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A Phenomenology of Occupation-Based Hand Therapy

Donna Colaianni

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A PHENOMENONOLOGY OF OCCUPATION-BASED HAND THERAPY

A Dissertation
Submitted to the John G. Rangos School of Health Sciences

Duquesne University

In partial fulfillment of the requirements for
the degree of Doctor of Philosophy

By
Donna J. Colaianni

August 2011
A PHENOMENONOLOGY OF OCCUPATION-BASED HAND THERAPY

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ABSTRACT

A PHENOMENOLOGY OF OCCUPATION-BASED HAND THERAPY

By

Donna J. Colaianni

July 8, 2011

Dissertation supervised by Davis Somers and Ingrid Provident

The founding philosophies of occupational therapy and the medical model have been in conflict within the practice of occupational therapy for more than 60 years. This conflict is especially evident in the hand therapy arena due to the prevalence of the medical model. There is extensive literature outside this specialty area indicating that an occupation-based approach is beneficial for patients with whom it is used yet there is a lack of research on occupation-based hand therapy. Clearly describing and defining what constitutes occupation-based hand therapy can help promote occupation-based practice in keeping with the philosophy of the profession and facilitate efficacy research.

Methods: The qualitative approach of phenomenology as described by Moustakas was used. Ten participants who were: 1) occupational therapists, 2) with more than five years
of experience, 3) and who self identified as occupation-based, were recruited using criterion sampling. Data was collected through audio recorded telephone interviews and electronic mail. Analysis began with individual cases. Data was reduced and distilled into themes and descriptions of the experience of providing occupation-based hand therapy for each participant. The individual analysis was followed by a cross-case analysis revealing overarching themes and a synthesis description of the experience of providing occupation-based therapy.

Results: Five themes were uncovered that describe the experience of providing occupation-based hand therapy. 1) Influences: describes elements that influenced the participants’ experience with providing occupation-based hand therapy. 2) Occupation and Professional Identity: described how the participants think about being an occupational therapist and how others perceive occupational therapy. 3) The Psychosocial Elements of Practice: addresses the interpersonal and psychological considerations in occupation-based hand therapy described by the participants. 4) The Procedural Elements of Practice, deals with the tasks associated with providing occupation-based hand therapy that were described by the participants. 5) Negotiating a Place: addresses the difficulties of occupation-based practice in a traditional hand therapy setting and the ways the participants have dealt with these difficulties.
DEDICATION

This dissertation is dedicated to those who have loved me and put up with me for the past seven years. First, to my parents, John and Barbara Colaianni, who have always supported and encouraged my educational pursuits. To Mary, Randy, Jay and Sara, who have cheered for me. To my favorite niece, Haley, who provided lots of hugs and comic relief. To my favorite nephew, whose coming gave me something wonderful to anticipate. Welcome to the world Charlie! To my friends and colleagues Edie, Diana, Amanda, Shannon, Marsha, Deb, Jeanne and Lisa who generously offered their advice, support and prayers. Lastly, to Brendan, it’s over! I love you all.
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I will be forever grateful to Dr. Robert Gibson for all he has done for me throughout this dissertation.

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I thank my colleagues and students at both Milligan College and West Virginia University for supporting and tolerating me throughout this endeavor.
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Chapter I: Introduction and Background

Occupational therapy is based on the premise that engaging in occupation promotes and restores physical and emotional health (Trombly, 1995). Occupations are “Activities…of everyday life, named, organized, and given value and meaning by individuals and a culture. Occupation is everything people do to occupy themselves, including looking after themselves…enjoying life…and contributing to the social and economic fabric of their communities…” (Law, Polatajko, Baptiste & Townsend, 1997, p.34)

Occupational therapy was founded in 1917 by people of different professional backgrounds including medicine, nursing, social work and architecture (Barker Schwartz, 2003; Hussey, Sabonis-Chafee & O’Brien, 2007). The values of the founders of occupational therapy were influenced by their professional backgrounds and by a wide variety of social and health care movements. The occupational therapy values of holism, focusing on environmental factors, learning by doing, and the importance of order and habits in daily life arose from the founders’ involvement and interest in the social and health care movements of pragmatism, the Arts and Crafts movement, and moral treatment among others. These values supported using handcrafts, leisure, occupation and work activities as therapeutic modalities for health promotion and remediation (Barker Schwartz, 2003; Reed & Sanderson, 1999).

During the mid-20th century, occupational therapy became aligned with the American Medical Association. This alignment increased focus on the medical model in occupational therapy (Barker Schwartz, 2003). The medical model uses objective measures to discern between the freedom from and presence of anatomical and
physiological pathology, or impairment (Smart, 2001; WHO, 2001). This focus on
diagnosis and impairment is inherently reductionist and out of alignment with the holistic
values held by the founders of occupational therapy (Fitzpatrick & Presnell, 2004; Yerxa,
1983).

In the 1960s occupational therapists Mary Reilly and Elizabeth Yerxa challenged
this philosophical movement of the profession away from its founding values toward the
medical model (Reilly, 1962; Yerxa, 1967). The struggle to balance the principles of the
medical model with those of the founders of occupational therapy continues today,
particularly in the hand therapy arena (Dale et al., 2002; Fitzpatrick & Presnell, 2004).
Because of the medical environment for this specialty area of occupational therapy, hand
therapists must understand and integrate the health promoting restorative powers of
occupation (Pierce, 2001; Wilcock, 1998) with the current diagnosis and impairment
focused paradigm in hand therapy (Fitzpatrick & Presnell). Maintaining a holistic
presence in the field of hand therapy can be very difficult due to the dominance of the
medical model (Fitzpatrick & Presnell; Helm & Dickerson, 1995) and the scarcity of
research about hand therapy practice from a more holistic or occupation-based approach.

Occupation-Based Hand Therapy

Occupation-based hand therapy is described as a treatment approach that balances
the value of occupation as a therapeutic mechanism and the value of maintaining sound
biomechanical principles (Amini, 2004). This therapy prioritizes and directly addresses
the client’s performance of activities of daily living, instrumental activities of daily
living, leisure, work, play, education, and social participation. However, the treatment
approach does not ignore the biomechanical frame of reference, or the benefits of
adjunctive methods such as physical agent modalities. Rather, occupation-based hand therapy adheres to sound principles of medical-model based treatment while also accessing the restorative power of occupation (Amini).

Many occupational therapists practicing in hand therapy affirm the value of and would like to incorporate more occupation-based interventions in their practice, but are unsure of how to do so (Colaianni & Provident, 2010). This is not surprising considering that research investigating occupation-based hand therapy and comparing occupation-based hand therapy with standard impairment-based interventions is lacking. It is possible this lack of literature is because of the difficulty associated with examining a complex concept such as occupation, which is based in part on individual meaning (McLaughlin Gray, 1998; Price & Miner, 2007; Trombly, 1995).

Another possible reason for the lack of research on occupation-based hand therapy is the absence of consensus about what constitutes occupation-based practice (Price & Miner, 2007). One belief is that occupation-based practice should be focused on using the client’s occupations as an intervention to reach occupational performance goals (Killian, 2006a, 2006b; McLaughlin Gray, 1998; Pierce, 2003). “Occupation as means” and use of therapeutic occupation are two ways of describing this approach. Activities used for this approach are described as active doing, goal directed, personally and culturally meaningful, and repeatable (McLaughlin Gray, 1998). This approach is often contrasted with the belief that in occupation-based practice all types of interventions can be used as long as the end goal is occupational performance. The types of treatments used can include preparatory activities such as physical agent modalities, but do not
necessarily include occupation (Price & Miner, 2007; Earley & Shannon, 2006). This approach is also referred to as “occupation as ends” (Trombly, 1995).

**Purpose**

The historical roots of occupational therapy are consistent with a holistic and occupation-based approach to care, yet because of the small amount of research on this subject in hand therapy the approach may not be prevalent in this specialty (Fitzpatrick & Presnell, 2004). However, there is extensive literature outside this specialty area indicating that an occupation-based approach is beneficial for patients with whom it is used (Dolecheck & Schkade, 1999; Ferguson & Trombly, 1997; Hsieh, Nelson, Smith & Peterson, 1996; Jackson & Schkade, 2001; Melchert-McKearnan, Deitz, Engel, & White, 2000; Murphy, Trombly, Tickle-Degnen & Jacobs, 1999; Nelson et al., 1996; Sietsema, Nelson, Mulder, Mervau-Scheidel, & White, 1993; Trombly & Wu, 1999; Van der Weel, Van der Meer, & Lee, 1991; Wu, Trombly, Lin & Tickle-Degnen, 1998; Yoder, Nelson, & Smith, 1989; Zimmer-Branum & Nelson, 1995).

There is insufficient published research defining occupation-based hand therapy or examining its effectiveness to strongly encourage the use of this approach in the hand therapy specialty area. Nevertheless, because of the core values of occupational therapy and the effectiveness of this treatment approach in other specialty areas, there are therapists who incorporate occupation into their hand therapy interventions. Moreover, there are therapists who envision using this approach within their hand therapy clinics. The purpose of this initial study is to uncover what practicing occupational therapists perceive to be an occupation-based approach to hand therapy. The findings of this study will help to better define the extant view of an occupation-based approach to hand
therapy and lay the foundation for refining that definition and examining the
effectiveness of the approach.

Research Question: How do occupational therapists perceive and describe the experience
of providing occupation-based hand therapy?
Chapter II: Literature Review

Although the use of occupation is somewhat new and only beginning to be investigated in hand therapy, much has been written about the foundational role of occupation in occupational therapy, and the well documented effectiveness of occupation-based interventions in physical disabilities settings.

Foundations of Occupational Therapy

Occupational therapy was founded in 1917 during the industrial period by a diverse group of people based on their belief in the therapeutic value of occupation for health promotion and remediation (Barker Schwartz, 2003). The values of the founders of occupational therapy were influenced by a wide variety of social and health care movements including moral treatment, the Arts and Crafts movement, and pragmatism (Reed & Sanderson, 1999).

Moral treatment. This treatment approach for mental illness developed in France in the 19th century by Philippe Pinel and advocated for in America by Benjamin Rush, the father of American Psychiatry. Moral treatment assumed that mental illness was a physical disease than could be cured through an individualized regimen of occupations including work, recreation, religious and educational services, and group living (Caplan, 1969). The beliefs and values found in moral treatment continue today in occupational therapy including holism, the importance of environmental factors and the need for order and habits in daily life (Reed & Sanderson, 1999).

Arts and Crafts movement. William Morris and John Ruskin founded this movement in England during the early part of the 20th century. The Arts and Crafts movement sought to counteract the negative effects of industrialization through a return
to a simpler life where a person could engage both body and mind in the crafting of hand-made objects (Baker Schwartz, 2003). Occupational therapy founder Susan Cox Johnson supported the use of hand crafting in treatment:

Handcrafts have a special therapeutic value as they afford occupation that combines the elements of play and recreation with work and accomplishment. They give a concrete return and provide a stimulus to mental activity and muscular exercise at the same time, and afford an opportunity for creation and self expression. (1920, p. 69)

**Pragmatism.** This philosophy was developed by Charles Sanders Pierce in the late 19th century, and most famously advocated by educator John Dewey. Pierce taught that ideas should be interpreted through their consequences. Occupational therapy founder Susan Tracy then applied the ideas of pragmatism to occupation. She posited that action and experience help people adapt to the environment by allowing them to experience consequences and results. The concepts of learning by doing and being conscious of the environment remain important in occupational therapy today (Reed & Sanderson, 1999).

**Growth of the profession.** Growth and changes in the profession of occupational therapy influenced beliefs about the use of occupation as a therapeutic modality for health promotion and remediation. Following the founding of occupational therapy in 1917 the need for occupational therapy services grew during and after World War I and World War II. The profession expanded to treat those with physical impairments and incorporated more vocationally related skills such as carpentry into the rehabilitation of those injured in the wars. Legislation including the Rehabilitation Act of 1954 and Medicare legislation in 1965 assured the continued growth of occupational therapy (Barker Schwartz, 2003).
As occupational therapy grew, specialization in areas such as pediatrics, mental health and physical disabilities began to emerge in the 1960’s. Occupational therapy also became aligned with the American Medical Association to increase medical and scientific credibility during this time. As a result of this alignment with medicine, occupational therapists began to utilize the medical model more in practice (Barker Schwartz, 2003).

In the 1960’s occupational therapists Mary Reilly and Elizabeth Yerxa challenged the philosophical movement away from the founding values of the profession toward the medical model (Reilly, 1962; Yerxa, 1967). This challenge led to the expansion of research as well as the development of new theories about occupation and its effect on health and well-being (Barker Schwartz, 2003).

**Occupation’s Effect on Health**

The influence of occupation on health is central to occupational therapy philosophy. Occupation is the means by which humans maintain their health by providing “the mechanism to fulfill basic human needs essential for survival and to enable people to adapt to biological, social, and environmental changes.” (Wilcock, 1998, p. 13). A healthy pattern of occupational engagement improves health (Clark et. al., 1997). The lack of a healthy, balanced pattern of occupational engagement, or occupational dysfunction, can lead to diminished health (Brownson & Scaffa, 1996).

**Occupational dysfunction.** Risk factors for occupational dysfunction include occupational imbalance, occupational deprivation, and occupational alienation (Wilcock, 1998). Occupational imbalance is a deficiency in the balance between work, self-care, play, leisure and rest, which results in the individual’s inability to meet their health needs.
A balance of human occupation promotes good health by utilizing human capacities necessary for maintenance and development of the individual. If capacities are over utilized, an individual may suffer from fatigue, stress and burnout which in turn can lead to increased risks of disease and injury. If capacities are underutilized they will atrophy, leading to diminished health (Wilcock). Occupational deprivation includes situations and restrictions that may prevent an individual from engaging in occupation. These restrictions include unemployment, poverty, disability, and lack of transportation among others. Occupational alienation is when an individual experiences a lack of fulfillment in, or sense of estrangement from their occupations. Meaningless, boring, or stressful tasks as well as coping with change can result in occupational alienation (Wilcock).

Occupational imbalance, occupational deprivation and occupational alienation are not only risk factors for health problems themselves, but they can also lead to the development of other risk factors for health problems and societal problems. Unemployment is an example, and can cause occupational deprivation and occupational imbalance which may result in sleep disturbance and depression. Problems such as sleep disturbance or depression can lead to substance abuse and suicide (Wilcock, 1998).

**Occupational dysfunction among hand therapy clients.** Clients with upper extremity injuries experience occupational dysfunction (Chan & Spencer, 2004; Helm & Dickerson, 1995; Schier & Chan, 2007). Occupational engagement is important in the shaping of identity and meaning in an individual’s life (Christiansen, 1999). Thus, the loss of ability to engage in occupations following a hand injury can result in occupational imbalance and deprivation which effects role participation and the identity of the client. A client who sustained a Colles’ fracture shared her experience with receiving hand
therapy (Helm & Dickerson). The themes of meaning that emerged from the phenomenological inquiry included the participant’s frustration with her functional losses and her dissatisfaction with therapy. The participant experienced occupational deprivation and imbalance due to the pervasive effects of the injury on her ability to engage in valued daily tasks and roles. This effect was exacerbated by the lack of focus on returning to her valued daily tasks and roles in treatment. This lack of focus contributed to the patient’s dissatisfaction with a therapy program that she perceived as just a “standard program” (p.73) that was not centered on what was meaningful to her. The findings of this study suggest that this participant may have benefited from a therapy program that specifically addressed her loss of valued occupations and centered the therapy experience on her as an individual.

Schier and Chan (2007) used qualitative methodology to examine the effect of acute hand injuries on the roles of spouse, caregiver and worker. All three of the study participants experienced difficulties with performance of their life roles with differing results that ranged from frustration to threats to the participant’s identity. Schier and Chan concluded that it may be beneficial to use a holistic approach that diminishes occupational imbalance and deprivation by addressing the patient’s occupations and roles and incorporating them into treatment.

Chan and Spencer (2004) documented the results of a mixed methodology study on adaptation to hand injury that incorporated quantitative and qualitative data from five participants. Quantitative data sources included the Disabilities of the Arm, Shoulder, and Hand instrument, the Reactions to Impairments and Disability Inventory, and standard measures such as range of motion and subjective reports of pain. Qualitative
data arose from open-ended semi-structured interviews that addressed life before and after injury, the changes that accompanied the injury, and hopes for the future. All participants struggled with occupational dysfunction. The findings suggest that there is no simple or direct relationship between physical recovery and adaptation to hand injury, but rather that psychosocial adaptation is determined by individual experience. Participants were motivated by their valued occupations and relationships with others. Chan and Spencer reported that occupational balance and well-being can be enhanced when treating those with hand injuries by connecting the therapy experience with patients’ valued occupations and daily lives.

**Occupation-Based Interventions in Physical Disabilities Settings**

Not only is a balanced pattern of occupation a means of promoting good health, but engagement in occupation-based interventions can also be the therapeutic mechanism through which function is restored. Occupation-based interventions or purposeful activities increased active range of motion (AROM) (Nelson et al., 1996; Sietsema et al., 1993; Van der Weel et al., 1991), increased tolerance (Dolecheck & Schkade, 1999; Murphy et al., 1999; Yoder et al., 1989), decreased pain (Melchert-McKearnan et al., 2000), improved function and decreased length of stay (Jackson & Schkade, 2001). Improved overall outcomes also occurred when using occupation-based interventions or purposeful activities by increasing repetitions performed (Hsieh, Nelson, Smith & Peterson, 1996; Melchert-McKearnan et. al., 2000; Yoder et al.), decreasing errors and increasing motor learning (Ferguson & Trombly, 1997), and improving quality of movement (Trombly & Wu, 1999; Wu et al., 1998). Some participants also experienced the benefits of increased enjoyment (Jackson & Schkade; Melchert-McKearnan et al.;
Zimmer-Branum & Nelson, 1995), and increased self-determination and competence (Murphy et al., 1999) with occupation-based or purposeful activities.

It should be noted that the level of purpose and meaning of the interventions in these studies varies. Purpose and meaning are important to the concept of occupation (Pedretti & Early, 2001; Trombly, 1995) and delineate different forms of occupational therapy intervention. The Occupational Therapy Practice Framework (AOTA, 2008) describes three different levels of occupational therapy intervention including preparatory methods, purposeful activities, and occupation-based interventions. Preparatory methods prepare the client for occupational performance and include physical agent modalities (PAMs), splinting, or exercise. As such, preparatory methods may have little or no purpose or meaning to the client outside of the context of the current injury. Purposeful activities are specifically chosen by the occupational therapist to allow the client to develop the skills required for occupational performance. Purposeful activities may include practicing getting in and out of the bathtub, practicing fastening clothing, preparing a grocery list, and practicing use of adaptive equipment. Purposeful activities have a purpose but may not be individually meaningful to the client. However, occupation-based interventions have a specific purpose and meaning for the client. Occupation-based interventions may include activities such as completing morning dressing and hygiene, participating in meal preparation, gardening, or a leisure interest such as painting (AOTA, 2008).

Because of the inherent difficulty in studying a single activity that has varying meaning for the participants, many of the reviewed studies examine purposeful activity rather than actual occupation-based interventions. Included are such diverse activities as
ringing a bell (Morton, Barnett & Hale, 1992), dunking a ball through a basketball hoop (Zimmer-Branum & Nelson, 1995), playing a tune (Ferguson & Trombly, 1997), hitting a drum (Van der Weel et al., 1991) and creating an end product such as cookies (Yoder et al., 1989) or a painted object (Murphy et al., 1999).

Range of motion. Occupation-based interventions or purposeful activities promoted increased AROM in three of the studies reviewed. Van der Weel et al. (1991) investigated the effects of a concrete end-goal versus an abstract end-goal on AROM. Participants included nine children with cerebral palsy and twelve neurologically normal children from three to seven years of age. In the abstract condition, all participants were asked to move a drumstick as far as they could in pronation and supination. In the concrete condition, all participants were asked to use the drumstick to bang the drums that were positioned to encourage pronation and supination. When there was a concrete and purposeful end-goal, hitting a drum, the participants with cerebral palsy demonstrated significantly more AROM than when the end goal was abstract. Sietsema et al. (1993) compared the degree of foreword reach attained by 20 participants with a traumatic brain injury using a counter-balanced design. The experimental condition used occupationally-embedded exercise. This involved seated participants reaching forward to play an electronic game positioned on a table in front of them. The control condition used rote exercise. This involved the seated participants reaching forward while receiving instruction to reach out their affected hand as far as they were able to. Participants demonstrated significantly greater reach while participating in the occupationally-embedded exercise than when participating in rote exercise.
Nelson et al. (1996) also examined the effect of occupationally embedded exercise on the AROM of participants with cerebral vascular accidents (CVA). An apparatus was developed for the study which required the participants to grip a handle and rotate it by pronating and supinating their stabilized forearm. In the experimental condition participants performed an occupationally-embedded activity involving rotating the handle of the apparatus to cause three dice to fall from a small cup in the top of the handle into a wooden chute in order to play a simple dice game. The first die fell at about 40° and the last die fell at about 90°. In the control condition the same movements were performed as rote exercise. The wooden chute and dice were removed and the cup that held the dice at the top of the handle was covered with a wooden cap the approximate weight of the dice.

Thirty six participants from six sites were randomly assigned to either the experimental or control condition in a stratified and balanced manner that accounted for side of infarct, gender, and clinical site. Participants rotated the handle 20 times in either the experimental or control condition and the AROM was recorded using a potentiometer in the handle. The difference in AROM was significant with participants reaching 90° of rotation 68% of the time in the occupationally embedded condition and only 46% of the time in the rote exercise condition (Nelson et al., 1996).

Increased activity tolerance. Occupation-based interventions or purposeful activities improve activity tolerance. Dolecheck and Schkade (1999) examined the effect of participation in personally meaningful activities versus non-personally meaningful activities on standing tolerance among six nursing home residents with CVA. Participants alternated between the meaningful task condition and the non-meaningful
task condition while standing. The intervention took place over the course of twelve treatments, implemented three times a week, for four weeks. All of the participants stood for a longer period of time when engaging in meaningful tasks than when engaging in non-meaningful tasks. The difference reached significance in five of the six participants.

Yoder et al. (1989) also examined activity tolerance by comparing added-purpose exercise and rote exercise among 30 randomly assigned female elderly nursing home residents. In the added purpose exercise condition participants stirred cookie dough. In the rote exercise condition participants made stirring motions. The participants who stirred the cookie dough in the added purpose exercise condition did so for a significantly longer period of time and a significantly higher number of repetitions than the participants who only made stirring motions in the rote exercise condition.

Murphy et al. (1999) studied the effects of keeping the end product of a chosen activity on activity tolerance and on feelings of competence and self-determination. Fifty healthy participants chose between four purposeful activities including painting a ceramic vase, decorating cookies, making stationary, and making a beaded necklace. Participants selected and completed an activity under two conditions. In the keep condition the participants were instructed that they could keep the end product and in the no keep condition the participants were instructed that they could not keep the end product. Participants worked significantly longer when they were allowed to keep the end product, although this effect varied from activity to activity.

Decreased pain. Occupation-based interventions or purposeful activities promoted a decrease in pain in a case study by Melchert-McKearnan et al. (2000). Pain levels of two six-year-old children receiving treatment for burn injuries were compared
while engaged in an occupation-based play activity or rote exercise. Outcome measures included the number of repetitions, pain as assessed by observation and by self-report and self-report of enjoyment of the activity. The treatment conditions of play or rote exercise were randomly assigned in two-hour blocks over the course of six days for one participant and eight days for the second participant. Participant 1 exhibited consistently less pain behaviors and improved self report of pain after engaging in play than after engaging in rote exercise. Participant 2 had little variation in observed pain behaviors, but did have more improvement in self report of pain after engaging in play than after engaging in rote exercise. The effect diminished over time for both participants.

**Improved activities of daily living (ADL) performance.** The effectiveness of the Occupational Adaptation model was compared to the biomechanical-rehabilitative model with 40 patients following hip fractures. First, 20 participants received the standard treatment at the rehabilitation facility which was described as the biomechanical-rehabilitative model. The focus of treatment in this portion of the study was the remediation of physical impairments and adaptation of the environment. Once all 20 participants from the biomechanical-rehabilitative model condition were discharged, the next 20 participant’s received treatment under the Occupational Adaptation model. In the Occupational Adaptation model the goal was to facilitate functional recovery via the internal adaptation skills acquired through engagement in occupation-based activities. The occupation-based activities were individually chosen by the participants as meaningful to them (Jackson & Schkade, 2001).

There was no significant difference between participants in the two conditions at discharge in discharge setting or in ADL performance. However, the biomechanical-
rehabilitative model participants had a significantly longer length of stay than the Occupational Adaptation model participants. When progress in ADL performance was evaluated on the basis of the amount of progress per day, those in the Occupational Adaptation model condition experienced a significantly greater improvement than those in the biomechanical-rehabilitative model condition, indicating a faster functional recovery (Jackson & Schkade, 2001).

**Increased repetition.** Several studies reported increased repetitions while engaging in occupation-based or purposeful activities. In the study of pediatric burn patients by Melchert-McKearnan et al. (2000) repetitions of activity did not seem to be effected by whether or not participant 1 was engaging in play or rote exercise. However, participant 2 demonstrated consistently higher repetitions when playing compared to the rote exercise condition. In Yoder et al., (1989) participants who stirred cookie dough performed significantly more repetitions than participants who performed exercises that simulated the stirring motion.

Hsieh et al. (1996) examined the effect of added-purpose exercise versus rote exercise on the dynamic standing balance of 21 participants with hemiplegia. Three conditions were used, all of which involved the participant bending down, reaching, standing, and extending the arm. In the rote exercise condition the participant performed the motions without any added purpose. In the added-purpose condition participants reached down to retrieve a small ball and throw it at a target. In the third, imagery-based, condition the participants imagined using the ball while going through the motions including throwing at the target. Participants used their unimpaired hand and performed all conditions in a counterbalanced order, engaging in each condition to the point of
fatigue. Participants completed significantly more repetitions in the added-purpose and imagery-based conditions than in the rote exercise condition with no significant order effect.

However, one study reported no significant difference in repetitions between added purpose and single purpose tasks. Morton et al. (1992) compared the effect of an added purpose task and a single purpose task on repetitions performed among 30 healthy adults. Participants were assigned to either the single-purpose task condition or the added-purpose task condition in a random and stratified manner according to age and gender. Participants in both conditions engaged in their assigned task three times over the course of two weeks. Participants in the single purpose task condition pushed a weighted box up an incline as many times as they could until they perceived they were working very hard. Participants in the added purpose task condition pushed a weighted box up an incline as many times as they could in order to ring a bell until they perceived they were working very hard. There were no significant differences for performance measures such as repetitions, duration and heart rate between the two conditions. The purpose of ringing a bell did not produce an end product and thus may not have been as motivating for performance.

Decreased errors and increased motor learning. Ferguson and Trombly (1997) examined the effect of added purpose on motor learning among 20 healthy university students. Participants were randomly assigned to either an added-purpose condition or a rote-exercise condition. The added-purpose condition involved practicing three five-note patterns in order play a tune. The rote-exercise condition involved learning the same motor pattern without knowing the pattern would be used to play a tune. The participants
were then asked to play the tune on a musical keyboard. Participants in the added-purpose condition made significantly fewer errors when playing the tune than those in the rote-exercise condition, demonstrating that adding music to the purpose of an activity enhances motor learning. Participants also rated the personal meaning of the activity, but there were no significant differences in motor learning between differing levels of personal meaning.

**Improved quality of movement.** Quality of movement was improved through the use of a purposeful functional target in two of the three experiments reviewed. Wu et al. (1998) examined the effect of the target object on quality of movement while reaching. Fourteen participants with CVA and 24 participants without CVA, who were matched for age, performed in two conditions described as enriched affordances and impoverished affordances. In the enriched-affordances condition the participants reached forward to a chopper and pressed on the handle to chop a mushroom. In the impoverished-affordances condition the participants reached forward to a chopper covered with cardboard, and containing nothing, and pressed on the handle. In both conditions participants’ reaching motion was analyzed using a motion analysis system. Participants with CVA demonstrated significantly more efficient movement in the enriched-affordances condition than in the impoverished-affordances condition indicating faster, more direct, smoother, and more planned movements. Participants in the non-CVA condition also demonstrated significantly more efficient movement in the enriched-affordances condition than in the impoverished-affordances condition indicating more efficient and planned movements.
Trombly and Wu (1999) also examined the effect of the presence or absence of an object and the degree of functional specificity of the object on quality of movement while reaching. In a counterbalanced design, 14 individuals who experienced a CVA participated in two experiments containing two and three conditions respectively. In the first experiment, the effect of the presence or absence of a target on reaching performance was examined. In counterbalanced order participants reached for either a small snack food of their choice on a plate, such as popcorn or small candies, or to a spot on the same plate. A motion analysis system was used to examine smoothness, directness, speed and strategy. When reaching for a snack food of their choosing on the plate the participants’ movements were significantly more smooth, fast, preplanned, and forceful than when reaching for a spot on the same plate.

In the second experiment (Trombly & Wu, 1999) the effect of the functional specificity of an object on reaching performance was examined. Participants performed three conditions in counterbalanced order. The first condition was referred to as the natural context and required the participant to pick up the receiver of a working telephone and dial a phone number written on a pad of paper. The second condition was referred to as partial context and required the participant to pick up a receiver that was not connected to a telephone. The receiver was positioned in the same place and at the same height as in condition one. The third condition was referred to as the simulated condition and required the participants to pick up a wooden stick the same weight, size, and color as the telephone receiver. The wooden stick was positioned in the same location and at the same height as the receivers in conditions one and two. A motion analysis system was
used to examine smoothness, directness, speed and strategy for the movement. This experiment yielded no significant findings and showed weak to no effect sizes.

**Affective benefits.** There is evidence that some patients gain more enjoyment from participation in purposeful activity and prefer it over participation in exercise. In Jackson and Schkade (2001) patients following hip fracture who were treated using the Occupational Adaptation model had significantly higher levels of satisfaction with occupational therapy treatment than those treated using the biomechanical-rehabilitative model. In a study of pediatric burn patients (Melchert-McKeanan et al., 2000) both participants consistently rated play as more fun than rote exercise. Play was almost always rated as a 5 and exercise was rated as a 3 or below on a 0-5 point fun scale.

Zimmer-Branum and Nelson (1995) investigated the preferences of 52 elderly nursing home residents between an occupationally embedded exercise and a rote exercise. The occupationally embedded exercise required the participants throw a small sponge ball through a basketball hoop. The rote exercise involved performing movements that simulated throwing the basketball through the hoop. Participants tried both the rote exercise condition and the occupationally embedded exercise condition in counter balanced order then were presented with a choice to participate in either one. The order in which the conditions were offered as choices was also presented in a counterbalanced manner to avoid order effects. A significant number (69%) of participants preferred the occupationally embedded exercise to the rote exercise.

**Occupation-Based Interventions in Hand Therapy**

While some hand therapists regard the use of an approach that addresses both physical and psychosocial aspects of hand injury as excellent practice (Cannon, 1989),
and are calling for increased use of occupation as a treatment modality (Chan & Spencer, 2004), there is a noticeable absence of hand therapy research about occupation. A review of recent hand therapy research revealed articles that address treatment effectiveness (Rogers & Wilder, 2007), evidence-based practice (Klingaman, Estilaei & Byl, 2006; Jerosch-Herold, Shepstone, Chojnowski & Larson, 2008), treatment protocols (Bany & Kahl, 2006; Fedorczyk, 2006), splinting, (Vipond, Taylor & Ryder, 2007; McKee & Nguyen, 2007), and outcome measures (Marshall, 2006; Shechtman, Sindhu & Davenport, 2007; Rompe, Overend, & MacDermid, 2007) with little research noted beyond these impairment oriented subjects.

The research that does exist indicates that occupation-based interventions or purposeful activities are effective in the hand therapy setting. Occupation-based interventions or purposeful activities increased ROM (Guzelkucuk, Duman, Taskaynatan & Dincer, 2007; Early and Shannon, 2006), increased strength (Guzelkucuk et al.), decreased pain (Earley & Shannon), and promoted functional improvement as measured by the Disabilities of the Arm, Shoulder, and Hand questionnaire and the Jebsen-Taylor Hand Function Test (Guzelkucuk et al.). Improved overall outcomes were also supported when using occupation-based interventions or purposeful activities through increased repetitions performed (King, 1992) and improved functional movement patterns (Toth-Fejel, Toth-Fejel and Hendricks, 1998). Some participants also experienced the benefit of more interest in occupation-based or purposeful activities (Jarus, Shavit, and Ratzon, 2000).

**Increased range of motion.** Following participation in occupation-based treatment, increased ROM and strength were noted by Guzelkucuk et al. (2007) and
Earley and Shannon (2006). Guzelkucuk et al. (2007) compared the effectiveness of therapeutic activities based on activities of daily living (ADL) with therapeutic exercise among a group of 36 participants in a military setting following hand injuries. The control condition consisted of 16 participants who underwent two daily sessions of therapeutic exercises. The therapeutic exercises included passive range of motion, active assistive range of motion, AROM, and strengthening exercises. The experimental condition consisted of 20 participants who had one session of exercise which was the same as the control condition and then a second session daily that consisted of therapeutic activities based on ADLs. There were 25 different ADL-based therapeutic activities including locking and unlocking a door, turning a faucet on and off, opening and closing a window, using a screwdriver, opening a jar, and writing. Active range of motion was assessed including total active motion, finger pulp to distal palmar crease, thumb abduction, and opposition. Data was collected at the initial evaluation, at discharge, and two months after discharge. There was no significant difference between the participants in the experimental and control conditions at baseline.

At the post-treatment evaluation all of the AROM outcome measures for participants in the experimental condition were significantly different from baseline, but only total active motion and finger pulp to distal palmar crease were significantly different from baseline for participants in the control condition. At the two month post-treatment point, all of the AROM outcome measures for participants in the experimental condition maintained significant improvement and all AROM outcome measures for participants in the control condition achieved significant improvement from baseline indicating a faster, comprehensive improvement in AROM for the experimental condition.
who participated in the functional activities. Participants in the experimental condition also demonstrated significantly greater mean changes than participants in the control condition when comparing baseline to two months post discharge for all AROM outcome measures except total active motion and thumb abduction (Guzelkucuk et al., 2007).

Earley and Shannon (2006) reported the results of the use of occupation-based treatment in the case of a 53 year old woman with idiopathic adhesive capsulitis of the shoulder. Treatment consisted of compensatory occupation including activity modification, preparatory methods including ultrasound and active and passive ROM, and purposeful activities including work tasks, Pilates, and home management tasks. The participant demonstrated significant progress in AROM at six weeks and returned to AROM near that of her non-affected shoulder at the six months post-treatment point. Improvement in AROM was faster than typical for clients with adhesive capsulitis (Vermeulen, Rozing, Oberman, Cessie & Vlieland, 2006).

**Increased strength.** In a study by Guzelkucuk et al. (2007), those who participated in functional activities demonstrated significant improvement in both pinch and grip strengths over baseline at both the post- treatment and two month follow up point. Those who participated in therapeutic exercise demonstrated significant improvement only at the two month follow up for grip strength. There were also significantly greater changes for the participants in the functional activities condition from baseline to two months post-discharge in the mean grip and pinch strength compared to participants in the exercise condition.

**Decreased pain.** The participant in Earley and Shannon’s (2006) case study experienced decreased pain after participating in a client-centered and occupation-based
treatment approach for adhesive capsulitis. The participant’s pain decreased from 8/10 at the initial evaluation to 3-4/10 at the six week point. At the six month follow up the participants pain decreased to 1-2/10 and then to 0/10 at the nine month point.

**Increased function.** In Guzelkucuk et al. (2007) the Disabilities of the Arm, Shoulder, and Hand questionnaire and Jebsen-Taylor Hand Function Test indicated greater functional recovery following treatment with functional activities than with exercise. A significant change occurred in the Disabilities of the Arm, Shoulder, and Hand questionnaire scores of the participants who performed functional activities between baseline and both the post-treatment and two months post-treatment points. For participants in the exercise condition there was no significant improvement between baseline and post-treatment on the Disabilities of the Arm, Shoulder, and Hand questionnaire, though significant change \( p = .05 \) was noted at the two month follow up. There was also significant improvement on the Disabilities of the Arm, Shoulder, and Hand questionnaire from baseline to two months post-discharge for the participants in the functional activities condition compared to participants in the exercise condition.

The participants who performed functional activities also demonstrated a significant improvement between base line and the post-treatment point on all seven subtests in For the Jebsen-Taylor Hand Function Test. For the participants in the exercise condition there were significant changes between baseline and the post-treatment point for three of the seven subtests, and between baseline and the two months post point for six of the seven subtests. This finding indicates a faster functional improvement for the participants who performed functional activities. There were also significantly greater improvements from baseline to two months post-discharge on all seven of the Jebsen-
Taylor Hand Function Test subtests for the participants in the functional activities condition compared to the participants in the exercise condition (Guzelkucuk et al., 2007).

**Increased repetitions.** King (1992) compared purposeful activity with non-purposeful activity for effectiveness in increasing the number of repetitions of an activity performed. One hundred forty-six patients in a hand therapy clinic participated in three minute sessions of using a gripper or pincher connected to a computer that either operated a game or instructed the participant to use the gripper or pincher at a comfortable pace. Participants used either the pincher or the gripper depending on their treatment goals. All participants were randomly assigned to one of two groups who performed both conditions in counterbalanced order while the repetitions performed were recorded by the computer program. Repetitions performed were significantly greater for participants in the purposeful activity condition than for participants in the non-purposeful activity condition.

**Improved functional movement patterns.** Toth-Fejel et al. (1998) discussed the use of the experience sampling method to promote occupation-based practice in hand rehabilitation. The experience sampling method is a method of data collection which records the physical, contextual, and psychosocial aspects of activities performed in the client’s environment. Clients are semi-randomly signaled using an electronic device such as a pager to momentarily stop what they are doing to record their current occupation, physical and social context, and any subjective experiences. In this case study, the experience sampling method was employed for one week with a woman with cubital tunnel syndrome in order to evaluate follow-through in the client’s home environment.
and ensure client-centered and occupation-based practice. The experience sampling method encouraged use of a valued occupation in treatment. Use of the ESM also helped the client realize the degree to which she was avoiding using her affected arm and enabled her to take ownership of modifying her unproductive movement patterns. At the conclusion of treatment the client met all her goals including the sublimation of non-adaptive movement patterns in favor of functional movement patterns.

**Increased interest.** Jarus et al. (2000) compared a relevant computer based intervention with a low tech treatment to determine which was more effective at improving interest in treatment and wrist range of motion for clients following Colles’ fracture. Forty seven clients with wrist fracture were randomly assigned to the experimental and control conditions. Confounding variables of considering equality for gender, age, education, profession, diagnosis, dominant hand, injured hand, previous computer use and whether or not they received physical therapy were controlled through group assignment. All participants received treatment three times a week for five weeks. In the control condition the participants used wrist motion to create bottle brushes on a brush machine. The brush machine could be set to require motion in the plane of flexion and extension or in the plane of pronation and supination. Participants in the control condition received ten minutes of whirlpool, ten minutes of massage and passive exercise, ten minutes of exercise with thera-putty, ten minutes with the brush machine working on wrist flexion and extension, and ten minutes with the brush machine working on pronation and supination. Participants in the experimental condition received the same treatment except for the brush machine. Instead the participants in the experimental condition played a computer game attached to a mechanism modified from the brush
machine which required the same motions of either wrist flexion and extension or pronation and supination.

Active range of motion in the planes of wrist flexion, wrist extension, pronation and supination, as well as grip, edema, and interest in treatment were assessed at entry to the study and again at the end of the five weeks of treatment. While those in the computer game condition tended to increase in both range of motion and grip strength at a faster rate than those in the brush machine condition, the differences were not significant. The only significant difference between the conditions was interest in treatment. Participants in the condition who played computer games demonstrated a significantly higher level of interest in treatment than those in the brush machine condition (Jarus et al., 2000).

**Challenges to Occupation-Based Practice in Hand Therapy**

Occupational therapists practicing in the hand therapy arena face challenges when attempting to maintain an occupation-based practice beyond the lack of research. These challenges include reliance on protocols and methods, reimbursement, and the effects of specialization.

**Reliance on protocols.** There are many treatment protocols published for hand therapy diagnoses (Jerosch-Herold et al., 2008; Groth, 2005). The perception that impairment focused treatment modalities typical of protocol based care are easier (Dale et. al., 2002) discourages the use of individualized treatment. Reliance on pre-prescribed treatment protocols that do not take the individual or their environment into account focuses treatment on the diagnosis instead of the person (Fitzpatrick & Presnell, 2004). When occupational therapists rely too heavily on specific protocols and methods, they are
perceived by patients as impersonal and uncaring (Helm & Dickerson, 1995; Peloquin, 1993).

**Reimbursement.** Reimbursement and cost containment influence the intervention choices made by occupational therapists working in hand therapy toward more medical model driven and less holistic treatment options (Dale et al., 2002). Health care systems that are driven by business, revenue, and efficiency require occupational therapists working in hand therapy to treat higher numbers of clients. The increased caseload demands contribute to the dehumanization of clients by not allowing the therapist the time to interact with the client as a whole person (Peloquin, 1993).

Changes in reimbursement, including managed care and the Medicare Prospective Payment System (PPS), have placed limits on therapy visits (Kurlander, 1999; MacDermid et al., 2002). Restrictions imposed by reimbursement encourage reductionism because developing the type of client-therapist relationship that allows for client-centered, holistic, and occupation-based care takes time (McColl, 1994; Posatery-Burke & Cassidy, 1991). It is difficult for occupational therapists working in hand therapy to develop an occupation-based treatment plan when there is less time to spend with individual clients due to reimbursement and case load demands (Dale et al., 2002).

**Effects of specialization.** Specialization in hand therapy may encourage reductionism by focusing on specialized treatments that remediate impairment, such as exercise, joint mobilization and modalities (Hoyt Slaymaker, 1986; Heater, 1992). When occupational therapists specialize in hand therapy they learn new treatment techniques. These new techniques may seem preferable over occupation-based activities because of their novelty, resulting in a “tyranny of expertise” (Bonzani, 2003, p. 2). A focus on
Impairment remediation may also occur among novices learning new skills (Dale et al., 2002). The focus on impairment remediation ignores other aspects of the person including psychological, social, and occupational aspects (Bonzani).

Specialization in hand therapy tends to influence occupational therapists to adopt the medical model (Dale et al., 2002) at the expense of a holistic and occupation-based practice (Bonzani, 2003; Hoyt Slaymaker, 1986). The medical model assumes that function is restored when physical signs and symptoms such as pain or decreased AROM are alleviated (Mathiowetz, 1993). This assumption leads some occupational therapists who work in hand therapy to delay addressing functional goals until physical symptoms are addressed. The idea that changing underlying physical symptoms changes functional performance is questionable. There is no simple or direct relationship between physical recovery and adaptation after hand injury (Chan & Spencer, 2004). Only 31% of ADL performance variance is associated with motor impairment (Trombly, 1995). Modest correlations at best have been found between components such as pain, strength or range of motion and functional performance (Hocking, 2001; Mcaniff & Bohannon, 2002; Michener & Legin, 2001; Pratt & Burr, 2001; Rice, Leonard, & Carter, 1998; Sampiano et al., 2006; Serlin, Mendoza, Nakamura, Edwards & Cleeland, 1995). Use of occupation as a modality is proposed to provide more context specific and generalizable functional skills (McLaughlin Gray, 1998).

**Facilitating Occupation-Based Hand Therapy**

Only one qualitative study was found that examined how occupational therapists practicing in hand therapy provide holistic care (Dale et al., 2002). Therefore, little to no evidence is available that thoroughly defines occupation-based hand therapy, its
application or the means by which this kind of practice can be facilitated. However, experts in the use of occupation in both the general practice of occupational therapy and hand therapy describe multiple strategies for facilitating occupation-based therapy.

Several experts in the use of occupation-based therapy recommend strengthening professional development and relationships as a means by which to promote occupation-based practice. These recommendations suggest enhancing professional development and relationships at different levels. At the level of the individual therapist, it is suggested that reflection on occupational therapy philosophy and theory followed by self-assessment may enhance the practice of occupation-based therapy (Berro & Deshaies, 2007; Killian, 2006b). It is also recommended that individual therapists practicing in the hand therapy arena enhance their professional skills within the clinical setting. Becoming more efficient with time management, communication, flexibility in their practice, and increasing their efficiency, may help these therapists overcome inherent barriers to the use of occupation in practice (Dale et al., 2002).

At the level of groups of therapists, experts recommend that occupation-based therapy can be enhanced through promoting professional relationships. Holding seminars, journal clubs, in-services and presenting case studies is one recommended strategy for building the kinds of professional relationships that can enhance individual development and the use of occupation (Berro & Deshaies, 2007; Killian, 2006b). Moreover, several experts recommend that establishing a mentoring relationship with those who are more experienced in the practice of occupation-based therapy would be beneficial (Berro & Deshaies; Killian, 2006b). Others (Killian, 2006a) recommend that partnerships between the clinical and academic communities would be beneficial. These
latter recommendations are built upon the argument that exposing clinicians to faculty and fieldwork relationships can help to keep ideas about practice both fresh and firmly rooted in occupational therapy philosophy and theory. The attention to occupational therapy philosophy and theory as applied to contemporary practice in occupational therapy at a time when it is departing from the strong paradigm of the medical model could perhaps enhance occupation-based practice.

Although these recommendations regarding professional development and relationships are present in the occupational therapy literature, only the recommendation about enhancing professional skills (e.g. time management), arose from research in the hand-therapy community. Consequently, it remains unknown if these recommendations would also prove helpful within the occupation-based hand therapy community.

Experts in occupation-based therapy also recommend the application of several assessment tools and practice frameworks as a means of enhancing occupation-based practice. Experts suggest that use of assessment tools such as the Canadian Occupational Performance Measure (Berro & Deshaies, 2007; Bhavnani, 2000; Hocking, 2001; Killian, 2006b), the Occupational Performance History Interview (Hocking; Kielhofner et al., 2001), and the Experience Sampling Method (Toth-Fejel et al., 1998) may facilitate occupation-based practice. Use of assessments like these may help occupational therapists practicing in the hand therapy arena (Bhavnani; Toth-Fejel et al.) and in other practice arenas (Berro & Deshaies; Hocking; Killian, 2006b; Kielhofner et al.) to better understand the meaning and relative importance of occupations in their patients’ lives. This knowledge may promote occupation-based practice by focusing attention on the client’s occupational priorities instead of their impairments (Hocking; Killian, 2006b).
In addition, experts suggest the application of healthcare frameworks such as the World Health Organization’s International Classification of Functioning, Disability, and Health (Fitzpatrick & Presnell, 2004) and the Occupational Therapy Practice Framework: Domain and Process (AOTA, 2002; Berro & Deshaies, 2007; Killian, 2006a, 2006b) as a means to facilitate occupation-based practice. Experts propose that these practice frameworks may provide a means with which to describe and document the occupation-based therapeutic process within general occupation-based practice (AOTA, 2002; Berro & Deshaies; Killian, 2006a, 2006b) and occupation-based hand therapy (Fitzpatrick & Presnell).

Experts in occupation-based therapy also recommend physical environment changes to clinic arrangement and equipment in order to facilitate occupation-based practice (Berro & Deshaies, 2007; Dale et al., 2002; Killian, 2006b). Dale et al. recommended adapting the hand therapy clinic environment to allow room for home living environments. Similarly, other experts in general occupational therapy settings (Berro & Deshaies; Killian, 2006b) suggested changes to the clinic environment such as the addition of functional stations. Functional stations are areas that have adequate space and allow easy access to supplies to facilitate engagement in occupation-based activities such as cooking, gardening, child care, or grocery shopping. In addition, experts in occupation-based therapy recommend creative use of the hospital or clinic campus and community to expand the available space for occupation-based interventions (Berro & Deshaies; Killian, 2006b).

The development of occupation kits is also recommended by experts in the use of occupation in the general practice of occupational therapy as a means to facilitate
occupation-based practice in general occupational therapy settings (Berro & Deshaies, 2007; Killian, 2006b). Occupation kits are collections of supplies and equipment commonly used while engaging in an occupation which are placed in appropriately labeled individual plastic bins for ease in accessing, transporting, and storage. Kits may include occupations such as gardening, pet care, car care, scrapbooking, and housecleaning. Experts further advised that the cost of the kits can be reduced by soliciting donations of supplies, shopping for supplies at garage sales and discount stores, and requesting that the client or their family bring in supplies from home (Berro & Deshaies; Killian, 2006b). Because the expert sources of the recommendation to use occupation kits comes from the general practice arena and not the hand therapy arena it is unknown if the use of occupation kits would enhance occupation-based hand therapy.

These changes to the clinic environment may also provide an additional benefit (Killian, 2006b). Experts in occupation-based therapy assert that when occupational therapy clinics keep the equipment commonly used in occupation-based interventions visible, clients, family and staff may better understand that the primary focus of occupational therapy is occupational engagement. Further, this improved understanding may promote increased support from physicians and hospital administration for occupation-based practice in both the hand therapy arena (Dale et al., 2002) and general practice arenas (Berro & Deshaies, 2007).

The recommendations regarding professional development, the use of assessment tools and practice frameworks, and physical environment changes are based largely on expert opinion. Whether or not these recommendations would prove effective at
facilitating the use of occupation within the hand therapy setting can only be determined by first understanding the complex concept of being an occupation-based hand therapist.
Chapter III: Method

Research Design

The phenomenological approach used for the methodology is consistent with those described by Moustakas (1994).

Participants. I used criterion sampling to purposefully select participants who experienced the phenomena under study: providing occupation-based therapy in a hand therapy setting. I sought information-rich cases (Patton, 2002) or “experts” in the use of occupation-based interventions in hand therapy in order to describe the essence of occupation-based hand therapy. Initially, I identified those who authored publications or gave presentations about providing occupation-based care in a hand therapy setting as key participants. In order to identify additional participants, I employed snowball or chain sampling (Patton) by asking the key participants if they knew of any other occupational therapists using an occupation-based approach in a hand therapy setting.

I sent a letter of invitation to participate in the study to all identified possible participants through either the United States Postal Service (USPS) and or electronic mail (email), depending on the available contact information. I obtained contact information from the publication or presentation materials authored by the key participant or from the key participants for additional participants. The letter of invitation included information about the proposed study, a consent form and a brief questionnaire (Appendix A). If the individual wished to participate in the study they returned the consent form and brief questionnaire in a self-addressed, postage paid envelope that I provided. If the invitation was sent through electronic mail, I asked the participant to provide a mailing address in order to send the self-addressed postage paid envelope. The brief questionnaire included questions designed to ascertain if the participant met the inclusion criteria for the study:
1. being an occupational therapist, 2. having five or more years of experience working in hand therapy, 3. identifying themselves as an occupation-based therapist, and 4. being willing to participate in in-depth audio-taped telephone interviews. I selected the criterion of a minimum of five years of experience working in hand therapy because this is the minimum years of practice required to take the hand therapy certification examination. This ensured that the participants had enough experience working in hand therapy to provide the descriptions required to answer the research question. I invited the participants who met all criteria to participate in the interview portion of the study. A sample of 5-25 participants was initially projected to represent the depth of knowledge and practice variability needed to exhaustively investigate the phenomenon. A final total of 10 individuals participated in the study. Initially I recruited five key participants who had published or presented on the topic of occupation-based hand therapy and they all agreed to participate in the study. I then recruited an additional six participants referred to me by the key participants. One of the additional participants was excluded from the study due to a medical issue. Sampling continued until no new information was generated (Patton, 2002).

**Data collection.** I interviewed the participants over the telephone in accordance with the preferred telephone number and dates for an in-depth interview submitted on the brief questionnaire. The interview was semi-structured and included open ended questions. I recorded the telephone interviews and took notes during the interviews in the event there was a problem with the audio recording, which occurred with one participant. At the initiation of each interview, participants either gave consent or refused audio
recording of the interview. All participants consented to audio recording of the interview.

To ensure a comprehensive description of the participant’s experience (Moustakas, 1994) with providing occupation-based hand therapy, I used an interview guide (Appendix B). I developed the interview guide based on questions and types of questions recommended in qualitative literature (Creswell, 2007; Moustakas; Patton, 2002). The interview guide focused on the texture, or descriptive qualities (Moustakas), of the experience of providing occupation-based hand therapy such as “If I followed you through a typical day at work what would I see you doing?” or “Try to remember the last time you used an occupation-based approach with a client and tell me everything you can about the situation, about what you felt, did or said.” The interview guide was reviewed by the dissertation chair and committee and piloted tested on both a hand therapist and an occupational therapist that uses an occupation-based approach. The questions produced rich descriptions of occupation-based hand therapy in the pilot study and similarly rich descriptions when used on the study participants.

During the interviews I asked additional questions for clarification and or elaboration as needed such as “can you give me an example?” or “what do you mean by that?” (Moustakas, 1994). I added questions to address additional issues and topics as they arose during the interviews. The inclusion of additional questions was based on issues raised by the participants during the interviews and allowed for an iterative process where previous interviews informed subsequent interviews.

Immediately following each interview I recorded my thoughts about the participant’s responses in the reflective journal. Either a paid transcriptionist or I
transcribed all interviews verbatim within a week of the interview. This allowed an iterative process to be employed where novel elements described by one participant could be explored during other participant’s interviews. I identified participants by pseudonym only in the transcriptions and changed any specific references to location or other identifying information to protect the confidentiality of the participants during the data analysis and in the final results.

For member checking, I sent transcripts of each participant’s interview to them through the USPS or email as requested by the participant. I asked the participants to review the transcripts of their interview to ensure that their experiences were accurately reflected. I encouraged participants to offer further clarification if needed through email or in written form on the transcript. If the participant preferred offering written clarification, a self-addressed postage paid envelope was included with the transcript for return.

After initial interviews were completed on all participants, I conducted follow-up interviews with each participant, except Ian, who did not respond to requests for a follow up interview. The purpose of the follow-up interviews was to ensure all initial interview questions had been comprehensively answered, clarify any points of confusion and further explore elements of the phenomenon that emerged from the initial round of interviews. Exploration of emerging concepts during follow-up interviews continued until saturation of the data, or cessation of novel data, was achieved (Creswell, 2007). Follow up interviews were conducted over the telephone for one participant and over electronic mail for all other participants. After each transcript was returned to me
following the member check, I added each participant’s answers from the follow up questions to their transcript.

**Data analysis. Individual analysis.** I began analysis of all data by reading each participant’s transcript several times to gain familiarity with the data for that participant. Line numbers were applied to the document to aid in identifying and relocating statements in the transcript. In step 1 of the analysis every statement relevant to the provision of occupation-based hand therapy was identified using the underline function in the word processing program. I treated all relevant statements in the transcripts as equal in value (Moustakas, 1994). I made a notation at the beginning of each statement indicating the line number in the interview transcript where it began. Example statements that would be identified as relevant include: “When I am going to use occupations with a patient I always spend some time planning and gathering supplies before they arrive”; “I mean, some OT patients deny their deficits”; “Occupations, hmm, can be used”; “A good way to understand what is important to your patient is to use the COPM”; “Occupation-based care requires extra planning”, and “the COPM is helpful”. Statements that were not about providing occupation-based therapy, such as unrelated statements about the participant's personal life, were not underlined. An example statement that would be identified as unrelated is: “My kids like to bake”.

All non-underlined text was then deleted, and each underlined statement was formatted into a list. This list of underlined statements, referred to by Moustakas as the horizontalized statements, was saved in a separate document. Line number notations were retained to aid in location of the statement within the original interview transcript. This
The process of identifying and listing relevant statements is consistent with the horizontalization procedure previously reported (Creswell, 2007; Moustakas, 1994).

In step 2, I determined the invariant constituents, or textural meanings, of each interview transcript by reducing or eliminating the horizontalized statements. First, the number of horizontalized statements was reduced by eliminating all vague or repetitive statements. A statement was regarded as vague if it was unclear and repetitive if it repeated ideas or concepts found in other statements. The vague or repetitive statements in each list of horizontalized statements were marked using the italics function in the word processing program. A notation was made at the end of all italicized statements indicating the reason the statement would be eliminated and these eliminated statements were saved in a separate document. From the previous example statements, the statement “occupation-based care requires extra planning” would be eliminated because it repeats the idea found in the statement: “When I am going to use occupations with a patient I always spend some time planning and gathering supplies before they arrive”. The statement “the COPM is helpful” would be eliminated because it is unclear in what way the COPM is helpful.

In step 3 of the analysis I considered the remaining horizontalized statements in the light of two criteria as described by Moustakas (1994, p. 121). If the statement contained “a moment of the experience that is a necessary and sufficient constituent for understanding it”, the statement was retained in the dataset. If it was possible to “abstract and label” the statement, it was retained in the dataset. Statements not meeting these two criteria cannot add to the analysis because they either lack components that promote understanding of the phenomena or because they cannot be labeled to represent an
element of the experience of providing occupation-based hand therapy. For example, “I mean, some OT patients deny their deficits” would be eliminated from the dataset because it is not relevant to occupation-based practice and does not add understanding to the analysis. I would eliminate the horizontalized statement “Occupations, hmm, can be used” from the previous example because it cannot be meaningfully labeled.

The horizontalized statements that failed to meet either criterion were marked using the italics function in the word processing program. A notation was made at the end of all statements that were italicized indicating the reason the statement would be eliminated. Eliminated statements and the reasons for elimination were saved in the same separate document noted in the last step. The remaining horizontalized statements were then the invariant constituents of the phenomenon under study (Moustakas, 1994). In the example, the invariant constituents would include the statements “When I am going to use occupations with a patient I always spend some time planning and gathering supplies before they arrive” and “A good way to understand what is important to your patient is to use the COPM”.

In the step 4 I reviewed each participant’s invariant constituents and organized them into themes for each participant based on commonalities. The process of coding the invariant constituents for themes began by reading the invariant constituents several times and formulating some general themes. The invariant constituents were then labeled by theme using the highlight or change text color functions in the word processor, and organized into lists of invariant constituents for each theme. Assignment of invariant constituents to a particular theme was reviewed and changes were freely made in the assignments and theme labels until I was convinced I had placed each constituent into a
labeled theme it seemed to best represent. For example, I might organize the statement “When I am going to use occupations with a patient I always spend some time planning and gathering supplies before they arrive” into a theme labeled “planning”. The statement “A good way to understand what is important to your patient is to use the COPM” might be organized into a theme labeled “identifying occupations”. Because substantial data reduction is used to produce invariant constituents, and multiple iterations of organizing constituents are used to discern themes, it is possible that the initial meaning of the original statement may become lost. In order to assure that all invariant constituents and themes accurately reflected the original interview data for a participant, I checked the original interview to confirm the presence of the invariant constituents within the transcript and to confirm that the generated themes were consistent with the transcript. Any invariant constituent that was not in the interview transcripts or theme that was not compatible with the interview transcripts would have been deleted, though none were detected (Moustakas, 1994). This process of listing horizontalized statements, invariant constituents and themes was completed for each participant, one at a time, before continuing the data analysis process.

In the 5th step of the analysis I constructed an individual textural description of the experience of providing occupation-based hand therapy for each participant. In this level of data processing, the themes and invariant constituents assigned to a theme were used to generate statements that captured a participant’s experiences relevant to occupation-based hand therapy. For example, the themes of “planning” and “identifying occupations”, along with the invariant constituents that comprise them, could be incorporated into a textural description that might read: “The participant sought to
identify valued occupations of their clients and carefully plan their treatment sessions to address those occupations. The participant also used the COPM because they found it “a good way to understand what is important to your patient”. The process of horizontalization, organization of the invariant constituents into themes, and construction of the textural description is consistent with the phenomenological reduction procedure previously reported (Creswell, 2007; Moustakas, 1994).

For step 6 of the analysis I considered the structures and contexts that lead to the participant’s responses about providing occupation-based hand therapy. To establish these structures I returned to the original interview transcripts. For each participant, I extracted from these transcripts structures or contexts included in the text that were either imbedded in or independent of the invariant constituents. Concepts such as the environment within which the participant practiced, issues involving time, relating to self and others about occupation-based hand therapy, and any other factors that affected the provision of occupation-based hand therapy (Moustakas, 1994) within the original transcript were noted. A structural description of each participant's experience was generated from the statements. For example, the structural description may address elements such as available time for planning, support from the administration to purchase assessment tools such as the COPM, and other issues that influence how occupation-based hand therapy is carried out by the participants. I then checked the structural descriptions against the individual interview transcripts to ensure that they accurately reflected the experiences of the participants (Polkinghorne, 1989). This process is consistent with the imaginative variation procedure previously reported (Moustakas, 1994).
The themes, textural description and structural description were sent to all participants for a member check. I asked participants to carefully examine the themes, textural description and structural description and make any clarifications, alternate interpretations, additions or corrections they felt were necessary through email or in written form on the transcript. If the participant preferred offering written clarification, a self-addressed postage paid envelope was included with the transcript for return. If I did not understand the participant’s clarification I contacted them by email to further clarify. Any recommended changes were noted and the themes, textural description, and structural description were revised as needed to accurately reflect the participant’s experience with providing occupation-based hand therapy (Moustakas, 1994).

Then, for step 7 of the analysis I reviewed each individual participant’s member-checked textural description and structural description. Concepts in the descriptions were considered and compared in order to synthesize the overall meaning and significance of the experience of providing occupation-based hand therapy for each participant. For example, concepts from a participant’s textural description about work experience and approach to treatment were considered along with concepts from the participant’s structural description about influences and synthesized into a description of how influences and experience informed the participant’s approach to occupation-based treatment. I then checked each synthesized description against each individual participant’s interview transcript to ensure that it accurately reflected the experiences of the participant. This process is consistent with the textual-structural description procedure previously reported (Moustakas, 1994).
**Cross-case analysis.** For step 1 of the cross-case analysis, I began by grouping together the individual themes across all participants based on commonalities. The process of organizing the individual themes into cross-case thematic groupings began by reading the individual themes several times and formulating some initial cross-case thematic groupings. Individual themes were then assigned to a cross-case thematic grouping based on commonality. Assignment of individual themes to a particular cross-case thematic grouping was reviewed and changes were made in the assignments until I was certain I had placed each theme into the cross-case thematic grouping it seemed to best represent. For example, I grouped together the individual themes about exercise with themes about other preparatory methods such as physical agent modalities into a cross-case thematic group titled “prep-aratory treatments”. This process resulted in 35 cross-case thematic groups, each containing multiple individual themes, and each individual theme containing multiple invariant constituents.

In step 2 of the cross-case analysis I completed a second level of analysis in order to have consistency between the invariant constituents contained in the cross-case thematic groupings. Because I attempted to keep each case separate as I completed the individual within-case phenomenological analysis, sometimes the same ideas would be coded into differently labeled individual themes between two participants. For example, invariant constituents about the concept of time were organized into a theme titled “time” for one participant, but were organized into a theme titled “barriers” for another participant due to the difference in how the participants expressed their ideas. So, in the second level of analysis I carefully recoded and reorganized the individual invariant constituents contained within the cross-case thematic groups based on commonalities.
The process of recoding and reorganizing the invariant constituents within the cross-case thematic groups into smaller, more specific groupings began by reading the invariant constituents several times and formulating some initial cross-case specific groupings. The invariant constituents were then labeled by specific grouping using the highlight or change text color functions in the word processor, and organized into lists of invariant constituents for each specific grouping. Assignment of invariant constituents to a particular cross-case specific grouping was reviewed and changes were freely made in the assignments until I had placed each constituent into a specific grouping it seemed to best represent. For example, the invariant constituents about time contained in the individual themes about “time” for one participant, and “barriers” for another participant were then reorganized into a specific grouping titled “time”. This process resulted in 147 cross-case specific groupings.

Step 3 of the cross-case analysis involved removing specific groupings generated in the second level of cross-case analysis that contained data from only one participant and as such did not contribute to the cross-case analysis. For example, I removed the specific grouping about consulting because only one participant contributed to it. I then organized the cross-case specific groupings that remained into cross-case sub-themes. I initiated the process by first reading the cross-case specific groupings several times and then organizing them into cross-case sub-themes based on commonalities. As was the case with previous coding and organizing, the assignment of cross-case specific groupings to cross-case sub-themes were reviewed and changed as necessary until all specific groupings were assigned to cross-case sub-themes that best described them. For example, the cross-case specific groupings “Medical Model” and “Expectations of the
Medical Model” were combined along with other specific groupings into a cross-case sub-theme titled “The Medical Model” because they contained invariant constituents that were similar. This process resulted in 18 cross-case sub-themes.

In step 4, I then considered the relationships between the cross-case sub-themes by reading them several times. Cross-case sub-themes were then organized and re-organized based on similarities and relationships until five overarching cross-case themes were developed and labeled. Assignment of cross-case sub-themes to a particular cross-case theme were reviewed and changes were made in the assignments and cross-case theme labels until I was convinced I had placed each cross-case sub-theme into a labeled cross-case theme it seemed to best represent. This process is consistent with the cross case analysis procedure previously reported (Patton, 2002).

In the 5th and final step of the cross-case analysis I integrated all of the individual participant’s textural, structural, and composite descriptions and the cross-case themes into a common and universal, or essential, description of the phenomenon. This process is consistent with the synthesis statement procedure previously reported (Moustakas, 1994).

**Standards of validation.** I used several methods of validation that are typical for qualitative and phenomenological inquiry. The general methods of validation for qualitative research used were triangulation, peer review and external audit, and rich description. I accomplished triangulation by the use of multiple participants as sources of data. The dissertation chair audited portions of interview transcripts, horizontalized statements, invariant constituents and themes of each participant to ensure they accurately reflected the data. External audit was performed by an outside external reviewer who
compared the invariant constituents and themes to the textural, structural, and synthesized
textural-structural descriptions to ensure that the descriptions accurately reflected the data
(Patton, 2002). The dissertation chair and external reviewer also audited the cross-case
themes and final composite synthesis statement. I obtained rich descriptions of the
experience of providing occupation-based hand therapy through appropriate criterion
sampling, a thoughtfully constructed and reviewed interview guide, and accurate
interview transcriptions (Creswell, 2007; Maxwell, 2005).

The specific methods of validation for phenomenological inquiry that I used were
soliciting member checks and adhering to the essential philosophical and methodological
features of phenomenological inquiry, including diligently pursuing the process of
epoque (Appendix C). I solicited member checks both after transcription of the
interviews (Creswell, 2007) and after construction of the themes, textural and structural
descriptions (Moustakas, 1994) in order to ensure that the transcriptions, themes and
descriptions accurately reflected the experience of the participants. I adhered to the
philosophical and methodological features of phenomenological inquiry as proposed by
Moustakas including clearly communicating and defining my research question
(Creswell) as well as taking steps to limit the possibility that I influenced the participant’s
descriptions in such a way that they do not depict the participant’s experience
(Polkinghorne, 1989). These steps included using a thoughtfully constructed and
reviewed interview guide and engaging in the process of epoque, or the bracketing of my
biases. Bracketing took place throughout the data collection and data analysis periods
aided by reflections that I recorded following each interview. These bracketed biases and
reflections were reviewed at the beginning of the data analysis process for each
participant, while organizing themes and prior to constructing the synthesis statement. I regularly discussed issues related to bracketing with the dissertation chair and the external reviewer. I also considered possible alternate conclusions (Polkinghorne, Moustakas), and solicited alternate interpretations from the participants during the member check.

Finally, I considered if the constructed composite description was situation specific or if it can also apply to other situations (Polkinghorne, 1989). Because the applicability of qualitative studies are not based on population sampling, which allows the generalization to other members of the population, but rather on the development of theories or ideas that can be extended to other similar situations, I carefully weighed the application of the findings of the proposed study in the light of the similarity to the other situations in question (Maxwell, 2005).
Chapter IV: Results

Participants

All ten participants identified themselves as occupation-based hand therapists. Participant locations ranged from California to Florida and points in between. Overall, the participants were quite practiced, ranging from 20 to 36 years of experience as an occupational therapist and 15-37 years of experience in hand therapy. Six of the ten have presented or published on the topic of occupation-based hand therapy. Five participants hold doctoral level degrees, and another a post-professional masters degree in occupational therapy. Three of the ten participants were male and seven female. Half of the participants were full time clinicians, two of whom served as adjunct faculty, and the other half were full-time academics who maintained varying degrees of clinical practice at the time of their interview. See Table 1 for detailed participant demographics.

For individual descriptions, all participants are referred to by pseudonyms. Alan has been an occupational therapist for 22 years, with the last ten being spent as an occupational therapy academic. He has 21 years of experience in hand therapy. Alan spent ten percent of his time participating in a small faculty clinical practice for patients with upper extremity injuries. Alan has published on the use of occupation-based treatment and holds a clinical doctorate in occupational therapy.

Beth has been an occupational therapist for 28 years. She has 15 years of experience in hand therapy and is a certified hand therapist (CHT). Beth holds a doctoral level degree. She has been a full-time occupational therapy academic for fifteen years while spending six percent of her time working at a local hospital. In her clinical practice she has treated both outpatients and inpatients with upper extremity injuries. However, at
the time of the interview Beth’s caseload was primarily inpatient. Beth has published on a topic similar to occupation-based hand therapy, occupation and holism in hand therapy.

Cathy has been an occupational therapist for more than 29 years with most of her experience treating upper extremity injuries in outpatient clinics. She is a CHT and has served as adjunct faculty. Cathy has also served as the coordinator for research about hand therapy at a nationally known hospital. Cathy has bachelors and masters degree in fine art and an entry level master’s degree in occupational therapy. At the time of the interview Cathy was employed at a hospital-based outpatient rehabilitation facility, with an all hand therapy caseload.

Diane has been an occupational therapist for 22 years, with most of her experience being in hand therapy and all but one year at the same facility. Fifty percent of Diane’s time is spent in patient care and the rest in administrative tasks. She also serves as adjunct faculty. She has published and presented on the topic of occupation-based hand therapy. Diane holds a bachelors degree in occupational therapy and is a CHT.

Ellen has 26 years of experience as an occupational therapist, including 21 years in hand therapy. She has been a full time occupational therapy academic for 12 years while participating in sporadic part time or PRN work in hand therapy. At the time of the interview she was not practicing clinically. Ellen has published and presented on occupation-based hand therapy. She holds a doctoral level degree and is a CHT.

Fay has been an occupational therapist for 35 years and practiced in outpatient rehabilitation, industrial rehabilitation and community-based practice settings. Fay has 35 years of experience in hand therapy. She has earned a doctorate and a hand therapy
certification. Fay has been a full time academic in an occupational therapy program for the last five years. She only sees patients as a part of research currently.

Gayle has been an occupational therapist for more than 37 years, with the majority of her experience as a full time academic. She has provided part time and consultant hand therapy throughout her time as an academic, however for the last nine years her clinical work has been reduced and is currently one percent of her time. Gayle has a doctoral level degree.

Hank has 20 years of experience as an occupational therapist, primarily in hospital-based hand therapy. He has a bachelor’s degree in chemistry and a bachelor’s degree in occupational therapy. Hank is a CHT.

Ian has 30 years of experience as an occupational therapist, including 20 years specializing in hand therapy in out-patient settings. He holds a bachelor’s and a post professional master’s degree in occupational therapy and is a CHT. Ian has published on the subject of occupation-based hand therapy.

Janet has 32 years of experience as an occupational therapist. Most of her 30 years of experience in hand therapy has been in outpatient settings. She has a post graduate certificate of proficiency in occupational therapy and is a CHT.

**Themes**

The cross case analysis produced five overarching themes that define the scope of how occupational therapists perceive and describe the experience of providing occupation-based hand therapy. See Table 2 for participant contribution to each theme.
<table>
<thead>
<tr>
<th></th>
<th>Alan</th>
<th>Beth</th>
<th>Cathy</th>
<th>Diane</th>
<th>Ellen</th>
<th>Fay</th>
<th>Gayle</th>
<th>Hank</th>
<th>Ian</th>
<th>Janet</th>
</tr>
</thead>
<tbody>
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<td><strong>Gender</strong></td>
<td>Male</td>
<td>Female</td>
<td>Female</td>
<td>Female</td>
<td>Female</td>
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<td>Female</td>
<td>Male</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
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<td>CA</td>
<td>NC</td>
<td>OH</td>
<td>FL</td>
<td>OH</td>
<td>NC</td>
<td>OH</td>
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<td><strong>CHT?</strong></td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>No</td>
<td>No</td>
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<td>B.S in OT, Ed. D.</td>
<td>MOT</td>
<td>B.S. in OT, Ed.D.</td>
<td>B.S. in OT, Ph.D.</td>
<td>B.S. in OT, Ph.D.</td>
<td>B.S. in OT</td>
<td>B.S. and post-professional masters degrees in OT</td>
<td>Post-graduate certificate of proficiency in OT</td>
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<td>Yes, Full Time</td>
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<td>Yes, Adjunct</td>
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<tr>
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<td>28</td>
<td>29+</td>
<td>22</td>
<td>26</td>
<td>35</td>
<td>37</td>
<td>20</td>
<td>30</td>
<td>32</td>
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<tr>
<td><strong>Years of experience in hand therapy</strong></td>
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<td>15</td>
<td>29+</td>
<td>22</td>
<td>21</td>
<td>35</td>
<td>37</td>
<td>20</td>
<td>20</td>
<td>30+</td>
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<tr>
<td><strong>Current % of time in direct patient contact</strong></td>
<td>10%</td>
<td>6%</td>
<td>95%</td>
<td>50%</td>
<td>0%</td>
<td>Only as a part of research</td>
<td>1%</td>
<td>90%</td>
<td>100%</td>
<td>95%</td>
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<td><strong>Current practice setting</strong></td>
<td>Academic, with small faculty practice.</td>
<td>Academic, with 1 day a week clinical practice at small hospital</td>
<td>Full time clinical practice in a free standing out patient clinic that is part of a national chain</td>
<td>Full time clinical/administrative practice in a hospital-based out patient clinic</td>
<td>Full time Academic</td>
<td>Full time Academic</td>
<td>Full time Academic</td>
<td>Full time clinical practice in a hospital-based out patient clinic</td>
<td>Full time clinical practice in a private practice out patient clinic, physician owned</td>
<td>Full time clinical practice in a private practice out patient clinic, PT owned</td>
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Table 2
Contribution to Themes by Participant

<table>
<thead>
<tr>
<th>Theme</th>
<th>Alan</th>
<th>Beth</th>
<th>Cathy</th>
<th>Diane</th>
<th>Ellen</th>
<th>Fay</th>
<th>Gayle</th>
<th>Hank</th>
<th>Ian</th>
<th>Janet</th>
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<tr>
<td><strong>INFLUENCES</strong></td>
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<td>X</td>
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<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
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<td>Personal Experience</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Others’ perceptions of OT</td>
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<td></td>
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<td>The patient and therapist relationship</td>
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<td></td>
<td></td>
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<tr>
<td>The patient’s needs are more complex than their injury and must be dealt with holistically</td>
<td>X</td>
<td>X</td>
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<td></td>
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<tr>
<td>Occupation addresses psychosocial issues</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<td><strong>THE PROCEDURAL ELEMENTS OF PRACTICE</strong></td>
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<td></td>
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<tr>
<td>Balancing precautions and activity</td>
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<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Occupation as means</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>The context of occupation</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td><strong>NEGOTIATING A PLACE</strong></td>
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<tr>
<td>The effort it takes</td>
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<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>The medical model</td>
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<td>Issues related to the patient</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>The pragmatic concerns of time, reimbursement, and the environment</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
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</table>
**Theme 1: Influences.** This theme describes elements that influence the participants’ experience with providing occupation-based hand therapy. The subthemes address theoretical influences, the influence of evidence and information about occupation-based hand therapy, and the influence of the participants’ personal experiences.

**Theoretical.** All participants identified theoretical influences on their approach to treatment. Participants specifically identified the Model of Human Occupation (MOHO), the Occupational Therapy Practice Framework, Occupational Science, Occupational Adaptation, the Person-Environment-Occupation-Performance model, Cognitive-based therapies, The Canadian Model of Occupational Performance, the Rehabilitation and Biomechanical frames of reference, and the theories of Lorna J. King, Abraham Maslow, Gail Fiddler, Anne Mosey, Mary Reilly, Katherine Trombly and David Nelson as well as the writings of Julie McLaughlin Gray as influencing them. The most frequently mentioned theory that influenced the participants was MOHO. For example, Fay stated, “MOHO definitely has influence, certainly has influenced developing the clinic and looking at what kind of motivations, the volition and habituation. We looked at that a lot.” Additionally the Occupational Therapy Practice Framework was named by several participants as an influence on their therapeutic approach. Several Participants indicated that they were influenced by the academic discipline of Occupational Science, the study of the meaning, form and function of human occupation (Zemke & Clark, 1996). Cathy noted that occupational science was a good philosophical fit for her, because of the focus on the meaning found in activities relevant to a patient’s life. She stated, “[U]nderstanding the meaning of an activity and the relevance of it to a person drives our
success really. That's the piece that remains very beautiful for me, and it's where I connect I think quite successfully with patients.”

**Evidence and information.** This subtheme was contributed to by most participants and contains statements regarding seeking information about and evidence for an occupation-based approach. Such statements expressed the need for more research, contributing to the research, clinical experience as a source of evidence, and professional values and evidence.

*The need for more research.* Many participants expressed a need for more objective research about the use of an occupation-based approach in hand therapy. For example, Gayle stated, “Well, there isn’t a lot of research on occupation-based hand therapy unfortunately. There is some research on occupation and it’s kind of its building, but it’s slow. But, you know at least it’s a little bit there.”

*Contributing to the research.* Several participants reported interest in contributing research to the occupation-based hand therapy evidence base. Fay related, “…in the American Society of Hand Therapists, there are a core group of us who communicates and get support and are doing more presentations on [occupation-based hand therapy].” Diane reported her experience with research:

> We are sitting on loads of data and we actually have set up to do some work with University of X. Their students come in for like a research and independent study research class and are doing a lot of our data entry and we’re trying to get things together so we can really analyze and publish a lot of this data. Because, we have thousands of COPMs that we're sitting on over here. So we're kind of excited about that.

Fay also shared her occupation-based hand therapy research agenda stating,

> … the kinds of other research questions I had was…does range of motion predict someone's ability to cook a meal? And I continue that line of research because I see patients who can do amazing things in spite of their
impairment, and people who are not very impaired who can't do anything. So what is this relationship between body structures and activities and really activities and participation? And I'm not so sure that we are really predicting function by doing all of these other measurements of body structures.

Several participants also noted the difficulties associated with studying the complex construct of occupation. Fay reported, “…the research I think about is like from Trombly that looks at…is exercise better than activity. But it is still contrived activities so I don't know if we've got at the issue of occupation.” Ellen suggested the need to consider qualitative methodology to study the outcomes of occupation-based hand therapy.

I think that the outcomes that occupational therapy or an occupation-based approach really fosters, you have to go from that qualitatively. You have to talk to clients, you have to find out how it has impacted their life, not just quantitatively…. I agree you can … make improvements in patient’s hands [quantitatively], but does that always mean they’re getting back to the life they want to live as quickly as possible? That’s the question.

Clinical experience as a source of evidence. All but one participant reported relying on their clinical experience with using an occupation-based approach as evidence for effectiveness because of the lack of research on occupation-based approaches in hand therapy. For example, during Cathy’s interview she was asked if she believed an occupation-based approach was effective. She replied, “I do, but I have no evidence. But what I believe I’ve seen.”

Professional values and evidence. Some participants refer to the values of occupational therapy as reasons or evidence for the use of an occupation-based approach. Ellen expressed that belief in occupation-based care is important because it is based in the values of the profession. She reported, “whereas what is out there about the occupation-
based approach as opposed to the standard approach there is very little evidence. But I think it’s even bigger than the evidence, because we’re talking about how the profession believes.” Gayle illustrated how belief in the values of occupational therapy can influence belief in the effectiveness of occupation-based hand therapy approaches. She stated, “I’m sure we’ll get to the point where we have good research to support that it is efficacious, that it is better than just plain exercise and….other adjunctive treatments, because I believe in it. But, we’re not there yet.”

**Personal experience.** All but one participant reported being influenced toward occupation-based practice by their personal experiences. Influences relating to the personal experience of the participants consisted of academic experience, professional support, and personal reward.

**Academic experience.** Several participants discussed the role of education in influencing their therapeutic approach. For example, Hank reported that his fieldwork experience instilled in him an appreciation for the use of meaningful activity as interventions. He stated, “I was in a psych setting for three months once as part of my training too, so I appreciate these things of leisure, baseball and going out into the field and playing some ball with some of the psych residents.” Ian expressed that it was his post professional masters degree in occupational therapy that influenced him toward a more occupation-based practice, “I think that came, philosophically…after my masters. I think before that it was pretty much non occupation-based, more range of motion and strengthening and in a lot of ways not really thinking very clearly about philosophy, fundamentals and so on.”
Several participants reported that serving as a faculty member influenced them toward an occupation-based approach. For example, Cathy shared that her experience as an adjunct faculty member allowed her to be connected to a source of professional growth that influenced her toward an occupation-based approach. She related, “I stayed connected to the evolving frameworks that came subsequently, and I continued to have writing and study experiences with therapists who were more in touch with the transition [to occupation-based care].” For Beth, entering an academic environment as a full-time faculty member and being exposed to educational standards that promoted occupation-based practice influenced her adoption of an occupation-based approach to care. She stated, “In academia, adhering to the standards for ACOTE really is an eye-opener. … I think that was a real wake-up call to get back to my roots, which was occupation-based therapy.”

Ellen also reported that entry into an academic environment reacquainted her with the roots of the profession of occupational therapy, and that this influenced her toward a more occupation-based practice. She reported, “And that’s [becoming faculty] when I really feel like I started to connect back to the profession of OT, probably having lost sight of what OT really was doing hands because the culture is so reductionist.”

Professional support. Most of the participants discussed the role of professional support in influencing occupational therapists in hand therapy settings toward an occupation-based approach. For example, Diane had a supervisor who strongly promoted occupation-based care. She reported experiencing a:

push from…my particular boss, [who] happens to be like the most occupation-based person in the world. So she really does a great job keeping everyone … focused and getting everyone to… buy into
it and facilitate it...[W]hen you're in that environment under her, she
doesn't let you get away...with not doing it.
Fay shared the change in her approach that occurred when she was mentored by
other occupational therapists:

I never really got mentored by an occupational therapist. In a hospital
environment I was mentored by physicians....And when I did get an OT
mentor ...[they] really challenged me in a positive way to look at what I
was doing and if it was really OT or not....And so having these OT
mentors I think was great. And that led to experiences where I saw how
powerful occupation is.
Several participants commented on the importance of practicing in a professional
environment that is philosophically supportive of occupation-based hand therapy. Diane
discussed her experience in a facility that has actively worked to achieve a more
occupation-based approach:

It is actually a fairly large inpatient and outpatient physical disabilities
rehab facility. And, the nice thing about it is that it's always been fairly
occupation-based although it has evolved a little over the years. We're
much stronger now I want to say probably over the past 10 years as far as
the occupation-based approach coming from an administrative- entire
department level.... I guess I really kind of grew up as an OT in an
environment that really looked a lot at function in occupation not purely
just...medical model rehab.... And I think again I'm pretty fortunate
where I am right now to be in a situation where we have kind of found
ways around to a lot of those kind of perceived barriers.... So, I think were
probably seeing a little bit less of these barriers than maybe other people
just because of the department. We've been so strong at looking at this.
For Janet, a supportive environment gives her the freedom to do the
different or less traditional things required by an occupation-based approach:

I think our situation promotes it [occupation-based care] because when I
didn’t tell anyone my harpist was bringing in her harp ....Not a single staff
member was like “what’s that? What’s going on?” They’re just like, “oh
that’s lovely. You don’t know what they’re going to bring in.” ....When
we built a frame for the guy that worked at the lumber yard...[n]obody
dismantled it. We just sort of built it and when we were done with it we
took it apart. It’s a very supportive environment.
Not all participants experienced this type of support for occupation-based practice in traditional hand therapy environments. Fay reported:

[F]or me to be able to do occupation-based care… I had to go into private practice to develop my own context, because it was just so foreign. I mean if I was to bring in the equipment we had at the center, you know like bricks and all kinds of works sim tasks…. I don't know the response I would've gotten, or the support.

Other participants speculated about the effect of a lack of clinical role modeling that supports occupation-based hand therapy. Cathy noted,

[W]hen I watch therapists treat who are the opposite of occupation-based in hand therapy, I've been curious about… what causes these differences. … I wonder…if it has to do with what they are exposed to …. in clinical role modeling through their development.

Several participants also reported being influenced toward an occupation-based practice by occupational therapy professional organizations. Beth shared her experience with serving on a committee for the American Occupational Therapy Association (AOTA). She stated, “that is a constant reminder …of where we want the OT profession to go, and it's hugely occupation-based.” Ellen noted the influence of the Accreditation Council for Occupational Therapy Education (ACOTE) on occupation-based practice through educational standards that require teaching of the underlying philosophies of occupational therapy. She stated, “I’m not sure instructors are doing a good job of making that point [underlying philosophy of OT] clear. I think it’s changed…since 98, as part of the standards now we have to talk the talk.”

*Personal reward.* Most participants commented on the role of personal enjoyment and reward as an influence toward occupation-based practice. Cathy stated, “when I practice occupation-based hand therapy, on a personal note, I experience a lot more
reward and personal job satisfaction and so I believe it is really prevented me from
burning out.” Janet commented,

[W]ell it [an occupation-based approach] makes it much more interesting. Because I can…get a call from one of my former patients who say, “hey I’m giving a concert on such and such if you want to come you’re welcome to, I’d love to have you,” and so I can go and see them happily back at what they love….But helping somebody regain their quality of life makes me know it was all worth it…. [W]hen somebody …says, “I was able to play a glissando and it sounded pretty good, not great, but pretty good”. Okay, we’re working in the right way.
Diane also noted experiencing personal satisfaction when using an occupation-based approach. She stated,

It's been actually it's more fun, because you get to be more creative. You know, you're really working closely with the patient and their family and getting them to think of some ideas of things that they want to work on and methods that they want to work toward some of their goals… [I]t just keeps things much more interesting because you're not just doing kind of those recipe protocol treatments exclusively.

Diane shared an example of this type of experience:

This is a patient's who was being seen for training with a myoelectric prosthesis on his right dominant arm….[H]is wife had come in and he also brought in his adorable really cute little baby and we did some things…showing him how to integrate the myoelectric prosthesis into …changing the baby’s diapers, putting on the baby shoes and clothes, safe means that he could actually carried the baby from point A to point B…. [Y]ou have these moments every once in awhile…where you just really feel, “oh my God this was like such a great experience, this is what OT is all about!” Because, he was incredibly excited that he could successfully do these things.

**Theme 2: Occupation and Professional Identity.** This theme describes how the participants think about being an occupational therapist and how others perceive occupational therapy. The sub-themes within this theme are the therapists’ conceptualization of occupational therapy and others’ perceptions of occupational therapy are.
The therapists’ conceptualization of occupational therapy. When the participants discussed how they conceptualize being an occupational therapist practicing in a hand therapy setting, many reported that they considered themselves occupational therapists first, before considering themselves hand therapists. For example, Fay stated

[A]t this point I don't even call it hand therapy anymore. I have really kind of watched my language and call it more doing occupational therapy with patients who have hand injuries. Or just not even calling it hand therapy or hands. It's always working with patients with hand injuries or with traumatic brain injuries. It's a person to me now as opposed to a physiological response to exercise. And that's been a huge jump and has taken a long time to get there….I mean we should be doing the same thing with all our patients, it's just that they come with a specific diagnosis.

Beth agreed that occupation should be the focus regardless of diagnosis. She reported,

“…for me hand therapy is almost a misnomer…getting people back to their occupation should always be what we’re about.”

For Ellen, identification with occupation is the primary construct underpinning occupational therapy. She related,

I think… it’s the understanding on the part of the therapist about what OT is. I don’t think an OT just wants to super glue occupations on top of beliefs, “I’m all biomechanical, but here I’m going to throw in arts and crafts, or throw in some talk about toileting, I’m just going to throw it in there every now and again.” That’s not what it is. It’s a belief, it’s values, it’s ethics, it’s understanding what your profession is….I think a better understanding of that and, you know, revisiting and trying to understand what our forefathers wanted and that we have to be true to that. And, people would say “Why, life changes, things change”. But, no, you can change your tactics and your tools, but you can’t change your philosophy, you shouldn’t change your philosophy or you’re becoming a different profession.

A few participants reported believing that some occupational therapists working in hand therapy undervalue the role of occupation. Diane stated,

I think in a lot of respects people [OTs] end up having this inferiority complex. It's like you know they want to be respected like the PT, so they
want to kind of do the same things that they do…And I think a lot of people just think occupation is so basic and they kind of take it for granted and they kind of undervalue it. And they place more value on…all the modalities and all this other stuff which definitely has a place but it's not the be-all end-all.

Fay shared her experience with examining how she valued occupation:

[W]hat I think really happened is as a new graduate I was not particularly proud of what I had in my bag of tricks….I was really thinking to do more range of motion and strength, impairment oriented things, because they seemed more scientific and important. And so there was that piece I bought….I think I needed to sell myself on doing these [occupation-based] programs. And it's interesting because my training had a lot of occupation in it…. And my level II fieldwork supported the use of activities…. So, fortunately for me I had exposure to the doing parts of therapy. And, that served me well, that when I was ready and had a change of attitude in my own belief system and experiences about occupation that I had some skills that I could use.

**Others’ perceptions of occupational therapy.** Most participants discussed others’ perceptions about occupational therapy. This subtheme contains statements about the distinctive identity of occupational therapy in the perception of others including physicians and other treatment team members, insurers, and clients. Participants reported concern about occupational therapists communicating clear differences with physical therapy. Diane related an example of this concern:

[W]hen I would attend continuing education things…at AOTA [American Occupational Therapy Association] or ASHT [American Society of Hand Therapists] or even local…state conferences, I was getting a little frustrated with how you really couldn't see a difference between what the OT's were talking about and what PT's were talking about. That occupation didn't really seem to be in there….I just think it’s so important for us as a profession to really highlight and value what makes us distinct from our PT counterparts.

A few participants shared examples of how using an occupation-based approach helps to clearly communicate the distinctiveness of occupational therapy to physicians.

Diane noted,
I think they [doctors]…have a much better idea of the difference between OT and PT. Because before I think, and probably some doctors still to some degree probably think that it's pretty interchangeable….so a referral might go to either discipline. And I think it really has helped clarify that for at least at our facility most of the upper extremity cases to go to OT because they can not only see…the great outcomes as far as the physical stuff but they hear from the patient's what they're back to doing. I think it just really helps kind of define the difference.

Diane also noted that using an occupation-based approach led to “a change in how we are perceived by other team members” She elaborated, stating,

[A] really nice byproduct of that was that the interdisciplinary [team], they started being aware of what we were doing and the physical therapists and the speech therapist started asking about the patient goals. And they wanted to see copies of the COPM so that way they were aware of what the patient really wanted to work on. And then OT suddenly became the leaders as far as the interdisciplinary team, and kind of tracking and reporting and getting the team together around these really important occupation goals that the patient had. And so now we’re kind of looked to as the leaders and all that which is really nice.

Ellen noted that not being able to be differentiated from physical therapy can cause occupational therapists future problems with reimbursement. She reported:

I sort of realize we were definitely heading down the wrong road as a profession and we were not being true to what we were supposed to be and we were in trouble. Because we couldn’t be differentiated from PT, you know our closest friend. And that’s not good in a world where there are so many health care dollars. You know if you want to have a job, I mean practically or pragmatically that’s part of what it is.

Several participants discussed the importance of patients understanding what occupational therapy is and the efficacy of using an occupation-based approach to enable that understanding. Ellen shared her view:

I think it [occupation based interventions] starts … from coming into the facility they don’t quite understand the purpose of treatment… [Not] “oh you’re going to help my shoulder to move, you’re going to help it to heal”, but that they understand “oh this is a facility, a profession that is going to help me get back to doing the things I want to do, whatever that may be and along the way part of that process involves helping my hand to move.
Ellen further noted that it can be difficult to help patients understand what the purpose of occupational therapy is. She stated,

I can see where…some therapists might feel challenged…to the point that they don’t want to deal with it. If a patient’s… looking at you…[and] the physical therapist is in the same giant gym area…and they’re watching people working out on big machines and the hot packs and the ice…and then here we are talking about ADL activities and…offering them different types of fun things like “would you like to build a toy truck”. And they’re like “I don’t get it, why am I doing fun baby games over here, and then over there…” So there has to be that explanation for them.

However, Cathy noted that using an occupation-based approach helps her clients understand what occupational therapy is. She stated, “I very seldom have to explain [to patients about occupation-based therapy]. They just really appreciate that it matters to me to understand more about their needs.” Diane agreed with Cathy, stating:

I think the biggest difference that [an occupation-based approach] makes is I think they [patients] truly understand what occupational therapy is really all about, and how we're different…. When you start defining things in those…occupational terms and…identify…some of those things that are really important to them I think it really helps their understanding of what we're trying to do.

Theme 3: The Psychosocial Elements of Practice. This theme deals with the interpersonal and psychological considerations in occupation-based hand therapy described by the participants. This theme contains the sub themes: the patient and therapist relationship, the patient’s needs are more complex than their injury and must be dealt with holistically, occupation addresses psychosocial issues, and motivation and meaning for the patient.

The patient and therapist relationship. Participants described characteristics of the therapist and patient relationship within an occupation-based approach by briefly
mentioning qualities such as encouraging the patient, caring, valuing rapport, listening to
the patient and being an advocate for the patient. Cathy shared an example,

[A]t the end of the session she said her pain was better and that this has
helped her more than any of her doctor’s visits. And what I believe it was,
was the listening. So I think sometimes situations you know are very hard
to tackle clinically but there's just that power of the listening. So to me
that was very occupation-based.

However, participants primarily addressed the concepts of respecting the patient
as an individual and focusing on a collaborative patient and therapist relationship when
discussing occupation-based hand therapy. Participants discussed focusing on the patient
as an individual and centering treatment around that focus. Janet stated, “I’m treating
them as a person; they’re not just a radius fracture.” Diane related,

Being truly client-centered allows me to explore and focus on the unique
occupations that each client wants to do. The client has to be involved to
help identify problems, set and prioritize goals, plan for treatment, and
ensure optimal outcomes…. The more I engage clients in the process, the
better the rapport, mutual trust, respect, and outcome.

Most participants agreed that focusing on the client and their needs fosters a trusting
therapeutic relationship. Ian reported,

[A] patient will sit down and they’ll say, “I have this particular orthopedic
problem” and the first thing I think about is one functional thing that they
have difficulty with because of that problem and I’ll say, “oh I bet it’s
really hard to put your bra on,” …[W]hat it’s shown the patient is that I
understand the condition. And the trust factors have been phenomenal,
and the ability for the patient to just move into a therapeutic relationship
has just been enhanced greatly…

Most participants noted the importance of creating a collaborative relationship
with the patient rather than a relationship where the therapist is the expert and the patient
is the recipient of care. Cathy illustrated this attitude when she stated, “in the more
occupation-based environments it’s my thinking that white lab jackets don’t convey a
compatible message. I prefer clothes that don’t make you look like you are trying to stand apart as the expert professional in the room.” Diana reported, “[occupation-based treatment] brings about a true and equal partnership. Clients are the experts in their hands and occupations; I am the expert in hand conditions and treatment.”

To Hank, this collaboration meant that he now positions himself as more of a facilitator than as the expert he previously had. He stated,

I’ve…backed off telling them what I’m going to do to them, and that they have to come see me and that’s the only way to succeed….I just give them a program that’s recommended by me, and then talk to them about where they’re at with it and whether we need to change to some other treatment.

Janet viewed collaboration as a primary difference in her own occupation-based approach. She related an experience where a patient told her “‘you know the difference between you and the other therapists?… You involve me every step of the way’ and I said, ‘It’s your finger isn’t it?... I work with people I don’t work on them.’”

The patient's needs are more complex than their injury and must be dealt with holistically. Many participants reported the belief that patients’ needs are more complex than their diagnoses and must be dealt with in a manner that addresses the whole person.

Ellen offered an example to illustrate:

…Ultimately this woman went to work… it took about 6 months through this whole process. But, she actually came back and talked to me…about her experience and had it not been for her OT she didn’t know where she’d be because she needed that support…. She was looking for her future…and if you didn’t encourage that dialogue and didn’t pay attention and weren’t an advocate, then she would have lost it. I mean that woman wouldn’t have had the positive outcome, … I really believe the OTness is what made a difference in her life.

Cathy shared another example of viewing the patient’s needs as more than just their current injury:
If a patient fell walking and is recovering from a distal radius fracture but they've lost their confidence in walking, and walking is their social outlet, and they are feeling that they just can't now connect with their neighbors or their neighborhood. Knowing that...[I have helped] that patient work on ideas to feel more confident returning to that activity, because the injury disrupted that activity.

**Occupation addresses psychosocial issues.** The majority of participants discussed how using an occupation-based approach facilitates addressing psycho-social issues by helping the patient picture their future self, revealing problems, and helping the patient overcome fears.

**Picturing a future self.** For Beth, one of the primary benefits of using an occupation-based approach was how regaining occupations helped the patient to see they were recovering and enabled them to picture a future self who could be successful. She reported “the effectiveness comes from...being geared toward regaining abilities to perform occupations....it keeps the idea of regaining occupational abilities at the forefront. It helps the client to understand they're getting better because ... it's an important benchmark”.

Diane also shared an example of how using an occupation-based approach helped her patient picture a future self that was able to return to doing what was important to him:

I had a gentleman one time who was in the midst of law school and had some really bad nerve injuries and fractures. He basically thought he would never get back to school and never be a lawyer. And so when we first started talking about his goals...he never brought up being able to go back to school because he thought it was unattainable. And so he had to get to a point where he had a little bit of hope that he could...see himself starting to do smaller things like feeding himself, managing some clothing and managing his toileting. And then that kind of let him see that, “you know what, even if I don't get full function...I'm going to be able to find a
way to compensate.” So then he started getting really excited about his long-term future and going back to school.

Revealing problems. Participants noted the usefulness of incorporating occupation in treatment in order to reveal concerns. Fay noted, “occupation brings out all of the hidden agendas. It brings out the psychosocial piece”. She shared an example where engaging in a meaningful activity helped a patient express her feelings while working on improving the functional use of her arm.

The kinds of things we had her do initially was just a lot of gross motor activities….he was into stenciling, so on our walls we actually had her do a mural hand painted on the wall. The mural that she selected, the title she gave it was called stuck, S-T-U-C-K, and that kind of described where she was.

Helping the patient overcome fears. Several participants also noted that having their patients participate in occupations in the clinical environment helped the patient overcome fears. Hank reported, “It’s the patient that’s struggling, the ones I think of are the ones that are messed up and haven’t been able to do anything for a long time, and they’re really distressed… [that benefit from doing occupation in the clinic]”. Janet shared this example:

So I encouraged her to try [piano] scales and seeing how that stretch was and where. I would ask her when she’d come in “did you try yet?” And she said no, she didn’t feel she could do that. So she walked in one day and found a keyboard on one of the tables. I said “guess what we’re doing today”. We were able to break through that by trying it firsthand.

Motivation and meaning for the patient. All participants discussed the role of meaning and motivation in an occupation-based approach. Alan commented on the role of relevant and meaningful activity in promoting patient progress. He reported,

[F]or example, if you're using job simulation to get a person back to a certain type of work. Obviously that's a…great type of therapy, versus just doing something that has no relevance to work, but just working on client factors such as range of
motion and strength. But I think when it's within context and it has influence on future roles and performance, it has a lot more benefit.

Gayle expressed the connection between the individual meaning found in occupations and motivation:

[T]he chief underpinning of occupation-based practice is something that is of interest to the patient. Any occupation has to be something that is meaningful to that patient, and so you have to spend the time to get to know your patient to figure out what is really meaningful to them, what is it in their heart that is driving them? What is it that’s bothering them the most that they can’t do because of this hand injury? And once you key into that, attitudes change, engagement in therapy changes. You can see it.

For Fay, the individual meaning found in occupation also motivates by promoting the active involvement of the patient. “There’s just really no comparison [using an occupation-based approach with other approaches used previously]…Occupation-based therapy makes people responsible, makes people engaged, makes people motivated.”

Beth also noted that participating in activities that are meaningful boosts motivation and compliance. She reported,

I have had the experience of many patients in the past not being highly compliant or motivated by rote exercise. In other words, I found out a long time ago that exercise just doesn't work very well. It has to be a small piece of prevention and remediation for some of my clients … but if that's all I do I'm quite convinced by my experience that that won't work. And I see that in either noncompliance or partial compliance out of my patients from the past.

Ian offered this example of the role of occupation in patient motivation and interest:

I had a patient that dislocated his elbow playing football two weeks ago and he had a very clear elbow post reduction protocol, and what I had to do with him was show him how to train everything except his elbow. Because his focus as a 17 year of high school athlete is about “is he going to get a scholarship?”…[H]is motivation is “how do I get back on the football field as fast as I possibly can?” And my task is, how do I get him
on that field without reinjuring that elbow and making sure the rest of him doesn’t fall out of condition so he can go back to playing football. And so we did a lot of running activities. We had the parking lot of the office, and went out and he was catching one handed with his other hand, so he was working on coordination with his non-dominant hand. He was very motivated. It was keying into what he was doing. I could have done just range of motion and strengthening but he enjoyed coming to therapy mostly because it was keeping him in the game so to speak.

**Theme 4: The Procedural Elements of Practice.** This theme deals with the tasks associated with providing occupation-based hand therapy that were described by the participants. This theme contains the sub themes: assessment, balancing precautions and activity, preparatory methods, occupation as the end goal, occupation as means, and the context of occupation.

**Assessment.** Participants described assessing both patients’ impairments and their occupational performance issues. All participants indicated that a necessary and appropriate part of occupation-based care is evaluating impairments such as range of motion, strength, edema and pain. Ian explained,

> I don’t think you can fully spend enough time in an occupation based approach understanding what the deficits are without understanding the actual physical performance problems of the patient…. I need to analyze whether I need to break off the restorative practice and say you know “this is what you got we’re going to have to work with”. If you don’t have a full understanding of the nervous system or skeletal system or impairment problems how do you know you reached that point?

Participants used both standardized and non-standardized approaches when assessing occupational performance issues. Most of the participants discussed using a standardized assessment, such as the Canadian Occupational Performance Measure (COPM) and the Disabilities of the Arm, Shoulder, and Hand Questionnaire (DASH), or a structured interview based on a standardized assessment. For example, Janet reported, ‘’We use a DASH… But it’s a narrative we discuss, it’s not a fill in the blank kind of
thing. … I don’t like fill in the blank forms…You have to talk to them and get to see who they are”. Many participants expressed a preference for the use of the COPM as a means to assess occupational performance issues. Cathy related, “I sometimes use the COPM and I like that instrument very much.”

Others used semi-structured or non-structured patient interviews or a combination of approaches. One participant, Hank, reported relying on clients to report their occupational performance issues. He stated,

It’s interesting, when it’s one arm and the other is healthy, for the most part they seem to manage pretty well with basic self care type stuff, and life functioning around the house. So I don’t usually hear too many concerns or complaints. On occasion somebody will share with you what’s hard.

However, other participants indicated that deeper questioning is necessary to access occupational performance deficits. Ellen explained:

You know sometimes people in the clinic say, “oh, we always ask can you do your ADLS?”… “oh yea I did!” “Okay, good, move on.” And they never say, “Well, tell me about your experience about the quality,” That’s what we never ask. And, I think that is the difference in an occupation based approach, is that we’re not just looking does it get done or not, but how is it affecting this person? …I think it needs to be a little more formalized. I think it has to be…“tell me specifically what you are having difficulty with so we can make sure that it is addressed”, not just “oh this will help you eventually get back to work, or eventually do your ADLS at home.”

Diane also shared an example where using the COPM allowed her to discover her client’s occupational performance issues in ways that an unstructured interview did not:

I thought I was talking a lot with him about his prior occupations and what he wanted to be able to do and functional goals, and I kept putting off physically doing the COPM with him because I kind of perceived that he would think it was a waste of time….He was very large and he was into working out and so we were focusing a lot on tissue remediation and … general range of motion and strengthening and splinting and things like that. And when I finally did it with him he actually broke down and cried.
It was a very transformative experience for him because he talked about how since… I talked about these things with him and I started writing them down and we started… talking about his goals that he knew it was going to be possible.

**Balancing precautions and activity.** Many participants discussed the challenge of balancing precautions and activity in an occupation-based approach. Diane stated, “There's also… balance… Am I… balancing things based on the patient's current status and acuity and tissue healing? Is there a balance between doing enough for that and also keeping the occupation-based focus in there as well?” Janet noted, “You still have to break it down so if they’re not allowed resistive activity, they aren’t allowed resisted activity.” Gayle concurred and reported, “[O]f course you have to use a basic scientific reasoning about their wound healing progression and all that to make sure that you don’t do something that is going to hurt them.”

A few participants expressed a greater concern for the acuity of the patient’s injury than for their ability to complete necessary ADLs. For example Ian related,

[W]hen you come out of rotator cuff repair you can’t move your arm for six weeks… Well pretty much everything they like to do in their life is put on hold for those 6 weeks while they wait to regain the ability to start to move their arm again. So then they go through a process when they have really, no occupation goals…[D]ressing skills and care skills, hygiene skills, those types of things can be addressed 6-8 post operative weeks, they can’t be addressed earlier.

However, Ellen believes that ensuring a patient’s ability to engage in their ADLs is a vital part of occupation-based hand therapy.

I hear that a lot from OTs in hand therapy, “well we’re working toward their inevitability of functionality”, it’s like well I wouldn’t want to wait 6 weeks to toilet, or to feed myself, or prepare meals, or dress my baby, or why do I have to wait for those? To me that’s the first thing when you’re talking occupation based you immediately go to the occupations… But I think another really important part of our job as OTs is making sure that… if someone had a flexor tendon laceration and can't use their
dominant hand for three months…that they're finding out some way of getting by right now. So it's not just “okay we'll get to that later once you can use your hand”, but “okay how are you getting by one handed. Are there any compensatory methods that we can teach you? Are there any assistive devices that will help make your life a little easier while you're waiting for your tissues to recover so we can start doing more?”

Other participants also noted that a balanced approach is required when considering the needs of the patient’s tissues and the need of the patient to perform valued occupations such as ADLs. Alan stated, “the only time I use occupation-based activity per the framework with acute patients would be typically under the rehabilitative frame of reference, we’re working on compensatory techniques and assistive devices.” Beth noted this balance is necessary because patients will engage in activities of daily living at home regardless of precautions, and need to know how to do so safely. She stated,

[W]e need to be careful not to do too early in the wound healing phase and still be able to do the occupations that I know they're going to go home and do regardless. And so if I don't take time to see how they're doing it, or teaching them how to do it safely, then I really have done a disservice to them.

**Preparatory methods.** All participants described using preparatory methods to address their patients’ tissue specific needs such as exercise, splinting and physical agent modalities. For example, Janet reported “I do hands-on also, where hands-on is needed, to do blocking or active assisted motion….as well as motion, pain relief, edema control, modified stress loading kind of things… basic strengthening, range of motion, coordination.” Ian also related the kinds of interventions he engages in on a daily basis, stating, “I’d make 4-5 splints a day….. You would see always anywhere between 15-20 minutes of hands-on intervention where I am able to have my hands on a patient doing
whatever, scar mobilization, wound management techniques, movement, and joint mobilization techniques.”

Several participants reported that there are times when the specificity of exercise is required to address tissue specific objectives. Beth noted, “for example, after a tendon repair…where I know tissue specific exercise is really critical.” Ian also shared an example:

I think when you have targeted problems…a good example would be …intrinsic tightness… it needs a very specific, very mundane exercise approach. There is nothing functionally you can do to overcome intrinsic tightness…[I]f I try to do a functional hand based program, it will not address the intrinsic tightness because it doesn’t control the MP joints well enough. So you need to be able to do target based impairment interventions when that is precipitating more predominant problems.

Many participants regard interventions such as exercise and manual techniques as a part of an occupation-based approach, even though these interventions are classified as preparatory rather than occupation-based by the American Occupational Therapy Association. Ian explained:

Ian: I guess if you were to look at …a joint mobilization technique for example you can make the argument that is not an occupation-based intervention…
Researcher: Is that how you view it though?
Ian: Exactly, that’s not how I view it. But, in current terminology it’s a preparatory technique or necessary to get the patient to that level of performance of that particular activity. That’s totally consistent with the mission statements of AOTA. So I don’t consider any of those things non-occupation based.
Diane further explains,

I just wanted to make it clear that… were not…excluding some of those …more traditional exercises, …those will be included as well to get to the tissue specific things that were looking for. But it's just kind of the frame, the lens that we …use when we’re picking activities so that we really try to make it very occupation-based versus just…here's the exercises that everybody gets for this problem.
Occupation as the end goal. All participants described themselves approaching occupational performance as the end goal of treatment. Participants described the concept as a focus on the patient’s ability to perform their occupations as the ultimate goal of occupational therapy intervention. For example, Alan judged a successful therapy outcome as “being able to … do more of the physical demands of the job, getting closer and closer to being able to do on your job.” Ellen further described this ultimate goal:

   Engagement in occupation is an end result of what we do. We do not just do working on range of motion as a goal. Even Medicare doesn’t want to see that. You know, it doesn’t matter, some people have perfectly functional lives without range of motion of their wrist so why would that need to be a goal? The goal is can they function.

   Many participants noted that although some interventions may not look occupation-based because they are preparatory in nature, they are occupation-based because they work toward the ultimate goal of return to occupational performance. For example, Beth related,

   [W]hat do my interventions look like? Well, they may still be preparatory in nature, some of them, but ultimately, they are couched in, “okay, we need to work on this because it’s going to lead to getting you back to work or getting you back to doing your home management things or being a caregiver”, whatever the case may be.

   According to some of the participants, consistently explaining the connection between what you are doing and the end goal of occupational performance is necessary. For example, Cathy related,

   Sometimes you have to do mechanistic things in order to achieve the next step in hand therapy. But to have them understand the connection that if we go through some of these more mechanical steps it's for the purpose of them being able to hold the pen and adapting the pen and doing everything to make it relevant treatment that leads to their seeing and participating in that activity that they want or need to do.

   Ellen reported,
And they [preparatory activities] have a place but there always needs to be the connection to “we’re going to do this, but then we’re going to take a walk to the bigger more important issues, we’re not just doing this and you leave.” There needs to be a connection every single time the person has therapy. So that’s how I look at the difference…. I mean I think that would be at the very least, if you are an OT and you’re starting to realize, “wow I’ve really neglected this part” then at least start with a conversation.

**Occupation as means.** Some participants also viewed occupation as the actual intervention, or means of treatment. Gayle defined occupation as means as,

[Y]ou are using their valued occupations and the activities and tasks that are associated with those values and occupations as therapeutic modalities, and selected pieces of those tasks as you can safely apply them in your therapeutic program.

Ian provided further description of how occupation as means and occupation as ends can work together in this example:

We clearly work toward a goal that is occupation based. We’re working toward regaining some type lost ability to function. And we use different methods and interventions to get us there. Sometimes we use occupation and sometimes it’s very effective. I mean occupation as means would be using a specific activity as an intervention. A person is unable to knit, the way you get them to knit is to actually go knit, think about the adaptations and teach them how to knit. In that case the occupation becomes means and ultimately when you gain independence becomes the means and the ends.

Participants offered numerous examples of occupations they used as the means of treatment. Diane shared the following examples from several patients:

He needed to be able to not only get dressed but to be able to put on his suit and tie and tie his shoes when he had to argue mock cases in school….We've taken kids out there [a nearby park] with their parents you know help them figure out how to push their kids on the swing and things like that….Her concerns were just in the kitchen area and so we had her do lots of cooking, we had her do organizing shelves for reaching.
Fay also shared examples, including “We had her just doing a lot of holiday type of preparations. You know it was around the holidays so she did Christmas cookies with patients and she did decorating the Christmas tree.”

For Ellen, the use of occupation as means is a beneficial contribution of occupational therapy to hand therapy. She related,

I’m afraid hand therapy gets out of the [use of occupation], they may consider it their end, but I’m not sure that it’s as strong a part of the means as it could be. And I believe that if it’s part of the means then the end is going to be better.

Participants differ somewhat on when it is appropriate to initiate using occupations as an intervention. For some participants, using occupation as means is not appropriate until the client has begun to demonstrate improvements in impairments. Alan reported, “[A]s they move along the continuum and get better and more active movement is…warranted as we’re trying to make range of motion and strength and function better, that’s when…occupation-based activity per the framework would be indicated.”

However, most participants used occupation as the means of treatment even during the acute phase of recovery. Janet often incorporates musical instruments into the treatment of musicians as soon as she can. She related, “With my harpist it is like ‘ok you can start on scales, work on getting that octave stretch.’ So I have them working within their occupation as soon as possible as part of their therapy.”

A few participants reported believing that occupations do not remediate impairments effectively. Alan reported:

If I'm just going to go with occupation-based therapy for hand therapy per the framework, I think were missing out. Because, I think we're not doing justice to the acute or sub-acute patient... [I]n the acute phase we are not using occupation-based interventions when we’re trying to use anything that is trying to remediate or try to fix the problem. Were using more
preparatory methods and purposeful activity….I guess I get better results, based on my experience, when using preparatory methods and purposeful activity to have effects on clients’ impairments, than I typically do with occupation-based. When trying to elicit just more global patterns of function, then I do have more success with occupation-based interventions.

However, other participants believed that the use of occupation-based activities could effectively remediate impairments through the use of spontaneous or sub-cortical movements. Fay shared an example:

Well, there seems to be a turning point in every one's rehab program where they need to stay sick or to get better. We had an obstacle course and I was working with the COTA at the time. The goal of this police lady was to run through tires and get on the bus and then we open the back of the bus and she had to jump off the back of the bus. So she did all the tires, because she could manage maintaining her shoulder in a very tight position. But when it came to jumping off the bus she really wouldn't do it. And so the COTA was there with me and she was telling her to “jump off the bus” and being a policeman she was not responding. So the COTA kept saying "jump off the bus!" in a very military approach. And so finally the COTA said "jump off the g.d. bus!" The lady jumped off the bus, her arm went up in the air and that was the end of the show. She basically did full shoulder motion.

Adaptation. Most participants incorporated occupation as means in the form of adaptation and compensation techniques, even in the acute stage. Fay likened the need for adaptation to medication:

But for people with cumulative trauma disorders of the upper extremity, …it's the activity that you're adapting and I liken it to taking medication. Do you need two pills or three pills? How much of this do you really need to modify? How can you modify it? What are the results? How does the tissue respond? How does a person responds to their performance? So adaptation, at least for people that are more cumulative trauma, is essential.

A few participants discussed using adaptation and compensation once the patient is out of the acute phase. For Hank, adaptation is often associated with sports like golf where “we’re picking up a club and talking about the progression of return to golf outside of the
clinic, and thinking about what’s appropriate and what’s not.” Hank also addresses adaptation and compensation in other areas. He reported, “[A]nother OT specialty you got to open up and that’s the adaptive equipment and functional “how do I make myself tolerate doing things in the kitchen? How do I make myself tolerate going into the garden again?”

**The context of occupation.** Most participants discussed the appropriate context of occupation in an occupation-based approach. For some participants, “true” occupation-based treatment is very difficult to do in a clinical situation. Ellen explained: “[I]t’s almost impossible to do true occupation based activities in the clinic, because…they involve the context of the patient’s life.” Participants discussed several alternatives to the use of occupations in the clinic including simulation, talking to the patient about their occupations, and having the client complete the occupation at home.

**Simulation.** Most participants discussed simulating occupation in the clinic. Ellen stated,

> [Y]ou can simulate an activity, but it can’t simulate the context and all those other environmental factors so I think those need done in the home. But they need to know about it. They need to know “what is the expectation? What do you need from me? What can you do to help me?”

…[]If you are able to offer the practice in a simulated type of environment…it gives the person that rehearsal.

Simulation was an alternative to the use of occupation in the clinic for many participants. Cathy offered this example:

> I'm working with somebody who is just beginning to recover just gross lateral pinch with tenodesis. So, we came up with…the idea of trying to use big chunks of cheese. He was picking up pieces of foam in the clinic to practice the motion and he’s interested in being able to feed himself more so we came up with trying to do that at home.
Many participants also simulate work tasks as a part of treatment. For example,

Janet reported,

I have one man now who is back to work … he’s an iron worker and he had a crush injury in his forearm. Anyway in order to get him safely back to work he had to work carrying his 62 pound tool belt… I said, “you know you’re going to have to start coming in with that thing, because if we work and we stress your arm we got to know that you can do it with all that weight on.”

Fay used work simulation as a primary treatment approach. She shared an example:

[W]e started having her cut some of the other patients hair in the clinic and this was in preparation to get her back to work….And then we could grade that activity in terms of how much shoulder activity she was doing and how to modify all that. We put people in different chairs and at different heights and she had to work a different resistances.

_Talking to the patient about their occupations_. Several participants discussed the need to talk about occupation in the clinic when it is not possible to do it. Diane related:

[E]ven if I wasn't doing something occupation-based, like say somebody was working on a particular exercise or we were doing a modality or working on you know some joint mobilizations, I would hope that you would hear me at least talking a lot about the patient and delving a little bit more into their profile and their narrative and some of their goals.

Fay also reported relying on talking about occupation because of the contextual difficulties common to traditional hand therapy clinics:

I've been in a setting where I'm in the physician's offices, I see the x-rays, I take the dressings off, I take the sutures out, I see the wounds. And the best I can say about occupation-based practice in that setting is kind of the interview and the encouragement I would give patients to start re-engaging in certain activities…. [W]e would talk about how their, how they were able to function if there was a specific activity that was problematic. Then we might brainstorm how that would be done. But it was all kind of interview, talk through, versus doing.
Completing the occupation at home. Several participants described assigning the patient occupations to perform at home as an alternative to occupation in the clinic. For example, Ellen stated,

And the other thing I always kind of talk about with clinics that claim they don’t have the ability to provide occupation based treatment, I’m like “Have the person do it at home, and bring it in and show you” So I did a lot of that and we ended up with some paintings…[O]ne lady took up painting so I said “will you paint us something” and she brought back in a painting of her hand, and we were treating because she had a CMC arthroplasty, so she actually painted her hand with the hardware in her CMC joint It was sort of funny but it was cool. So that we kept there [in clinic].

Ian offered another example:

I’ll tell people…“what you need to do tonight is you need to make dinner, and you can’t go to the store and buy a prepared dinner. You have to open some cans, even if you use the electric can opener, you still need to use the two hands.” And I’ll try to incorporate manual skill and things of that nature. “You need to cut up an onion, cut up a vegetable, make a salad, whatever you like” … But they need to get back to the kitchen, start doing…load and unload your dishwasher, dry your dishes, put them away. People hook into that because they need that.

However, many participants noted that while talking about occupation in the clinic and having the patient engage in occupation at home are beneficial, these alternatives are not sufficient. Participants reported that there are benefits associated with getting as close as possible to performing occupation in the clinic environment. Janet noted that she finds doing occupation both in the clinic and at home to be important because it helps clients overcome their reticence for returning to occupation at home:

I work with a number of musicians…They bring in their instrument when it’s time that we can start involving it in the clinic. So we can analyze where they are on it or look at if I have to adapt something…. If I’m working with mechanics I have various tools as part of their program in the clinic and then they do something different at home. Sometimes they’re scared to try things at home until they try it in the clinic.
Participants also reported that incorporating occupation-based activities in the clinic allows for problem solving and adaptation that would not have otherwise occurred. Beth reported,

Either doing the actual things that we can do in a hospital setting and doing the simulated things that we can do as best as possible in a hospital setting, those things were also critical, because it's a way to use the active, in-context problem solving. It really is the way to allow the clients and myself to see, “oh these are the things that would not have occurred to us had we not been doing this. Had we only been focusing on exercise or simply talking about the home environment we would not have understood that this was going to be a problem until we actually got up and tried it.” So those sorts of things were critical.

**Theme 5: Negotiating a place.** This theme deals with the difficulties of occupation-based practice in a traditional hand therapy setting and the ways the participants have dealt with these difficulties. This theme contains the sub-themes: the effort it takes, the medical model, patient issues, and the pragmatic concerns of time, reimbursement, and the environment.

**The effort it takes.** All participants discussed the challenges associated with occupation-based practice. For some participants, one challenge was the extra work that occupation-based care requires. Fay related the challenge succinctly, “There's just a natural reason that OTs don't [do occupation based treatments]. It's…a lot of work to do that.” Gayle acknowledges that traditional hand therapy approaches such as exercise are easier. She reported, “It’s much easier just to go to exercise. I think initially when patients come to you that’s what they expect, and that’s what the treatment environment often expects, so that’s what OTs end up doing…a lot of the time.”
Participants dealt with the effort required by an occupation-based approach in different ways. While Gayle noted that using an occupation-based approach requires extra effort, she also reported that the effort to find an activity that resonated with the patient was worthwhile. She stated, “it’s not easy to find always, but when you find it, it’s great.” When asked why an occupational therapist would want to bother with an occupation-based approach considering the associated difficulties, Gayle stated,

Because it feels so good! It’s much more rewarding ultimately….it becomes obvious that they’re really engaging in this. That they’re following through at home, and things go fast, and … you feel like you’ve done a much better job.

Some participants reported that using an occupation-based approach makes some elements of the treatment process easier. For example, Diane stated,

I think in a lot of respects it also makes some of the decision-making a little bit easier….because once you end up … giving the occupational profile and finding out their goals it's basically giving you…a nice treatment plan. So you already have activities and things to…examine and to treat and…follow as far as their progress based on their identified goals. So it’s just a matter of saying “okay they're ready to do some resistive exercise now let's look at some of the goals and figure out how we can make that happen with some of their interests.” So, it takes a lot of the pressure off in a lot of respects.

The medical model. The medical model focuses on the diagnosis of the medical problem by an expert (Smart, 2001). Many of the participants reported that dealing with the predominance of the medical model-based approach common in hand therapy clinics is a challenge. Fay indicated the medical-model is not conducive to occupation-based hand therapy. She stated, “if we're in a medical model setting… I think the environment… reinforces not doing that kind [occupation-based] of activity.” Gayle reported that it is difficult for some occupational therapists to assert a more occupation-
based approach in medical model-based settings due to fear of being misunderstood. She related:

I think for especially for young therapists that what’s out there is such a medical model kind of practice … model out there it’s very hard for them to assert themselves as occupational therapists and break out of that mode. They don’t want to be viewed as the “play lady” or something…and so it’s hard.

The medical model’s focus on diagnosis may also impede an occupation-based approach. Cathy related, “I think sometimes we are vulnerable to being driven by the diagnostic words on a page and might overlook something important that the patient’s hand actually shows us, or the patient’s body language or posturing actually shows us.” Ian noted that medical model-based settings may not have the equipment needed for occupation-based care. He said, “[A kitchen is] not a typical setting for most hand therapy clinics….From one point of view it makes a great deal of sense, from a more traditional medical model point of view it’s not a classic design or equipment.”

Participants also reported that attempting to bridge the divide between occupation-based approach and the medical model when communicating with physicians can be a challenge. Ian stated,

[Y]ou have to know how to work in their [orthopedic surgeons] world…If I’m working on predominantly ADLs and my patient goes to see the orthoped for a recheck and the patient says, “I go to the clinic and work on the dressing board,” I’m going to get a phone call like, “… How come you aren’t stretching their hand?” So expectations by my surgeons…limit occupational practice.

While working within a setting that is typically dominated by the medical model was reported as challenging for many participants, some participants noted how actually using an occupation-based approach helped to meet that challenge. Diane shared that after 15 years of work by her facility to achieve an occupation-
based focus that others within the medical model setting now think more positively of occupational therapy. She related:

I know we've also seen... a change in how we are perceived by other team members including the physicians....I think it really has helped clarify that for at least at our facility most of the upper extremity cases to go to OT because they can not only see kind of the great outcomes as far as the physical stuff but they hear from the patient's what they're back to doing.

Cathy has also experienced physicians recognizing the value of an occupation-based approach. She stated,

I've been in environments where hand surgeons will give me the more challenging or difficult patient situations, or patients who have a lot of needs and maybe would be viewed as...“difficult”. I've seen doctors... earmark those patients more towards the occupation-based therapist.... [T]he doctors that I've had those kinds of interactions with have not been able to say exactly what they know is different but they know something is different

For Fay, engaging in occupation-based practice required leaving the medical model-based care environment to start her own clinic. She reported,

[I]t wasn't until I got out of patients that were more acute and into folks that were sort of more failures of the system who never got better in acute care or sub-acute settings. And, I ended up picking them up and working with them in occupation in a different environment...[W]hen I started out in hand therapy I really felt validated by working with physicians and residents and going to surgery and doing wound care. So I felt validated as a person, but not validated as an OT. And so for me when I got into occupation-based therapy it was a total joy. I mean it was a thrill to be able to set up an occupation based treatment program and stand back and watch people just adapt and engage in all these meaningful tasks. So there’s sort of this personal reflection and positive feedback, but when you're doing occupation-based OT it feels right, you know it's right and you know it's really a significant contribution above and beyond who you are.

**Issues related to the patient.** Many participants reported that issues related to the patient can make an occupation-based approach challenging. These issues include cooperation, finding the right occupations to use in treatment, and appropriateness.
Cooperation. For a few participants, gaining the patient’s cooperation can be an issue. For example, Hank reported,

[I]t’s almost always a worker’s comp patient, because [those] people are [in] a law suit situation. [They say] “I can’t, I won’t……” So if you’re trying to simulate or replicate a task of their job, and …they sense that or know that you’re working on that, then they might hesitate to succeed at it, for financial gains or even pleasures of not being at work….

Ian related that some patients also resist occupation-based care because they perceive it as an invasion of privacy. He related an example in which he was discussing time use with an injured worker. Ian asked the patient, “’What can we do to structure your day?’ and the patient did not respond positively. Ian continued, “…and after a few minutes of this discussion he looks me right in the eye and says, ‘you know what, take care of my thumb, I’ll take care of my life.’”

Patients may not want to participate in the collaborative relationship required by an occupation-based approach. For example, Janet reported, “[T]here is a gentleman who would come in… and he literally would drop his hand on the table…and…say, “… fix it.” He…would do nothing. He wasn’t involved in any way shape or form; you don’t get a good result.”

Most participants agree that it is necessary for the patient to understand and be willing to engage in an occupation-based approach. Most participants found their Patients to be cooperative rather than resistant. For example, Cathy stated,

[Y]ou would need a patient who understood why the therapy had an occupation-based look and an occupation-based approach. Whatever it would take to have the patient be comfortable. Although, I very seldom have to explain. They just really appreciate that it matters to me to understand more about their needs.
Finding the right occupations. Part of the challenge in an occupation-based approach is finding an occupation-based activity that works for the individual patient. A comment from Gayle illustrates this:

I think occupation based is much more challenging because it’s not always that easy to find what’s going to really click with your patient… it’s not that easy to come up with the activities….You have to be much more creative and thinking on your feet….It is a bigger job than just going more cookbook,…go by the protocol.

This challenge may be due to the patient not having many occupations. Janet reported, “the people that are the hardest to work with are the ones that go to work every day, and they come home and watch TV. Those are the hardest because they don’t have something to involve them.” Some participants reported that using assessments such as the COPM helped them find meaningful occupations to use as both the ends and means of treatment. Diane stated,

I always… felt that I had grown up very occupation focused just by virtue of the way we were taught to do things at [her facility]. And what I found was that once we started using that particular tool [the COPM] I just realized that I wasn't as occupation and client-centered as I had thought I was.

Appropriateness. Diane reported that it is difficult to use an occupation-based approach with patients who come for a one time visit to have a splint made or a piece of adaptive equipment replaced. For example, a patient “might come in because their wrist brace wore out and they just need something replaced.” Ellen acknowledged that some patients are not appropriate candidates for occupation-based hand therapy. She stated, “What about the patient who doesn’t have any functional problems?...But, once in a while we need to take a step back and say this person really doesn’t require my service and that needs to be ok.”
The pragmatic concerns of time, reimbursement, and the physical environment.

Many participants discussed challenges related to the pragmatic concerns of time, reimbursement, and the environment.

**Time.** Most participants reported that limited time was a challenge to occupation-based practice. Gayle described how time creates pressure within occupation-based practice:

> One of the big contextual problems for occupation based therapy is time constraints in traditional clinics...because they want billable minutes, and they’re not patient with having you spend very much time really getting to know your patient, and occupation based care requires that you get to know them.

Participants cited various factors that limit time, including the pressure for productivity, overbooked schedules, physicians who send patients over to be seen without warning, documentation, and competing goals. For example, Hank stated, “There’s a limit as to how much...time you can give each client, especially if they’re only going to be there for an hour and there are needs that supersede other needs at different times in the rehab process.”

While time pressures were a challenge for most participants using an occupation-based approach, many participants also discussed ways to deal with it. Some suggested a multi-tasking approach. For example, Gayle reported,

> A lot of the time is spent in assessment, a lot of the time is spent in constructing splints, but you’re never just doing that. You’re always talking to the patient, getting the sense of who they are, what’s important to them....I know there are contextual constraints and you have to learn to get around them. You have to do your talking and get to know your patient while you’re doing the splint or doing a modality.

Other participants reported that the key to dealing with time pressure is to have administrative support for the time required by an occupation-based approach.
For example, Cathy related, “I have the luxury of having control of my schedule… now. I've worked in environments where patients were double and triple booked and it was doable but much harder….Philosophical support in the clinical environment …is very important…”

_Reimbursement._ Some participants mentioned concerns over reimbursement influencing their ability to use an occupation-based approach. Ian offered various examples of problems with reimbursement such as “IADLs are not reimbursable under Medicare if you don’t document them exactly the way they relate to a BADL” and “I don’t [deal with leisure goals]…Unless…I’m more than willing to give the care away for free, which I’m not in my practice.”

However, most participants reported that they did not have reimbursement issues when providing occupation-based care. Janet stated,

[W]e haven’t had problems with [reimbursement]….You have to document to the goal and to the activity specific you’re working toward…. But I can document pretty much anything to the activity, because it’s related to the activity…. I have not had a problem with reimbursement for that….I will put in a [leisure] goal…We have not had problems with reimbursement…

Cathy noted that the limitation of visits imposed by managed care exists whether an occupation-based approach is being used or not:

[T]hose therapy visit limits would be impacted regardless…[I]f a patient…has a flexor tendon injury but only as 12 visits total… it would be a manner of making sure we're collaborating to maximize the person’s safe follow through with a home program as much as possible to have enough visits to get through the upgrades to the point where they would be needing less protection and able to do well on their own….So from my experience I don't feel that it limits my ability to be occupation-based.

The _physical environment_. All of the participants agreed that the physical work environment and available equipment influence their ability to use an occupation-based
approach. Hank stated, “Occupation-based care is difficult in an outpatient setting that focuses on the plastic and orthopedic concerns of the UE in a controlled space. The necessary items to simulate or practice occupations are not easy to keep or use”. Fay attributes the majority of the reason why occupational therapists working in hand therapy settings may not use an occupation-based approach to the environment.

I think that's the key to why we don't do occupation-based care is that our OT clinics are set up in a more medical model type of structure, and sometimes even in PT clinics. So we don't have meaningful activities to give to clients. It’s not an environment that feels or provides opportunity for doing occupation. So I just think, I think that 80% of why we don't do occupation-based care.

Ellen’s experience illustrates Fay’s point:

I think the environment has to be different…. Because even when I’m …telling you exactly what it would look like, but it’s not the reality I want to see…. I wasn’t given control over what the environment looked like, and the doctors wouldn’t get it, whoever initially created it. Or if you asked “oh could you rip this up and spend another 10 thousand dollars” they’re like “why?” And I would love to see…“okay, we got all the money we need, we’re going to start from scratch. What would you like the hand therapy clinic to look like?” It would look a lot different, and have a lot more things available.

Participants suggested several means of dealing with the challenges of the physical environment. Not allowing the environment to dictate treatment approach was suggested as a place to start. Ellen reported,

[I]t’s not impossible to at least get started and do the best you can so you don’t have to say “well my facility doesn’t do this, I don’t do that” I think you can still bring a lot in and do the best you can do no matter what circumstances you are working under.

Many participants discussed the need to create your own environment. Gayle related,

I think the therapist that are really committed to occupation-based care have to help create their own environments to use occupation-based therapy because usually those environments are created by people who are strictly into medical model care and so they have exercise equipment but
they don’t have objects or other things like that to really utilize occupation-based care …

For example, Fay created her own environment for occupation-based care:

[Int]erms of what I really perceive now to be occupation-based, I don't feel I could really do that until I had my own business. And that's when we had a 5000 ft.² facility with you know, a kitchen, a pool table, a volley ball net, a school bus, a driving area. And that's when I could really get into the context of what people were doing.

Other participants were able to use nearby facilities intended for inpatients with their outpatient hand therapy patients or find creative uses for spaces intended for other purposes. Beth related, “the environments…that are more occupation-based are sometimes used for…outpatients. Because the bathroom, the kitchen, the simulated bedroom are across the hall.” Janet reported an example of re-purposing existing treatment areas for occupation-based treatment with a patient who had a thumb amputation and worked at a lumber store:

One of the final steps was he’s got to go to the gravel pit … and sometimes he gets on his hands and knees, and I’m like “well you know we better do that… [W]e had a site outside of our office…15-20 feet long and about 6 feet wide. And it was originally built…[for] one of our PTs [who] is a vestibular specialist, and it’s got a grassy area, an uneven grassy area, it’s got a sandy area, and a small gravel area, and a bigger rock area…[W]e went outside and I said, “look we got gravel so let’s get going!...Let’s move some of it”. So we got down on our hands and knees and that day as he worked in the gravel.

Diane is reported that her physical environment is conducive for occupation-based practice due to the location of her facility and ongoing administrative support for occupation-based practice. She stated,

[W]e kind of have…two clinic rooms…side by side….one of them has a full kitchen and … we actually have a bedroom with a real bed and carpeting and then tables and an armoire and a dresser. And we also have a living area that has a real sofa and another carpeted area….[W]e have really great access to the outside. Our clinic happens to be a single story
outpatient clinic in that all we have to do is go right out the back doors and we have access to things like a basketball court, a tennis court. We have a garden we have a lot of lawn area, trees and bushes so were always outside doing gardening and landscaping and things like that…. [T]here …is…a park right across the street from the facility and so that's another area that we're able to access…. [W]e have a market about a block away and we've got a bank across the street so we have a lot of community things to access as well…. [We have been] transforming some of our outdoor areas…as a result of some of the patient's goals and what we were trying to accomplish.

Participants reported that the availability of equipment and supplies influenced their treatment choices. Alan stated, “the availability of tools and materials and everyday real-life things would have some bearing on what I do, yes.” Hank indicated that the cost of supplies can be a limiting factor. “The economics of some of it… in the crafting category where you know you’re going to use something up every time you see the patient, and its 25$.”

Participants noted several ways of dealing with the availability of equipment when using an occupation-based approach. Several participants advocated having the patient bring in supplies for their occupations from home. Hank reported, “the person that might actually want to get back to some crafting at home…we are discussing and encouraging and sometimes if they have a problem with something it’s like, ‘well bring it in let’s take a look at it.’” Some participants gather supplies from their own home or borrow it from others. For example, Janet stated,

We have an interesting facility. One of our staff members has a farm, the other grew up on a farm and her brother still runs that farm. If I put out a need for something, it probably appears. We don’t go out and buy a lot of things…. [I was] working with a guy that worked as a roller…and one of the things he had to do was grab bars as they were coming off, and it would be bundles of bars. It would be 1 inch wire, ½ inch bars, whatever they were running and he had to be able to pick up a group of them. And he was like, “I don’t know if I’m going to be able to do that.” … I said “okay, I’ll figure something out, we’ll do it.” So he was coming back the
next day, and he walked in and I said “look what I found!” And he looked on the table and there was this box full of re-bars…and he goes “where’d you get those?” And I said “in my garage!” And he said “where do you live, a construction site?” I said “No, my father never threw away anything and he acquired many things he didn’t need.” Diane reported that her facility addressed the supplies issue by creating, [R]eady-made occupation kits that you can just kind of pull out and grab…so you don't have to think as hard of, “okay, do I have the sporting goods I might need for this patient? Do I have the tools that I might need for this other guy?”
Chapter V: Discussion

External Validity

There is a lack of agreement regarding the definition of occupation-based hand therapy within the very limited existing literature (Gustaffson & McKenna, 2010; Ward, Mitchell & Price, 2007; Lee, 2010). Because the practice is not well defined, this initial investigation was performed using occupational therapists who were experts in hand therapy. There are several reasons why these subjects are likely representative of the population of occupation-based hand therapists. The participants are considerably experienced occupational therapists and hand therapists. Participants have a range of 20-37 years of experience as occupational therapists and 15-37 years as hand therapists. Several participants hold hand therapy certifications and several have published or presented on the topic of occupation-based hand therapy. The participants came from academic and clinical backgrounds. Their clinical practice backgrounds were diverse, encompassing inpatient settings and a variety of outpatient settings including private practice, physician owned practices, and hospital-based practice arenas. The gender of the sample interviewed was representative of the occupational therapy community. The subjects of the study were from multiple states, likely representing any regional differences in practice philosophy. I believe in the absence of an accepted definition of occupation-based hand therapy these subjects represent an excellent population from whom to develop an understanding of this practice arena.

Themes

I have uncovered five themes that describe the experience of providing occupation-based hand therapy. Because I reached saturation in the data analysis, these
themes are believed to be exhaustive and comprehensive in revealing the phenomenon of occupation-based hand therapy. There were five independent themes which emerged from the data analysis and many of these themes were also reflected in literature about occupation. There are also differences between the existing occupational literature and the findings here reported for occupation-based hand therapy. These differences may help to explain the unique phenomenon of occupation-based hand therapy.

**Theme 1.** The first theme uncovered was that of influence. This theme described elements that influence the participants’ experience with providing occupation-based hand therapy and was comprised of three independent sub-themes that are also represented in literature examining occupation-based therapy: theoretical, evidence and information, and personal experience.

**Theoretical.** MOHO was the theory most commonly cited as a theoretical influence by the participants in this study. Similarly, Lee, Taylor and Kielhofner (2009) stated that MOHO is the occupation-based theory most commonly used by occupational therapists. Keponen and Launiainen (2008) reported that a five step cooperative learning process about MOHO facilitated the use of occupation-focused clinical reasoning among advanced occupational therapy practitioners.

There are also similarities between the present subjects’ use of their values and beliefs to select theories for practice and previously published literature on occupation-based therapy. Lee et al. reported that occupational therapists chose MOHO based on their personal beliefs and values and the needs of their clients. Although the present subjects did not refer to values when discussing MOHO, they did when discussing other theoretical approaches, such as occupational science. For example, participants in this
study believed that integrating occupational science into practice was useful because of the philosophical match between occupational science’s focus on occupation and their own beliefs about the power of occupation (Pierce, 2001; Pierce, 2003).

The Occupational Therapy Practice Framework (OTPF) influenced how participants in this study approached occupation-based hand therapy. Though not a theory, the OTPF was intended to serve as a guide to practice (AOTA, 2008). Like the participants in this study, Amini (2008), Paquette (2008) and Hunt et al., (2007), all reported case studies that highlighted the use of the OTPF as a guide to practice in varied settings including hand therapy, industrial rehabilitation, school systems, outpatient rehabilitation, and home health. The outcomes of these case studies were similar to the experiences of the participants in this study who also found that applying the OTPF can help the therapist’s focus on holistic elements outside of the medical and vocational needs of the client.

Several participants in this study reported being influenced by Occupational Adaptation (Schkade & Schultz, 1992) when adopting their occupation-based approach to hand therapy. In a similar fashion, Jack and Estes (2010) described a hand therapist whose use of Occupation Adaptation shifted her treatment approach from a biomechanical focus to an occupation-based focus. Occupational Adaptation has also been used as the framework for an occupation-based approach in other studies of non hand therapy populations (Gibson & Schkade, 1997; Jackson & Schkade, 2001; Johansson & Bjorklund, 2005).

The present results suggest that occupational therapists that practice occupation-based hand therapy do not differ substantially from other occupational therapists in their
approach to theoretical literature. Like other hand therapists and occupational therapists in general, the present subjects are impacted by this literature, and in fact reflect upon many of the same theories to influence their practice. Therefore, it does not appear that the specific challenges of providing occupation-based hand therapy in any way separates its practitioners from the influence of the profession's foundational theoretical underpinnings. Although perhaps new occupation-based hand therapy theories of practice will develop, the present data suggest that the development of such theories is not necessary for the emergence of occupation-based hand therapy which presently exists firmly influenced by the existing theories of practice.

**Evidence and information.** This sub-theme contained statements regarding seeking information about and evidence for an occupation-based approach. Participants in this study expressed the need for more research as well as the desire to contribute to the body of occupation-based hand therapy literature. Expressions of this need are also found throughout the literature (Colaianni & Provident, 2010; Jack & Estes, 2010; Law, 2010; Pierce, 2003). For example, Law emphasized that occupational therapists have a responsibility to produce evidence for practice. Pierce asserted that a generative discourse that includes research is necessary to produce strong occupation-based practice. Further, Pierce emphasized the importance of that research, including published examples of how occupation-based therapy can be successfully carried out. In addition, Jack and Estes called for more published examples of how to accomplish the shift from strictly biomechanical approaches to the more holistic occupation-based approach in hand therapy. Colaianni and Provident also reported that occupational therapists practicing in
the hand therapy arena identified the need for more occupation-based hand therapy research, including exemplary models of occupation-based hand therapy.

Participants in this study noted the difficulty associated with studying occupation. Like the participants, others have reported that this difficulty is associated with the complexity of the construct of occupation (Parham, 1998) including a highly individualistic nature (Pollard, Sakellariou, & Lawson-Porter, 2010). The individualistic nature of occupation-based treatment approaches make the standardization of treatment required by outcome studies difficult (Lee, 2010). Because of the individualistic nature of occupation, participant Ellen asserted that study of occupation-based hand therapy requires qualitative investigation of the impact of occupation-based hand therapy on the patients’ lives. However, it appears that clinicians (Colaianni & Provident, 2010), like participant Ian in this study, are looking for evidence in the form of quantitative outcome studies. Thus, a tension exists between the qualitative methods that may be the most effective at capturing the individualistic nature of occupation-based hand therapy (Brooks, 2006) and the type of quantitative methods expected as evidence within the medical-model based hand therapy setting (Colaianni & Provident; Jackson, 1998).

When considering available evidence for occupation-based hand therapy, participants in this study also referred to their clinical experience and their professional values. Most participants in this study relied on their successful clinical experience with using an occupation-based approach as evidence in lieu of the limited research evidence. In a practice arena such as hand therapy where the connection to the medical model is strong, the push for research-based interventions is heightened (Jackson, 1998). Some clinicians struggle with the limited quantitative research evidence for occupation-based
hand therapy (Colaianni & Provident, 2010). However, Jackson (1998) argued that the use of strictly "positivistic science" (p.466) to demonstrate the efficacy of occupation as a treatment modality could ultimately reduce the value of occupation. Further, Law, Pollock and Stewart (2004) argued that evidence-based practice is more than examining the research evidence stating, "Evidence-based practice can be considered to be a combination of knowledge from what we know from research, what we have learned from clinical wisdom, and what we learned from the information from the client and their family." (p.14).

Some participants in this study argued that reasons for the use of occupation-based treatment go beyond research evidence and personal experience to the need to be congruent with the beliefs and values of the occupational therapy profession. Law (2010, p. 13) agreed, stating "We have a responsibility for a knowledge creation process consistent with our values." Additionally, others (Lee et al., 2009; Storch & Eskow, 1996) found that congruence between the therapist's values and a treatment model was a primary reason why therapists chose to use the model.

Participants in the present study are clearly devoted to evidence-based practice and desire that their practice be more rooted in evidence. However, this desire is not expressed in the traditionally held view of medically-based evidence. Instead, the participants revealed a deeply thoughtful approach to the kind of evidence it would take to undergird the practice they embrace. Study participants developed a deep seated belief in the effectiveness of occupation-based hand therapy based both in their clinical experience and in occupational therapy philosophy, and affirm the importance of both of these sources as evidence for their practice. They also recognized the need to accurately
Document the effect of an occupation-based approach through published research. Participants expressed confidence that research would validate their experiences if effective means to study the outcomes of occupation-based hand therapy could be developed. Participants reported believing the outcomes of occupation-based hand therapy extend beyond the remediation of impairments to influence the patient as a holistic being. Consequently, study participants noted that capturing the effects of occupation-based hand therapy requires both qualitative and quantitative approaches. Moreover, noting the lack of published research on occupation-based hand therapy motivated the participants to contribute to the published evidence.

**Personal experiences.** Participants in this study also cited their exposure to a collection of personal experiences along their path of professional development as influences toward occupation-based practice. Exposure to occupation-based concepts in an academic environment was noted as an influence by several participants in this study. However, only a few participants referred to their pre-professional education as an influence toward occupation-based hand therapy and that experience was on fieldwork, not in the classroom. Similarly, others (Raiz, 2007; Vroman, Simmons, & Knight, 2010) advocated for the use of a service learning approach that allows students to apply occupation-based principles in a clinical environment to promote occupation-based practice. Like the fieldwork experiences of participants, service learning can support the synthesis of theory into practice, such as occupation-based practice. For example, one student noted the importance of putting what she learned about occupation into action to truly understand it. She stated, “It was when I used occupation and experienced the connection with the clients that I really understood occupation.” (Vroman et al., p.250)
Conversely, most participants referred to their post-professional educational experiences as influences, indicating that their pre-professional education was not a major factor in developing an occupation-based approach to hand therapy. Unlike the participants in this study, previous publications examining the role of education on adopting an occupation-based approach focus primarily on entry-level education. For example, a study by Lee et al. (2009) reported that 75% of clinicians using the occupation-based MOHO did so because it was promoted by faculty in their occupational therapy educational program. Additionally, Pierce (2001) asserted that students who receive appropriate preparation for occupation-based practice will be "sophisticated graduate[s]...ready to adapt interventions to a variety of persons, disabilities, and settings....Not only will graduates... use more powerful interventions, but they will also be more eloquent about why such an approach is effective." (p. 251). Participants in this study have not been influenced by their entry level education to the extent that would be expected based on the focus on pre-professional education found in previous publications.

However, like the present study, Brooks (2006) noted that the most significant characteristic related to whether or not the participants practiced in an occupation-based manner was not their entry-level education. Instead, Brooks noted that her participants’ level of professional experience was a much greater factor in their adoption of an occupation-based approach. She noted that novices tended to focus more on reasoning about the procedures they were engaged in rather than on the patient's occupational narrative. This approach limited the ability of the novice occupational therapist to engage with the patient in such a way that would promote more occupation-based care. Brooks
also noted that more experienced occupational therapists, or experts, tended to focus more on reasoning directed toward the patient's occupational narrative, allowing them to more readily access the information they needed to be more occupation-based. For example, when a patient told their occupational therapist "I just want to walk" (Brooks, 2006, p. 91), novices focused on procedures more, such as what sorts of treatments were within the scope of occupational therapy at the facility. This tended to limit their use of occupation as an intervention to ADLs. In response to the same statement from a patient, an expert would ask questions that sought to learn more about the patient's occupational narrative such as "tell me how walking fits in with your life goals" (p. 91). The approach used by the expert allowed the use of occupation as an intervention to be expanded beyond ADLs to include occupations integral to the patient's goals.

Copley, Rodger, Hannay and Graham (2010) also noted that occupational therapy students struggle with the complexity of occupation-based practice on their fieldwork experiences. This struggle was also attributed to the fact that students are novices and lack the comfort with ambiguity that may be present in an occupation-based approach. Brooks further concluded that since the expert clinician's comfort with procedures was what allowed them to go beyond procedural reasoning to the narrative reasoning required for an effective occupation-based approach, that it may be beneficial to focus more on procedures during classroom education in order to allow novices to move beyond a focus on procedural reasoning earlier.

Participants in this study were influenced to a much greater degree by the education they pursued about occupation-based practice after their graduation. Similarly, Fortune (2000) advocated continuing education on occupation-based approaches for
experienced clinicians. Lee et al. (2009) reported that almost 60% of occupational therapists who use MOHO learned about it through their own efforts after graduation including reading books and articles, attending continuing education courses, and performing literature and web-based searches on the topic. Pursuing continuing education about occupation-based practice is important in order to increase the occupational therapists’ comfort in using occupation-based models. Storch and Eskow (1996) and Elliott, Velde, and Whitman (2002) found that an occupational therapists’ lack of familiarity and comfort with a therapeutic model was a significant deterrent to the use of the model.

Participants in this study who were involved as faculty in the academic arena reported being influenced to become more occupation-based in their clinical practice through increased exposure to the occupation-based concepts found in the writings of the founders of the profession, in occupation-based theories, and educational standards for occupational therapists. The role of the influence of being a faculty member on the adoption of an occupation-based approach in clinical practice is an area not discussed in the literature. Perhaps faculty members are placed in a position where their assumptions about clinical practice are challenged by occupation-based practice embedded in curricular requirements and standards and as such they must discover a way to integrate the two paradigms.

Participants in this study were also influenced to adopt an occupation-based approach to hand therapy through their experiencing professional support in the form of mentoring, administrative support, and collegial support along their path of professional development. Several participants in this study noted that their use of an occupation-
based approach was encouraged by occupational therapy clinical mentors. Similarly, Salvidia (2003) asserted that professional identity is an important consideration when seeking to understand the mentoring experience for occupational therapists. For example, Amini (2010, p. 234) reported that when certified occupational therapy assistants enter the workplace they are influenced to take on “reductionist beliefs based on their interactions with others in the setting” even though they were trained in an educational program that emphasized an occupation-based approach. Sabari (1985) also noted that like the participants in Amini’s study and in the present study, the socializing influence of clinical occupational therapy mentors can exceed the influence of education.

The collegial atmosphere of healthcare disciplines such as occupational therapy have been described as a culture because of the presence of shared beliefs, assumptions, and values (Rudman et al., 2008). In the present study, participant Janet reported that she appreciated the support and acceptance she received from colleagues within her culture when using an occupation-based approach. This kind of support is influential for clinicians because the subjective norms within the particular culture in which a practitioner finds themselves will shape their behavior (Archer, Elder, Hustedde, Milam & Joyce, 2008; Brooks, 2006) and their professional identity (Watson, 2006).

Participants in this study also noted that the level of administrative support they received influenced their ability to use an occupation-based approach. The important role of administrative support is also reported in the literature. Administrative support can help to reduce or eliminate pragmatic barriers to occupation-based practice such as time, space or equipment limitations. Eliminating pragmatic barriers to occupation-based practice creates a professional environment where it becomes easier to engage in
occupation-based care (Brooks, 2006; Killian, Berro & Deshaies, 2007; Wressle & Samuelsson, 2004). For example, in the present study Diane often noted the importance of the administrative support offered by her department manager in facilitating occupation-based practice. Similarly, Brooks reported on an administrator who worked to have occupational therapy reimbursement included in the daily rate at an in-patient rehabilitation facility which then limited time pressures for productivity and allowed the time needed for occupation-based care (Brooks). This kind of administrative support may make it more likely that occupation-based care will occur because behavior can be influenced by the perceived ease or difficulty of carrying out a behavior (Archer et al., 2008).

The participants in the present study found the high levels of personal and professional reward they experienced while practicing in an occupation-based manner to be a significant reinforcement for the continuation of occupation-based practice. The participants’ personal reward was derived from experiences such as seeing their patients regain quality of life, having the opportunity for greater creativity, and working closely with patients and their families. However, there is not much discussion of the personal reward experienced by occupational therapists in the literature.

Occupation-based hand therapists are influenced in their adoption of an occupation-based approach by many factors. They strongly connect their beliefs and treatment approach to the philosophical and theoretical foundation of occupational therapy. They value evidence for practice from research, experience, and professional values. Occupation-based hand therapists are more influenced by their post-professional education and self-directed learning than by their entry-level education. They are greatly
influenced toward occupation-based hand therapy by mentors and supportive administration. In addition, occupation-based hand therapists are immensely influenced by the high levels of personal and professional satisfaction they experience.

**Theme 2.** The second theme uncovered pertained to occupation and professional identity and described how the participants conceptualize being an occupational therapist practicing in a hand therapy setting as well as how others perceive occupational therapy. Several study participants reported prioritizing their identity as occupational therapists over their identity as hand therapists, and this thoughtfulness was not found in previous publications. Similar to the beliefs of the participants in the present study, Fitzpatrick and Presnell (2004) asserted that what makes hand therapy “occupational therapy” is the adherence to a core set of philosophical beliefs that shape practice. However, Fitzpatrick and Presnell questioned the conviction with which many occupational therapists practicing in hand therapy adhere to these beliefs. Because not all occupational therapists working in the hand therapy arena adhere to the core philosophical beliefs of occupational therapy, yet the participants in the present study do so vigorously, the adherence to these beliefs appears to be a defining characteristic of occupation-based hand therapy.

For participants in this study, the question of how they prioritize their identity is not just about how they practice, but also about the way they perceive themselves. Beliefs about self and about professional practice are a part of professional identity (Edwards & Dirette, 2010).

Participants in this study also discussed the importance of making occupation the central focus of hand therapy. Focusing on occupation as the defining aspect of
occupational therapy is a common theme of discussion throughout the occupational therapy literature. For example, Pierce (2001) argued that in order to secure the identity of the profession “the key to our success is simple: just be the best at what we do. We must use occupation in the most powerful therapeutic ways possible.” (p.249) Similarly, Rebeiro-Gruhl (2009) asserted that a lack of focus on occupation as the central defining concept of occupational therapy endangered the identity of the profession.

Participants in this study also related their belief that some occupational therapists practicing in hand therapy do not place the high value on occupation that they do and postulated that this undervaluing of occupation may result in the development of an inferiority complex. Occupational therapists who perceive themselves as possessing inferior knowledge or skill are also discussed in the literature. For example, scholars (Copley et.al, 2010; Law, 2010) have reported that the tacit knowledge held by occupational therapists about occupation is not respected. Additionally, some occupational therapists have reported feeling stigmatized by the low tech nature of many occupation-based interventions such as crafts (Colaianni & Provident, 2010; Harris, 2007) and “devalued by their colleagues because occupational therapy looks so easy” (Wilding & Whiteford, 2007, p.189). Thus, participants in the present study are distinctive in their respect for the power of occupation in their practice and to their own identity as distinctive practitioners.

In 2001, Pierce posited that the undervaluing of occupation occurred when practitioners were educated in a way that technical and medical knowledge were given higher status than knowledge about occupation. Pierce further argued that students needed more rigorous education in occupation. Ikiugu and Rosso (2003) also advocated
facilitation of an occupation-based professional identity through coursework that makes connections between historical, theoretical, philosophical, political and economic factors and occupational therapy practice. However, it is unknown if the changing of entry-level educational approaches may yield occupational therapists who value occupation like the participants in the current study because it appears that new graduates can be even more influenced by the clinical culture than by the values they learned in school.

While more recent educational standards for occupational therapists have focused much more on occupation, many practicing occupational therapists were not educated under the more occupation-focused standards (Friedland, 1998). Because students and new graduates can be influenced by the professional culture to a greater degree than by their education (Amini, 2010; Archer et al., 2008; Sabair, 1985; Watson, 2006), the influence of education that undervalued occupation continues. Fortune (2000) asserted that it is important to “enable occupational understanding” for those who are not recent graduates. Participants in the current study serve as examples of this enablement.

Many participants in the current study were educated prior to the incorporation of more occupation focused standards as well, so it is unknown how receiving an occupation-focused education would have altered their path to adopting an occupation-based approach to hand therapy. However, the participants in this study did develop a more occupation-based approach to hand therapy in part through the assumption of a professional identity that highly values occupation. The change in professional identity was brought about by continued learning and mentorship after graduation. Thus, it appears the development of continuing education and mentoring programming is important to the development of a more occupation-focused identity.
When an occupational therapist identifies themselves and their practice by occupation the perceptions of others about occupational therapy will be altered. Diane and Janet reported that by focusing on occupation from the point their patients are admitted to therapy, both patients and other health care providers experience a greater understanding of the role of occupational therapy. Likewise, Fisher (2003) asserted that occupational therapists teach others about what occupational therapy is by what they do. Fisher recommended occupational therapists embrace a central focus on occupation as means and ends in order to help others understand what occupational therapy is. Similarly, Wood (1993) argued for congruence between what occupational therapists express is their purpose and the methods of assessment and intervention used to reach the purpose. This congruence would help others recognize occupational therapists as the professionals who should be sought out to prevent or remediate occupational dysfunction (Wood).

Participants in this study were particularly concerned with professional identity issues related to differentiating occupational therapy from physical therapy in the hand therapy arena. The importance of distinguishing occupational therapy from physical therapy is noted in the literature. For example, Fisher (1998) asserted that when occupational therapists use treatment methods that are too similar to those used by physical therapists, the distinctions between occupational and physical therapy are not apparent.

Several participants in this study reported that using an occupation-based approach resulted in greater respect and understanding from physicians and other treatment team members. It was those study participants who most strongly
differentiated themselves from the medical model who reported that other healthcare providers and clients demonstrated improved understanding and valuing of the role of occupational therapy for those with hand injuries.

While both the participants in the study and scholars (Fisher, 1998; Fortune, 2000; Rebeiro-Gruhl, 2009; Wood, 1993) have advocated an occupation-based approach to clarify the perceptions of others about occupational therapy, there has been little published research to back up this assertion. However, in a qualitative study of patient perceptions about occupational therapy, Boutin-Lester and Gibson (2002) reported that the patient who received the most occupation-based treatment that included planting flowers, shopping and making pies had the least difficulty distinguishing between occupational therapy and physical therapy. This finding is comparable to the experiences reported by participants in the present study.

While the rest of the profession identifies that the perception of the occupational therapists themselves and the perception that other professions hold of them are important to practice (Fisher, 1998; Fortune, 2000; Rebeiro-Gruhl, 2009; Wood, 1993), occupation-based hand therapists, including the participants in this study, express that in a distinctive way. Perhaps because they practice in the hand therapy arena which tends to focus on medical model-based approaches (Fitzpatrick & Presnell, 2004), they are very sensitive to distinguishing themselves specifically from the profession of physical therapy. Moreover, they are very sensitive about the perceptions their patients and other professionals hold. Further, they believe that using occupation in their practice as an essential identifying characteristic will build an accurate perception of who they are.
**Theme 3.** The third theme concerned the psychosocial elements of practice. This theme deals with the interpersonal and psychological considerations in occupation-based hand therapy. Theme 3 was comprised of four independent sub-themes that are also represented in previous publications examining occupation-based therapy: the patient and therapist relationship, the patient’s needs are more complex than their injury and must be dealt with holistically, occupation addresses psychosocial issues, and motivation and meaning for the patient.

**The patient and therapist relationship.** Participants in this study described encouraging the patient, caring, valuing rapport, listening to the patient and being an advocate for the patient as characteristics of occupational therapists that facilitate an occupation-based approach. Similarly, Boutin-Lester and Gibson (2002) reported that home health patients valued occupational therapists that were empathetic, understanding, flexible and kind. McKinnon (2000) also noted that patients value collaborative communication styles that encourage attention to the patient’s needs.

The importance of a collaborative relationship between the therapist and patient in occupation-based hand therapy was the primary focus of participants in this study. Likewise, the importance of a collaborative or client-centered relationship is reported throughout the literature. For example, Brooks (2006) asserted that occupation-based practice necessitates a client-centered approach that features a collaborative relationship between the therapist and patient. Collaboration is viewed as the central to client-centered practice (Sumison & Lenucha, 2007).

Similar to participants in this study, Bowen (1996) noted that in a collaborative relationship each party brings their expertise to the partnership. The occupational
The therapist brings their expertise on therapeutic interventions and the patient brings their expertise on their own values, interests and priorities. For example, Cooper, Deshaies, Berro and Murrillo (2007) related a hand therapy case example featuring collaboration between the patient and therapist that used treatment perceived as relevant and useful to the patient and resulted in an excellent outcome. Conversely, when there is limited collaboration between the therapist and patient, the use of treatment interventions that are not perceived as valuable by the patient can occur resulting in poor motivation and satisfaction with occupational therapy (Boutin-Lester & Gibson, 2002; Daniels, Winding & Borell, 2002). The COPM has been advocated as a tool to promote a collaborative relationship between the occupational therapist and patient (Cole & Tufano, 2008). Participants in the current study also advocated use of the COPM to promote the collaboration required by an occupation-based approach in the hand therapy arena.

The occupation-based hand therapists who participated in this study share with other occupational therapists the belief in encouraging, caring for, valuing and advocating for their patients. Also, like the occupational therapists discussed in the literature they share the notion of a collaborative relationship between the therapist and patient that is patient-focused. In addition, participants believe that the COPM may be a useful tool to promote collaboration between the client and the therapist as is advocated in publications. However, occupation-based hand therapists go further in their opinions of the nature of the relationship between the therapist and patient. Occupation-based hand therapists appear to have a distinctive sensitivity to eliminating the concept that the therapist is an expert and the patient is the receiver of that expertise. Although more research may be necessary to confirm this notion, it appears that occupation-based hand therapists possess
a keen sense of collaboration and equality with their clients that they see as absolutely instrumental to their success.

*The patient’s needs are more complex than their injury and must be dealt with holistically.* Study participants reported that patients who suffer injuries requiring hand therapy can have needs that go beyond their physical body and so require a holistic approach. The collaborative patient-therapist relationship that occurs with occupation-based hand therapy promotes a holistic focus on the psychological, social and occupational aspects of the person instead of just the diagnosis (Bonzani, 2003). For example, Martin (2007) argued that understanding holistic concerns such as patient beliefs and motivation are crucial to the effective treatment of patients with repetitive strain injuries of the upper extremities. Like participants in the current study, Cooper (2010) recommended the use of a narrative approach to hand therapy in order to address the patient’s illness experience and not just the illness itself. Further, Jackson (1998) argued that dealing with the patient in a holistic manner through occupation not only assists patient recovery, but also strengthens the profession by focusing on occupational therapy’s distinctive nature.

Occupation-based hand therapists do not focus on the patient’s diagnosis, but rather enter into the patient’s occupational narrative in order to understand and address the patient as a holistic being with physical, psychological, social and occupational aspects. This attention to the patient’s occupational narrative is a distinctive hallmark of an occupation-based approach.

*Occupation addresses psychosocial issues.* Study participants reported that using an occupation-based approach facilitates addressing psycho-social issues. Participants in
the current study noted that an occupation-based approach facilitates the patient’s ability to picture a future self after injury. Similarly, Harris (2007) reported that engaging in occupations such as crafts can help patients understand that they retain skills and talents and remain able to do. Others called this process occupational story making (Clark, Ennevor & Richardson, 1996; Mattingly, 1998; Jackson, 1998; Price-Lackey & Cashman, 1996) and related examples of how occupational engagement assisted the patient in seeing a viable future self. In one case example, Jackson examined the role of occupation in helping a patient create her future story. Initially the patient was unable to perceive a viable future and wished to die. However, her occupational therapist intervened and nurtured the patient’s hope that a future life could still be filled with worthwhile occupations by engaging the patient in occupations relevant to her life. Jackson asserted that occupational engagement helped the patient “rewrite her own story by creating images of herself performing occupations” (p. 471).

Participants in this study also noted that an occupation-based approach is useful to reveal psychosocial issues that need to be addressed such as patient frustration, interpersonal issues, or fear. Jackson (1998) illustrated this by reporting a case where engaging the patient in familiar occupation-based tasks brought up the patient’s concerns about interpersonal relationships that otherwise may not have been mentioned or addressed. Study participants reported that occupation-based treatment approaches help the patient overcome fears by engaging them in valued occupations in a controlled environment. Fear can prevent an individual’s attempt to return to occupational engagement after illness or injury. For example, the elderly may become stagnant because of fear of returning to meaningful occupations from which they have withdrawn.
Occupation-based therapists, like the participants in this study, provide opportunities for occupational engagement that allow fear to be overcome in a safe place so the individual can move beyond the fear to a more actively engaged and healthier life (Clark et al., 1997; Clark et al., 2001). For example, workers suffering from post traumatic stress disorder following an injury can benefit from being exposed to work simulation tasks in a safe environment (Phillips, Bruel & Harden, 1997).

According to the participants in the present study and previous publications, the process of occupational story making and the narrative reasoning process behind it are the primary means through which the occupation-based therapist discovers what is meaningful to the patient and how to employ that meaning to address psychosocial and physical issues. Though the use of narrative reasoning in the hand therapy practice arena was advocated by Cooper (2010), most of the focus in previous publications on occupational story making is on other practice arenas. While further exploration of the use of occupational story making in the hand therapy arena is needed, it appears that the experiences of participants in the current study demonstrate that addressing of psychosocial issues through occupational story making is a necessary component of occupation-based hand therapy.

**Motivation and meaning for the patient.** The central role of meaning in encouraging motivation was noted by all participants in this study. This is not surprising given the extensive discussion of meaning and motivation in the previous literature about occupation-based approaches in hand therapy and other arenas. Scholars (Dolecheck & Schkade, 1999; Ferguson & Trombly, 1997; Nelson et al., 1996; Roberts, Vegher,
Gilewski, Bender & Riggs, 2005; Trombly & Wu, 1999; Wu et al., 1998) have reported extensively on the significantly improved performance when individuals with stroke engage in meaningful tasks versus rote tasks. For example, Bayona, Bitensky, Salter & Teasell (2005, p. 58) asserted that “Repetition alone, without usefulness or meaning in terms of function is not enough to produce increased … meaningful, functional improvements.”

The positive effect of meaning on motivation is also reported in pediatric cases (Melchert-McKearnan et al., 2000; Van der Weel et al., 1991) and among normal populations (Ferguson & Trombly, 1999; Morton et al., 1992). For example, Morton et al. (1992) studied the effect that ringing a bell had on the effort exerted by participants while pushing a weighted box up an incline. Results indicated that ringing the bell did not motivate improved performance. The authors speculated that may have been because ringing the bell was not perceived as meaningful to the participants.

The association between meaning and motivation noted by participants in the current study has also been reported in the hand therapy literature (Cooper, 2010; Jarus et al., 2000; King, 1992). However, the connection of meaning to motivation may have special significance in hand therapy. People engage with the world through their hands giving the hand a symbolic meaning (Lohman & Royeen, 2001) that separates its unique function from the function of other body parts in ways that make meaningful activity even more motivating. Thus, for occupation-based hand therapists like the participants in this study, working on the hand in a solely biomechanical manner is insufficient to provide the degree of motivation commonly associated with occupation as cited in the
literature. Instead, occupation-based hand therapists have discovered that the meaning found in occupation is needed for motivation.

Based on the experiences of participants in the present study and previous publications, the integrated nature of occupation with an individual’s identity (Christiansen, 1999) and thus their psychosocial being is clear. Occupation-based hand therapists seek to use occupational story making and the meaning found within it to address patients’ psychosocial needs. Thus, the use of occupational story making is a distinctive component of occupation-based hand therapy.

Theme 4. The fourth theme concerned the procedural elements of practice. This theme deals with the tasks associated with providing occupation-based hand therapy that were described by the participants, and was comprised of six independent sub-themes that are also represented in previous publications examining occupation-based therapy: assessment, balancing precautions and activity, preparatory methods, occupation as the end goal, occupation as means, and the context of occupation.

Assessment. Participants in this study described addressing both impairments and occupational performance as part of their assessment process. Similarly, others (Berro & Deshaies, 2007; Bonzani, 2003; Lohman & Royeen, 2002; Weinstock-Zlotnick & Hinojosa, 2004) have asserted that an occupation-based view of hand therapy should include both technical assessment of impairments and assessments which address concepts that are congruent with occupational therapy philosophy such as occupational performance. For example, Bonzani stated, “clinicians are challenged to integrate their advanced technical skills with the core concepts of our profession. Building on our skill set is preferable to substituting one set of skills for another.” (Bonzani, p.2)
Current study participants described using semi-structured or non-structured patient interviews or a combination of approaches to identify the patient’s occupational performance issues. However, the majority of participants argued that deeper and more structured questioning is required to ascertain a patient’s occupational performance issues in the hand therapy arena because occupational performance issues may not be obvious. Like participants in this study, others (Berro & Deshaies, 2007; Hocking, 2001) have noted that the COPM provides the structure necessary to promote communication between the occupational therapist and patient in order to identify and prioritize patient goals and occupational roles. The available evidence indicates that the COPM is a valuable tool for occupation-based hand therapy. This value is due to the facilitation of patient-therapist collaboration as well the affinity for gaining the kind of in depth information about occupational performance required by an occupation-based approach.

Several study participants focused on the use of the COPM as an occupation-based assessment. The COPM promotes occupational therapy practice that is based on the client’s occupational priorities instead of their impairments (Hocking, 2001; Killian, 2006b). Use of the COPM has been repeatedly recommended as a useful tool in all practice areas of occupational therapy, including hand therapy (Bhavnani, 2000; Case-Smith, 2003; Hocking, 2001; Phipps & Harden, 2007; Stamm, Cieza, Machold, Smolen & Stucki, 2004). In addition, the COPM has been effectively used as an outcome measure in hand therapy studies (Case-Smith, 2003; Oskarsson, Aulin, Gustafsson & Petterson, 2009; Sampaio, Mancini, Silva, Figueiredo, Vaz & Alvez, 2006; Sandqvist, Johnsson, Sturesson, Tagil & Geborek, 2009; Stamm et al., 2004; Thiele, Nimmo, Rowell, Quinn & Jones, 2009).
**Balancing precautions and activity.** In the current study, participants discussed the need to balance precautions and activity in an occupation-based approach. This is a topic that is also represented in previous publications examining occupation-based therapy. For example, Cooper et al., (2007, p. 365) asserted that hand therapy needs to be both structure specific in order to “treat tissues safely and accurately” and meaningful to the patient in order to be most effective. Similarly, Brooks (2006) noted that it is not necessary for patients’ medical needs to be the predominant theme of their treatment in order for their medical needs to be adequately met.

General Systems Theory proposes that in order for living systems to function well they must operate in a flexible and dynamic manner, or heterarchy rather than a mechanized and predetermined manner, or hierarchy (Cole & Tuffano, 2008). When approaching patients with hand injuries, an occupational therapist must use their clinical reasoning skills to consider the patient’s medical condition and their occupational condition in a heterarchical manner rather than in a hierarchical manner in order to make judgments about what should be prioritized.

The experience of the participants in this study demonstrates that it is possible to balance a focus on the patient’s occupational performance while not sacrificing the integrity of their healing tissues or ignoring their medical condition. So, the more salient question for the occupational therapist practicing in hand therapy may not be “should I focus on occupation or impairments?”, but rather “when do I focus on occupation?” “when do I focus on impairment?” and “in what combination do I focus on occupation and impairment?”.
Some occupational therapists, like participant Alan, may conceptualize the questions “when do I focus on occupation” and “when do I focus on impairment” in a hierarchical manner that moves through steps or stages that begin with addressing impairments and move toward the introduction of occupation once the patient’s impairments are lessened (Weinstock-Zlotnick & Hinojosa, 2004). For example, in rehabilitation, occupation is often seen as a future goal (Jack & Estes, 2010) or a “separate and subsequent step” (Friedland, 1998, p. 373).

However, most of the participants in the current study and occupation-based hand therapists like them conceptualize when to focus on impairment or occupation in a more heterarchical manner where they use their clinical reasoning to determine appropriate timing and balance. In a similar fashion, scholars (Amini 2010; Amini, 2011; AOTA, 2008; Dolhi & Chisholm, 2011) have asserted that the treatment continuum of preparatory activity, purposeful activity, and occupation is not meant to be viewed as a step-by-step progression, or a list of interventions to be performed in a particular order. Rather, the intervention continuum describes interventions that may be used at any time throughout the course of treatment. It may be that the preference for a hierarchy of predetermined rules and protocols indicate novice level reasoning (Brooks, 2006).

Occupation-based hand therapists advocate balancing precautions and activity in treatment. They do not suggest that medical needs and impairments should be ignored, but rather that the patient’s needs require balance based on heterarchical reasoning. However, whenever possible an occupation-based hand therapist prioritizes a focus on occupation as the defining characteristic of occupation-based hand therapy.
Preparatory methods. All study participants described using preparatory methods such as exercise, splinting and PAMs as a part of an occupation-based approach, even though these interventions are classified as preparatory rather than occupation-based by the American Occupational Therapy Association. Likewise, Amini (2004) asserted that the adoption of an occupation-based approach to hand therapy does not require the elimination of preparatory methods. Previous publications also contained descriptions of the use of these preparatory interventions as a part of an occupation-based approach for treating individuals with hand injuries (Amini; Bonzani, 2003; Earley & Shannon, 2006; Jack & Estes, 2010). Further, participants in the current study asserted that sometimes preparatory interventions are required to address the needs of specific tissues. Thus, the occupation-based hand therapists in the current study view preparatory interventions as a necessary part of an occupation-based approach, but definitively not the focus of an occupation-based approach.

Occupation as the end goal. All study participants reported that occupational performance is always the end goal of treatment. The concept of occupation as the end goal of occupational therapy treatment is discussed throughout previous publications about occupation-based practice (Berro & Deshaies, 2007; Fisher, 2003; Hocking, 2001; Jack & Estes, 2010). For example, Fisher (2003, p. 193) declared that the unique focus of occupational therapy is "the ability of our clients to do". However, Daniels et al., (2002) suggested that people are more than functional performance and as such the “doing” of occupational therapy should go beyond basic ADLs. The concept of occupation as ends seems to be universally accepted among the participants in this study and others (Colaianni & Provident, 2010) and as such may not be an indicator of
occupation-based hand therapy. Rather, occupation as ends may be a necessary but not a sufficient condition of occupation-based hand therapy.

However, participants in the present study also related the importance of explaining the connection between treatments, especially preparatory treatments, and the end goal of occupational performance. Similarly, Amini (2004) asserted the importance of tying occupational outcomes to treatments that may not be obviously linked, such as exercise or PAMs. In order to maintain the focus on occupation, occupation-based hand therapists connect treatments that are not obviously occupation-focused such as exercise or PAMS to occupation when communicating with their patients.

**Occupation as means.** Some study participants also viewed occupation as an effective means of treatment. One participant defined this as "using their valued occupations and activities and tasks that are associated with those values and occupations as therapeutic modalities". The use of occupation as means is described as a vital part of the occupational therapy process in the OTPF (AOTA, 2008). There is a growing body of publications that provide evidence for the effectiveness of occupations and purposeful activities as the means of treatment. As outlined in chapter II of this dissertation, the use of occupations and purposeful activities as treatments resulted in benefits to patients. For example, the use of occupation as means for patients with hand injuries has resulted in increased ROM (Guzelkucuk et al., 2007; Earley & Shannon, 2006), increased strength (Guzelkucuk et al.), improved function (Earley & Shannon; Guzelkucuk et al.; Jack & Estes, 2010; Toth-Fejel et al., 1998) as well as acting as a motivation agent in therapy (Jack & Estes; Jarus et al.; King, 1992).
Participants reported believing that the spontaneous movements encouraged by using occupation as the means of treatment contributed to effectiveness. Previous publications also demonstrated that occupation is more effective than rote exercise to promote movement (Earley & Shannon, 2006; Guzelkucuk, 2007; Nelson et al., 1996). These studies compared movements combined with a purpose that occurred in a more automatic fashion with rote exercise. These purpose added movements included chopping a vegetable, playing a game, or reaching for a snack food. Participants who moved as a part of playing a game moved more than while performing rote exercise (Nelson et al., 1996; Sietsema et al., 1993). Increased smoothness and efficiency of movement was also noted when comparing tasks such chopping a mushroom and reaching for a snack food against rote exercise (Trombly & Wu, 1999; Wu, Trombly, Lin & Tickle-Degnen, 1998). Also, Furguson and Trombly (1997) found that performance of added-purpose occupation promoted greater motor skill retention than rote exercise. Thus, the view of occupation-based hand therapists such as the participants in this study that occupation can be effectively used as treatment has evidentiary support in the literature.

However, the opinion that occupation is an effective means of treatment was not uniform among the participants in this study. A few participants reported viewing occupation as a less effective means of treatment, which is an opinion is shared by other occupational therapists practicing in the hand therapy arena (Colaianni & Provident, 2010). This view appears to be at odds with Amini (2011) who stated that authentic occupational therapy is occupation-based, and includes occupation as the means of treatment. Moreover, others (Fisher, 1998; McLaughlin Gray, 1998; Pierce, 2003; Ward
et al., 2007) have asserted that authentic occupational therapy does not address occupation as ends only. It should be noted that occupational therapists practicing in the hand therapy arena are not the only occupational therapists that use occupation as the ends of treatment, but do not use occupation as the means of treatments as often (Lysaght & Wright, 2005; Neistadt & Seymour 1995).

Colaianni and Provident (2010) reported that occupational therapists working in the hand therapy arena do not use occupation as the means of treatment as much as preparatory interventions even though they believe occupation is beneficial. Reasons for this disparity include concerns over time, the physical environment, reimbursement, the credibility of occupation-based treatments and the limitations imposed by treatment protocols. These reasons are similar to the reasons given by participants in the current study who tend to not use occupation as the means of treatment. If the participants in the present study are indicative of the broader field of occupation-based hand therapists, only a subpopulation of those therapists endorse the use of occupation as the means of therapy. However, those who do endorse occupation as the means of therapy view this as a distinctive element of occupation-based hand therapy.

Study participants discussed adaptation as a part of addressing occupation in treatment. Most participants viewed adaptation as something to be incorporated throughout the treatment process. Previous research of occupation-based approaches reported that the "doing" that occurs as a part of meaningful occupation promotes adaptation which allows the patient to do what is meaningful to them (Fisher, 1998; McLaughlin Gray, 1998; Jackson, 1998; Johnson & Schkade, 2001; Schkade & Schultz, 1992). While not discussed by the participants, Johnson and Schkade as well as
McLaughlin Gray asserted that occupation-based treatment also helps to generalize adaptations to other areas of occupation.

However, a few participants in the current study delayed addressing adaptation until the patient was out of the acute phase of treatment. Similarly, Daniels et al., (2002) reported that occupational therapists working with patients after a stroke delayed the initiation of an adaptive approach until it was determined that the improvements in the patient’s impairments had begun to plateau. Though the participants in the study worked with individuals after stroke, there appears to be a similar attitude among a few participants in the current study that impairments must be addressed before adaptation can be considered. However, others (Amini, 2004; Earley & Shannon, 2006) argued that an occupation-based approach to hand therapy will use adaptation and compensatory techniques to “maximize participation while waiting for tissue healing” (Amini, p. 13).

The majority of occupation-based hand therapists who participated in this study regarded adaptation as an important part of the means of therapy. However, a lack of uniformity appears when discussing when adaptation should begin. Thus, occupation-based hand therapists see adaptation as a vital component throughout the treatment process; however a subpopulation may believe that impairments must be dealt with before adaptation can be addressed.

*The context of occupation.* While several study participants questioned the possibility and appropriateness of using occupation as a treatment in the clinic due to the context differing from the patient’s natural occupational context, others reported using occupation as a treatment in the clinic. Amini (2004) agreed with some participants, stating that “[o]ccupations need not, and ideally should not, be completed within the
clinics.” Similarly, Pierce described a quality of occupation-based treatment, “intactness”, as “the degree to which a therapeutic occupation occurs in the usual spatial, temporal, and socio-cultural conditions in which it would usually occur for that client” (2003, p.220). Pierce (2001) further asserted that ideally, occupation-based treatment should maintain “intactness” as much as possible. Having the context of treatment be as close as possible to the natural occupational context for the patient is important because “[i]n the client’s own settings, the challenges, barriers, adaptations, and potential problem solutions are more clearly evident than they can be in virtual and unfamiliar environments, such as the clinic.” (Pierce, 2001, p. 254). Additionally, performing occupations in their natural context may be more comfortable for patients (Ward et al., 2007).

Several participants in this study suggested simulation, talking about occupation and assigning occupation to be done at home as alternatives to occupational engagement in the clinic. The effectiveness of simulation as a treatment intervention may depend on how closely the context of the simulation matches the context of the occupation it simulates. Simulation has been compared to the performance of occupation in a clinical context in previous research. Trombly and Wu (1999), Wu, Trombly, Lin and Tickle-Degnen (1998), and Yoder, Nelson and Smith (1989) all reported that when individuals participated in therapeutic occupation rather than simulation, performance improved. Additionally, Ross and Nelson (2000) reported that movement kinematics differ between performance of actual occupations and simulations.

Like participants from the current study who suggested talking about occupations as an alternative to the doing of occupations, Amini (2004) also urged occupational
therapists desiring to engage in occupation-based hand therapy to talk to patients about occupation including how their treatment related to their occupations and what occupations are to be completed at home as “homework”. Talking with a patient is also necessary to determine how contextual factors within the patient’s natural occupational environment influence the patient’s performance of their occupations. This information helps the occupational therapist supply feedback through which the patient can modify their occupational performance (Toth-Fejel et al., 1998). Approaches that promote communication between the patient and occupational therapist about occupation in context allow occupational therapists practicing outside of a patient’s natural context to capture assessment data about the patient’s context during the performance of occupations in order to promote discussion and feedback from the therapist (Toth-Fejel et al.).

Several participants also discussed assigning occupation to be done outside of treatment time. This approach is also found in the occupation-based literature (Earley & Shannon, 2006; Jack & Estes, 2010; Toth-Fejel et al., 1998). For example, Earley and Shannon (2006) reported using occupations outside of therapy to work on increasing movement. The patient was instructed on arranging the office and home environments to require performance of certain shoulder motions while throwing away trash, answering the phone, or washing and putting away the dishes.

Though treatment in a patient’s natural occupational context may be ideal, many participants in this study pragmatically advocate for the use of occupation-based treatments in the clinic in a manner that closely approximates the patient’s natural occupational environment. Similarly, Pierce (2001, p. 256) asserted,
Because of institutional and pragmatic constraints, it is not possible to consistently enact intervention in perfectly intact context. Intervention must approximate intactness to the degree feasible. And, being attuned to intactness, the therapist will be ready to move toward intactness in both small and large ways when opportunities arise.

For example, Brooks (2006) reported that the use of occupation in the more home-like environment of a kitchen in a rehabilitation unit may help remove a patient from the sick role to the more natural occupational role of meal preparer. Also, many participants in the current study reported benefits associated with getting as close as possible to performing occupation in the clinic environment. For example, Janet noted that performing occupation in the clinic helps the patient overcome their reticence to returning to the performance of occupations at home. Others have also noted that patients may fear return to occupations and require practice in a safe environment such as in the clinic under their therapist’s supervision (Jackson, Mandel, Zemke and Clark, 2001; Clark et al., 1997). Several participants also noted that performance of occupation in the clinic allows for immediate feedback and problem solving. Previous research publications similarly documented that participating in occupation benefits the patient by promoting problem solving and adaptation (Jack & Estes, 2010; Schkade & Schultz, 1992; Ward et al., 2007).

Participants in the present study have described different approaches for using occupation as the means of treatment including discussing occupational performance with the patient, assigning occupation to be done at home, using simulation of occupations in the clinic, and using individual patient’s occupations in the clinic as the treatment intervention. This appears to be where participants in the current study vary the most in their descriptions of occupation-based hand therapy. While there seems to be significant
variation in views about the appropriate context of occupation in treatment among participants in the present study, this position is entirely consistent with the published literature on the use of occupation. This finding indicates that while occupation-based hand therapists do hold various views about the context of occupation and its impact on treatment, their views do not depart dramatically from other occupational therapists.

Occupation-based hand therapists approach the procedural aspects of their practice in various ways. They include the assessment of both impairments and occupational performance. Occupational performance is assessed through a combination of structured, semi-structured and non-structured patient interviews, most notably the COPM. Occupation-based hand therapists assert the need to probe deeply to ascertain occupational performance issues in the hand therapy arena because occupational performance issues may not be obvious. Occupation-based hand therapists balance the physical and occupational performance needs of their patients using a heterarchical approach to clinical reasoning. They use preparatory methods but not as the focus of treatment. Occupation-based hand therapists view occupation as both the ends and means of therapy, though there is not agreement on the use of occupation as means. Those occupation-based hand therapists who view occupation as a central means of treatment assert that this is a distinctive element in occupation-based hand therapy. Occupation-based hand therapists address adaptation but do so at varying times in the treatment process. There is not a consensus about how occupation is to be used in treatment among occupation-based hand therapists. Some believe that there are too many barriers related to context to have a patient engage in occupation in the clinic. Instead they advocate simulation, assigning occupation at home and discussing occupation with
the patient. However, others believe there are benefits to having the patient engage in occupation in a clinical context as close as possible to the patient’s natural context.

**Theme 5.** The fifth theme concerned negotiating a place for occupation-based practice in the hand therapy arena. This theme deals with the difficulties of occupation-based practice in a traditional hand therapy setting and the ways the participants have dealt with these difficulties. Theme five was comprised of four independent sub-themes that are also represented in previous publications examining occupation-based therapy: the effort it takes, the medical model, patient issues, and the pragmatic concerns of time, reimbursement, and the environment.

*The effort it takes.* All participants in this study reported that occupation-based hand therapy requires effort on the part of the therapist. A study of Swedish occupational therapists' attitudes toward changing practice to be centered on goals meaningful to the client found that the effort required to make the change is a barrier to making the change (Wressle & Samuelsson, 2004). The Swedish occupational therapists’ motivation to change how they practiced was also described as an influencing factor.

It is reasonable to think that the effort required by an action would influence the motivation to carry out that action. The theory of planned behavior (TPB) postulates that the perceived effort required to carry out a behavior will influence the likelihood the behavior will occur (Ajzen, 1985). Also integral to the relationship between effort and action in TPB is the concept of intention to act. The TPB holds that the best predictor of action is an individual’s intention to act (Archer et al., 2008). Ahmed-Landeryou (2008) used the TPB to examine how British occupational therapists approach implementing occupation-based therapy with patients with neurological disorders. Use of an
occupation-based approach was greatly influenced by the therapist’s intention to use an
occupation-based approach. Many participants in the current study noted their intention
to practice in an occupation-based manner throughout the descriptions of their practice.

Some participants also noted that incorporating an occupation-based assessment
such as the COPM makes treatment decisions easier by outlining a treatment plan of
meaningful goals and interventions for the patient. Berro and Deshaies (2007, p.7)
concurred, noting that the COPM “helps define the role of OT, prioritize goals, guide
treatment efforts.” Killian (2006b) also noted that use of the COPM was integral to the
establishment of a more occupation-based approach to practice within a facility that
provides both inpatient and outpatient occupational therapy services. Examination of
previously administered COPMs allowed the therapists to pinpoint common occupations
that were meaningful to their patient population and equip the clinics to address these
occupations. This process made access to the equipment and supplies needed for
common occupations more easily available to the therapists, and thus easier to use.

Occupation-based hand therapists approach occupation-based patient treatment in
an intentional manner. While occupation-based hand therapists acknowledge that there is
effort involved in using an occupation-based approach to hand therapy, they also reported
that patient outcomes and the job satisfaction they feel make that effort worthwhile.
Thus their values, beliefs and past experiences provide the impetus for them to overcome
the effort required to engage in an occupation-based approach to hand therapy.
Occupation-based assessment tools such as the COPM are valued by occupation-based
hand therapists because they can help make goal setting and treatment planning easier.
The medical model. Many of the study participants discussed how elements of the medical model created a challenge for occupation-based treatment. There exists a significant tension between medicine and occupational therapy (Townsend, 1996) and this tension was also apparent among participants in the current study. This tension comes from differing paradigms. “[P]hilosophically, theoretically, and practically, occupational therapy does not fit at all well with medicine’s philosophy, theory and practice.” (Wilding & Whiteford, 2006, p. 190) For example, where the focus of the medical model is on diagnosis and cure, the focus of occupational therapy is on enabling engagement in occupation (Christiansen & Baum, 2005).

In addition, participants noted that the predominance of a medical model-based approach among physicians and physical therapists in the hand therapy arena can cause misunderstandings and communication problems for the occupational therapist wishing to employ an occupation-based approach. Wilding and Whiteford (2006) asserted that when occupational therapists work in a setting dominated by the medical model paradigm they may “feel significantly misunderstood and ignored.” (p.190) Colaianni and Provident (2010) also reported that occupational therapists working in the hand therapy arena experience misunderstandings with their medical model-based colleagues. Some participants in Colaianni and Provident expressed fear that these misunderstandings would stigmatize them as “not scientific” (p.141) and lead to a lack of respect from other health care professionals.

Concern over loss of respect and the prevalence of the medical model in hand therapy settings has led some occupational therapists practicing in the hand therapy arena to conform to the dominant medical paradigm (Dale et al., 2002; Fitzpatrick & Presnell,
Friedland (1998) reported that as occupational therapists attempt to fit in to medical model-based settings that erosion of occupational therapy philosophy and values will occur because the medical model is the dominant paradigm. This pressure may lead to role confusion where the occupational therapist takes on more medical model focused treatments aimed solely at the remediation of impairments. Treatments focused on remediation of impairments result in a type of practice that does not reflect the core values of the profession of occupational therapy. However, it should be noted that like participants in the present study have, it is possible to understand and use medical reasoning and not take on the medical model paradigm (Yerxa, 1992).

Occupation-based hand therapists perceive the pressure to conform to the medical-model paradigm that many other therapists trying to apply occupation-based strategies perceive. However, they understand that it is possible to use medical reasoning and not take on a medical model paradigm, and have done so within the environments where the practice. Thus, it appears that occupation-based hand therapists have established a mechanism by which to apply occupation while flourishing within the medical model environment of hand therapy.

**Issues related to the patient.** Many participants in this study reported that an occupation-based approach may become more difficult due to issues related to the patient. For example, patient cooperation, finding the right occupations for individual patients to use in treatment, and the appropriateness of occupation-based treatment for certain issues can produce difficulties. A few participants in this study had trouble gaining the cooperation of some of their patients with an occupation-based approach. Similarly, Colaianni and Provident (2010) reported that some patients may not
understand occupation-based treatment and so resistant cooperation. Or, patients may be focused on goals that are not strictly occupational in nature such as “I just want to walk” (Brooks, 2006, p. 54).

Some patients may appear less cooperative because they are more comfortable with health care professionals telling them what to do (Cole & Tufano, 2008; Daniels et al., 2002) rather than with an occupation-based approach that requires them to be active participants in the therapeutic process. For example, participant Janet reported that it was difficult to achieve good results when the patient expects the therapist as the expert to “fix” their hand and is not interested in collaborating in the therapeutic process. However, the experience of most participants and previous publications that addressed the positive influence occupation-based treatments have on motivation would seem to indicate that for the most part the use of occupation-based approaches tends to facilitate rather than inhibit patient cooperation (Cooper, 2010; Dolecheck & Schkade, 1999; Ferguson & Trombly, 1997; Jackson, 1998; Nelson et al., 1996; Roberts et al., 2005; Trombly & Wu, 1999; Wu et al., 1998).

A few study participants reported that at times it is difficult to find an occupation-based activity that will work for an individual client. However, other participants reported using non-structured interviews and assessments such as the COPM to help identify occupations to use in treatment among patients with hand injuries whose occupational performance issues may not be obvious. Finding appropriate occupation-based interventions for individual patients is not an issue that is present in discussions about occupation-based practice in the existing literature. Rather, what is discussed relates to methods that assist in selecting occupation-based interventions. Similarly to the
experience of some current study participants, appropriate occupations can be determined through using an interest interview (Dolecheck & Schkade, 1999) or an assessment such as the COPM (Herman et al., 2010; Jack & Estes, 2010) or ESM (Toth-Fejel et al., 1998).

A few participants in this study reported that not all patients are appropriate for an occupation-based approach due to a lack of occupational performance difficulties. For example, Diana reported that some patients are simply in need of having a splint or piece of adaptive equipment replaced and do not demonstrate occupational performance issues aside from that need. While which patients are not appropriate for occupation-based approaches is not a subject widely discussed in previous publications on occupation-based hand therapy, there is some discussion of what patients are appropriate. The goals of occupational therapy for individuals with musculoskeletal issues are to “improve their ability to perform daily occupations (i.e. activities and valued life roles at work, in the home, at leisure and socially), facilitate successful adaptations to disruptions in lifestyle, prevent losses of function and improve or maintain psychological status.” (Hammond, 2004, p. 491) As participants Diane and Ellen reported, if the needs of the patient do not fit these aims, that patient is not in need of occupational therapy service.

Occupation-based hand therapists may at times have difficulty gaining the cooperation of some patients due to a lack of understanding about the aims of occupation-based hand therapy on the part of the client. However, occupation-based hand therapists also note that with explanation most patients are cooperative, comfortable, and even appreciative of an occupation-based approach to hand therapy. While occupation-based hand therapists may find it difficult at times to identify occupation-based interventions for individual patients, they also find tools such as the COPM useful in that regard.
Occupation-based hand therapists are primarily concerned with their patients’ occupational performance and as such do not view patients who are not experiencing occupational performance issues as appropriate candidates for their services.

The pragmatic concerns of time, reimbursement, and the physical environment.

Many study participants discussed the impact of issues relating to time, reimbursement, and the environment on the provision of occupation-based hand therapy. Most participants in this study reported that limited time was a challenge to occupation-based hand therapy. Limited time has been previously reported as a challenge to occupation-based approaches in hand therapy (Berro & Deshaies, 2007; Colaianni & Provident, 2010; Dale et al., 2002) and in acute care (Harris, 2007; Wressle & Samuelsson, 2004). Previous publications on occupation-based approaches have asserted that developing the type of client-therapist relationship that allows for occupation-based care takes time (McColl, 1994; Pierce, 2001; Posatery-Burke & Cassidy, 1991). It is difficult for occupational therapists working in hand therapy to develop a holistic, occupation-based treatment plan when there is less time to spend with individual clients due to reimbursement and case load demands (Dale et al., 2002).

However, participants in this study also discussed ways to deal with time limitations. Several study participants discussed the importance of having administrative support for the time required for an occupation-based approach. Previous publications (Berro & Deshaies, 2007; Brooks, 2006; Killian, 2006a, 2006b) also noted the value of department and facility administration support for the time required for occupation-based practice. In addition, participants in this study suggested assuming a multi-tasking approach to deal with limited time. Similarly, Jackson (1998) described a case example...
where an occupational therapist multi-tasked by talking with her patient during dressing training in order to have the time to explore what was meaningful to the patient.

Whether or not an occupational therapists multi-tasks by delving into the patient’s occupational narrative during other treatment activities may be related to their level of experience. Brooks (2006) noted that occupational therapists with less than ten years of experience may need to concentrate more on procedural reasoning for the treatment session than more experienced therapists. More experienced occupational therapists are then able to devote more toward the narrative reasoning required to explore the patient’s occupational narrative. Similarly, occupation-based hand therapists like the participants in the present study tend to have more experience and as such may be better equipped to use multi-tasking strategies to overcome the time related challenges to occupation-based hand therapy.

One participant, Hank, reported that he dealt with time limitations by providing only limited focus on occupations, placing the responsibility for addressing occupational performance on the patient. Similarly, Dale et al., (2002, p. 39) reported that occupational therapists working in hand therapy adapted to the availability of less time by improving time management skills and by placing “the responsibility for improvement and resumption of previous life activities on the client.” However, others participating in the current study and in previous publications (Berro & Deshaies, 2007; Brooks, 2006; Hocking, 2001) asserted that it is the therapist’s responsibility to make sure the patient’s occupational performance needs are addressed.

A few participants in this study reported concerns about being reimbursed for occupation-based hand therapy. These concerns were also noted by 29% of participants
in Colaianni and Provident (2010). However, most participants in this study denied having reimbursement issues with occupation-based hand therapy. Similarly, Berro and Deshaies (2007, p. 4) included concerns over reimbursement as part of a list of “common perceptions, misperceptions and excuses” for why occupational therapy practice is not as occupation-based as it could be. It should be noted that current Medicare and Medicaid billing codes allow billing for occupation-based treatments when a skilled service is provided. “The same factors, such as grading of the exercise, that make AROM exercise skilled services and make properly executed occupation-based treatments skilled services” (Colaianni & Provident, 2010, p. 143). The reasoning required to implement an occupation-based treatment such as a craft is similar to the reasoning used when implementing other interventions (Harris, 2007).

All study participants reported that the physical work environment, available equipment, and supplies influenced their ability to use an occupation-based approach. Environment, equipment and supplies have been reported as challenges to occupation-based practice in previous publications (Berro & Deshaies, 2007; Colaianni & Provident, 2010; Killian, 2006b). Participants in this study mentioned strategies for overcoming these challenges, including creating a supportive physical environment, finding creative uses for spaces, borrowing equipment, and having patients bring in equipment and supplies for their occupations from home. Like the participants in this study, others (AOTA, 2003; Asher & Newman, 2000; Berro & Deshaies; Brooks, 2006; Chisholm, Dolhi & Schreiber., 2004; Dale, 2002; Killian, 2006b; Piersol, 2002) described creating environments for occupations and “occupation kits” that contain the supplies and equipment required for common occupations, or having the patient bring in equipment
and supplies for occupations from home (Brooks). Like current study participants, others (Berro & Deshaies, 2007; Brooks, 2006; Lyons et al., 2004) have also recommended rearranging treatment areas to reflect more home-like environments where occupations naturally occur. As has been described by the occupation-based hand therapists in the present study, creative use of the clinic and hospital campus and community can also expand the space for occupation-based interventions (Colaianni & Provident; Berro & Deshaies; Jackson, 1998; Killian, 2006b).

Occupation-based hand therapists experience the same pragmatic pressures and limitations that other occupational therapists experience but excel at using strategies to overcome these pressures. They overcome time pressures by multi-tasking and with administrative support. Occupation-based hand therapists have learned through experience that when using appropriate documentation and billing codes that reimbursement is not typically an impediment for occupation-based hand therapy. While occupation-based hand therapists may be challenged by a limiting physical environment or a lack of equipment and supplies, they also have developed many methods to work around these limitations. These methods include developing occupation kits and appropriate spaces for occupational performance, finding creative uses for spaces, borrowing equipment, and having patients bring in equipment and supplies for their occupations from home.

A Description of Occupation-Based Hand Therapy

The original intent of this study was to develop a description of occupation-based hand therapy practice that could be used as an operational definition in future quantitative investigation. It is clear from the results that there are various opinions among the
participants about what it means to practice in an occupation-based manner. Participant’s responses tended to fall along continua (Figure 1) rather than into discrete categories.

**Figure 1**

*Continuums*

**Occupation as Means**

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**Perceived Environmental Support for Occupation in their Clinical Practice**

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**Degree of Conflict between the Medical Model and Occupation-Based Care**

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**Expressed Concern for Unique Contributions of the Profession of Occupational Therapy**

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**Use of Occupational Performance Measure**

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**Views being Occupation-Based as a Guide to Practice**

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### Priority given to Occupation, Relative to Medical Precautions

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### Use of Occupation in the Clinic

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### Occupation as Means in the Clinic

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<th>Talk</th>
<th>Simulation</th>
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### Focus on Occupation as Ends

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### Struggles with Time for Occupation-Based Care

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### Concerned about Problems with Reimbursement for Occupation-Based Care

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### Struggles with Physical Environment

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However, individual participant’s responses tended to fall in consistent areas of the continua. For example, one participant’s responses may have tended toward one end of the continua, where another’s responses tended to stay toward the middle of the continua. Though the participant’s responses represented different positions along conceptual continua, their responses also tended to cluster in certain areas of these continua such as toward one end or in the middle. The patterns in which responses clustered between participants represent the shared aspects of the experience and inform the synthesis statement.

**Synthesis Statement.** An occupational therapist adopts an occupation-based approach to hand therapy when they encounter inspiration to do so. One source of inspiration exists in the founding philosophical principles of occupational therapy. While the lack of occupation-based research in hand therapy is a significant issue, practitioners are inspired to practice in an occupation-based manner due to research in other practice areas as well as personal experiences with the effectiveness of occupation-based approaches. Adoption of an occupation-based approach that is informed by personal experience and existing research evidence then may inspire more research on the use of occupation-based approaches in hand therapy. Exposure to sources of inspiration that influence practitioners toward occupation-based care often occur in academic environments, in mentoring experiences within the professional environment, and within professional organizations.

The concept of occupation is based on meaning (Trombly, 1995). When occupations are addressed in treatment the associated individually held meaning enhances patient compliance and motivation. Successful accomplishment of occupational
performance goals makes recovery relevant and easily discerned by the patient. Thus, success in one area of occupational performance can help the patient imagine a future where they can successfully engage in other meaningful roles and activities, giving them hope for recovery. Focusing on occupation in treatment requires addressing the individual as more than their physical impairments. This occupational focus facilitates the holism required by the complex needs of patients with hand injuries. When occupational therapists witness the psychosocial benefits of occupation-based approaches they are further inspired to continue using these approaches.

The procedural elements involved in executing occupation-based hand therapy vary somewhat depending on how the therapist prioritizes occupation. The therapist may conceptualize occupation-based hand therapy along a continuum from focusing on occupation as both the end goal and as an important part of the means of treatment, to primarily focusing on occupation as the end goal. Those who tend to focus on occupation as the end goal and prioritize it as the means of treatment select tools to assess impairments as well as occupational performance and goals. But in order to use the patient’s occupations as the means of treatment they will also select tools such as the COPM that investigate the place and meaning of occupation within the life of the patient. Occupations performed within the patient's physical limits are prioritized as the means of treatment from the time of admission. This is accomplished by carefully balancing the requirements of the patient’s tissues as they heal with the need of the individual to engage in occupation. Treatment activities are selected based on treatment precautions and on the meaning(s) they hold for the patient. These
interventions may include activities as diverse as cooking, adapted dressing, painting, playing music, diapering a baby, and cutting hair. Although it is perceived to be beneficial to use occupation as a treatment modality in the clinic, there can be challenges to doing so. When the challenges cannot be overcome, there are possible alternatives including simulation, talking with the patient about occupation, and assigning the patient occupation to do at home. Preparatory interventions such as exercise and physical agent modalities (PAMs) are also used in this conception of occupation-based hand therapy, but they are not prioritized.

Those who tend toward focusing mostly on occupation as the end goal of treatment will select tools to assess impairments as well as occupational performance and goals, but do not select tools that investigate the place and meaning of occupation within the life of the patient. They may prioritize the safety of the patient’s healing tissues over the needs of the patient engage in occupation to the point that occupational performance is delayed until impairments are addressed to the degree they judge as necessary. They do not reject occupation as the means of treatment, but do not prioritize occupation or focus on using it as a treatment from the point of admission. Occupation is viewed as a future goal to be worked toward more than as a current need of the patient. In this conception of occupation-based hand therapy the focus is on getting the patient ready to engage in occupation using preparatory treatments such as exercise, PAMs, and simulation.

Participants in this study described occupation-based care as often requiring extra effort, possibly resisted by the adherents of medical model and by some patients, and
challenging due to pragmatic concerns related to time, reimbursement, and the environment. However, participants also experienced effectively dealing with these challenges through various means including maintaining an occupation-based approach and allowing the results themselves to address challenges, using what is available, and being creative.

The patient’s impairments are prioritized in the medical model-based approaches often associated with hand therapy. However, occupation is prioritized in occupation-based hand therapy. This prioritization of occupation focuses on what is distinctive about occupational therapy and provides a clear point of identification for the occupational therapist. The use of an occupation-based approach can assist the occupational therapist practicing in a hand therapy setting to clarify the distinctiveness of the role of occupational therapy among physicians, other team members, insurers, and patients. An acceptance of the centrality of occupation to the practice of occupational therapy results in the primary identification of self as an occupational therapist rather than as a hand therapist.

Though the original intent of this study was to describe what an occupation-based approach is, it is now clear that there is no one, single occupation-based approach in hand therapy, but rather a continuum of approaches. While the phenomenological approach was an appropriate choice to describe occupation-based hand therapy from the perspective of those who self-identify as occupation-based, more study is needed to fully develop this understanding. Those wishing to use the description of occupation-based hand therapy contained in this study as the basis for future study will need to decide what area of the continuum they wish to investigate.
Summary of Implications

The results of this study dealt with factors as far ranging as theory, professional identity, psychosocial factors, specific interventions and environmental considerations. Due to their wide ranging nature, implications of these findings were woven throughout the discussion. A summary of the implications for practice, education and research is now provided.

Implications for practice. The description of occupation-based hand therapy provided by study participants and within previous publications demonstrates the usefulness of occupation-based hand therapy for the benefit of the identity of occupational therapy and patient outcomes. Participants in this study and scholars have reported that engaging in occupation-based therapy makes the identity and purpose of occupational therapy clear to those inside and outside of the profession. Findings from this study suggest strategies to promote occupation-based hand therapy.

Occupational therapists practicing in the hand therapy arena who wish to become more occupation-based can begin by learning about occupation-based philosophies and practice, and by initiating an occupation-based approach with intention. Learning about an occupation-based approach to hand therapy can occur through study of previous publications and through mentoring relationships. Participants noted that reviewing the founding philosophies of occupational therapy caused them to rethink approaching patient care under the medical model paradigm and to adopt a more occupation-based paradigm. Personal review of these founding philosophies coupled with discussion among like minded colleagues may promote a more occupation-focused paradigm. Participants credited mentoring from occupational therapists committed to an occupation-
based approach as instrumental to their becoming more occupation-based. This relationship can be with a colleague, or with a nearby occupational therapy faculty member.

Participants in this study were intentional about their use of an occupation-based approach. The TPB postulates that the best predictor of changing a treatment approach is the intention to use the approach and planning to use the approach (Ahmed-Landeryou, 2008; Ajzen, 1985). Getting into the habit of using an occupation-based approach may be facilitated by formally preparing treatment plans that incorporate occupation-based interventions. Both participants in this study and scholars have recommended the use of the COPM as a means to assist occupation-based practice. Use of the COPM can help create goals and interventions plans that are based in the occupations that are prioritized by the patient.

Use of the COPM can also assist the occupational therapist seeking to practice occupation-based hand therapy to gather information to inform the patient’s occupational narrative. Understanding the patient’s occupational narrative facilitates therapy that is meaningful to the patient. Therapy that is meaningful intervenes with the patient in a holistic manner that addresses their physical and psychosocial needs.

A therapist wishing to employ occupation-based hand therapy should also focus on the importance of context. When an occupational therapist provides treatment in a context as close to the natural context as possible, occupation-based interventions can become more relevant, meaningful and understandable to the patient. Participants in this study and scholars have recommended rearranging and rethinking treatment areas to include common natural environments for occupation such as kitchens and outdoor
spaces. Keeping the appropriate supplies and equipment available and easily accessible can also promote occupation-based hand therapy. The importance of administrative support for the contextual challenges of occupation-based hand therapy was discussed by this study’s participants as well as in previous publications on occupation-based therapy. However, participants and prior publications also noted strategies to overcome contextual challenges with less supportive administration.

**Implications for education.** When new graduates enter the occupational therapy work force they will encounter pressure to conform to the impairment focus of the medical model in ways that draw them away from the philosophical and theoretical foundations of occupational therapy and a focus on occupation. If they are not adequately prepared to deal with that pressure, they may experience feelings of inferiority when compared to other healthcare professions that better fit into the impairment-focused medical model. Feelings of inferiority may lead to an identity crisis. In order to prevent conformity to the medical model and development of an identity crisis after graduation, occupational therapy educators need to instill a strong sense of esteem for occupation in students. A strong sense of occupation esteem can equip new graduates to maintain their occupational therapy values in the face of pressure to conform to the medical model.

Occupational-therapy graduates who are knowledgeable about the available research to support occupation-based approaches will be better equipped to combat the pressure to adopt the seemingly more “scientific” impairment focused medical model approaches. It is also important for students to understand the rich philosophical history of the profession and the importance of maintaining a tie to that history in order to maintain professional distinctiveness. This understanding may help new graduates avoid
being conformed to impairment focused approaches without having to go through a process as the participants in this study did.

The discussion of the results of this study and previous publications reveal differing, and sometimes conflicting opinions about which educational approaches will produce students who become occupation-based occupational therapists. Much more research is needed to determine what educational approaches will best facilitate occupation-based practice.

**Implications for future research.** Participants in this study and authors of previous publications on occupation-based practice agree that there is a need for more research on occupation-based approaches, including case examples. The difficulty associated with studying the concept of occupation was acknowledged by participants in the present study as well as by others in the literature. Development of both qualitative and quantitative research approaches to study occupation-based approaches, including in the hand therapy arena are needed. Examination of the role of expert opinion as well as occupational therapy values as influences for an occupation-based approach would also be helpful.

**Efficacy.** Even though there is a growing body of research on the relatively new approach of occupation-based hand therapy, much of the research, including this study, is descriptive in nature. If occupation-based hand therapy is to be accepted, there will need to be more outcome studies that confirm the experience of therapists by demonstrating efficacy of the approach when compared to traditional, medical model-based approaches. The lack of outcome-based studies on occupation-based hand therapy is likely due to the difficulty associated with quantifying the complex construct of occupation as an
intervention and as an outcome. Part of pursuing this line of research may include use of grounded theory to further define occupation as an intervention within the continuum of occupation-based hand therapy. Additionally, more outcome measures that accurately and expediently assess occupational performance are needed.

The timing of when occupation should be initiated in treatment requires further research. When occupation should be used in treatment was not agreed upon by the participants in this study or in the previous publications. Also the effect of delaying the initiation of occupation in treatment is unknown and should be studied. Conversely, the risk of initiating occupation as the means of treatment as early as possible within existing medical precautions is also unknown and requires additional research.

However, additional qualitative studies would also be beneficial. Pierce (2003) has called for more descriptions of occupation-based care. Case studies that describe occupation-based care, especially those that address the effects of holism and occupational narratives in hand therapy would provide needed knowledge about these difficult to quantify areas of occupation-based practice

Also, research on the effectiveness of strategies to promote occupation-based hand therapy is also needed. Strategies that address changing the clinical environment, using tools such as the COPM and involving management support require investigation...

**Education and training.** Educational approaches that facilitate occupation-based practice among graduates need to be identified and studied. Also, because experience appears to interact with an occupational therapists ability to get beyond procedural reasoning to the narrative reasoning required by occupation-based practice, continuing education approaches also require study. Because occupational therapists practicing in
hand therapy may return to a novice like state of reasoning due to the required specialized learning it may be that continuing education offerings aimed at occupational therapists more experienced in hand therapy would have better effect on the promotion of occupation-based hand therapy. Training of those with more experience may also produce mentors and create a more occupation-based culture in hand therapy settings.

**Gender.** It is interesting to note that the participants who were most closely aligned with the medical model’s impairment focus were males, Hank and Alan. The third male participant, Ian, though less impairment focused and more occupation focused than Hank and Alan, tended to be more focused on impairment remediation than most of the female participants, with the possible exceptions of Beth and Cathy. It is unknown if this gender-based difference among the participants reflects the larger population or what the source of this difference is. Perhaps typical masculine conceptualization of occupation differs from the typical feminine conceptualization, leading to valuing occupation differently.

Interviews with Alan and Hank did not provide as many detail oriented examples and as such lacked the depth found in the replies of most of the female participants. Perhaps the interview was better designed to elicit rich description from female participants. Future research is needed to understand the relationship between gender and occupation.

**Occupation as belief system.** Many of the participants who highly valued an occupation-based approach discussed the importance of looking back to the writings of the founders of occupational therapy for guidance. This idea that those who set the values and beliefs of the profession in motion are also those who should be referred to for
guidance in the current day is curiously similar to those who adhere to other belief systems. Those who value an occupation-based approach also exhibit other characteristics of believers. For example, while there is a lack of published research on the effectiveness of an occupation-based approach, many participants who adhere to this approach see the results in their practice and have faith that the forthcoming evidence will prove them correct. Participants also appeal to the idea of maintaining a focus on occupation in the profession as one would maintain the focus of a belief system. It would also appear from the descriptions of the participants and previous publications that identity is also associated with the occupational therapists’ beliefs about occupation, much like identity is formed through other kinds of beliefs as well. Participants also reported being inspired by the personal reward they experienced when practicing occupation-based hand therapy in a similar manner to those who engage in activities that demonstrate their beliefs and values. More research on the relationship between personal beliefs and values, and evidence for practice is needed.

**Limitations**

Participants in this study were all educated more than 20 years ago, under a previous version of the ACOTE standards. Perhaps if they had been educated under newer standards their experiences would have been different. However, it should be noted that though inclusion criteria for participation in this study only required five or more years of experience, no one with less than 20 years of experience was identified for invitation to participate in the study. Perhaps adopting an occupation-based approach to hand therapy requires going through a process of developing the clinical reasoning necessary to feel comfortable using for this individualized and thus more ambiguous
approach. Conversely, because the participants in this study were experts, it may be that study of hand therapists who wish to employ an occupation-based approach but are novices in the hand therapy arena may yield different results.

As with all qualitative studies, care should be taken in generalizing the results of this study. The participants in this study were purposefully selected as experts in occupation-based hand therapy and do not represent the population of occupation-based hand therapists as a whole. While the results of this study do describe the experience of occupation-based hand therapists, generalizations to the population are inappropriate. It is up to the reader to compare the rich description of the experience of providing occupation-based hand therapy with their own experiences and contexts and apply the results individually.
References


Berro, M. & Deshaies, L. (2007, April). Lip service or service: Is your practice really as occupation-based as it can be? Paper presented at the annual meeting of the American Occupational Therapy Association, St. Louis, MO.


Appendix A
Letter of Invitation

Date __________

Dear __________,

This letter is to request your participation in a qualitative research study titled: A Phenomenonology of Occupation-Based Hand Therapy. My name is Donna Colaianni and this study is being performed as partial fulfillment of the requirements for my doctoral degree in Rehabilitation Science at Duquesne University. You are being contacted because (you have published on occupation-based hand therapy or presented on occupation-based hand therapy or your name was given to me by______________ because of your experience in providing occupation-based hand therapy).

There is limited research and literature on occupation-based approaches in hand therapy and I believe part of the reason for that is the difficulty associated with defining what occupation-based hand therapy is due to differing opinions on the subject. The research model I am using is a qualitative one through which I am seeking comprehensive descriptions of your experiences. In this way I hope to answer the question: “How do occupational therapists perceive and describe the experience of providing occupation-based hand therapy?” Through your participation I hope that answering this question will help provide a foundation for future research on occupation-based hand therapy. You will be asked to recall specific episodes, situations, or events related to providing occupation-based hand therapy. I am seeking accurate and comprehensive portrayals of what these experiences were like for you including your thoughts, feelings, and behaviors as well as the situations, places, people, and events associated with the experience.

Participation in the study will require you to (review and sign the consent form and fill out the brief questionnaire included with this letter and return the consent form and brief questionnaire in the envelope provided or review the consent form and the brief questionnaire attached to this email message. If you are interested in participating in the study please contact me via email with a mailing address and I will send you a postage paid envelope and printed copies of the consent form and brief questionnaire to return to me). Additionally, after I receive your consent form and brief questionnaire I may contact you for a 30-45 minute telephone interview at a date and time convenient for you. It is likely that more than one interview will be necessary for clarification. The interviews will be audio taped. You will also be asked to review the interview transcripts and data summaries for accuracy.

Your participation in this study would be greatly appreciated. If you have any questions or comments please feel free to contact me.

Sincerely,
Donna Colaianni, MS, OTR/L, CHT
Assistant Professor of Occupational Therapy, West Virginia University
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(day) 304 293-1953
(evening) 304 594-3170
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CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE: A Phenomenology of Occupation-Based Hand Therapy

INVESTIGATOR: Donna Colaianni, MS, OTR/L, CHT
13 Kaylan Drive
Morgantown, WV 26508
(W) 304 293-1953
(H) 304 594-3170

ADVISOR: Ingrid Provident Ed.D., OTR/L
Department of Occupational Therapy
Rangos School of Health Sciences
(412) 396-5411

SOURCE OF SUPPORT: This study is being performed as partial fulfillment of the requirements for the doctoral degree in Rehabilitation Science at Duquesne University.

PURPOSE: You are being asked to participate in a qualitative research project that seeks to investigate the question “How do occupational therapists perceive and describe the experience of providing occupation-based hand therapy?” You will be asked to fill out the brief questionnaire included with this form and in addition, if selected you will be asked to allow me to interview you. The interviews will be taped and transcribed. You will also be asked to check interview transcripts for accuracy and to review the final composite description constructed in the study for any additions or corrections you feel are necessary. These are the only requests that will be made of you.

RISKS AND BENEFITS: There are no risks associated with participation in this study greater than those encountered in everyday life. Benefits of the study will be to contribute to the understanding of what occupation-based hand therapy is.

COMPENSATION: There will be no compensation for participating in this study. However, participation in the project will require no monetary cost to you. Envelopes are provided for return of your response(s) to the investigator and all telephone contact will be made at the expense of the investigator.
CONFIDENTIALITY: Your name will never appear on interview transcripts. No indication of your identity will be made in the data analysis. All written materials and consent forms will be stored in a locked file in the researcher's home. Your responses will only appear anonymously in the data. All materials will be destroyed at the completion of the research.

RIGHT TO WITHDRAW: You are under no obligation to participate in this study. You are free to withdraw your consent to participate at any time. You can refuse to answer any questions posed.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon request.

VOLUNTARY CONSENT: I have read the above statements and understand what is being requested of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason. On these terms, I certify that I am willing to participate in this research project. I understand that should I have any further questions about my participation in this study, I may call the principle investigator Donna Colaianni 304-594-3170, Research Advisor, Dr Ingrid Provident 412-396-5411 or Dr. Paul Richer, Chair of the Duquesne University Institutional Review Board 412-396-6326.

_________________________________________  _________________________
Participant's Signature                                Date

_________________________________________  _________________________
Researcher's Signature                                Date
Questionnaire

Date ____________________

Name ___________________

1. Are you an occupational therapist? Please circle YES or NO

2. How many years of experience do you have in hand therapy? _________

3. Are you a CHT? Please circle YES or NO

4. What percent of your time at work is spent in direct patient care? ____%

5. Use the scale below to answer this question: I would describe myself as an occupation-based therapist. Please mark an X on the line after your selected answer.
   Strongly disagree _____
   Disagree _____
   Neutral _____
   Agree _____
   Strongly agree _____

6. Are you willing to participate in audio taped telephone interviews about your experience with providing occupation-based hand therapy? Please circle YES or NO

7. If you agree to participate and are selected to participate in interviews what are some dates/ times that it would be convenient to do the first telephone interview? Please include the phone number you prefer to be contacted through at your preferred dates and times.
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

8. Do you know any other occupational therapists who have experience providing occupation-based hand therapy and may be interested in participating in this study? If so please include any names and contact information.
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
Original questions based on literature:

- Please tell me about your work experience as an occupational therapist. (Patton, 2002, pp. 348-351)
- Do you have any work experience outside of OT? If yes, please tell me about it. (Patton, 2002, pp. 348-351)
- Please describe your current working environment and the working environments of anywhere else you have provided occupation-based hand therapy. (Patton, 2002, pp. 348-351)
- How would you differentiate occupation based interventions from non occupation-based interventions?
- How did you get interested in occupation-based hand therapy? (Patton, 2002, pp. 348-351)
- What have you experienced in terms of providing occupation-based hand therapy? (Creswell, 2007, p.61)
- How would you compare the effectiveness of occupation-based interventions to other types of interventions?
- If I followed you through a typical day at work what would I see you doing? (Patton, 2002, pp. 348-351)
- Try to remember the last time you used an occupation-based approach with a client and tell me everything you can about the situation, about what you felt, did or said. (Moustakas, 1994, p.115)
-What dimensions, incidents, and people connected with the experience of providing occupation-based hand therapy stand out for you? (Moustakas, 1994, p.116)

-Do you associate any changes with the experience of providing occupation-based hand therapy? (Moustakas, 1994, p.116)

-Think of a time you were providing occupation-based hand therapy to a client that really stands out in your mind and tell me everything you can about the situation, about what you felt, did or said. What was your patient’s response in this situation? (Moustakas, 1994, p.115; Patton, 2002, pp. 348-351)

-Is there ever a situation where you do not use occupation-based intervention? If so please describe. Can you tell me about a specific example of this situation?

-What contexts or situations have typically influenced or affected how you provide occupation-based hand therapy? (Creswell, 2007, p.61)

-Have you shared all that is significant about providing occupation-based hand therapy? (Moustakas, 1994, p.116)

Participant driven follow-up questions based:

-Do you refer to any frames of reference for your occupation-based approach?

-How would you describe the concepts of occupation and ends and occupation as means in the context of occupation based hand therapy?

-Do any of your personal philosophies influence your approach to occupation-based hand therapy?

- Does literature/research influence your approach to occupation-based hand therapy?

-How does your context limit occupation-based care?
-How do you see client–centered care relating to occupation-based care?

-How does occupation-based hand therapy influence how you feel or think about OT?

-How does occupation based care influence the patient-therapist relationship and trust?
To begin the process of bracketing my biases I think it is important to start with examining where my thoughts about occupation-based therapy began. I graduated from the University of Pittsburgh in 1988. The late 80s were a time of a very biomechanical focus in occupational therapy. The use of occupations as treatment modalities was limited, though crafts were used. During the first five years I was an occupational therapist I used some occupation-based treatments such as cooking, activities of daily living, and some craft activities, but these were not the center of my treatment choices.

After I was an occupational therapist for about four years, I began treating more clients with hand injuries. I became fascinated with all of the new things I was learning about hand therapy treatments. Most of these treatments were biomechanical in nature. I continued to do minimal occupation-based activities, however, the amounts decreased at that time. After a few years of this I was became bored with a biomechanical approaches to treatment. The other part of my practice incorporated industrial rehabilitation. The use of work simulation in industrial rehabilitation began to demonstrate to me the power of occupation-based activities. Patients appeared to be more motivated when participating in treatments that were directly related to what they wanted to do. I began to incorporate more work simulation type activities with my typical hand therapy patients as well when appropriate. I noticed improved motivation and better generalization of skills with the occupation-based types of treatments.

After three or four years of practicing in the hand therapy and industrial rehabilitation setting I returned to school to pursue a post-professional master's degree in
occupational therapy. The course work associated with that degree continued to spur interest in occupation. It also spurred my interest in client-centered treatments and particularly the Canadian Occupational Performance Measure. As I began asking my hand therapy patients more about their valued occupations, I began incorporating more occupation-based and functional treatments in the treatment sessions. I noticed the more occupation-based approach that I used the more motivated clients appeared to be, the faster they recovered, and the more or they appeared to enjoy therapy. I certainly enjoyed using an occupation-based approach more. The occupation-based approach required me to be more creative and made the treatment more interesting for me. It also required that I understand the biomechanical aspects of the injury in order to apply principles of activity analysis to the occupation-based activity so that they would be appropriate treatments for my patients.

The more I pursued using occupation-based treatments the more I liked them. I selected interventions for my patients that were based in the things that were meaningful to them. So, I did things like cooking and baking, card games, crafts, bowling, gardening, and shooting basketballs. These sorts of activities were excellent for improving strength and range of motion. The additional movement helped reduce edema. I noticed these types of meaningful activities to be especially beneficial to patients with multiple trauma and severe injuries. The enjoyment of the activity helped decrease the patient’s attention to their pain and allowed them to do more. Not only do the occupation-based activities improve clients’ impairments, they also improved their ability to perform functional tasks. The focus on what was meaningful to the patient in selecting treatment
interventions also helped me to be better able to focus on the goals that were most meaningful to the patient.

When I began my career as an academic my interest in occupation-based treatments continued. I decided very early on in the process of searching for a doctoral program that I wanted to do research related to occupation-based treatments in hand therapy. The research that I have done into the literature on the subject has only served to confirm my beliefs that occupation-based treatments are very valuable for hand therapy patients. I think that the beliefs and biases that I have about occupation-based hand therapy are based both in my own experience and in my review of the literature.

Biases

1. Occupation-based treatments are useful for remediating impairments.
2. Improving impairments alone will not necessarily result in improved function.
3. Hand therapists sometimes regard occupation-based interventions as a low tech.
4. It's important for occupational therapists working in hand therapy to maintain their professional identity. The way to do that is through utilizing occupation-based treatments appropriately.
5. Sometimes we choose preparatory activities such as modalities or exercise because they are easier and require less creative thinking than the use of occupation-based interventions.
6. Sometimes we choose more medical model-based activities that address impairments, because they are more acceptable in the medical model context that most hand therapy takes place in.
7. Other medical disciplines and the public at large do not understand the restorative power of occupation.

8. Sometimes we resist using occupation-based activities because we don't want people to misunderstand what we are doing or to think that it's not valuable. I think the way to get around this is to educate others about the value of occupation-based treatments.

9. I think sometimes therapists tend to think, in an all or nothing way, because an occupation-based intervention may not be appropriate in one situation that it is not appropriate in most situations.

10. I think that when we regard the concept of occupation as ends as occupation-based treatment that we are missing much of the value of occupation. We miss the benefits that and meaningfulness bring in occupation-based treatments.

11. I think one of the reasons why there is some resistance to occupation-based hand therapy is the fact that typically a CMS code for ADL or therapeutic activity would be used to charge for occupation-based therapy which typically reimburse at a lower rate than the CMS codes used to charge for exercise or modalities.

12. I also think that people don't understand how to appropriately document and charge for occupation-based treatment.