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Competencies and Physical Agent Modalities: An Investigation of Clinical and Ethical Implications

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COMPETENCIES AND PHYSICAL AGENT MODALITIES:
AN INVESTIGATION OF CLINICAL AND ETHICAL IMPLICATIONS

by

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Thesis

Submitted to the College of Health and Human Services

Eastern Michigan University

in partial fulfillment of the requirements

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MASTER OF SCIENCE

in

Occupational Therapy

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Ypsilanti, Michigan

Dedication

To my three beautiful children, Emma, Grace, and Sam, for their love and support and understanding that mommy is working on her “big book.” I hope you persevere and write your own “big book” someday.

Acknowledgements

I would like to thank Dr. Ruth Hansen for never giving up on me and believing that I would finally finish my thesis. I also thank you for sharing your incredible knowledge on ethics and the profession of occupational therapy. I would also like to thank Dr. Judy Olson for her amazing knowledge in qualitative research and for her guidance through this process.

Abstract

Occupational therapy has evolved from its early inception in diversional therapy to incorporate technologically advanced modalities into the professional domain. Over the last thirty years the profession has increasingly incorporated physical agent modalities (PAMs) into the treatment process. Throughout this process there has been both opposition and support for the inclusion of PAMs in occupational therapy. There are concerns from both sides regarding the proper training of therapists in the use of PAMs, how competency should be assessed, who is responsible for ensuring competency, and the ethical concerns with the use of these modalities.

This phenomenological study analyzed six therapists' views on competency testing and the clinical and ethical implications involved in the use of PAMs. The findings of this study are compared and contrasted to the core ethical principles of occupational therapy. These include principles of beneficence, nonmaleficence, autonomy, confidentiality, duty, procedural justice, veracity, and fidelity.

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Chapter 1: Introduction

Statement of Problem

Throughout the health and human services field, each profession continues to redefine and substantiate its domain. Poorly defined delineation of services can be confusing to the general population, as well as to peers working in the field of health and human services. The general public often has difficulty defining and understanding what role and responsibilities each medical professional has in providing care. How often have you heard *What is the difference between occupational therapy and physical therapy? What services can a licensed practical nurse provide for me, and what services can a registered nurse provide?* The fundamental question that should be asked, however, is *Is this person competent to provide services?* “Across professions, there is agreement, in principle, that the public should be assured of the continuing competence of health care providers. However, there are considerable differences in the philosophical and practical issues regarding what constitutes continuing competence, how it should be measured, and who should be responsible” (Grossman, 1998, p. 709).

“Historically, professions develop and expand by creating areas of expertise or domains of concern. If a profession is to survive and grow, its area of expertise must be both needed and valued by society” (Gutman, 1998, p. 684). As technology advances and professions expand and change their domains of practice, the need for public accountability and quality assurance increases. Occupational therapy finds itself faced with this dilemma as the profession continues to incorporate the use of physical agent modalities (PAMs) into the treatment process. With the ever increasing use of PAMs over the past thirty years, the need to assure competent use of these therapeutic agents

continues to be both a public and professional issue. There have been numerous discussions within the profession regarding the use of physical agent modalities, whether they are in the domain of occupational therapy, and what role they should play in the therapeutic process. With the incorporation of the use of PAMs came further discussions of what competency is and how should it be assessed and documented.

Historical Overview of Literature

Since the inception of the National Society for the Promotion of Occupational Therapy (NSPOT) at Clifton Springs, New York, in 1917, the field of occupational therapy has struggled to define itself to both its members and the public. NSPOT evolved into the American Occupational Therapy Association (AOTA), which is today the only national organization promoting occupational therapy. AOTA's Definition of Occupational Therapy for the Model of Practice defines occupational therapy as the following:

The therapeutic use of everyday life activities (occupations) with individuals or groups for the purpose of participation in roles and situations in home, school, workplace, community, and other settings. Occupational therapy services are provided for the purpose of promoting health and wellness and to those who have or are at risk for developing an illness, injury, disease, disorder, condition, impairment, disability, activity limitation, or participation restriction.

Occupational Therapy addresses the physical, cognitive, psychosocial, sensory, and other aspects of performance in a variety of contexts to support engagement in everyday life activities that affect health, well-being, and quality of life.

(Brayman et al., 2004a, p. 2)

Occupational therapy is grounded in the theory of purposeful activity to facilitate adaptation.

Occupation refers to active participation in self-maintenance, work, leisure, and play. Purposeful activity refers to goal-directed behaviors or tasks that comprise occupations. An activity is purposeful if the individual is an active, voluntary participant and if the activity is directed toward a goal that the individual considers meaningful. (Hinojosa, Sabari, & Pedretti, 1993, p. 1081)

The term *occupation* is often falsely interchanged with the term *purposeful activity*. The meaning of occupation has changed and evolved throughout the history of occupational therapy.

Core to the profession of occupational therapy is the concept of occupation.

Occupation is composed of the daily tasks and purposeful activities in which we engage coupled with the meaning or personal, subjective value these tasks and activities provide. Our occupations are formed by our cultural background; our interests and aspects of life that are meaningful to us as individuals form our occupations. (Hinojosa, Kramer, Luebben, & Royeen, 2003, p. 1)

The term occupation is often in used two different contexts. “Occupations are used in our daily interventions with clients (occupation as a means during intervention), yet our goal is to have the client continually engage in the occupations of his or her choice (occupation as an end of intervention)” (Hinojosa et al., 2003, p. 1). This dual meaning is confusing to both the public and the profession. There is a call to align the meaning of terms with those of other professionals and accrediting organizations.

As a field, we can choose to better align our use of terminology (occupation as process and activity as outcome) with what will likely become the standard across the world for professionals and for third-party payers or we can continue to employ the word occupation in an ambiguous manner. (Hinojosa et al., 2003, p. 6)

Throughout history, occupational therapy has struggled to define its domain of practice and solidify its niche in the health and human services arena. As all professions do, the profession of occupational therapy too has evolved within a sociocultural context. Viewpoints regarding humanitarianism, health, and occupation can be traced to 19th-century English writings. Psychology, sociology, and social work were instrumental in the promotion of occupation and health. As Moral Treatment evolved, many physicians, including Americans Dr. Benjamin Rush and Dr. Amariah Brigham, began reporting the benefits of using occupation as a treatment proponent. The beginning of the arts and craft movement around 1860 introduced what we now know as diversional therapy, occupational training, and vocational education. Numerous occupational therapists performed the role of reconstruction aides in WWI, and under the Vocational Rehabilitation Law of 1918, occupational therapy was placed under medical authority. After WWII, occupational therapists were pressured to conform to the biomedical model. In the 1960s, therapists began to move away from this reductionistic approach and embraced the idea that the patient is an active agent in health promotion and occupation.

From its early inception in mental health to its evolution into the domain of physical disabilities, occupational therapy has borrowed from other disciplines. “Occupational therapists use selected theories from other disciplines and professions. The term selected is used to indicate that only some theories of a particular discipline or

profession serve, in part, as the theoretical foundation of occupational therapy” (Mosey, 1981, p. 4). “The scope of occupational therapy knowledge and practice has at various times brought the profession into conflict with other professions including physical therapy....Professional “turfdom” is a problem that develops as society changes its views about who is permitted to perform which health care and health education services” (Reed, 1993, p. 37).

As new areas of practice and treatment techniques emerge, they are often met with opposition and hesitation from those within the field of occupational therapy. Just as the use of sensory integration and group therapy techniques were met with concerned caution, so was the use of physical agent modalities.

Physical agent modalities are defined as those modalities that produce a biophysiological response through the use of light, water, temperature, sound, electricity, or mechanical devices.

- Superficial thermal agents include, but are not limited to, hydrotherapy/whirlpool, cryotherapy (cold packs, ice), Fluidotherapy, hot packs, paraffin, water, infrared, and other commercially available superficial heating and cooling technologies.
- Deep thermal agents include, but are not limited to, therapeutic ultrasound, phonophoresis, and other commercially available technologies.
- Electrotherapeutic agents include, but are not limited to, biofeedback, neuromuscular electrical stimulation, functional electrical stimulation, transcutaneous electrical nerve stimulation, electrical stimulation for tissue

repair, high-voltage galvanic stimulation, and iontophoresis and other commercially available technologies.

- Mechanical devices include, but are not limited to, vasopneumatic devices and CPM (continuous passive motion). (McPhee, Bracciano, & Rose, 2003, p. 650)

In 1992, AOTA adopted a position paper on physical agent modalities that supported the use of PAMs as an adjunct to purposeful activity (AOTA, 1992). The exclusive use of modalities without functional outcomes was determined to not be occupational therapy. The paper states that the use of physical agent modalities is not an entry-level practice. It suggests that the theoretical background and technical skills required for competent use of modalities should be obtained through postprofessional education, such as continuing education, in-services, and graduate-level studies. AOTA further stated that there must be documented evidence provided by occupational therapists of possessing the theoretical background and technical skills necessary for competent use of PAMs. The association calls for the supervision of all physical agent modality treatments by therapists until appropriate competency is documented. The position paper was edited in 1997 with no core changes to the philosophical base (AOTA, 1997). In the 2003 position paper, AOTA expanded the definition of PAMs and divided modalities into one of four subcategories: superficial thermal agents, deep thermal agents, electrotherapeutic agents, and mechanical devices (AOTA, 2003). The 2003 version continues to state that modalities must be in conjunction with purposeful activity and that the use of modalities alone is not occupational therapy. Documented evidence of knowledge of the theoretical background and technical skills are still required, but the

term *verifiable competence* debuts. Noticeably absent from the 2003 version is the statement that the use of PAMs is not considered entry-level practice. The position paper states, “Integration of physical agent modalities in occupational therapy practice must include foundational education and training in biological and physical sciences” (McPhee et al., 2003, p. 650). The term *modality-specific education* indicates that the therapist must be educated in the biophysiological, neurophysiological, and electrophysiological changes that occur with the use of modalities.

With the adoption of the Standards for the Master’s Programs in December 2006 by the Accreditation Council for Occupational Therapy Education (ACOTE), the issue of whether or not the use of PAMs is or is not entry-level practice is answered. It not only identifies that this is an entry-level practice modality, but it also indicates that universities are required to incorporate physical agent modality education into the core curriculum. At both the master’s level and the doctoral level, the therapist is expected to do the following:

B.5.13. Explain the use of superficial thermal and mechanical modalities as a preparatory measure to improve occupational performance, including foundational knowledge, underlying principles, indications, contraindications, and precautions. Demonstrate safe and effective application of superficial thermal and mechanical modalities.

B.5.14. Explain the use of deep thermal and electrotherapeutic modalities as a preparatory measure to improve occupational performance, including indications, contraindications, and precautions. (AOTA, 2007)

These standards are effective as of January 2008. Although these standards are a step forward toward providing the appropriate educational background for using PAMs, they do not ensure competency. Like many of the theories or techniques taught within the curriculum, such as sensory integration and neurodevelopment technique, therapists are provided with only a preliminary look into these areas. For one to be considered competent in these areas of practice, further study and significant clinical experience is required. One is not considered competent as a result of merely hearing about these techniques and practicing them within the educational setting. Although future therapists graduating under these standards will be exposed to PAMs at the university level, there are many therapists who have already graduated and are practicing without an educational background in physical agent modalities.

Research Purpose and Research Question

The purpose of this phenomenological study was to explore the use of physical agent modalities by occupational therapists in the treatment of persons with physical disabilities. The study focused on the use of competency testing and the clinical and ethical implications involved in the use of PAMs. The study explored questions regarding the use of physical agent modalities with a focus on the ethical responsibilities of the practitioner who chooses to use them. [I also explored the role of PAMs in occupational therapy through my analysis of the interviews.] Data collection and analysis occurred throughout the interviewing process. Emergent themes surfaced through the narrative dialogue of the therapists. The therapists were asked a variety of questions to focus on specific lived experiences associated with the use of physical agent modalities. The following is a list of some of the lived experiences that were explored.

1. The reasoning behind the choice to use PAMs.
2. The therapist's concepts of what defines competent use of PAMs, what steps therapists should take to ensure competency, and how competency should be assessed and documented.
3. Who is responsible for ensuring competent use of PAMs.
4. The perceived reactions of peers and other medical professionals about the use of PAMs by occupational therapists.
5. Ethical issues regarding the use of PAMs.
6. The effect of the current trends in the healthcare arena on the use PAMs.

Operational Definitions

For the purpose of this study, *physical disability* was defined as an impairment of one or more of the following; the skeletal, muscular, vascular, and neurological systems. This impairment may be the result of either injury or disease process and interferes with the individual's ability to perform daily occupations. An occupational therapist is defined as an individual who has successfully graduated from an accredited occupational therapy program and passed the entry-level certification exam that is administered by the National Board for the Certification of Occupational Therapy and fulfills state requirements for licensure, certification, recertification, or registration.

Competency assessment is defined as the steps involved in identifying that an individual is competent in a particular practice area. This may include but is not limited to a written test and practical examination that evaluates the clinician's knowledge of the use of PAMs. As outlined by the Standards for Continuing Competence in the professional development tool, the testing should address the following areas: knowledge,

critical reasoning, interpersonal abilities, performance skills, and ethical reasoning skills (AOTA, 2003).

Assessment should include questions regarding the indications and contraindications for use of specific modalities, appropriate selection of therapeutic settings for modality units and application techniques, physiological effects resulting from the use of PAMs, and theoretical and scientific background information. Competency assessment should include questions regarding when to introduce different modalities into the therapeutic process, as well as how to evaluate treatment response. The competency assessment should further define the appropriate settings for delivering the modality to patients dependent upon the diagnosis. It is important that the assessment also address the theoretical and scientific background of the use of modalities. This may include subcategories of physics, chemistry, physiology, and kinesiology. The clinician should be able to communicate the physiological effects that the modality creates in the human body, as well as demonstrate comprehension of the theoretical assumptions of each modality he/she utilize. Competency assessment should also include a practical examination in which the clinician demonstrates the use of modalities in the clinical setting. *Competency guidelines* are defined as the steps the therapist must complete before completing the competency test. These steps may include but are not limited to recommended readings and continuing education courses and observation, supervision, and mentoring by a senior therapist.

Significance of Study

Little to no research exists that links the clinical use of physical agent modalities, competency/competency testing, and ethical issues. This research is an attempt to look at

these issues as they are interwoven in the therapeutic process. This research is not an attempt to provide an ultimate answer to the questions *Why?* and *How?* Rather, it is a study to look at how and why physical agent modalities are used and the clinical and ethical issues faced by the therapists in this research study. This research is an attempt to add to the professional literature and to encourage therapists to evaluate what is ethical practice, what is competent use, and how competency should be measured.

Chapter 2: Literature Review

Lack of Proper Education/Training

There are many therapists who disagree about the use of physical agent modalities (PAMs) in occupational therapy. The basis of their argument centers on the lack of proper education for occupational therapists in using these treatment modalities at the university level, the conflict with the core concepts of occupational therapy, and the tendency to abdicate the use of purposeful activity. Another major point is the proper attainment of training for those therapists already practicing in the field. The issues of how a therapist gains the proper education to ensure competent use of physical agent modalities and who should govern these activities become areas of contention. In 1991, West and Wiemer expressed their concerns regarding the use of PAMs by occupational therapists and pointed to the lack of proper education in PAMs as a main area of opposition.

Rather, we believe that if such modalities are essential as preparatory, enabling, supportive, or adjunctive to the use of purposeful activity, they should be used by those whose academic education provides the requisite knowledge base and whose clinical education provides experience in their safe and appropriate application. (West & Wiemer, 1991, p. 1145)

In a 1997 study by Glauner, Ekes, James, and Holm, they suggest that the amount of education needed to perform PAMs depended on each individual modality. The majority of respondents indicated that superficial agents, such as hot and cold packs, could be performed by entry-level professionals with on-the-job training. However, they indicated that the use of deeper thermal agents, such as ultrasound and electrical

stimulation should require more in-depth education, such as continuing education courses. The researchers surveyed 151 occupational therapists about the theoretical and technical content necessary for competent use of modalities. Those surveyed identified that individuals who use modalities should know the indications for use, contraindications, and the physiological effects of each modality. They also identified that continuing education was the most appropriate way to gain the theoretical background for performing PAMs. On-the-job training and in-services were also cited as ways of gaining knowledge.

In a 1996 study, Cornish-Painter, Peterson, and Lindstrom-Hazel found that the majority of therapists surveyed had minimal training in the use of physical agent modalities and very few had established competencies in place. In this study 100 therapists were surveyed about their use of modalities. The survey inquired about their education in the use of PAMs, competency testing, and opinions regarding this type of treatment. The survey concluded that the majority of training and education in the use of PAMs was accomplished through on-the-job-training and that 71 of 100 respondents had not been tested regarding their competency to use those modalities. The remaining 29 respondents stated that competency testing was infrequent and that once therapists were tested, there were no standards in place to ensure that competency was maintained.

In 1999, I conducted an informal and unpublished study in which I interviewed eight occupational therapists about their use of physical agent modalities. All eight therapists stated that they felt therapists should complete competency testing before utilizing them. Six of the eight stated that they used physical agent modalities, but only four stated that their employers required competency testing. All eight of the therapists

stated that they had little to no training in the use of PAMs at the university level. All but two of the therapists agreed that modalities should be taught at an introductory level in the university program to expose students to the benefits and proper use of PAMs as a treatment option. However, the therapists did state that they felt that continuing education courses were the best way to learn about PAMs. Seven of the eight therapists agreed that the modalities should be used as an adjunct to occupational therapy. All the therapists agreed that there were ethical concerns regarding the use of these treatment techniques without the proper focus and training.

Still others fear that occupational therapy will lose its true identity as it *borrow*s from other professions. Some believe that PAMs is not within the domain of occupational therapy and belongs in other fields, such as physical therapy.

If we now add physical agents to our modalities, we once again lay ourselves open for criticism, public confusion, political problems, and head-on confrontation with physical therapy, a posture we have tried to avoid for decades by careful intraprofessional and interprofessional communication and understanding. A move now to use physical agents will once again cause an identity crisis. (West & Wiemer, 1991, p. 1144)

AOTA Endorsement for the use of Physical Agent Modalities

However, the use of physical agent modalities has also found support by occupational therapists who are in my opinion primarily practicing in the areas of physical disabilities and hand therapy. They support the use of PAMs as an adjunct in the therapeutic process to increase the individual's ability to perform purposeful activity. They are supported by AOTA in the following statement on physical agent modalities:

The American Occupational Therapy Association, Inc. asserts that physical agent modalities may be used by occupational therapists and occupational therapy assistants as an adjunct to or in preparation for intervention that ultimately enhances engagement in occupation. The AOTA further stipulates that physical agent modalities may only be applied by occupational therapists and occupational therapy assistants who have documented evidence of possessing the theoretical background and technical skills for safe and competent integration of the modality into an occupational therapy intervention plan. (McPhee et al., 2003, p. 650)

The use of PAMs is further supported by its inclusion in the AOTA's *Scope of Practice*, (Brayman et al., 2004). Under the domain and practice section, it includes "Application of physical agent modalities, and use of a range of specific therapeutic procedures (e.g., wound care management; techniques to enhance sensory, perceptual, and cognitive processing; manual therapy techniques) to enhance performance skills" (Brayman et al., 2004, p. 7).

The AOTA fully endorses the use of physical agent modalities by therapists who "have demonstrated verifiable competence in order to use physical agent modalities" (McPhee et al., 2003, p. 651). The therapist must be responsible to obtain the proper education to ensure the proper use of physical agent modalities. The position paper further states that "the foundational knowledge necessary for proper use of these modalities requires appropriate documented professional education, such as continuing education, in-service training, or accredited higher education programs" (McPhee et al., 2003, p. 650). It further states that education should include training in the biological and physical sciences and focus on modality-specific biophysiological, neurophysiological,

and electrophysiological changes associated with the use of physical agent modalities.

“Education in the application of physical agent modalities must also include indications, contraindications, and precautions; safe and efficacious administration of the modalities; and patient preparation including the process and outcomes of treatment (i.e., risks and benefits)” (McPhee et al., 2003, p. 650). Competency must be demonstrated and documented before a therapist utilizes physical agent modalities in the treatment plan.

“Supervised use of the physical agent modality should continue until service competency and professional judgment in selection, modification, and integration into an occupational therapy intervention plan is demonstrated and documented” (McPhee et al., 2003, p. 650).

Competence and Professional Development

Many professionals feel that engaging in continuing education activities ensures competency, whereas others feel that continuing education alone does not ensure professional competency. The types and intensities of continuing education activities vary greatly. In a study by Lori Anderson (2001), the types of continuing education activities and their effectiveness were explored. This study was born of the question *How does one maintain competence?* It is clear that national organizations support maintaining competent behavior. “Many professional associations, such as AOTA, support and promote individual and professional responsibility to remain competent” (Anderson, 2001, p. 449). There exists a debate about whether formal education opportunities (workshop and courses) or informal learning opportunities in the workplace provide the most effective learning experience. Some feel that formal education programs lead professionals to a false sense of competency and do not allow for a

bridging of practice to the clinical setting. They also feel that formal education do not allow the practitioner to personalize the information gained through the formal education activity to her/his work situation. Others feel that informal learning opportunities in the work place increase the learning process by allowing the practitioner to directly apply the information they learned to the clinical setting.

In Anderson's study, 391 therapists were asked to indicate whether they participated in continuing education activities and if so, what type of activities. The therapists were asked to score their perceptions of the impact of these activities using a 5-point Likert scale.

The results show a trend toward formal education programs of 1 or more days in length to have more of perceived impact than most informal educational activities. Additionally, a trend was found for the informal educational activities of being mentored, observing skilled practitioners, and on-the-job training as being perceived as effective, and in some cases more effective, than formal educational activities of 8 hr or less. Formal programs 1 or more days in length had a greater perceived impact than most of the voluntary activities....The voluntary activities of on-the-job training (in the domain of application) and being mentored were perceived to be more effective than formal programs of less than 3 hr. Being mentored was reported to be as effective as attending formal programs of 1 or more days....This finding about the perceived effectiveness of informal learning may also support the concept of the teachable moment in which learning takes place when the professional has a need and is ready to learn. (Anderson, 2001, p. 452-453)

The concept of competence is not a phenomenon new to the medical field and, in particular, to the field of occupational therapy. What has changed is the way that competence is proven with the technological advances of the 21st century. Throughout the literature it is expressed that changes in technology are what prompt the emergence of new practice areas and new or advanced therapeutic techniques. As therapists begin to explore these new areas and utilize these new techniques, the need for competence guidelines becomes apparent. “The rapid growth of information points to need for continuous learning and updating” (Youngstrom, 1998, p. 717). With knowledge-base expansion and specialization in specific practice areas, it is apparent that maintaining competence is an ongoing process. “Competence evolves over time through repeated experiences. It occurs as new knowledge and skills are layered over past experiences, integrated with them, and applied to practice” (Youngstrom, 1998, p. 718)

What defines the concept of competence? “Operationally defined, competence means having the pertinent knowledge, skills, and attitudes to perform a behavior or task to a specific criterion.... Competencies are identified criteria for assessing performance” (Hinojosa et al., 2000b, p. CE-1). Youngstrom (1998) explained that competence also includes the understanding of knowledge, clinical skills, interpersonal skills, problem solving, clinical judgment, and technical skills (p. 716).

“As members of a profession, we are expected to demonstrate professional behavior and conduct, and to assure society that we are competent” (Hinojosa et al., 2000, p. CE-1). Ongoing technological advances, changes in practice scope, and limited knowledge obtained from academia are risk factors for lack of competency. The American Occupational Therapy Association (AOTA) authored the Continuing

Competence Plan for Professional Development, which is a continuum for developing competence. They are listed in the AOTA continuing Education article by Hinojosa et al., (2000a, p. CE-1):

1. Triggers,
2. Examination of responsibilities,
3. Self-assessment,
4. Identification of needs in light of the 1999 Standards for Continuing Competence,
5. Development of a plan,
6. Implementation,
7. Documentation of professional development and change in performance, and
8. Implementation of changes and demonstration of continuing competence.

These components are viewed on a continuum and can be entered at any point.

The trigger causes the clinician to examine her competence and determine what knowledge and skills are lacking. Such a trigger may be returning to practice after several years' absence, changing practice areas, or assuming new responsibilities within the same practice area. In the examination of responsibilities, the clinician looks at what continued competence is needed to perform all aspect of her/his duties and, in particular, when new roles are added. In self-assessment, the clinician synthesizes information from self-assessment tools and performance evaluations as well as informal information, such as meetings with supervisors and feedback from peers. "After information is gathered, it is our responsibility to synthesize it and reflect on our individual assets and limitations in performing expected or assigned professional responsibilities" (Hinojosa et al., 2000a, p. CE-4). Comparisons of needs are made to the Standards for Continuing Competence

and a plan for obtaining competence is developed. In the implementation phase, the clinician outlines a learning plan to address the needs identified in the self-assessment phase. The clinician will then have some type of written documentation of competence, which may be a summative evaluation, receiving specialty certification, or using a portfolio to combine evidence of competence. The clinician must continue to self-assess to demonstrate continuing competence. The Professional Development Tool (PDT) was created in May 2003 to help guide the clinician through this process. “An important activity within the Professional Development Tool (PDT) is designing a self-directed professional development plan that reflects each person’s unique professional knowledge, skills, goals, and aspirations” (Hinojosa, 2004, p. 7).

“The process of maintaining competence is ongoing and developmental,” (Youngstrom 1998, p. 717). While the majority of professionals agree that ongoing competence is mandatory, there are few agreements on where the responsibility for enforcing competence lies. The National Board of Certification in Occupational Therapy (NBCOT) initially certifies all practitioners as competent to begin practicing in the practitioner’s area of choice. This initial certification does not ensure continued competence, especially as technology advances and the clinician begins to specialize. The NBCOT has instituted a certification renewal requirement consisting of 36 professional development units that can be obtained through a variety of professional activities. This, however, does not ensure continued competence. “There are those who say that mandatory continuing education is desirable but is not sufficient for the demonstration of ongoing professional competency” (Fisher, 2000, p. 19). Mandatory continuing

education requirements help to establish credibility and accountability but do not ensure competence.

They key issue which supports the need for mandatory continuing education is the need for consumer protection through the establishment of professional competency. Professional competence refers to the practitioner's ability to perform the duties and responsibilities of his or her profession with skill. (Fisher, 2000, p. 20)

A question arises: Who's responsible for ensuring continued competence? Many feel it is a personal responsibility, the responsibility of the employer, the state or federal regulatory agency, or a national organization, such as the American Association of Occupational Therapists (AOTA). "AOTA upholds that it is each practitioner's personal responsibility to design and implement his or her own strategy for developing and demonstrating continuing competence" (Hinojosa et al., 2000a, p. CE-1). Many employers use one-time competency evaluations to ensure that the practitioner has the knowledge and skills for effective job performance. "Although these programs are an important method of demonstrating competence at a specific point in time, completion of work-site competency assurance program does not assure ongoing competence" (Youngstrom, 1998, p. 718).

Others feel that it should be individual state boards that develop and implement competency requirements that would culminate in an evaluation. State boards currently provide periodic renewals of licensure or registration. Many feel that competencies could be built into this current system. However, others feel that with the degree of specialized treatment areas in occupational therapy, that that would not be feasible. Still others point

to the national organization for assessing competency and providing professional standards. Some medical professionals have expressed the concern of professional organizations to remain subjective and autonomous. “The challenge is for the professions to maintain autonomy by becoming proactive in the movement to ensure continuing competence” (Grossman, 1998, p. 711).

The question may not be who is responsible for monitoring practitioner competence, but what the appropriate roles of the regulatory board, the professional association, and voluntary credentialing organizations are. Collaborative relationships among all stakeholders will be needed so that the professions can regulate themselves and be accountable to managed care and consumer demands for competent and ethical health care providers. (Grossman, 1998, p. 713)

Ethical Considerations

Failure to maintain competency is in direct conflict with the American Occupational Therapy Association Occupational Therapy Code of Ethics. “All personnel are expected to meet applicable state and federal regulations, adhere to relevant workplace policies and the Occupational Therapy Code of Ethics, and participate in ongoing professional development activities to maintain continuing competency” (Brayman, 2004, p. 663). The preamble to the Occupational Therapy Code of Ethics (Reitz et al., 2005) explains that ethical action goes beyond rote following of rules or application of principles; rather, it is a manifestation of moral character and mindful

reflection (p. 639). Lohman, Gabriel, and Furlong (2004), stated that when society cannot solve conflicts, public policy and ethical codes are formed (p. 109). A definitive principle in the code states that occupational therapy personnel shall achieve and continually maintain high standards of competence. Principle 4C further states that occupational therapy personnel shall take responsibility for maintaining and documenting competence in practice, education, and research by participating in professional development and educational activities (Reitz et al., 2005, p. 640). “Therapists are ethically obligated to seek out this specialized training through activities such as mentoring, continuing education, additional course work, AOTA self-study, and independent reading” (Lohman et al., 2004, p. 111).

The guidelines to the occupational therapy code of ethics expresses the need to continue to pursue ongoing educational opportunities in order to remain competent.

4.0 Competence: Occupational therapy personnel are expected to work within their areas of competence and to pursue opportunities to update, increase, and expand their competence.

4.1 Occupational therapy personnel developing new areas of competence (skill, techniques, approaches) must engage in appropriate study and training, under appropriate supervision, before incorporating new areas into their practice.

4.2 When generally recognized standards do not exist in emerging areas of practice, occupational therapy personnel must take responsible steps to ensure their own competence.

4.5 Occupational therapy personnel must ensure that skilled Occupational therapy interventions or techniques are only performed by qualified persons.

4.6 Occupational therapy administrators (academic, research, and clinical) are responsible for ensuring the competence and qualifications of personnel in their employment. (Reitz et al., 2006, pp. 3-4)

The principles of beneficence and nonmaleficence are apparent as therapists attempt to provide appropriate and safe therapy. “Professional caregivers are responsible for practicing in a manner that keeps the patient’s interest foremost by achieving the greatest good and avoiding harm in the process” (Christinsen & Lou, 2001, p. 345). The principles of autonomy and duty are expressed as professionals are required to make informed decisions and include the patient in this process.

We acknowledge that practitioners are professionally and morally obligated to ensure that their decisions are informed and reflect best practices. Further, we recognize the value of encouraging practitioners to assume responsibility for searching and appraising available evidence so that informed options can be shared with patients. (p. 348)

The Guidelines to the Occupational Therapy Code of Ethics (Reitz et al., 2006) state that professionals must be honest with themselves, must be honest with all whom they come in contact with, and must know their strengths and limitations (p. 1). Further, Occupational therapy practitioners must be truthful about their individual competencies as well as the competence of those under their supervision. In some cases the therapist may need to refer the client to another professional to assure that the most appropriate services are provided.” (p. 1)

Principles of duty, procedural justice, veracity, and fidelity are reinforced when therapists appropriately represent their credentials and provide accurate information to ensure public trust.

In clinical practice therapists are encouraged to represent themselves accurately and to provide accurate information to ensure public trust. When working with public policies therapy practitioners need to apply the same concept of sharing truthful, factual information about the public policy with legislators and peer professionals. (Lohman et al., 2004, p. 111)

Ethics are interwoven in every professional activity whether that be in providing safe and effective treatment to a patient, adequately documenting patient progress, or lobbying for professional concerns. Within every encounter and within every therapy session there lies potential for ethical dilemmas. Christiansen and Lou (2001) stated that ethical issues are part of every healthcare encounter. Moral principles, such as truth, fairness, doing the right thing, avoiding harm, and respecting autonomy, lie at the heart of these ethical concerns (2001, p. 345). They also conclude that increased technological advances and the increased call for accountability increase the need for ethical and evidence-based practice. They call for therapists to reengage in the clinical decision-making process and understand that ethics guide the therapy process.

In our zeal to be objective and informed, we may forget that clinical decision making, at its core, is an ethical matter, and we may lose sight of the ethical matter, and we may lose sight of the ethical dilemmas hidden beneath our efforts to produce the most effective medical, rehabilitation, and health outcomes. (Christiansen & Lou, 2001, p. 345-346)

Chapter 3: Research Design and Methodology

Research Approach

This qualitative study follows a phenomenological approach to examine the participant's opinions about the use of physical agent modalities in a clinical setting by occupational therapists. It approaches the research process with a human science focus, in which the conscious thoughts, feelings, values, and beliefs of the participants are explored. Max van Manen (1990) stated that "human science studies 'persons,' or beings that have 'consciousness' and that 'act purposefully' in and on the world by creating objects of 'meaning' that are 'expressions' of how human beings exist in the world" (p. 4). van Manen (1990) concluded that the "preferred method for human science involves description, interpretation, and self-reflective or critical analysis...human science aims at explicating the meaning of human phenomena and at understanding the lived structures of meanings (such as in phenomenological studies of the lifeworld)" (p. 4).

This phenomenological study utilizes the van Manen method of human science research. Phenomenology attempts to uncover the *essence* of the phenomena that is being studied.

The essence of a phenomenon is a universal which can be described through a study of the structure that governs the instances or particular manifestations of the essence of that phenomenon. In other words, phenomenology is the systematic attempt to uncover and describe the structures, the internal meaning structures, of lived experience. A universal or essence may only be intuited or grasped through a study of the particulars or instances as they are encountered in lived experience. (van Manen, 1990, p. 10)

Phenomenology involves the study of lived experiences or lived meanings to describe a phenomenon. Lived meanings are described by van Manen (1990) as ways “that a person experiences and understands his or her world as meaningful. Lived meanings describe those aspects of a situation as experienced by the person in it” (p. 183).

According to van Manen, “The fundamental model of this approach is textual reflection on the lived experiences and practical actions of everyday life with the intent to increase one’s thoughtfulness and practical resourcefulness or tact” (1990, p. 4). This approach is reflective in nature. It cannot predict the future; it can describe past lived experiences and the here-and-now experiences of the phenomenon. The goal of phenomenology is to gain a deeper understanding of the lived experience of the phenomenon. For this study, the goal was to explore the therapist’s experiences of using physical agent modalities and the ethical and clinical implications associated with the use of modalities.

Selection of Participants

A purposeful sample, as described by Creswell (1998), is used to choose participants who can offer the fullest and most relevant information regarding the phenomenon [the use of PAMs]. Established criteria for inclusion in the study included the requirement that participants be certified occupational therapists who work with individuals with a physical disability and utilize PAMs at least 5 times weekly. This criterion was an attempt to ensure that all those interviewed had experienced the phenomenon. A convenience sample of occupational therapists from Southeastern Michigan outpatient clinics were contacted first by letter (see Appendix B) to explain the focus of the research and to explain the interview process. The therapists were informed

of the option of contacting the chairperson of the thesis committee by phone with any questions. If the therapist met the criteria and was interested in becoming a participant, he/she contacted the secretary for the School of Health Sciences to schedule an interview.

Contact letters were sent to occupational therapy departments of clinics and hospitals in southeast Michigan. Letters were also sent to certified hand therapists who were listed in the members section of the Hand Therapy Certification Commission Web site, as well as members of the American Society of Hand Therapists as listed on its Web site. A total of 32 letters were mailed to departments and/or therapists in hope that 4-6 therapists would participate in the study. One letter was returned to the sender because of the closure of the clinic. Eight letters were mailed at a time in two-week increments to ensure that at least but no more than 6 therapists would schedule interviews. It was thought that most therapists would respond to the letter within two weeks of receiving the letter if they were interested in participating in the research process. Seven therapists contacted the secretary to schedule interviews. However, one therapist had to cancel on the day of the interview because of an emergency administrative meeting and did not call to reschedule. Six interviews were successfully completed over a five-week period. The first interview took place on November 7, 2006, and the last interview occurred on December 14, 2007.

Informed Consent

Prior to the interviewing process, written informed consent was obtained from the subjects. The consent form contains information regarding the purpose of the study, details on the interviewing process, and information regarding voluntary discontinuation from the study. The following is an excerpt from the consent form regarding

confidentiality and storing of data that is gathered from the interviewing and transcribing process.

I understand that participation is voluntary and there are no monetary benefits associated with my participation in this study. I understand that I may withdraw and discontinue participation at any time without penalty. I can call the office of the thesis committee co-chairperson at the following number to withdraw from the study (734) 487-2280. I also understand that I will not be identified in any presentation of the information obtained from this study and that all identifiable records will be kept confidential to the extent provided by federal, state, and local law. Presentation of this information may include a thesis project and publication in professional journals. I will receive a copy of this consent form for my records. I understand that the audiotape and transcripts will be kept in a locked file cabinet accessible only to the investigator. All data will be destroyed in five years after the completion of the research.

Please see Appendix C for the complete consent form. The participants were asked to sign two forms, one for the researcher's file and one for the therapist's records.

Methodology

Semistructured, in-depth interviews with both open-ended and closed questions regarding physical agent modalities (see Appendix A for the interview protocol in its entirety) were conducted. Therapists were asked descriptive questions regarding their number of years of experience, educational background, diagnoses of the patients they treat, types of modalities they use, and the frequency of modality use. Questions concerning the intensity of education received in the area of physical agent modalities at

the university level and during fieldwork experiences were solicited to inquire about their knowledge as entry-level therapists. The therapists were asked to explain if they felt PAMs should be taught at the university level and whether they felt that using modalities was an advanced-level or entry-level skill. The therapists were asked to detail what steps they had taken to acquire the background necessary to use modalities. They were questioned about opposition to their use of modalities and if they felt occupational therapists should use physical agent modalities. Questions regarding why they choose to use modalities, how they [modalities] are used in the treatment process, what are the benefits they see from using modalities, and how they determine that the modalities are beneficial were asked. The therapists were asked if they had ever been expected to use a modality in which they did not have proper training, if they ever experienced any difficulty while using a modality, and if current trends in health care affect their use of modalities. Inquiry about competency testing included whether they are expected to demonstrate competency, whether their facility has specific standards of competency in place, how competency should be assessed, and whether they feel there should be a national competency board was included in the interview protocol. They were queried about ethical issues with the use of PAMs and about those who choose to use modalities without sufficient training. After review of the first interview transcript, questions regarding supervising and preparing students who use PAMs, physicians' roles in ordering modalities, and instructing patients on using modalities at home were added to the interview protocol. Clarification questions were used accordingly when required in individual interviews.

The interviews were audio taped with both a standard microcassette recorder and a digital voice recorder to ensure that if one of the recorders experienced a mechanical difficulty, the interview would continue to be captured by at least one of the recorders. I listened to each interview numerous times and hand wrote the transcripts sentence by sentence. At this time there was also some preliminary flagging and memoing of points of interest as they occurred in the narrative. Word processing of the transcripts was the next step, and then I listened to the tapes several more times to ensure the accuracy of the transcripts. Careful attention was paid to the tone of voice of the participants, including laughing or pauses in conversation, to get the true feeling of the interview. Identifying information was placed in parentheses to ensure that it would be removed or appropriately changed to ensure the confidentiality of the participants. Brackets were added in the areas in which a clarification statement or information was needed to adequately convey the meaning of the participant's speech. The participants were assigned pseudonyms to protect their identities, and, as stated earlier, all identifying information was removed or altered while still maintaining the integrity of the interview.

Upon the completion of the transcription of the interview, the participants were mailed a copy of their transcripts to ensure the information was accurate and to provide an opportunity for clarification, if needed. With a copy of their transcript, the participants were provided with a stamped envelope to return these changes or clarifications to a post office box to ensure that the participants did not have access to my personal information. None of the participants requested that any changes be made to their transcripts, and none provided any further clarification. All six of the interview tapes, copies of the transcripts, field notes, and field journal have been placed in a locked

filing cabinet and will be destroyed in five years. All digital voice files have been erased from the digital voice recorder and from my computer files. I also utilized field notes and a journal to record insights, questions, and reflections. Members of the thesis committee were also provided with copies of the transcriptions and coding for review.

Risks and Benefits

There were no known risks for the participants associated with this study, and no harm was reported by any of the participants or the researcher. Benefits to the participants may have included but are not limited to increased professional knowledge of physical agent modalities, competency, and the clinical and ethical issues related to the use of physical agent modalities. Subjects have also contributed to professional literature through the dissemination of the information gained in this study. Participation was voluntary, and there were no monetary benefits associated with this study. Participants were asked at the time that written consent was obtained if they would like an abstract of the results of the study. Those participants who indicated that they would like a copy of the abstract were asked to provide a mailing address. Upon completion and approval of the abstract, I will prepare copies to be mailed to the participants. To ensure that the participants do not have access to the project investigator's personal information, the abstract will be mailed by the secretary of the School of Health Sciences.

Data Analysis

The data for this study will consist of the transcribed interviews. Using the structure of human science research outlined by van Manen (1990), the following procedures will be used:

- (1) A focus of interest has been chosen. The focus of interest of this project is to

explore the use of physical agent modalities by occupational therapists in the treatment of persons with physical disabilities and includes the use of competency testing and the clinical and ethical implications involved in the use of PAMs.

- (2) These perceptions will be documented through long interviews that will be audio taped and transcribed.
- (3) Reflection that results in thematic analysis and the determination of essential themes will be done. Essential themes will be obtained by isolating thematic statements by using the selective, or highlighting, approach, in which the text is read numerous times and reoccurring chunks of meaning are identified. As the commonalties in the narrative descriptions emerge, one begins to look for phrases to support these preliminary themes.
- (4) The phenomenon under study will be described through writing.
- (5) Other sources will be located in order to add to the description of the use of physical agent modalities, competency testing, and clinical and ethical implications.

Trustworthiness

Although van Manen provided techniques for reaping the thematic narrative, he did not clearly define how to incorporate trustworthiness in the research but, rather, explains how to describe the lived experience of a phenomenon. “Rigor in qualitative research is established when the inquiry is perceived to be trustworthy by the reader” (Crepeau & Deitz, 1998, p. 843). Trustworthiness is established by the truth value, or the credibility, of the research, that is, transferability, dependability, and neutrality of the

research. Trustworthiness is comparable to reliability and validity in quantitative research. There are those who question whether trustworthiness is important to qualitative work.

There are other ways than those I have mentioned in which content in the data analysis sections of papers seems to conform to a received dogma about what we should do in the process. Earlier I wrote of the “grounded commitments” I had to the people and situations I studied and the knowledge I discovered. These are ethical concerns that authors frequently address with “member checks” and “triangulation” methods, saying that they have conducted these acts to support rigor. But are such processes necessary to qualitative research? Must every study include them? And what do these terms mean? (Dickie, 2003, p. 54)

Although I agree that those terms mentioned above are more conducive to quantitative research than to qualitative research, I did employ many of these grounded theory techniques throughout the research process. These techniques were used to keep me on track, to remain true to the nature of my research, and to remain true to the data.

To ensure truth value in this study four methods were used: persistent observation, triangulation of sources, peer debriefing, and member checks. Persistent observation is summarized by Crepeau and Deitz (1998) as the researcher’s learning enough about the field to understand what is important to focus on in relation to the particular research question (p. 843). Triangulation was attempted through conducting the interviews, reviewing the data gathered, and maintaining a field log. Peer debriefing was conducted routinely with the thesis co-coordinators. Member checking was accomplished through providing the participants with a copy of their transcript in order to

check for factual accuracy. Transferability, the ability to generalize findings to other settings, is notoriously difficult in qualitative research. This study attempted to provide in-depth details or dense description of the individuals who were interviewed for transferability to other settings. Dependability was addressed via an audit trail, which ensures that the documentation supports the findings of the research and allows for someone to be able to follow the data collection and analysis processes. Neutrality is not a goal of qualitative research, however; the accuracy of the data is the focus. This is accomplished through an audit trail, triangulation, use of a reflexive journal, and reporting of the researcher's social biography. These procedures do not remove bias but allow the reader insight into the perspective of the researcher.

Chapter 4: Description of Subjects and Core Themes

Description of Subjects

Six occupational therapists were interviewed for this phenomenological study. All six participants are Caucasian females who have been occupational therapists between 4 and 24 years with the average number of years practicing being 13.92. All of the therapists have successfully graduated from an accredited occupational therapy program, passed the entry-level certification exam that is administered by the National Board for the Certification of Occupational therapy, and fulfilled the state requirements for registration. Two of the six therapists have completed Master of Science degrees in occupational therapy programs. Four of six therapists have successfully completed the hand therapy certification examination as administered by the Hand Therapy Certification Commission (HTCC). Table 1 summarizes the years of experience, level of education, and specialty certification of the participants.

Table 1

Participant Demographics

Participant	Years of experience	Bachelor's degree	Master's degree	Certified hand therapist
Cathy	4	Yes	Yes	No
Paula	14.5	Yes	No	Yes
Ann	18	Yes	No	Yes
Diane	18	Yes	Yes	Yes
Abby	5	Yes	No	No
Jenny	24	Yes	No	Yes

Note. All participants have been assigned a pseudonym to ensure anonymity.

All the therapists work with a physical disability population and utilize physical agent modalities on a daily basis. The majority of the patients seen by these therapists are adults with upper quadrant injuries and conditions. Five of the therapists work in outpatient clinics affiliated with large metropolitan hospitals, and one therapist is employed by a company that runs numerous outpatient rehabilitation facilities that specialize in upper extremity diagnoses.

Cathy has been a practicing occupational therapist for four years and has both her bachelor's and master's degrees in occupational therapy. She currently works in a hospital setting in which her caseload consists primarily of outpatient orthopedic and neurological diagnoses, and she occasionally provides in-patient care. "I see a lot of hand patients, tendon injuries, carpal tunnel, strains, CVA's. I have a MS patient, Parkinson patient; these are rare, I typically don't see those...umm, just your typical hand patients, like fractures." Cathy stated that she had limited exposure to PAMs at the university level and that she felt unprepared to use modalities at the time of graduation.

Umm, you know honestly I don't think at all, not that I can think of. If so, it was you know like in one class setting and that was it. If anything like hot/cold packs, I mean not really even anything like ultrasound. Just your very basic like hot packs, cold packs, maybe fluido, maybe.

However, she was required to use modalities during her level II fieldwork. "Yes, I was at a hand clinic, I used ultrasound a lot. I used e-stim, interferential, umm, ionto a little bit and then your typical fluido, paraffin, hot packs." Cathy's use of PAMs was supervised by her clinical instructor (CI). "Umm, at the beginning direct [supervision], umm after that more or less just supervised a little bit. You know, my CI was always

around but he didn't always look over my shoulder." Cathy has not attended conferences on the use of modalities and stated that she primarily acquired the background necessary to use modalities through her level II fieldwork placement. "Umm, well one of my internships was at a hand clinic and so I was already exposed to the modality agents. Uhh, because we don't get much of that in school, and then we also have books that we read and we do competencies here." Competency testing at her facility includes both a written assessment and demonstration of modality use.

Cathy incorporates physical agent modalities in the therapeutic process on a daily basis, and the patient is an active participant in deciding which modality to use in therapy.

Umm, I kind of go through spurts it seems, right now I am using ionto a lot.

Umm, I use ultrasound quite a bit and that's really all I use in this setting.

Interferential and e-stim I don't use too often anymore. Hot pack and cold packs and that's probably on a daily basis some type of heat modality depending on you know what the patient prefers or what the restrictions are. Some paraffin, fluido, hot packs, cold packs, ahh every once in a great...usually I just have them do it at home.

Modalities are used in the treatment process, according to Cathy, "mostly for joint mobility, increasing joint mobility, pain reduction a lot, reducing swelling." The patients presenting problem is the primary determinant for choosing to use or not use PAMs and which to incorporate in the treatment process. "Umm, depending on what the patient presents with, if its you know like a tennis elbow they are having a lot of pain, I'll do ionto or ultrasound. Really just depends, for the most part I do heat on almost every

single of my joint patients just too kind of loosen them up.” Modalities are not used as a sole treatment technique but are incorporated in the treatment plan. “I don’t think if I just did the modality it’s going to make a difference. I think with a combination of my manual therapy, my strengthening, you know and then looking at my re-evaluation, asking them about pain or checking their swelling.”

Paula has been an occupational therapist for fourteen and a half years and has been a certified hand therapist for three years. She works in an outpatient clinic affiliated with a level I trauma hospital that also supports numerous outpatient rehabilitation facilities. Paula’s caseload comprises mostly “distal radius fractures, finger fractures, lateral epicondylitis, carpal tunnel, rheumatoid arthritis, osteoarthritis, anything really, elbow fractures, shoulder tendonitis, any tendonitis of the upper extremity is included in that.” Paula stated that she had limited exposure to PAMs at the university level. However, she did take an elective course in hand therapy, in which modalities were introduced on a basic level. “Umm, they [PAMs] were not taught at all, except I did use to have a hand therapy course along time ago. It was in the spring and I took it so we did learn some basic hand therapy basically through that course and some physical agent modalities.”

Upon completion of her studies at the university, she did not feel prepared to use modalities, but upon her completion of level II fieldwork, she felt prepared to use hot and cold packs. “No, no from the university part, from the level II’s I felt qualified to use a hot pack and cold pack.” As a student she was required use modalities and to prove competency in both hot packs and cold packs. The level of supervision included “eyeball supervision, and competencies, you had to pass competencies. They had competencies in

thermal modalities. When I did [level II fieldwork] at [the hospital] you had to, it was a little more stringent then.” Paula has engaged in numerous continuing education opportunities, including conferences, reading, and mentoring to ensure that she has the proper training to administer physical agent modalities. Her current employer also requires competency testing that includes a written assessment and observation of proper technique.

Paula incorporates physical agent modalities into the treatment process on a daily basis. She utilizes conduction and convection modalities “prior to active range of motion and general strengthening and conditioning activities.”

Hot packs and moist heat packs I use, it depends on the diagnosis but most frequently I use moist heat with someone with cervical neck [conditions] maybe 3-4 times a week. I use ultrasound probably more frequent, 5-10 times a week, depends on what you are using it for. You can do pulsed ultrasound, you can do continuous ultrasound, you can do it for scars, deep heating. I use electrical stim probably the least frequent, it depends on what your patient population is. If I have a lot of wrist fractures and more fractures I am going to use that more than if I had a lot more acute tendonitis I might use iontophoresis. I use paraffin, fluidotherapy, I use them all frequently.

Paula clearly stated that PAMs are used in conjunction with other therapeutic modalities. “I think it’s not used in place of activity but as an adjunct or in prep for activity, specifically in hand therapy.” Determining which modality to incorporate in the treatment process is solely patient driven. “Depends on the diagnosis...it just really depends on the diagnosis.” Through evaluation, Paula determines which thermal agent to

use and the effectiveness of the treatment. “It is eval and treat, eval and treat. The patient feels better and they tell me. Like, for iontophoresis, I will never do more than, if they don’t feel better after 3 [treatments], then we don’t do that. After a couple visits, I reassess.”

Ann has been an occupational therapist for 18 years and successfully completed the Hand Therapy Certification examination in 1993. She works full-time in two outpatient hand clinic affiliated with a large metropolitan hospital that supports numerous outpatient rehabilitation and orthopedic centers. Her primary caseload consists of “amputees, cumulative trauma, fractures, lacerations, tendon repairs that’s pretty much it you know, carpal tunnel, cumulative trauma.” Ann does not recall learning about physical agent modalities in undergraduate course work and did not feel prepared to incorporate modalities into the treatment plan at the time of graduation. “You know I don’t really remember it being taught at [the university]. I think it was all education beyond school.” During level II fieldwork she utilized nonelectrical modalities that were introduced by her supervisor. “No, if your thinking of umm, heat then yes I was just with the supervisor and that was like fluidotherapy, heat packs, paraffin, that sort of thing. It was just kind of introduced, kind of an orientation, and you were told what to do [by the supervisor].” Ann has relied on continuing education opportunities, such as attending conferences, reading, and sharing with fellow therapists to obtain the background necessary to utilize PAMs in the treatment process. Her current employer does enforce competency testing that incorporates reading references and successfully completing a written assessment.

Modalities are used on a daily basis to improve the healing process. “Definitely I think it helps to speed up the recovery process; we are able to move along a little bit quicker.” Ann incorporates various types of thermal agents to enhance functional outcomes. “I use heat, so I would use hot packs, paraffin, fluido quit frequently. I also use ultrasound for healing and for heat. I don’t use NMES very often. I use iontophoresis fairly frequently. Then I rarely use biofeedback and haven’t used diathermy or interferential.” Thermal modalities are utilized to increase range of motion, decrease pain, and soften scars.

Sometimes for heat to increase the tissue extensibility, sometimes for scar softening, sometimes for pain, desensitization, I am kind of drawing a blank for anything else. Heat definitely for preparation, and umm scar softening with like iontophoresis is very helpful. So it’s always used in preparation to increase range of motion or desensitization, that sort of thing.

The choice of which modality to use is dependent on the effect that is desired. “It depends on what I want to do. If its heat then I would decide the area and the depth of the tissue and that would determine...sometimes I just let the patient choose. I give them a choice of conduction or convection and let them choose which ever they felt was the most comfortable.” She determines that the modality is beneficial “usually by the increased range of motion, umm less pain, a little bit more movement when I do joint mobs, that kind of thing, so the tissue is moving a little better.” Within the treatment session, she notes improvements. “I’ve seen very good results with being able to increase range of motion, decrease pain, scar softening. I’ve noticed that it makes a big difference.”

Diane has been a practicing occupational therapist for 18 years and has earned degrees in occupational therapy at both the bachelor's and master's levels. She has been a certified hand therapist (CHT) for ten years and also has experience teaching graduate-level courses on physical agent modalities. Diane currently works in an outpatient orthopedic and upper extremity rehabilitation clinic. Her caseload comprises patients with upper extremity injuries and conditions: "fractures, hand fractures, nerve entrapment, carpal tunnel, tennis elbow, tendon lacerations, crush injuries, amputations, anything really." Diane did not learn about PAMs during her undergraduate and graduate studies, and this lack of exposure spurred her interest in teaching modalities at the graduate level.

Not until I taught it. Definitely not at the bachelor's level but at a graduate level they wouldn't let me take it in the PT program. So I did outside studying on my own and then when I graduated I taught it for OT graduate students because then there wasn't any. Like I said, I tried to take it in the PT program and they wouldn't allow me...I've taught classes: I've taught the modality class for the OT grad students.

She stated that she did not feel prepared to use modalities at the time of graduation and was not required to use physical agent modalities during her fieldwork. Diane attended continuing education courses and read extensively to obtain the knowledge and background to safely and effectively use physical agent modalities. Her current employer's competency program includes readings, written testing, and demonstration of competent use.

Modalities are incorporated into the therapeutic process on a daily basis.

I use fluidotherapy daily. I use moist heat daily, I use interferential probably 3 times a week or so, TENS the same, neuromuscular electrical stimulation probably, it depends on the patient maybe a couple times a month if a patient needs it. I have laser that I've been using daily now just kind of trying it out...High volt, paraffin and ionto I use daily.

Diane feels that modalities improve a patient's overall functional outcome. "It's definitely helpful with patients so that they can do better with their exercises and they have less pain and they can move better, quicker, heal quicker." Physical agent modalities are used to support occupational performance. "They can be used as a pre-conditioner to kind of warm things up. They can be used postexercise for symptom relief. They can be used during exercise for strengthening and range of motion and edema reduction." Diane utilizes her clinical experience and evaluation skills to determine when to use or not use PAMs and which modality is the most appropriate for the patient and his/her diagnosis.

Experience, I think that after you evaluate the patients needs you find out what they need. I usually start off very conservative and then if need be I can bring out my bigger guns you know what I mean. I don't start off with iontophoresis day one, or you know, I might start with some simple heat or cold and if then they need a little more then we will go the next level. If their scar is real stuck then we'll start doing ionto. Sometimes like ionto is great for like a real active tennis elbow so I might use that from day one so you know it just depends on the diagnosis and their needs and what the capabilities of the modality are.

Diane relies on patient report to determine whether the modality is beneficial, and these benefits include “pain relief, edema reduction, increased range of motion, strengthening, wound care.”

Having worked as an occupational therapist for five years, Abby currently works in an outpatient clinic affiliated with a large suburban hospital. Abby has a Bachelor of Science degree in occupational therapy and is currently preparing for the hand therapy certification exam. Abby primarily treats patients with upper extremity conditions. “In general, lateral epicondylitis, medial epicondylitis, radius fractures, and PIP dislocations are the most common things we see.” Abby stated that she did not have exposure to physical agent modalities during her bachelor-level studies. “You know, when I went to [the university] they don’t teach you anything....They were in our textbooks, read them at your leisure. I remember it had ultrasound, I think it talked about hot packs. I remember iontophoresis in there, e-stim, that’s about it.” She was not required to use PAMs during her fieldwork placements but did feel prepared to use a hot and cold pack at the time of graduation. “Heat yes, cold yes, but anything else no.” Abby states that she has not attended continuing education courses and primarily learned about modalities when she was working as a PT aide while waiting to take her certification exam. Her current facility does not have a competency program in place.

Abby utilizes modalities on a daily basis. “Ultrasound just about all day, iontophoresis occasionally, fluído all day, those are the main modalities...ice packs, cold packs, yes.” Determining to use or not use modalities and which ones to use is patient driven. “Depends on the person, because like a tennis elbow like I said, ultrasound or iontophoresis is effective. It depends on the severity of the pain, how it’s responding to

what we're doing." The benefits that Abby sees from using PAMs include "decreased pain, increased range of motion."

Umm, I think people progress much more quickly. Ultrasound takes down the, makes it more limber in the joint to make it more pain free for range of motion. Grant it they may leave here 2 hours later and they lose it. The fact that they got it is a good sign on how well they're going to progress and stuff...I think it helps to facilitate healing. It goes down to the physiological, where we can only handle the structures you know, but if you can reach the physiology of the pain or stiffness then you're reaching a little deeper than what my hands can do. Even if it's psychological you know sometimes they're like ahh that feels so much better but hey who am I to say it doesn't.

Jenny's career spans 24 years of working in the area of physical disabilities. She successfully passed the hand therapy certification exam in 1991 and currently works in an outpatient orthopedic and upper extremity rehabilitation facility affiliated with a large medical facility. The most common diagnoses she treats include "carpal tunnel, tendons, some CMC arthritis, a lot, a lot of epicondylitis, all kinds of overuse tendonitis, fractures a lot of fractures, hand wrist, elbow. I do some shoulders, but, umm, not my forte."

Jenny did not have exposure to physical agent modalities during her undergraduate studies and was not expected to use them during her fieldwork experiences. "You have to remember I graduated from [the university] in December of '81. No, we still had crafts being taught; we still had military OT's." Jenny has relied on continuing education courses as her primary means of gaining the knowledge base to use modalities

to enhance occupational performance. Her facility does not have a competency program in place but has in the past used a peer review process.

In the past we did peer review of each other umm, we haven't done that in a while. You know, you got the hot packs, you got 12 layers of toweling, and you properly set the timer and you checked on them. With ultrasound did you do everything properly, did the setting, did you use the appropriate sound head. So we've been checked in the past but it's not something we've done recently.

Jenny has a repertoire of physical agent modalities that she uses on a daily basis: I use hot packs daily. I use fluidotherapy daily. I use ultrasound daily, probably ionto, it depends on the caseload, there are times when I use it daily, and there are times I don't use it at all. I tend not to use paraffin.... I don't think it keeps the heat as long: It's a lot longer for set-up and I think there are better choices. Umm, TENS I use rarely, depending, it's always something I have in the back of my mind that I know I can always use it. I use modalities everyday.

Deciding which modality to incorporate into the treatment plan is dependent upon the patient diagnosis, the patient's preferences, the response to the modality, and the capabilities of the modality.

You know I have all the different types of modalities available and I may start someone off on a heat pack or fluidotherapy and ask them and I ask people every time they come in, does the heat make a difference, does the ultrasound make a difference? With ionto we do it 3 times...if its not working why continue to do it, so I think the modalities help. Most of the people I use with ultrasound with will say yea that makes a really big difference, I like that. Sometimes people are

like I don't know and I won't do it, but the majority of the patients I think benefit from modalities.

Thermal agents are frequently utilized as a precursor to manual therapy techniques to improve pain and occupational performance.

Usually I use heat at the beginning and umm ice at the end...I almost always start every single patient with some type of heat of some sort, it just gets things loosened up, warmed up, it helps you know with pain...Usually I would say gosh 90% of my people start off with a heat treatment.

The benefits that Jenny sees when using modalities include "increased range of motion, decreased pain, a better comfort level and more ability to tolerate the stretching...It makes therapy a little more comfortable."

All of therapists recognized that there were educational issues with respect to competency and that there was a need for ongoing education in the area of physical agent modalities at the university level. They recognized that there was a need for competent behavior and competency assessment (although one therapist felt that competency testing was not needed at her facility because no one was having difficulties with PAMs) but are unsure of who should be responsible for ensuring competence. However, when asked if there should be a national competency board that would administer competency testing, five of six therapists strongly responded that this would not be beneficial. Only one therapist had a minimal introduction to PAMs at the university level as an elective class, and another therapist was told to read the chapters on PAMs at her leisure. Three therapists felt that the use of physical agent modalities was considered an entry-level skill, one therapist identified it as an intermediate-to-advanced-level skill, and two

therapists identified it as an advanced-level skill. Table 2 summarizes information regarding education issues with respect to competency and physical agent modality use.

Table 2

Education Issues with Respect to Competency

Participant	Cathy	Paula	Ann	Diane	Abby	Jenny
Were PAMs taught at your university?	No	Yes*	No	No	No**	No
Should PAMs be taught at the University Level?	Yes	Yes	Yes	Yes	Yes	Yes
Is the use of PAMs an entry or advanced skill?	E	A	I to A	E	E	E
Does your facility have specific standards of competency in place?	Yes	Yes	Yes	Yes	No	No
Are there any follow-up competencies?	No	No	No	No	No	No
Should there be a national competency board to administer competency testing for PAMs?	No	No	Yes	No	No	No

Note. E = entry level, I = intermediate, and A = advanced level.

* Minimally introduced in an elective hand therapy class not required in the core curriculum.

** PAMs were in the textbooks, and the students were told to read them at their leisure. There was no formal education provided in physical agent modality use.

Core Themes

Identifying Themes

As the data were reviewed and analyzed, some apparent themes were revealed as they repeatedly emerged from the coding process, some were initially not thought of as relevant, and some initially thought of as having significant relevance were, although still having significance, not in line with the focus of this study. These themes will be discussed in the Limitations and Future Research sections of chapter 5. Some themes were subtle, but other theme units appeared to overpower the data. It was initially thought that ethical issues regarding the use of physical agent modalities would appear in the data; however, the depth and diversity of the ethical issues that were presented were much more far-reaching than I initially predicted. Principles of beneficence, nonmaleficence, and veracity were expected to appear in the research. I was initially surprised that every principle in the Occupational Therapy Code of Ethics (Reitz et al., 2005) emerged through the data analysis process. In retrospect, the depth of ethically related information should not be surprising. Ethics are and should be part of every aspect of the therapeutic relationship and process. These principles include beneficence, nonmaleficence, autonomy/confidentiality, duty, procedural justice, veracity, and fidelity. Obviously, the data were saturated with some of the principles to a higher degree, but all could easily be identified.

Data were initially coded under various *thematic chunks*. These chunks showed therapists both in compliance and in conflict with the core principles of the code of ethics. Data describing the importance of the patient in the therapeutic and decision making processes were initially coded *patient-centered therapy*, *patient is an active*

participant in treatment process, and doing what's best for the patient. Data describing therapists' recognition that they may lack appropriate training were initially coded *therapists recognizing self-limitations and professional duty/responsibility.* *Harm to patients* was the code to identify situations in which the patient could be harmed or was harmed. Issues related to administering modalities for monetary gain, the inability to provide services resulting from a lack of reimbursement, and information concerning tailoring the use of PAMs to fit the insurance coverage of the patient were all initially coded *reimbursement issues.* Other initial codes included *ethical issues, lack of competency, professional turf issues, hierarchy of modalities, physical therapists as mentors, expand use of modalities beyond hand therapy, support for and opposition to use of PAMs, denial of potential risks from using PAMs, and PAMs is not real OT.* Upon review of data, it became clear that all of these codes had one common denominator: All of the categories represented one or more principle of the Occupational Therapy Code of Ethics (Reitz et al., 2005).

The codes were grouped in reference to the principles of the Occupational Therapy Code of Ethics and then further combined into six primary themes.

1. Occupational therapists ultimately are concerned with the overall therapeutic benefits for the recipients of their services. Therapists believe that incorporating physical agent modalities into the treatment process is *doing what's best for the patient* and often find themselves *advocating for needed services.*
2. Occupational therapists are fundamentally concerned for the safety of the recipients of their services. Therapists recognize that there are many *issues*

impacting the safe use of physical agent modalities and have also recognized safety concerns during the use of physical agent modalities.

3. Occupational therapists respect that *patients are active participants in the therapy process.*
4. Occupational therapists identify that it is a professional duty to provide competent services and to ensure that those they supervise provide competent care. *Acquiring the education and the road to competency is currently inconsistent within the profession. Therapists are obligated to provide responsible supervision to ensure that those under their supervision are adequately supervised and adhere to the code of ethics.*
5. Occupational therapists identify *concerns with professional accountability,* and the question of *who is responsible for ensuring competency* arises.
6. Occupational therapists strive to *respect other medical professionals with coinciding and conflicting opinions.*

Theme 1: Occupational therapists ultimately are concerned with the overall therapeutic benefits for the recipients of their services. Principle 1 of the Occupational Therapy Code of Ethics (Reitz et al., 2005) states, “Occupational therapy personnel shall demonstrate a concern for the safety and well-being of the recipients of their services (Beneficence)” (Reitz et al., 2005, p. 639). All of the therapists interviewed clearly identified that the primary reason for using physical agent modalities was to enhance the therapeutic process for the patient and to improve the overall functional outcome for the patient. The therapists discussed how they became advocates for their patients to receive the benefits of modalities. The therapists discussed how they became advocates with

insurance companies, reimbursement agencies, and other professionals so that patients could reap the benefits from using physical agent modalities.

Doing what's best for the patient. Paula explained that her primary reason for learning about modalities and incorporating them into the therapeutic process was to increase the safety and convenience of her patients.

Initially the way it started is that I have always been interested in hand therapy.

When I was a new graduate at the time [an insurance company] only reimbursed physical therapy for modalities. So, if I wanted a patient say who had a wrist fracture get a moist heat pack I had to schedule them with physical therapy first and then they could have occupational therapy. I thought that was ridiculous.

Who put the hot pack on? An aide, a tech off the street...and if a tech off the street could do it I could do it, so I learned...But when I started I thought I would be qualified after I learned and that it would be better for me to do it because I know why I doing it than a tech.

Jenny felt that OTs use modalities to benefit the patients. “So, I think OT has evolved to the point where we should be able to do them [modalities] and do what’s best for the patient.” She also explained that early in her career she had to be an advocate to use PAMs to increase the convenience for her patients.

Way back when in the early 80s I was a new grad and it was the typical OT/PT clash they didn’t want the OTs using any of the modalities because that’s PT. Or if we needed to use a modality they would have to charge the PT and the OT could do the exercises. So, it was like you know, let’s do one-stop shopping, let one therapist figure out what’s best for the patient.

Ann initially had opposition to use her use of modalities as well, but her primary reason for using PAMs was to improve the function of her patients. “I was just kind of a like new therapist and I you know felt like I had gone way out beyond my means but I didn’t. I had read about it, I know about it, I knew that...I felt sure this would help them [patients] and for me that was the whole point.” She strongly felt that anything that would benefit the patient should be utilized in the therapy process: “I think that anything that will help facilitate the ends that we really want and what we desire, I think that we should be able to use whatever will help obtain these ends.”

Diane felt that in a hand therapy setting it was imperative that OTs use modalities and that the patient’s functional outcome is benefited by their use.

I know and I was frustrated with that [opposition to her use of PAMs] because in particularly in this type of setting it’s definitely helpful to the patient and there’s no reason why I as a therapist couldn’t learn. I had enough science background that I could definitely learn how to use them safely in this type of setting and with training I don’t see any reason why we can’t if it’s going to help the patient move better.

Abby also agreed that modalities should be incorporated into the treatment plan if the patient benefits from their use. “I think they [OTs] should use them, especially in a setting like this [hand therapy clinic]...and if it’s the best thing for them [patients] to reach their goal of range of motion, less pain, etcetera, then yes.” Cathy stated that therapists who do not know how to use modalities decrease the benefits of the therapeutic process. “They [untrained OTs] look at it and say I don’t know how to use it and then the patient doesn’t benefit.”

Advocating for needed services. Many therapists feel that reimbursement issues place them in conflict with beneficence. Certain insurance companies and reimbursement agencies will not provide reimbursement for some modalities and types of services. Principle 1C of the code of ethics clearly states, “Occupational therapy personnel shall: Make every effort to advocate for recipients to obtain needed services through available means” (Reitz et al., 2005, p. 639). The therapists stated that they often had to modify their treatment plans to align with what was reimbursable even if they felt that another type of treatment would be more beneficial to the patient.

Cathy explained that there were times when she could not administer her first modality of choice as a result of reimbursement issues.

Obviously we need to get clearance through insurances. Some insurances you know won't let you use certain things....I don't know it's one of them they won't allow certain things so I just adjust my treatment if they can't do hot packs than I'll do paraffin if they can't do paraffin I'll do fluido or something.

Ann also noticed decreased reimbursement for certain modalities and was concerned that further reductions in reimbursement would occur.

Well, I obviously...what I notice off the bat is that there's a lower rate for the use of paraffin, and I think that probably insurance companies will umm, probably focus on hands-on more. Where if its like fluido you can walk away or whatever that can maybe become a problem or heat packs or something like that may become an issue in the future because of the cutbacks with insurance....I would think insurance that could be an issue in the future.

Diane explained that reimbursement issues affect her use of modalities but that ultimately, her clinical experience guides her use of modalities. However, she stated that her corporation was concerned about reimbursement.

Yea, reimbursement you know...I think that, I'm not sure how to word it. A lot of things like for the laser for example you get four dollars for a treatment with that but I still use it because it helps and it helps them [patients] do better on other things not strictly for reimbursement. I know they no longer reimburse phonophoresis with the medication because they found it was effective. I agreed so I stopped using it anyway because I didn't think it was effective either so I'm not sure. I think I use my own clinical experience whether or not I use it or not and reimbursement is just something you have to deal with, but if it helps the patient that's what's the most important, my corporation may not want to buy something if it doesn't pay for itself.

Current reimbursement issues also affect the types of modalities that Abby can use as well. She explains that different insurances will pay for different modalities and has a chart that she references to make sure that the modality she is about to use is a covered benefit.

Well, [insurance company] will not pay for ionto. They [patients] have to pay for that themselves if they want it and they have to sign a paper. So you know that we have a chart that says who pays for what because there's e-stim, e-stim unattended etcetera, etcetera, and there are certain ways you can and cannot bill it varies by insurance.

Jenny went into great detail to describe how reimbursement issues affect her use of PAMs. She felt that insurance companies are too controlling and interfere with the treatment process.

Sure, umm, [insurance company] doesn't cover ionto. So, if you come to me and have tendonitis I would say I would like to do this treatment for you but your insurance doesn't cover it, it costs \$76.00 if you would like to have this modality sign here saying you will pay for it out of pocket \$76.00 every time you come to be billed later or sign here that says I have discussed this with you and you don't want it just so we have our butts covered and I don't think the insurance companies should be limiting us that way. Well, I can do this, oh you have that insurance I guess I can't do it. With iontophoresis with one [insurance plan] everything is timed you can't bill for the pads or the medication it's timed visit so the only thing I can charge for is maybe the 5 minutes it takes me to set you up which is whole lot less than you know the \$76.00. So, yes insurance really influences it. I think that most insurance companies don't pay for the fluido, hot packs, or cold there bundled you do them, you put them on your statistics but really, when it comes time for billing, our billing department takes that out. So, it shows up that you've done it but the patient doesn't get billed for it.

Jenny went on to explain that there are often times in which she puts the patient first and allows the PCAs (patient care attendants) to do modalities for which there will be no reimbursement.

If a PCA does the ultrasound we can't charge for it, it has to be a therapist so you know and there are days that the PCAs will go through the clinic and ask if they

could help you and its like oh red chart [insurance plan] and there are days when I am far behind and I'm here by myself, it's a freebie and there's nothing you can do. Either you inconvenience the patient or say it's a freebie today. Actually, we have a chart that lists all the insurances, all the modalities, who pays for what and who doesn't pay for what and the discussions you have to have and if you mess up and do ionto on a [certain insurance company] patient and you didn't discuss it with them it's a freebie because we can't bill for that because we didn't discuss it ahead of time.

Theme 2: Occupational therapists are fundamentally concerned for the safety of the recipients of their services. Principle 2 of the Occupational Therapy Code of Ethics states, "Occupational therapy personnel shall take measures to ensure a recipient's safety and avoid imposing or inflicting harm (nonmaleficence)" (Reitz et al., 2005, p. 640). All of the therapists interviewed recognized that using modalities without proper training, without clearly knowing the clinical implications of modality use, and using modalities to increase revenue is not only unethical but also potentially harmful to the patient.

Issues impacting the safe use of physical agent modalities. Cathy felt that there were ethical concerns for therapists who use PAMs without proper training.

Umm, I think it can be harmful to the patient you know I think everyone should at least have someone observing them, watching over them if they don't know....But it can be devastating like my one patient where I didn't even injure her but she, after that she wouldn't even talk to me, like I said she had a few psychosocial issues too.

Paula recognized that if not done correctly, modalities can be harmful to the patient. She also felt that reimbursement issues could drive modality use.

...it is one of those things you can truly hurt a patient with and people just do it without learning the reasons behind it. I have a friend who is working in skilled nursing and she is getting charts coming back saying wouldn't ultrasound be appropriate for this patient. This is not traditionally an OT modality and it is being driven by reimbursement and people are being forced to do this whether or not it's in their repertoire...Like I said you can hurt people.

Paula had concerns for the patient when untrained therapists used modalities. "That's terrible and they can injure people...I think it is driven by reimbursement in some areas of practice." Diane also felt that some therapists were reimbursement driven when doing modalities and strongly felt that those therapists who do not have the proper training should not be using modalities.

They shouldn't be doing it because someone could get hurt and it can be dangerous and I think also, it's abused. I think that there are some clinics that people go to that have techs and everyone else doing the modalities and they're making money off them and everyone does the same thing and its not really helping the patient. I can name a list of places but I won't. But they really need to be trained in it...I think some people abuse them for reimbursement.

In contrast, Abby appeared to be inconsistent in her beliefs that modalities can harm patients if done incorrectly. At first she stated, "Most equipment will shut down before it will do anything to hurt anybody, so I've been pretty comfortable with that." Later in the interview she stated, "Because, because if you don't do it [modalities] right

you can really poke someone or make someone uncomfortable, but not physically harm them. Abby also puts faith in other therapists, recognizing that if they are not properly trained in modalities, they should not be using them. “I think an intelligent therapist, if they’re uncomfortable, they shouldn’t do it [modalities].

Jenny felt that therapists who do modalities without proper training are jeopardizing the safety of their patients. “I don’t think they should be doing it....You could harm the patient....If people don’t know what they’re doing they shouldn’t be doing them because you can cause harm.” She also had concerns that some people were using them primarily to increase revenue. When asked if she felt there were ethical issues regarding the use of PAMs, she replied, “Umm, I suppose if your doing it just to get more money, you know more billable things...so they could be doing it just to get more money.”

Safety concerns during the use of physical agent modalities. When directly asked if they had ever had any difficulty while using a modality in which there were concerns with safety for their patient, half of the therapists interviewed said they had not had a problem or concern while using a modality. Oddly enough, the identified issues with safety came through in later questions of the interview or within conversation about physical agent modalities. Cathy explained that she had had an incident while using a modality.

When I was a student I did [have a problem while using a modality]. Umm, I think I was using e-stim on a patient and it was turned up. It didn’t hurt the patient but it kind of shocked her and she had some social and emotional

problems and it really affected her. Like I said, I don't really think it hurt, it just shocked her that it was turned up but beside that I've never really had a problem. Paula had also had an incident in which a patient was injured while she was using a modality.

Safety number one because you can truly hurt people. If you use e-stim with a pacemaker...you can hurt people. You can hurt people with them [modalities]. Most things that we do you do not hurt people but with PAMs you can burn. I after 14 years recently frost burned someone with ice so there are you know...that's the first time I ever did anything like that but after 14 years of practice I frost burnt someone. So there are issues of safety and certainly picking the right thing otherwise you provide a placebo. You know a placebo can be helpful sometimes but you have to provide quality treatment.

Ann experienced difficulty while using ultrasound, and the patient reported significant pain when the proper technique was not used.

Scary, that's really scary because umm well actually this is not a good thing, but I was working with a patient who had a wrist fracture and of course he was talking and we were talking and I didn't keep doing the moving technique and he was like oww and I hurt him and I was like oh my gosh. He said that it hurt as bad as when he got hurt. I'm like, oh great!

Jenny had also had incidents while using modalities in which patients have been harmed. "I have burned patients. I burned a patient with ionto one time and it left a definite open area on her wrist."

Theme 3: Occupational therapists respect that patients are active participants in the therapy process. Under principle 3 of the code of ethics is stated “Occupational therapy personal shall respect recipients to assure their rights (Autonomy, Confidentiality) (Reitz et al., 2005, p. 640). In specific, it states that occupational therapy shall “collaborate with recipients, and if they desire, families, significant others, and/or caregivers in setting goals and priorities throughout the intervention process, including full disclosure of the nature, risks, and potential outcomes of any interventions” (p. 640). The principle also includes the individual’s right to refuse professional services. Five of six of the therapists indicated that patient input guided their use of physical agent modalities. Paula stated that she determines whether a modality is beneficial by patient self-report. “The patient feels better and they tell me.” Ann explained that she would often let the patient decide which modality to use: “Sometimes I just let the patient choose. I give them a choice of conduction or convection and let them choose whichever they felt was the most comfortable.” Diane also uses patient feedback to determine if the modalities are benefiting the patient. “By the 2nd of 3rd time, even the first time, they’re telling me if it helps or not. Patients’ response and feedback and also their physical abilities.”

Abby respects the rights of the patient to refuse professional services. “If a patient is adamant I do not like ionto or I do not want to have it again, then fine. You know patient driven care, then take it off the list.” Jenny, who has been an occupational therapist for 24 years embodies the principle of autonomy. “I ask people every time they come in does the heat make a difference, does the ultrasound make a difference...sometimes people are like I don’t know and I won’t do it.” She relies on patient report to determine if the modalities are beneficial.

Ask the patient, do you think its making a difference?... We sit down while our patients are out there sitting in chairs we are like how are you today, what's your pain level, do you think that this is making a difference? My one lady this morning as she was going through her activities, I asked if her program was meeting her needs, do you need me to change anything, do you fell like I'm addressing everything? Sometimes you get in a rut. You know we ask patients on a daily basis every time they came in, how are you doing, is this making a difference?

Jenny ensures that patients are given the appropriate information so that they can provide an informed consent to treatment.

Usually at the beginning it depends on the diagnosis like a tennis elbow I will give the patient a choice I will explain one is ultrasound a deep heat; one is iontophoresis which uses a steroid, cortisone. Some people have very strong feelings about cortisone and that's their feelings if they don't want it for any reason even though I think it's the best thing for them I respect that. So, I explain to the patient what I want to do and why I want to do it and then I can leave it up to them.

Jenny often collaborates with patients and their families when providing instruction on home exercise programs.

I kind of look at the patient and see how overwhelmed they are on day one: there are doctors who order everything on day one. OK, say day one I may give them heat and their range of motion exercises then ok let me see how well you do with that if you have any questions bring it back and I'll take a look at it. If they do

well with that then I'll give them putty and probably scar massage and see how they do with that. If somebody cognitively is having problems and they're with a family member I will tell the family member. I have called families to say I've given your mom this and I just wanted to let you know that this is what I have given her. It's just not like here you go.

Theme 4: Occupational therapists identify that it is a professional duty to provide competent services and to ensure that those they supervise provide competent care.

Principle 4 of the Occupational Therapy Code of Ethics, states, "Occupational therapy personnel shall achieve and continually maintain high standards of competence (Duty)", (Reitz et al., 2005, p. 640). This includes professional activities such as maintaining competence in practice areas and documenting ongoing professional development. All of the therapists interviewed recognized the need to gain knowledge on modalities before they could competently be incorporated into the therapeutic process, but only four of the therapists had engaged in continuing education opportunities. Four of the six therapists were expected by their employers to demonstrate competency in the use of physical agent modalities.

Acquiring the educational background and the road to competency. Diane sought continuing education opportunities to acquire the background necessary to utilize modalities in a safe and effective manner. "I've taken other outside courses and reading and preparing for the CHT exam. It's ongoing." Her current employer has a competency program that all therapists must complete. "We had internal competencies through the company.... We have a program that everyone has to go through and all the employees have to go through it. It's readings, a test, and then a demonstration that, you know, you

are a competent in the application...Competencies, we have a lot of competencies that we do.” She also explains that competency is tested on the CHT exam, “Well, it’s definitely assessed on the CHT exam; there are several questions on it.”

Through continuing education and mentoring by a physical therapist, Paula felt that she had gained the appropriate background necessary to administer modalities.

I went to a lot of conferences, physical agent courses, I went to probably three. I think thermal stuff is easy. I did a lot of reading and a nice physical therapist taught me things too. They taught me iontophoresis, e-stim, those kinds of things that are not as easily picked up from a course like ultrasound. So it was a combination of continuing education courses, reading, and physical therapy.

Paula had been asked to demonstrate that she was competent to use modalities at both her current facility and at past facilities.

When I worked at one hospital I had to show proof of continuing education courses that I had taken in modalities. Here we have competencies; you have to pass a test for ultrasound, iontophoresis, thermal modalities, anything that you use. It is test based so you take a pre-test and then you read a lot of material and then you take a post-test and you have to pass it with 80% accuracy and then you have to have someone, a clinical specialist watch you perform it. I don’t know there is a certain amount of times but it’s been too long. You know, watch one, do one, I think you have to do that 2-3 times.

Without exposure to PAMs at the university level and with limited exposure during fieldwork, Ann turned to continuing education opportunities to acquire the background necessary to use modalities. These activities included “reading, conferences, and sharing

with fellow therapists. Mainly when I first started using it [modalities] I attended courses, conferences I should say, and that was covered in there [physics, anatomy, physiology].” She has learned from vendor in-services as well: “Plus we have vendors who come in and they will show us different things too and we all learn you know like in-services and that sort of thing.”

Ann’s current employer would enforce that all therapists prove their competence in the use of physical agent modalities.

Yes, there is a competency everyone needs to go through at work. Well, there’s a collection of reference materials that we need to read and then we take a test.

Pretty much, actually I don’t remember being watched I mean just that the supervisor does work with us and she sees us do it....So actually as to watch it, it may have happened, I just don’t remember.

The competency tests are “specific to each one [modality]. Yea, I would say that conduction/convection like the hot packs, the fluido, paraffin are all kind of in one competency. Then there’s a competency for ultrasound, there’s a competency for iontophoresis that kind of thing.”

In contrast, Jenny’s employer did not require any documentation of competency, but she had participated in various continuing education activities and relied on professional education opportunities, including conferences, to gain the technical knowledge required to use physical agent modalities.

I have done some conferences. I’ve done a really good one on ultrasound...and it was run on the Internet and it was just incredible because he explained things really well, so ultrasound has been the biggest, and heat packs, cold,

fluidotherapy, an ionto have been on the job training by other people, mostly the PTs who had the training in school and then trained us, electrical stim too, TENS. Her facility currently did not have a formal competency program in place but had in the past utilized peer-review observation to ensure proper use of modalities. “So, it was a whole checklist of things that you know I would check off for you, you would check off for me.”

Two of the therapists reported that they had not attended any conferences on physical agent modality use and had limited involvement in professional development activities in this area. Cathy had not attended any conferences or courses, but she was expected to complete readings and fulfill competency requirements as outlined by her employer. Determination of competency at her current employer included both a written assessment and demonstration. “We do take a test through the books that we read I think there’s two of them, I don’t know where they are around here but they are somewhere.” “We do have competencies that we have to fulfill. Just reading the two books that we have and then taking a test and having a physical therapist observe us.” Abby had not attended continuing education courses on modalities and stated that she acquired the knowledge to use modalities while working as a PT aide while waiting to take her OT certification examination. Abby’s current facility did not have any competency requirements. “When I started here I’m sure that the other therapists kept any eye on me to make sure that I was competent in what I was doing and we switch patients off, that’s just how it’s scheduled so you know if I’m doing something wrong somebody’s going to catch it.”

It may be argued that Abby, Jenny, Cathy, and their employers were in conflict with principle 4C of the Code of Ethics, “Take responsibility for maintaining and documenting competence in practice, education, and research by participating in professional development and educational activities” (Reitz et al., 2005, p. 640). Other areas of potential contention include principles 4F and 4G:

F. Protect service recipients by ensuring that duties assumed by or assigned to other occupational therapy personnel match credentials, qualifications, experience, and scope of practice.

G. Provide appropriate supervision to individuals for whom they have supervisory responsibility in accordance with Association official documents, local, state, and federal or national laws and regulations, and institutional policies and procedures.

Principle 4F and principle 5 (procedural justice) can come into conflict when new therapists or students begin using modalities in a facility. Principle 5 states, “Occupational therapy personnel shall comply with laws and Association policies guiding the profession of occupational therapy” (p. 640). According to principle 5C, it is the supervising therapist’s responsibility to “encourage those they supervise in occupational therapy related activities adhere to the Code” (p. 640). The majority of the therapists recognized that therapists using unfamiliar modalities should be supervised.

Responsible supervision. Cathy felt that those who do not have sufficient training should be watched to ensure patient safety.

Umm, I think it can be harmful to the patient you know I think everyone should at least have someone observing them, watching over them if they don’t know.

Obviously everyone starts off not knowing how to use them and so as long as there is someone observing and making sure everything is running smoothly. Paula felt that hands-on experiences help to ensure that occupational therapy students are prepared to assume the duties of providing services, including using modalities (principle 4F).

I have had a lot of students who had no idea what it's about there just not exposed to it. I think that exposure to using PAMs or any treatment technique or modality that we use is important. You can read about it in a book but to actually apply it and see some of the reactions to skin. I mean, it's just different.

Protecting the patient and ensuring the OT student is prepared and comfortable using PAMs includes readings, observations, and close supervision (principle 4G). Paula does not require the students to complete competency testing, but she does recognize that this is an issue that may require further investigation.

We don't require the level II fieldwork students to do the competencies it really depends on the knowledge they have coming in...Some come with nothing so I make them read. I mean; I make them read everything about any modality that I've been using with a patient. They typically observe for a couple weeks before they do anything and then umm, as for ultrasound they are more technicians they don't really...I mean, I make sure they do things properly and set-up but I am not sure if they have any clue of how to choose it. I am choosing the parameters and all that I wouldn't say they are competent but their being supervised...[students] don't have any idea but towards the end I think they get competent but maybe that [competency testing] is something we should look at. I don't know that is a lot to

expect to pass all those competencies when you're a student. I don't know it's something to look at.

Ann also uses readings and competency testing to ensure that students have the experience necessary to use modalities (principle 4F). "Oh, there's usually competencies that they do, they have readings, usually articles, that sort of thing and then there's a competency test that's usually what we do especially for oncoming therapists. They have to answer questions and they demonstrate." Diane provides supervision to students using modalities and incorporates quizzes, demonstrations, and competencies to provide the needed experience for modality use.

They had to do a competency. Its reading, its quizzes, and then they have to demonstrate it and you do a, like a check-off. They don't do any of the electrical ones either. They mainly do hot packs, cold packs, fluidotherapy, paraffin. I don't have them [students] put iontophoresis on or something. Ultrasound, If I set-up the parameters they can with me right there.

Abby mentors students in their use of modalities and respects their level of confidence and comfortableness with using physical agent modalities (principles 4F and 4G).

Well of course I set the example and explained the theory behind why I am using it, the set-up for them, and of course go through it with them. It's just not like here you go and walk away. I was always with them until they were comfortable. Basically they show me that they know how to do it. If I had a student who didn't feel comfortable I wouldn't make them do it because chances are they are going to graduate and never use it again so why make them suffer with it.

Although Jenny does not currently supervise students, she does supervise new therapists and ensures that they have the skills needed to safely use thermal agent modalities. “For new therapists we check them so when [a new therapist] came on I went through and checked to make sure she was using the proper settings and doing things properly and checking her techniques. So yea, a new person does get checked, it’s more of an observation.”

Theme 5: Occupational therapists identify concerns with professional accountability.

The question of who is responsible for ensuring competencies arises. As stated earlier, principle 5 outlines that OT personnel shall comply with laws and association policies. In particular, principle 5A states, “Occupational therapy personnel shall familiarize themselves with and seek to understand and abide by institutional rules, applicable Association policies; local, state, and federal/national/international laws” (Reitz et al., 2005, p. 640). The therapists recognize that it is both a personal and professional responsibility to incorporate only treatment techniques that they are prepared to do. The question of how they prepare themselves for using modalities arises. Is there a difference between being mentored with a true competency program in place versus just being shown how to use a modality? What are the responsibilities of the therapists who are *just showing* another therapist how to use a modality? The therapists identified that there were times they were asked to use a modality in which they had not completed a competency for, and the need to be truthful to patients and colleagues about their limitations in performing certain modalities arose. Being truthful about limitations also aligns with principle 6 of the code: “Occupational therapy personnel shall provide

accurate information when representing the profession (Veracity).” Of particular interest are principles 6A and 6E:

6A. Occupational therapy personnel shall: Represent their credentials, qualifications, education, experience, training, and competence accurately. This is of particular importance for those to whom occupational personnel provide their services or with whom occupational therapy personnel have a professional relationship.

6E. Occupational therapy personnel shall: Accept responsibility for their professional actions that reduce the public’s trust in occupational therapy services and those that perform those services (Reitz et al., 2005, pp. 640-641).

Professional accountability. Jenny is somewhat in conflict with this principle.

She identified that she was not competent using a modality and sought the guidance of another professional. However, the question arises: Does this behavior comply with laws and association policies guiding the profession for both Jenny and the therapist imparting the knowledge?

I can’t remember the modality, one of the hand therapists is also a PT so he used like interferential, was it galvanic stim, yea and so he left me a note that said if you don’t know just ask so or so and so I just pulled one of the other PTs and said you know make sure I’m doing this right so you know and [he] had gone through and showed me some of it but it was like well maybe I should make sure and not electrocute someone.

Paula acknowledged that she had learned modality techniques from other therapists. “A nice physical therapist taught me things too. They taught me

iontophoresis, e-stim, those kinds of things that are not easily picked up from a course like ultrasound.” Ann was currently learning a new modality, not through a course or conference but through fellow therapists.

But there is one that I am learning about but haven't used it yet is a combination of ultrasound and NMES which is very beneficial for pain. The PTs are teaching me, the ones that use it are. Interestingly enough it seems the [PTs] don't know why it really works either. It's like it is good but don't know why...No conferences on this technique, just reading pretty much with them [PTs].

Sometimes if we have someone who would benefit we have them [PTs] set the parameters and we follow but they are there, right there.

Ann also stated that she learns from vendors. “Plus we have vendors who come in and they will show us different things too and we all learn you know like in-services and that sort of thing.” What come into question are the educational background and the motives of these vendors.

Abby acknowledged that her education in PAMs had emerged while working as a PT aide. “No courses. I learned when I was a PT aide. I learned from the other physical therapists. It was hands on and through using it you know the difference between continuous and pulsed.” She continued to state that she could rely on others to confer with.

If you're going to work in a setting such as this you're going to get baptized by fire and you're going to pick up on it right away just from other people's examples. Because if it came to it I could surely ask another hand therapist, you know like is it ok to do continuous on a PIP joint?

Abby explained that she had been asked to perform a modality with which she was not familiar with and relied on other therapists to guide her in using the modality.

Umm, like every place I worked didn't have phonophoresis, here they have phonophoresis and somebody had it on their treatment plan that was established before I came here. Phonophoresis, I'm like what do you do? What is it? I knew what it was but until someone explained to me that you put the cream on the ultrasound, it's the same thing. So you basically just ask for help, ask someone to show you how. TENS units, people get orders for TENS units and I haven't done a whole lot of set-ups with TENS units but there's always someone to ask.

Cathy also had had an experience in which she was asked to use a modality in which she did not have proper training, and she relied on a physical therapist to tell her how to use the modality. "Yea, umm, I just spoke with one of the physical therapists and asked them how they used it and all of them here are pretty knowledgeable. They were willing to guide through the steps."

Who is responsible for ensuring competence? Under the domain of public accountability, the question of who is ultimately responsible for ensuring competent professional behavior arises. In the literature there are those that feel it is the individual responsibility of the practitioner, the facility's responsibility, the state regulatory association's responsibility, or the national regulatory association's responsibility. When asked if they felt there should be a national competency board that would administer competency testing, five of six therapists responded that this would not be beneficial. They recognized there was a need for competency testing but were unsure of who should be responsible for this assessment.

Cathy explained that testing should not be required of all therapists, particularly if they are working in areas other than hand therapy/physical disabilities.

Not really, umm I think a number of reasons I guess. I see most therapists in you know outpatient hand clinics using [modalities] but there is a huge realm of you know....I guess if it were specific to where you are working umm you could have something like that but just for anyone going out and I mean if you work in schools you're not going out to use modalities all the time and I think the boards were just a terrible experience I just think maybe something of a lesser extreme. Cathy felt that perhaps employers should provide needed training.

Maybe school should be where it starts or sometimes I see conferences on physical agent modalities but not many. You know maybe they should make it more easier for us to you know, go and get trained in that sort of ting or places of employment should train therapists.

Paula felt that a national competency assessment was not the appropriate route to go to ensure competency.

No, I think it would be more fees and oversight. I don't know I am not sure that's the answer. I think that people need to be competent but I can't say how but I certainly wouldn't want something like NBCOT. Look at how we are doing our continuing education it's just self report. I think that attending continuing education courses that maybe have a component of doing it [modality]...There are some types of continuing education classes that you actually get certificates maybe that's the way to do it. I don't know maybe a national company that does

it everywhere. I don't know wishful thinking it's definitely hodgepodge the way it is.

Diane also stated that she felt that a national competency board was not necessary. I don't think so. It would be another test that people would have to take. No, I think it could be more facility to facility and just make sure they actually have a program in place....On a OT level, I know, if somehow maybe that they could actually have a competency program for the therapists who are using them. They should prove that they are competent. I'm not sure if it should be on the OT reg exam or anything like that.

Abby had strong feelings against a potential national competency board.

You know how much hell you go through everyday trying to keep your head above water with paperwork and proving that this patient needs therapy, this patient doesn't need therapy. If it comes to that far there will probably be a day that as much as I love being a therapist I would say you know it's not worth it.

Jenny too had strong feelings of opposition to a potential national competency board for physical agent modality use.

No, see I have issues with NBCOT and well, and what was AOTA thinking when they let them take away the OTR and COTA? I mean how stupid was that? I, no, I think it can be facility driven and we don't need another board taking another 75-100 dollars so that they can say yes you can do a hot pack, so no.

In contrast, Ann was the only therapist who felt that a national competency board would be beneficial.

Well, I think that might be a good idea only for the protection of the patient. That if someone was going to use those modalities that they at least passed something so that you would know that not matter where you went that they were qualified. Because I went to a foot doctor once and the girl was doing the ultrasound and obviously she didn't know what she was doing. She was like all around the place you know and I'm like well you know. So I think that would be a good thing and then again, well I personally think that would be a good thing, I do.

Theme 6: Occupational therapists strive to respect other medical professionals with coinciding and conflicting opinions. Principle 7 of the Occupational Therapy Code of Ethics (Reitz et al., 2005) states that occupational therapy personnel shall treat colleagues and other professionals with respect, fairness, discretion, and integrity (Fidelity). Paula respects the physician's choice of modalities but also relies on her clinical experience and evaluations to determine the best course of treatment.

No, it is eval and treat, eval and treat. Some physicians think ultrasound is the cure for everything and they will write that, we generally have to ask for ionto, our procedure is that they have to get the prescription from a drug store and bring in the medicine so we can't get around that so we have to ask the physician to do that. It's not just try this and this, it's legit.

Jenny sometimes did not agree with the physician orders.

I think you have to really know the controversies too for example the phonophoresis, umm some doctors still order that but apparently there is research that says well it doesn't really penetrate the lotion base or the cream base to really

drive the cortisone through there [skin] so I tend not to use that unless the doctor orders it.

Jenny reiterated the point of complying with the physicians orders later in the interview.

Some will write just modalities some will be real specific about what they want.

Some still write about phonophoresis which again I'm not a fan of it. If they give you a couple of options you can use that as your last thing. If that's the only thing they write your kind of obligated to go ahead and do it whether you agree with it or not. So you can try it and say oh well it really didn't help or did help, or you know.

Diane stated that she consults with physicians regarding adding modalities to the plan of care.

They [physicians] usually put modalities as needed and then I fill out my plan of care that they sign with the modalities that I choose and then if I add any on in the future I write it up on a prescription and send it to them to be signed for their approval.

Abby also stated that she consults with physicians on the plan of care. "They'll [physicians] say ultrasound, heat, home program. Then we'll do the evaluation and if they say only range of motion and strengthening then on our plan of care we'll put down hot pack, cold pack, ultrasound as needed or whatever."

Ann had received referrals from physicians for modalities that were contraindicated.

Yea, sometimes we get a request for ultrasound for a child under 18 which you wouldn't do because of the growth plate and the doctor would insist on it and yet we feel that's wrong, I feel that's wrong. I don't do it: I just don't do it.

However, the majority of the time there is no difficulty collaborating with the referring physician.

Well, actually the way it's set up is pretty neat, they give this referral and then they'll have modalities and then they check them all off. They check them all off like fluido, hot packs, they check off ultrasound, and so it is certainly up to us which we choose to do. They are kind of authorizing the use of them.

Chapter 5: Conclusions

Throughout the narrative of this research, the therapists relayed a genuine concern for the safety and well-being for their patients. They clearly stated that the primary reason for incorporating physical agent modalities into the treatment process was to improve the therapy experience for the patient and to improve the patient's overall functional outcome. All of the therapists identified the importance of the patient as an active participant in the therapy relationship. Lack of education at the university level was identified as being a concern, and the majority of the therapists had participated in continuing education and professional development activities to obtain the background necessary to use PAMs. Four of six therapists were required to complete a competency program at work, and all but one therapist felt that a competency program was necessary. All the therapists identified that there were potential safety concerns with the use of PAMs and that they had had some type of difficulty while using a modality, cases in which a patient was harmed or complained of increased pain while a modality was used. Each theme identified and explored in this research has real and true meaning to the participants who experienced the phenomenon and implications for everyday practice. The following section will explore the implications of these themes on everyday clinical practice across all domains.

Implications for Practice

Doing what's best for the patient and advocating for needed services. Principle 1 of the code of ethics (Reitz et al., 2005) states that therapists must demonstrate a concern for the safety and concern for the recipients of the services and be an advocate for recipients of their services (p. 639). This principle of beneficence is concerned with the

overall welfare of the patient. All of the therapists in this research stated that the primary reason for using physical agent modalities was to benefit the patient and improve his/her overall functional outcome. The therapists also identified that they have advocated for patients to receive specific services. There is insufficient literature exploring why therapists choose to use physical agent modalities and describing what benefits are observed from their use.

In a discussion, opinion, and commentary article, Stancliff (1998) spoke with therapists regarding their use of physical agent modalities. The therapists responded that they felt that PAMs facilitated tissue healing, optimized functional outcome by increasing range of motion and decreasing pain and inflammation. “PAMs can set the stage for optimizing a person’s performance with treatment involving functional occupation. I do use them to precede my regular functional treatment approaches” (Stancliff, 1998, p. 55). Christiansen & Lou (2001) concluded that the practitioner is responsible for making decisions with the patient that will achieve the greater good for the patient.

Professional caregivers are responsible for practicing in a manner that keeps the patient’s interest foremost by achieving the greatest good and avoiding harm in the process. In their pledges to practice ethically, professionals already commit to making decisions that are right for a given patient at a given time. (p. 345)

It is of the utmost importance that clinicians across the profession of occupational therapy provide safe and effective treatment and advocate for the well-being of the recipients of their care.

Issues impacting safe use of physical agent modalities and safety concerns during the use of physical agent modalities. Principle 2 of the Code of Ethics (Reitz et al., 2005)

states that practitioners shall take measures to ensure a recipient's safety and avoid imposing or inflicting harm (p. 640). The therapists in the study identified issues that they felt potentially placed patients in harm's way. Lack of proper training in physical agent modalities and using modalities to increase revenue were identified as potentially harmful situations. The therapists identified that they also had experienced safety concerns while using PAMs. One of the issues contributing to the initial opposition to the use of PAMs by occupational therapists was the lack of proper training and theoretical background in the curriculum of OT educational programs. A 1991 study by Taylor and Humphry found that those opposed to the use of PAMs by OT's were concerned about the lack of educational training in the use of PAMs. They found that most therapists interviewed reported that they had not had exposure to modalities at the university level.

Our study revealed that few therapists reported that their academic programs had provided training in any of the physical agent modalities. These findings emphasize the fact that occupational therapists' training in physical agent modalities varies among therapists and between different modalities. Therefore, we cannot consider all physical agent modality use and training to be equivalent across all modalities. (p. 928)

Studies by Glauner et al. (1997) and Cornish-Painter et al. (1997) also stated that there are issues with a lack of proper training and potential safety concerns due to this lack of training. It is imperative that therapists do no harm (nonmaleficence) to their patients. Ensuring that one has the proper theoretical and technical background to perform

treatment modalities and providing appropriate and indicated services is an ethical responsibility of the practitioner regardless of the domain in which the therapist practices.

Patients are active participants in the therapy process. The therapists interviewed for this research project explained that the patient is an active participant in the therapy process. Principle 3 of the Occupational Therapy Code of Ethics states that collaboration with the patient and family members is essential and that patients have the right to refuse treatment (Reitz et al., 2005, p. 640). In a study by Northen, Rust, Nelson, & Watts (1995) the involvement of adult rehabilitation patients in setting occupational therapy goals was studied. The study found that although therapists attempted to involve patients in goal setting, they often failed to provide appropriate communication in the treatment process. These included introducing occupational therapy services, verbally preparing patients and family for initial and ongoing treatment, explaining purposes and procedures of evaluation and treatment and potential outcomes of treatment, attempting to elicit patient concerns, and collaborating with the patient (p. 214). It is imperative that occupational therapists respect the autonomy of the patient, fully communicate throughout the treatment relationship, and encourage patients to take an active role in the therapy process. It is vital that a respectful therapeutic relationship exists in order to ensure that the patient feels engaged in the therapy process.

In an article about engagement and disengagement in the therapy relationship, Van Amburg (1997) stated that the typical medical model places great importance on objectivity and also looks at the patient in a reductionistic fashion, and therefore, often leads to disengagement of the patient.

In a disengaged relationship, the therapist must sell his or her authority to the client. This disengaged therapist helps to elicit anticipated behavioral responses from clients, using reductionistic techniques that often do not involve the client's own desires and motivations. Therapy is then aimed at purposeful (functional), but not necessarily meaningful, activities, using only functional outcomes as measures of client worth. (p. 189)

In an engaged relationship, the focus is not the therapist's control and point of view but involves a meaningful exchange of life experiences and dialogue between the therapist and patient. "Patients' involvement in their own health care is a deeply rooted premise of occupational therapy" (Northen et al., 1995, p. 215). It is the therapist's responsibility to uphold the autonomy of the patient and foster an engaged therapeutic relationship.

Acquiring the education and the road to competency. The therapists in this research clearly identified that there is a lack of proper training across university programs. The majority of the therapists stated that they had attended conferences or participated in professional development activities to obtain the technical and theoretical background to use physical agent modalities. Four of six therapists had completed a competency program and/or competency assessment. It is essential that therapists be able to document that they have taken steps toward obtaining competence in the area of physical agent modality use. The literature supports that therapists identify continuing education opportunities with competency. In an ethical policy paper, Lohman, et al. (2004) stated that therapists are ethically obligated to seek out this specialized training through activities such as mentoring, continuing education, additional course work, AOTA self-study, and independent reading (p. 111). In a 2001 study by Anderson, the

majority of therapists surveyed placed greater value on formal education programs, such as conferences of 1 day or more, than on informal educational activities. In a 2001 study by Lysaght et al., variables affecting the competency-maintenance behaviors of occupational therapists were examined. “Workshops, conferences, and seminars were the most frequently reported methods (98%)” (p. 30). It was also identified that an individual therapist’s sense of professional responsibility was a critical factor in competency-maintenance behavior.

A 1997 study by Glauner et al. regarding theoretical and technical competence for the use of physical agent modalities found that the respondents consistently identified continuing education as the most appropriate way to obtain theoretical content regardless of the type of modality. Not only is obtaining competency an ethical issue, but it also raises legal issues as well. In an article by Ranke & Moriarty (1996), an overview of professional liability in occupational therapy was introduced. It clearly states that the therapist must ensure that he/she has documented competency in all modalities that are used in the clinical setting.

If sued for an injury from a physical agent modality, an occupational therapist will need to prove that he or she properly supervised the client during modality use and adhered to the standard of care for the particular treatment. Important evidence to prove standard of care is that the therapist followed the guidelines set forth by AOTA’s Physical Agent Modality Task Force, which in essence requires the practitioner to have proper training and competency in these modalities before applying them in treatment and the proper documentation exists to prove that such training has been received. (AOTA, 1992, p. 675)

Across all domains of practice, occupational therapists must obtain the proper technical and theoretical background to safely administer effective treatment. Whether this is done through using a physical agent modality, utilizing a therapeutic listening program, or instructing patients on adaptive equipment use, therapists are ethically and legally responsible to ensure that they are competent practitioners.

Concerns with professional accountability and who is responsible for ensuring competence. Occupational therapists must accurately represent themselves to the public and ensure that they are competent in all activities that are utilized in the treatment process. Within this study, the therapists recognized issues with public accountability and in general were unsure of who should ultimately be responsible for ensuring competence. For occupational therapy to continue to be a viable and respected profession, professional accountability must be a top priority. Lohman et al. (2004) stated that in clinical practice therapists are encouraged to represent themselves accurately and to provide accurate information in order to ensure public trust (p. 111). Misrepresentation of one's abilities is not only an ethical issue but a legal one as well.

Within the literature there continues to be debate about who is responsible for ensuring competence. In a 2001 study, Lysaght et al. concluded that there is little concurrence in the field about how continuing competency should be regulated (p. 28). Regulatory boards are legally responsible for the behavior of those they have certified, employers have a moral and legal responsibility to their clients, and the individual therapist has responsibilities to national and state boards as well as to his/her employer, clients, and his/her professional conscience and the general public (p. 29). Youngstrom

(1998) also concluded that, ultimately, it is the individual professional's responsibility to continue to engage in professional development activities and to maintain competency.

The mantle of a professional carries with it a lifelong commitment to maintaining and developing competence. Professionals assume a responsibility to maintain their abilities and to grow in their knowledge and skills as their profession grows and practice changes. They assume responsibility to be aware of advances and shifts in professional practice so that they can change their own practice accordingly. (p. 718)

Therapists are obligated to ensure that they are competent to perform therapeutic treatments.

Respect other medical professionals with coinciding and conflicting opinions.

The therapists in this research identified that at times they felt in conflict with physical therapists over the use of physical agent modalities and also stated that there were times when they felt in conflict with physician orders. Disagreeing with other medical professionals is to be expected in the medical field. This should not be looked at as necessarily a negative thing: It is often through disagreement that one can learn about the viewpoint of other professions or professionals. These disagreements can be looked at as educational experiences and opportunities to promote the profession of occupational therapy. Conflicting opinions with other professionals could be cause for an ethical dilemma. "Problems of professional ethics usually arise from conflicts of values, sometimes values conflicts within the profession and sometimes conflicts of professional commitments with commitments of persons outside the profession" (Beauchamp &

Childress, 1994, p. 7). For the patient's benefit and the integrity of the professional relationship, these situations must be handled ethically.

Beauchamp & Childress (1994) also stated that professional codes of ethics also specify rules for etiquette and responsibilities to other professionals. Principle 7 of the occupational therapy code clearly states that OTs should treat other professionals with respect, fairness, discretion, and integrity. A study by Lohman et al. (2004) summarizes that there is a sense of fidelity to act ethically and fulfill agreements with patients and other medical professionals. "Diplomacy helps with good advocacy skills" (Lohman, et al., p. 111). Therapists are required to balance the ethical responsibility to respect other professionals with advocating for the most beneficial treatment of their patients.

Limitations of Research

With a phenomenological study, the research is limited to the shared experiences of the participants during a designated period of time. Therefore, generalizing the findings to other groups of therapists may be problematic. For example, this study focused on therapists who work with adult patients with an upper quadrant condition. It is inappropriate to think that the findings of this research would generalize to other professional subgroups, such as pediatrics or mental health practitioners. However, with the rich description of participants of this study, readers can compare the findings to other similar settings. "Consequently, vivid, detailed description must be included in the study to enable the reader to judge the similarity between settings and, therefore make judgments about the transferability of the findings (Lincoln & Guba) (Crepeau & Deitz, 1998, p. 844).

All of the participants who responded to the contact letter worked at hospitals or a therapy corporation. There was no representation from private practice practitioners. The participants practiced in a large metropolitan area, and there was no representation of rural-based therapists. All of the therapists were female and all had attended universities in the state of Michigan. Therefore, the male perspective was not explored, and representations from out-of-state educated therapists were not included in the sample. Also unique to the time period of this research was the adoption in December 2006 of the Standards for the Master's Programs, which call for the incorporation of physical agent modality education at the university level. If this study is replicated in the future, the adoption of the standards would definitely alter the views of the participants, particularly for those who will graduate under the new standards.

Future Research

It is imperative that if occupational therapy is to remain a viable and respected profession, its members must continue to be active in research. Research activity is often spawned from a clinical irritation or a general interest or sparked from other research projects or literature review. In my opinion, research should be thought provoking to the reader. It does not mean that one agrees with the research or even that the reader can fully relate to the research, particularly if it is about a domain unfamiliar to the reader. However, the reader may be able to look at the research and think about how it affects their domain of practice and how it affects the profession in general. Research may also ignite a desire to further explore ideas or themes presented in research. There are several areas of interest that arose from the data that I would like to explore further or perhaps others would be interested in exploring. These areas arose out of the data and were not

fully developed into themes because they were not fully aligned with the purpose of the original study, there were insufficient data to support a full theme, or the data were also included in other themes. *Professional turf issues* were alluded to in the data but warrant further investigation and, in contrast, many therapists viewed *physical therapist as unofficial mentors and teachers of physical agent modalities*. It would also be interesting to find out the opinions of physical therapists, as they are viewed as being mentors for physical modality use. *The support for and opposition to use of PAMs by OTs* could be further researched, particularly as the OTD standards come into effect. The use of PAMs has primarily been associated with hand therapy. Many of the therapists interviewed suggested the *expanded use of modalities* into other treatment areas not typically associated with modality use. Another theme that would be interesting to explore is that many therapists stated that they felt *PAMs was not real OT* and that at times they felt like they were *not real OTs* when using PAMs.

The use of PAMs has at times been viewed as being in conflict with the occupation-based practice upon which occupational therapy has been formed. Those who oppose the use of PAMs in occupational therapy treatment see modalities as a passive activity in which the patient is not involved in an occupation-based activity. Those in support of PAMs feel that modality use improves the physical functioning of patients to improve independence in occupation-based activity. As outlined by AOTA, occupational therapy is involved with the therapeutic use of everyday life activities or occupations to promote health. A prime goal of occupational therapy is to engage the client in meaningful activity. The question arises: Is this treatment modality, technique, or intervention meaningful to the patient? There has been debate within the profession

regarding an increase in what many view as reductionistic-based treatment versus a more holistic approach. The use of physical agent modalities is viewed by some as a reductionistic treatment approach. Continued research in the area of occupation-based treatment with the use of modalities and the role and opinions of the patients involved in these treatments would be beneficial to the profession and add to the professional literature.

The profession of occupational therapy would benefit from continued research on the ethical and clinical implications of competency and competency assessment. This subject is not exclusive to the use of physical agent modalities. Issues regarding competency, competency assessment, and the ethical implications associated with lack of documented competence span across every domain of practice and should be at the forefront of every facility, supervisor, and employee. Supervisors should be concerned with the competent practice of all its employees and should be concerned with how to adequately assess the competency of those they are supervising. Ultimately, individual therapists need to be concerned with their professional development and take responsibility to ensure that they are providing safe, effective, and ethical treatment. In an age where the ever increasing call for public credibility and accountability influences the treatment process, it is imperative that the profession of occupational therapy continue to explore the ethical, clinical, and competency behaviors of those who represent the profession.

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Appendix A: Interview Questions

Interview Questions

Section I.

How long have you been an OT? What are the diagnoses of the individuals you work with?

Section II.

What is your educational background?

What steps have you taken to acquire the back ground necessary to use physical agent modalities?

How did you acquire this information (formal course work, informal training, continuing education)?

Were PAMs taught at your university, and if so, in what depth?

Which PAMs were taught or introduced?

Did you feel prepared to use PAMs at the time of graduation?

Should PAMs be taught at the University level?

Do you feel that PAMs is an entry level or advanced level skill?

As an OT student on fieldwork were you required to use PAMs?

How did you know how to use the modalities as a student?

What kind of supervision did you receive while using PAMs as a student?

Section III.

In your opinion, should occupational therapists use PAMs and why?

Section IV.

Do you currently use PAMs?

What types of modalities do you use and how frequently do you use them?

How are the modalities used in the treatment process?

How do you determine when to use or not use PAMs? How do you determine which modality to use?

Do your referring physicians dictate which modality to use?

How do you determine if the modality is beneficial? What are the benefits of the use of modalities in a treatment session?

Section V.

Have you ever had an incident in which you were asked to use a modality that you had no background or training?

What happened?

Have you experienced any difficulties while using a modality in which you felt there were safety concerns? This may be due to lack of proper training, faulty equipment, etc.

What happened and how did you feel about the situation?

How are the current trends (insurance, case loads, etc) in health care affecting your use of PAMs?

Does caseload affect your use of PAMs?

Section VI.

Have you been expected to demonstrate that you are competent to use a specific modality? How?

Does your facility have specific standards of competency in place? Please explain.

Are there any follow-up competencies?

Do you currently supervise students who use PAMs?

How do you determine that they are prepared to use PAMs?

Do you instruct patients to use PAMs at home and how do you determine that they are competent to use them?

Section VII.

How should competency be assessed?

Do you feel that there should be a competency board much like the NBCOT that would administer competency testing? Explain your position.

Section VIII.

What is your opinion about those who use PAMs who do not have the sufficient training and education to do so?

Do you feel that there are ethical issues regarding the use of PAMs, what are they?

Section IX.

How do you feel about opposition to the use of PAMs in OT? In PT?

Have you had an experience with opposition to the use of PAMs? Please explain.

Appendix B: Contact Letter

Date

Dear Colleague,

I am a graduate student at Eastern Michigan University. As part of the educational requirements for the Master of Science degree in Occupational Therapy I am conducting research for my thesis entitled, Competencies and physical agent modalities: An investigation of clinical and ethical implications. I am currently seeking occupational therapists that use physical agent modalities at least five times per week and will be willing to be participants in the research process. Participation is voluntary and there will be no monetary benefits associated with participation. Participation consists of a one-time semi-structured interview that would require a 30-60 minute time commitment. The interviews will include questions regarding the use of physical agent modalities, educational background, and competency assessment. The interviews will be audio taped and then transcribed. Participants will be provided with a copy of the transcript to check for accuracy and to give the participants an opportunity for clarification. You and your place of work will not be identified in any presentation of the information obtained from this study and all identifiable records will be kept confidential. Participation is voluntary and you may withdraw and discontinue participation at any time. If you have any questions regarding this study please contact the thesis coordinator, Dr. Olson at (734) 487-2280. Please call Sharyn Hoard, secretary of the School of Health Sciences at (734) 487-2474 to schedule an interview. The interview will be scheduled at your convenience and at the location of your choice.

Thank You,

Casey Lambert, OTR

Appendix C: Consent Form

Competencies and Physical Agent Modalities: An Investigation of Clinical and Ethical Implications

Occupational Therapy Department
Eastern Michigan University

(Principal Investigator: Casey A Lambert, OTR)
(Thesis Co-Coordinator: Ruth Ann Hansen, Ph.D, FAOTA)
(Thesis Co-Coordinator: Judy Olson, Ph.D)

CONSENT FORM

1. I agree to participate in a research study about the use of physical agent modalities. I understand that the purpose of this research is to gain knowledge about the use of physical modalities and clinical competencies. I will be asked questions regarding my use of physical agent modalities, my educational background, use of competency assessment, and my opinion on various issues regarding physical agent modalities.
2. The interviewing process has been fully explained to me by Casey A Lambert. I understand that the interview may take 30-60 minutes to complete and that I agree to have the interview audiotaped. I will receive a copy of the transcript to verify my comments.
3. No known risks are associated with my participation.
4. I understand that participation is voluntary and there are no monetary benefits associated with my participation in this study. I understand that I may withdraw and discontinue participation at any time without penalty. I can call the office of the thesis committee co-chairperson at the following number to withdraw from the study (734) 487-2280. I also understand that I will not be identified in any presentation of the information obtained from this study and that all identifiable records will be kept confidential to the extent provided by federal, state, and local law. Presentation of this information may include a thesis project and publication in professional journals. I will receive a copy of this consent form for my records. I understand that the audiotape and transcripts will be kept in a locked file cabinet accessible only to the investigator. All data will be destroyed in five years after the completion of the research.
5. I may contact the thesis co-coordinator at any time during the course of this study to answer any additional questions regarding the purpose, procedures, and risks involved. I can contact the thesis coordinator at the following number (734) 487-2280.
6. I would/would not like to receive a copy of the abstract of the results of this study.

Signature of Participant Date _____

Signature of Principal Investigator Date _____

Please provide contact information to receive a copy of the abstract.

Address _____
City _____
State _____ Zip _____

Recipients Copy

Competencies and Physical Agent Modalities: An Investigation of Clinical and Ethical Implications

Occupational Therapy Department
Eastern Michigan University

(Principal Investigator: Casey A Lambert, OTR)
(Thesis Co-Coordinator: Ruth Ann Hansen, Ph.D, FAOTA)
(Thesis Co-Coordinator: Judy Olson, Ph.D)

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6. I would/would not like to receive a copy of the abstract of the results of this study.

Signature of Participant Date _____

Signature of Principal Investigator Date _____

Please provide contact information to receive a copy of the abstract.

Address _____
City _____
State _____ Zip _____

Principal Investigator Copy

