011). According to the Canadian Physiotherapy Association Rules of Conduct, the supervision of students is the professional responsibility of Canadian physiotherapists (Canadian Physiotherapy Association, 2011); however, only approximately 25% of physiotherapists supervise students. Although it has been reported that supervising physiotherapists mostly agree that clinical education is a core professional role (Baldry Currens & Bithell, 2000; Sevenhuysen & Haines, 2011), the present study has not fully examined the extent to which non-supervising physiotherapists agree with this position.

If beliefs about professional role and responsibility are an influential factor for supervising students, then a greater awareness of this responsibility and more purposeful engagement with physiotherapists by physiotherapy schools, associations, and Colleges is needed to bridge this gap in understanding. This may be achieved through: (1) education of students' while they are completing their training programs about the benefits of supervision and the responsibility they have to the sustainability of their profession, (2) formal recognition by the profession for physiotherapists who participate in this essential activity, and (3) increased awareness and messaging of the importance and need for supervisors from the professional associations and regulatory Colleges.

Additionally, physiotherapy schools must engage those physiotherapists who do believe student supervision is their professional responsibility but perhaps work part-time or in an area they deem not appropriate for student learning. With a broad overview of potential sites, ACCEs should look for solutions to partner part-time physiotherapists at different facilities to provide full-time placement opportunities, or seek out one-off or modified learning experiences that would allow those physiotherapists who work in nonconventional roles to contribute to student learning.

Common Influences across Regional and Practice Boundaries

Survey respondents are representative of the Canadian physiotherapy population both geographically and in clinical practice. Despite numerous differences in provincial and territorial governance and demographics, variations in health care delivery and administration, and unique attributes of physiotherapy

training at each of the 14 schools, surprisingly only small differences exist between supervising and non-supervising physiotherapists for the factors that influence the decision to supervise students. There does not appear to be one specific factor that separates supervisors from non-supervisors, or a collection of factors that appear to strongly influence one group or another. Therefore, one might conclude that the factors collectively influence physiotherapists on an individual basis, dependent on the physiotherapist's own circumstances, or perhaps their own beliefs about the extent to which supervision is their professional role and responsibility.

The individuality of the decision to supervise a student, and the fact that there does not appear to be one predominant factor that influences a group of physiotherapists, poses a challenge to stakeholders (employers and healthcare agencies, physiotherapists, and physiotherapy schools) looking to engage and recruit supervising physiotherapists. It is unlikely that one single intervention will bring a large number of supervisors into the fold. Each initiative or intervention will likely encourage only a small number of new supervisors to participate in clinical education. For example, physiotherapy schools in Ontario and British Columbia have in recent years instituted initiatives to encourage more physiotherapists to participate in clinical education. In Ontario, the government has provided limited funding to remunerate clinicians who supervise students, and the University of British Columbia has trialed a new evaluation instrument, the Assessment of Physiotherapy Practice (Dalton, Davidson, & Keating, 2011), as an interim measure to appease clinicians dissatisfied with the CPI. Undocumented

accounts from ACCEs in each province report that neither of these initiatives, both addressing contributors to the decision to supervise students identified in my study, has resulted in large numbers of physiotherapists now becoming involved in the clinical education of students. However, each initiative has encouraged physiotherapists for whom the reason they did not supervise students was addressed by that initiative, to participate in the supervision of students. It is apparent therefore, that multiple initiatives, like the ones described earlier, will need to be undertaken by the collective stakeholders in clinical education to engage physiotherapists, to decrease the stress associated with supervising students, and to make student supervision a more rewarding and enjoyable experience.

Challenges Associated with Payment for Services

A unique finding to emerge from my study was the perspective of the private practitioner, which makes an important contribution to the physiotherapy clinical education literature. Approximately 40% of physiotherapists work in private practice which represents an important training environment for physiotherapy students. However, the views of private practitioners have not been well represented in previous studies in physiotherapy clinical education because private practitioners were not often included in the studies' samples. This study had a substantial number of respondents (32%) who reported working in a private practice setting, who voiced challenges with student supervision that have not previously been reported. Although these challenges did not emerge explicitly in the factor analysis, private practitioners expressed their concerns in text.

Two themes pertinent to private practice emerged from the respondent comments, and relate to the unique stresses that may be present in this particular practice context associated with the ethical considerations of charging fees for services provided by students, and a loss of income due to student productivity. Private physiotherapy services are often not funded by provincial health insurance, and patients (or the patient's private insurance company) must pay for the services they receive. Some respondents felt uneasy about charging patients for services that were not delivered by a qualified physiotherapist. Particularly for patients paying out of pocket, physiotherapists felt an obligation to provide proficient, appropriate care since funds for physiotherapy services may be limited. Other respondents were stressed about the loss of income that was associated with supervising a student. This resulted from taking extra time to mentor and teach a student, which detracted from productivity and throughput of patients. Respondents reported this loss of income to be as much as 20% while the student was present.

Both of these ethical and income issues pose a challenge for physiotherapy schools, and are not easily resolved. Although students are supervised by licensed physiotherapists, the care that students provide is unlikely to be of the same standard and proficiency as an experienced practitioner. The care provided by the student is most often reviewed by the CI to ensure the care plan is appropriate; students then receive feedback on the execution of clinical skills which typically improve as the placement progresses. In this way the care provided is similar to what the licenced physiotherapist would provide, but the handling skills are

perhaps not as practiced. This discrepancy in competence and skill set between students and experienced clinicians has been acknowledged elsewhere by students who acquire and refine clinical skills as they progress through their clinical education and practice (e.g. Tryssenaar & Perkins, 2001). Additionally, physiotherapy treatments are often offered in 15 minute intervals by experienced practitioners, a pace unlikely to be maintained by a student. Students often spend longer with each patient they see, which may make patients feel they are getting better value for their money and that they are receiving extra attention for their ailments. This may offset any feelings that they are receiving sub-optimal care.

An investigation into the financial impact of student practitioners in private practice may be warranted to determine if new funding models are necessary for patients treated by physiotherapy students. Additionally, some form of income supplementation may be required to offset the loss in physiotherapists' wages that results when a student is present. It could be argued, however, that proficient senior students may in fact add to the productivity of the private clinic, and increase the overall income generated by the CI. This may negate the need for income supplementation, and may even counterbalance the effect of the CI supervising a junior student at a different time. The level of student training and the proficiency of each of the students will determine any increases in income or productivity in each case. The impact of student performance and income generation in a private practice setting has not been explored in the literature.

Implications for Clinical Education Stakeholders

It must be recognized that forces beyond the control of physiotherapy schools play a role in the challenges related to clinical education, and therefore endorse the need for a shared approach to achieve meaningful resolution to the problem. Moving forward, all stakeholders in clinical education (universities, healthcare agencies, clinicians and students) will need to collaborate to investigate solutions that will make the supervision of students a less stressful and a more rewarding undertaking.

Below are five potential solutions for enhancing the student supervision experience:

1. A review by physiotherapy schools of current supervisor training programs to ensure training workshops are aligned with the needs of supervisors, and are reflective of today's physiotherapy learners. Training programs should equip clinicians with the skills and behaviours that will allow them to better manage the clinical placement experience, and decrease the feelings of stress associated with workload management. This may include: clear communication of student expectations and physiotherapy program content (Hanson, 2011), and content related to time management and the application of these principles to maximise the clinical placement experience (Higgs & McAllister, 2005). Strategies that specifically address the struggling student and how to implement plans to achieve a successful resolution to the placement, including student failure, should be included. Because physiotherapy programs are offered at the master's level and many students

are therefore older, the principles of adult learning (Lieb, 1991) and strategies for teaching the millennial generation (e.g. Roberts, Newman and Schwartzstein, 2012) should be included.

2. Employer support, both in the culture of the organization with respect to encouraging and supporting the supervision of students, and in the form of practical supports like additional staffing resources during times when students are first on placement as well as education time to attend training workshops, may assist in reducing clinician stress (Davies et al., 2011). Improved supports from employers may also provide greater recognition for the work done by supervising physiotherapists which may encourage more to participate in the process. Physiotherapy schools should also reinforce the benefits of having students on site including the potential for recruiting new staff members.

3. The need for a new assessment instrument that is clear, practical, and easy to use, that reduces the time and stress associated with its completion. A review of the needs of Canadian physiotherapists with respect to the evaluation of physiotherapy students has been completed and the development of a new instrument for the assessment of physiotherapy student performance is presently underway.

4. A review of the Canadian physiotherapy curriculum to ensure that education is congruent with the needs of the healthcare system, so that physiotherapy students are better prepared to work in the current clinical

environment - particularly for areas of neurology, paediatrics, and patients with complex medical conditions.

5. The education of physiotherapy students about the professional role and responsibility of physiotherapists, while they are still in the program. In particular, placing a greater emphasis on the supervision of students as being a part of their role and responsibility. Students should be provided with a better understanding of the placement process, and schools should introduce the concepts of the supervision of students and support level staff early on in programs and begin to provide students with the tools to evaluate performance, and to provide feedback.

Limitations

Despite careful consideration for survey development and administration, a number of limitations exist in this study related to (a) low survey response rates, (b) generalizability concerns, (c) limited item representation, and (d) a priori scale decisions. My study had an overall response rate of 17%, which falls in the middle of the range of recent surveys of physiotherapists conducted in Canada which had response rates ranging from 3% for education related surveys (National Physiotherapy Advisory Group, 2009), to 36% for practice specific surveys (Chau et al., 2012; Doyle and Mackay-Lyons, 2013). I undertook an extensive marketing and awareness campaign for the survey through the provincial Colleges, the CPA, and physiotherapy programs. Nevertheless, the response rate for the survey was low and leads to non-response bias concerns. In spite of a protocol designed to maximize standardization of survey delivery, there were a number of

inconsistencies with the administration of the survey that likely impacted response rate. The amount of support from the College in the promotion of the survey to its members, and the number of reminder e-mails that were sent out to members, appear to contribute to the response rates for each province. Two of the largest provincial Colleges, which also had some of the lowest response rates, declined to send out e-mail reminders to their members. This was an issue because it has been reported elsewhere that follow-up reminder e-mails have the potential to double response rates (Kittleson, 1997). Response rates for physiotherapy surveys in Canada have been variable in recent years.

Because of a low response rate, non-response bias is of concern. The extent to which the attitudes and opinions of survey non-responders differ from respondents, and if those attitudes differ in a systematic manner, may have biased the findings of this study (Czaja & Blair, 2005). To determine how different the sample may be from the national physiotherapy population, demographic characteristics may be examined. In this case, the respondent demographic information indicates that a cross-sectional sample of physiotherapists from across the country who practice in varied practice settings and areas of practice was obtained, with some demographic variables that closely resemble the national population (Canadian Institute for Health Information, 2011). But, a number of dissimilarities between the sample and the population do exist. It is reported by ACCEs that roughly 20-25% of physiotherapists participate in clinical education; in this study approximately 60% of respondents had supervised a student in the previous three years. This might be attributed to encouragement from

physiotherapy programs to physiotherapists in their clinical community or that supervising physiotherapists already have an interest in clinical education and therefore chose to participate.

The sample differs from the population in that it has a higher percentage of female physiotherapists, and a lower percentage of urban physiotherapists. Variations are also present in work setting and area of practice demographic variables; however, due to the nature of CIHI reporting it is difficult to determine exactly how different these are. These differences in respondent demographics may impact the generalizability of the survey findings.

I undertook a systematic process of survey development and validation to ensure that the items in the survey were representative of the issues contributing to physiotherapists' decisions to supervise students. However, a number of contributors were identified that were not well represented in the survey, particularly related to private practice and professional role and responsibility.

Items related to compensation were included in the survey with respect to remuneration for supervising students but were not a focus of either of the scales. Items related to compensation and billing for service in the context of private practice were not represented. Several items pertaining to environmental contextual factors were included in the survey; however, they did not necessarily cover the content expressed by respondents in the comments. Items addressed contextual factors on an individual physiotherapist basis, and did not adequately and explicitly cover some of the operational challenges within the workplace, for example, staffing shortages or the timing of placements. Additionally, a limitation

in survey design resulted in underrepresentation of survey items pertaining to private practice. Items that specifically addressed income when a student is present, and the ethical dilemmas faced by physiotherapists when charging patients for services provided by a student were lacking. These issues were not evident in the literature and had not been raised with ACCEs. The identification of these unique stresses in the private practice environment and the challenges they pose warrant further investigation.

The extent to which physiotherapists' beliefs of professional role and responsibility influence their decision to supervise students has not been well explored in this study. In part this may be due to an underrepresentation of items pertaining to professional role and responsibility in the survey, and while this was not a focus of this investigation it is a limitation of the study. More items could have been added to the survey to enhance the representation of certain constructs, but I was also cognizant of respondents' time and the number of items I was asking them to complete. The influence of personal beliefs about the role of physiotherapists, and other health care professionals, in the clinical education of students opens up avenues for future investigation.

I decided not to include Not Applicable (N/A) as an option for item response, based in part on the limitations of the survey software. I believed that the vast majority of items were applicable to most physiotherapists and that there were only a small number of items that could be N/A. The survey software only allowed an all or none format for N/A and having the N/A option might have encouraged respondents to use it when the item was applicable. As a result

respondents may have left the item out, or chosen response 3 as the neutral response, which may have affected mean scores for those items.

Directed content analysis of respondent comments was performed on the English comments only. French comments related to the reasons why physiotherapists choose supervise to or not to supervise a student were not translated into English and were not included in the analysis. These comments could be translated into English in the future and reanalysed to determine if they fit within the 18 identified categories.

Implications for Future Research and Practice

This study opens up avenues for investigation to explore aspects of the recruitment of CIs, and the impact of targeted strategies to address placement shortages. It provides a valuable overview of the contributors to physiotherapists' participation in clinical education activities from the perspective of a cross-sectional, representative sample of Canadian physiotherapists, and is a stepping stone to future studies that may investigate the effects of addressing one or more of the factors identified in this study. Specifically, there are three areas for future research and practice: (a) the contribution of physiotherapists' beliefs about professional responsibilities related to the supervision of students, (b) investigations into the impact of strategies to increase clinical placement numbers both generally across practice areas, and also initiatives that specifically target certain practice areas or practice settings, and (c) modifications to the survey instrument to enhance the representativeness of the factors identified in this study.

Although personal and professional factors have been identified in this study as contributors to the decision to supervise students, the extent to which these factors contribute to that decision, the overall importance of personal factors in that decision, and the exploration of personal beliefs about professional roles and responsibilities may provide insight into how schools recruit clinical educators, and may even factor into decisions about entry to physiotherapy programs. Additionally, an exploration of the factors that contribute to a physiotherapist's beliefs about their professional responsibility may also shed light on this topic.

The belief that the supervision of students is a responsibility of physiotherapists as health professionals may also have practice implications for physiotherapy professional associations, regulatory Colleges, and physiotherapy managers. The education of association members and physiotherapy staff about the need for supervisors in clinical education, and formal recognition of those who participate in the supervision of students, may highlight the importance of the role of student supervisors and increase the awareness for additional participants in clinical education.

Physiotherapists work in diverse practice settings and practice areas, and this study has provided an overview of the contributors present across all settings and practice areas. However, not all contributors will be present to the same extent across these practice areas. The prevalence of each contributor, and the impact of potential strategies to address them, may be felt differently in each

practice environment. Future studies should explore the impact of solutions to address the contributors within, and across, these specific practice environments.

Additionally, future work should explore the differences between clinical sites that host multiple students each year with those that do not host or host very few students, to begin to understand some of the organisational barriers that may impact the ability to supervise students.

To begin to address some of the limitations in this study, future studies on this topic could revise the survey to include additional items to adequately represent each of the identified contributors including specific attention to issues related to private practice. Experts in the field of physiotherapy clinical education should be consulted as additional items are developed to enhance the internal consistency of current sub-scales, and to ensure that items developed for the categories not identified in the exploratory factor analysis are relevant to and representative of each of the categories. Future surveys might also include an N/A response option for all items.

Conclusion

The goal of this study was to determine the factors that contribute to Canadian physiotherapists' decisions to supervise physiotherapy students. It emerged that no single factor influences that decision. Instead the decision to supervise students is multifactorial and complex. This study found a six-factor model with physiotherapists' feelings of stress as the greatest influence in the decision to supervise a student.

This national survey was the first attempt to systematically identify the contributors to the decision to supervise students in a manner that included physiotherapists from all practice areas, practice settings and geographical regions in Canada. Included among these is the representation of private practitioners that has been absent from previous studies. In so doing, it has confirmed a number of previously identified contributors (e.g. stress), and highlighted new ones (e.g. private practice concerns). Despite differences in healthcare delivery, population demographics, and individual physiotherapy program delivery across Canada, there appear to be small differences between supervising and non-supervising physiotherapists across regional and practice boundaries. Although training workshops and resources are available to prepare and support supervising physiotherapists, a substantial component of stress appears to be related to supervisors' preparation to supervise a student. A review of current offerings and improvements to training programs to meet the needs of supervising physiotherapists may begin to mitigate some of the causes of CI stress. The influence of a physiotherapist's beliefs about their professional role may be more influential in the decision to supervise student that this study suggests, and provides new directions for future research.

Despite stress emerging as the most influential factor in the decision to supervise students, it should be remembered that supervising students is often a positive experience (e.g. Hall et al., 2012), and the positive aspects of supervision were evident in this study. These positive aspects of student supervision are often overshadowed by the many challenges associated with clinical education.

Motivated and well prepared students, combined with proficient CIs working in an environment supportive of student learning, makes for successful clinical placements with benefits to all parties. A multipronged approach, that includes consultation with all stakeholders, is needed to resolve the issues of student placement capacity.

Reference List

Adams, C. L., Glavin, K., Hutchins, K., Lee, T., & Zimmerman, C. (2008). An evaluation of the internal reliability, construct validity, and predictive validity of the physical therapist clinical performance instrument (PT CPI). *Journal of Physical Therapy Education, 22*(2), 42-50. http://www.aptaeducation.org/members/jopte/index.cfm

Allen, C., & Simpson, A. (2000). Peers and partners: Working together to strengthen preceptorship in mental health nursing. *Journal of Psychiatric and Mental Health Nursing*, 7, 505-514

American Physical Therapy Association. (1995). A guide to physical therapist practice, volume I: A description of patient management. *Physical Therapy, 75*(8), 707-764. http://ptjournal.apta.org/

American Physical Therapy Association. (1997). *A normative model of physical therapist professional education*. Alexandria, VA: American Physical Therapy Association.

American Physical Therapy Association. (2011). Model position description for the ACCE/DCE: PT program. Retrieved May, 14, 2011, from http://www.apta.org/ModelPositionDescription/ACCE/DCE/PT/

American Physical Therapy Association. (1997). *Physical Therapist Clinical Performance Instrumen*t. Alexandria, VA: American Physical Therapy Association.

Ary, D., Jacobs, L. C., & Sorensen, C. (2010). *Introduction to research in educatio*n (8th ed.). Belmont, CA: Wadsworth.

Australian Physiotherapy Council. (2009). *Accreditation of entry level physiotherapy programs - a manual for universitie*s. Turner, ACT: Australian Physiotherapy Council.

Baldry Currens, J. A., & Bithell, C. P. (2000). Clinical education: Listening to different perspectives. *Physiotherapy, 8*6(12), 645-653. http://dx.doi.org/10.1016/S0031-9406(05)61302-8

Baldry Currens, J., & Bithell, C. (2003). The 2:1 clinical placement model: Perceptions of clinical educators and students. *Physiotherapy, 8*9(4), 204-218. http://dx.doi.org/10.1016/S0031-9406(05)60152-6

Bartlett, D. J., Lucy, S. D., Bisbee, L., & Conti-Becker, A. (2009). Understanding the professional socialization of Canadian physical therapy students: A qualitative investigation. *Physiotherapy Canada, 6*1(1), 15-25. http://dx.doi.org/10.3138/physio.61.1.15

Bearman, M., Molloy, E., Ajjawi, R., & Keating, J., 2012. "Is there a Plan B?": Clinical educators supporting underperforming students in practice settings. *Teaching in Higher Education.* http://dx.doi.org/10.1080/13562517.2012.752732

Bradburn, N. M., Sudman, S., & Wansink, B. (2004). *Asking questions: The definitive guide to questionnaire design: For market research, political polls, and social and health questionnaires.* (Rev. ed.) San Francisco: Jossey-Bass.

Bristow, D., & Hagler, P. (1997). Comparison of individual physical therapists' productivity to that of combined student-therapist pairs. *Physiotherapy Canada, Winte*r, 16-24.

British Columbia Academic Health Council. (2005). *Practice education survey final report: Planning for sufficient & appropriate student placements for health professional students in BC*. Vancouver, BC: BC Academic Health Council.

Canadian Alliance of Physiotherapy Regulators (2010). *Candidate handbook*

Canadian Institute for Health Information (2010). *Physiotherapists in Canada, 2009*.

Canadian Institute for Health Information. (2011). *Physiotherapists in Canada, 2010*.

Canadian Physiotherapy Association. (2008). *Position statement: Clinical education of physiotherapy students*. Toronto: The Association.

Canadian Physiotherapy Association. (2011). *Rules and regulation*s, Canadian Physiotherapy Association.

Carifio, J. & Perla, R. J. (2007). Ten common misunderstandings, misconceptions, persistent myths, and urban legends about Likert scales ad Likert response formats and their antidotes. *Journal of Social Sciences*, 3(3), 106-116.

Carroll, J. B. (1957). Biquartimin criterion for rotation to oblique simple structure in factor analysis. *Science, 12*6, 1114-1115. http://www.jstor.org/stable/1752730

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research,* 1(2), 245-276. doi:10.1207/s15327906mbr0102_10

Chau, J., Chadbourn, P., Hamel, R., Mok, S., Robles, B., Chan, L., Cott, C., Yeung, E. (2012). Continuing education for advanced manual and manipulative physiotherapists in Canada: A survey of perceived needs. *Physiotherapy Canada*, 64 (1): 20-30. http://dx.doi.org/10.3138/ptc.2010-50

Clinical Education Guidelines Working Group. (2011). *Clinical education guidelines for Canadian university programs. entry-to-practice physiotherapy curriculum: A companion document.*

Clouten, N. (1991). *The Academic Coordinator of Clinical Education in physical therapist educational programs.* Doctoral dissertation, Western Michigan University (UMI 9123600)

Coughlan, M., Cronin, P., & Ryan, F. (2009). Survey research: Process and limitations. *International Journal of Therapy and Rehabilitation,* 16 (1), 9-15

Cohen, J. (1992). A power primer. *Psychological Bulletin, 11*2(1), 155-159. http://www.apa.org/pubs/journals/bul/index.aspx

Commission on Accreditation in Physical Therapy Education (2011). *Evaluative criteria PT programs: Accreditation handboo*k. Alexandria, VA: American Physical Therapy Association.

Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysi*s (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Council of Canadian Physiotherapy University Program. (2009). *Entry - to - practice physiotherapy curriculum: Content guidelines for Canadian university program*s. Toronto, ON: Council of Canadian Physiotherapy University Programs.

Creaser, G. A. (2006). *An exploration of clinical instructors' experiences and perceptions of the physical therapy clinical performance instrument.* . (Unpublished Research Master of Arts in Education). Mount Saint Vincent University, Halifax, NS. (AAT MR34569)

Creswell, J. W. (2007). Qualitative inquiry & research design. Choosing among five approaches. (2nd ed.). Thousand Oaks, CA: Sage Publications Inc.

Czaja, R., & Blair, J. (2005). *Designing surveys: A guide to decisions and procedures*. (2nd ed.) Thousand Oaks, CA: Pine Forge Press.

Dalton, M., Davidson, M., & Keating, J. (2011). The assessment of physiotherapy practice (APP) is a valid measure of professional competence of physiotherapy students: A cross-sectional study with Rasch analysis. *Journal of Physiotherapy, 57*, 239-246. doi: http://dx.doi.org/10.1016/S1836-9553(11)70054-6

Davies, R., Hanna, E., & Cott, C. (2011). "They put you on your toes": Physical therapists' perceived benefits from and barriers to supervising students in the clinical setting. *Physiotherapy Canada, 6*3(2), 224-233. http://dx.doi.org/10.3138/ptc.2010-07

DeMaio, T. J., Rothgeb, J., & Hess, J. (1998). *Improving survey quality through pretesting*. U.S Bureau of the Census.

DeVellis, R. F. (2003). *Scale development: Theory and application*s (2nd ed.). Thousand Oaks, CA: Sage Publications.

Dillon, L. S., Tomaka, J. W., Chriss, C. E., Gutierrez, C. P., & Hairston, J. M. (2003). The effect of student clinical experiences on clinician productivity. *Journal of Allied Health, 3*2(4), 261-265. http://www.ingentaconnect.com/content/asahp/jah;jsessionid=1ydvhekwzees.alexandra

Doyle, L. and MacKay-Lyons, M. (2013). Utilization of aerobic exercise in neurological rehabilitation by physical therapists in Canada. *Journal of Neurologic Physical Therapy*, 37, 20-26. doi:10.1097/NPT.0b013e318282975c

Epstein, R. M. (2007). Assessment in medical education. *New England Journal of Medicine, 35*6, 387-396. http://www.nejm.org/doi/pdf/10.1056/NEJMra054784

Epstein, R.M. & Hundert, E.M. (2002). Defining and assessing professional competence. *Journal of the American Medical Association*. 287(2):226-235. doi:10.1001/jama.287.2.226.

Fan, W., & Yan, Z. (2010). Factors affecting response rates of the web survey: A systematic review. *Computers in Human Behavior, 2*6, 132-139. doi:10.1016/j.chb.2009.10.015

Field, A. (2005). *Discovering statistics using SPS*S (2nd ed.). London: Sage Publications Ltd.

Field, A. (2009). *Discovering statistics using SPS*S (3rd ed.). London: Sage Publications Ltd.

Fowler, F. J. (2009). *Survey research methods.* (4th ed.).Thousand Oaks: Sage Publications

Glass, G. V., & Hopkins, K. D. (1996). *Statistical methods in education and psychology* (3rd ed.). Needham Heights, MA: Simon and Schuster.

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale NJ: Lawrence Erlbaum Associates.

Health Professions Act, (2011). Government of Alberta

Grice, J. W. (2001). Computing and evaluating factor scores. *Psychological Methods,* 6(4), 430-450. doi: 10.1037//1082-989X.6.4.430

Guttman, L. (1953). Image theory for the structure of quantitative variates. *Psychometrika, 1*8(4), 277-296. doi: 10.1007/BF02289264

Guttman, L. (1954). Some necessary conditions for common factor analysis. *Psychometrika, 1*9(2), 149-161. doi: 10.1007/BF02289162

Hall, M., McFarlane, L., & Mulholland, S. (2012). Positive clinical placements: Perspectives of students and clinical educators in rehabilitation medicine. *International Journal of Therapy and Rehabilitation, 1*9(10), 549-556. http://www.ijtr.co.uk/

Hamada, H., Martin, D., & Batty, H.P. (2006). Adapting an effective counseling model from patient-centered care to improve motivation in clinical training programs. *Medical Education Online,* 11:31 http://www.med-ed-online.org

Hanson, D. J. (2011). The perspectives of fieldwork educators regarding level II fieldwork students. *Occupational Therapists in Health Care, 2*5(2-3), 164-177. doi: 10.3109/07380577.2011.561420

Health Canada. (2006). 2003 First ministers' accord on health care renewal. Retrieved 05/28, 2011, from http://www.hc-sc.gc.ca/hcs-sss/delivery-prestation/fptcollab/2003accord/index-eng.php

Health Council of Canada. (2005). *An environmental scan of current views on health human resources in Canada: Identified problems, proposed solutions and gap analysis*. Toronto, ON: Health Council of Canada.

Higgs, J., & McAllister, L. (2005). The lived experiences of clinical educators with implications for their preparation, support, and professional development. *Learning in Health and Social Care,* 4(3), 156-171. doi: 10.1111/j.1473-6861.2005.00097.x

Hsieh, H., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research, 1*5, 1277. doi: 10.1177/1049732305276687

Ilott, I. (1995). To fail or not to fail? A course for fieldwork educators. *American Journal of Occupational Therapy*, 49 (3), 250-255 doi: 10.5014/ajot.49.3.250

Jamieson, S. (2004). Likert scales: How to (ab)use them. *Medical Education,* 38, 1217–1218

Jarski, R. W., Kulig, K., & Olson, R. E. (1990). Clinical teaching in physical therapy: Student and teacher perceptions. *Physical Therapy, 7*0(3), 173-178. http://ptjournal.apta.org/

Kaiser, H. F. (1958). The varimax criterion for analytic rotation in factor analysis. *Psychometrika, 2*3(3), 187-200. doi: 10.1007/BF02289233

Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika, 35, 3*5, 401-415. doi: 10.1007/BF02291817

Kaplowitz, M. D., Hadlock, T. D., & Levine, R. (2004). A comparison of web and mail survey response rates. *Public Opinion Quarterly, 6*8(1), 94-101. doi: 10.1093/poq/nfh006

Keating, J., Dalton, M., & Davidson, M. (2009). Assessment in clinical education. In C. Delany, & E. Molloy (Eds.), *Clinical education in the health professions*. (pp. 147-172). Sydney: Churchill Livingstone/Elsevier.

Kettenbach, V. (1999). *The role of participating in a clinical instructor training curriculum in preparing clinical instructors to comply with the American Physical Therapy Association Guidelines for Clinical Instructors* (unpublished doctoral dissertation). Saint Louis University, Saint Louis MO

Kittleson, M. J. (1997). Determining effective follow-up of e-mail surveys. *American Journal of Health Behavior, 2*1(3), 193-196. http://www.ajhb.org/

Lam, T. C. M., & Klockars, A. J. (1982). Anchor point effects on the equivalence of questionnaire items. *Journal of Educational Measurement, 1*9(4), pp. 317-322. doi: 10.1111/j.1745-3984.1982.tb00137.x

Lee, C., Frank, J. R., Cole, G., Mikhael, N. Z., & Miles, C. A. (2002). Web-based surveys for data gathering from medical educators: An exploration of the efficacy and impact of follow-up reminders. *Annual Meeting of the American Education Research Association,* New Orleans, LA.

Lekkas, P., Larsen, T., Kumar, S., Grimmer, K., Nyland, L., Chipchase, L., . . . Finch, J. (2007). No model of clinical education for physiotherapy students is superior to another: A systematic review. *Australian Journal of Physiotherapy, 5*3(1), 19-28. http://dx.doi.org/10.1016/S0004-9514(07)70058-2

Lieb, S. (1991) Principles of Adult Learning. *VISION journal* [electronic version] South Mountain Community College, Fall. Retrieved on 29 March 2013 from http://www.lindenwood.edu/education/andragogy/andragogy/2011/Lieb_1991.pdf

Likert, R. (1974). The method of constructing an attitude scale. In G. M. Maranell (Ed.), *Scaling: A sourcebook for behavioral scientist*s (pp. 233-243). New Jersey: Aldine Transaction.

Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic Inquiry*. Sage Publications, Newbury Park, CA.

Luhanga, F., Yonge, O., & Myrick, F. (2008) Precepting an unsafe student: The role of faculty. Nurse Education Today, 28 (20), 227-231. http://dx.doi.org/10.1016/j.nedt.2007.04.001

McIver, J. P., & Carmines, E. G. (Eds.). (1981). *Unidimensional scalin*g Sage Publications. doi: 10.4135/9781412986441

Miller, A., Pace, T., Brooks, D., & Mori, B. (2006). Physiotherapy internship: An alternative collaborative learning model. *Physiotherapy Canada, 5*8(2), 157-166. doi: 10.3138/ptc.58.2.157

Miller, W.R., & Rollnick, S. (2002). Motivational Interviewing: Preparing people for change (2nd Ed.). New York, NY: Guildford Press

Mooney, S., Smythe, L., & Jones, M. (2008). The tensions of the modern-day clinical educator in physiotherapy: A scholarly review through a critical theory lens... including commentary by Kidd M. *New Zealand Journal of Physiotherapy, 3*6(2), 59-66. http://www.physiotherapy.org.nz/Category?Action=View&Category_id=241

Myers, J. (2004). Assessment and evaluation in social studies classrooms: A question of balance. In A. Sears, & I. Wright (Eds.), *Challenges & prospects in Canadian social studies* (pp. 290-301). Vancouver, BC: Pacific Educational Press.

National Association for Clinical Education in Physiotherapy. *Constitution for the National Association for Clinical Education in Physiotherapy.*

National Association for Clinical Education in Physiotherapy. (2007). *Meeting minutes.*

National Association for Clinical Education in Physiotherapy. (2010). *NACEP internship map*

National Physiotherapy Advisory Group. (2009). *Essential competency profile for physiotherapists in Canada.*

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.

Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Science Education*, 15, 625-632. doi: 10.1007/s10459-010-9222-y

Norman, K. E., Booth, R., Chisolm, B., Ellerton, C., Jelley, W., MacPhail, A., . . . Thomas, B. (2013). Physiotherapists and physiotherapy student placements across regions in Ontario: A descriptive comparison. Physiotherapy Canada, 65(1), 64–73; doi:10.3138/ptc.2011-63

Öhman, A., Hägg, K., & Dahlgren, L. (2005). A stimulating, practice-based job facing increased stress – clinical supervisors' perceptions of professional role, physiotherapy education and the status of the profession. *Advances in Physiotherapy, 7*(3), 114-122. doi: 10.1080/14038190510010359

Paulhaus, D. L. (1991). Measurement and control of response bias. In J. P. Robinson, P. R. Shaver & L. S. Wrightsman (Eds.), *Measures of personality and social psychological scales* (Volume 1 ed., pp. 17-60). San Diego, CA: Elsevier.

Philips, J., B.U., McPhail, S., & Roemer, S. (1986). Role and functions of the Academic Coordinator of Clinical Education in physical therapy education: A survey. *Physical Therapy, 66*(6), 981-985. http://ptjournal.apta.org/

Physiotherapy Education Accreditation Canada. (2010). *Fact sheet: Accreditation program development.* London, ON: Physiotherapy Education Accreditation Canada. Retrieved from http://www.peac-aepc.ca/PDFs/FactSheets/FactSheetAccreditationFeb2012_000.pdf on September 23, 2012

Physiotherapy Education Accreditation Canada. (2012). *Accreditation standards for physiotherapist education programs in Canada*. London, ON: Physiotherapy Education Accreditation Canada. Retrieved from http://www.peac-aepc.ca/PDFs/Accreditation%20Standards/FINALPEACSTANDARDS2012.pdf on 23 September, 2012

Pope, C., Ziebland, S., & Mays, N. (2000). Analysing qualitative data. *British Medical Journal, 320*, 114-120. *doi: http://dx.doi.org/10.1136/bmj.320.7227.114*

Roberts, D.H., Newman, L.R., Schwartzstein, R.M. (2012. Twelve tips for facilitating Millenial's learning, Medical Teacher, 34 (4), 274-278. doi: 10.3109/0142159X.2011.613498

Rodger, S., Webb, G., Devitt, L., Gilbert, J., Wrightson, P., & McMeeken, J. (2008). Clinical education and practice placements in the allied health professions: An international perspective. *Journal of Allied Health, 37*(1), 53-62. http://www.ingentaconnect.com/content/asahp/jah;jsessionid=1ydvhekwzees.alexandra

Rogers, J. L., Lautar, C. J., & Dunn, L. R. (2010). Allied health students' perceptions of effective clinical instruction. *The Health Care Manager, 29*(1), 40-44 doi: 10.1097/HCM.0b013e3181cca311

Rose, M., & Best, D. (2005). Introduction to terminology and definitions. In M. Rose, & D. Best (Eds.), *Transforming practice through clinical education, professional supervision, and mentoring* Edinburgh; New York: Elsevier Churchill Livingstone.

Schmidt, W. C. (1997). World-Wide Web survey research: Benefits, potential problems, and solutions. *Behavior Research Methods, Instruments, & Computers, 29* (2),274-279

Sevenhuysen, S. L., & Haines, T. (2011). The slave of duty: Why clinical educators across the continuum of care provide clinical education in physiotherapy. *Hong Kong Physiotherapy Journal, 29*(2), 64-70. doi: 10.1016/j.hkpj.2011.06.002

Smith, P. M., Corso, L. N., & Cobb, N. (2010). The perennial struggle to find clinical placement opportunities: A Canadian national survey. *Nurse Education Today, 30*(8), 798-803. doi:10.1016/j.nedt.2010.02.004

Tabachnick, B. G., & Fidell, L. S. (1989). *Using multivariate statistics* (2nd ed.). New York NY: Harper and Row.

Task Force for the Development of Student Clinical Performance Instruments. (2002). The development and testing of APTA clinical performance instruments. *Physical Therapy, 82*(4), 329-353.

Thompson, M., & Proctor, L. F. (1990). Factors affecting a clinician's decision to provide fieldwork education to students. *Canadian Journal of Occupational Therapy, 57*(4), 216-222. doi*:10.1177/000841749005700410*

Thurstone, L. L. (1947). *Multiple factor analysis*. Chicago, IL: University of Chicago Press.

Tourangeau, R., Rips., L. J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge: Cambridge University Press.

Tryssenaar, J., & Perkins, J. (2001). From student to therapist: Exploring the first year of practice. *American Journal of Occupational Therapy, 55*(1), 19-27. doi: 10.5014/ajot.55.1.19

Vogt, W. P. (2007). *Quantitative research methods for professionals.* Boston, MA: Pearson/Allyn and Bacon.

Wiersma, W., & Jurs, S. G. (2009). *Research methods in education* (9th ed.). Boston, MA: Pearson Education Inc.

Willis, G. B. (2005). *Cognitive interviewing. A tool for improving questionnaire design.* (1st ed.). Thousand Oaks, CA: Sage Publications.

Appendices

Appendix 1. Item Rating Package for Expert Panelists

UNIVERSITY OF ALBERTA

Department of Physical Therapy
Faculty of Rehabilitation Medicine

2-50 Corbett Hall
Edmonton, Alberta, Canada T6G 2G4

Tel: 780.492.5983
Fax: 780.492.4429

Information Letter

Title of Project: **Development of a survey of attitudes towards supervision and evaluation of physiotherapy students**

Principal Investigator(s): **MD Hall MScPT, LA Beaupre PhD, PT** **492-3997**
Co-Investigator(s): C Poth PhD, P Manns PhD PT

Address

Dear

As you are aware NACEP is planning to develop a new instrument to evaluate physiotherapy students on clinical placement. In order to do this we need to gather information about current attitudes towards the supervision of physiotherapy students, the CPI as well as information that will be helpful in the development of a new instrument. I am asking members of NACEP, as experts in the field of clinical education, to help validate the survey instrument that will be used to gather this information.

The validation process is a multi-step the process that will be outlined in this letter. Your contribution to the review process will take roughly two to three hours of your time. In order to have this survey ready for discussion at our meeting in St Johns, please try and get your reviews back to me by the dates specified. I appreciate your efforts in light of the condensed time line.

Please review and complete the survey and document any comments that you may have about each survey item. You will notice that some items have fairly emotive language; this is intentional in the hope that it will encourage respondents to use the extremes of the scale.

Your role in this portion of survey development is to:

- Complete the online survey

- Review the same survey in Word format carefully reading each question/statement
- Complete the Content Review Form; this form will be used to ensure that the survey is capturing all the information of interest
- **Return your Content Review Form to me, via fax or email, by XX June 2010**

Once the reviews are compiled and analyzed, I will send out the summary of reviews, your original review and the survey with any new items or modifications that have been suggested by the group.

Your role in the second review is to:

- Review the updated survey in Word format, carefully reading each statement, especially those items that have been modified or added.
- Read your original review and compare to the compiled review.
- Complete the Content Review Form again. At this point you may decide that you want to change your original ratings to align more with the group, or keep your original ratings.
- Provide any additional comments or items
- **Return your second Content Review Form to me, again via fax or email, by XX July 2010**

Second round reviews will be compiled and analyzed and brought to our meeting in St Johns for further discussion. The goal in St. Johns is to reach consensus on the final survey.

In addition, I would like to record our discussions in St Johns to ensure that all of the discussion is captured; I may include some of the discussion in my thesis, if it will provide further insight. All discussions will remain confidential and no identifying information will be used.

The survey will be translated into French, and piloted with a total of 50 English and French speaking physiotherapists across Canada. The pilot results will be analyzed and further modifications made as necessary before the survey sent to all Canadian physiotherapists. The survey results will help lay the ground work for the development of a new clinical evaluation instrument.

There are no direct benefits to you by participating, but we as NACEP will gain valuable information from this survey that will aid us in the development of a new evaluation instrument. There are no risks to participating. Participation is voluntary and you may choose to stop participating/ withdraw consent at any time, however once the data has been collated and shared with NACEP for discussion it would not be possible to remove your comments and ratings.

No identifiable information will be used; your personal information will be kept confidential. Study material will be kept in the researcher's locked office at the University of Alberta for a period of 5 years at which time it will be destroyed. Any electronic information will be kept on a password protected hard drive behind the University of Alberta firewall for a period of 5 years.

If you have any questions about your rights as a research participant you may contact the University of Alberta Health Research Ethics Board at 780-492-0302. Collect calls will be accepted.

Your assistance is greatly appreciated, if at any time you have any questions please feel free to contact me by telephone 780 492 3997 or via email Mark.Hall@ualberta.ca. My fax number is 780 492 4429.

Thanking you in advance for your time and I look forward to seeing you in St. John's.

UNIVERSITY OF ALBERTA

Department of Physical Therapy
Faculty of Rehabilitation Medicine

2-50 Corbett Hall
Edmonton, Alberta, Canada T6G 2G4

Tel: 780.492.5983
Fax: 780.492.4429

Subject Consent Form

Title of Project: **Development of a survey of attitudes towards supervision and evaluation of physiotherapy students**

Principal Investigator(s): **MD Hall MScPT, LA Beaupre PhD, PT** **492-3997**
Co-Investigator(s): C Poth PhD, P Manns PhD PT

Part 2 (to be completed by the research subject):

Do you understand that you have been asked to be in a research study? Yes No

Have you read and received a copy of the attached Information Sheet? Yes No

Do you understand the benefits and risks involved in taking part in this research study? Yes No

Have you had an opportunity to ask questions and discuss this study? Yes No

Do you understand that you are free to refuse to participate or withdraw from the study at any time? Yes No

Has the issue of confidentiality been explained to you? Do you understand who will have access to discussion comments? Yes No

This study was explained to me by: _____

I agree to take part in this study. Yes No
I agree that my unidentifiable comments from the discussions may be used in a thesis or subsequent publications. Yes No

_____ _____ _____
Signature of Research Participant Date Witness

_____ _____
Printed Name Printed Name

I believe that the person signing this form understands what is involved in the study and voluntarily agrees to participate.

_____ _____

Signature of Investigator or Designee Date

THE INFORMATION SHEET MUST BE ATTACHED TO THIS CONSENT FORM AND A COPY GIVEN TO THE RESEARCH SUBJECT

Initial Survey in Word

Dear NACEP Colleagues

The aims of this survey are to ascertain the attitudes of Canadian physiotherapists with respect to the supervision of our students, the CPI and their opinions on the development of a new assessment form.

The survey has been divided up into sections, each with a specific focus. The survey will be completed in an electronic format and not all sections will be completed by every respondent. As this survey is looking at therapists' attitudes, some emotive language has purposefully been used to draw out that emotion and to spread the respondents within the response scale.

You have already responded to the survey in its electronic form but you have not seen all questions. Your role in this step is to gain a full understanding of each section and the items within each section. Please make notes regarding item clarity, appropriateness as well as items you may feel are missing.

Let's begin

Supervision and evaluation of physiotherapy students in Canada.

This survey aims to gather information about the clinical supervision of physiotherapy students across Canada as well as the assessment form used to assess these students. You may recall the name of this form is the Clinical Performance Instrument (CPI).

Your responses are anonymous. Therefore please be as honest as possible.

There is no right or wrong answer, your first response is usually the best one.

The survey should take you approximately 10 minutes to complete.

This first question aims to separate those therapists that supervise our students from those that don't. If PT's have supervised a student in the last 10 years they will skip forward to question 5. If they have not they continue with question 2.

1. Please select the year in which you most recently supervised a physiotherapy student.

2010 - 2000

I have not supervised a PT student in the last 10 years.

2. Please select the TOP THREE reasons, in order of importance, why you do not supervise physiotherapy students?

a. I do not enjoy supervising students

b. I am too busy to supervise students

c. I am in a management/non patient care role

d. I believe my area is too complex for students

e. I feel I am not prepared to supervise students

f. I do not think I would be a good teacher/mentor

g. I feel my setting is too busy to provide adequate supervision

h. I work in a setting that does not supervise students

i. I only work part time and there is no one else to supervise the student when I am not working

j. I am a recent graduate (less than one year) and do not feel comfortable supervising others

k. I do not like the assessment form used, the Clinical Performance Instrument (CPI).

l. Other (please specify)

If you selected statement "k" in your top 3, you continue with question 3. For all other statements you will skip to the demographic information at the end of the survey. Since these therapists do not supervise students they will not comment on the questions about supervision or the CPI. If they do not supervise students because of the CPI however, then we do want their input.

3. Which aspects of the CPI do you dislike? Select all that apply.

a. The CPI is unclear.

b. The CPI is very repetitive.

c. The CPI uses too much jargon.

d. The CPI takes too long to complete.

e. I do not know how to complete it correctly.

f. It takes too long to review with my student.

g. It is not applicable to the Canadian setting.

Other (please specify)

4. Are you in favour of the development of a new clinical assessment form?

Yes

No

If they select "No", they skip to the demographic information at the end of the survey, if they select "Yes", then they skip to question 10 in the section that deals with the development of a new form.

This is the start of the survey for those therapists that do supervise students. From here on respondents answer all questions till question 9.

5. This first section deals with your attitude towards the supervision of physiotherapy students on clinical placement. Please indicate how strongly you agree or disagree with the following statements:

a. I enjoy supervising students

b. I feel stressed when I supervise students

c. Supervising students makes me a better clinician

d. I think supervising students is a lot of fun

e. I find supervising students a burden

f. Supervising students allows me to "give back" to the profession

g. I find supervising students to be a rewarding experience

h. Supervising students allows me to keep current with the latest best practice information from the university

i. I believe supervising students is my duty to ensure sustainability and growth of my profession

j. If I received credit for continuing education requirements I would supervise more students

k. Supervising students encourages me to evaluate my practice decisions

l. I would supervise more students if I were paid to do so

m. I think junior students are too much work

n. I think intermediate students are too much work

o. I think senior students are too much work

p. I enjoy supervising senior students more than junior students

q. Supervising students allows me to get other projects done

r. Supervising students makes me more efficient as I am able to get more done in a day

s. I only supervise students because my manager/professional practice leader says I must

t. I think supervising junior students leads to an OVERALL increase in my productivity.

u. I think supervising intermediate students leads to an OVERALL increase in my productivity.

v. I think supervising senior students leads to an OVERALL increase in my productivity.

w. Supervising students does NOT take up too much of my time

x. I feel the Physiotherapy Department at the University adequately prepares me to supervise their students

y. My employer does not support me in supervising students.

The CPI was developed by a working group in the United States (U.S) based on U.S. best practice and competency guidelines. Canadian input was taken into account in its development and the CPI was pilot tested in the U.S and British Columbia before being released.

The following statements deal with your attitudes towards the CURRENT assessment form used to evaluate students on clinical placement, the CPI. Please indicate how strongly you agree or disagree with the following statements:

6

a. I find the CPI concise

b. I think the CPI is repetitive

c. I am satisfied with the CPI

d. I think the CPI is “too American”

e. I think the CPI should be changed

f. The CPI does not work well for me

g. I feel comfortable using the CPI

h. I think the CPI is well organised

i. I think the CPI takes too long to complete

j. I find the visual analogue scale easy to use

k. I would supervise more students if the assessment form was shorter

l. I find it easy to evaluate my student using the CPI

m. The CPI guides me in my evaluation of the students I am supervising

n. I think the CPI is aligned with principles of physiotherapy practice in Canada

o. I think the CPI provides a comprehensive evaluation of the overall performance of a physiotherapy student on clinical placement

p. I think the CPI evaluates all aspects my student's performance

q. The CPI enables me to give an accurate account of the overall performance of my student

r. The CPI allows me to discriminate between students that perform well and students that perform poorly

7. The following statements deal with your preparation to use the CPI. Please indicate how strongly you agree or disagree with the following statements:

a. I feel well prepared to use the CPI

b. I was formally trained to use the CPI

c. Before I used it for the first time I read the instructions on how to complete it

8. Where do you typically complete the CPI?

a. At work

b. At home

c. Other

9. Please indicate how long it typically takes you to:

a. Complete the CPI at midterm

b. Complete the CPI at final

c. Review the CPI with your student at midterm

d. Review the CPI with your student at final

10. Do you think a new assessment form should be developed for physiotherapy students on clinical placement?

Yes

No

If you select "No" for question 9, then you skip to the demographic information. If you select "Yes" then we want to get your opinion on the development of a new form in question 10.

The following questions ask your opinion about the development of a new form to evaluate the competence and performance of Canadian physiotherapy students on clinical placement

The Essential Competency Profile for Physiotherapists in Canada describes the essential knowledge, skills and attitudes required by entry-to-practice physiotherapists and by all physiotherapists throughout their career in Canada. This profile was recently revised (October 2009) and is now a role based framework and the competencies are separated into 7 key roles: the

physiotherapist as an Expert, Communicator, Collaborator, Manager, Advocate, Scholarly Practitioner and Professional..

11. How familiar are YOU with the recently revised (Oct.2009) Essential Competency Profile for Physiotherapists in Canada

12. The assessment of Canadian physiotherapy students should be aligned with the revised Essential Competency Profile for Physiotherapists in Canada.

13 When COMPLETING the NEW assessment form please indicate(in minutes):

a. The MINIMUM amount of time required to provide a comprehensive assessment of the student's performance

b. The MAXIMUM amount of time you are willing to spend to give a comprehensive assessment of the student's performance

c. The MAXIMUM amount of time you are willing to spend reviewing the evaluation with a student

14 In the new assessment form which rating scale would you prefer to use? Looking at the options above, please rank in order of preference.(an example of each scale type will be given here)

a. Visual Analogue Scale

b. Visual Analogue Scale with markers

c. A 5-point Likert scale

d. A 7-point Likert scale

15. What is your preferred method of training in order to use a new assessment form?

In person, one on one

In person at a workshop

A DVD

An online training module

Other (please specify)

16. How long (in minutes) are you willing to spend on training?

17 How could we gauge therapists' confidence and competence in using the new assessment form after training?

a. A multiple choice quiz

b. A few case study examples

c. A verbal quiz with the ACCE

d. There is no need to gauge therapists' level of competence

18 Which of the following do you prefer?

a. Paper assessment

b. Online web based for

c. It doesn't matter

19. If the assessment form was online, is there a quiet, private place for you to review the evaluation with the student and a computer with access to the internet?

Do you have any other comments about the development of a new evaluation form?

Demographic information

20. In the upcoming year, how likely are you to offer to supervise a physiotherapy student?

21. In the past 5 years approximately how many students have you supervised?

22. In which practice setting do you work? Select all that apply.

Acute care hospital

Rehabilitation hospital/facility

Private Practice

Community health centre

Long term care facility

Community care/ Home care

Workers Compensation Board

School environment

Other (please specify)

23. In which practice area do you work? Select all that apply.

Cardiopulmonary

MSK inpatients

Sports MSK outpatients

General MSK outpatients

Neurosciences

Mixed areas

Geriatrics

Paediatrics

Pain

Oncology

Other (please specify)

24. In which province do you live?

Alberta

British Columbia

Manitoba

Nova Scotia

Newfoundland and Labrador

New Brunswick

Ontario

Prince Edward Island

Quebec

Saskatchewan

Territories

25 When did you graduate as a physiotherapist?

26 Were you trained in Canada?

27 Are you a member of the Canadian Physiotherapy Association?

28 How do you keep current with your practice? Select all that apply.

Read journals

Attend conferences/symposia

Attend workshops

Take courses

Listen to lectures by experts offered at the University

By supervising students

29 In which age group do you fall?

30 Which of the following best describes where you work?

Urban

Suburban

Semi rural

Rural

If you would be willing to be contacted for a follow up interview/focus group to clarify information on the topics covered in this survey, please write your name and email address in the box below.

DECISIONS TO SUPERVISE PHYSIOTHERAPY STUDENTS

Content Review Form

Reviewer:_____ Date:_____

Instructions

Now that you have read and understood the items in the survey your next task is to indicate how relevant you believe the items are to each attitude scale and subscale, i.e. how well does each statement fit with each attitude or objective it is trying to measure. In addition, do the items together totally represent that domain. Please have the survey in Word format with you. Carefully read each item in each section. Once you have read an item, please use the five point rating scale shown below to indicate the degree to which each item fits the attitude/objective to which it is referenced:

Poor Fit	Fair	Good	Very Good	Excellent Fit
1	2	3	4	5

Circle/highlight the number corresponding to your rating beside the item number, and add any comments you may wish to about each item. In this space please also comment on clarity and meaning of each item if required. Please remember that in some instances emotive language has been used intentionally.

Once you have rated each item in the category please consider if all the items that you rated a 4 or 5 collectively represent the attitude. Is this category complete or

are there items missing? If there are any items you feel are missing from this section please write them in the space provided. If you require more space please use a new page and clearly indicate the item number to which you comment corresponds.

Objective	Item No.	Degree of Item Fit	Comments
2. Reason for not supervising a student	a	1 2 3 4 5	
	b	1 2 3 4 5	
	c	1 2 3 4 5	
	d	1 2 3 4 5	
	e	1 2 3 4 5	
	f	1 2 3 4 5	
	g	1 2 3 4 5	
	h	1 2 3 4 5	
	i	1 2 3 4 5	
	j	1 2 3 4 5	
	k	1 2 3 4 5	

Do these items fully represent this domain? Yes / No

If No, please add any items you feel will complete this domain in the space below.

Objective	Item No	Degree of fit	Comments
3. Which aspects of the CPI do you dislike?	a	1 2 3 4 5	
	b	1 2 3 4 5	
	c	1 2 3 4 5	
	d	1 2 3 4 5	
	e	1 2 3 4 5	
	f	1 2 3 4 5	
	g	1 2 3 4 5	

Do these items fully represent this domain? Yes / No

If No, please add any items you feel will complete this domain in the space below.

Objective	Item No	Degree of fit	Comments
5. Attitude towards supervision of students.	a	1 2 3 4 5	
	b	1 2 3 4 5	
	c	1 2 3 4 5	
	d	1 2 3 4 5	
	e	1 2 3 4 5	
	f	1 2 3 4 5	
	g	1 2 3 4 5	
	h	1 2 3 4 5	
	i	1 2 3 4 5	
	j	1 2 3 4 5	
	k	1 2 3 4 5	

Items a-k represent a subscale, **personal and professional benefit from supervising students**. Do these items fully represent this domain? Yes / No

If No, please add any items you feel will complete this domain in the space below.

Objective	Item No	Degree of fit	Comments
5 Attitude toward Supervision of students	l	1 2 3 4 5	
	m	1 2 3 4 5	
	n	1 2 3 4 5	
	o	1 2 3 4 5	
	p	1 2 3 4 5	
	q	1 2 3 4 5	
	r	1 2 3 4 5	
	s	1 2 3 4 5	
	t	1 2 3 4 5	
	u	1 2 3 4 5	
	v	1 2 3 4 5	
	w	1 2 3 4 5	
	x	1 2 3 4 5	
	y	1 2 3 4 5	

Items l-y represent the subscale, **resources, manpower and time**. Do these items fully represent this domain? Yes / No

If No, please add any items you feel will complete this domain in the space below.

Items a-y represent the **attitude towards supervision and reasons therapists may or may not supervise students**. Do these items fully represent this domain? Yes / No

If No, please add any items you feel will complete this domain in the space below.

Objective	Item No	Degree of fit	Comments
6. Attitude towards the CPI.	a	1 2 3 4 5	
	b	1 2 3 4 5	
	c	1 2 3 4 5	
	d	1 2 3 4 5	
	e	1 2 3 4 5	
	f	1 2 3 4 5	
	g	1 2 3 4 5	
	h	1 2 3 4 5	
	i	1 2 3 4 5	
	j	1 2 3 4 5	
	k	1 2 3 4 5	

Items a-k deal with **length and layout** of the CPI. . Do these items fully represent this domain? Yes / No

If No, please add any items you feel will complete this domain in the space below

6. Attitude toward the CPI	l	1 2 3 4 5	
	m	1 2 3 4 5	
	n	1 2 3 4 5	
	o	1 2 3 4 5	
	p	1 2 3 4 5	
	q	1 2 3 4 5	
	r	1 2 3 4 5	

Items l-r deal with **evaluation of student performance**, do these items fully represent this domain? Yes / No

If No, please add any items you feel will complete this domain in the space below

Items a-r deal with **therapists attitudes toward the CPI**. Do the items fully represent this domain? Yes / No. If No, please add any items you feel will complete this section in the space below.

Objective	Item No	Degree of fit	Comments
7. Preparation to use the CPI.	a	1 2 3 4 5	
	b	1 2 3 4 5	
	c	1 2 3 4 5	

Do these items fully represent **preparation and training?** Yes / No

If No, please add any items you feel will complete this domain in the space below

Items 11-19 are questions related to the development of a new student evaluation instrument. As a member of NACEP involved in developing this new instrument, does each item fit in this section, is each item clear, and do these items adequately represent the information we are trying to gather and will need in order to develop this new instrument? As above please rate each item, suggest any changes and add in any other questions you feel might be appropriate in this section.

Item No.	Degree of Item Fit					Comments
11	1	2	3	4	5	
12	1	2	3	4	5	
13	1	2	3	4	5	
14	1	2	3	4	5	
15	1	2	3	4	5	
16	1	2	3	4	5	
17	1	2	3	4	5	
18	1	2	3	4	5	
19	1	2	3	4	5	

Any items you would like added to this section please write them below:

Items 20-30 are demographic questions. Please review and make any comments or additions below.

To my Francophone colleagues, do you foresee any difficulties in translating any of the items into French? i.e are there any words, statements that do not translate well/lose meaning?

Thank you for your help in reviewing this survey

DECISIONS TO SUPERVISE PHYSIOTHERAPY STUDENTS

Instruction Sheet for Expert Panelists

You will receive a series of XX emails with components to review and complete in order to assess the overall relevance and representativeness of the survey. Please follow the following steps and review the content of the emails in the order they arrive.

1. Email 1 has a link to the survey instrument. Please click on the link which will take you to the start of the survey.
2. Please carefully read and answer each statement in the survey. Please answer "Yes" to the first question about supervising a student in the last 5 years. This will ensure you are directed to the appropriate page. Please make notes about the layout of the survey as you go along. Please note the page and item number if you have suggestions.
3. Email 2 has a PDF version of the entire survey instrument. In addition to the survey you will receive materials describing the various dimensions of the survey. Once again please carefully review each item and make notes as you see fit either in a word document or using "sticky notes" if you have Adobe Professional. The aim is to have you gain a full understanding of what is to be measured. Please think about the extent to which each item is appropriate, complete and clear.

   If you have any questions at this point, please contact me by phone (780 492 3997) or at Mark.Hall@ualberta.ca.

4. When you feel you have a good understanding of the domain to which the items in the survey are referenced, please open email 3.
5. Email 3 contains a copy of the Content Review form and the instructions for completing the form. First, following the directions provided, rate each item on how well it fits the objective or category it was written to measure. Please feel free to comment on the items as you complete the rating. Second, for each objective, indicate whether the items you rated as 4 or 5 together adequately represent the objective.
6. Once you have completed the above steps, please either scan and email or fax your completed Consent and Content Review Forms to me at Mark.Hall@ualberta.ca or 780 492 4429.

Appendix 2. Interview Information Letter and Consent Form

Title of Project: Gauging physiotherapist's attitudes towards the supervision and evaluation of physiotherapy students on clinical placement. **Part 1: Researcher Information**		
Name of Principal Investigator: Dr. Lauren Beaupre Contact Information: Phone: 780-492-8626 Email: Lauren.Beaupre@ualberta.ca		
Name of Co- Investigator: Mark Hall Contact Information: Email: Mark.Hall@ualberta.ca Name of Co-Investigator: Dr. Cheryl Poth Contact information: Email: cpoth@ualberta.ca Name of Co-Investigator: Dr. Trish Manns Contact information: Email: Trish.Manns@ualberta.ca		
Part 2: Consent of Subject - INTERVIEW		
	Yes	**No**
Do you understand that the interview you have been asked to participate in is part of a research study?		
Have you read and received a copy of the attached information sheet?		
Do you understand the benefits and risks involved in taking part in this research study?		
Have you had an opportunity to ask questions and discuss the study?		
Do you understand that you are free to refuse to participate or withdraw from the study at any time?		
Has the issue of confidentiality been explained to you? Do you understand who will have access to the information discussed in the interview?		
Part 3: Signatures		
This study was explained to me by: _____ Date: _____ _		
I agree to take part in this study. Signature of Research Participant: _____ Printed Name: _____		

Witness (if available): _____ Printed Name: _____
I believe that the person signing this form understands what is involved in the study and voluntarily agrees to participate. Researcher: _____ Printed Name: _____
* A copy of this consent form must be given to the subject.

Interview - Information Letter for Participants ~Health Care Professionals

Title of Study: Gauging physiotherapist's attitudes towards the supervision and evaluation of physiotherapy students on clinical placement.

You are being asked to take part in a research study. This letter provides you with information about the study. The interviewer (a study co-investigator) will also describe this study to you. Please read the information below and ask questions about anything you don't understand before you decide whether or not to take part. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.

Principal Investigator and Contact Information:
Name of Principal Investigator: Dr. Lauren Beaupre
Contact Information: Phone: 780-492-8626 Email: Lauren.Beaupre@ualberta.ca

What is the purpose of this study? *The purpose of this study is to gather information about the supervision and evaluation of physiotherapy students while they are out on clinical placement.*

Think aloud interviews will be conducted with 25-30 physiotherapists to pre-test a survey instrument. This will help the researches ensure that the survey is working correctly and that the way the questions are asked is going to get us the answers we are looking for. We are also hoping you will tell us if words are confusing or not clear.

What will be done if you take part in this research study? The interviewer will ask you to "think aloud" as you answer the questions. You will be asked to read the questions aloud and tell the interviewer what you are thinking and why you are answering the question the way you are. You will also be ask to let the interviewer know if the items do not make sense or are confusing. Your answers will be audio recorded with a digital recorder so that the researchers may go back and listen to your responses and make any necessary changes. The interview itself should not last longer than 1 hour.

What are the possible discomforts and risks of participation?

The interview has no potential physical adverse effects.

What are the possible benefits to you or to others?
This research will help inform University physiotherapy programs and the physiotherapy community in general about student clinical education and the clinical evaluation tools used to evaluate physiotherapy students.

How will your privacy and the confidentiality of your research records be protected?

The interview will be audio recorded. Once the interview is complete, the digital recording of the discussion will be transcribed (i.e. the words that were said will be typed up into a transcript). The information from the interview, including the digital recording will be kept for at least five years after the study is done. The information will be kept in a secure area. Your name will also never be used in presentations or publications of the study results.

The information gathered for this study may be looked at again in the future to help us answer other study questions. If so, the ethics board will first review the study to make sure the information is used ethically.

How can you withdraw from this study? If you wish to stop participating in the study for any reason, you should contact Mark Hall 780 492 3997, or indicate your intention at the interview. You are free to withdraw your consent and stop participation in the study at any time. You will not incur a penalty or loss of benefits to which you are otherwise entitled.

What if you do not want to answer a particular question?
You do not have to answer every question asked of you. However, recall that all information provided will be held confidential and will not be released except as provided in this letter.

Who may you contact if you have concerns about this research study?
If you have questions about your rights as a research participant, please contact, The University of Albert Research Ethics Board – Panel B.
Telephone: 780-492-2615.

Will I be compensated for my participation? As a token of appreciation you will be given a $10 coffee card for participating in the interview.

Appendix 3. Final Survey - English

Timer and status bar %

Survey of supervision and evaluation of physiotherapy students in Canada.

This survey aims to gather information about the clinical education of physiotherapy students across Canada. Whether you supervise PT students or not, your opinions are important to us. We are interested in identifying the factors that influence your decisions to supervise a physiotherapy student. The survey should take you approximately 10 minutes to complete.

Survey instructions:

1. Please remember that your responses are anonymous and there is no right or wrong answer.

2. Please use the following definitions when responding:

Junior students are those in their first full-length clinical placement in which they are responsible for approximately 25-40% of a caseload.

Senior students are those in their final placement and carry a near entry-level caseload.

Clinical Performance Instrument (CPI) is the name of the instrument current used by most Canadian schools to evaluate students on placement.

Survey

1.Have you supervised a physiotherapy student in the last 3 years? Yes/No

The following statements relate to factors that may influence your decisions to offer to supervise a physiotherapy student.

2. When thinking about why you do or do not offer to supervise a physiotherapy student please indicate your level of agreement with each statement.

a. I find supervising students to be a rewarding experience

b. Supervising students allows me to “give back” to the profession

c. Supervising students is a burden

d. Supervising students allows me to keep current with the latest (best practice) information

e. I feel stressed when I supervise students

f. I like the recognition I get from the profession for supervising students

g. Supervising students encourages me to evaluate my practice decisions

h. I am intimidated by the new knowledge the student brings

i. Supervising students is my responsibility to ensure sustainability of my profession

j. As an experienced PT I have a lot of knowledge to offer students

k. Supervising students makes me more efficient, I am able to get more done.

l. I only supervise students because my manager/professional practice leader says I must

m. Supervising students takes up too much of my time

n. I enjoy supervising

   i. Junior students

   ii. Senior students

o. Junior students make me more productive overall

p. Senior students make me more productive overall

q. I am too busy to supervise students

r. I feel unprepared to supervise students

s. I feel apprehensive supervising students due to a previously negative experience with a student

t. I feel I have done my share of supervising students and should let newer therapists do the work now.

u. I am worried my practice will be evaluated or criticized when a student is with me

v. I prefer to share supervising responsibilities with another therapist

3. Please indicate your level of agreement with each of the following statements related to why you do or do not supervise a physiotherapy student?

a. Supervising students assists with recruitment of new staff members

b. I feel my site lacks the resources (physical space, computer access etc.) to accommodate a student.

c. My caseload is too complex for students

d. I am adequately compensated for my time spent supervising a student

e. My setting provides an excellent learning environment for a student

f. I would supervise more students if my regulatory College recognized supervision as part of my continuing competency requirements

g My caseload is too unpredictable to provide adequate experience for students

h. Patients tend to get extra time and attention when I have a student

i. The physiotherapy program at the University adequately prepares me to supervise their students

j. I would supervise more students if I were paid to do so

k. My employer supports the supervision of students

4. **With respect to factors concerning the evaluation of students, when thinking about why you do or do not offer to supervise a physiotherapy student please indicate your level of agreement with each statement**

a) I feel prepared to evaluate students on placement

b) The current evaluation instrument, the CPI, takes too long to complete

c) I feel uncomfortable using the CPI

d) I am provided with appropriate guidelines and expectations to evaluate a student on placement

e) There is sufficient time for providing the student with informal feedback

f) The evaluation process is clear

g) I have insufficient time at work to complete the CPI

h) I am comfortable evaluating a student on clinical placement

i) I dislike the evaluation instrument presently used – the Clinical Performance Instrument

j) I feel adequately prepared to use the CPI

k) I feel stressed making judgements about students' performance

5. **With respect to factors specifically concerning the student, when thinking about why you do or do not offer to supervise a physiotherapy student please indicate your level of agreement with each statement**

a) I feel most students have the right attitude to work in my setting

b) I am worried I will get a challenging/struggling student
c) Students are unprepared to work in my practice setting
d) I feel students are committed to the profession
e) I feel students lack professionalism
f) Junior students have the academic preparation to work in my practice setting
g) Senior students have the academic preparation to work in my practice setting

6. Do you have any other comments about the factors that may contribute to your decision to supervise physiotherapy students?

Canadian physiotherapy students are currently evaluated on clinical placement using the Clinical Performance Instrument (CPI) which was developed in 1997 by the American Physical Therapy Association and is based on American physiotherapy practice standards. The CPI is currently used by 13 out of 14 Canadian schools.

7. Do you see a need for a new assessment form to be developed to evaluate Canadian physiotherapy students on clinical placement?

Yes
No
Not Applicable

If respondents select "No" or N/A for question 6 , then they skip to the demographics items. If you select "Yes" then we want to get their opinion on the development of a new form in question 7.

The **Essential Competency Profile for Physiotherapists in Canada** describes the essential knowledge, skills and attitudes required by entry-to-practice physiotherapists and by all physiotherapists throughout their career in Canada. This profile was recently revised and is now a role based framework. The competencies are separated into 7 key roles: the physiotherapist as an Expert, Communicator, Collaborator, Manager, Advocate, Scholarly Practitioner and

Professional. The Essential Competency Profile for Physiotherapists in Canada form the basis for Canadian physiotherapy practice standards.

8. Please rate your familiarity with the "**Essential Competency Profile for Physiotherapists in Canada"**. (Statements are ranked in order of increasing familiarity).

    a. I have **heard** about it.
    b. I have **read** the document
    c. I **understand** how the roles are applicable to my setting
    d. I **apply** the seven key roles in my evaluation of physiotherapy students

9. The CPI is not currently aligned with Canadian physiotherapy practice standards. To what extent do you agree that the assessment of Canadian physiotherapy students **should** be aligned with Canadian physiotherapy practice standards as outlined in the Essential Competency Profile for Physiotherapists in Canada?

Strongly disagree – strongly agree

The following questions relate to the development of a new assessment form based on the **Essential Competency Profile for Physiotherapists in Canada.** This form would be used to evaluate the competence and performance of Canadian physiotherapy students on clinical placement.

10. Which of the following scales would allow you to provide an accurate evaluation of the performance of a physiotherapy student that also allows you to discriminate between students with differing levels of performance?

    a. Visual analogue scale Examples only, no text
    b. Visual analogue scale with markers
    c. A 5-point Likert scale
    d. A 7-point Likert scale
    e. Other

11. Which of the following formats do you prefer?

    d. Paper assessment
    e. Online web based form

f. An electronic fillable PDF or Word document

g. No preference

12. a. What is the MAXIMUM amount of time (in minutes) you are willing to spend to complete a student evaluation form

b. What is the MAXIMUM amount of time (in minutes) you are willing to spend reviewing the evaluation with a student

We would like to take an inventory of how well prepared you are to use an online form.

13. How comfortable are you using an online assessment form? Very uncomfortable – Very comfortable

14. If the assessment form was online, is there a quiet, private place for you to review the evaluation with the student and a computer with access to the internet? (Y/N)

15. If the evaluation form was online, how likely are you to print it out to review the evaluation with your student? Very unlikely – Very likely

Training to use the new assessment form.

16. Which method will optimally prepare you to use a new assessment form?

a. In person, one on one

b. In person at a workshop

c. An online training module

d. An online workshop/webinar

e. A DVD

f. None

g. Other (please specify)

17. What is an appropriate amount of time to spend on training? _____minutes

18. How should we measure therapists' level of knowledge and confidence in using the new assessment form after training?

e. A multiple choice test

f. A few case study examples

g. A verbal test with the Clinical Coordinator from the University (The ACCE/DCE)

h. Self evaluation

i. With a colleague

j. There is no need to assess therapists' level of knowledge.

19.Do you have any other comments about the development of a new evaluation instrument?

Demographic information

20. In the last 3 years approximately how many physiotherapy students have you supervised? XX

21. How likely is it you will supervise a physiotherapy student in the upcoming year? Not to very

22. In which practice setting(s) do you work? Please select all that apply.

Acute care hospital

Administration/Research

Rehabilitation hospital/facility

Private Practice

Community health centre

Long term care facility

Community care/ Home care

Workers Compensation Board

School environment

Other (please specify)

23. In which practice area(s) do you work? Please select all that apply.

Cardiopulmonary

Musculoskeletal/orthopaedics

Neurology/Neurosciences

Pain

Oncology

Burns/wound care

Other (please specify)

Rheumatology

Hand therapy/plastic surgery

General rehabilitation

Mixed caseload

24. What is the age group of patients/clients you primarily work with?

0-18

19-65

66 and older

Mixed ages

What is your current FTE (i.e. if you work full time, then you have a 1.0 FTE, if you work 2 days a week, you have a 0.4 FTE)_____FTE

What percentage of your job is patient care and associated responsibilities (i.e. non administrative/managerial work)_____%

25. In which province/territory do you work?

British Columbia

Alberta

Saskatchewan

Manitoba

Ontario

Quebec

New Brunswick

Prince Edward Island

Nova Scotia

Newfoundland and Labrador

Yukon

Northwest Territories

Nunavut

26. Which of the following best describes where you work?

Urban

Suburban

Semi rural

Rural

Remote

26. In which year did you graduate as a physiotherapist? YYYY

27. Did you receive your entry-level physiotherapy degree in Canada? (Y/N)

28. Are you a member of the Canadian Physiotherapy Association? (Y/N)

29. In what year were you born? _____
30. Are you Male/Female?

Thank you for taking the time to complete this survey. Your responses are very important to us.

If you would like to be entered into the draw to win one of four $50 gift cards, please complete the following skill-testing question and enter an email address where we can contact you if you win. This email address will not be associated with your survey responses and will only be used to contact you if you win. You have a minimum 1 in 4000 chance of winning.
Please write your answer in the box provided
(13 + 7) x 2 = _____

Please enter your email address: _____-

Appendix 4. Final Survey - French

Registre d'horloge et barre d'état %

Sondage sur la supervision et l'évaluation des étudiants en physiothérapie au Canada.

Ce sondage vise à recueillir de l'information pertinente à l'enseignement clinique aux étudiants en physiothérapie à travers le Canada. Que vous supervisiez ou non des étudiants, votre opinion est importante pour nous. Nous nous intéressons à l'identification des facteurs qui influencent votre décision de superviser un étudiant en physiothérapie. Le sondage ne devrait prendre qu'environ 10 minutes à remplir.

Indications pour le sondage:

1. Rappelez-vous que vos réponses sont anonymes et qu'il n'y a ni bonne ni mauvaise réponse.
2. Veuillez vous référer aux définitions suivantes en répondant:

Étudiants débutants : ceux qui en sont à leur premier stage complet au cours duquel ils sont responsables d'environ 25-40 % d'une charge de travail.

Étudiants chevronnés: ceux qui en sont à leur dernier stage et qui assument une charge de travail presque équivalente à celle du physiothérapeute débutant.

Instrument de mesure du rendement clinique (IMRC) : nom de l'outil actuellement utilisé par la plupart des programmes canadiens pour évaluer les stagiaires.

Sondage

1. Avez-vous supervisé un étudiant en physiothérapie au cours des 3 dernières années? Oui/Non

Les énoncés suivants réfèrent aux facteurs qui peuvent influencer votre décision de vous porter volontaire pour superviser un étudiant en physiothérapie.

2. Quand vous pensez aux motifs pour lesquels vous vous portez ou non volontaire pour superviser un étudiant en physiothérapie, veuillez indiquer votre niveau d'accord avec chaque énoncé.

a. Je trouve que la supervision d'étudiants est une expérience gratifiante.

b. La supervision d'étudiants me permet de "redonner" à la profession.

c. La supervision d'étudiants est un fardeau.

d. La supervision d'étudiants me permet de rester à jour avec les plus récentes (meilleures pratiques) informations.

e. Je me sens stressé quand je supervise des étudiants.

f. J'aime la reconnaissance que je reçois de la profession pour la supervision d'étudiants.

g. La supervision d'étudiants m'encourage à évaluer mes décisions de pratique.

h. Je suis intimidé par les nouvelles connaissances qu'apportent les étudiants.

i. La supervision d'étudiants est ma responsabilité pour assurer la viabilité de ma profession.

j. Comme physiothérapeute expérimenté j'ai beaucoup de connaissances à offrir aux étudiants.

k. La supervision d'étudiants me rend plus efficient, je peux accomplir davantage.

l. Je supervise des étudiants seulement parce que mon gestionnaire/chef professionnel dit que je dois le faire.

m. La supervision d'étudiants exige trop de mon temps.

n. J'aime superviser les:

   i. Étudiants débutants
   ii. Étudiants chevronnés

o. Les étudiants débutants me rendent plus productif en général.

p. Les étudiants chevronnés me rendent plus productif en général.

q. Je suis trop occupé pour superviser des étudiants.

r. Je ne me sens pas préparé pour superviser des étudiants.

s. Je me sens craintif à superviser des étudiants à cause d'une expérience négative antérieure avec un étudiant.

t. J'ai l'impression que j'ai fait ma part pour superviser des étudiants et que je devrais laisser les plus jeunes physiothérapeutes faire maintenant le travail.
u. Je m'inquiète du fait que ma pratique sera évaluée ou critiquée quand un étudiant est avec moi.
v. Je préfère partager les responsabilités de la supervision avec un autre physiothérapeute.

3. **Veuillez indiquer votre niveau d'accord avec chaque énoncé suivant en lien avec les motifs pour lesquels vous supervisez ou non des étudiants en physiothérapie.**
a. La supervision d'étudiants aide au recrutement de nouveaux membres du personnel.
b. J'ai l'impression que mon milieu manque de ressources (espace physique, accès à l'ordinateur, etc.) pour accommoder un étudiant.
c. Ma charge de travail est trop complexe pour les étudiants.
d. Je suis adéquatement compensé pour le temps que je passe à superviser un étudiant.
e. Mon milieu offre un excellent environnement d'apprentissage pour un étudiant.
f. Je superviserais plus d'étudiants si mon Ordre professionnel reconnaissait la supervision comme une partie des exigences de la compétence continue.
g Ma charge de travail est trop imprévisible pour offrir une expérience adéquate aux étudiants.
h. Les patients tendent à recevoir plus de temps et d'attention quand j'ai un étudiant.
i. Le programme de physiothérapie de l'université me prépare adéquatement pour superviser ses étudiants.
j. Je superviserais plus d'étudiants si j'étais payé pour le faire.
k. Mon employeur appuie la supervision d'étudiants.

4. **Par rapport aux facteurs concernant l'évaluation des étudiants, quand vous pensez aux motifs pour lesquels vous vous portez volontaire ou non**

pour superviser un étudiant en physiothérapie, veuillez indiquer votre niveau d'accord avec chaque énoncé.

a) Je me sens préparé pour évaluer des stagiaires.

b) L'instrument de mesure du rendement clinique actuel, l'IMRC, est trop long à remplir.

c) Je ne me sens pas à l'aise pour utiliser l'IMRC.

d) On m'offre les directives et les attentes appropriées pour évaluer les stagiaires.

e) Il y a assez de temps pour transmettre la rétroaction informelle à l'étudiant.

f) Le processus d'évaluation est clair.

g) Je n'ai pas assez de temps au travail pour remplir l'IMRC de façon complète.

h) Je suis à l'aise pour évaluer un stagiaire.

i) Je n'aime pas l'instrument de mesure actuellement utilisé – L'instrument de mesure du rendement clinique.

j) Je me sens adéquatement préparé pour utiliser l'IMRC.

k) Je me sens stressé quand je porte des jugements sur le rendement d'un étudiant.

5. **Par rapport aux facteurs spécifiques aux étudiants, quand vous pensez aux motifs pour lesquels vous vous portez volontaire ou non pour superviser un étudiant en physiothérapie, veuillez indiquer votre niveau d'accord avec chaque énoncé.**

a) J'ai l'impression que la plupart des étudiants ont la bonne attitude pour travailler dans mon milieu.

b) J'ai peur de recevoir un étudiant provocateur/présentant des difficultés.

c) Les étudiants ne sont pas prêts pour travailler dans mon milieu.

d) J'ai l'impression que les étudiants sont attachés à la profession.

e) J'ai l'impression que les étudiants manquent de professionnalisme.

f) Les étudiants débutants ont la préparation universitaire pour travailler dans mon milieu.

g) Les étudiants chevronnés ont la préparation universitaire pour travailler dans mon milieu.

6. Avez-vous d'autres commentaires concernant les facteurs pouvant influencer votre décision de superviser des étudiants en physiothérapie?

Les stagiaires canadiens en physiothérapie sont actuellement évalués au moyen de l'Instrument de mesure du rendement clinique (IMRC) qui a été conçu en 1997 par l'Association américaine de physiothérapie (APTA) et qui est basé sur les normes de pratique américaines de physiothérapie. L'IMRC est actuellement utilisé par 13 des 14 écoles de physiothérapie au Canada.

7. Voyez-vous la nécessité de concevoir un nouveau formulaire d'évaluation pour évaluer les stagiaires canadiens en physiothérapie?

Oui

Non

Sans objet

Si les répondants indiquent "Non" ou S.O. à la question 7, ils passent alors aux éléments démographiques. Si vous indiquez "Oui" nous voulons alors avoir leur opinion sur la conception d'un nouveau formulaire à la question 8

Le **Profil des compétences essentielles des physiothérapeutes au Canada** décrit les connaissances, les compétences et les attitudes essentielles requises des physiothérapeutes débutants et de tous les physiothérapeutes au cours de leur carrière au Canada. Ce profil a été récemment révisé et consiste maintenant en un cadre conceptuel basé sur les rôles. Les compétences sont divisées en 7 rôles clés: le physiothérapeute comme un Expert, Communicateur, Collaborateur, Gestionnaire, Promoteur de la santé, Praticien érudit et Professionnel. Le Profil des compétences essentielles des physiothérapeutes au Canada forme la base des normes de pratique de la physiothérapie au Canada.

9. Veuillez évaluer votre connaissance du "**Profil des compétences essentielles des physiothérapeutes au Canada"**. (Les énoncés sont classés en ordre croissant de connaissance).

e. J'en ai **entendu** parler.

f. J'ai **lu** le document

g. Je **comprends** comment les rôles sont applicables à mon milieu

h. J'**applique** les sept rôles clés dans mon évaluation des étudiants en physiothérapie

10. L'IMRC n'est actuellement pas en lien avec les normes de pratique de la physiothérapie au Canada. Dans quelle mesure êtes-vous en accord avec le fait que l'évaluation des étudiants en physiothérapie au Canada devrait être en lien avec les normes de pratique de la physiothérapie au Canada telles que décrites dans le Profil des compétences essentielles des physiothérapeutes au Canada?

Fortement en désaccord – Fortement en accord

Les questions suivantes réfèrent à la conception d'un nouveau formulaire d'évaluation basé sur le **Profil des compétences essentielles des physiothérapeutes au Canada.** Ce formulaire serait utilisé pour évaluer les compétences et le rendement des stagiaires canadiens en physiothérapie.

10. Laquelle des échelles suivantes vous permettrait de produire une évaluation juste du rendement d'un étudiant en physiothérapie et qui vous permettrait aussi de faire la discrimination entre les étudiants ayant différents niveaux de rendement?

f. Échelle visuelle analogique Exemples seulement, pas de texte

g. Échelle visuelle analogique avec repères

h. Une échelle Likert en 5 points

i. Une échelle Likert en 7 points

j. Autre

11. Lequel des formats suivants préférez-vous?

h. Évaluation sur papier

i. Formulaire internet en ligne

j. Un document électronique PDF à remplir ou un document Word

k. Aucune préférence

12. a. Quel est le temps MAXIMUM (en minutes) que vous êtes prêts à consacrer pour remplir un formulaire d'évaluation de stage?

b. Quel est le temps MAXIMUM (en minutes) que vous êtes prêts à consacrer pour revoir l'évaluation avec un étudiant?

Nous aimerions inventorier jusqu'à quel point, vous êtes prêt à utiliser un formulaire en ligne.

13. Jusqu'à quel point vous sentez-vous à l'aise à utiliser un formulaire d'évaluation en ligne? Très mal à l'aise – Très à l'aise

14. Si le formulaire d'évaluation était en ligne, avez-vous accès à un endroit tranquille et privé pour revoir l'évaluation avec l'étudiant et à un ordinateur avec accès Internet? (Oui/Non)

15. Si le formulaire d'évaluation était en ligne, est-il probable que vous l'imprimiez pour revoir l'évaluation avec votre étudiant? Très improbable – Très probable

Formation pour utiliser le nouveau formulaire d'évaluation.

16. Quelle méthode vous préparerait le mieux à utiliser un nouveau formulaire d'évaluation?

h. En personne, un à un

i. En personne au cours d'un atelier

j. Un module de formation en ligne

k. Un atelier/webinaire en ligne

l. Un DVD

m. Aucune

n. Autre (veuillez préciser)

17. Quelle est la somme de temps appropriée à consacrer à la formation?

_____minutes

18. Comment devrions-nous mesurer le niveau de connaissance et d'assurance du physiothérapeute pour utiliser le nouveau formulaire d'évaluation après la formation?

k. Un examen à choix multiple

l. Quelques exemples d'étude de cas

m. Un examen oral administré par le coordonnateur universitaire de l'enseignement clinique

n. Autoévaluation

o. Avec un collègue

p. Il n'est pas nécessaire d'évaluer le niveau de connaissance des physiothérapeutes.

19. Avez-vous d'autres commentaires pertinents à la conception d'un nouvel outil d'évaluation?

Information démographique

20. Dans les 3 dernières années, approximativement combien de stagiaires en physiothérapie avez-vous supervisés? XX

21. Jusqu'à quel point est-ce probable que vous supervisiez un stagiaire en physiothérapie au cours de la prochaine année? Peu probable

22. Dans quel(s) milieu(x) de pratique travaillez-vous? Veuillez sélectionner tout ce qui s'applique.

Centre de soins aigus

Administration/Recherche

Centre de réadaptation

Pratique privée

Centre de santé communautaire

Centre hospitalier de soins de longue durée

Soins communautaires/ Soins à domicile

Santé et sécurité au travail

Milieu scolaire
Autre (veuillez préciser)

23. Dans queI(s) domaine(s) de pratique travaillez-vous? Veuillez sélectionner tout ce qui s'applique.

Cardiopulmonaire
Rhumatologie
Musculosquelettique/orthopédie
Thérapie de la main/chirurgie plastique
Neurologie/Neurosciences
Réadaptation générale
Douleur variée
Charge de travail
Oncologie
Brûlés/soins des plaies
Autre (veuillez préciser)

24. Quel est le groupe d'âge des patients/clients avec lesquels vous travaillez principalement?

0-18
19-65
66 et plus
Âges variés

Quel est votre ÉTP actuel (c.-à-d. si vous travaillez à temps plein, votre ÉTP est de 1,0, si vous travaillez 2 jours par semaine, votre ÉTP est de 0,4) ____ÉTP

Quel pourcentage de votre travail consiste en soins direct aux patients ainsi qu'aux responsabilités associées (c.-à-d. travail non administratif/de gestion) ____%

25. Dans quelle province/territoire travaillez-vous?

Colombie-Britannique
Alberta
Saskatchewan
Manitoba
Ontario

Québec
Nouveau-Brunswick
Ile du Prince-Édouard
Nouvelle-Écosse
Terre-Neuve et Labrador
Yukon
Territoires du Nord-Ouest
Nunavut

26. Parmi ce qui suit, qu'est-ce qui décrit le mieux la région où vous travaillez?
Urbaine
Banlieue
Semi-rurale
Rurale
Région éloignée

26. En quelle année avez-vous obtenu votre diplôme en physiothérapie? AAAA

27. Avez-vous obtenu votre diplôme d'entrée à la profession de physiothérapie au Canada? (Oui/Non)

28. Êtes-vous membre de l'Association canadienne de physiothérapie? (Oui/Non)

29. Quelle est votre année de naissance? _____
30. Vous êtes : un homme / une femme

Merci d'avoir pris le temps de répondre à ce sondage. Vos réponses sont très importantes pour nous.
Si vous voulez participer au tirage pour gagner un de nos quatre chèques-cadeaux de 50 $, veuillez remplir la question d'habileté suivante et inscrire votre adresse courriel à laquelle nous pourrons vous rejoindre si vous gagnez. Cette adresse

courriel ne sera pas associée à vos réponses au sondage et servira uniquement à vous contacter si vous gagnez. Vous avez au moins1 chance sur 4000 de gagner.
Veuillez écrire votre réponse dans la case prévue à cet effet
(13 + 7) x 2 = _____
Veuillez écrire votre adresse courriel: _____

Appendix 5. Survey Information Letter - English

UNIVERSITY OF ALBERTA

Development and administration of a survey to measure "Attitudes of Canadian physiotherapists towards the supervision and evaluation of physiotherapy students".

Name and contact information Principal Investigator: Dr. Lauren Beaupre

Phone: 780 492 8626. Email: Lauren.Beaupre@ualberta.ca

Name and contact information of Co-Investigators:

Mark Hall Email: Mark.Hall@ualberta.ca

Dr. Cheryl Poth Email: cpoth@ualberta.ca

Dr. Trish Manns Email: Trish.Manns@ualberta.ca

Dear Physiotherapy colleague

I am conducting a survey to gather Canadian physiotherapists' opinions about the supervision and evaluation of students on clinical placement. Questions pertain to your experiences in supervising students, factors that affect your ability to supervise students. Questions also deal with your experience with, and opinions of, the Clinical Performance Instrument (CPI) used to evaluate students on placement. **Even if you do not supervise physiotherapy students your opinions are important to us.**

The survey is anonymous and no identifying information will be collected. You are free to withdraw from the survey at any time without penalty. Your participation is voluntary. There are no direct benefits to your participation, but you will help shape future physiotherapy clinical education practices in Canada. There are no known risks associated with participating in the survey. If you choose to complete the survey you will have the opportunity to enter your email address for a chance to win one of four $50 gift certificates. You have a minimum 1 in 4 000 chance of winning. Your email address will not be associated with your responses and will be removed when the responses are sent to the researchers. Therefore all data seen by the researchers is anonymous.

The survey will take approximately **10 minutes** to complete.

Completion of the survey implies your consent to participate in the study.

If you have any questions about your rights in participating in this study you may contact the Health Research Ethics Board at the University of Alberta (780) 492 2615

You may also contact the study investigator: Lauren Beaupre (Lauren.Beaupre@ualberta.ca) or Mark Hall (mark.hall@ualberta.ca or 780 492 3997)

Appendix 6. Survey Information Letter – French

Conception et administration d'un sondage pour mesurer les "Attitudes des physiothérapeutes canadiens envers la supervision et l'évaluation des stagiaires en physiothérapie".

Nom et coordonnées du chercheur principal: Dr. Lauren Beaupre Tél. : 780 492 8626 Courriel: Lauren.Beaupre@ualberta.ca

Nom et coordonnées des cochercheurs:

Mark Hall Courriel: Mark.Hall@ualberta.ca

Dr. Cheryl Poth Courriel: cpoth@ualberta.ca

Dr. Trish Manns Courriel: Trish.Manns@ualberta.ca

Cher collègue-physiothérapeute,

Je procède à ce sondage pour recueillir les opinions des physiothérapeutes canadiens sur la supervision et l'évaluation des stagiaires. Les questions portent sur vos expériences de supervision d'étudiants, les facteurs qui affectent votre habileté à superviser des étudiants. Les questions portent aussi sur votre expérience avec, et vos opinions sur l'Instrument de mesure du rendement clinique (IMRC) utilise pour évaluer les stagiaires. **Même si vous ne supervisez pas d'étudiants, vos opinions sont importantes pour nous.**

Le sondage est anonyme et aucune information d'identification ne sera recueillie. Vous êtes libre de vous retirer du sondage à tout moment sans être pénalisé. Votre participation est volontaire. Il n'y a aucun bénéfice direct lié à votre participation, mais vous aiderez à façonner les pratiques futures de l'enseignement clinique en

physiothérapie au Canada. Il n'y a aucun risque connu lié à la participation au sondage. Si vous choisissez de remplir le sondage, vous aurez la chance de gagner quatre chèques cadeau de 50 $ en donnant votre adresse courriel. Vous avez au moins 1 chance sur 4 000 de gagner. Votre courriel ne sera pas associé à vos réponses et sera retiré quand les réponses seront envoyées aux chercheurs. Ainsi, toutes les données que verront les chercheurs seront anonymes.

Le sondage ne prendra qu'environ **10 minutes** à remplir.

Si vous désirez participer, veuillez cliquer sur le lien ci-dessous et vous serez dirigé sur le site du sondage. Le fait de remplir le sondage signifie que vous consentez à participer à l'étude.

Si vous avez des questions au sujet de vos droits concernant votre participation à cette étude, vous pouvez communiquer avec le Conseil de déontologie de recherche en santé (Health Research Ethics Board) à l'Université d'Alberta (780) 492 2615

Vous pouvez aussi communiquer avec les chercheurs : Lauren Beaupre (Lauren.Beaupre@ualberta.ca) ou Mark Hall (mark.hall@ualberta.ca) ou au 780 492 3997.

Appendix 7. Survey Invitation Email

Dear Members,

Clinical education (clinical placements) is an important component of physiotherapy student training, and supervising physiotherapists are an essential feature of clinical education. The reasons physiotherapists decide to supervise a student are many and complex, but are relatively unknown in the literature. Researchers at the University of Alberta are interested in exploring the reasons Canadian physiotherapists decide to supervise or not to supervise a PT student; we are conducting a national survey of all Canadian physiotherapists and hope you will be willing to participate. Even if you
DONT supervise physiotherapy students, the reasons for this decision are very important to us.

The survey will take approximately 10 minutes to complete. Participants stand the chance of winning 1 of four $50 gift cards. The survey will remain open till midnight June 3, 2012.

To complete the survey please click on the
link: https://surveys.srv.ualberta.ca/tsqs/rws5.pl?FORM=clinicaleducation

L'enseignement clinique (les stages) est une importante composante de la formation des étudiants en physiothérapie, et les physiothérapeutes-superviseurs sont des éléments essentiels de l'enseignementclinique. Les motifs pour lesquels les physiothérapeutes décident de superviser un étudiant sont nombreux

et complexes, mais sont relativement absents de la littérature. Les chercheurs de l'Université de l'Alberta veulent explorer les motifs pour lesquels les physiothérapeutes canadiens décident de superviser ou de ne pas superviser un étudiant en physiothérapie; nous procédons à un sondage nationalauprès de tous les physiothérapeutes canadiens et nous espérons que vous voudrez y participer. Même si vous ne supervisez PAS des étudiants en physiothérapie, les raisons de cette décision sont très importantes pour nous.

Le sondage prendra approximativement 10 minutes à remplir. Les participants ont 1 chance sur 4 de gagner un chèque cadeau de 50 $.

Le sondage restera ouvert jusqu'à minuit Juin 3, 2012.

Pour remplir le sondage, veuillez cliquer : https://surveys.srv.ualberta.ca/tsqs/rws5.pl?FORM=clinicaleducation

Appendix 8. Initial Six-Factor Exploratory Factor Analysis Solution

Initial Six Factor Pattern

Item	Factor					
	1	2	3	4	5	6
2eR I feel stressed when I supervise students	.628					
2sR I feel unprepared to supervise students	.583					
2vR I am worried my practice will be evaluated or criticised when the student is with me	.579					
2hR I am intimidated by the new knowledge the student brings	.569					
2mR Supervising students takes up too much time	.495					
2rR I am too busy to supervise students	.469					
2cR Supervising is a burden	.449					
4kR Stressed making judgements about student performance	.434			.366		
5bR Worried I will get a challenging student	.408					
2lR Only supervise students because my manager or professional practice leader says I must	.402					
2tR I feel apprehensive supervising students due to a previously negative experience	.342					
w. I prefer to share supervising responsibilities with another therapist	-.315					
2uR I have done my fair share and should let newer therapists do the work now						
k. Supervising students makes me more efficient, I am able to get more done		.658				
p. Junior students make me more productive		.627				

overall				
q. Senior students make me more productive overall	.598			
h. Patients tend to get extra time and attention when I have a student				
d. I am adequately compensated for my time spent supervising a student				
f. I would supervise more students if my regulatory College recognized supervision as part of my continuing competency requirements				
4bR CPI takes too long to complete		.734		
4iR Dislike CPI		.719		
3jR Would supervise more if paid to do so				
4gR Insufficient time to complete CPI				
j. I feel adequately prepared to use the CPI			.661	
f. The evaluation process is clear			.635	
a. I feel prepared to evaluate students on placement			.581	
d. I am provided with appropriate guidelines and expectations to evaluate a student on placement			.576	
h. I am comfortable evaluating a student on clinical placement	.319		.567	
4cR I feel uncomfortable using CPI		.361	.513	
i. The physiotherapy program at the University adequately prepares me to supervise their students			.331	
e. There is sufficient time for providing the student with informal feedback			.304	
5cR Students unprepared to work in my				-.664

practice setting			
3cR Caseload too complex for students		-.604	
g. Senior students have the academic preparation to work in my practice setting		-.568	
f. Junior students have the academic preparation to work in my practice setting		-.545	
a. I feel most students have the right attitude to work in my setting		-.446	
5eR Students lack professionalism		-.404	
3gR Caseload too unpredictable to provide adequate experience for a student		-.377	
3bR Site lacks resources (space, computer etc) to accommodate a student		-.366	
d. I feel students are committed to the profession		-.324	
k. My employer supports the supervision of students		-.312	
e. My setting provides an excellent learning environment for a student			
b. Supervising students allows me to “give back” to the profession			.597
i. Supervising students is my responsibility to ensure sustainability of my profession			.574
a. I find supervising students to be a rewarding experience			.568
x. Supervising students is part of my job as a physiotherapist			.452
g. Supervising students encourages me to evaluate my practice decisions			.430
o. I enjoy supervising Senior students	.385		.427
d. Supervising students allows me to keep			.384

current with the latest (best practice) information	
f. I like the recognition I get from the profession for supervising students	.367
a. Supervising students assists with recruitment of new staff members	.317
j. As an experienced PT I have a lot of knowledge to offer students	.314
n. I enjoy supervising Junior students	

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 28 iterations.

Appendix 9 Item Analysis by Factor for Factors 1-6.

Table 9A

Item analysis for Factor 1-Clinical Instructor Stress

Item	Mean	Std. Deviation	N	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
2eR I feel stressed when I supervise students	3.04	1.09	2985	.598	.787
2vR I am worried my practice will be evaluated or criticised when the student is with me	3.97	1.05	2985	.584	.789
2hR I am intimidated by the new knowledge the student brings	4.01	0.99	2985	.543	.805
2sR I feel unprepared to supervise students	3.80	1.16	2985	.572	.790
5bR I am worried I will get a challenging/struggling student	3.08	1.10	2965	.464	.803
4kR I feel stressed making judgements about students' performance	3.45	1.03	2965	.511	.797
2tR I feel apprehensive supervising students due to a previously negative experience with a student	4.20	1.05	2985	.434	.806
2cR Supervising students is a burden	3.44	1.06	2985	.444	.805
2lR I only supervise students because my manager / professional practice leader says I must	4.32	1.00	2985	.436	.805
2j As an experienced PT I have a lot of knowledge to offer students	4.15	0.78	2985	.361	.812

Table 9B
Item Analysis for Factor 2 – Student Contribution to Workplace Efficiency

Item	Mean	Std. Deviation	N	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
2k. Supervising students makes me more efficient, I am able to get more done	2.39	1.02	3082	.609	.661
2p. Junior students make me more productive overall	2.33	0.93	3082	.602	.673
2q. Senior students make me more productive overall	3.07	1.03	3082	.570	.708

Table 9C
Item Analysis for Factor 3 – Dislike of Assessment Instrument

Item	Mean	Std. Deviation	N	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
4iR I dislike the evaluation instrument presently used - CPI	2.57	1.07	3046	.646	.
4bR The current evaluation instrument, the CPI, takes too long to complete	2.16	1.01	3046	.646	.

Table 9D
Item Analysis for Factor 4 – Student Preparation and Attitude

Item	Mean	Std. Deviation	N	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
5cR Students are unprepared to work in my practice setting	3.41	1.02	3041	.595	.707
5g. Senior students have the academic preparation to work in my practice setting	3.78	0.86	3041	.578	.715
5f. Junior students have the academic preparation to work in my practice setting	2.88	1.09	3041	.488	.734
5a. I feel most students have the right attitude to work in my setting	3.79	0.79	3041	.510	.730
5eR I feel students lack professionalism	3.87	0.89	3041	.402	.750
3cR My caseload is too complex for students	3.63	1.10	3041	.453	.743
5d. I feel students are committed to the profession	3.85	0.76	3041	.380	.753

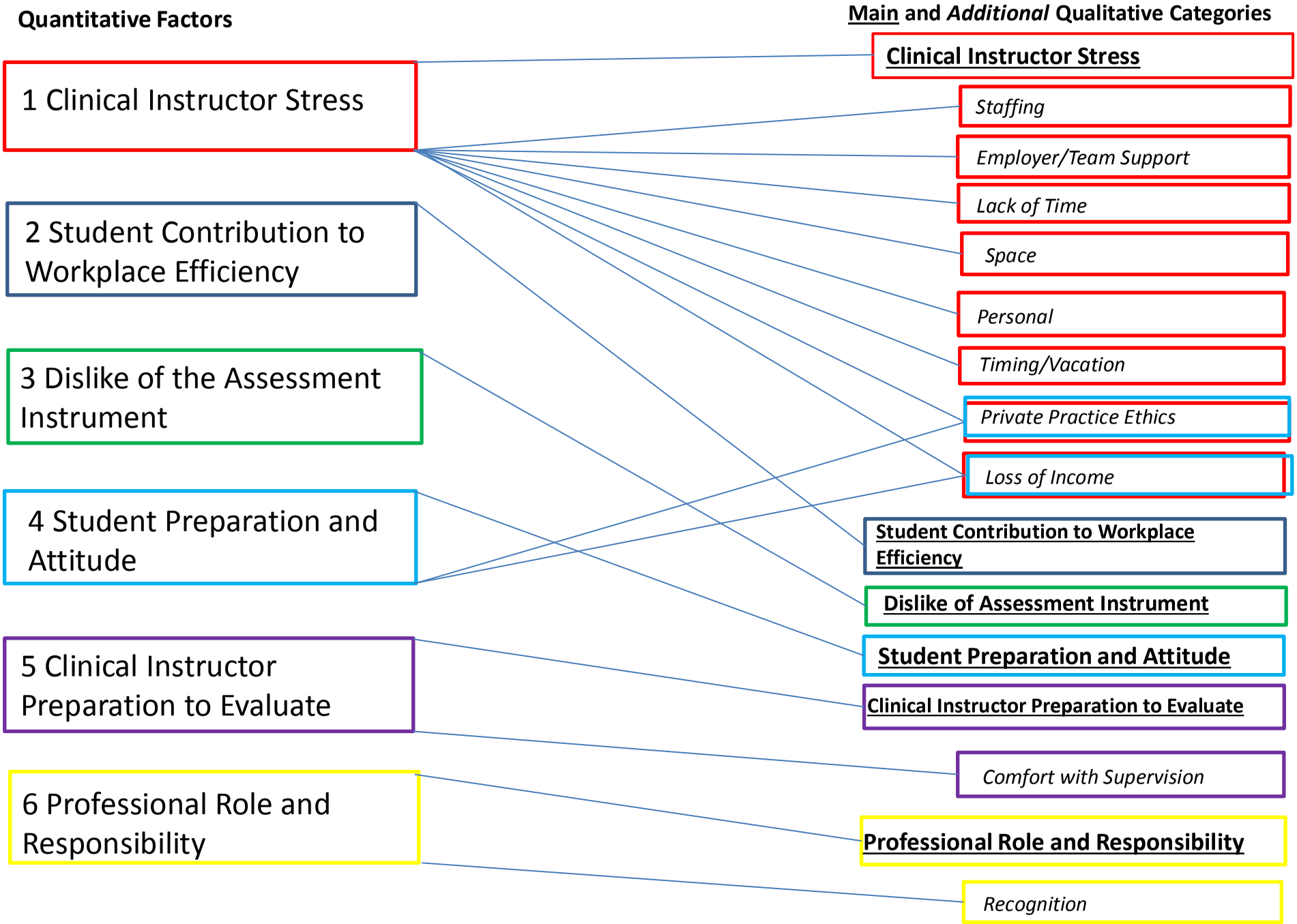
Table 9E
Item Analysis for Factor 5 Clinical Instructor Preparation to Evaluate

Item	Mean	Std. Deviation	N	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
4j. I feel adequately prepared to use the CPI	3.32	0.93	3011	.598	.773
4f. The evaluation process is clear	3.34	0.86	3011	.576	.778
4d. I am provided with appropriate guidelines and expectations to evaluate a student on placement	3.41	0.86	3011	.604	.773
4a. I feel prepared to evaluate students on placement	3.72	0.96	3011	.612	.770
4h. I am comfortable evaluating a student on clinical placement	3.80	0.92	3011	.574	.778
3i. The physiotherapy program at the University adequately prepares me to supervise their students	3.04	1.03	3011	.414	.808
4e. There is sufficient time for providing the students with informal feedback	3.37	0.96	3011	.452	.799

Table 9F

Item Analysis for Factor 6 – Professional Role and Responsibility

Item	Mean	Std. Deviation	N	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
2i. Supervising students is my responsibility to ensure sustainability of my profession	3.79	0.98	3084	.543	.692
2b. Supervising students allows me to “give back” to the profession	4.19	0.83	3084	.520	.700
2a. I find supervising students to be a rewarding experience	4.16	0.81	3084	.520	.701
2x. Supervising students is part of my job as a physiotherapist	3.71	1.10	3084	.491	.706
2g. Supervising students encourages me to evaluate my practice decisions	4.04	0.81	3084	.448	.715
2d. Supervising students allows me to keep current with the latest (best practice) information	3.79	0.91	3084	.408	.723
2f. I like the recognition I get from the profession for supervising students	2.76	1.03	3084	.316	.748


Quantitative Factors
Main and Additional Qualitative Categories
1 Clinical Instructor Stress
2 Student Contribution to Workplace Efficiency
3 Dislike of the Assessment Instrument
4 Student Preparation and Attitude
5 Clinical Instructor Preparation to Evaluate
6 Professional Role and Responsibility
Clinical Instructor Stress
Staffing
Employer/Team Support
Lack of Time
Space
Personal
Timing/Vacation
Private Practice Ethics
Loss of Income
Student Contribution to Workplace Efficiency
Dislike of Assessment Instrument
Student Preparation and Attitude
Clinical Instructor Preparation to Evaluate
Comfort with Supervision
Professional Role and Responsibility
Recognition

Appendix 11. ANOVAs for Comparison of Factor Scores for Supervising and Non-Supervising Physiotherapists across Geographic Regions

Table 1A

Factor 1, *Factor Score Descriptive Statistics for Supervising Physiotherapists*

Geographical Region	Mean	Std. Deviation	N
BC	0.89	5.65	389
Prairie	0.08	6.16	368
ON	1.49	5.92	581
QC	0.95	5.38	301
Atlantic	1.11	5.95	185
Total	0.95	5.85	1824

Table 1B

Factor 1, Main Effects One Way ANOVA for Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	454.96	4	113.74	3.35**	.007
Within Groups	61832.26	1819	33.99		
Total	62287.22	1823			

Note.**$p \leq 0.01$

Table 1C

Factor 1, Post Hoc Multiple Comparisons with Tukey HSD Test for Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference(I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	0.80	0.42	0.320	-0.35	1.96
	ON	-0.61	0.38	0.503	-1.65	0.44
	QC	-0.06	0.45	1.000	-1.28	1.16
	Atlantic	-0.22	0.52	0.993	-1.65	1.20
Prairie	BC	-0.80	0.42	0.320	-1.96	0.35
	ON	-1.41*	0.39	0.003	-2.47	-0.35
	QC	-0.87	0.45	0.312	-2.10	0.37
	Atlantic	-1.03	0.53	0.289	-2.46	0.41
ON	BC	0.61	0.38	0.503	-0.44	1.65
	Prairie	1.41*	0.39	0.003	0.35	2.47
	QC	0.55	0.41	0.680	-0.58	1.68
	Atlantic	0.38	0.49	0.936	-0.96	1.73
QC	BC	0.06	0.45	1.000	-1.16	1.28
	Prairie	0.87	0.45	0.312	-0.37	2.10
	ON	-0.55	0.41	0.680	-1.67	0.58
	Atlantic	-0.16	0.54	0.998	-1.65	1.33
Atlantic	BC	0.22	0.52	0.993	-1.19	1.65
	Prairie	1.03	0.53	0.289	-0.41	2.46
	ON	-0.38	0.49	0.936	-1.73	0.96
	QC	0.16	0.54	0.998	-1.33	1.65

Note.*significant at the 0.05 level

Table 2A

Factor 2, Factor Score Descriptive Statistics for Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	-0.37	2.47	405
Prairie	-0.17	2.47	369
ON	0.13	2.51	588
QC	0.08	2.45	301
Atlantic	0.23	2.39	191
Total	-0.04	2.48	1854

Table 2B

Factor 2, Main Effects One Way ANOVA for Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	83.63	4	20.91	3.42**	.007
Within Groups	11314.71	1849	6.12		
Total	11398.34	1853			

Note.**$p \leq 0.01$

Table 2C

Factor 2, Post Hoc Multiple Comparisons with Tukey HSD Test for Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference(I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	-.20	0.18	0.794	-0.68	0.29
	ON	-.49*	0.16	0.018	-0.93	-0.06
	QC	-.45	0.19	0.125	-0.96	0.07
	Atlantic	-.60*	0.22	0.046	-1.19	-0.01
Prairie	BC	.20	0.18	0.794	-0.29	0.69
	ON	-.29	0.16	0.387	-0.74	0.16
	QC	-.25	0.19	0.705	-0.77	0.28
	Atlantic	-.40	0.22	0.368	-1.00	0.20
ON	BC	.49*	0.16	0.018	0.06	0.93
	Prairie	.29	0.16	0.387	-0.16	0.74
	QC	.05	0.18	0.999	-0.43	0.53
	Atlantic	-.11	0.21	0.985	-0.67	0.46
QC	BC	.45	0.19	0.125	-0.07	0.96
	Prairie	.25	0.19	0.705	-0.28	0.77
	ON	-.05	0.18	0.999	-0.53	0.43
	Atlantic	-.15	0.23	0.962	-0.78	0.47
Atlantic	BC	.60*	0.22	0.046	0.01	1.19
	Prairie	.40	0.22	0.368	-0.20	1.00
	ON	.11	0.21	0.985	-0.46	0.67
	QC	.15	0.23	0.962	-0.47	0.78

Note.*significant at the 0.05 level

Table 3A

Factor 3, Factor Score Descriptive Statistics for Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	-0.94	1.76	404
Prairie	-0.41	1.83	377
ON	-0.47	1.80	589
QC	0.48	1.88	300
Atlantic	-0.24	1.94	194
Total	-0.38	1.87	1864

Table 3B

Factor 3, Main Effects One Way ANOVA for Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	358.35	4	89.59	26.92***	.055
Within Groups	6186.93	1859	3.33		
Total	6545.28	1863			

Note.***$p \leq 0.001$

Table 3C

Factor 3, Post Hoc Multiple Comparisons with Tukey HSD Test for Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference(I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	-0.53*	0.13	0.000	-0.89	-0.18
	ON	-0.47*	0.12	0.001	-0.80	-0.15
	QC	-1.42*	0.14	0.000	-1.80	-1.04
	Atlantic	-0.70*	0.16	0.000	-1.14	-0.27
Prairie	BC	0.53*	0.13	0.000	0.18	0.89
	ON	0.06	0.12	0.988	-0.27	0.39
	QC	-0.89*	0.14	0.000	-1.27	-0.50
	Atlantic	-0.17	0.16	0.825	-0.62	0.27
ON	BC	0.47*	0.12	0.001	0.15	0.80
	Prairie	-0.06	0.12	0.988	-0.39	0.27
	QC	-0.95*	0.13	0.000	-1.30	-0.60
	Atlantic	-0.23	0.15	0.543	-0.64	.18
QC	BC	1.42*	0.14	0.000	1.04	1.80
	Prairie	0.89*	0.14	0.000	0.50	1.27
	ON	0.95*	0.13	0.000	0.60	1.30
	Atlantic	0.72*	0.17	0.000	0.26	1.18
Atlantic	BC	0.70*	0.16	0.000	0.27	1.14
	Prairie	0.17	0.16	0.825	-0.27	0.61
	ON	0.23	0.15	0.543	-0.18	0.64
	QC	-0.72*	0.17	0.000	-1.18	-0.26

Note.* Significant at the 0.05 level

Table 4A

Factor 4, Factor Score Descriptive Statistics for Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	.94	4.36	398
Prairie	.46	4.54	366
ON	.77	4.33	582
QC	.66	4.00	305
Atlantic	.27	4.36	191
Total	.67	4.33	1842

Table 4B

Factor 4, Main Effects One Way ANOVA for Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	82.98	4	20.75	1.11	.002
Within Groups	34411.86	1837	18.73		
Total	34494.84	1841			

Table 4C

Factor 4, Post Hoc Multiple Comparisons with Tukey HSD Test for Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	0.49	0.31	0.525	-0.37	1.34
	ON	0.18	0.28	0.970	-0.59	0.95
	QC	0.29	0.33	0.909	-0.61	1.18
	Atlantic	0.68	0.38	0.389	-0.36	1.72
Prairie	BC	-0.49	0.31	0.525	-1.34	0.37
	ON	-0.31	0.29	0.818	-1.10	0.48
	QC	-0.20	0.34	0.974	-1.12	0.71
	Atlantic	0.19	0.39	0.989	-0.87	1.24
ON	BC/YK	-0.18	0.28	0.970	-0.95	0.59
	Prairie	0.31	0.29	0.818	-0.48	1.10
	QC	0.11	0.31	0.997	-0.73	0.94
	Atlantic	0.50	0.36	0.640	-0.49	1.48
QC	BC	-0.29	0.33	0.909	-1.18	0.61
	Prairie	0.20	0.34	0.974	-0.71	1.12
	ON	-0.10	0.31	0.997	-0.94	0.73
	Atlantic	0.39	0.40	0.866	-0.70	1.48
Atlantic	BC	-0.68	0.38	0.389	-1.72	0.36
	Prairie	-0.19	0.39	0.989	-1.24	0.87
	ON	-0.50	0.36	0.640	-1.48	0.49
	QC	-0.39	0.40	0.866	-1.48	0.70

Table 5A

Factor 5, Factor Score Descriptive Statistics for Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	1.13	4.53	400
Prairie	0.90	4.62	370
ON	1.71	4.30	585
QC	0.84	4.55	299
Atlantic	0.27	4.78	191
Total	1.13	4.53	1845

Table 5B

Factor 5, Main Effects One Way ANOVA for Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	381.96	4	95.49	4.70***	.010
Within Groups	37413.62	1840	20.33		
Total	37795.57	1844			

Note.$^{***}p \leq 0.001$

Table 5C

Factor 5, Post Hoc Multiple Comparisons with Tukey HSD Test for Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference(I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	0.23	0.33	0.954	-0.66	1.12
	ON	-0.58	0.29	0.280	-1.38	0.22
	QC	0.30	0.34	0.912	-0.65	1.24
	Atlantic	0.86	0.40	0.193	-0.22	1.94
Prairie	BC	-0.23	0.33	0.954	-1.12	0.66
	ON	-0.81	0.30	0.054	-1.63	0.01
	QC	0.06	0.35	1.000	-0.89	1.02
	Atlantic	0.63	0.40	0.523	-0.47	1.72
ON	BC	0.58	0.29	0.280	-0.22	1.38
	Prairie	0.81	0.30	0.054	-0.01	1.62
	QC	0.87	0.32	0.051	-0.00	1.75
	Atlantic	1.44*	0.38	0.001	0.41	2.46
QC	BC	-0.30	0.34	0.912	-1.23	0.65
	Prairie	-0.06	0.35	1.000	-1.02	0.89
	ON	-0.87	0.32	0.051	-1.75	0.00
	Atlantic	0.56	0.42	0.661	-0.58	1.70
Atlantic	BC	-0.86	0.40	0.193	-1.94	0.22
	Prairie	-0.63	0.40	0.523	-1.72	0.47
	ON	-1.44*	0.38	0.001	-2.46	-0.41
	QC	-0.56	0.42	0.661	-1.70	0.58

Note.* Significant at the 0.05 level

Table 6A

Factor 6, Factor Score Descriptive Statistics for Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	0.27	4.20	400
Prairie	0.20	4.150	371
ON	0.88	3.98	584
QC	1.06	3.95	308
Atlantic	0.44	4.21	194
Total	0.60	4.09	1857

Table 6B

Factor 6, Main Effects One Way ANOVA for Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	217.26	4	54.31	3.26*	.007
Within Groups	30855.86	1852	16.66		
Total	31073.12	1856			

Note.*$p \leq 0.05$

Table 6C

Factor 6, Post Hoc Multiple Comparisons with Tukey HSD Test for Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	0.07	0.29	0.999	-0.73	0.87
	ON	-0.60	0.26	0.153	-1.33	0.12
	QC	-0.79	0.31	0.079	-1.64	0.05
	Atlantic	-0.16	0.36	0.991	-1.14	0.81
Prairie	BC	-0.07	0.29	0.999	-0.87	0.73
	ON	-0.67	0.27	0.094	-1.41	0.07
	QC	-0.86*	0.31	0.049	-1.72	0.00
	Atlantic	-0.23	0.36	0.967	-1.22	0.75
ON	BC	0.60	0.26	0.153	-0.12	1.32
	Prairie	0.67	0.27	0.094	-0.07	1.41
	QC	-0.19	0.29	0.966	-0.97	0.60
	Atlantic	0.44	0.34	0.691	-0.48	1.36
QC	BC/YK	0.79	0.31	0.079	-0.05	1.64
	Prairie	0.86*	0.31	0.049	0.00	1.72
	ON	0.19	0.29	0.966	-0.60	0.97
	Atlantic	0.63	0.37	0.449	-0.39	1.65
Atlantic	BC	0.16	0.36	0.991	-0.81	1.14
	Prairie	0.23	0.36	0.967	-0.75	1.22
	ON	-0.44	0.34	0.691	-1.36	0.48
	QC	-0.63	0.37	0.449	-1.65	0.39

Note.*significant at the 0.05 level

Table 7A

Factor 1, Factor Score Descriptive Statistics for Non-Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	-1.73	6.40	336
Prairie	-1.54	5.80	151
ON	-0.34	5.60	270
QC	-3.03	5.90	141
Atlantic	-1.65	6.56	138
Total	-1.50	6.11	1036

Table 7B

Factor 1, Main Effects One Way ANOVA for Non-Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	715.74	4	178.94	4.86**	.018
Within Groups	37973.37	1031	36.83		
Total	38689.12	1035			

Note.**$p \leq 0.01$

Table 7C

Factor 1, Post Hoc Multiple Comparisons with Tukey HSD Test for Non-Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference(I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	-0.19	0.59	0.998	-1.82	1.43
	ON	-1.39*	0.50	0.040	-2.74	-0.04
	QC	1.30	0.61	0.208	-0.37	2.96
	Atlantic	-0.08	0.61	1.000	-1.76	1.60
Prairie	BC	0.19	0.59	0.998	-1.43	1.82
	ON	-1.20	0.62	0.294	-2.88	0.49
	QC	1.49	0.71	0.221	-0.45	3.43
	Atlantic	0.11	0.71	1.000	-1.84	2.07
ON	BC	1.39*	0.50	0.040	0.04	2.75
	Prairie	1.20	0.62	0.294	-0.49	2.88
	QC	2.69*	0.63	0.000	0.97	4.41
	Atlantic	1.31	0.64	0.235	-0.42	3.05
QC	BC	-1.30	0.61	0.208	-2.96	0.37
	Prairie	-1.49	0.71	0.221	-3.43	0.45
	ON	-2.69*	0.63	0.000	-4.41	-0.97
	Atlantic	-1.38	0.73	0.320	-3.36	0.61
Atlantic	BC	0.08	0.61	1.000	-1.60	1.76
	Prairie	-0.11	0.71	1.000	-2.07	1.84
	ON	-1.31	0.64	0.235	-3.05	0.42
	QC	1.38	0.73	0.320	-0.61	3.36

Note.*significant at the 0.05 level

Table 8A

Factor 2, Factor Score Descriptive Statistics for Non-Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	-0.12	2.40	358
Prairie	0.05	2.38	162
ON	0.22	2.41	283
QC	0.49	2.34	151
Atlantic	0.00	2.49	143
Total	0.09	2.41	1097

Table 8B

Factor 2, Main Effects One Way ANOVA for Non-Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	45.47	4	11.37	1.97	.007
Within Groups	6307.44	1092	5.78		
Total	6352.90	1096			

Table 8C

Factor 2, Post Hoc Multiple Comparisons with Tukey HSD Test for Non-Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	-0.17	0.23	0.950	-0.79	0.46
	ON	-0.34	0.19	0.401	-0.86	0.19
	QC	-0.61	0.23	0.072	-1.24	0.03
	Atlantic	-0.11	0.24	0.990	-0.76	0.54
Prairie	BC	0.17	0.23	0.950	-0.46	0.79
	ON	-0.17	0.24	0.953	-0.82	0.48
	QC	-0.44	0.27	0.487	-1.18	0.30
	Atlantic	0.05	0.28	1.000	-0.70	0.81
ON	BC	0.34	0.19	0.401	-0.19	0.86
	Prairie	0.17	0.24	0.953	-0.48	0.87
	QC	-0.27	0.24	0.799	-0.93	0.39
	Atlantic	0.23	0.25	0.896	-0.45	0.90
QC	BC	0.61	0.23	0.072	-0.03	1.24
	Prairie	0.44	0.27	0.487	-0.30	1.18
	ON	0.27	0.24	0.799	-0.39	0.93
	Atlantic	0.49	0.28	0.400	-0.27	1.26
Atlantic	BC	0.11	0.24	0.990	-0.54	0.76
	Prairie	-0.05	0.28	1.000	-0.81	0.70
	ON	-0.22	0.25	0.896	-0.90	0.45
	QC	-0.49	0.28	0.400	-1.26	0.27

Table 9A

Factor 3, Factor Score Descriptive Statistics for Non-Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	0.44	1.58	342
Prairie	0.68	1.58	153
ON	0.78	1.41	276
QC	0.67	1.44	141
Atlantic	0.81	1.28	140
Total	0.65	1.49	1052

Table 9B

Factor 3, Main Effects One Way ANOVA for Non-Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	23.39	4	5.85	2.67*	.010
Within Groups	2296.73	1047	2.19		
Total	2320.12	1051			

Note. *$p \leq 0.05$

Table 9C

Factor 3, Post Hoc Multiple Comparisons with Tukey HSD Test for Non-Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	-0.24	0.14	0.451	-0.63	0.15
	ON	-0.34*	0.12	0.039	-0.67	-0.01
	QC	-0.23	0.15	0.546	-0.63	0.18
	Atlantic	-0.37	0.15	0.093	-0.78	0.04
Prairie	BC	0.24	0.14	0.451	-0.15	0.63
	ON	-0.10	0.15	0.966	-0.51	0.31
	QC	0.02	0.17	1.000	-0.46	0.49
	Atlantic	-0.13	0.17	0.945	-0.60	0.34
ON	BC	0.34*	0.12	0.039	0.01	0.67
	Prairie	0.10	0.15	0.966	-0.31	0.51
	QC	0.11	0.15	0.949	-0.31	0.53
	Atlantic	-0.03	0.15	1.000	-0.45	0.39
QC	BC	0.23	0.15	0.546	-0.18	0.63
	Prairie	-0.02	0.17	1.000	-0.49	0.46
	ON	-0.11	0.15	0.949	-0.53	0.31
	Atlantic	-0.14	0.18	0.926	-0.63	0.33
Atlantic	BC	0.37	0.15	0.093	-0.04	0.78
	Prairie	0.13	0.17	0.945	-0.34	0.60
	ON	0.03	0.15	1.000	-0.39	0.45
	QC	0.14	0.18	0.926	-0.34	0.63

Note.*significant at the 0.05 level

Table 10A

Factor 4, Factor Score Descriptive Statistics for Non-Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	-1.15	4.44	344
Prairie	-0.68	4.53	157
ON	-0.94	4.39	278
QC	-0.58	4.34	147
Atlantic	-0.79	4.49	138
Total	-0.88	4.43	1064

Table 10B

Factor 4, Main Effects One Way ANOVA for Non-Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	45.53	4	11.38	0.58	.002
Within Groups	20797.64	1059	19.64		
Total	20843.16	1063			

Table 10C

Factor 4, Post Hoc Multiple Comparisons with Tukey HSD Test for Non-Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	-0.47	0.43	0.810	-1.63	0.70
	ON	-0.20	0.36	0.979	-1.18	0.77
	QC	-0.56	0.44	0.696	-1.76	0.63
	Atlantic	-0.36	0.45	0.931	-1.58	0.86
Prairie	BC	0.47	0.43	0.810	-0.70	1.63
	ON	0.26	0.44	0.976	-0.95	1.47
	QC	-0.10	0.51	1.000	-1.49	1.29
	Atlantic	0.11	0.52	1.000	-1.30	1.52
ON	BC	0.20	0.36	0.979	-0.77	1.18
	Prairie	-0.26	0.44	0.976	-1.47	0.95
	QC	-0.36	0.45	0.932	-1.60	0.87
	Atlantic	-0.15	0.46	0.997	-1.41	1.11
QC	BC	0.56	0.44	0.696	-0.63	1.76
	Prairie	0.10	0.51	1.000	-1.30	1.49
	ON	0.36	0.45	0.932	-0.87	1.60
	Atlantic	0.21	0.53	0.995	-1.23	1.64
Atlantic	BC	0.36	0.45	0.931	-0.86	1.58
	Prairie	-0.11	0.52	1.000	-1.52	1.30
	ON	0.15	0.46	0.997	-1.11	1.41
	QC	-0.20	0.53	0.995	-1.64	1.23

Table 11A

Factor 5, Factor Score Descriptive Statistics for Non-Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	-1.86	4.50	335
Prairie	-0.94	4.71	147
ON	-1.00	4.17	273
QC	-3.54	4.66	141
Atlantic	-1.56	4.62	137
Total	-1.69	4.55	1033

Table 11B

Factor 5, Main Effects One Way ANOVA for Non-Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	703.80	4	175.95	8.75***	.033
Within Groups	20671.08	1028	20.11		
Total	21374.88	1032			

Note.***$p \leq 0.001$

Table 11C

Factor 5, Post Hoc Multiple Comparisons with Tukey HSD Test for Non-Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	-0.92	0.44	0.232	-2.13	0.29
	ON	-0.86	0.37	0.132	-1.86	0.14
	QC	1.68*	0.45	0.002	0.45	2.91
	Atlantic	-0.30	0.45	0.964	-1.54	0.94
Prairie	BC	0.92	0.44	0.232	-0.29	2.13
	ON	0.06	0.46	1.000	-1.19	1.31
	QC	2.60*	0.53	0.000	1.15	4.04
	Atlantic	0.62	0.53	0.773	-0.84	2.07
ON	BC	0.86	0.37	0.132	-0.14	1.86
	Prairie	-0.06	0.46	1.000	-1.32	1.19
	QC	2.53*	0.47	0.000	1.26	3.80
	Atlantic	0.56	0.47	0.761	-0.73	1.84
QC	BC	-1.68*	0.45	0.002	-2.91	-0.45
	Prairie	-2.60*	0.53	0.000	-4.04	-1.15
	ON	-2.53*	0.47	0.000	-3.80	-1.26
	Atlantic	-1.98*	0.54	0.002	-3.44	-0.51
Atlantic	BC	0.30	0.45	0.964	-0.94	1.54
	Prairie	-0.62	0.53	0.773	-2.07	0.84
	ON	-0.56	0.47	0.761	-1.84	0.73
	QC	1.98*	0.54	0.002	0.51	3.45

Note.*significant at the 0.05 level

Table 12A

Factor 6, Factor Score Descriptive Statistics for Non-Supervising Physiotherapists

Geographical Region	Mean	Std. Deviation	N
BC	-1.26	4.69	352
Prairie	-0.16	4.16	161
ON	-0.65	4.33	277
QC	-0.61	4.50	151
Atlantic	-0.57	4.40	145
Total	-0.76	4.47	1086

Table 12B

Factor 6, Main Effects One Way ANOVA for Non-Supervising Physiotherapists

	Sum of Squares	df	Mean Square	F	Partial Eta Squared
Between Groups	160.32	4	40.08	2.02	.007
Within Groups	21481.24	1081	19.87		
Total	21641.56	1085			

Table 12C

Factor 6, Post Hoc Multiple Comparisons with Tukey HSD Test for Non-Supervising Physiotherapists

(I) Geographical Region	(J) Geographical Region	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
BC	Prairie	-1.11	0.42	0.069	-2.27	0.05
	ON	-0.62	0.36	0.419	-1.60	0.36
	QC	-0.66	0.43	0.550	-1.84	0.53
	Atlantic	-0.69	0.44	0.516	-1.89	0.51
Prairie	BC	1.11	0.42	0.069	-0.05	2.27
	ON	0.49	0.44	0.802	-0.72	1.70
	QC	0.45	0.51	0.902	-0.93	1.83
	Atlantic	0.42	0.51	0.926	-0.98	1.81
ON	BC	0.62	0.36	0.419	-0.36	1.60
	Prairie	-0.49	0.44	0.802	-1.70	0.72
	QC	-0.04	0.45	1.000	-1.27	1.19
	Atlantic	-0.07	0.46	1.000	-1.32	1.17
QC	BC	0.66	0.43	0.550	-0.53	1.84
	Prairie	-0.45	0.51	0.902	-1.83	0.93
	ON	0.04	0.45	1.000	-1.19	1.27
	Atlantic	-0.03	0.52	1.000	-1.45	1.38
Atlantic	BC	0.69	0.44	0.516	-0.51	1.89
	Prairie	-0.42	0.51	0.926	-1.81	0.98
	ON	0.07	0.46	1.000	-1.17	1.32
	QC	0.03	0.52	1.000	-1.38	1.45