

ROUTINE USE OF THE CANADIAN OCCUPATIONAL PERFORMANCE
MEASURE

THE ROUTINE USE OF THE CANADIAN OCCUPATIONAL PERFORMANCE
MEASURE BY OCCUPATIONAL THERAPISTS: EFFECT ON PRACTICE,
OUTCOMES AND THERAPISTS' PERCEPTIONS OF USE

By
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TITLE: The routine use of the Canadian Occupational Performance Measure by
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Abstract

This thesis focuses on routine outcome measurement in occupational therapy; specifically the use of the Canadian Occupational Performance Measure (COPM) in inpatient geriatric rehabilitation.

The purpose of the first study (Chapters two and three) was to: 1) determine if routine COPM use was associated with improved functional outcome; 2) gather therapist perceptions on routine COPM use; and, 3) propose a template for summarizing COPM data. A cohort study with a therapist participant survey measured the difference in Functional Independence Measure (FIMTM) change scores between an experimental group (n = 45) that implemented the routine use of the COPM for evaluation/planning and a historical “usual care” comparison group (n = 58). Using generalized linear modeling, it was found that both groups had significant changes in FIMTM scores over time ($p < .05$). Differences between groups were not significant. Therapists perceived that the COPM facilitated treatment but experienced challenges in routine use. Therapists placed more importance on individual than group data.

The second study (Chapter four) determined if routine use of the COPM was associated with changes in five domains of practice: focus of care on occupation, knowledge of client perspective, clinical decision-making, clinician ability to articulate outcomes, and documentation. Twenty-four occupational therapists on eight geriatric rehabilitation units completed a before-and-after study with a repeated baseline. Domains of practice during three months of standard care (no COPM) were compared using Chart Stimulated Recall and chart audit as outcome measures to three months of intervention (COPM). Mean practice scores indicated a significant effect for time ($p < .0001$) but no

effect based on the frequency of COPM use. Chart audit indicated that COPM use resulted in more occupation-focused issue identification.

This thesis challenges assumptions regarding the value of measurement and contains the first study to demonstrate that routine outcome measure use affects occupational therapy practice.

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Preface

The following summary details all author contributions to each of the manuscripts in the thesis.

For all three studies: Heather Colquhoun determined the research questions, formulated the study design, developed the study protocol, established relationships with all study sites, completed the ethics approval process for all nine participating sites, managed the research projects, hired a research assistant (RA), completed the data collection with the RA, analyzed the data, and prepared the manuscripts. Dr. Lori Letts assisted with refining the research questions, assisting in interpretation of the findings, and provided editorial assistance with manuscript preparation. Dr. Mary Law assisted with refining the research questions, and provided editorial assistance with manuscript preparation. Dr. Joy MacDermid assisting in providing assistance with statistical analysis, interpretation of the findings, and provided editorial assistance with manuscript preparation.

For the manuscripts entitled Routine administration of the Canadian Occupational Performance Measure: Effect on functional outcome, and Clinical utility of the Canadian Occupational Performance Measure for routine use: Mary Edwards assisted with refining the research questions, and provided editorial assistance with manuscript preparation.

For the manuscript entitled Routine administration of the COPM: Effect on occupational therapy practice: Dr. Cheryl Missiuna assisted with refining the research questions, and provided editorial assistance with manuscript preparation.

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Chapter One: Introduction

The use of outcome measures as an integral component of health care practice has been encouraged for decades (Epstein, 1990; Law & Baum, 2005). The field of rehabilitation, in particular, has placed considerable focus on measuring the outcomes of care (Law, Baum, & Dunn, 2005; Finch, Brooks, Stratford, & Mayo, 2002). Despite many proposed benefits of measurement (Abrams et al., 2006; Law, Baum, & Dunn, 2005), rehabilitation clinicians, including occupational therapists, have not prioritized systematic outcome measurement (Law et al., 2005; Finch et al., 1994). Numerous proposed barriers to outcome measure use exist (Blenkiron, 2005; Huijbregts, Myers, Kay, & Gavin, 2002); however, the reasons for poor adoption rates are unknown. Compounding the issue of poor adoption of outcome measures is that the proposed benefits of outcome measurement are largely anecdotal: little research evidence exists that suggests that the routine use of standardized outcome measures has any positive effect on clinical decision-making, care or outcomes (Gilbody, House, & Sheldon, 2003). Solving the dilemma of poor outcome measure use will require a better understanding of the benefits of routinely employing outcome measures. As such, this thesis focuses on examination of the effects of routinely utilizing standardized outcome measures in occupational therapy.

This thesis contains three manuscripts (Chapters two, three and four) that resulted from two research studies completed as a component of a PhD program at McMaster University in Rehabilitation Science. All three manuscripts focus on the routine use of standardized outcome measures as a component of occupational therapy practice. The

first and third manuscripts (Chapters two and four respectively) address the effect of using a standardized outcome measure; the first examined the effect on client outcomes and the third, the effect on five domains of occupational therapy practice. The second manuscript (Chapter three) relates to the perceptions of occupational therapists about using outcome measures routinely and the methods that they used to summarize routinely collected outcome measure data. The first and second manuscripts have been published in peer-reviewed journals: the Australian Occupational Therapy Journal (Colquhoun, Letts, Law, MacDermid, & Edwards, 2010b) and the British Journal of Occupational Therapy (Colquhoun, Letts, Law, MacDermid, & Edwards, 2010a) respectively. Permission to reproduce the manuscripts are stated in the related chapter.

This introductory chapter provides an overview of the issues that form the contextual basis for the thesis. The specific focus of measurement that was examined in the thesis is described, as is the outcome measure utilized and the environment in which the research occurred. This is followed by a historical review of measurement of outcomes in health care practice with emphasis on rehabilitation, a review of the present use of outcome measures, and the progress made towards increasing the use of outcome measures in this field. A theoretical and empirical rationale is provided to support the thesis hypothesis: that there is an effect of measurement on clinical practice and client outcomes. This rationale includes a review of evidence in support of systematic approaches, routine outcome measurement, and client-centred approaches to measurement. Lastly, this chapter provides a statement of the problem to be addressed, a review of the thesis process, and a summary of study objectives.

Focus of Measurement

Outcome measures are believed to inform health care practice through evaluation of clinical interventions as part of research, monitoring population health, clinical audit, and facilitation of decision-making and client care (Gilbody et al., 2003). Outcome measurement can occur at an individual level (i.e., decision-making for individuals) or an aggregate level (i.e., program evaluation or population health). The focus of this thesis is the use of an individualized outcome measure on a routine basis in clinical practice to facilitate decision-making and client care. The term “routine outcome measurement” is employed and is defined as the systematic use of a standardized outcome measure(s) in clinical practice with every patient as a part of a standardized assessment practice guideline.

The Canadian Occupational Performance Measure: An individualized outcome measure

Individualized measures are outcome measures in which the “problem areas being measured are specific for each individual and may be set by either the client or the health professional” (Donnelly & Carswell, 2002, p. 85). These measures are considered to have better responsiveness than many self-report questionnaires (Donnelly & Carswell, 2002) and are consistent with a direction in rehabilitation that is promoting more individualized treatment (Callahan & Barisa, 2005). These types of measures are also consistent with one of the core principles of occupational therapy practice: a belief that the client is a partner and key decision-maker in occupational therapy treatment

([Canadian Association of Occupational Therapists] CAOT, 1997). A focus on individualized measures may begin addressing the issue that outcome measures lack value and discourage an understanding of the subtleties of individual outcomes (Gilbody, House, & Sheldon, 2002; Lakeman, 2005).

One such measure that fits with both the theoretical beliefs of occupational therapy and the definition of an individualized measure is the Canadian Occupational Performance Measure (COPM) (Donnelly & Carswell, 2002; Law et al., 2005). The COPM is considered to be a gold standard for identifying occupational performance issues and measuring client perceptions of changes in occupation (McColl et al., 2005; Parker & Sykes, 2006; Wressle, Marcusson, & Henriksson, 2002). The COPM is consistent with the Canadian Model of Occupational Performance (CAOT, 2002), its extension, the Canadian Model of Occupational Performance and Engagement (Townsend & Polatajko, 2007) and core occupational therapy practice models (Townsend & Polatajko, 2007). Despite the fact that the COPM includes a systematic approach to issue identification and the measurement of outcomes, it is surprising that it has not translated well into routine clinical practice across Canada (McColl et al., 2005; Toomey, Nicholson, & Carswell, 1995).

Geriatric Rehabilitation

Estimated population increases in the number of adults over the age of 65 in the next few decades, and the subsequent need for more effective and efficient geriatric rehabilitation services, are well documented (Cruise, Sasson, & Lee, 2006; Wells,

Seabrook, Stolee, & Borrie, 2003). One of the primary goals for both the occupational therapist and the client in geriatric rehabilitation is to enable occupation (Townsend & Polatajko, 2007). As a standard for determining occupation-based issues and measuring changes in occupation over time, the COPM has been recommended for inpatient geriatric rehabilitation environments (Bodiam, 1999). COPM use in geriatric rehabilitation environments however, is limited (Chen, Rodger, & Polatajko, 2002; McColl et al., 2005).

The Outcome Measure Movement: 1990-2010

The 1990's marked a significant movement in health care characterized by emphasis on measuring outcomes (Epstein, 1990; Law & Letts, 1989; Rogers & Holm, 1994). The movement signaled an unprecedented level of encouragement for clinicians to measure the results of care (Epstein, 1990). The goal was to create a shift in clinical practice in which determining patient improvement would be increasingly focused on objective outcome measure data rather than subjective clinician judgment. Using standardized outcome measures as the primary source of data to determine the effectiveness of intervention was thought to be a new and valuable method of clinical decision-making (Epstein, 1990).

Occupational therapy was no exception to this movement (Egan, Dubouloz, von Zweck, & Alonso, 1998; Law & Baum, 1998) nor was physiotherapy (Duckworth, 1999; Huijbregts et al., 2002), rehabilitation in general (Dobrzykowski, 1997; Haigh et al.,

2001; Heinemann, 2005; Jette & Haley, 2005), nursing (Lakeman, 2004), or medicine (Gilbody et al., 2002; Slade, Thornicroft, & Glover, 1999).

Research articles (Dobrzykowski, 1997; Unsworth, 2000), editorials (Law, 1989; Law & Baum, 1998; Rogers & Holm, 1994; Yerxa, 1984) and textbooks (Cole, Finch, Gowland, & Mayo, 1995; Dittmer & Gresham, 1997; Law, Baum, & Dunn, 2005) on rehabilitation outcome measurement became common. Measuring outcomes in rehabilitation became a core professional competency in Canada (CAOT, 1997; Kay, Myers, & Huijbregts, 2001), Australia (Coombs & Meehan, 2003; Unsworth, 2000), the United Kingdom (Illott & White, 2001), and the United States (Jette & Haley, 2005).

In 2001, in Canada, a national rehabilitation dataset was initiated with mandated participation in Ontario and it included a functional outcome measure, the Functional Independence Measure[™] (FIM[™]), that was to be collected on every client in inpatient rehabilitation ([Canadian Institutes of Health Information] CIHI, 2009a). This dataset presently includes 103 facilities across nine provinces in Canada (CIHI).

The rationale for how standardized outcome measurement would benefit client care was commonly described; simply put, measuring outcomes was meant to improve care. Measurement of outcomes was believed to facilitate clinician decision-making for client treatment and to result in improved treatment plans and evaluation (Abrams et al., 2005; Douglas, Swanson, Gee, & Bellamy, 2005; Gilbody et al., 2003; Law & Baum, 2005; MacDermid & Stratford, 2004). The suggested benefits also included improved care (Blankertz & Cook, 1998; Coombs & Meehan, 2003; Walter et al., 1996), as well as improved client outcomes (Illot & White, 2001), positive professional growth (Callahan

& Barisa, 2005) and the promotion of best practice (Heinemann, 2005). Suggestions of benefit went so far as to include work quality, staff morale, and job satisfaction and performance (Blankertz & Cook, 1998).

A decade later, the focus on what constitutes excellence in practice has shifted into what is now referred to as Evidence Based Practice (EBP). EBP in occupational therapy is defined as “using research evidence together with clinical knowledge and reasoning to make decisions about interventions that are effective for a specific client(s)” (Law & Baum, 1998, p.131). EBP encompasses a broad scope of factors that contribute to quality care beyond just measuring outcomes but the concept of measuring outcomes still features predominantly in any discussion of EBP (Egan et al., 1998; Law & Baum, 1998) and quality of health care (Jette & Haley, 2005).

Present Use of Outcome Measures

Despite an apparent consensus on the need to use outcome measures (Heinemann, 2005; Law, Baum & Dunn, 2005), a 20-year trend in the literature that encourages their use (Epstein, 1990; Law & Letts, 1989; CAOT, 2005; Jette, Halbert, Iverson, Miceli, & Shah, 2009), and professional position statements citing their value (Illott & White, 2001; CAOT, 1997), the use of outcome measures as a routine aspect of health care practice including rehabilitation has not translated to any great extent (Gilbody et al., 2002; Jette et al., 2009; Toomey et al., 1995).

Large-scale rehabilitation surveys on outcome measure use in Australia (Douglas et al., 2005) and Europe (Haigh, Tennant, BieringSorensen, Grimby, & Marcinek, 2001)

suggest low use rates and significant inconsistency in the application of measures across similar patient groups. Specific use rates reported in occupational therapy indicate rates of less than ten percent across hand therapists - of which 80% are occupational therapists - (Michlovitz, LaStayo, Alzner, & Watson, 2001), rheumatology therapists (Blenkiron, 2005) and mental health practitioners (Garland, Kruse, & Aarons, 2003).

Increasing the Use of Outcome Measures

Investigating barriers to outcome measure use has been the most common approach to solving the dilemma of poor use rates (Huijbregts et al., 2002; Jette et al., 2009; Slade et al., 1999; Toomey et al., 1995; Turner-Stokes & Turner-Stokes, 1997). The two most consistent barriers identified are a perception that outcome measures lack value and practicality for clinical practice (Slade et al., 1999; Huijbregts et al., 2002; Blenkiron, 2005; Douglas et al., 2005; Gilbody et al., 2002; Toomey et al., 1995; Turner-Stokes & Turner-Stokes, 1997; Chiu & Tickle-Degnen, 2002, Toomey et al., 2005; Garland et al., 2003), and that outcome measurement is too time-consuming (Huijbregts et al., 2002; Turner-Stokes & Turner-Stokes, 1997; Abrams et al., 2006; Chiu & Tickle-Degnen, 2002 Slade et al., 1999; Huijbregts et al., 2002; Kay et al., 2001; Garland et al., 2003).

Other barriers include unavailability of suitable measures (Huijbregts et al., 2002; Jette and Haley, 2005), poor knowledge of which measures to choose (Abrams et al., 2006; Blenkiron, 2005; Huijbregts et al., 2002; Turner-Stokes & Turner-Stokes, 1997) and knowledge of how to apply the measures systematically (Huijbregts et al., 2002;

Toomey et al., 1995). Lack of support/resource personnel, including support to summarize outcome measure data, and the level of organizational commitment have also been highlighted (Huijbregts et al., 2002). Of note is that barrier identification has been primarily achieved using cross-sectional surveys that collect the perceptions of clinicians who are not using outcome measures to any great extent. Additionally, very few proposed barriers have been empirically tested in studies aimed at increasing use rates.

Although not specifically presented as a barrier, studies on outcome measure use have consistently found substantial preference among clinicians for the use of intuition and subjective evaluation to determine client progress (Blenkiron, 2005; Garland et al., 2003; Huijbregts et al., 2002; Jette et al., 2009; McGlynn & Cott, 2007; Meadows, Rogers, & Greene, 1998; Taylor, Macdonald, & Bezjak, DePetrillo, 1996). The rationale for this apparent preference for unsystematic and informal processes for determining client progress is not clear but several of these studies indicate a perceived superiority of informal processes as compared to standardized measurement (Garland et al., 2003; McGlynn & Cott, 2007; Taylor et al., 1996). This perceived superiority could, in part, explain why one of the most cited barriers to outcome measure use is a perception that standardized measures lack value for clinical practice.

Theoretical Rationale for Thesis Hypothesis

Administering the COPM includes two components: a systematic approach to issue identification and a measure of outcome. A central concept to both of these two components is the concept of client-centred practice. These three foci, the COPM as a

systematic approach to issue identification, the COPM as a measure of outcome, and the COPM as a client-centered approach, all contribute to the rationale for a potential effect of COPM use.

EBP frameworks support systematic approaches in clinical practice including systematic approaches to issue identification. EBP in occupational therapy “uses research evidence together with clinical knowledge and reasoning to make decisions about interventions that are effective for specific client(s)” (Law & Baum, 1998, p. 131). The systematic approach to issue identification, inherent in utilizing the COPM, facilitates the clinician knowledge and reasoning required for effective treatment planning and leads to improved care and outcomes.

The effect of routine use of the COPM as a measure of outcome can be implemented through several mechanisms. A clinician can administer an outcome measure such as the COPM at set intervals during the time that treatment is provided, to determine if progress is being made as expected (Coombs & Meehan, 2003; Walter, Cleary, & Rey, 1998). In addition, the clinician can administer the COPM before and after treatment to determine if improvement occurred (Dobrzykowski, 1997; Mayo, 1994). The information gained is two-fold. First, the therapist can determine more objectively if progress is being made as anticipated for that individual client and can change the treatment if it is not creating the desired effect (Abrams et al., 2006; Coombs & Meehan, 2003). Secondly, the information gained at the completion of care can be used to evaluate overall treatment outcomes for individuals. Both types of information

have the capacity to have a positive effect on occupational therapy interventions and, ultimately, on client outcomes.

Clinicians tend to have a belief in the effectiveness of the treatment they administer and are, therefore, likely biased towards positively rating client improvement (Kaptchuck, 1998). If subjective judgment is the only method used to assess progress, this bias is increased. This inherent bias supports the notion that the use of outcome assessment from sources other than the therapist should lead to more accurate and realistic information on client progress. If this is the case, then more informed changes to clinical decision-making and care could be expected when an outcome measure is used, when compared with reliance on clinician judgment alone to determine client progress. In fact, this rationale forms the basis for the imperative of independent outcome assessment in clinical trials (Kaptchuk).

The effect of the COPM on practice as a client centered outcome measure is supported through two concepts: 1) the conceptual models that define occupational therapy practice; and, 2) the development of the COPM to be in keeping with these conceptual models. Current conceptual models of occupational therapy practice, the Canadian Model of Occupational Performance (CAOT, 1997, 2002), and its extension, the Canadian Model of Occupational Performance and Engagement (Townsend & Polatajko, 2007) describe an imperative for client engagement in the therapeutic process. Titled Enabling I (CAOT, 2002), and Enabling II (Townsend & Polatajko, 2007), these publications have played critical roles in advancing the core concepts of occupational therapy practice in Canada. Enabling I describes client-centred practice as a distinct

component of occupational therapy practice (CAOT, 2002) while Enabling II embeds client-centred concepts within the concept of enablement (Townsend & Polatajko, 2007). Both approaches maintain the imperative of viewing the client's individuality as fundamental to occupational therapy practice, and include the beliefs that clients are experts regarding their occupations and are essential participants in occupational therapy. The underlying assumption is that clinicians cannot know the client's experience, needs, or goals of intervention. The omission of client perspectives from the therapeutic process will not lead to successful occupational enablement and therapeutic outcomes will reflect this reality. The COPM was designed specifically to reflect these principles with the identification of occupational performance issues, the determination of the issues most relevant to the client, and the measurement of changes in these issues within occupational therapy practice (Law et al., 1990). Additionally, the COPM is focused on gathering client perspectives: a key tenet of EBP (Law & Baum, 1998).

Empirical Support for Thesis Hypothesis

Systematic approaches.

Evidence supports systematic approaches to issue identification. An instrument to identify patient issues in primary care increased accuracy of identifying the issues important to the patient and increased patient satisfaction (Albertson et al., 2002). A Health Related Quality of Life instrument to identify issues improved the accuracy of identifying health related quality of life concerns (Dettmer, Muller, Schornagel, Wever, & Aaronson, 2002). Evidence also exists for the value of systematic approaches to

measurement of patient status: a standardized assessment for depression screening outperformed clinical judgment alone in terms of accuracy of identifying depression (Schade, Jones, & Wittlin, 1998). Empirical evidence specific to the COPM as a systematic approach to issue identification, or to systematic approaches in occupational therapy more broadly, are limited.

Client-centred practice.

Clinicians state that using the COPM allows them to work more holistically with clients, and assists with developing realistic and client-centered goals (Chen et al., 2002). Clinicians indicate that their priorities are often different from client priorities, suggesting value in COPM use (Law et al., 1990). This finding is supported by poor correlations between clinician and client perceptions of occupational performance in work (Boyer, Hachey, & Mercier, 2000), and an observed disconnect between client and therapist perceptions of issues in mental health (Richard & Knis-Mathews, 2010). Evidence in support of client-centred approaches and the COPM has been predominantly gathered in cross-sectional survey designs (Boyer et al. excluded), resulting in an evidence base that largely consists of therapist perceptions.

Routine outcome measurement.

Minimal evidence exists that routinely using an outcome measure leads to better decision-making on the part of clinicians, clinical care or client outcomes (Blenkiron, 2005; Gilbody et al., 2003; Lakeman, 2005).

A Cochrane review conducted specifically on the value of routine outcome measurement in schizophrenia concludes that there is little proof of any benefit in routinely employing an outcome measure (Gilbody et al., 2003). Routine outcome measurement was not defined specifically but criteria for included studies in the review included an established feedback procedure for the clinician to obtain the outcome measure information. Gilbody et al. stated that, given the time-consuming nature of outcome measurement, caution must be taken in using outcome measures routinely until proof of effectiveness is found. There are also suggestions that routine outcome measure use can have a negative impact. Clinicians perceive that outcome measure use may have a negative effect on the therapeutic relationship (Gilbody et al., 2002; Lakeman, 2005), and take too much time to incorporate into practice, negatively influencing time spent on other aspects of client care (Huijbregts et al., 2002; Slade et al., 1999; Toomey et al., 1995). To date, the benefits of routine outcome measurement are largely theoretical, not empirical. Additionally, no clinical evidence exists on the effect of using the COPM or any other outcome measure on occupational therapy practice.

Statement of the problem

The value of routine outcome measurement in occupational therapy, including the COPM, on clinical practice and client outcomes remains largely unexplored. The assumption that routinely using an outcome measure has a positive effect on practice must be questioned and the assumptions about improved care and outcomes require study (Gilbody et al., 2002; Lakeman, 2005; Walter et al., 1996). The possibility of a negative effect, the cost in training requirements, use of clinician time with clients, and increased

administrative time as well as direct client burden (Garland et al., 2003) contribute to the relevance of these issues.

Furthermore, evidence on the nature of potential benefits to practice with routine COPM use has the capacity to affect the uptake of outcome measure use into occupational therapy practice, both specific to the COPM, as well as outcome measure use in general. Increasing the uptake of outcome measures, including the COPM, into practice will be further enhanced by identifying clinician perceptions about routine use from those who are using the COPM routinely. Given the perceptions of value in COPM use, with limited uptake, an enhanced understanding of therapist perceptions will be of benefit. Additionally, addressing issues of how to summarize outcome measure data are advantageous, given the reported difficulties with utilizing outcome measure data and perceptions of poor clinical utility of outcome measures for routine clinical practice.

Overview of Thesis Papers

This thesis is a compilation of three manuscripts resulting from two studies pertaining to the routine use of the COPM by occupational therapists in inpatient geriatric rehabilitation environments.

The first manuscript in Chapter two presents the primary aim of the first study, hereafter referred to as the Client Outcomes study. The objective of this cohort study was to investigate whether the routine application of an outcome measure, the COPM, throughout occupational therapy treatment in inpatient geriatric rehabilitation, was associated with improved functional outcome as measured by change scores in the

Functional Independence Measure™ (FIM). The hypothesis was that, if routinely using the COPM had a positive effect on care, a difference in functional outcome would be found between the experimental group and the comparison group that favoured the experimental group (routine use of the COPM). Using generalized linear modeling, this study analyzed changes in FIM™ scores between an experimental group (n = 45) that received the routine use of the Canadian Occupational Performance Measure for evaluation/planning versus a historical comparison group (n = 58) that received “usual” care.

Chapter three is a manuscript presenting data collected to meet two secondary objectives of the first study (presented in Chapter two). This study will, hereafter, be referred to as the Therapist Perceptions study. The secondary objectives were: 1) to determine therapists’ perceptions of the clinical utility of the COPM as a routine outcome measure; and, 2) to propose a therapist-driven template that would summarize COPM data to inform practice. A written questionnaire was used with three occupational therapists after five months of mandated COPM use in geriatric rehabilitation: the resulting COPM outcomes data were summarized into a template using input from the three therapists.

Chapter four presents a manuscript summarizing the findings from a second study; hereafter, referred to as the Practice Change study. The study objective was to determine if the systematic application of the COPM, throughout the course of occupational therapy treatment in inpatient geriatric rehabilitation, was associated with changes in five domains of practice (focus of care on occupation, knowledge of client perspective, clinical

decision-making, clinician ability to articulate outcomes, documentation) when compared to standard practice. The hypothesis was that if using the COPM has the capacity to affect critical components of practice, then the hypothesized practice dimensions should be improved when the COPM is used, as compared with reliance on more unsystematic methods of determining occupational performance issues and informal methods for measuring progress (standard practice). This before-and-after study with a repeated baseline was conducted with 24 occupational therapists on eight geriatric rehabilitation units. Using chart stimulated recall and chart audit, five domains of practice were examined over three months of standard care (no COPM) compared with three months of intervention (COPM).

Thesis Process

Client outcomes are a critical component of investigating the effect of measurement and represent the ultimate benefit of systematic outcome measure use. As such, investigating the effect of COPM use on client outcomes was the primary aim of the first thesis study. The examination and review of the findings of this first study however, required the candidate to consider other possible explanations for the results. It was these considerations that led the candidate to consider the need for exploration of the mechanisms by which the use of an outcome measure could be expected to affect or not affect client outcomes. The focus of the first study on client outcomes, and the focus of the second study on clinical practice are in part reflective of this progression in critical thinking.

Determining therapist perceptions of routine COPM use is critical to our understanding of routine outcome measurement in occupational therapy and of why use rates remain low. The first study in this thesis examined therapist perceptions of outcome measure use as a secondary objective and used a short answer survey. The study found that therapists who used outcome measures as a component of a research study expressed perceptions consistent with existing broad based surveys of perceptions of outcome measure use. In order to better develop our understanding of therapists' perceptions of outcome measure use, studies designed primarily to gather perceptions and with designs beyond short answer survey and questionnaires are required. Despite the multiple important areas of study in the field of routine outcome measurement, it was felt that establishing evidence in support of the value of COPM use to occupational therapy practice represented the most critical area of study. The Practice Change study in the thesis, therefore, focused on determining which aspects of practice were improved with routine outcome measure use and increased our understanding of the mechanisms by which these practice improvements could be achieved. This understanding better informs our knowledge of the effect of routine outcome measurement: subsequent studies are required to examine the perceptions of COPM use as a routine part of practice.

Chapter Two

Title of Paper: Routine administration of the Canadian Occupational Performance Measure: Effect on functional outcome

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Authors: Heather Colquhoun, Lori Letts, Mary Law, Joy MacDermid, Mary Edwards
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Introduction

The use of outcome measures as an integral component of health care practice has been encouraged for decades (Epstein, 1990; Law, Baum, & Dunn, 2005). The field of rehabilitation in particular has placed considerable focus on measuring the outcomes of care (Law et al., 2005). Measuring outcomes is felt to be an ethical responsibility (Ottenbacher, 1986) as well as a critical component of evidence-based practice (Law et al., 2005). The overarching rationale for why clinicians should use standardized outcome measures has been stated in simple terms: measuring outcomes is meant to improve care (Epstein, 1990; Gilbody, House, & Sheldon, 2007). The primary purpose for using an outcome measure is to document the effect of our interventions, yet using an outcome measures is also believed to effect aspects of client care like facilitating goal setting and increasing the focus of therapy on the client (Unsworth, 2000). One compelling reason to utilize an outcome measure is the possibility that it improves initial intervention planning

(Abrams et al., 2006; Law et al., 2005) and ongoing intervention planning (Coombs & Meehan, 2003; Illott & White, 2001), resulting in better clinical decision-making.

Despite an apparent consensus on the need to use outcome measures (Huijbregts, Myers, Kay, & Gavin, 2002; Law et al., 2005), a 15-year trend in the literature encouraging their use, and professional position statements citing their value (Illott & White, 2001), clinicians are not using them (Blenkiron, 2005; Huijbregts, Myers, Kay, & Gavin, 2002). Large-scale rehabilitation surveys on outcome measure use in Australia (Douglas et al., 2005) and Europe (Haigh, Tennant, BieringSorensen, Grimby & Marcinek, 2001) indicate low rates of outcome measure use and significant inconsistency in the application of measures across similar client groups. Studies investigating outcome measure use in occupational therapy indicate rates less than 10 percent (Blenkiron, 2005; Michlovitz, LaStayo, Alzner, & Watson, 2001).

The reluctance of clinicians to adopt outcome measures into practice might be justified. Very little empirical evidence supports the use of routine outcome measurement to improve care, clinician decision-making or client outcomes (Lakeman, 2005; Blenkiron, 2005; Gilbody, House, & Sheldon, 2007). A Cochrane Collaboration review conducted on the value of routine outcome measurement for people with schizophrenia concluded that there is little proof of any benefit in routinely employing outcome measures (Gilbody, House, & Sheldon, 2007). Further, Gilbody et al. (2007) state that given the time-consuming nature of outcome measurement, caution must be exercised before using outcome measures routinely until proof of effectiveness is demonstrated. Several authors feel that the use of routine outcome measurement can negatively affect

care by limiting the therapeutic relationship (Gilbody, House, & Sheldon, 2002; Lakeman, 2005), taking too much time to incorporate into practice (Huijbregts, Myers, Kay, & Gavin, 2002) and even discouraging an understanding of the subtleties of individual outcomes (Gilbody et al., 2002; Lakeman, 2005). The possibility of a negative effect from outcome measure use extends the effectiveness controversy further and demands investigation.

Evidence of the Value of Routine Application of Outcome Measures on Client Outcomes

Clinicians tend to believe in the effectiveness of the intervention they are administering and may therefore be biased towards exaggerating client improvement as a result of their intervention (Kaptchuk, 1998). This is a primary reason for independent outcome assessment in randomized controlled trials (Kaptchuk, 1998). Subjective determination of client progress, however, is the evaluative method in which most day to day practice occurs. The bias towards an exaggeration of client improvement based on subjective judgment alone supports the idea that the addition of a standardized outcome measure to intervention should provide more accurate information on client progress.

Schade, Jones, & Wittlin (1998) completed a 10 year review on the value of using depression screening instruments and supported the value of a systematic approach. They found statistical and clinical support for increased accuracy of screening with the use of standardized screening instruments as opposed to physician judgment. Although not in the rehabilitation field, these results lend support to the idea that systematic and objective approaches to clinical decision-making may outperform clinical judgment alone.

The effect of systematic approaches to treatment in occupational therapy has been investigated by a single pilot study, randomized to compare traditional occupational therapy versus a more goal-focused occupational therapy (Gagnes & Hoppes, 2003). After 2 weeks, there was a statistically significant difference for the dressing item of the Functional Independence Measure™ (FIM™). Flaws in the design of the study require cautious interpretation of the results but it does lend some support for systematic and individually focused approaches to monitoring occupational therapy clients (Gagnes & Hoppes, 2003).

The FIM™ is one standardized outcome measure that has gained widespread use as a routine measure in rehabilitation including occupational therapy (Jette & Haley, 2005). Routine use of the FIM™ has been achieved primarily through mandated use. Despite significant collection of FIM™ data in countries like Australia, Canada, and the United States, little evidence exists on the impact that using the FIM routinely has had on outcomes.

Very few studies define routine outcome measurement specifically. In this study, it is defined it as the systematic use of a standardized outcome measure(s) in clinical practice with every client as a part of a standardized assessment practice guideline.

Individualized Outcome Measures in Occupational Therapy

Individualized measures are outcome measures in which the “problem areas being measured are specific for each individual and may be set by either the client or the health professional” (Donnelly & Carswell 2002, p. 85). Given that clinicians perceive outcome measures lack value and practicality for clinical practice (Blenkiron, 2005; Gilbody,

House, & Sheldon, 2002; Huijbregts et al., 2002) and that outcome measures lack the capacity to reflect the unique nature of disability (Lakeman, 2004), it seems prudent to begin testing the value of outcome measurement by investigating the impact of individualized measures. One such measure that fits with the theoretical beliefs of occupational therapy and fits this definition of an individualized measure is the Canadian Occupational Performance Measure (COPM) (Law et al., 2005). Few studies have addressed the effect on functional outcomes of routinely using the COPM.

One of the primary reasons to use an outcome measure is to measure the outcomes of our interventions and thus, the impact of our work with clients (Law et al., 2005). The question remains, however, what is the overall value of this measurement to our intervention and to our client's outcomes? Simply having knowledge of client progress is not a benefit unless we use that information to improve our interventions. We could use outcome information on a group level to improve our programs or we could aim to see if using an outcome measure as an integral part of care could in fact improve the outcomes of individuals. Currently, our understanding of the advantages of outcome measurement on intervention and client outcomes on both a program and individual level is poor (Lakeman, 2005).

The purpose of the following study is to investigate the effect of integrating an outcome measure into practice on individual client outcomes. The specific research question asked if the systematic and consistent application of an individualized outcome measure, the COPM, throughout the course of occupational therapy in inpatient geriatric rehabilitation was associated with improved functional outcome as measured by the

FIM™. The COPM is an individualized measure; however, in inpatient rehabilitation environments, the COPM is frequently used to set self-care goals that closely match those activities listed in the FIM™ (Bodiam, 1999).

It was hypothesized that routinely using the COPM to determine client needs/status at baseline and throughout intervention would increase the accuracy in which client improvements were determined leading to improved decision-making for ongoing intervention and this would result in better outcomes. The COPM was hypothesized to foster interventions focused on the individual and improved outcomes could be anticipated through this mechanism as well. The assumption was not that the COPM itself would result in an intervention effect, but rather that an indirect effect would arise due to the adjustments made to care based on what is learned from the results of measurement. This might include changes in how intervention is delivered, changes in the approach of the clinician or changes in how clients responded to intervention. This present study did not address the specific changes in practice that may occur, but investigated the relationship between the routine use of an instrument (the COPM) and outcomes (as measured by the FIM™).

Methods

This study used a cohort design with a historical comparison group. It compared FIM™ change scores obtained by an intervention group that received the routine use of the COPM to the same data obtained from a historical comparison group that received “usual” goal setting and evaluation in the five months prior to the intervention phase of the study. The intervention in this study is the introduction and routine use of an

individualized outcome measure by occupational therapists and includes the use of the COPM along with adjustment of intervention in response to its use. Routine use of the COPM included administration on admission, re-evaluation at 2 week intervals throughout length of stay and use at discharge. The COPM (Law et al., 2005) involves the use of a semi-structured interview in which clients are asked to identify all important occupational performance issues for them in the areas of self care, productivity and leisure. The five most important issues are rated by the client on a scale from one to ten as to how well they think they perform these occupations and how satisfied they are with this performance, resulting in two scores (performance and satisfaction). Test re-test reliability is adequate (Donnelly & Carswell, 2002), as is construct validity (McColl et al., 2000) and responsiveness (Bodiam, 1999).

Participants

Participants were recruited from an inpatient geriatric rehabilitation unit in Toronto, Canada. Three occupational therapists work on the unit comprised of 2.5 full-time positions. The unit participates in mandatory FIM™ data collection at admission and discharge as part of the Canadian National Rehabilitation Reporting System database and has been doing so since 2002.

Intervention Group (n = 45): All clients admitted to the unit were asked to participate in the study except those with a length of stay less than 2 weeks and those with a proxy decision maker. An admission of less than 2 weeks would not provide adequate time for the study intervention and individuals with a proxy decision maker were excluded as the COPM process, although possible with this group, is significantly

different using a proxy. The only requirement for using the COPM is that the client and therapist are interested in improving client occupations and as this is an expectation of rehabilitation, all clients have the potential of using the COPM. Ninety-six individuals were admitted to the unit over the 4.5 months that the study took place. No clients were admitted with a proxy decision-maker during the timeframe of the study and 15 of the 96 clients admitted were excluded based on a length of stay less than two weeks. Forty-five of the remaining 81 eligible clients consented to participate.

Comparison Group (n = 58): The comparison group was comprised of the last 75 people who were discharged from the unit prior to the start of the experimental phase. This time period covered five months. Fifty-eight of the obtained records had complete FIM™ data and these 58 individuals comprised the comparison group. It was not possible to determine why data was missing or to recover missing data as it was gathered historically as well as anonymized (consent was not obtained from these individuals).

Instrument

Functional Independence Measure (Hamilton, Granger, & Sherwin, 1987): The FIM™ includes 18 daily activity items in five areas (self-care, sphincter control, mobility, locomotion, communication, social cognition). Each item is scored on a 7-point scale (1 is totally dependent and 7 is total independence) for a total possible score of 126. The instrument has a total score, a motor score and a cognitive score. Overall development, reliability and validity for this instrument are excellent (McDowell & Newell, 1996). The FIM™ could be considered a routine outcome measure on this unit as well; however it is

only used at admission and discharge and is not incorporated into planning intervention or evaluating progress throughout care.

Procedure

The participants in the intervention group received routine rehabilitation care as it typically occurred on the unit plus the use of the COPM. In order to prepare for the intervention phase of the study, the occupational therapists received two, two-hour training sessions on using the COPM. During the intervention phase, bi-weekly sessions occurred between the principal investigator and the unit occupational therapists to discuss COPM use and monitor adherence. The COPM was administered within 1.5 weeks of admission, every two weeks throughout length of stay, and at discharge.

The comparison group received the standard approach to goal setting and monitoring that was conducted as part of the occupational therapy program. This was not a formalized procedure but included setting goals that were completed in part with the client and were monitored every two weeks but in a non-systematic way.

All FIM™ data were prospectively collected for both groups within 72 hours of admission to the unit and at the time of discharge. The comparison group data were obtained through medical records. It was collected prior to, not concurrent with, the intervention group.

The following demographic data was collected for both groups: gender, reason for admission, age, length of stay, Mini-Mental Status Evaluation (MMSE), and FIM™ scores on admission and discharge.

The study was approved through the research ethics board at both the University affiliated with the study and the hospital where the study occurred.

Statistical analyses

Data quality was assessed by manual checking and inspection of descriptive statistics.

The degree of protocol adherence was determined using counts as were the number of COPM issues that related to self-care, productivity and leisure. For 26 patients, the MMSE scores were missing (23 in the comparison group, 3 in the intervention group). The proportion of difference in missing data between the groups is believed to be a result of using an historical comparison group and the inability to monitor the completeness of data as they were being collected. A prediction equation using regression analysis was developed in order to impute the missing MMSE data. This was accomplished utilizing the FIM™ cognitive sub-score data and was done in order to complete and strengthen the multivariate analysis.

Independent samples t-tests were initially used to determine between group differences for age, length of stay, function on admission (total FIM™ score on admission) and cognition (MMSE). Chi squared was used to test for between group differences for gender and reason for admission. Generalized linear modeling was used to detect differences in FIM™ scores between the groups (COPM versus usual care) with repeated measures across the time factor and controlling for any covariates. Significance was set at $p < .05$ and the calculations were completed using The Statistical Package for the Social Sciences, version 14 (SPSS, Inc., Chicago, IL). All participants were included

in the analyses regardless of whether or not they received the full protocol as intended (intention to treat analysis).

Results

Table 1 presents the demographic data and baseline differences for both the comparison and intervention groups. Participants were primarily female. An orthopaedic condition was the primary reason for admission for both groups followed by a neurological condition and deconditioning (a term applied to an individual admitted from home due to an inability to manage). The means and standard deviations for the MMSE data after imputation did not change significantly (see Table 1 for these values).

The study protocol included COPM administration every two weeks throughout the clients' length of stay but this was not always achieved. Eighteen percent (8/45) of the clients did not complete the COPM, 44% (20/45) had administration at admission and discharge only and 38% (17/45) received the COPM at admission, discharge as well as at least one additional administration during length of stay.

Baseline Analyses: The analyses for baseline differences between the two groups revealed non-significant differences for age, gender, length of stay, and reason for admission. Statistically significant baseline differences were found for mental status (before imputation $t = -2.1$, $df = 75$, $p < .05$; after imputation $t = -2.2$, $df = 101$, $p < .05$) and FIMTM admission scores ($t = -2.12$, $df = 101$, $p < .05$) indicating a higher level of cognition and functional status in the intervention group.

<insert Table 1 here>

A summary of FIM™ admission, discharge and change scores for both groups as well as the FIM effect sizes that each group attained separately are contained in Table 2. Both groups (intervention and control) had large effect sizes for the FIM™.

The between group analysis using generalized linear modeling and controlling for baseline differences indicated no statistically significant difference on the group factor ($F = 1.4$, $df = 1$, $p > .05$), but a significant change over time across both groups ($F = 3.65$, $df = 1$, $p = .05$). A power calculation utilizing Cohen's d revealed an underpowered analysis with 8% power to detect a 0.5 (moderate) effect size. Despite such significant improvements on the FIM™ in both groups, the magnitude of the difference in effect between the two groups was only 0.1 (small).

<insert Table 2 here>

Discussion

Most experimental studies on routine outcome measure use have focused on increasing use of outcome measures or increasing understanding of attitudes towards using outcome measures (Abrams et al., 2006; Huijbregts et al., 2002; Toomey et al., 1995). This study aimed to determine if the routine application of an outcome measure was associated with increased functional status. It was hypothesized that routinely employing an outcome measure that both facilitated individualized intervention planning and provided a clear indication of how clients perceived their status would facilitate some aspect of intervention for either the clients or clinicians and lead to improved functional outcomes. Thus, it was hypothesized that incorporating an individualized outcome

measure would have an indirect effect on outcomes through more individualized interventions.

This study found no difference in FIM™ score improvements during rehabilitation in a group of patients managed following introduction of routine use of the COPM compared to a historical cohort who received standard care (without routine use of the COPM). The analyses for this study however, were significantly underpowered. There are several possible explanations to this finding. Clients in both groups (intervention and control) improved significantly on the FIM™ in this study and it is unlikely that an additional moderate or large effect in excess of these improvements would have occurred. The effect sizes for the groups individually were large yet the magnitude of the difference in effect between the groups was small. This study was planned based on an estimated effect size between the groups of 0.5 (moderate) and was not powered to detect small differences. Power calculations reveal that to maintain 80% power, the sample size required for an effect size as small as the one observed would have been 1,579. For an effect size of 0.3 and 0.4, the study would have required 175 subjects and 99 subjects respectively. The study results, while not definitive for a small effect size, demonstrate that there is no medium to large effect of introducing the COPM into this practice environment as measured by the FIM™. The potential for small effects exists as well as the potential that larger effects might be observed with other measures and in other clinical situations. However, these possibilities need to be studied.

Another explanation for the findings is that although the COPM encourages a more client-centered approach to goal setting and evaluation, these processes of client-

centred care may have already been occurring in a less structured way. The team and the occupational therapists may have already been creating a very client-centered focus, and the ongoing evaluation that the COPM aims to support may have been occurring, albeit informally. If these processes were already occurring, the expectation of significant additional improvement based on utilizing the COPM would have been unrealistic. This may have been compounded by a higher level of function (better FIMTM scores on admission) in the intervention group giving this group less room to improve than the historical comparison group.

If routine outcome measurement does have the capacity to improve outcomes, this would need to occur through a specific mechanism (better customization of care, more individualized intervention, more accurate knowledge of improvement) and the effect size would likely vary across contexts. These mechanisms and variations in effect have for the most part not been studied. In order to fully appreciate the value of utilizing outcome measures, further study in the area is needed.

There were several limitations to this study. The use of a historical comparison group contributed to significant baseline differences and made comparison more difficult. An unrealistic estimate of effect size created an inadequate sample size and underpowered the analyses. As well, this study examined the association between routine outcome measurement (at the level of the therapist) and functional outcomes (at the level of the client) as measured by the FIMTM. This rationale makes sense from the viewpoint of determining if routine outcome measure use can affect outcomes, yet this study did not address the intermediate changes necessary to show this relationship. The study did not

address other potentially relevant outcomes. The FIM™ may not be sensitive enough to detect the size or type of improvements in function that could be attributed to the COPM. Potential effects of routine individualized outcome measurement like satisfaction with care, client-specific functional capability, participation or other relevant health outcomes are not addressed by the FIM™. The comparison group did have a typical approach to goal setting; one that would be consistent with many rehabilitation units in Canada. The process, however, is poorly defined making it difficult to establish what the comparison group received. Therapists were asked to re-evaluate the COPM at two-week intervals but the reality of integrating an outcome measure into practice made this difficult. Only 38% of the clients in the intervention group had administration of the COPM as planned. It is uncertain whether this limitation influenced results but studies of this nature will need to ensure that there is adherence to the established protocol. Further studies using prospective comparison group data collection, more outcomes of interest, clear documentation of how practice changes, and larger sample sizes will enhance what is known about routine outcome measurement.

Despite these limitations, this study can be considered a preliminary and important step in our understanding of the effects of routine use of outcome measures. This study cannot conclusively support or refute the use of the COPM for inpatient rehabilitation in terms of improved functional outcomes; however, it highlights issues related to routine outcome measurement and the need to examine the inherent value and specific use of outcome measures and then adapt practice accordingly. While the global objective of improving care and outcomes is a strong undercurrent in the outcomes movement, its

attainment remains under-investigated and largely unproven. There are potentially many valuable reasons to routinely use outcome measures in clinical practice, but it is important to begin defining what specific objectives can be achieved in different settings and study those hypotheses.

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Table 1 Client Demographics and Baseline Differences

Characteristic	Intervention Group (n = 45) Mean (SD)	Comparison Group (n= 58) Mean (SD)	Test for differences at Baseline	p
Gender	13 male 32 female	17 male 41 female	$X^2 = .002$	.96
Reason for Admission	24 Ortho 10 neuro 11 decon ^a	23 ortho 20 neuro 15 decon	$X^2 = 2.37$	.31
Age (years)	81 (10)	82 (8.9)	$t = .54$	.60
Length of Stay (days)	38.7 (10.3)	35 (11.6)	$t = -1.5$	.14
MMSE	26.5 (3.7) BI 26.6 (3.6) AI	24.6 (4) BI 24.8 (4) AI	$t = -2.1$ BI $t = -2.2$ AI	*.03 *.03
Total FIM™ score on admission	83 (12.7)	77 (14)	$t = -2.2$	*.02

Note. Ortho=Orthopaedic diagnosis; Neuro=Neurological diagnosis;
Decon=Deconditioning.

BI=before imputation; AI=after imputation.

^a Deconditioning is a term used to describe a client admitted from home due to poor overall health and an inability to manage.

* $p < .05$

Table 2 FIM Score Summary

FIM™ Scores	Intervention Group	Comparison Group
Admission	83 (12.7)	77 (14)
Discharge	104.8 (12)	100 (16)
Change	21.7 (10.6)	22.9 (9)
Effect Size	2.1	2.5

Chapter Three

Title of Paper: Feasibility of the Canadian Occupational Performance Measure for routine use

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Introduction

Occupational therapy clinicians experienced an unprecedented level of encouragement to measure outcomes of care (Law and Baum, 1998) during the outcome measurement movement of the 1990's (Epstein 1990). Evidence based practice (EBP) represents the next step in evolution of the outcome measurement movement.

EBP in occupational therapy “uses research evidence together with clinical knowledge and reasoning to make decisions about interventions that are effective for specific client(s)” (Law and Baum 1998, p. 131). EBP expands the types of evidence that a clinician should be using to improve quality of care beyond simply measuring outcomes; however, measuring outcomes still features predominantly in the EBP literature (CAOT 1999, Law and Baum 1998).

The potential benefits of outcome measurement include improved clinician treatment planning (Abrams et al 2006, Law and Baum 2005), better care and documentation of results, and the promotion of best practice (Ilott and White 2001).

Interestingly, despite potential benefits and apparent consensus support for the need and value of using outcome measures (Law and Baum 2005), clinicians are not using them (Blenkiron 2005, Haigh et al 2001, Toomey et al 2005).

Factors contributing to reluctance to use outcome measurement include the belief that measures lack value and are not clinically relevant (Blenkiron 2005, Toomey et al 1995). Further, therapists do not feel they have sufficient knowledge to choose a measure (Abrams et al 2006, Huijbregts et al 2002) or apply it systematically (Huijbregts et al 2002, Toomey et al 1995). A lack of time (Abrams et al 2006), insufficient support/resource personnel and lack of organizational commitment (Huijbregts et al 2002) all contribute to reluctance to use outcome measures. It is not known whether the removal of these barriers would increase the use of outcome measures by clinicians or not.

Purpose

This study was a component of a larger study. The primary aim of this portion of the study was to ask the question, , “To what extent is the Canadian Occupational Performance Measure (COPM) feasible for routine use on an inpatient geriatric unit?” The primary objective of the study was to survey occupational therapists currently using the COPM to gather their perceptions about the use of the COPM on a routine basis. Clinicians were asked to complete a short answer survey addressing their perspective of routine outcome measure use, immediately following a time period in which they used the COPM. The focus of the survey was to gather therapist perceptions about the use of the measure, not to address the psychometric properties of the COPM.

A secondary objective of the study was to propose a meaningful template for summarizing routine COPM data. A template was proposed for routine use based on aspects of the COPM data that were meaningful to the therapists.

Literature Review

Studying the state of routine outcome measurement in rehabilitation and potential mechanisms for increasing the use of outcome measures has had some interesting results. In a study of occupational therapists, Blenkiron (2005) found a five percent rate of standardized outcome measure use in rheumatology practice yet a rate of 90% for non-standardized ADL measures. The knowledge level of standardized outcome measures in this group was low, causing the authors to speculate that the preference for non-standardized outcome measures was more an issue of using what was available and familiar; however, the difference in use rates is remarkable.

Attitude may also play a role. After a 3-month period of mandated outcome measure use, 67% (n =158) of clinicians in one study stated that the burden of measurement was too high and that even if it helped them provide better care, they would still not elect to use a measure routinely (Walter et al 1998). Even mandatory outcome measure use has limitations. One study only managed to describe an increase in use of 36% (30%-66%) when a regulatory organization stipulated outcome measure use as a requirement for practice (Abrams et al 2006).

A study that examined the effects of a 6-year national plan to improve standardized outcome measure use in physiotherapy revealed that clinician perception of knowledge as a barrier to outcome measurement actually increased during this time (Kay

et al 2001). Physiotherapist perspectives indicated that measures were used unsystematically and only when time permitted (Huijbregts et al 2002). Additionally, therapists identified difficulties in summarizing outcome measure data. Barriers to outcome measure use were proposed by the physiotherapists surveyed but since the therapists were not using outcome measures to any great extent, the barriers were only proposed barriers, making it difficult to conclude if the removal of the proposed barriers would actually facilitate use.

Toomey et al (1995) studied reasons why some therapists seemed able to adopt the COPM into practice and some did not. The study highlighted the dramatic polarity of opinion expressed related to barriers and facilitators. Some individuals felt the instrument was threatening for the client while others felt it was helpful in focusing the client. The COPM was felt to both take too much time and increase the efficiency of time. The same issues were identified as both barrier and facilitator. The conclusions in this study were based on a group that used the COPM and a group that did not, however the group that were identified as COPM users only used the COPM on average two times over the course of one year.

Bodiam (1999) used the COPM on a neurorehabilitation unit and concluded that it is beneficial and valuable. Summary information was provided on types of issues identified using the COPM and overall changes in performance and satisfaction but most of the focus was placed on the effectiveness of the measure in this environment, not on the value and use of the instrument as a routine measure.

More applied clinical knowledge is needed on routinely using outcome measures (Gilbody et al 2002). Clinically based research on clinicians' experiences of using an outcome measure on a routine basis, both their perceptions as well as potential ways of summarizing the information, would be of tremendous assistance in directing how to move forward with this area of practice.

Slade et al (1999) suggest that when considering a measure for routine use, feasibility needs to be considered. Feasibility is defined as “the extent to which a measure is suitable for use on a routine, sustainable and meaningful basis in typical clinical settings, when used in a specified manner and for a specified purpose” (Slade et al 1999, p. 245). These concepts of feasibility will provide the framework for this paper.

Very few studies define routine outcome measurement specifically. This study defines it as the systematic use of a standardized outcome measure(s) in clinical practice with every patient as a part of a standardized assessment practice guideline. An outcome is the “result of an intervention” and outcome measures “are used to demonstrate that particular goals established for a consumer have been identified and achieved” (Dittmar and Gresham 1997, p. 65).

Methods

This study took place within a larger cohort study that investigated changes in function between an experimental group that received the routine use of the COPM for evaluation/planning versus a historical comparison group that received “usual” care. The protocol for COPM use was based on the objectives of the larger study and included COPM administration on admission, at 2-week intervals throughout the client's length of

stay, and at discharge. Although not a standard procedure for COPM use, this timeframe was set to ensure the objectives of the larger study. The protocol also included the therapists meeting with the principal investigator every two weeks throughout the five months of the study timeframe to ensure protocol adherence and provide support. The protocol described above for COPM use was the context upon which the three occupational therapists in this study were basing their perceptions. Two weeks after the completion of the larger study, all three occupational therapists working on the unit were given a short answer written questionnaire asking them questions related to the feasibility of the COPM and the value of the data. This paper reports on the results of this survey. In addition, the resulting five months of COPM data were summarized into a proposed template based on what the therapists found meaningful.

Survey

The survey was designed by the principal investigator and focused on several key areas as derived from the literature on routine outcome measure use. First, questions related to the three key aspects of the definition of feasibility (routine use, sustainable use and meaningful use) as proposed by Slade et al (1999) were incorporated into the survey. Questions included “Please describe what made it hard to use the COPM routinely” and “Do you think there were benefits to you, your clients or the unit to using the COPM routinely?” Items on proposed barriers to routine outcome measure use that are supported in the literature were also incorporated. These included issues such as the measure’s value for recognizing the individual nature of clients, perceived benefit, and time and skill base required for routine use.. Lastly, in order to capture additional information on the

meaning of COPM use, the survey included questions on perceived changes to treatment and clinical decision-making as a result of using the COPM. In order to gather data to assist with the development of the template, questions included perceptions of which aspects of COPM data were most meaningful to the therapists. The survey was pilot tested on four occupational therapists prior to implementation in the study, resulting in several improvements to phrasing questions and eliminating redundancies.

Instrument

The COPM was selected for routine use in this study as it is considered a standard for identifying occupational performance issues and measuring changes in occupation (Carswell et al 2004). Completing the COPM (Law et al 2005) involves the use of a semi-structured interview in which clients are asked to identify all important occupational performance issues for them in the areas of self care, productivity and leisure. The client then rates the 5 most important issues on scales from 1-10 as to how well they think they perform these occupations and how satisfied they are with this performance. These scores are summed and averaged to create summary scores for performance and satisfaction with performance. This forms the basis of the initial assessment, facilitates goal setting and is re-scored throughout the therapeutic process at pre-determined intervals. Test re-test reliability is adequate (Donnelly and Carswell 2002), as is construct validity (McColl et al 2000) and responsiveness (Bodiam 1999, Chen et al 2002). Initial testing indicated the COPM is a useful tool that is easy to administer, simple to rate and score, and is a useful framework for initial assessment (Law et al 1994). Its use as a routine measure for

occupational therapy practice, however, has been more limited (McColl et al 2000, Toomey et al 1995).

Participants

All three occupational therapists that worked on the unit and participated in the cohort study completed the survey. They had expressed an interest in using the COPM on a routine basis and volunteered to participate. All were female, with six, eight and 31 years of practice. Their ages were 28, 32 and 51 years respectively and years working on the study unit were one, five, and one year. None of the therapists had previously used the COPM routinely but two of them had some experience using it intermittently in practice. All three received COPM training for this study including two, two-hour workshops facilitated by an expert in using the COPM with older adults (A. Carswell). Over a five-month period of time, COPM administration was attempted on all 45-client participants who consented to participate in the cohort study. Table 1 provides a brief overview of client participant demographics to provide context to the COPM data.

Table 2 outlines the degree to which the therapist participants followed the protocol for COPM use outlined in the larger cohort study. Of the 45 client participants who consented to the study, 37/45 (82%) had the COPM completed with them. Of the 8 (18% of total) clients who did not have a COPM completed, six (13% of total) were due to cognitive issues as perceived by the therapists. Three of these six were unable to complete any portion of the COPM and the other three were able to identify occupational performance issues but not able to complete the scoring.

<Insert table 1 here>

<Insert table 2 here>

The study was approved through the research ethics board at both the University affiliated with the study and the hospital where the study occurred.

Data Analysis

Descriptive content analysis of the survey were completed by the principal investigator, using the three elements of the definition of feasibility as proposed by Slade et al (1999) to organize the therapists' feedback. This involved compiling all responses, grouping similar responses together, and identifying unique as well as common responses. Results were considered more important if shared by all three therapists and if consistent with the notes taken from the bi-weekly meetings with the therapist participants. If only one therapist made a particular comment this was stated explicitly. A template for summarizing the COPM data was formulated based on therapist input and information from the survey results. COPM results from client participant data were summarized using frequencies, proportions and means in order to provide the necessary data for the template.

Findings

Survey Results

Routine Use

All three occupational therapists highly recommended the COPM for use as a routine measure on a geriatric rehabilitation unit. The biggest limiting factor to routine use, however, was using the COPM with clients with cognitive impairment. This issue was highlighted on numerous occasions by all three therapists both in the survey as well

as during the study meetings and was a more relevant issue than time constraint. The therapists felt that using the COPM was too therapist-driven and time-consuming with the cognitively impaired group. Aside from limitations with cognitively impaired clients, additional barriers to use included scoring the COPM, increased time burden and the process being “too therapist-driven”.

Meaningful Use

All three therapists felt that using the COPM helped focus treatment on occupation and improved the degree to which care was client-centred. Using the COPM created a more comprehensive client interview, an improved method of explaining the occupational therapy role and created practice that was more in keeping with relevant models of practice. The therapists perceived the benefits to their clients as improved clarity and ownership of the goals, improved self-awareness of their issues, and the opportunity to score progress themselves.

All three occupational therapists expressed how using the COPM increased their awareness of their clients’ perceptions of occupational performance. Determining the occupational performance issues was something they felt they already did regardless of whether or not they used the COPM, but routinely gathering client perceptions of occupational performance had not been a part of their practice prior to the study. All three therapists also expressed that they were cognisant of the COPM issues and scoring during the course of the clients’ length of stay, even if they did not score it multiple times during admission. They also thought about COPM findings during their treatment planning.

Sustainable Use

When asked about continued use of the COPM following the study period, one participant stated she was continuing to use the COPM and planned to do so in the future. The other two participants had begun to use it less since the study ended. The main reason provided for not continuing to use the COPM was time. Two of the therapists felt that continued COPM use was contingent on reducing their assessments to make room to use the COPM. The estimated time for completing the COPM was 20-40 minutes for one participant, 30-60 minutes for the second and 45 minutes for the third.

Summary of COPM Data

The therapists indicated that mean performance and satisfaction scores were not meaningful. The aspects of COPM data that were of greatest interest were overall rates of occupational performance issues that improved, and categorization of the types of issues identified (with self care divided into basic and instrumental). The patient perspectives of performance and satisfaction on an individual basis were greatly valued by the therapists but were also the most difficult to capture in a summary. The template in Table 3 was developed to reflect what was meaningful to the therapists, not to be comprehensive in a measurement context.

<Insert Table 3 here>

Discussion

The field of routine outcome measurement is believed to be in its infancy (Lakeman 2004) and its translation into practice has been poor. Our overall knowledge base on routine outcome measurement has been primarily gathered from clinicians not

measuring outcomes on a routine basis and our present understanding of how best to improve the use of outcome measures is limited (Blenkiron 2005). As this survey only gathered the perceptions of three occupational therapists, it should be considered a pilot project. The study is unique, however, in that the three respondents had just finished using the COPM on a routine basis making their perceptions based on actual routine use. The study also proposed a template for summarizing COPM data on a routine basis that was specifically linked to what the therapists found valuable in the data.

The survey data in this study indicates that the COPM is feasible for routine use. The therapists recommend the use of the COPM and found it meaningful. Similar descriptions of benefit have been found in other studies. Using the COPM has been found to increase the client-centred nature of practice (Donnelly and Carswell 2002, McColl et al 2005), to improve goal setting (Chen et al 2002), and to assist in defining the occupational therapy role (Fedden et al 1999). Despite these continued findings of meaning, when asked about why they do not use outcome measures, clinicians cite a perception that using outcome measures lacks value (Blenkiron 2005, Gilbody et al 2002, Slade et al 1999). Perhaps a different or broader definition of value needs to be considered when discussing outcome measurement along with a better understanding of the expectations of value.

In this study, therapists indicated that they thought about COPM results during treatment planning and informal evaluations of client progress. For these therapists, the outcome measure results were an integral component of decision-making for ongoing care and support the possibility that routinely employing an outcome measure may have

the capacity to improve care and outcomes. These results are only based on three therapists yet the potential of benefits to care and outcomes is worthy of additional research.

The incorporation of outcome measure results during the process of care might also indicate that outcome measures need to be used throughout care to re-evaluate progress and not just at admission and discharge. The COPM manual states that re-evaluation during care should be decided upon by the therapist and client depending on progress made towards achieving the goal (Law et al 2005). Donnelly et al (2004) suggested a mid way point of re-evaluation but this recommendation seemed more based on common sense than empirical data. As the time required to use outcome measures continues to play a role in routine outcome measurement, further research on optimum re-evaluation points is warranted.

When Toomey et al (1995) studied the use of the COPM, the therapists spoke of a greater belief in a clinical imperative versus a scientific imperative in defense of eliminating the scoring component of the COPM. In contrast to these findings, this study found that it was the scoring of client perceptions of performance and satisfaction that provided new and valuable clinical information.

Limits in cognition do not preclude the use of the COPM (McColl et al 2005), yet this study as well as others (Bodiam 1999, Wressle et al 2002) suggests that the COPM is more difficult with clients with cognitive impairment. A study that investigated understanding COPM instructions and scoring indicated 100% understanding of instructions in a group of 61 community dwelling individuals (aged 18-75+) who had

received occupational therapy services but only a 75% rate of fully understanding the scoring (McColl et al 2000). Our study had a 100% rate for determining occupational performance issues and a 94% rate for completing the scoring. Despite a relatively small percentage of clients who were unable to score the COPM, the issue was a significant one for the therapists. The therapists found it troubling to have to direct the process with these clients and affected the therapists' ability to use the measure routinely. It is not yet clear if this is an issue of client age (the average client age in this study was 81), client cognition or the need for more education in administering the COPM with this type of client.

This study suggests that a focus on removing barriers to outcome measurement will not result in routine and sustained use. The clinicians in this study were eager to use the COPM, received training on its use, had research and organizational support, and had a 5-month trial of benefiting from the perceived valuable effects on client care. The specific measure was focused on occupation and was individualized. Despite this elimination of many proposed barriers to outcome measure use, only one of the therapists in this study was planning continued use. Chen et al (2002) found that only 50% of the therapists involved in a study designed to increase COPM use voiced a desire to continue using the instrument. The only significant barrier not alleviated in this present study was the time constraints in using an outcome measure, yet it seems difficult to accept that as a profession occupational therapy has been unable to address the issue of time constraints for a practice area with such perceived value. Additionally, reports of high rates of non-

standardized outcome measure use (Blenkiron 2005) are not consistent with time being the predominant barrier.

The proposed template for summarizing COPM data is one of the first published summaries developed based on therapists' perceptions of value in routine outcome measure data collection and is clearly different than COPM summaries in the literature (Bodiam 1999). Summarizing outcome data is often seen as one of the difficulties therapists have with routine outcome measurement (Huijbregts et al 2002). A change score of two or more on the COPM has been established as clinically important (Law et al., 2005) and including the percentage of occupational performance issues that changed at least two points for both performance and satisfaction in the template was important to the therapists in order to capture important clinical outcomes. One of the important data elements to the therapists, perceptions of performance and satisfaction on an individual basis, was difficult to capture in a summary and could be one of the contributing factors why therapists have difficulty summarizing outcome data and do not find it useful. More attention needs to be placed on therapist relevant methods of summarizing and utilizing routine outcome data both from an individual and group perspective.

This study was limited by a short answer survey method with no additional or secondary form of measurement to enhance accuracy of the findings. There were only three participating therapists indicating the need to consider the study a pilot study. The protocol for using the COPM was based on the objectives of a larger study with related but separate objectives and it might have been more useful to study COPM use that was consistent with how the instrument was intended to be used. Additionally, the ways in

which the COPM might have been used to inform practice were not addressed. Future research should include a greater number of clinician participants and patient populations as well as a more detailed survey with quantitative scaling as well as short answer questions. Including other outcome measures would increase the depth of knowledge gained as would the use of qualitative approaches. The proposed template was not evaluated on an on-going basis making it difficult to know its overall utility.

Conclusion

The COPM may be feasible for meaningful and routine use, but not necessarily sustained use. More knowledge is needed about what clinicians expect of outcome measurement, the role that client characteristics like cognition play, and how to balance value and burden. Gathering perspectives of routine outcome measure use from clinicians who are using outcome measures routinely is beneficial and yields additional insights into the complex nature of measurement in occupational therapy practice.

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Table 1 Client participant demographics (N=45)

Characteristic (SD)	Count or Mean
Age in years	81 (10)
Gender	
Males	13
Females	32
Reason for Admission	
Ortho	24
Neuro	10
Decon [§]	11
Length of Stay in days	38.7 (10.3)
Functional Status on admission (FIM [™] admission score)	83 (12.7)
Cognitive status on admission (MMSE admission score)	26.5 (3.7)

Note. Ortho=Orthopaedic diagnosis; Neuro=Neurological diagnosis;

§=Deconditioning

Deconditioning is a term that clients would be admitted with when they are admitted from home due to poor overall health and an inability to manage.

Table 2 COPM use for client participants (N=45)

Use	Category
Count	
Unable to complete COPM	
8	
COPM completed at admission and discharge	
20	
COPM completed at admission, once during admission and at discharge	16
COPM completed at admission, twice during admission and at discharge	1

Table 3 Template for COPM data summary

COPM administration			
Timeframe: Five months (Dec 2006-May 2007)			
Number of COPM attempts: 45			
Number of COPM completions: 37		Reasons for incompletions:	6 due to cognition
			2 due to early d/c
Types of OPI's			
87% (167) self care			
105/167 (63%) basic ADL			
62/167 (37%) instrumental ADL			
9% (18) leisure			
3% (6) productivity			
Changes in occupational performance			
Number of clients: 37 clients			
85% of all OPI's improved at least 2 points for performance			
88% of all OPI's improved at least 2 points for satisfaction			

Chapter Four

Routine administration of the COPM: Effect on occupational therapy practice

Authors: Heather Colquhoun, Lori Letts, Mary Law, Joy MacDermid, Cheryl Missiuna.

Introduction

Systematic approaches in occupational therapy

As evidence-based practitioners, occupational therapists are required to determine the clinically relevant issues that will be addressed with their clients, to develop intervention plans that are consistent with these issues, to make on-going decisions about improvement, and to measure the outcomes of care (Law et al., 2005). Evidence suggests that clinicians prefer informal and unsystematic approaches for undertaking these tasks (Blenkiron, 2005; Huijbregts, Myers, Kay, & Gavin, 2002; McGlynn & Cott, 2007).

Use of standardized outcome measures by occupational therapists is consistently low across practice areas. For example, standardized outcome measure usage is less than 10% in both inpatient rheumatology (Blenkiron, 2005) and hand therapy (Michlovitz, LaStayo, Alzner, & Watson, 2001). In a study investigating the use of cognitive measures, therapists described mostly using top-down assessments but reported few standardized top-down assessments, inferring a preference for and high rate of non-standardized measurement (Douglas, Liu, Warren, & Hopper, 2007).

The same is true of the Canadian Occupational Performance Measure (COPM), a standardized instrument used in occupational therapy to determine relevant occupational performance issues (OPT's) and measure client perceptions of change in performance and

satisfaction with those issues (Law et al., 2005). Despite its relevance to occupational therapy, and 20 years of encouragement to therapists to adopt the measure, COPM use has not translated consistently into practice (Chen, Rodger, & Polatajko, 2002; Toomey, Nicholson, & Carswell, 1995).

The value of systematic approaches and standardized outcome measurement

The low use of standardized instruments and perceived preference of occupational therapists for unsystematic approaches is in contrast to evidence from other areas of health care that suggests a benefit when standardized instruments are used. An instrument used to identify patient issues in primary care increased accuracy of identifying the issues important to patients and increased patient satisfaction (Albertson et al., 2002).

Additionally, using a Health Related Quality of Life instrument to identify issues improved the accuracy of identifying health related quality of life concerns by general practitioners with their patients (Dettmer, Muller, Schornagel, Wever, & Aaronson, 2002). Evidence also supports the value of systematic approaches being used to measure important client outcomes. A standardized assessment for depression screening outperformed clinical judgment alone in terms of accuracy of depression screening (Schade, Jones, & Wittlin, 1998).

Clinicians tend to have a belief in the effectiveness of the treatment they administer and are, therefore, biased towards positively rating client improvement (Kaptchuck, 1998). If subjective judgment is the only method used to assess progress, this bias may increase. In fact, this tendency forms the basis for the imperative of independent

outcome assessment in clinical trials (Kaptchuk, 1998). The use of outcome assessment, in addition to subjective therapist determination of progress, should lead to more accurate and realistic information regarding client progress. Generally, an over-reliance on informal observation is viewed as fallible and should be reduced (Garb, 2005).

Use of standardized outcome measures is believed to improve initial intervention planning (Law, Baum, & Dunn, 2005), ongoing intervention planning (Abrams et al., 2006), communication with peers and other health professionals (Ketelaar, Russell, & Gorter, 2008), and clinician knowledge of client improvement (Abrams et al., 2006). In a recent study, greater than 90% of physiotherapists reported a perception that using outcome measures would improve communication and help direct the plan of care (Jette, Halbert, Inversion, Miceli, & Shah, 2009). These perceived benefits are supported primarily by anecdotal evidence; little clinical research evidence exists to demonstrate that the routine use of standardized outcome measures has any positive effect on practice (Gilbody, House, & Sheldon, 2007).

The COPM and occupational therapy practice

Enabling occupation is a primary goal for clients and clinicians in occupational therapy practice, including in geriatric rehabilitation (CAOT, 2002). The COPM is considered a gold standard for identifying OPI's and measuring client perceptions of changes in occupation (McColl et al., 2005). The COPM is consistent with the Canadian Model of Occupational Performance ([Canadian Association of Occupational Therapists] CAOT, 2002), its extension, the Canadian Model of Occupational Performance and

Engagement (Townsend & Polatajko, 2007) and core occupational therapy practice models (Townsend & Polatajko, 2007).

Clinicians perceive that the COPM results in more realistic and client centered goal identification (Chen et al., 2002), as well as an increase in knowledge of client perception of improvement and the degree to which care is focused on occupation (Colquhoun, Letts, Law, MacDermid, & Edwards, 2010a). They also perceive that the COPM assists with goal setting and treatment planning, provides feedback on improvements in their clients, and facilitates communication with clients (Wressle, Marcusson, & Henriksson, 2002). Clinicians indicate that their priorities are often different from client priorities, suggesting that there is value in COPM use to know the client's perspective (Law et al., 1990). This finding is supported by poor correlations between clinician and client perceptions of occupational performance in work (Boyer, Hachey, & Mercier, 2000) and an observed disconnect between client and therapist perceptions of issues in mental health (Richard & Knis-Mathews, 2010). Information gained from using the COPM has been shown to improve clinicians' abilities to predict future function in their clients (Simmons, Crepeau, & White, 2000) suggesting that the COPM provides information to clinicians that they would not have without using it. To date, no clinical research evidence exists to substantiate perceived benefits of routine COPM use or to determine if occupational therapy practice is enhanced when the COPM is administered routinely: including use throughout intervention as well as at the beginning and end of intervention.

This study was designed to determine whether the routine use of a standardized outcome measure would improve practice. Specifically, the purpose was to determine if the systematic application of the COPM, throughout the course of occupational therapy treatment in inpatient geriatric rehabilitation, would be associated with changes in five domains of practice (focus of care on occupation, knowledge of client perspective, clinical decision-making, clinician ability to articulate outcomes, documentation) when compared with the standard practice of non-systematic interview and informal determination of client perceptions of progress. Eight dimensions were measured across the five practice domains (the order in which the dimensions are listed reflects the process of care from assessment, intervention, outcomes, to documentation):

1. Proportion of treatment issues that were occupations (Focus of care on occupation)
2. Clinician knowledge of important client issues (Knowledge of client perspective)
3. Clinical decision-making for initial treatment (Clinical decision-making)
4. Clinical decision-making for ongoing treatment (Clinical decision-making)
5. Clinician knowledge of clients' perspectives on outcomes (Knowledge of client perspective)
6. Clinician ability to state client outcomes clearly (Clinician ability to articulate outcomes)
7. Degree to which documentation reflects a relationship between goals and interventions (Documentation)
8. Degree to which documentation states outcomes (Documentation)

Methods

A before and after study design with a repeated baseline was employed. All eight dimensions were measured using Chart Stimulated Recall (CSR). Focus of care on occupation (dimension one) was additionally measured with a chart audit. Measurement occurred at baseline, after three months of standard practice (control phase), and after three months of routine COPM use (intervention phase). The control phase included informal and unsystematic interview for OPI determination and informal judgments of client progress. In the intervention phase, the clinicians used the COPM for these tasks with all clients. The additional baseline measure was utilized to verify the possibility of a Hawthorne effect (see Figure 1 for a summary of the study timeline and outcomes).

<Insert Figure 1 about here>

Participants

Twenty-four occupational therapists in eight inpatient geriatric rehabilitation programs across two large urban centres participated. Inclusion criteria included: at least 75% of the occupational therapists' client caseload was 65 years of age or older; unit type was mixed diagnosis, neurology only or orthopedic only. Exclusion criteria included: therapists were currently using the COPM or had used the COPM in the last 6 months.

Clinician demographics collected included: age, gender, years of occupational therapy practice, years of geriatric rehabilitation practice, and experience with the COPM. Site-specific information collected included percent of clients greater than 65 years old, unit type, unit size, and length of stay.

Outcomes

Chart Stimulated Recall

Chart Stimulated Recall (CSR) is a useful method of measuring clinical activity in many areas of healthcare practice, including occupational therapy (Salvatori, Baptiste, & Ward, 2000). The method combines clinician interview with chart audit to score a clinician on a set of pre-determined practice dimensions that allow for comparison over time (Norman et al., 1993). Established methods were used to create the scoring guideline and included: establishing clear and measurable dimensions, standardizing scoring criteria for each dimension, developing probing questions for the interviews, establishing an interview guideline, and piloting and refining the guidelines (Norman et al., 1993; Salvatori et al., 2000). The CSR score is an average across two interviews using two separate client charts and is based on the consensus of two raters. Inter-rater reliability of this method has been found to be 0.97 (Norman et al., 1993; Salvatori et al., 2000).

An abbreviated version of the CSR scoring sheets with the detailed scoring criteria for 3 dimensions is included in Appendix A. The complete version of the CSR criteria is available from the first author.

Chart Audit

All occupational therapy issues summarized during the initial occupational therapy assessment at one participating facility were collected for both the control and intervention phases. The participating facility utilized an electronic record and recorded

OT issues in an open text box at the end of the initial assessment; the text box contents were used for the analysis. The participants were blinded to the audit. Each issue was rated as being an OPI or not in order to produce dichotomized data. Ratings were based on a set of decision rules developed for the study and were consistent with the methods used for the CSR question related to occupation. The same rules were applied to each phase of the study and were created recognizing the high prevalence of basic activity of daily living issues observed in inpatient rehabilitation (Bodiam, 1999) and allowing for raters to infer occupation based on the issue stated. For example, the phrase “mobility” was not an OPI, but “functional mobility” was an OPI, as was “dressing”. If someone listed multiple issues in the same phrase, the phrase was counted as an OPI if at least 50% of the issues listed were allowable as an OPI, given the decision rules. Two independent raters, the principal investigator (PI) and a research assistant (RA), conducted the ratings and discrepancies were resolved by consensus.

Control and Intervention

Control Phase: Occupational therapist (OT) participants utilized the standard practice of informal and unsystematic interview for OPI determination and to make informal judgments on client progress. Intervention Phase: Participants used the COPM as a routine aspect of their care. The COPM (Law et al., 2005) is a client-centred outcome measure that systematically assists in the identification of OPI's that are important to a client and measures improvements in these issues from the perspective of the client. The five most important issues are rated by the client on a scale from one to

ten as to how well they think they perform these occupations and how satisfied they are with this performance, resulting in two scores (performance and satisfaction). Procedures for COPM use in this study were consistent with those outlined in the COPM manual: COPM was used on admission, discharge and at mid-points throughout care, as agreed upon by the client and clinician (Law et al., 2005).

Each OT participant received two hours of COPM training (between the control and intervention phases) in one of three group workshops designed specifically for the study. The workshop leader had expertise in using the COPM with older adults. Ongoing support was provided by the workshop leader via e-mail throughout the intervention phase and by one face-to-face meeting at each site within two weeks of the workshop. This meeting was used to discuss any issues that had arisen over the first two weeks of COPM use.

Procedure

When therapists were enrolled in the study, the first baseline CSR interviews were completed. The 12-week control phase began after this interview. Each phase (control and intervention) was 12-weeks with a two week interval between the two phases to allow for completion of the second baseline CSR interviews and the COPM workshop. All three CSR interviews (first baseline, second baseline and post-intervention) were completed within two weeks of each 12-week phase. Therapists were asked to choose the charts of two clients for the interviews; they were asked to select charts of clients who were recently discharged and had complete documentation. CSR ratings were based on

consensus between the PI and the RA; however, the PI and RA documented pre-consensus ratings separately, prior to consensus discussions, to facilitate the consensus process.

During the intervention phase, participants submitted weekly COPM usage rates (admission, mid-point, discharge) and the number of new admissions. The chart audit data for both phases were requested at the end of the study and were obtained in anonymized form through medical records. The PI and RA, both occupational therapists, completed all CSR measurement and the chart audit.

Planned Analyses

Manual checking and inspection of descriptive statistics assessed data quality. Descriptive statistics were summarized based on relevant clinician and site characteristics.

Baseline differences were calculated using a generalized linear model applied to the two baseline CSR scores to examine whether the measurement using CSR was influencing practice.

Primary outcome: Generalized linear modeling was used to detect differences in total CSR scores between the control phase and intervention phase, with three repeated measures across time. Controlling for the covariate of degree of COPM use was included as a secondary analysis as variations in COPM use rates were expected. Significance was set at $p < .05$ and the calculations were completed using Predictive Analytics SoftWare Statistics, version 18 (SPSS, Inc., Chicago, IL). All participants were included in the

analyses regardless of their degree of COPM use. A secondary analysis of each individual dimension was undertaken using the same procedures of generalized linear modeling. To account for multiple testing in examining 8 individual practice dimensions, a Bonferroni correction (Norman & Streiner, 2008) was applied to the p value ($p < .05$) which led to significance being set at $p < .006$ ($1/8$). The degree of COPM use was determined using counts. A Chi Squared statistic was used to test differences in proportions of occupation-focused issues from the chart audit data.

Findings

All twenty-four occupational therapists participated in the study with no drop-outs. The average participant age was 32 years, with the average number of years of occupational therapy practice and geriatric occupational therapy practice being 5.7 and 4.1 years, respectively.

Participants reported limited experience with the COPM with 88% (21/24) indicating minimal to no experience with the COPM. Of the two participants who indicated significant COPM experience, one was an experienced therapist of 20 years and the other was a new graduate with significant COPM experience through occupational therapy education. Only one participant rated their COPM experience as moderate.

The majority of participants worked on mixed diagnosis units (19/24) with smaller numbers working on neurology only (3/24) and orthopedic only (2/24) units. Mixed units were a combination of at least two of the following: orthopedic, activation, de-conditioning, neurology, medicine, fractures, oncology, post-surgical. Unit size ranged from 24-52 beds and average lengths of stay from 2 weeks to 3 months. All participants

reported caseloads of at least 75% older adults (greater than 65 years old). Table 1 and 2 summarizes demographic and unit information.

<Insert Table 1 about here>

<Insert Table 2 about here>

The rate of COPM use during the intervention phase ranged from 0 times per week to 2.92 times per week. Although a facility-specific analysis was not conducted, 6/8 sites are represented in the top half of COPM users. The rate of total COPM use for the intervention phase was 34% (164 of initial COPM's completed for 476 total new admissions). Of note is the difference in COPM use between the first and second halves of the 12-week intervention phase. Week one to six had a 47% (111/238) rate of COPM use with new admissions and week six to twelve had a 22% (53/238) rate of use. Table 3 summarizes the COPM use data.

<Insert Table 3 about here>

Twenty-three of 24 participants were able to attend the training workshop: no participants utilized the workshop leader on e-mail throughout the intervention phase and all sites except one (representing two participants) had the face-to-face meeting. The participant who could not attend the workshop believed she had adequate training as a recent graduate and declined to watch a video of the workshop. This participant was in the moderate COPM users group. The site without the face-to-face meeting declined the meeting, indicating no additional need for support. Both of these participants were in the high COPM users group.

Baseline differences: The generalized linear model applied to baseline differences (first baseline and second baseline) indicated a statistically significant effect in a negative direction ($F = 11.73$, $df = 1$, $p < .01$) indicating that practice performance decreased. Although a true decrease in participant practice ability is possible, it is believed to be unlikely given a three-month timeframe. One potential reason for the negative baseline differences can be explained by examining differences in each of the eight practice dimensions separately together with an analysis of the agreement of pre-consensus CSR scores between the PI and RA. Three of the eight practice dimensions have a statistically significant result in a negative direction and two of these three dimensions have the lowest levels of pre-consensus agreement between PI and RA (see Table 4). The dimensions with low levels of agreement presented challenges in reaching consensus by the PI and RA and subsequently, underwent minor revision to scoring criteria following the first baseline measure. This change in calibration of the CSR scoring criteria may have resulted in unintended differences in scoring and resulted in a systematic effect that reduced scores for these dimensions. If calibration changes in CSR scoring were the source of the negative baseline differences, the second baseline measure represents the most accurate baseline measure. No changes occurred in the CSR scoring criteria from the second baseline to the post-intervention measure. The lack of an improvement in scores between the repeated baselines suggests that a Hawthorne Effect for the post-intervention CSR measure would be unlikely.

<Insert Table 4 about here>

Primary Analyses: A generalized linear model was used with three repeated measures across time with total CSR score as the dependent measure. This analysis indicated a statistically significant result for time ($F = 12.4$, $df = 2$ $p < .0001$) across all participants. In order to account for the negative baseline differences, pairwise comparisons were calculated revealing a statistically significant result for time from the first baseline to the second baseline in the negative direction ($p < .01$), and a statistically significant result in the positive direction for both the first baseline to post-intervention ($p < .0001$) and for the second baseline to post-intervention ($p < .0001$). Regardless of which baseline is utilized, the results are consistent. See Table 5 for a summary of mean CSR scores across the three measures including baseline one and baseline two.

As a secondary analysis, and in order to examine the relationship between practice changes and degree of COPM use, the analysis was repeated using a between-subjects group factor for frequency of COPM use divided into three groups of low, moderate and high COPM use (low = weekly rate of COPM use ≤ 0.25 ; moderate = weekly rate of COPM use $> .25$ and < 1.00 ; high = weekly rate of COPM use ≥ 1.00). These groupings were based on an attempt to have approximately equal groupings and to isolate the participants that used the COPM the greatest during the intervention phase. The second baseline measure was utilized for this analysis. Time was statistically significant ($F = 91.75$, $df = 1$, $p < .0001$) but the group factor was not significant ($F = 2.08$, $df = 2$, $p = .150$). There was no dose response based on degree of COPM use; however, the CSR means for the three separate groups of low, moderate and high COPM use indicate a trend of increased effects with increased use of the COPM (see Table 5 and Figure 2).

<Insert Table 5 about here>

<Insert Figure 2 about here>

The chart audit completed for the degree of care focused on occupation (dimension one) was statistically significant for an increase in issues identified that were focused on occupation ($X^2 = 5.1$, $df = 1$, $p < .05$). The number of issues identified as OPI's were 497/1535 (32%) for the control phase and 633/1752 (36%) for the experimental phase.

Secondary Analyses: All eight CSR outcomes were analyzed individually using the same procedures as the primary analyses. All domains except focus of care on occupation (dimension one) and documented relationship between interventions and goals (dimension seven) had a statistically significant result for time ($p < .0001$). Analysis of the dimensions investigating the relationship to degree of COPM use and utilizing the same procedures followed for the total CSR scores indicated no relationship to degree of COPM use ($p > .05$). Table 6 provides a summary of this secondary analysis from the second baseline to the post-intervention measurement.

<Insert Table 6 about here>

Discussion

Evidence to support an effect of outcome measurement on practice is critical for understanding the value of standardized outcome measure use and the use of formal versus informal approaches to measurement. This study investigated the effect of routine use of the COPM on eight dimensions of practice. The hypothesized dimensions of practice were based on proposed effects, aligned with the context of the COPM, as well

as based upon the more general effects anticipated from routine standardized outcome measurement.

This study found a statistically significant and clinically important improvement in practice with introduction of the COPM using a total practice CSR score across eight practice dimensions in inpatient geriatric rehabilitation. Analyses involving the two baseline measures suggested that a Hawthorne Effect was unlikely: participants did not appear to improve in their ability to answer the CSR questions based on repeated interviewing. COPM research has been conducted on gathering clinician perspectives on COPM use (Chen et al., 2002; Colquhoun, Letts, Law, MacDermid, & Edwards, 2010a; Wressle, Marcusson, & Henriksson, 2002), understanding the relationships between client and clinician goals (Boyer, Hachey, & Mercier, 2000; Law et al., 1990; Richard & Knis-Matthews, 2010), understanding the potential for COPM administration to improve client outcomes (Colquhoun, Letts, Law, MacDermid, & Edwards, 2010b), and determining if the COPM contributes to accuracy of future function decisions (Simmons, Crepeau, & White, 2000). No studies have established clinical research evidence for benefits to occupational therapy practice when the COPM is introduced.

When accounting for the degree of COPM use, the analysis indicated that increasing levels of practice improvement were not found with increasing levels of COPM use. There are several possible reasons for this lack of a dose response. When examining the three levels of COPM use (low, moderate, high), mean scores indicate a trend of increased improvements with increased frequency of COPM use: it is possible that resulting sample sizes in the sub-group analysis did not provide enough power to

adequately detect group differences. Given the effect sizes and CSR mean scores for the three sub-groups, it would have been necessary to have at least 34 people in each sub-group to detect a 9% difference between the high and moderate COPM users groups with 80% power. Also, although the intervention was focused on COPM use, it also included additional elements of COPM introduction. All participants except one attended the two-hour COPM workshop and all participants except two received the small group face-to-face meeting regarding COPM use. These interventions included discussions on the value of client-centred practice, the importance of measurement, and the challenges of determining relevant OPI's. These elements associated with introducing the COPM may have contributed to the overall effect on practice for all participants, regardless of the degree to which the COPM was ultimately used. A positive effect could be realized from introducing the measure; further research with larger samples will be needed to determine if this positive impact is greater with greater frequency of use.

Chart audit results indicated an increased proportion of issues identified that were actually occupation-focused for the intervention phase as compared with the control phase. As the primary analysis for this individual dimension, this is an important result and substantiates perceptions of occupational therapists that using the COPM can increase the focus of care on occupation (Colquhoun et al., 2010a). The secondary analysis for this practice dimension using CSR did not find a statistically significant result for an increase in the degree to which care was focused on occupation. Although both data sources used to measure this practice dimension (chart audit and CSR) measured the degree to which care was focused on occupation, they are distinct data sources and suggest a differential

effect of reporting of issues when a client is newer to a program of care. The chart audit captured OPI's immediately after client assessment while the CSR interview captured therapist descriptions of OPI's after discharge. It is feasible that using the COPM can increase the degree to which care is focused on occupation after completion of initial assessment but that this use is not necessarily maintained over the course of care, particularly with minimal mid-point and discharge COPM use (this study had a 3% rate for mid-point COPM's and a 12% rate of discharge COPM's). Trentham & Dunal (2009) studied therapist perspectives on identifying OPI's with older adults and found the process to be highly complex highlighting the need for rapport building prior to OPI identification and the iterative nature of OPI identification. The process used by the participants to identify OPI's in the control phase of this study was not examined and the specific ways in which the COPM might facilitate this process are not known. Future study is required on the nature and process of OPI identification; particularly how an outcome measure like the COPM may facilitate this process throughout care.

The secondary analyses of individual CSR dimensions revealed a significant effect for all practice dimensions except *focus of care on occupation* (dimension one) and a *documented relationship between client goals and interventions* (dimension seven). The degree to which COPM administration could affect the focus of care on occupation as measured after client discharge is unclear, particularly with participants administering the COPM minimally throughout care and at discharge. Documentation of the relationship between interventions and goals was more complex to measure than the second documentation question, *documentation of outcomes*, and may be more dependent

on centre-specific charting guidelines and the need for more time using and integrating the COPM into practice. Of note is that several of the practice dimensions investigated (for example, *decision-making for ongoing care* and *documentation of outcomes*) are, in part, dependent on mid-point and discharge COPM administration. Despite low levels of achievement for these aspects of COPM administration, positive effects were still found on some dimensions. When examining how the eight individual practice dimensions relate to the five practice domains studied (focus of care on occupation, knowledge of client perspective, clinical decision-making, ability to articulate outcomes, documentation), positive practice change was found in at least one aspect of all domains with several domains indicating positive practice change in all aspects of the domain (knowledge of client perspective, clinical decision-making, ability to articulate outcomes).

This study achieved a 34% rate of COPM use in a group of participants who expressed interest in using the COPM and consented to COPM use with every client for three months. The challenges associated with incorporating outcome measures into practice are well documented (Jette et al., 2009) and even studies that mandate outcome measure use as a regulatory component of practice show modest (30%) success (Abrams et al., 2006). Use rates in this study declined substantially over the course of the study. Even with motivated clinicians and a limited time commitment, incorporating the COPM into usual care was a challenge. Both Chen et al. (2002) and Colquhoun et al. (2010a) found that plans to sustain COPM use following a study targeted at using the COPM was limited. Although these studies were not aimed specifically at increasing or sustaining

COPM use, they do signal limited COPM use despite overall perceptions of value (Colquhoun et al., 2010a) and interest in using the instrument. There have been attempts to encourage COPM use by mitigating some of the perceived barriers to use (McColl et al., 2002), publishing summaries of COPM research (CAOT, 2006) and reporting that clinicians are thinking less negatively about the COPM (Parker & Sykes, 2006), yet there is still limited evidence of significant COPM use within some occupational therapy environments. Unfortunately, specific use rates in practice, outside of research studies involving the measure, have not been reported.

Despite a COPM use rate lower than study authors anticipated, the effect sizes for practice improvement with introduction of the COPM are noteworthy (1.8, 2.4 and 3.4 across low, moderate and high COPM use sub-groups respectively). If practice can be improved, not only through new or altered interventions, but by utilizing measurement instruments beneficially within existing practice, the implications for measurement as an integral component of care would be significant.

Limitations

Although a reliable and valid process for developing the CSR scoring protocol was used, measuring change in practice is a complex undertaking and additional pilot testing to further develop CSR scoring criteria prior to the initial baseline measure may have reduced the uncertainty surrounding the negative baseline differences. CSR was determined to be the best method to measure practice; however, using other methods in conjunction with CSR (observation, video) may have strengthened the results, as would

have blinding CSR assessors to the study conditions. Given the nature of the COPM as a client-centered outcome measure, it is possible that effects of COPM administration would also affect the client's perspective and capturing these perspectives would have added depth to the results. Considerable variability in COPM use rates resulted in limitations in our understanding of the relationship between practice change and COPM use. Earlier recognition of the need for more ongoing training and support for COPM use, even in a motivated group of participants, might have alleviated some of this issue.

Conclusion

The results of this study indicate an improvement to many dimensions of occupational therapy practice with the introduction of the COPM in inpatient geriatric rehabilitation. The nature of this improvement in relation to frequency of COPM use is unknown. This research has implications for the extent to which this instrument is an essential component of practice, the role of systematic and unsystematic approaches in occupational therapy, as well as the role of measurement within occupational therapy practice in general.

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Appendix A

Abbreviated CSR scoring criteria with probing questions

1. Focus of issues on occupation

Probe: “What were the main issues that you worked on with this client?” (total #)

1	2	3	4	5	6	7	Pre-consensus
1	2	3	4	5	6	7	Post-consensus
No occupation issues (0%)	<=25% of issues = occupation	< 50% of issues = occupation (26-49%)	50% are occupations (50%)	>50% issues = occupation (51-74%)	>=75% issues = occupation (75-99%)	All issues = occupations (100%)	

Describe/document issues: _____

2. Knowledge of client relevant occupational performance issues

Probe: “Of these issues, which were the most significant to the client? How do you know? How did you find out? What would the client say if we asked them?”

1	2	3	4	5	6	7	Pre-consensus
1	2	3	4	5	6	7	Post-consensus
Uses many “I think” statements or states “I do not know”	Does not know for sure but makes a reasonable guess or states with great uncertainty		Uses “I think” statements but has some sense of what client thinks	Knows clients view but only because client told them		Knows client’s view (i.e. backs up response with evidence, uses clear methods, no hesitation) Asks client specifically as a routine part of care	

Describe/document issues: _____

3. Decision-making for initial treatment

Probe: “Can you tell me more about how you set your treatment priorities? Why did you start where you started? How did you know to start where you did?”

1	2	3	4	5	6	7	Pre-consensus
1	2	3	4	5	6	7	Post-consensus
No rationale or process to ensure plan client focused	Rationale only consists of “this is just what I usually do”		Some rationale but plan vague or not client focused or not related to initial goals Rationale consists partially of “this is just what I usually do”	Some evidence of a systematic approach but not fully clear. Partially related to goals or partially client focused.		Clear rationale or reasons for plan, intervention linked to goals Evidence of systematic approach that is then applied to use.	

Describe/document issues: _____

Table 1
Participant demographics

Age	Years of Practice	Years of Geriatric Practice	Experience with COPM level (count)
Mean (SD)	Mean (SD)	Mean (SD)	
Median, range	Median, range	Median, range	
32 (6)	5.7 (5.1)	4.1 (3.7)	Never (6)
31, 25-47	3.5, 0.3-20	2.2, 0.2-15	Minimal (15)
			Moderate (1)
			Significant(2)

Note. Never = Never used COPM; Minimal = <10 times use; Moderate = 10 to 20 times use; Significant = >20 times use

Table 2
Site information ^a
Site n=8
Participant n=24

Characteristic	Category (count)
% clients > 65	90-100% (14) 75-90% (10)
Type of client	Mixed diagnosis (19) Neuro only (3) Ortho only (2)
Number of beds	20-30 (9) 30-40 (9) 40-50 (6)
Length of Stay	2-4 weeks (3) 4-6 weeks (10) 6-12 weeks (6) 12-16 weeks (5)

Note. Mixed=two of any of the following: orthopedic, activation, de-conditioning, neurology, medicine, fractures, oncology, post-surgical; Neuro=Neurological only service;

Ortho=Orthopedic only service.

^a Information gathered via therapist report.

Table 3
Total COPM use over 12 weeks, n=24

Avg COPM's per week Mean (SD) Range	Admissions (count)	Initial COPMs (% of total admissions)	Mid COPM's (% of total admission)	D/C COPM's (% of total admissions)
0.7 (.71) 0.00-2.92	476	164 (34%)	15 (3%)	59 (12%)

Note. Avg = Average; D/C = Discharge.

Table 4

Individual CSR baseline results at 1st and 2nd baselines with pre-consensus agreement
n=24

CSR Outcome	1 st Baseline Mean (SD)	2 nd Baseline Mean (SD)	ICC Pearson's r
1. Focus of issues on occupation	3.9 (1.34)	3.9 (1.3)	.94
2. Knowledge: client OPI's	5.1 (1.56)	4.3 (0.96)*	.88
3. Decision-making for initial treatment	5.54 (0.93)	4.7 (0.80)*	.68
4. Decision-making for ongoing treatment	5.29 (0.95)	4.6 (0.95)*	.70
5. Knowledge: client views on outcome	4.5 (1.36)	4.2 (1.07)	.88
6. Ability to state outcomes	5.40 (0.98)	5.0 (0.93)	.70
7. Documentation: interventions and goals	4.6 (1.32)	4.85 (1.2)	.85
8. Documentation: outcomes	5.1 (1.33)	4.6 (1.2)	.92

* $p < .05$

Note. ICC = Intraclass Correlation Coefficient; OPI = occupational performance issue.

Table 5

Mean CSR scores across repeated measures for all participants and divided into 3 groups of COPM users

Measure	COPM use	Mean (SD)	Sample size
First Baseline	All	39.5 (6.1)	24
	low	40.5 (5.7)	10
	moderate	36.0 (6.4)	7
	high	41.7 (5.5)	7
Second Baseline	All	36.1 (4.1)	24
	low	35.5 (2.6)	10
	moderate	35.8 (3.9)	7
	high	37.3 (6.1)	7
Post-Intervention	All	45.8 (4.7)	24
	low	43.2 (4.2)	10
	moderate	45.0 (3.5)	7
	high	50.1 (3.7)	7

Note. Low = weekly rate of COPM use ≤ 0.25 ; moderate = weekly rate of COPM use $> .25$ and < 1.00 ; high = weekly rate of COPM use ≥ 1.00

Table 6
Individual CSR outcome results
Secondary Analysis
n=24

CSR Outcome	Second Baseline Mean (SD)	Post-Intervention Mean (SD)	p
1. Focus of issues on occupation	3.9 (1.3)	4.7 (1.6)	.053
2. Knowledge: client OPI's	4.3 (0.96)	6.3 (1.0)	.000*
3. Decision-making for initial treatment	4.7 (0.80)	6.0 (0.75)	.000*
4. Decision-making for ongoing treatment	4.6 (0.95)	5.9 (0.65)	.000*
5. Knowledge: client views on outcome	4.2 (1.07)	5.8 (1.3)	.000*
6. Ability to state outcomes	5.0 (0.93)	5.8 (0.73)	.003*
7. Documentation: interventions and goals	4.85 (1.2)	5.1 (1.31)	.137
8. Documentation: outcomes	4.6 (1.2)	6.1 (0.90)	.000*

* $p < .006$

Note. OPI = occupational performance issue.

Figure 1
Study timeline and outcomes

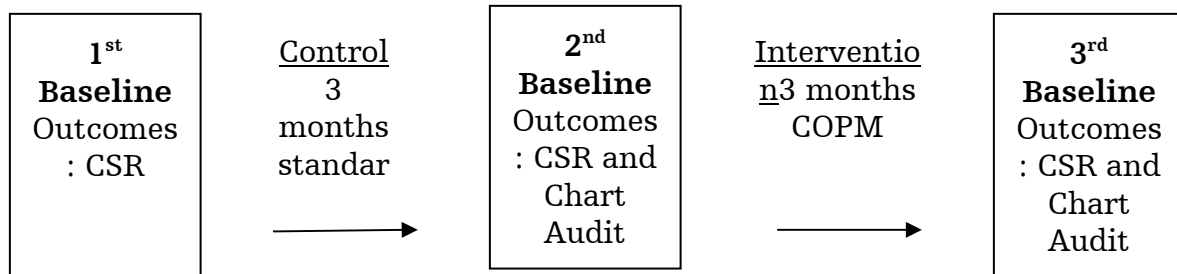
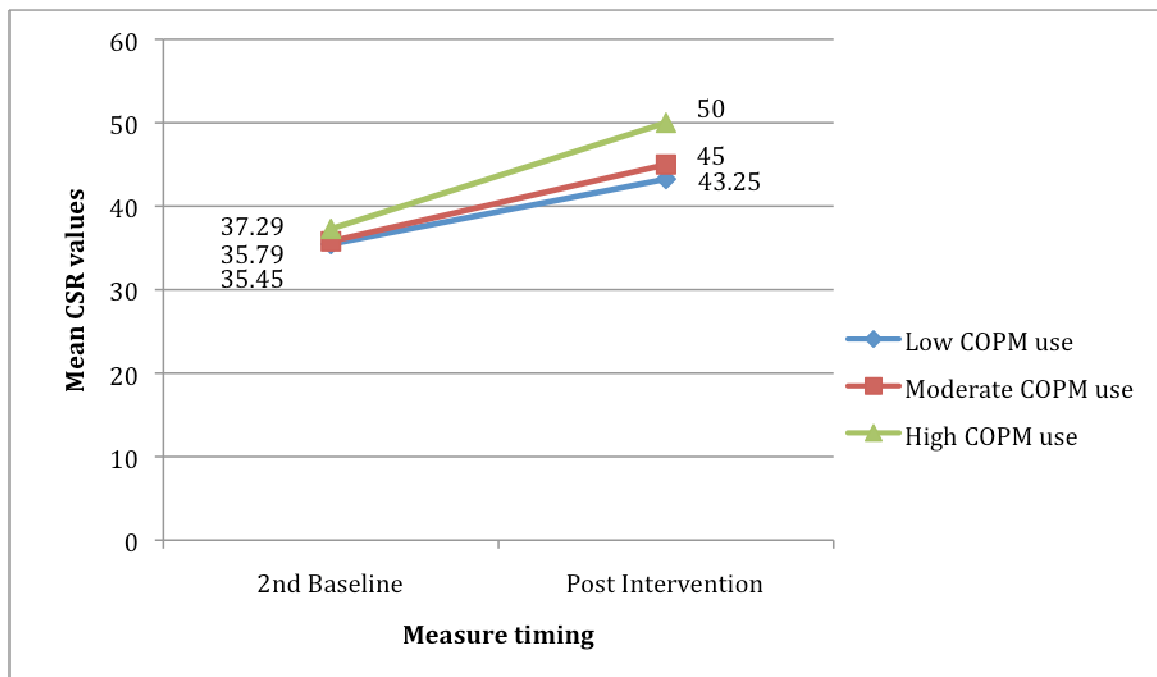


Figure 2
Mean CSR scores from 2nd Baseline to Post-intervention in three sub-groups of COPM users



Chapter Five: Discussion

This thesis examined three concepts in the field of routine outcome measurement in occupational therapy: the effect of outcome measurement on clinical outcomes and practice; therapist perceptions of using an outcome measure routinely; and, an exploration of the best approaches to summarizing routinely collected outcome measure data. The thesis contributes evidence regarding the degree to which measurement should inform clinical practice, and how therapist perceptions of routine outcome measurement can contribute to our understanding of why this aspect of practice has seen such limited uptake. More importantly, this thesis challenges existing assumptions regarding the value of routine outcome measurement and provides supportive evidence regarding the effect of using standardized outcome measures in occupational therapy practice.

This discussion summarizes the study results and places the focus of each paper within the field of routine outcome measurement in health care, with an emphasis on occupational therapy. First, each study is briefly summarized, including the main study findings. The findings are then reviewed in the larger context of routine outcome measurement considering: 1) the impact of outcome measurement on client outcomes and clinical practice; and, 2) clinician perceptions of outcome measure use and summarizing outcome measure data. The overall limitations of the three papers are described. Building on the research conducted, a theory of feedback is then presented and integrated into a proposed framework for examining the effect of routine outcome measurement. This latter section includes proposals for future use of the framework in studying outcome

measurement in occupational therapy practice. In conclusion, the practice, research and policy implications of this thesis are outlined.

Overview of Thesis Paper Results

All studies contained in this thesis pertained to the routine use of the Canadian Occupational Performance Measure (COPM) by occupational therapists in inpatient geriatric rehabilitation environments.

The Client Outcomes study presented data from a cohort study that investigated whether the routine application of the COPM, throughout occupational therapy treatment in inpatient geriatric rehabilitation was associated with improved functional outcome, as measured by the Functional Independence Measure™ (FIM). Changes in FIM™ scores between an experimental group (n = 45) that received the routine use of the Canadian Occupational Performance Measure for evaluation/planning were contrasted with a historical comparison group (n = 58) that received “usual” care and were analyzed using generalized linear modeling. Results indicated statistically significant changes in FIM™ scores, over time, for both groups. Results for differences between groups were limited due to underpowered analyses; however, no medium to large effect can be expected. Additional research is required to determine the benefits of measurement to client outcomes; however, this study began exploring the relationship between routine use of the COPM and client outcomes in the field of occupational therapy.

The Therapist Perceptions study presented data collected to meet the secondary objectives of the Client Outcomes study. These secondary purposes were to gather

therapists' perceptions of the experience of routine outcome measure use, and to propose a therapist-driven summary of COPM data to inform practice. A written questionnaire was used with three occupational therapists, following five months of mandated COPM use in geriatric rehabilitation, and resulting COPM outcomes data were summarized into a template using input from the three therapists. Results indicated that the clinicians perceived considerable value in using the COPM; however, challenges related to sustaining their use of the COPM and using the COPM with individuals with cognitive impairment, were identified. Two of the three participants did not plan to continue using the COPM, citing time limitations as the reason. The participants felt that they would need to eliminate existing elements of their assessment, if they were to add the COPM to their assessment protocol. Clinicians appeared to value individual outcome measure data over aggregate data in summaries of COPM outcomes data. This study provided perceptions of COPM use that had not currently been addressed in the literature: perceptions of occupational therapists with recent routine use of the COPM. Additionally, the study provided the first proposed template for summarizing routinely collected COPM data that was developed using clinician input.

The Practice Change study determined if the systematic application of the COPM, in inpatient geriatric rehabilitation, was associated with changes in five domains of practice (focus of care on occupation, knowledge of client perspective, clinical decision-making, clinician ability to articulate outcomes, documentation) when compared to usual care of unsystematic interview and informal determination of client perceptions of progress. This before-and-after study with a repeated baseline was completed with 24

occupational therapists on eight geriatric rehabilitation units. Using chart stimulated recall and chart audit, five domains of practice were examined over three months of standard care (no COPM) compared with three months of intervention (COPM). Results indicated a statistically significant improvement in total CSR practice score for time, indicating an improvement in practice score with COPM use ($p < .0001$). Secondary analyses revealed no relationship between practice improvement and frequency of COPM use; however, CSR means for COPM users, when divided into low, moderate and high COPM use, indicated a trend towards increased effects with increased frequency of use. This study demonstrates an improvement in five domains of occupational therapy practice with introduction of the COPM into practice and represents the first evidence in the field of occupational therapy of empirical benefits to practice with routinely utilizing the COPM.

Impact of Thesis Papers

This thesis makes several contributions to the field of routine outcome measurement in occupational therapy including: 1) the effect of measurement on client outcomes and clinical practice (Client Outcomes study and Practice Change study), and 2) perceptions of routine outcome measure use and methods of summarizing outcomes data (Therapist Perceptions study). The Client Outcomes study and the Practice Change study make contributions by testing prevailing assumptions, considering measurement as an intervention, and examining outcome measure use rates. The specific contributions of

the Therapist Perceptions study are related to perceptions of outcome measure use and the clinical utility of data that is derived from COPM use.

The effect of measurement on client outcomes and clinical practice.

Testing prevailing assumptions.

To date, the belief that using a standardized outcome measure is a benefit to clinical practice and/or client outcomes has been an assumed effect of measurement in rehabilitation (Jette et al., 2009). The traditional focus of increasing the use of outcome measures in rehabilitation, including occupational therapy, has been on establishing use rates (Abrams et al., 2006; Blenkiron, 2005; Kay et al., 2001; Michlovitz et al., 2001) and determining barriers to outcome measure use; both quantitatively (Blenkiron, 2005; Douglas et al., 2005; Haigh et al., 2001; Turner-Stokes & Turner-Stokes, 1997) and qualitatively (Garland et al., 2003; McGlynn & Cott, 2007).

The Client Outcomes study and the Practice Change study ask the question, “Does the routine use of a standardized outcome measure have an empirical effect on client outcomes and occupational therapy practice?” The contribution of this thesis is to question prevailing assumptions in occupational therapy on the value of measurement and to test these assumptions empirically.

Not all fields in health care have assumed benefits of measurement. Debate and discourse has been introduced in nursing (Lakeman, 2004) and medicine (Gilbody et al., 2002) suggesting that there is little basis to the claims of a benefit to measurement and encourage studies examining the effects of measurement. A Cochrane systematic review

in medicine on routine outcome measurement in schizophrenia found no studies worthy of inclusion and concluded that the clinical effectiveness of routine outcome measurement was unsupported in this practice context (Gilbody et al., 2003).

A systematic review of four experimental studies investigating the effect of outcome measurement in clinical psychology practice indicated that feedback in the form of outcome measure data had a positive impact on client outcomes (Lambert, Harmon, Slade, Whipple, & Hawkins, 2005). All included studies provided feedback to the clinicians in the form of a summary of client-rated scales completed prior to intervention and not completed by the treating clinician; in no case were the outcome measures themselves integrated into the clinicians' routine practice. Hatfield & Ogles (2006) confirmed the positive effect of outcome measure data feedback on client outcomes for clinical psychologists and further established that, in clients that show poor levels of improvement, more changes to treatment were seen throughout care when standardized outcome measure feedback was provided.

Medicine has also investigated the effects of using outcome measures including clinician awareness of client issues, client/physician communication, processes of care, and outcomes. A systematic review (Espallargues et al., 2000) on studies that investigated feedback to physicians on client perceived health status concluded a positive effect on processes of care but not client outcome. Studies since 2000 have reported varied results with one study finding improvements in communication but not management or outcomes (Detmar et al., 2002), one finding improvement in communication and management but not outcomes (Santana et al., 2010), and some finding improvements in communication

or outcomes without improvement in management (Hilarious, Kloeg, Gundy, & Aarson, 2008; Velikova et al., 2004).

Most of these studies provide limited theoretical explanations or specified causal pathways upon which the study hypotheses were based. Similar to clinical psychology, studies utilized external mechanisms to obtain the outcome measure data and reported the data back to the clinicians; no studies in medicine investigated outcome measure use integrated into the clinicians' practices. The rationale for utilizing external mechanisms to provide the outcome measure data was that of clinician time constraints.

The majority of studies investigating the effect of routine outcome measurement in disciplines other than occupational therapy have viewed measurement as the acquisition of knowledge. The Client Outcomes study and the Practice Change study measured the impact of using an outcome measure that integrated the outcome measure into clinical practice. The results outlined in the Practice Change study however, suggest that elements of COPM introduction in addition to COPM use may have contributed to the effect on practice: the observed practice improvements were not conclusively related to frequency of COPM use. Participants had improvements in practice despite minimal use of the COPM, and therefore, minimal acquisition of the knowledge the instrument is meant to provide. While the exact nature of how introduction of an outcome measure can improve practice requires additional research, changes to practice as a result of outcome measure use may be related to more than just the acquired knowledge from client-specific outcome measure data. The possibility that elements of training specific to the outcome measure utilized could have an affect on clinical-decision making or care needs to be

considered. In both studies in this thesis, training specific to the COPM encouraged and included client-centered approaches to practice, not just methods of outcome measure administration.

It is imperative that studies of this nature clearly outline the degree to which the outcome measure is integrated into practice, and consider the nature of the outcome measure being utilized.

Literature in psychology shows a trend towards a positive effect on practice and outcomes using feedback mechanisms (Hatfield & Ogles, 2006; Lambert et al., 2005). Although study results in medicine are less consistent, a systematic review concludes improved processes of care with no improvements in outcomes (Espallargues et al., 2000). The studies in this thesis also found an effect on practice but were inconclusive related to an effect on outcome; supporting the conclusion that utilizing an outcome measure has an effect on practice. This thesis contributes evidence specific to occupational therapy for an effect of measurement on practice and extends this evidence to include the possibility of an effect of measurement based on more than solely knowledge acquisition.

Measurement as an Intervention.

Two studies in this thesis investigated measurement as an intervention: The Client Outcomes study investigated measurement as an intervention to improve client outcomes and the Practice Change study investigated measurement as an intervention to improve clinical practice.

Proposing that the introduction of an outcome measure into occupational therapy practice is an intervention with its own resulting effect is critical if we are to undertake research in support of the effects of measurement and to understand the conditions in which measurement is beneficial. Further, as an intervention, utilizing standardized outcome measures requires the same level of supportive evidence as any intervention utilized in occupational therapy practice.

Studying outcome measurement, as an intervention, poses several challenges. The COPM Outcomes study was designed to measure the effect of using a standardized outcome measure on client outcomes. The design of such a study requires one to conceptualize outcome measures in an unconventional manner: one outcome measure is used as the independent variable and another outcome measure is used as the dependent variable. As an independent variable, the investigator is using the process of introducing an outcome measure as an intervention. As a dependent variable, another outcome measure is needed to investigate the effect of the introduction of the intervention measure. The challenge in this design is in choosing an appropriate outcome measure for the dependent variable. The hypothesized improved client outcomes will be, in part, related to the context of the independent variable measure; yet, they cannot be measured using the independent variable measure. A different, yet related, measure must be chosen that has the capacity to capture the changes hypothesized based on the use of the independent variable measure.

In the Client Outcomes study, the effects of introducing the COPM are measured using the FIMTM to measure study outcomes. In inpatient environments, the COPM is

frequently used to set self-care goals that are consistent with the activities included in the FIM™. Improved self-care outcomes were expected through better adjustments of care based on improved knowledge of improvements and increased client engagement. Yet, not all items on the FIM™ address self-care items and the FIM™ is a measure of burden of care, measuring the degree to which someone is capable of performing basic self-care skills (McDowell & Newell, 1996). The COPM is an individualized and client-centered instrument that measures client perceptions of changes in occupation (Law et al., 2005). In the case of the Client Outcomes study, the relationship between the independent and dependent variable measures was based on the assumption that performance of self-care skills as rated by another is consistent with self-perceptions of self-care skills.

While study designs and methodologies to examine the effect of measurement on client outcomes require development, this thesis provides one design through which to study these questions. The critical issues to consider and make explicit in future studies that examine the effect of routine outcome measurement are: a clear description of what the dependent variable outcome measure actually measures; a thorough description of the exact intervention being utilized (independent variable); and, the distinct causal pathways by which the independent variable is hypothesized to have an effect on the dependent variable.

The Practice Change study also investigated the introduction of the COPM as an intervention. However, instead of focusing on the effect on client outcomes, the effect on clinical practice of occupational therapists was investigated as the dependent variable. The challenge in this line of inquiry is to establish the precise ways in which practice

would be improved and, more critically, the mechanisms by which these improvements can be achieved.

When examining the effect of an outcome measure on clinical practice, it is important to consider two concepts: 1) benefits realized based on the specific instrument that is being utilized in the study; and, 2) the benefits realized from the value of measuring outcomes in general.

The COPM is a client-centred outcome measure with two sections resulting in four factors that may be influencing clinical practice when the COPM is utilized: 1) a systematic approach to issue identification; 2) a client-centred systematic approach to issue identification; 3) a standardized approach to measuring outcome in those issues from the client's perspective; and, 4) a standardized approach to measuring outcome.

Table 1 outlines the framework that links COPM attributes and general effects of measurement to the hypothesized study outcomes (the eight dimensions of practice measured in the Practice Change study). The table functions as an example for how future studies that investigate the effect of the COPM on practice may be developed and also functions as a template for future studies that consider the effect of other outcome measures utilized in occupational therapy practice. An understanding of the mechanisms whereby improved outcomes can be realized through measurement will facilitate our understanding of the contexts in which measurement is beneficial.

Outcome Measure Use Rates.

The studies in this thesis had COPM use rates that were less than anticipated.

The Client Outcomes study had an overall use rate of 38%. Clients were enrolled in the study if they consented to having their therapist use the COPM with them, and therapists were then committed to completing the COPM with those specific clients. The use rate of 38% was calculated by the proportion of consenting client participants that received the full COPM study protocol: COPM use at admission, discharge and at least one mid-point COPM.

Use rates in the Practice Change study were similar at 34% (percent of the time the COPM was used on initial assessment divided by total admissions) but differed significantly between the first and second half of the intervention period: the overall use rate was 47% in the first six weeks of the study and 22% in the second six weeks. These use rates were based on self-report but were requested on a weekly basis from study participants during the course of the study. Despite the different contexts of the two thesis studies, the similarities suggest that - in a group of motivated occupational therapists with initial support and training on COPM use, a 34-38% rate of COPM use can be achieved within research study conditions.

In both studies, COPM use rates prior to the study were 0%, creating a 34-38% increase in use as a result of the study implementation procedures. Similarly, in an intervention study focused on mandated outcome measure use in physiotherapy, an increase of 30% was achieved; use rate at baseline was 30% and use rate post intervention was 60% (Abrams et al., 2006).

Reporting of use rates in published literature varies considerably, making it challenging to establish accurate expectations for use rates. Use rates exist for individual

outcome measures (Jette et al., 2009), for average use of multiple outcome measures (Blenkiron, 2005), and based on number of reported centres that use at least one outcome measure (Turner Stokes & Turner Stokes, 1997). Use rates are further complicated by the prevalence of self-reported use and the probable presence of overestimation based on social desirability bias (Adams, Soumerai, Lomas, & Ross-Degnan, 1999).

Self-report use rates of overall outcome measure use in occupational therapy appear to be between 5 and 10% (Blenkiron, 2005; Michlovitz et al., 2001).

Physiotherapists self-report use rates vary: 48% for use of any activity limitation and participation measures (Jette et al., 2009), 88% for use of Manual Muscle Testing, 90% for goniometry, and 18% utilizing the FIMTM (Kay et al., 2001). Self-report overall outcome measures use rates have been reported for psychology at 37% (Hatfield and Ogles, 2007).

Based on existing literature of use rates and the data in this thesis, the following figures would be reasonable expectations in terms of outcome measure use rates in occupational therapy:

- Self-reported and non-mandated outcome measure use within the field of occupational therapy can expect use rates between 5-10%.
- Use rates in mandated or research oriented conditions for occupational therapists utilizing the COPM might expect use rates between 30-38%
- Increasing use rates with interventions or with training and support that are part of a research study protocol could expect a 30-38% increase above baseline rates.

- Overall use rates in occupational therapy appear consistent with other disciplines with the exception of physiotherapy, which appears to have higher use rates

Challenges remain in understanding the relationship between self-report use rates and actual use rates, use rates within study conditions as compared to everyday practice, and understanding what can be achieved in interventions designed to increase outcome measure use.

Mandated outcome measure use might appear a potential solution; however, the limited studies investigating mandated use indicate only modest increases (Abrams et al., 2006). Additionally, while CIHI mandated FIM™ use has seen facility response rates between 99-100% (CIHI, 2009b), the degree to which mandated FIM™ use has resulted in improved care or outcomes is uncertain.

Perceptions of Outcome Measure Use and Data Summarization.

Perceptions of outcome measure use.

Examining clinicians' perceptions of outcome measure use is important for understanding the role of measurement in occupational therapy practice. In the literature clinicians report clear perceptions of value in utilizing outcome measures, despite limited use. This finding is consistent across individuals who are mandated to use outcome measures (Abrams et al, 2006; Garland et al., 2003; Walter et al., 1998), individuals not using outcome measures to any significant degree (Colquhoun, Letts, Law, MacDermid, & Edwards, 2010a; Jette et al., 2009), and individuals using outcome measures within study conditions (Abrams et al., 2006; Chen et al., 2002; Garland et al., 2003). The

Therapist Perceptions study supports this trend; the three participants indicated clear perceptions of the value of COPM use, yet participants only achieved a 38% use rate and did not have plans to sustain use.

Jette et al. (2009) reported that > 90% of the physiotherapists in their study believed that outcome measures enhance communication and assist in directing the plan of care; yet, more than half (52%) indicated that they did not intend to start using outcome measures. Walter, Cleary & Rey (1998) studied attitudes of staff members who had been required to measure patient outcomes on a routine basis. The results were remarkable in that more than half (67%, n=158) of respondents indicated that, even if it meant improved outcomes for their clients, they would still not want to use an outcome measure. They felt that the negative effects of rating outcomes, which included taking too much time, would outweigh any potential benefits.

Garland et al. (2003) examined the perceived utility of measures in a sample that were utilizing a set of mandated outcome measures. Participants felt the outcome measures were lacking in clinical utility yet went on to state multiple ways in which using outcome measures were helpful and of benefit to their practice.

While an explanation for these findings is uncertain, one possible explanation is that clinician decisions for using outcome measures are based on consideration of value versus burden. Clinicians find outcome measure utilization to be valuable, perceived or experienced, but not beneficial enough to change practice, given the burden of measurement.

The predominant burden of measurement is time constraints (Abrams et al., 2006; Chiu & Tickle-Degnen, 2002; Huijbregts et al., 2002; Slade et al., 1999; Turner-Stokes & Turner-Stokes, 1997). In the Therapist Perceptions study, therapists stated that they would incorporate the COPM into practice if they eliminated a portion of their existing assessment regime; implying that time dictated their decision. This is consistent with other studies specific to the COPM (Toomey et al., 1995). The relatively high rates of non-standardized outcome measures use in rehabilitation (Blenkiron, 2005; Douglas, Liu, Warren, & Hopper, 2007; Jette et al., 2009), however, makes it challenging to fully understand the role of time in decisions about routine outcome measure use. If decisions regarding outcome measure use do result from a value versus burden consideration, focus needs to be placed on our understanding of both value and burden. Additionally, consideration might need to be given as to whether perspectives differ with different types of measures. Physiotherapy studies indicate higher use rates for impairment-based measures (Kay et al., 2001) but no studies were found outlining this specifically for occupational therapy or outlining perceptions based on type of measure.

Another possible explanation is the preference for subjective and unsystematic approaches to clinical assessment and evaluation in rehabilitation (Blenkiron, 2005; Garland et al., 2003). Standardized outcome measures are perceived to be valuable but clinicians believe subjective evaluation of client progress is either adequate or superior. Even when clinicians are mandated to use standardized outcome measures, rarely are the measures used to make decisions about client progress (Garland et al., 2003). Given the strong evidence suggesting flaws in relying on subjective evaluation of client progress

alone (Garb, 2005; Hatfield & Ogles, 2006), this issue is of critical importance to all health care fields, including occupational therapy.

Summarizing Outcome Data.

One of the perceived barriers to outcome measure use is summarizing outcome measure data and knowing how to use the data to improve practice (Huijbregts et al., 2002; Meadows et al., 1998). There are useful examples of approaches to data summarization in musculoskeletal health in physiotherapy (MacDermid & Stratford, 2004) but data summary has received minimal attention in the literature: methods of using summarized outcome measure data to inform clinical practice have received even less attention. The COPM template proposed in the Therapist Perceptions study is one of the first attempts at summarizing routine COPM data for use by clinicians. Further evaluation and development of the template is needed that results in a greater understanding of why clinicians prefer individual level data and how this might relate to outcome measure use in general. Additionally, how outcome measure data is used to improve practice is also needed.

Limitations of the Research

The limitations of the individual chapters are outlined in each manuscript. The following section outlines limitations to the thesis as a whole.

Limited data from a client perspective are included in the thesis studies. As a client-centred instrument, the COPM and its potential effects on outcomes would likely

extend to client-oriented outcomes and these outcomes could potentially represent the most significant effects. Chapter two was focused on client outcomes but these outcomes did not include the clients' perspectives; rather these ratings of client outcomes were completed by members of the health team. Additional research related to the effect of the COPM is warranted that includes data from the client perspective. This could include, for example, measuring perceptions of how client-centred care the care was according to the Measure of Processes of Care for Adults (Bamm, Rosenbaum, & Stratford, 2010; King, Rosenbaum, & King, 1996).

Incorporating the COPM into practice is a challenge; however, the magnitude of this challenge in motivated clinicians, who commit to use the COPM with their clients, was underestimated. Future studies require additional support to maximize use of the COPM with an emphasis on ongoing support throughout the study period. A 34% use rate might be within reasonable expectations but, until use rates are more consistently established for different contexts, methods of enhancing use within study conditions must be undertaken and more fully understood. Future studies could integrate best practice evidence for intervention fidelity into study design and procedures.

Each of the two studies in this thesis required knowledge translation (KT) strategies to initiate and maintain COPM use; yet, these strategies were not studied or investigated systematically. Studies investigating the effect of measurement in a clinical context should aim to consider study designs and measurement that are capable of investigating the KT strategies employed to support use. Likewise, studies with a KT focus that investigate interventions to increase outcome measure use should use designs

that include an investigation of whether the outcome measure had an effect on clinical practice and/or outcomes.

Theoretical Mechanisms for an Effect of Measurement

The thesis introduction proposes theoretical concepts and frameworks in support of the COPM as a client-centred measure of outcome, and as a systematic and client-centered approach to issue identification. It did not; however, make explicit the theoretical rationale for why a measure of outcome in general could be expected to improve clinical practice. The framework outlined in Table 1 shows the relationship between measurement attributes (the COPM and measurement in general), the dimensions of occupational therapy practice hypothesized to change, and the theoretical mechanisms by which change is achieved for each dimension of practice.

Table 1
Framework for the effect of the COPM on practice with theoretical mechanism highlighted

Dimension of Practice	Characteristics of the COPM			Outcome Measurement in General
	A systematic approach to OPI identification	A systematic approach to OPI identification that is client-centered	A measure of outcome from the client perspective	A measure of outcome
1. Focus of care on occupation	✓ TM: EBP framework			
2. Knowledge of clients perspective of most important issues		✓ TM: principles of client centred practice		
3. Clinical decision-making for initial care				✓ TM: Carver and Scheier
4. Clinical decision-making for ongoing care				✓ TM: Carver and Scheier
5. Knowledge of outcomes from clients perspective			✓ TM: principles of client-centered practice	
6. Knowledge of outcomes from clinician (own) perspective				✓ TM: Carver and Scheier

7. Documentation of relationship between interventions and goals	✓ TM: EBP framework			✓ TM: Carver and Scheier
8. Documentation of outcomes				✓ TM: Carver and Scheier

Note: OPI=Occupational performance issue; TM=Theoretical mechanism.

The primary mechanism explaining how an effect of outcome measurement occurs is by considering outcome measurement as a form of feedback. The importance of feedback for enhancing performance is one of the most dependable concepts known in the field of human psychology (Hatfield & Ogles, 2006). Utilizing a standardized outcome measure routinely in clinical practice can be considered a form of feedback to the therapeutic process. A theoretical rationale for the effect of outcome measure feedback on clinical practice and, ultimately, outcomes, can be explained using the Theory of Self-Regulation and Control (Carver & Scheier, 1982).

Theory of self-regulation and control (Carver & Scheier, 1982).

Carver & Scheier (1982) propose a Theory of Self-regulation and Control that provides a theoretical basis for the positive effect of feedback in human functioning. Initially proposed by Wiener in 1948 as a theory pertaining to machine and cybernetic feedback loops (as cited in Carver & Scheier, 1982), Carver and Scheier extended the theory to human functioning, developing a description of how feedback improves goal attainment. By considering outcome measurement as a form of feedback for the ongoing therapeutic process, the theory can explain the mechanisms by which using an outcome measure could improve occupational therapy practice and, ultimately through these changes, improve client outcomes.

The theory proposes that regulating a situation or meeting goals is achieved through a discrepancy-reducing feedback loop (Figure 1). This continual feedback loop explains how an individual discerns the degree to which a given present condition is

divergent from a standard expectation and how this information is used to develop action plans designed to reduce the discrepancies.

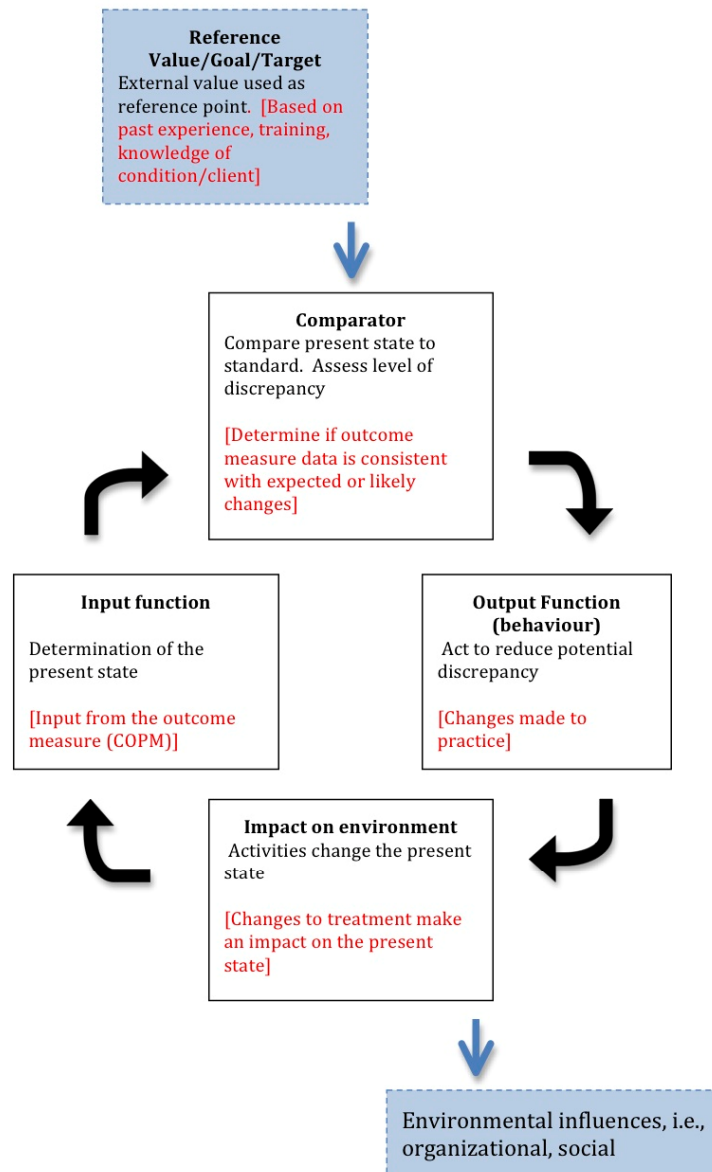
The *input function* is the determination or perception of the present condition or state. When using an outcome measure to inform clinical practice, the determination of the present condition is based on what is learned from the outcome measure. These perceptions are then compared against a *comparator* or standard. The comparator is the standard by which the therapist is determining the changes that are expected or likely. If there is a discrepancy found or perceived between the determined present state and the point of reference (*comparator*), then one will act towards reducing this discrepancy (*output function* or behaviour). The output becomes the changes to practice that result from determining divergence between the present condition and comparator. These actions, through an impact on the environment, lead to a new present condition or state and the loop continues: all designed to minimize deviations between the present state and a standard. Continued feedback on these discrepancies is what leads to successful goal achievement.

This closed loop process is influenced by two external elements. The first is the reference value that contributes to how the comparator/standard is determined. Although the exact ways in which occupational therapists determine this value are unknown, the value may be based on past experiences, training, knowledge of the condition, experience with the condition, and knowledge of the client. The second external element is the environment and this includes any external force that acts on the system and effects the changes to the present state. An example of an environmental influence could be the

organizational influences that affect the quantity of treatment provided, or influences in the client's social environment that could affect their improvements.

The loop describes the optimum conditions for reducing discrepancy between present and expected conditions. More accurate information on the present condition improves the quality by which this process occurs and the efficiency of the decisions to reduce discrepancy. The theory provides a basis to the hypotheses stated in the Client Outcomes study and the Practice Change study: a positive effect on care is realized through an improved discrepancy feedback loop and a positive effect on outcomes is realized through a positive effect on care.

Figure 1



Adapted from Carver & Scheier, 1982.

Additions regarding outcome measure process in brackets

Implications for Routine Outcome Measure Use in OT Practice.

The Theory of Self-regulation and Control explains mechanisms by which routine outcome measurement could enhance clinical practice in occupational therapy and suggests valuable considerations for future study.

How do occupational therapists determine the present condition in the absence of a standardized approach to evaluation? Clinicians can determine client improvement without using a standardized outcome measure; however, in the absence of a standardized outcome measure, subjective information is used for determining the divergence between present and expected states. The theory proposes that effective planning for goal attainment and refinements to intervention are dependent on quality judgements made throughout the discrepancy-reducing loop. If evidence supports the inferiority of using subjective evaluation alone to determine client progress, the efficiency of the loop is compromised. Useful questions in applying the theory to practice include:

- Does the addition of standardized outcome measure data to subjective evaluation of client improvement improve decision-making for care and overall determination of client status?
- Do clinicians using standardized outcome measure data better articulate decision-making for reducing discrepancy?
- If experienced clinicians have relied on subjective information to determine client progress for years of clinical practice, do they already have feedback systems that are perceived to function well and what are the best methods for changing how they practice?

The Theory of Self-regulation and Control supports a shift from considering outcome measurement as a task to be completed minimally on admission and discharge. If mid-point evaluation plays a large role in the benefit of measurement by guiding therapists to fine-tune interventions, more emphasis must be placed on ongoing use of outcome measures throughout care. Additionally, emphasis needs to be placed on how client discharge data are utilized and reflected upon to support future decisions of comparator values.

Implications for the ways in which therapists determine comparators and reference values are also important. The issue of from where the standard comes needs to be addressed. Additionally, does this standard develop differently when a clinician uses standardized outcome measure data to discern the present condition versus subjective evaluations?

Impact of the Thesis on Practice, Research, Policy

Practice.

Utilizing client-centred approaches, focusing intervention on occupation and measuring the outcomes of care are essential components of occupational therapy practice (CAOT, 1997; Townsend & Polatajko, 2007) and can be supported through routine use of the COPM. Occupational therapists have not made outcome measurement, and specifically the use of the COPM, a priority in practice (Blenkiron, 2005; CAOT, 2006; Chen et al., 2002). Study results in this thesis indicate that a significant improvement in eight dimensions of practice can be achieved with introduction of the COPM.

Additionally, this improvement can be achieved with minimal use of the COPM.

Improved aspects of care include: increased knowledge of client perspectives; the degree to which care is occupation focused; clinician ability to make decisions about initial and ongoing care; and, clinician knowledge of outcomes. Occupational therapy practitioners and leaders in health care should take interest in these findings. If replicated through other studies, the potential effect sizes that could be achieved are considerable.

Determining which aspects of COPM introduction specifically cause this effect requires additional study, but practitioners need to give more consideration to the use of the COPM in practice.

This thesis has practice implications for the role of objective versus subjective approaches to measurement and evaluation in occupational therapy. Several studies have indicated a preference for subjective approaches to evaluation in practice (Garland et al., 2003; Hatfield & Ogles, 2007; Jette et al., 2009), yet compelling evidence exists for the inaccuracies inherent in an over-reliance on subjective measurement approaches and evaluation (Garb, 2005; Hatfield & Ogles, 2006; Kaptchuk, 1998). Participants in the Therapist Perceptions study indicated that the key benefit of COPM use was in measuring outcome; identifying occupational performance issues was a task they felt they already did. Results in the Practice Change study suggest that there can be improvements in the degree to which care is focused on occupation, with the introduction of the COPM. Clinician assumptions about the degree to which their practice is focused on occupation requires further consideration and study.

Occupational therapy professional education programs need to evaluate the degree to which standardized measurement is taught as an integral component of care. Ensuring that the focus is placed on how to summarize outcome measure data, how to integrate the data into care, and the value of objective data in combination with subjective data are paramount.

Research.

Initial research priorities include understanding the effects of introducing standardized outcome measures into occupational therapy practice. This thesis established improvements to five domains of practice with introduction of the COPM. Uncertainty remains regarding the relationship to frequency of COPM use and the role that aspects of the measurement introduction process had, other than COPM use. Better understanding of the contextual elements of routine use of the COPM would increase our understanding of the value and benefit of routine outcome measurement and the role of systematic approaches to issue identification and evaluation in occupational therapy practice. Additionally, research that extends to other environments within occupational therapy practice and other standardized instruments would be of tremendous value to the field of measurement in occupational therapy and rehabilitation in general.

A second critical area of study is establishing evidence in support of an effect of routine outcome measurement on client outcomes. Improvements to occupational therapy practice that are shown to cause improvements in client outcomes are the ultimate goal of routine outcome measurement (Gilbody et al., 2003). The Client Outcomes study

provided initial investigation of the effect of outcome measurement on outcomes but larger studies with stronger designs (parallel group or clustered randomized controlled trials) that are capable of establishing an effect on client outcomes are imperative.

A third critical area of study is improving our understanding of the reasons why outcome measure adoption in occupational therapy has been poor. Literature on EBP for stroke rehabilitation in occupational therapy (Menon, Korner-Bitensky, Kastner, McKibbin, Straus, 2009), and literature related to the field of knowledge translation in general (Grimshaw et al., 2004), indicates that compelling evidence in support of an intervention does not necessarily mean that the evidence will lead to behaviour change. This research can be two-fold. First, innovative methods of determining clinician perspectives of outcome measurement are needed. The perceived barriers to outcome measure use are consistently reported; little more can be gained with additional surveys asking clinicians why they are not using outcome measures. The exploration of social cognitive theories [e.g. The Theory of Planned Behaviour (Ajzen, 1991)], that outline how belief constructs for specific behaviours contribute to behaviour change would be worth investigating to guide the collection of clinicians' perspectives. Second, studies that develop and test interventions to increase the use of outcome measures are needed. Solving the problem of poor use rates needs to move beyond survey data and perceptions of clinicians not using outcome measures and move into testing interventions that may increase use.

Further research directions include increasing our understanding of the value of subjective versus objective approaches to issue identification and measurement in clinical

practice. Evidence suggests a preference for unstandardized and more subjective evaluations of client progress in many fields, including occupational therapy (Garland et al., 2003; Jette et al., 2009). Yet, evidence that subjective clinical judgments are inferior to objective outcome data exists both conceptually (Garb, 2005) and empirically (Hatfield & Ogles, 2006; Hannan et al., 2005). An over-reliance on subjective and unstandardized approaches is viewed as problematic and research to examine these concepts within clinical practice and within an occupational therapy context are needed. This work should also include an examination of whether preferences and perspectives are consistent across different types of outcome measures.

There is a need to better quantify use rates, both within occupational therapy in general, and specific to the COPM. COPM use rates in Canada and internationally are not known and studies outlining the use of other outcome measures in occupational therapy practice in adults are limited to use rates in musculoskeletal health and hand therapy. Use rates will help inform clinical practice, as will studies designed to investigate the effect of outcome measure use, and studies designed to increase the use of outcome measures.

A broader definition of clinical utility may also be needed. Slade, Thornicroft & Glover (1999) define feasibility of an outcome measure as “the extent to which it is suitable for use on a routine, sustainable and meaningful basis in typical clinical settings, when used in a specified manner and for a specified purpose” (p. 245). This concept is similar to the concept of clinical utility which states that a measure needs to be easy to use, have an acceptable administration time, be in a format acceptable to both client and therapist and provide useful information (Law et al., 1990). The difference is that

feasibility focuses on a measure's capacity for routine and sustainable use. What makes a measure suitable for routine use? Should we develop outcome measures differently for routine use? Do measures developed for routine use show more value for client outcome? More research that investigates a measure's feasibility for routine and sustainable use in the clinical context and that evaluates the best way to achieve information that can be fed back into practice is needed.

Policy.

Policy implications occur on two levels: regulatory policy, and health information policy. Regulatory requirements for occupational therapy in Canada outline the requirement to evaluate client outcomes but do not state that this needs to be done using standardized outcome measures ([Association of Canadian Occupational Therapy Regulatory Organizations] ACOTRO, 2000). Given the state of objective measurement in occupational therapy practice and the evidence in support of objective approaches, consideration should be given to strengthening the language in our regulatory requirements with respect to the use of standardized outcome measures for client evaluation.

Health information policy outlined through the CIHI has an increasingly strong national mandate to collect FIM™ data on every patient in inpatient rehabilitation (CIHI, 2009a). Current procedures for providing data to facilities consist almost entirely of aggregate data. Although further evidence is required on best approaches to outcome measure data summaries for use by programs and clinicians, it would be advantageous for

CIHI to consider the implications as they summarize data for programs. In addition, the possibility of providing individual level data should be considered.

Summary

This thesis has examined the effect that COPM introduction into occupational therapy practice has on client outcomes and clinical practice. The thesis has also collected perceptions of therapist participants on using the COPM routinely and has developed a template for summarizing routinely collected outcome data. Generating evidence regarding the effects of using the COPM will contribute significant information on the degree to which this instrument may be an essential component of practice and the differences that might be expected with using an objective and systematic approach over a subjective and unsystematic approach. This research has implications for the use of the COPM, the direction of knowledge translation efforts to increase its use, as well as the role of measurement in occupational therapy practice in general.

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Appendix A – McMaster University Ethics Form



RESEARCH ETHICS BOARD



REB Office, 1057 Main St. W., Hamilton, ON L8S 1B7
Telephone: 905-521-2100, Ext. 42013
Fax: 905-577-8378

Research Ethics Board Membership

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Graham Turpie MD FRCPC
Medicine
Andrew Worsrer MD
Emergency Medicine
Jim Wright BSc MD
Radiation Oncology
Ed Younglai PhD
Obstetrics/Gynecology

The HHS/FHS REB operates in compliance with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans; the Health Canada / ICH Good Clinical Practice: Consolidated Guidelines (E6); and the applicable laws and regulations of Ontario. The membership of this REB also complies with the membership requirements for REBs as defined in Canada's Food and Drug Regulations (Division 5: Drugs for Clinical Trials Involving Humans Subjects).

July 7, 2009

PROJECT NUMBER: 09-268

PROJECT TITLE: Routine administration of the Canadian Occupational Performance Measure: Effect on knowledge, clinical decision-making and care

PRINCIPAL INVESTIGATOR: Heather Colquhoun
LOCAL PI: Dr. Lori Letts

This will acknowledge receipt of your letter dated June 30, 2009 which enclosed a copy of the revised Participant Information Sheet along with a response to the specific issues raised by the Research Ethics Board at their meeting held on June 16, 2009. Based on this additional information, we wish to advise your study has been given **final** approval from the full REB. The study protocol, including the Participant & Consent Form version 2 dated June 30, 2009 was found to be acceptable on both ethical and scientific grounds. . **Please note** attached you will find the Information Sheet/Consent Form with the REB approval affixed; all consent forms used in this study must be copies of the attached materials.

We are pleased to issue final approval for the above-named study for a period of 12 months from the date of the REB meeting on June 16, 2009. Continuation beyond that date will require further review and renewal of REB approval. Any changes or amendments to the protocol or information sheet must be approved by the Research Ethics Board.

The Hamilton Health Sciences/McMaster Health Sciences Research Ethics Board operates in compliance with and is constituted in accordance with the requirements of: The Tri-Council Policy Statement on Ethical Conduct of Research Involving Humans; The International Conference on Harmonization of Good Clinical Practices; Part C Division 5 of the Food and Drug Regulations of Health Canada; and the provisions of the Ontario Personal Health Information Protection Act 2004 and its applicable Regulations.

PLEASE QUOTE THE ABOVE-REFERENCE PROJECT NUMBER ON
ALL FUTURE CORRESPONDENCE

Sincerely,

Jack Holland, MD, FRCP, FRCP (C)
Chair, Research Ethics Board
/cg

Appendix B – St John's Rehab Ethics Form

Tel: 416-226-6780
Fax: 416-226-6265
285 Cummer Avenue
Toronto, ON M2M 2G1
www.stjohnsrehab.com



TO Dr. Lori Letts
Siobhan Donaghy
Heather Colquhoun
Dr. Mary Law
Dr. Joy C. MacDermid
Dr. Cheryl Missiuna

DATE: August 27, 2009

FROM Manuel Gomez, MD

RE **Routine administration of the Canadian Occupational Performance Measure: Effect on knowledge, clinical decision-making and care**

Project Identification Number: 2009-10
Approval Date: August 27, 2009

The Research Ethics Board (REB) of St. John's Rehab Hospital has conducted a review of the research protocol referenced above on the above captioned date, and has approved the involvement of human subjects as specified in the protocol and the information sheet/consent form.

Should your study continue for more than one year you must request a renewal on or before one year from this approval date. Please advise the Board of the progress of your research annually and /or any adverse reactions or deviations which may occur in the future.

The above Project Identification Number has been assigned to your project. Please use this number on all future correspondence.

Thank you for keeping the Board informed.

Manuel Gomez, MD, MSc.
Chair, Research Ethics Board

Appendix C – William Osler Health Care Ethics Form

	WILLIAM OSLER HEALTH CENTRE	ETOBICOKE GENERAL HOSPITAL PEEL MEMORIAL HOSPITAL BRAMPTON CIVIC HOSPITAL <i>Here for you... caring for you</i>	WOHC- BCH REB DELEGATED ETHICS REVIEW CERTIFICATE

WOHC-BCH REB No.: 2009-07-29 – J. Santos		
Duration of Approval: 1 year	Ethics Expiry Date: 6 August 2010	
Principle Investigator: Jennifer Santos		
Department: Occupational Therapy		
Co-investigator(s): Heather Colquhoun Dr. Lori Letts Dr. Mary Law Dr. Joy MacDermid Dr. Cheryl Missiuna		
Study Title: Routine Administration Of The Canadian Occupational Performance Measure: Effect On Knowledge, Clinical Decision-Making And Care		
Sponsor(s): 1) Canadian Institutes of Health Research 2) Canadian Occupational Therapy Foundation		
Funding Type: ☐ Industry Sponsor ☒ Grants ☐ Award ☐ Departmental ☐ Personal ☐ None		
Institutions where the study will be conducted:		
1	Brampton Civic Hospital	
2	Etobicoke General Hospital	
Documents submitted for ethics review:		
#:	Document:	Version Date:
1	Protocol	none
2	WOHC Application	none
3	Informed Consent	Version 3, 5 Aug 09
4	Mc Master REB Ethics Approval	7 July 09
CERTIFICATION:		
1	The membership of the WOHC-BCH REB complies with the membership requirements for research ethics board defined in Part C Division 5 of the Food and Drug Regulations of Canada.	
2	The WOHC-BCH REB carries out its functions in a manner fully consistent with Good Clinical Practices	
3	WOHC-BCH REB has reviewed and approved the research project named above on this Certificate of Approval and has taken the action noted above. The research project is to be conducted by the principal investigator named above at the specified research site(s). This review of the WOHC-BCH REB has been documented in writing.	

	WILLIAM OSLER HEALTH CENTRE	ETOBICOKE GENERAL HOSPITAL PEEL MEMORIAL HOSPITAL BRAMPTON CIVIC HOSPITAL <i>Here for you... caring for you</i>	WOHC- BCH REB DELEGATED ETHICS REVIEW CERTIFICATE
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4	The WOHC-BCH Research Ethics Board and or the REB Chair and or the REB Associate Chair has reviewed the documentation for the above named project. The research study, as presented in the documentation, was found to be acceptable on ethical grounds for research involving human subjects and was approved.	
5	Approval of the WOHC-BCH REB Chair and or the REB Associate Chair is verified by the signature of one of the following.	
	6 August 2009	
DR. QAISER FAHIM WOHC-BCH REB Chair	Date:	DR. MARSHALL ZAITLEN WOHC-BCH REB Associate Chair

Appendix D – Providence Hospital Ethics Form



Research Ethics Board
Research Ethics Office
Telephone: (416) 285-3666 ext. 4101
Facsimile: (416) 285-3758
E-mail: payearst@providence.on.ca

December 15, 2009

Ms. Heather Colquhoun
School of Rehabilitation Science
Faculty of Health Sciences
McMaster University, Room 436
Hamilton, ON L8S 1C7

Dear Ms. Colquhoun:

Re: "Routine Administration of the Canadian Occupational Performance Measure: Effect on Knowledge, Clinical Decision-Making and Care"

The above-named study has been reviewed by the Research Ethics Board (REB) and approved through an expedited process. Based on adherence to the recommendations requested in the July 2, 2009 letter, the above-named study and consent form, Version 2, June 30, 2009, has been granted **Full Approval** by the REB at its December 15, 2009 meeting with a request for assurance of patient anonymity.

During the course of the research, any significant deviations from the approved protocol (that is, any deviation which would lead to an increase in risk or a decrease in benefit to human subjects) and/or any unanticipated developments within the research should be brought to the attention of the Chair of the Research Ethics Board.

As with all research studies approved at Providence Healthcare, this study will continue to be subject to annual review and approval of the REB. At such time you will be expected to submit a short progress report along with any safety letters, informed consent changes, protocol amendments, and/or revisions occurring during the previous year.

The Providence Healthcare Research Ethics Board (REB) operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans, the Ontario Personal Health Information Protection Act, 2004, and ICH Good Clinical Practice Consolidated Guideline E6, Health Canada Part C Division 5 of the Food and Drug Regulations, Part 4 of the Natural Health Product Regulations, and the Medical Devices regulations.

Sincerely,

Hazel Markwell, PhD
Chair, Providence Healthcare REB

HM/pa

Appendix E – Lakeridge Health Ethics Form



NOTIFICATION OF RESEARCH STUDY TO COMMENCE

October 5, 2009

To the Principal Investigator:
Heather Colquhoun
1400 Main St. West,
IAHS 403
Hamilton, ON
L8S 1C7
Site: Julie Langton, Lakeridge Health

cc: PASS
HIM

attach: Research Team Form

From: VP, Medical & Academic Affairs
Chair, LHC-Research Ethics Board

RI-ID# 2009-028	
Study Title: Routine Administration of the Canadian Occupational Performance Measure: Effect on Knowledge, Clinical Decision-Making and Care	
Sponsor:	☒ n/a
Initial REB-Approval Date: October 5, 2009	Expiry Date: October 5, 2010

The above named study has been approved for ethical and scientific merit by the Research Ethics Board (REB) and for administrative and resource utilization merit by Lakeridge Health. This research study may now commence, contingent upon the following:

(i) As a reminder, the REB and LHC operate in compliance with applicable laws and regulations including, but not limited to, the International Conference on Harmonization for Good Clinical Practice (ICH/GCP) Guidelines as set forth in Part C Division 5 under the Canadian Food and Drugs Act and the Tri-Council Policy Statement. As the Principal Investigator, you are responsible for the ethical conduct of all research team members during the course of the study, and for cooperating with monitoring activities determined by the REB. As such, you and your Research Team (attached) agree to undertake the study in conformity with the approved protocol, and to immediately report to the REB:



- any revisions, additions, deletions or other amendments via the *Amendment/Revised Consent Form*;
- any local, and specifically relevant external serious adverse events via the *Internal Serious Adverse Event (SAE) Report Form*; and
- any deviation or new information with respect to the protocol via the *Protocol Deviation Form*

(ii) In the event of confidentiality concerns or privacy breach, such as inappropriate and/or unauthorized use of information, you are to immediately report these to both the REB and to the LH Privacy Officer (in accordance with Ontario health privacy legislation – *Personal Health Information Protection Act, 2004*) via the *Privacy Breach Report Form*.

(iii) As the Principal Investigator, you are further expected to submit:

- an annual progress report and annual re-approval via the *Annual Report/Re-Approval Form* by September 5, 2010 if the study is expected to continue beyond the Expiry Date; and
- a *Study Closure Form* along with a copy of the final report when the study has been completed.

Contact Information:

CONTACT	NAME	PHONE
Principal Investigator	Heather Colquhoun	905-525-9140
Research Assistant	Jane Sandercock	905-525-9140 x27816
Academic Affairs – Research Program	Research Liaison	905.721.4727
Research Ethics Board	Chair, REB at LH	905.576.8711

Please feel free to contact the Research Liaison if there are any questions.

Sincerely,

Mark Taylor, MD, MSc, FRCSC, FACS
VP Medical & Academic Affairs
Lakeridge Health Education and Research Network



The REB has approved the items as indicated in your application form:

- Study Protocol including Appendices A-E
- Informed Consent Form dated September 30, 2009

Ivan Kiss, PhD, C.Psych
Chair, LHC-Research Ethics Board

Appendix F – Bridgepoint Health Ethics Form



Notification of JREB Approval

July 31, 2009

Dr. Lori Letts (c/o Heather Colquhoun)
Rehabilitation Science (Faculty of Health Sciences)
McMaster University
IAHS, 1400 Main St. W
Hamilton, Ontario

Study Title	Routine administration of the Canadian Occupational Performance Measure: effect on knowledge, clinical decision-making and care
REB Review Type	EXPEDITED REVIEW
REB Amendment Approval Date	N/A
REB Approval Date	July 31, 2009
REB Expiry Date	July 31, 2010
Documents Approved	JREB Application, Study Protocol (including all appendices A-E), Informed Consent Form (Version 3)

Dear Dr. Letts:

I am writing to confirm that your protocol entitled, "Routine administration of the Canadian Occupational Performance Measure: effect on knowledge, clinical decision-making and care" has received *full ethical approval* and you may proceed with data collection.

If, during the course of the research, there are any serious adverse events, any confidentiality concerns, changes in the approved protocol or consent form, or any new information that must be considered with respect to the project, these should be brought to the immediate attention of the JREB. In the event of a privacy breach, you are responsible for reporting the breach to the JREB (in accordance with Ontario health privacy legislation – Personal Health Information Protection Act, 2004). Additionally, the JREB requires reports of inappropriate/unauthorized use of the information.

The Joint Bridgepoint-West Park-Toronto Central Community Care Access Centre Research Ethics Board (JREB) operates in compliance with the Tri-Council Policy Statement, ICH/GCP Guidelines, the Ontario Personal Health Information Protection Act, and Part C, Division 5 of the Food and Drug Regulations of Health Canada.

Should you wish to make any further changes or revisions to any aspect or portion of the approved project, they must be submitted for consideration to the board prior to amending the protocol. Address any proposed changes to: Joint Research Ethics Board, c/o Dale Min, Bridgepoint Health, 14 St. Matthews Rd., Toronto, ON, M4M 2B5.

Appendix G – Information Sheet and Consent Form

School of Rehabilitation Science
Faculty of Health Sciences
Hamilton, ON L8S 1C7

1400 Main St., W.
IAHS 403
Fax: 905-524-0069

Phone: 905-525-9140
Ext. 27816
colquhhl@mcmaster.ca

Participant Information Sheet

Title of Study: Routine administration of the Canadian Occupational Performance Measure: Effect on knowledge, clinical decision-making and care

Locally Responsible Investigator and Principal Investigator: Lori Letts, Heather Colquhoun

Co-Investigators, McMaster University: Mary Law, Joy MacDermid, Cheryl Missiuna

Sponsor: Canadian Institutes of Health Research and the Canadian Occupational Therapy Foundation

You are being invited to participate in a research study conducted by Heather Colquhoun because you are an occupational therapist providing inpatient rehabilitation services to older adults at your facility. This is a PhD student research project conducting under the supervision of Dr Lori Letts.

In order to decide whether or not you want to be a part of this research study, you should understand what is involved and the potential risks and benefits. This form gives detailed information about the research study, which will be discussed with you. Once you understand the study, you will be asked to sign this form if you wish to participate.

Your facility, Dr Letts, and Heather Colquhoun are not under any sponsor contract for this study and are not receiving any compensation for the study.

Why is this Research Being Done?

A great deal of time is spent training and encouraging occupational therapists to use standardized outcome measures as a routine aspect of care with very poor results. Routinely employing an outcome measure is thought to have many benefits and is seen as a critical component of evidence based practice, however little empirical evidence exists as to these benefits and whether any positive changes to clinical practice or care can be expected when an outcome measure is used. Using an outcome measure is time consuming for both the therapist and client. We need to determine the benefits of using outcome measures in order to determine to what degree they should be used.

What is the purpose of the study?

The overall purpose of the study is to see if there are benefits to practice when you use the Canadian Occupational Performance Measure (COPM). This study aims to determine if there are changes to knowledge (what you know), clinical decision-making (what you are thinking), and care (what you are doing) when you use the COPM regularly. Understanding these potential changes could tell us a lot about the impact of using the COPM on care.

What will my responsibilities be if I take part in the study?

If you volunteer to participate in the study, we will ask you to do the following things:

- Participate in three hours of interview time with a research assistant and the principal investigator of the study (this will be accomplished on three separate one-hour occasions over 7 months). This interview will be audiotaped.
- Participate in a two-hour workshop to train you in the use of the COPM.
- Use the COPM with the majority of your clients for a three-month period of time.
- Answer a weekly e-mail while you are using the COPM asking you how many times that week you used the COPM.

What are the possible risks and discomforts?

There are no anticipated risks associated with you being involved in this study. The interview to determine changes in your practice will be a discussion of two patient cases of yours and is in no way evaluative of your competence as a practitioner. Data will not be shared with your employer.

How many people will be in this study?

We are hoping to have 30 occupational therapists in this study across 10 sites.

What are the possible benefits for me and for society?

There are no specific benefits to you from the study aside from an increased skill level in using the COPM. This study may increase what we know about why we should use the COPM and some of the potential advantages of using the instrument.

If I do not want to take part in the study, are there other choices?

It is important for you to know that you can choose not to take part in the study. Choosing not to participate in the study will in no way affect your employment.

What information will be kept private?

Your data will not be shared with anyone except with your consent or as required by law. All personal information such as your name will be removed from the data and will be replaced with a number. A list linking the number with your name will be kept in a secure place, separate from the study files. The data,

with identifying information removed will be securely stored in a locked cabinet. You have the right to review the audiotapes we collect of your interview. The only people who will have access to these audiotapes will be the members of the research team. The audiotapes will be erased at the same time as the other research data, 10 years after completion of the study.

For the purposes of ensuring the proper monitoring of the research study, it is possible that a member of the Hamilton Health Sciences/Faculty of Health Sciences McMaster University Research Ethics Board may consult your research data. By signing this consent form, you or your legally acceptable representative authorize such access.

If the results of the study are published, your name will not be used and no information that discloses your identity will be released or published without your specific consent to the disclosure.

Can participation in the study end early?

If you volunteer to be in this study, you may withdraw at any time and this will in no way affect your employment.

Will there be any costs?

There will be no costs to you for participating in this study.

If I have any questions or problems, whom can I call?

If you have any questions about the research now or later, please contact Heather Colquhoun at (905) 525-9140 ext 27816.

If you have any questions regarding your rights as a research participant, you may contact the Office of the Chair of the Hamilton Health Sciences/Faculty of Health Sciences Research Ethics Board at 905-521-2100, ext 42013.

Consent Statement

Signature of research participant:

I have read the preceding information. I have had the opportunity to ask questions, and all of my questions have been answered to my satisfaction. I agree to participate in this study. I understand that I will receive a signed copy of this form.

Name of Participant

Signature of Participant

Date

Consent form administered and explained in person by:

Name and title

Signature

Date

Signature of Investigator:

In my judgement, the participant is voluntarily and knowingly giving informed consent and possesses the legal capacity to give informed consent to participate in this research study.

Name of Investigator

Date

Signature of Investigator

Date

Appendix H – CSR Scoring Sheet, Full Length Version

Date (d/m/y):	
Therapist ID #:	Time 1 OR Time 2
Scorer: JANE or HEATHER	Chart #:

1. Focus of issues on occupation [C]

"What were the main issues that you worked on with this client?" (total #)

1	2	3	4	5	6	7	Pre-consensus
1	2	3	4	5	6	7	Post-consensus
No occupational Issues (0%)	<=25% issues= occupation (1-25%)	< 50% of issues = occupations (26-49%)	50% are occupations (50%)	>50% issues = occupation (51-74%)	>=75% issues = occupations (75-99%)		All issues = occupations (100%)

Describe/document

issues: _____

2. Knowledge of client relevant occupational performance issues [K]

"Of these issues, which were the most significant to the client? How do you know? How did you find out? What would the client say if we asked them?"

1	2	3	4	5	6	7	Pre-consensus
1	2	3	4	5	6	7	Post-consensus
uses many "I think" statements or states "I do not know"	Does not know for sure but makes a reasonable guess or states with great uncertainty		Uses "I think" statements but has some sense of what client thinks	Knows clients view but only because client told them		Knows client's view (i.e. backs up response with evidence, uses clear methods, no hesitation) Asks client specifically as a routine part of care	

Describe/document

comments: _____

3. Decision-making for initial treatment [DM]

“Can you tell me more about how you set your treatment priorities? Why did you start where you started? How did you know?”

1	2	3	4	5	6	7	Pre-consensus
1	2	3	4	5	6	7	Post-consensus
No rationale or process to ensure plan client focused	Rationale only consists of “this is just what I usually do”		Some rationale but plan vague or not client focused or not related to initial goals Rationale consists partially of “this is just what I usually do”	Some evidence of a systematic approach but not fully clear. Partially related to goals or partially client focused.			Clear rationale or reasons for plan, intervention linked to goals Evidence of systematic approach that is then applied to use.

Describe/document comments: _____

4. Decision-making for ongoing treatment [DM]

“Can you tell me how you decided if treatment needed to change? If so, why did treatment change? If not, why not?”

1	2	3	4	5	6	7	Pre-consensus
1	2	3	4	5	6	7	Post-consensus
No rationale / process to ensure client focused Tx; no link to	Plan is vague, not articulated well, not related to goals, ongoing outcomes		Some rationale but plan vague or only partially related to initial goals or ongoing outcomes;	Uses several methods but does not include measurement, rationale not fully systematic.			Clear rationale or reasons for plan, intervention linked to goals & outcomes; client-centred Uses several methods including measurement to

clinical goals						evaluate ongoing care.
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Describe/document

comments: _____

5. Knowledge of clients' progress from the clients' perspective [K]:

"Can you tell me about whether this client felt that they had made improvements? What do you think they would say about how much they improved while here? How do you know?"

1	2	3	4	5	6	7	Pre-consensus
1	2	3	4	5	6	7	Post-consensus
Unable to articulate client perspective or ways sought to get client feedback States "I do not know" and cannot make any reasonable guess.	States "I am not sure" or "I don't know" but can make an attempt at a reasonable guess		Makes guesses about client perspectives; Uses "I think he/she would say"... observation is prime source of info on client perspective	Is aware of client perspective but only because they client told them.			Clear, evidence-based recounting of client perception of treatment progress & how it related to goals/outcomes Asks client specifically for this information as a routine part of care.

Describe/document

comments: _____

6. Ability to communicate clients' outcomes [C]:

"Can you tell me whether you think this client achieved their goals? What were the outcomes for this client?"

1	2	3	4	5	6	7	Pre-
---	---	---	---	---	---	---	------

							consensus
1	2	3	4	5	6	7	Post-consensus
Unable to articulate outcomes/improvements; No occupational focus Complete uncertainty re: client goals whether achieved or not	Uncertain as to achieving goals but can articulate some aspects of client performance at discharge.		Indicates improvements or not but not certain of outcomes or how related to goals. Mix of performance & occupational focus outcomes.	Clear about achievement of goals but poor articulation of actual outcomes			Clear, evidence-based recounting of client outcomes & how it related to goals; occupational focus to all outcomes

Describe/document comments: _____

7. Documentation of relationship between goals & intervention [C]:

"Lets have a look at the chart – can you locate a goal for us? Show us how your charting shows a link between that goal and what you did with your client? If someone else picked up your chart, they would be able to see a relationship between the clients' goals and the intervention in the notes? Walk me through it"

1	2	3	4	5	6	7	Pre-consensus
1	2	3	4	5	6	7	Post-consensus
No documented progress notes that link goal to interventions	Some progress notes but only partially related to goals or indirectly related to goals	Many progress notes but all only indirectly related to goal/issue and not one complete note.	At least 1 complete progress note or 2-3 less complete ones Complete note= clearly identified as related to goal, intervention clear, plan stated	2 complete progress notes linking goal to intervention and plan			3 complete detailed progress notes linking goal to intervention plan

Describe/document
comments: _____

8. Documentation of outcomes [C]:

"Lets have a look at the chart for outcomes related to that goal? Can you show us what outcomes were achieved? Again, if someone else picked up your chart, would they be able to identify what outcomes were achieved? Where would they find it in the chart?"

1	2	3	4	5	6	7	Pre-consensus
1	2	3	4	5	6	7	Post-consensus
No outcomes documented	Outcomes not connected to goals		D/C measure only Outcomes present but connection to goal weak. Only a statement of status on discharge, no statement of progress.				Clear documentation of outcomes related to goal selected, includes measurement

Describe/document
comments: _____
