2021

Therapists' perceptions of student preparedness regarding hand therapy and the use of occupation-based interventions

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THERAPISTS' PERCEPTIONS OF STUDENT PREPAREDNESS REGARDING HAND THERAPY AND THE USE OF OCCUPATION-BASED INTERVENTIONS

Presented in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Occupational Therapy

Eastern Kentucky University
College of Health Sciences
Department of Occupational Science and Occupational Therapy

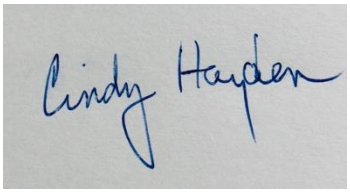
Stephanie Ye
2021

EASTERN KENTUCKY UNIVERSITY
COLLEGE OF HEALTH SCIENCES
DEPARTMENT OF OCCUPATIONAL SCIENCE AND OCCUPATIONAL THERAPY

This project, written by Stephanie Ye under direction of Cindy Hayden, Faculty Mentor, and approved by members of the project committee, has been presented and accepted in partial fulfillment of requirements for the degree of

DOCTOR OF OCCUPATIONAL THERAPY

CAPSTONE COMMITTEE



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Certification

We hereby certify that this Capstone project, submitted by Stephanie Ye conforms to acceptable standards and is fully adequate in scope and quality to fulfill the project requirement for the Doctor of Occupational Therapy degree.

Approved:

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Executive Summary

Background: Current literature suggests OT Level II students may not be sufficiently prepared to begin a Level II fieldwork hand therapy placement. ACOTE standards are generalized for the orthopedic content in curriculum for occupational therapy programs. OT students, faculty, and practitioners recognize there may be additional specific demands for upper extremity rehabilitation practice not included in the ACOTE standards. Biomechanical assessments are more likely to be used rather than occupation-based assessments in hand therapy clinics. In addition, previous research found that occupation-based interventions within hand therapy practice have declined due to a primarily biomechanical approach.

Purpose: This study examines whether occupational therapists believe OT Level II students are prepared by their academic programs for practice within the field of hand therapy, specifically with regards to providing occupation-based assessments and intervention.

Theoretical Framework. Ecology of Human Performance (EHP) principles allows the therapist the flexibility to collaborate with the client to either establish, adapt, create, and/or prevent throughout recovery phases of rehabilitation. The use of this theory best explains the complex theoretical underpinnings of occupation-based hand therapy as therapists must consider all components of the client factors and context to best evaluate and intervene, given the client's clinical orthopedic diagnosis.

Methods. The current study was a cross-sectional design. One hundred and sixty-four occupational therapy fieldwork educators completed an online survey on EKU Qualtrics. The 26-question survey was designed to illicit their beliefs about OT students being prepared for Level II fieldwork hand therapy placements.

Results. Occupational therapists and hand therapists report significant deficiencies of Level II students in working with the orthopedic client population, including anatomy and physiology preparation, wound care competence, orthotic fabrication, and using occupation-based assessment and interventions.

Conclusions: The current study's evidence shows a need for more academic preparation in upper extremity orthopedic content within occupational therapy programs for students to be ready for a Level II fieldwork placement in hand therapy.

Acknowledgements

Thank you to Cindy Hayden and Cassandra Ginn for your patience and guidance with completing this document. I would like to also thank the EKU OT post-professional doctorate faculty for making learning fun.

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CERTIFICATION OF AUTHORSHIP

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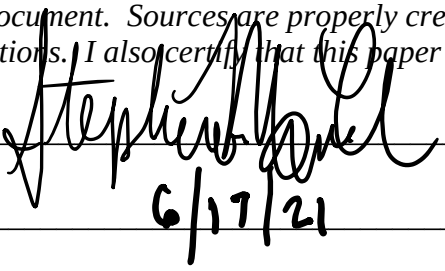
Certification of Authorship: I hereby certify that I am the author of this document and that any assistance I received in its preparation is fully acknowledged and disclosed in the document. I have also cited all sources from which I obtained data, ideas, or words that are copied directly or paraphrased in the document. Sources are properly credited according to accepted standards for professional publications. I also certify that this paper was prepared by me for this purpose.

Student's Signature: 

Date of Submission: 6/17/21

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Section 1: Nature of the Problem/ Problem Identification

Problem Statement

Over the years, occupational therapy programs have been scrutinized and analyzed for their content. Program content is examined to ensure what is taught to students is sufficient for beginning practitioners to be successful providers in the practice area of their choosing. There appears to be a general consensus that while there is an abundant focus on all other areas of practice (pediatrics, geriatrics, mental health, and hospital care), there is a sizable gap of the occupational therapy curriculum in the orthopedics area. For those who have an interest in the field of hand therapy, there is a need for more awareness and education on what occupational therapists' unique role is (Burley et al., 2018; Colaianni & Provident, 2010). After a 2014 practice analysis of hand therapy, the Hand Therapy Certification Commission (HTCC) changed their examination eligibility requirement from five years to three years after Occupational Therapy (OT) licensure. Researchers found that occupational therapists are more knowledgeable now to enter practice with a graduate degree than they were previously with a bachelor's degree (Keller et al., 2014). These findings suggest hand therapy could be an entry-level practice area.

Fitzpatrick (2006) states that "the number of patients being referred annually has doubled over the past five years," thus increasing the need for well prepared and knowledgeable occupational therapists to rise to the occasion (Fitzpatrick, 2006, p. 36). Law and MacDermid (2014) state that as professionals we are "responsible for facilitating knowledge development as insights emerge in daily practice" (Law & MacDermid, 2014, p. 17). When discussing knowledge gaps within master's level occupational therapy programs, it is important to refer to Accreditation Council for Occupational Therapy Education (ACOTE) standards within these

programs and compare to the demands in hand therapy. Research has shown that content of curricula does directly impact students' readiness to work in clinical practice (Chipchase et al., 2008). ACOTE's (2018) curriculum framework section does not specify how much is considered adequate for "preparation and application of in-depth knowledge" (ACOTE, 2018, p. 19). Chipchase et al. (2008) accentuates that the curriculum design of most occupational therapy master's programs is considered more a general, holistic preparation for practice in occupational therapy. Therefore, the inclusion of more specific hand therapy content within the curricula may have a positive impact on practice and facilitate new graduates choosing upper extremity orthopedics as an area of practice.

Current research does indicate that emphasis on occupation during coursework in occupational therapy programs is recommended for therapists to bridge occupation-based practice within orthopedics upper extremity settings (Short et al., 2020). However, due to broad accreditation standards and the level of complexity associated with hand therapy, holistic and uniform content inclusion may prove difficult. ACOTE standards emphasize this fact by stating students need to "practice as a generalist" (ACOTE, 2018, p. 19). Many OT programs curriculum design may be insufficient for student success in a practice area such as a hand therapy clinic.

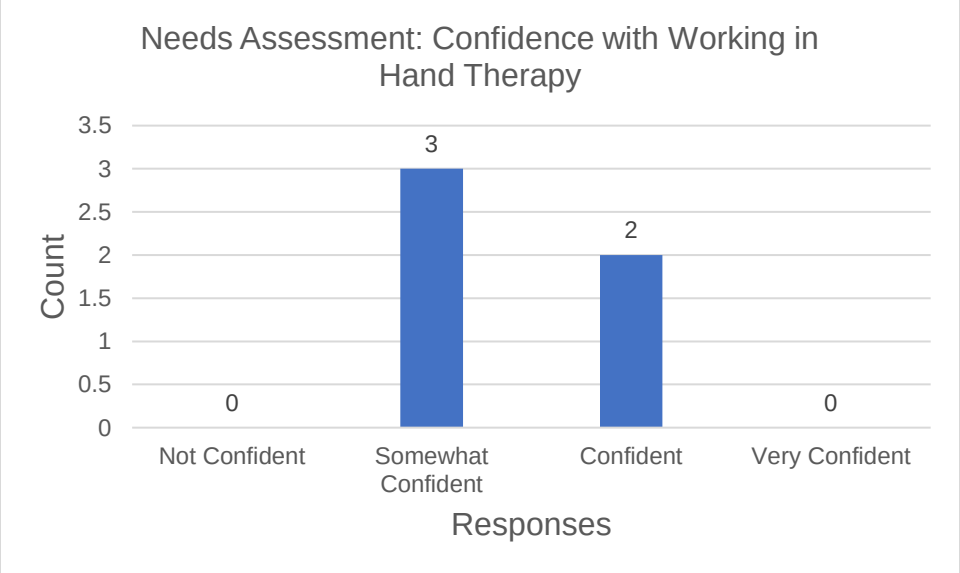
There is often confusion as to the role occupational therapists play when compared to physical therapists to the point where occupational therapists themselves often struggle to define their unique role to clients and administration. This appears to be reflected in the current available research, in that there are few studies on the implementation of occupation-based hand therapy (Robinson et.al., 2016; Grice, 2015). While occupational therapists have a desire to incorporate occupation in practice, there simply is a lack of knowledge as to how therapists can

bring occupation to the table given the barriers present in this setting (Colaianni & Provident, 2010).

A needs assessment survey was sent by the principle researcher to a convenience sample of practicing occupational therapists. The goal of the survey was to determine if OTs working in hand therapy believed their academic programs had prepared them to work in hand therapy. Participants all currently lived and worked within the 40-mile radius of the principal researcher and had from three to ten years of experience working in hand therapy.

As shown below, of the five occupational therapists who work in the field of hand therapy, 60% (N= 3) of therapists felt only somewhat confident working in the field of hand therapy based on the knowledge given in their occupational therapy program (Figure 1).

Figure 1:Needs Assessment Survey Question Regarding Confidence Working in Hand Therapy



In addition, all respondents indicated that they felt not or somewhat confident with regards to assessing and treating flexor/extensor tendon injuries (Figure 2), performing wound care (Figure 3), and assessing functional anatomy (Figure 4).

Figure 2:Needs Assessment Survey Question Regarding Confidence with Flexor/Extensor Injuries

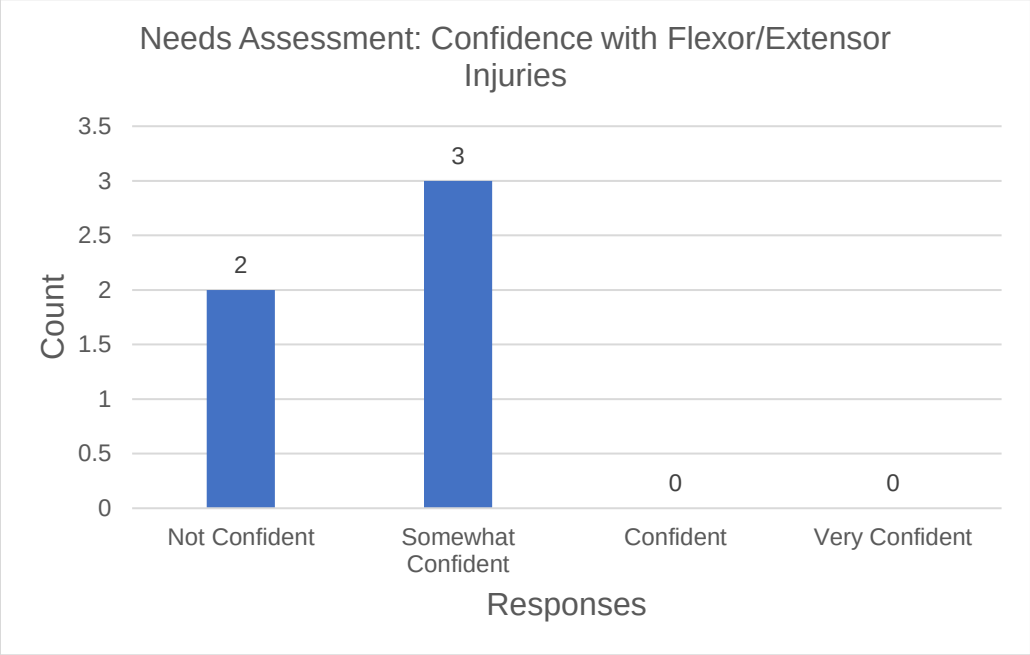


Figure 3:Needs Assessment Survey Question Regarding Confidence with Wound Care

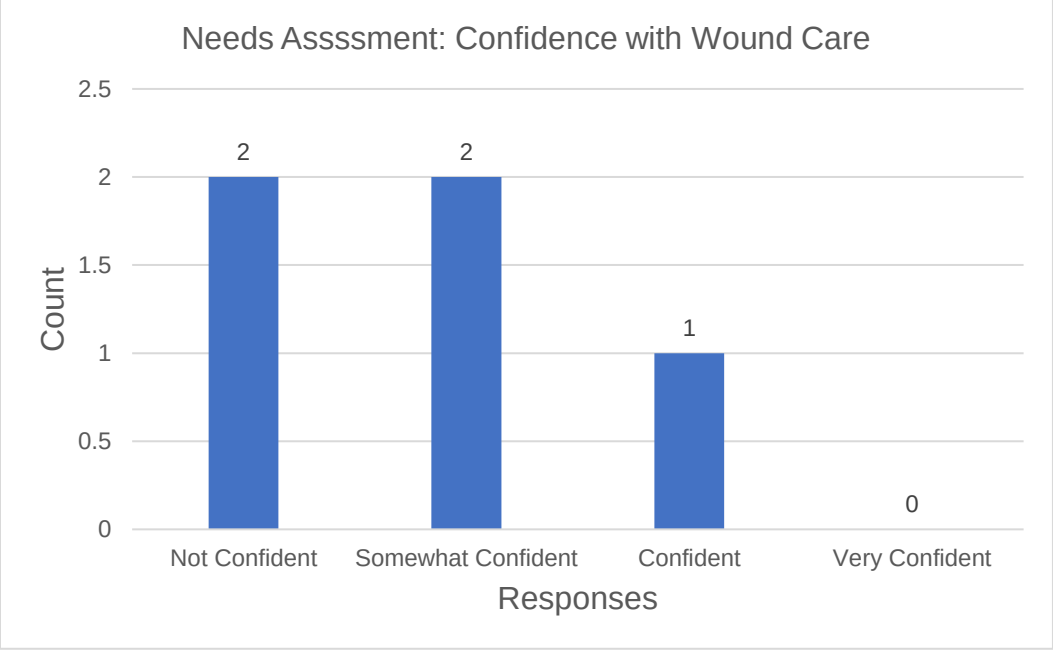
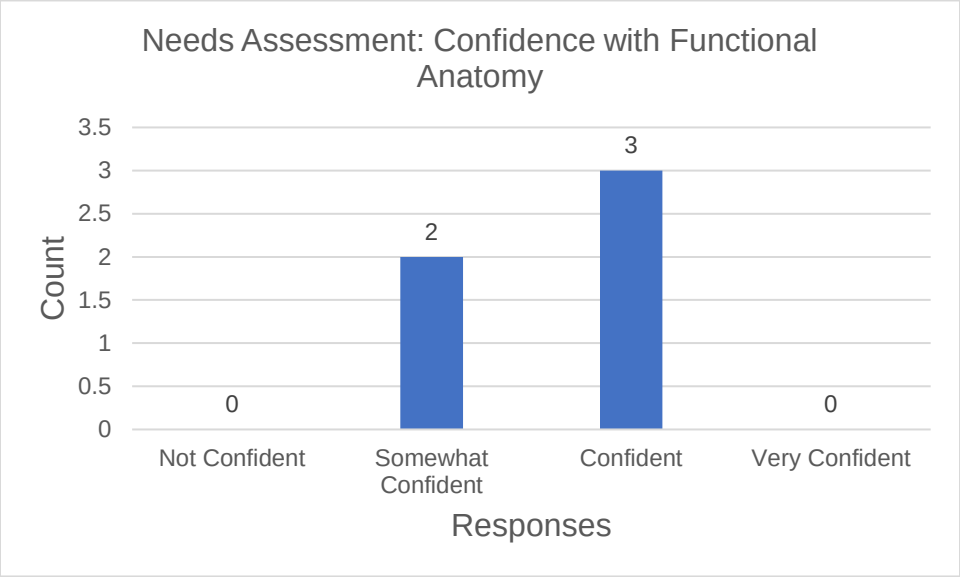
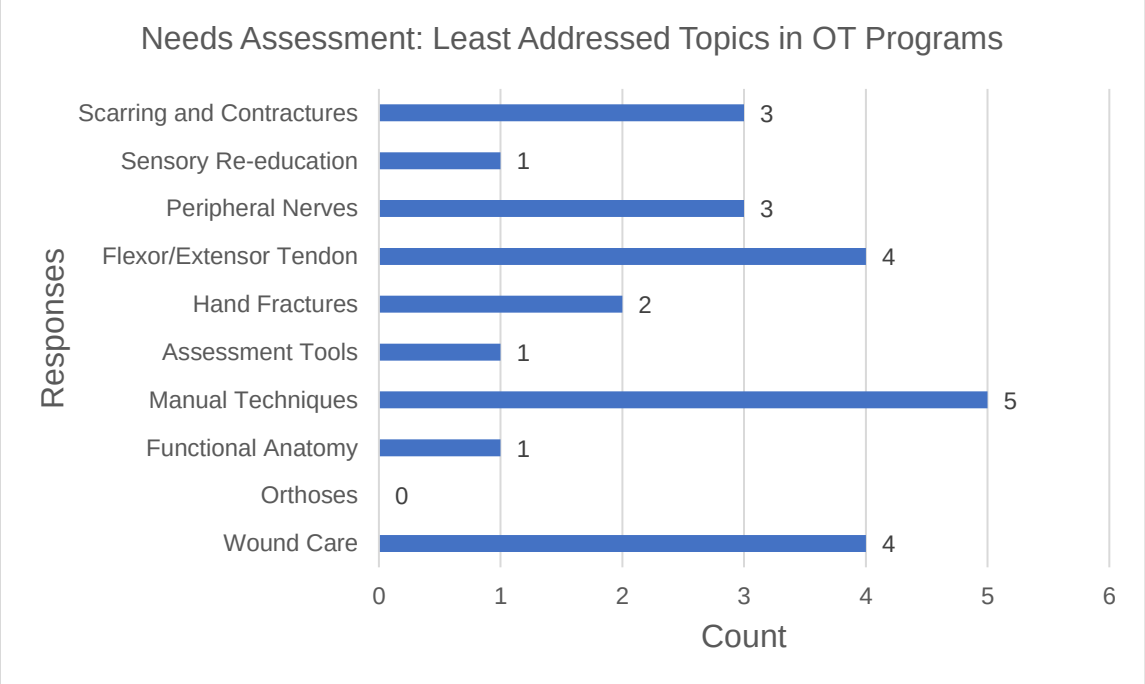


Figure 4:Needs Assessment Survey Question Regarding Confidence with Functional Anatomy



The therapists reported several topics such as orthoses, wound care, manual techniques, and flexor and extensor tendon management are least addressed in in occupational therapy programs (Figure 5).

Figure 5:Needs Assessment Survey Question Regarding Topics Least Addressed in OT Programs



The needs assessment also investigated whether therapists either always or seldomly used occupation-based assessments. 60% (N= 3) reported that time was the most influential issue on providing occupation-based hand therapy. Therefore, the findings from the needs assessment indicate that there may be a therapeutic disconnect between use of orthopedic knowledge and use of occupation-based practice in upper extremity rehabilitation needed.

Purpose and Significance

The purpose of this capstone project was to examine whether occupational therapists believe OT Level II students are prepared by their academic programs in practice within the field of hand therapy, specifically with regards to providing occupation-based intervention.

The needs assessment's findings demonstrate therapists felt OT programs under prepared them for practice in the upper extremity rehabilitation setting. Promoting the teaching of more occupation-based hand therapy assessments and interventions at the graduate school level could generate more knowledgeable therapists with regards to hand therapy content and in implementing occupation-based interventions.

In addition, increased perceived preparedness can improve the hand therapy intervention with our clients and propel the profession forward in this rapidly demanding area of practice. A study is needed of Fieldwork educator's' perceptions regarding OT students' preparedness for a hand therapy clinical rotation. If OT Level II students are better prepared, practitioners can confidently treat upper extremity orthopedic conditions and create a louder and more prominent impact of the importance of occupation-based practice in the eyes of our clients, physicians, and other related professions.

Theoretical Framework

The theoretical framework used to guide the following capstone project design, implementation, and analysis is the ecology of human performance (EHP). EHP was founded by occupational therapists at the University of Kansas in 1994. This framework was developed after a gap was identified within occupational therapy theory and practice. With EHP, context is considered an important factor in occupational performance. Subsequently, interventions are therefore tailored to establish, restore, adapt/modify, and/or alter tasks based on the client's overall clinical picture, including their context. Treatment can also focus on creating and/or preventing circumstances that can also lead to decreased occupational performance and participation in social/occupational roles (Cole, 2012).

To illustrate using EHP within the orthopedic setting, a scenario of a client who has broken a dominant sided wrist is portrayed. Based on the occupational profile, the client reports being the primary cook for the family and is now unable to chop vegetables or carry pots and pans. This client may adapt and order food from restaurants for the time being until the injury has healed and is safely allowed to participate in cooking tasks. In contrast, a client with a sudden amputation to the hand with a similar role as the family cook, may need to establish a completely new way to performing cooking tasks. These varying roles are based on the client's abilities, context, and desires (Dunn, 1994).

The theoretical framework is important when evaluating and treating the client to discover what is important to them and provide interventions that will be meaningful and safe. The use of this theory best explains the complex theoretical underpinnings of occupation-based hand therapy as therapists must consider all components of the client to best evaluate and intervene given the client's clinical diagnosis. EHP can explain, justify, and improve the critical

thinking processes behind the ever-powerful role and purpose of occupational therapists within the field of hand therapy.

Summary

The needs assessment's findings highlighted that practicing occupational and hand therapists reported their OT program had under prepared them for practice in the upper extremity rehabilitation setting. ACOTE curriculum framework does not specify how much is considered adequate in preparation for beginning an OT Level II fieldwork in hand therapy. An OT program's curriculum design may be insufficient for student success in a practice area such as a hand therapy clinic. Providing evidence of a knowledge gap could lead to new insights and attempts to close this gap in academic occupational therapy programs.

Section 2: Detailed Review of the Literature

The literature review focused on information relevant to hand therapy in relation to preparedness towards practice, especially with regards to occupation-based intervention. Peer reviewed articles were retrieved through a search of academic journals using key words such as "occupation-based", "hand therapy", "preparedness", "occupational perspective" and "student education". Academic databases such as Academic Search Premier, Google Scholar, and Eastern Kentucky University (EKU) library databases were utilized to analyze current research on therapists' perceptions of preparedness towards occupation-based intervention within hand therapy. Websites for the American Occupational Therapy Association (AOTA), the Journal of Hand Therapy, the Hand Therapy Certification Commission, and related materials were explored to support content knowledge about the topic.

Students' Preparation to Work in Hand Therapy

Before occupational therapy students enter Level II OT fieldwork, students' clinical learning and preparedness is predominantly based on coursework, journals, and textbooks provided within the structured program of an occupational therapy curriculum. While every students' fieldwork placements vary, each student's performance skills are a compilation of what knowledge they have been exposed to and learned in their academic program. Clinical rotations allow occupational therapy students to integrate didactic knowledge into a real-time physical setting. Particularly, students who are interested in having their clinical rotation in a hand therapy setting are often expected to already be prepared with fundamental knowledge of upper extremity content before starting their internships.

Valdes et al. (2020) states that current hand therapists report range of motion, anatomy and physiology, and interpersonal skills and communication were of the most importance for student competency when working in hand therapy. The question posed by this investigator is whether occupational therapy curricula are sufficiently preparing OT Level II fieldwork students towards beginning a clinical rotation in a facility treating upper extremity orthopedic conditions. This study focused on asking questions about the broad areas of orthopedic preparation, such as anatomy and physiology, orthosis fabrication, wound care, and occupation-based practice.

Anatomy and Physiology

Knowledge of anatomy and how conditions affect occupational performance is a critical component of OT graduate core knowledge. Schofield (2018) found there is a reduction in qualified faculty to teach anatomy and physiology content. Schofield (2018) also states that the Accreditation Council for Occupational Therapy Education (ACOTE) standards do not mandate or dictate specific, detailed curriculum regarding anatomy and physiology. ACOTE only

specifies the overall guidance of curricular framework and design. Consequently, the inclusion of an anatomy course within OT curricula and the given didactic depth within these courses vary greatly across the nation. Therefore, there is need for empirical evidence that helps to define the "current minimal anatomical competencies" for practicing occupational therapists, especially for those students who have selected a Level II fieldwork placement in hand therapy (Carroll & Lawson, 2014, p. 499).

Carroll and Lawson (2014) promote the need to better include anatomical education in the occupational therapy curriculum to establish a strong foundation and preparedness to work within the field of hand therapy. Knowledge of anatomy allows therapists to understand the variations of functional performance due to age, illness, and anatomical deficits while implementing techniques of orthopedic rehabilitation. This way occupational therapists can tailor their interventions to the needs of the client. In addition, knowledge of anatomy allows for therapists to effectively communicate with physicians and related rehabilitation members, as well as interpret medical or operative reports, and rationally evaluate, treat, and educate clients safely.

Orthosis Fabrication

Occupational therapist must apply knowledge of anatomy and physiology, as well as biomechanics, and the understanding of the many characteristics of thermoplastic materials to create an orthosis that is appropriate and meets the therapeutic needs of the client (Schofield & Schwartz, 2020). Occupational therapists have the power to mix art, science, and occupation when working with orthoses. ACOTE (2018) states that faculty in OT programs must demonstrate to their students how to "assess the need for orthotics, and design, fabricate, apply, fit, and train in orthoses and devices used to enhance occupational performance and participation" (ACOTE, 2018, p. 30). Schofield and Schwartz (2018) surveyed OT programs

about their coverage of splinting within their curriculum. Some program directors reported they plan on combining orthotics content with other coursework or reducing the time spent making orthoses in the classroom while others planned on providing a whole new separate splinting course within their programs. This finding demonstrates great variability in course structure and content in current OT programs with regards to teaching orthotic content knowledge and fabrication content.

In addition, there is the challenge of having appropriate faculty with the adequate combination of intensive splinting training, clinical knowledge base, and skill of teaching students within OT programs. The inability to hire qualified faculty makes it increasingly difficult to provide orthotic courses that meet needs across all OT programs in the nation. Student learning outcomes may be impacted by a lack of faculty members who possess the necessary training and skills. In addition, the materials and time required for the development of these essential skills is costly (Schofield & Schwartz, 2018). Therefore, the need to include and improve orthosis fabrication courses in occupational therapy programs is evident within the current literature.

Wound Care

Wound care is within an OT's scope of practice as it intercepts all aspects of occupation in clients within hand therapy. In line with the American Occupational Therapy Association's (AOTA)'s position paper regarding wound management, engagement in activities that are meaningful are integral to living a full life (AOTA, 2018). Mobility and skin integrity play a part when engaging in occupations. Occupational therapists can use positioning, adaptive equipment, environmental modifications, and lifestyle/risk reduction to improve wound healing, which allow clients to return to participation in meaningful occupations. However, occupational therapy

programs are allotting little attention to wound care within their current curriculum. Keller and Ward (2002) investigated opinions regarding competency of occupational and physical therapists who currently practiced in burn care where wound care is paramount. Therapists reported feeling prepared in basic sciences but only somewhat prepared in wound and burn care practices. Therefore, enhancing content on burn-related treatment interventions in OT programs can prepare OT students to more confidently address conditions requiring wound care in hand therapy clinics.

Tryssenaar and Perkins (2001) interviewed recently graduated therapists regarding their first-year practicing as a clinician. Some therapists stated the following "We don't know enough about equipment and splinting", "I never in my dreams thought that I would be treating wounds" and "…gunshot wounds—we never learned that!" (Tryssenaar & Perkins, 2001, p. 23). These statements emphasize that not only is there a scarcity regarding occupational therapy competence in orthotic fabrication and wound management within current available literature, but there also may not be sufficient education in the OT curriculum on how to address wounds within the hand therapy setting.

Fieldwork Level II Placements in Hand Therapy

Once occupational therapy students complete their didactic coursework, fieldwork education is key to integrating book knowledge with real-work clinical casework. However, there are several barriers found in the literature that have often impeded more practicing hand therapists to take on students and better prepare them to work within this area of practice. Both Evenson et al. (2015) and Jensen and Daniel (2010) discuss that there are many benefits to being a clinical instructor, such as encouraging practitioners to stay current on research, developing reasoning, and supervisory skills. However, practitioners are still hesitant to take on this

important role due to increased workloads, space limitations, and the challenges that come with working with students.

Hanson (2011) found that OT practitioners who supervise Level II OT students indicate those students may not be prepared for fieldwork. Lack of communication skills as well as inability to complete assessments and interventions were reported as student fieldwork issues amongst the 60 occupational therapist participants. Researchers also stated best approaches to educating students for readiness for fieldwork and practice is lacking (Evenson et al., 2015, p. 4). Therefore, more research is needed to better understand and improve learning outcomes with regards to student preparedness, specifically when working in placed in hand therapy internships. Occupational therapy program coursework needs to prepare novice occupational therapists to practice with sufficient content knowledge to confidently treat orthopedic conditions.

Therapists' Preparedness in Hand Therapy

In order to obtain a certified hand therapist (CHT) credential the following is required: become a licensed occupational or physical therapist, obtain 4,000 hours of upper extremity orthopedic experience, and accrue at least three years of experience since licensure date. Once these requirements have been met, one can sit for the CHT exam. Currently, the passing rate for this examination on the first try for 2019 falls between 50-60%, indicating just how challenging obtaining this credential can be (Hand Therapy Certification Commission, 2019). To date, there are only about 7,000 certified hand therapists in the world and the credential is highly valued by hand and upper extremity surgeons when referring their clients for rehabilitative care (Hand Therapy Certification Commission, 2019). The hand therapy exam, established in 1991, assesses knowledge required for clinical intervention in upper extremity rehabilitation as well as the

science and theory behind clinical treatment (Keller et al., 2016). Overall, the majority of CHTs are occupational therapist (85%), with the remaining 15% consisting of physical therapists.

The benefits of obtaining this credential along with salary data when working as a CHT has been captured by the Hand Therapy Certification Commission (HTCC). A recent survey found that not only did "55% reported receiving additional compensation" but that "98% indicated passing the CHT examination and becoming a CHT strengthened their position in the job market" (Hand Therapy Certification Commission, 2019, p. 16).

When beginning work in hand therapy, occupational therapists entering the field of orthopedics often do not feel prepared. Fitzpatrick (2006) found that junior therapists felt overwhelmed by the amount of information that they would need to know or learn to be a competent therapist in hand therapy. A heightened sense of responsibility seemed to be a common perception. Statements such as "I may harm this patient if I don't feel confident or have all the answers" is an example of these concerns (Fitzpatrick, 2006, p. 37). In this study, implementing a 6-month UE rehabilitation rotation once employed encouraged therapists to hone their skills and build a confidence with treating in the upper extremity orthopedic area of practice.

Occupational Therapists in Hand Therapy and Use of Assessments

With regards to orthopedic occupational therapy, there has been a history of tension between heavy use of the biomechanical model and remaining true to the occupational perspective (Burley et al., 2018; Wilding &Whiteford, 2007). The heavy reliance on the biomechanical perspective guides occupational therapists to focus more on remedial body function impairments and less on clients' occupational performance and engagement (Robinson et al., 2016; Wilding &Whiteford, 2007). Researchers have found that there is less emphasis on

activities and participation in therapy when compared to treating body structures and functions in hand therapy practice. Winthrop et al. (2011) found that of the 788 hand therapy articles reviewed, “body functions and structures were addressed in 99%, activities in 41%, participation in 37%, personal factors in 31%, and environmental factors in 19%” (Winthrop et al., 2011, p. 84). Therefore, using predominantly body structures and functions as guidelines for the basis of assessment and intervention in hand therapy clinics may not focus occupational therapists on addressing the occupational needs of their clients.

Consistent with the needs assessment findings and current literature, therapists working in the field of orthopedics most often report using the Disabilities of Arm, Shoulder, and Hand (DASH) or Quick DASH as their occupation-based assessment. However, Burley et al. (2018) challenge the strong use of the Disabilities of Arm, Shoulder, and Hand assessment. It is often argued that it does not address the impact of the environment on clients’ performance and engagement. This accentuates a possible misconception that therapists believe they are using occupation-based assessments that may not actually be considered truly occupation-based.

In addition, Stamm et al. (2004) also questions the use of other commonly used occupation-based assessments such as the Canadian Occupational Performance Measure (COPM), the Jebsen-Taylor Hand Function Test, the Moberg Picking Up Test, and the Functional Dexterity Test. Of the assessments examined, all instruments allocated their focus to activities and participation, instead of occupation. Assessments at OT’s disposal may not be the right fit for the orthopedic setting. While there is no consensus as to which occupation-based assessments best fit orthopedic occupational therapy, Grice (2015) does accentuate that therapists may be using these assessments due to being unfamiliar with the other occupation-based assessments such as COPM, FIM, OP, and FOTO. In the needs assessment, this researcher found

that therapists reported they would benefit from education on occupation-based assessments they may not have learned in school. Utilizing truly occupation-based assessment in hand therapy can allow therapists to see a clearer clinical picture of orthopedic clients and lead to better implementation of occupation-based interventions that are meaningful to them.

Occupational Therapists in Hand Therapy and Use of Interventions

Mu et al. (2006) found that occupational therapists made the most practice errors during the intervention phase. These errors included misjudgment, lack of preparation, and lack of experience. Tryssenaar and Perkins (2001) found that new graduates reported a sense of "great expectations" as well as the necessity to overcome their lack of academic education when working in hand therapy. These authors all allude to the same overarching theme that occupational therapy programs may not sufficiently prepare their students for clinical practice, especially treatment interventions. The authors also emphasized that OT program content influenced preparedness for entry level practice (Chipchase et al., 2008).

Occupation-Based Hand Therapy

Occupational therapy within the world of hand therapy has been recognized within the profession since the 1940s. Therapists working in hand therapy provide interventions that assist clients in making adaptations in life and to promote recovery using therapeutic occupations (Che Daud et al., 2016). Occupation based intervention (OBI) uses occupations and purposeful activities as treatment mediums and both have been shown to improve the perceived notion of control, pain, motion, and strength in recent studies (Earley & Shannon, 2006; Che Daud et al., 2016; Hubbuck et al., 2019). However, there is also evidence that therapists often do not employ occupation-based intervention in orthopedic practice. It is common to see purely exercise-based interventions due to the adherent focus on the biomechanical model. Therapists report that

occupation-based care in the hand therapy field requires more effort. Dilemmas such as time, pressure for productivity, documentation, meeting goals, pragmatic concerns, reimbursement, and the environment impact their hand therapy practice (Colaianni, et al., 2015).

In a 2015 study, occupational therapists reported the following when asked whether they felt they were practicing occupation-based hand therapy: “No, I am not truly doing occupation-based therapy. I am not sure how to truly bring it into my hand therapy setting. Most patients find exercises purposeful to be able to improve their function, but I do not believe they necessarily find meaning in these activities as much as they would with the activities they perform at home or work.” (Grice, p. 304). Burley et al. (2018) state that there has been some integration of an occupational perspective into hand therapy literature, but there are still challenges. Inconsistent terminology, lack of an occupational focus, and a bottom-up approach to interventions all contribute to the continued tensions between the biomechanical approach and the occupational perspective.

With regards to occupation, Colaianni and Provident (2010) identified the limitations that occupational therapists face in using occupation-based interventions in the clinical setting. These limitations included limited time due to caseload demands, reliance on treatment protocols, and changes in managed care with a prospective payment system (PPS). These researchers also found that participants believe that occupation-based interventions are beneficial to patients, but do not use it as often as they would like. This points to the current dilemma therapists face in the field of hand therapy of implementing occupation-based interventions in the clinic.

Given these barriers, our profession has the unique opportunity to find a way to “better prepare the next generation of therapists to continue the science and art of hand therapy” (Short, 2018, p. 313). Short et al. (2020), investigated perceptions of occupational therapist educators

with regards to hand therapy content in occupational therapy programs. Many educators stated the desire to include and implement hand therapy in the curricula, as well as the emphasis on occupation. The study also included interviews of two therapists, with these statements accentuating the same overall ideals of other articles that hand therapy has become mostly biomechanical and needs to transition back to being more holistic.

Summary of Current Literature

Preparing OT students for Level II fieldwork placements in hand therapy placements is the responsibility of OT academic programs. Students need in depth knowledge of anatomy and physiology, wound healing, orthotic fabrication, occupation-based assessment, and occupation-based intervention prior to Level II fieldwork placement in an upper extremity rehabilitation setting. There is no consensus as to which hand therapy assessments are truly occupation-based nor is there literature decisively arguing how to enfold occupation-based interventions within hand therapy practice, given described limitations. In the literature does imply a shortcoming in ACOTE standards with regards to orthopedic content in curriculum. There is little research regarding the clinical effects of lack of current hand therapy content in existing OT educational programs.

The literature review underscores the need for a survey of currently practicing OT fieldwork educators working in hand therapy to assess OT student readiness for a Level II placement in UE rehabilitation clinics. Previous research complements the present study on how occupational therapists need further support not just at the institutional graduate level, but also post-professionally when working in the field of hand therapy. The discussed articles, although different in their own way, all speak to the current study in that it emphasizes the suspected knowledge gap within the hand therapy setting, not just in terms of in general clinical

knowledge, but also as it relates to implementing occupation-based intervention. However, there is little relevant evidence as it relates to hand therapy preparedness and occupation-based hand therapy, with the majority of available evidence being not a high level of evidence.

Section 3: Methods

Project Design

The current study was a cross sectional design. Creswell (2014) explained that this method design allows the researcher to analyze data, specifically using descriptive statistics. In doing so, researchers can explore working occupational therapists' beliefs about OT Level II Fieldwork students concerning their preparedness in working in hand therapy. The study specifically asked about occupation-based assessments and interventions, learned in the academic portion of their master's occupational therapy program. The study asked participations to report how much they are completing occupation-based practice as well as to provide examples of occupation-based practice (OBP) treatment and assessments. Using this cross-sectional design provided the researcher with information regarding if participants believed OT Level II fieldwork students were ready and able to evaluate and provide intervention for the orthopedic upper extremity population (Law & MacDermid, 2014).

Instrument Development

The survey instrument in this study (Appendix A) was initially created by a master's level inquiry team of the Committee Chair. The researcher evaluated each question and added to, deleted, or changed questions based on current research. A pilot study was performed to ensure that all questions were consistent with what researchers meant to uncover. The pilot study performed was completed over the EKU Qualtrics platform. With regards to the pilot study, emails were sent to 188 OT/CHTs in a single southern state in the United States, which yielded

19 responses. The survey was modified based upon feedback given by occupational therapists and a statistician. The survey was then sent through to the American Society of Hand Therapists (ASHT) survey team. Modifications were then again made to the survey based on ASHT reviewer feedback. Results were shared with the research team and subsequently revised and re-submitted to the IRB for re-approval. Upon approval, the survey was then disseminated through their database via email. Participants clicked on a link to access the EKU Qualtrics survey. The questions consisted of 20 Likert-scale responses and five open response prompts. The survey questions were categorized by demographics, perceptions of student preparedness, occupation-based practice, and open-ended questions. The categories consisted of the following:

1. Demographics: These questions obtained information about whether occupational therapists were certified hand therapists (CHT), how many years of experience therapists had working in hand therapy, and how many Level II OT students they had supervised.
2. Perceptions of student preparedness: Survey questions asked whether they believed their Level II OT students were prepared with regards to theoretical framework, occupation-based assessments, interventions, fabrication of static/dynamic orthoses, use of modalities, wound care, and treating complex diagnoses.
3. Occupation-based practice: The current survey investigated how often participants felt they utilized occupation-based interventions.
4. Free response questions: Free response questions provided respondents an opportunity to what type of occupation-based assessments and interventions were used in their clinic. Also, study participants were encouraged to suggest

recommendations to occupational therapy programs for future changes to the orthopedic portion of the curriculum. Questions also asked about what OTs/CHTs believe is most important for preparing to work in hand therapy and what therapists would do differently in their own preparation for working in UE rehabilitation if given the opportunity.

Setting

Participants completed a survey over an online survey platform called EKU Qualtrics. Qualtrics is an online survey tool that allows researchers to build, distribute, and analyze surveys from their online cloud-based software (Qualtrics, 2021). Participant recruitment was accomplished through posting and disbursement of the survey through the American Society of Hand Therapists (ASHT) e-community.

Identification of Participants

Participants included in this study were occupational therapists who may or may not have held the Certified Hand Therapist (CHT) credential. OTs were currently working in the field of hand therapy. Participants had at least one year of hand therapy experience and had supervised at least one Level II student in hand therapy. This study excluded occupational therapy students and physical therapists.

Data Collection

The data analysis and reporting were obtained through the EKU Qualtrics and imported to Microsoft Excel, version 16. Qualtrics processed responses into charts, graphs, and statistical tables for ease of interpretation by the researcher.

Data analysis

The data from the 20 Likert-type scale questions were analyzed through Qualtrics' interpretation tools. Descriptive statistics were reported for demographics and OT fieldwork educators' beliefs about students' preparedness for Level II hand therapy placements. Graphs and charts were made from the quantitative data. Due to lack of time, exploring relationships among variables will be completed in the future by master's students' inquiry team. With regards to the five open-response questions, frequency of words was noted in word cloud diagrams in lieu of content thematic analysis.

Reliability and Validity

The survey instrument was designed based on the current literature related to the topic. The questions were reviewed by the researcher's chair, committee member, and other hand therapists. The researcher's capstone committee served as the panel of experts for face and content validity. The survey is provided as an appendix to allow for duplication of the study.

Ethical Considerations

All participants were informed of the study's purpose and beginning the study served as an agreement of informed consent. During the collection and analysis of data, the researcher only assessed the data on her password protected computer and did not share results outside of the research team.

Overall, the potential risks of a person completing the survey are low, since it is a survey design study that will not provide intervention of any kind to participants. All survey responses stayed on Qualtrics database, were shared only with committee members, and results were only accessed through the researcher's locked and secured computer.

Section 4: Results and Discussion

Quantitative Data

Demographics

Originally 210 respondents participated in the survey, with 164 occupational therapists completing the survey. Of the 164 participants, 78% (N= 128) report they are full time therapists with 22% (N= 36) working part time. Respondents report 87% (N= 143) held the OT/CHT credential, with 22% (N= 36) of respondents having 1-10 years of experience, 24% (N= 40) with 11-20 years of experience, and 30% (N= 49) with 21-30 years of experience. Seventy-eight percent (N=128) of therapists report more than 10 years of experience as an OT, with 22% (N= 36) having between 1-10 years of experience (Figure 6). Additionally, 46% (N= 75) of respondents currently obtained their master's degree, 39% (N= 65) reported they have their bachelor's degree, and 14% (N= 24) report obtaining their doctorate in occupational therapy (Figure 7). Of the 164 participants, 43% (N= 72) report having supervised 6 or more OT Level II fieldwork students, 29% (N= 48) had 3-5 OT Level II students, and 27% (N= 44) report having 1-2 OT Level II students (Table 1).

Figure 6:Participants Years of Experience

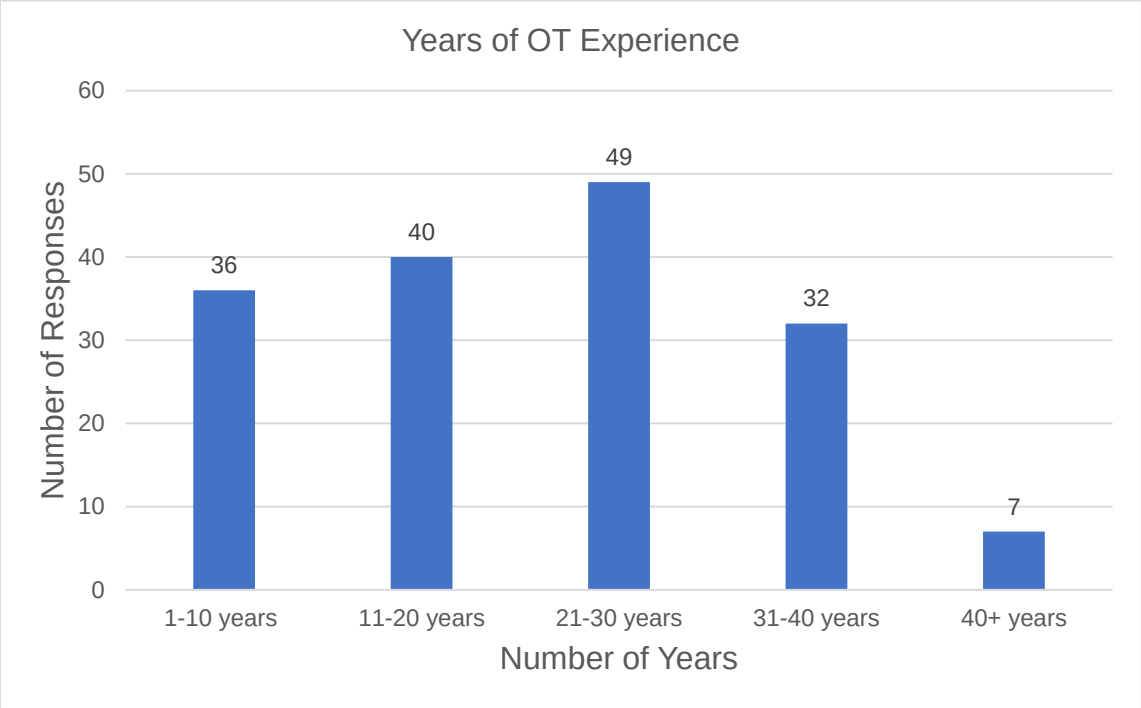


Figure 7: Participants Degree Held

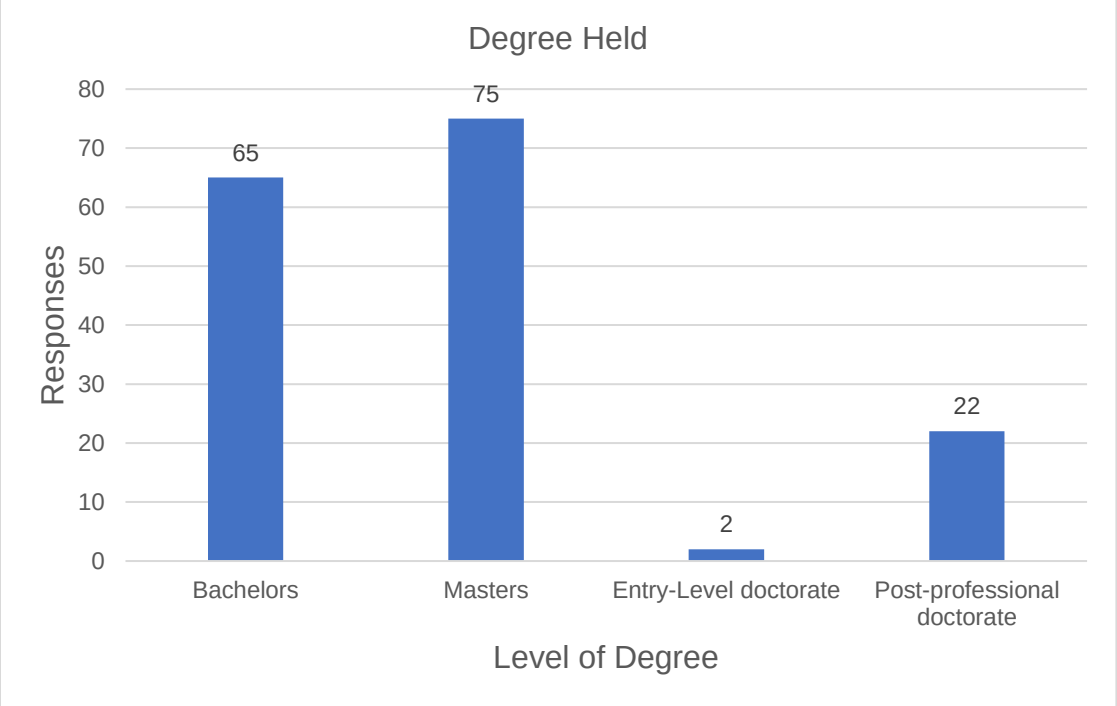


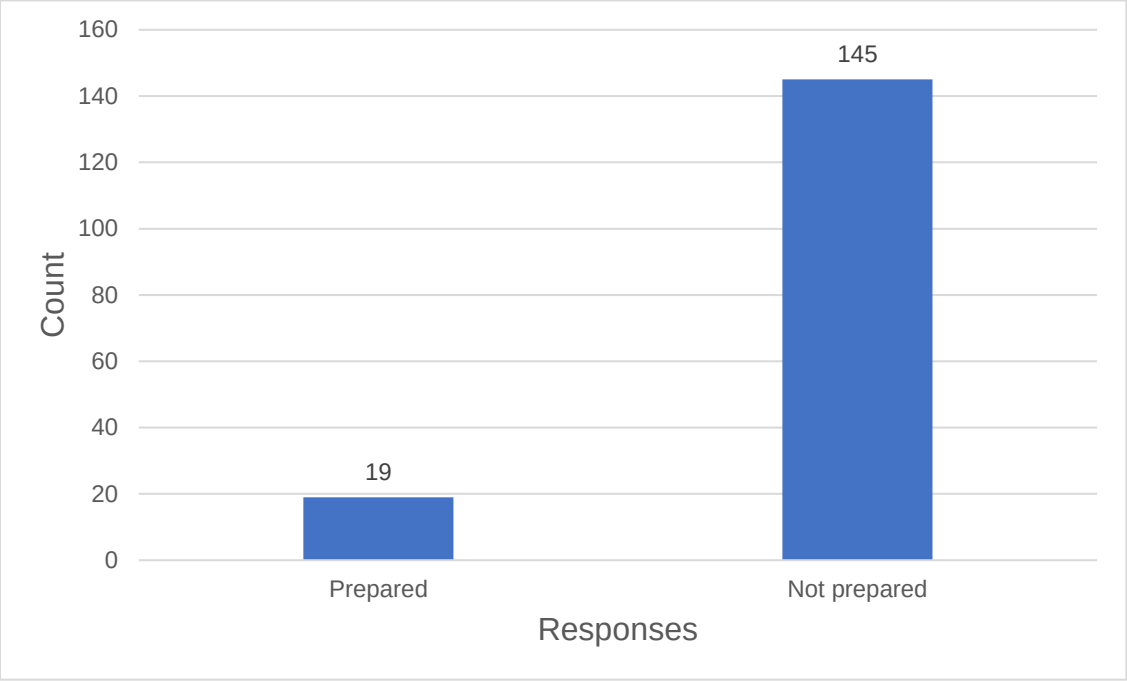
Table 1: Participants Number of OT Level II Fieldwork Students Supervised

Number of Students Supervised	Percent	N
1-2 OT Level II Fieldwork students	26.83%	44
3-5 OT Level II Fieldwork students	29.27%	48
6+ OT Level II Fieldwork students	43.90%	72
Total	100%	164

Beliefs Regarding Student Preparedness

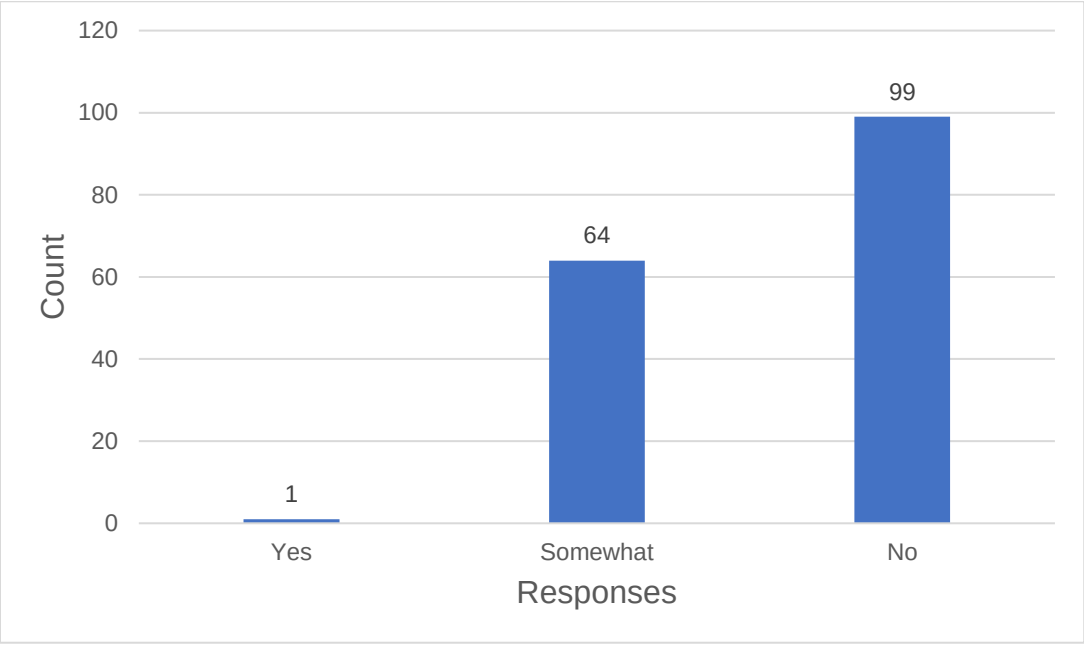
Responses “not prepared” and “somewhat prepared” were grouped together as “not prepared” and “prepared” and “very prepared” were grouped together as “prepared" in the following figures (Figures 8, 10, and 11). 88% (N= 145) of occupational therapists reported that OT Level II fieldwork students are not prepared, with 12% (N= 19) reported students being prepared to begin a fieldwork in hand therapy (Figure 8).

Figure 8: Are OT Students Prepared for Level II Hand Therapy Fieldwork Placements?



Sixty percent (N= 99) reported they believe current occupational therapy program curricula is not sufficently preparing OT Level II students for beginning fieldwork in hand therapy, 39% (N 64) report they are somewhat sufficently prepared, and 0.6% (N= 1) report students are prepared (Figure 9).

Figure 9: Are Current OT Programs Preparing OT Level II Students Sufficiently for Hand Therapy?



Responses "not competent" and "somewhat competent" were grouped together as "not competent" and "competent" and "very competent" were grouped together as "competent" in Table 2. 62% (N= 101) of respondents report that students are not competent with frames of references of hand therapy other than the biomechnial frame of reference, 35% (N= 58) report competent, and 3% (N= 5) report this question was not applicable to them. 82% (N= 136) of therapists report no competency with anatomy and physiology content knowledge, 16% (N= 26) reported competence, and 1% (N= 2) reported this question did not apply to them.

86% (N= 141) of participants report they believe students are not competent with biomechanical assessments, with 14% (N= 23) reported students competent. With regards to biomechanical interventions in hand therapy, 90% (N= 147) report not competent, 10% (N= 16) report competent, and 0.6% (N= 1) report this question did not apply to them.

88% (N= 144) respondents report students are not competent with superficial physical agent modalities, with 7% (N= 12) reported competent and 5% (N= 8) report this question did

not apply to them. With regards to preparedness with deep physical agent modalities, 90% (N= 147) reported not competent, 7% (N= 11) reported this question did not apply to them, and 4% (N= 6) report competent. 98% (N= 162) of participants report students are not competent with treating complex diagnoses such as flexor/extensor tendon repairs, amputations, and/or bony related issues, with 1% (N= 2) report this question did not apply to them.

Table 1: OT FW Educators Beliefs Regarding OT Student Preparation

Content Topic	Competent		Not Competent		Not Applicable	
	n	%	n	%	n	%
Frame of References and Theories Besides Biomechanics	58	35	101	62	5	3
Biomechanical Assessments	23	14	141	86	0	0
Biomechanical UE Interventions	16	9	147	90	1	1
Anatomy and Physiology Content Knowledge	26	16	136	83	2	1
Superficial PAMs	12	7	144	88	8	5
Deep PAMs	6	4	147	90	11	6
Treating Complex Diagnoses	0	0	162	99	2	1

With regards to treatment interventions commonly used in the field of hand therapy, 93% (N= 153) of occupational therapists' report students are not prepared to fabricate static orthoses

for the upper extremity, with 7% (N= 11) reported prepared (Figure 10). 100% (N= 164) reported no preparedness to make dynamic orthoses (Figure 11).

Figure 10: Are Level II OT Students Prepared to Make Static Orthoses?

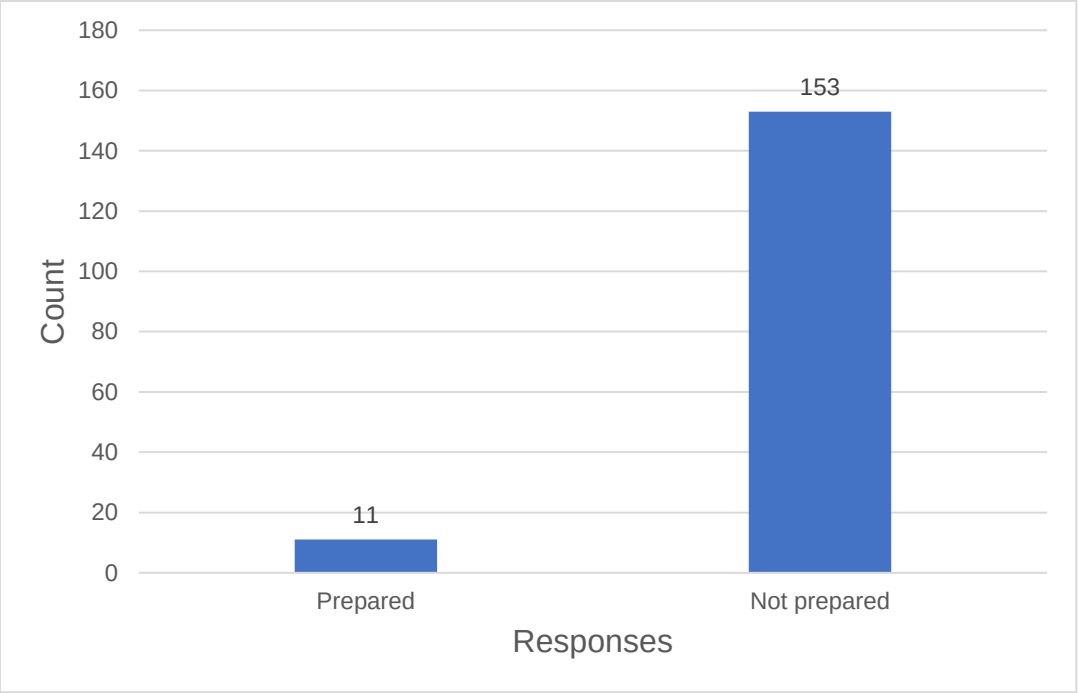
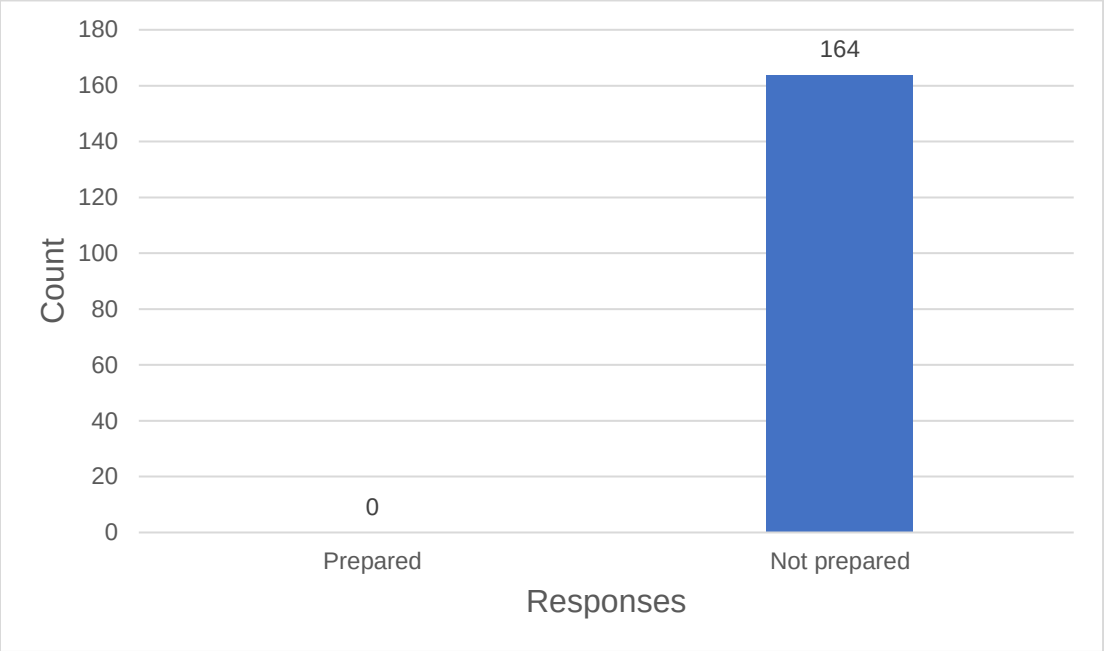


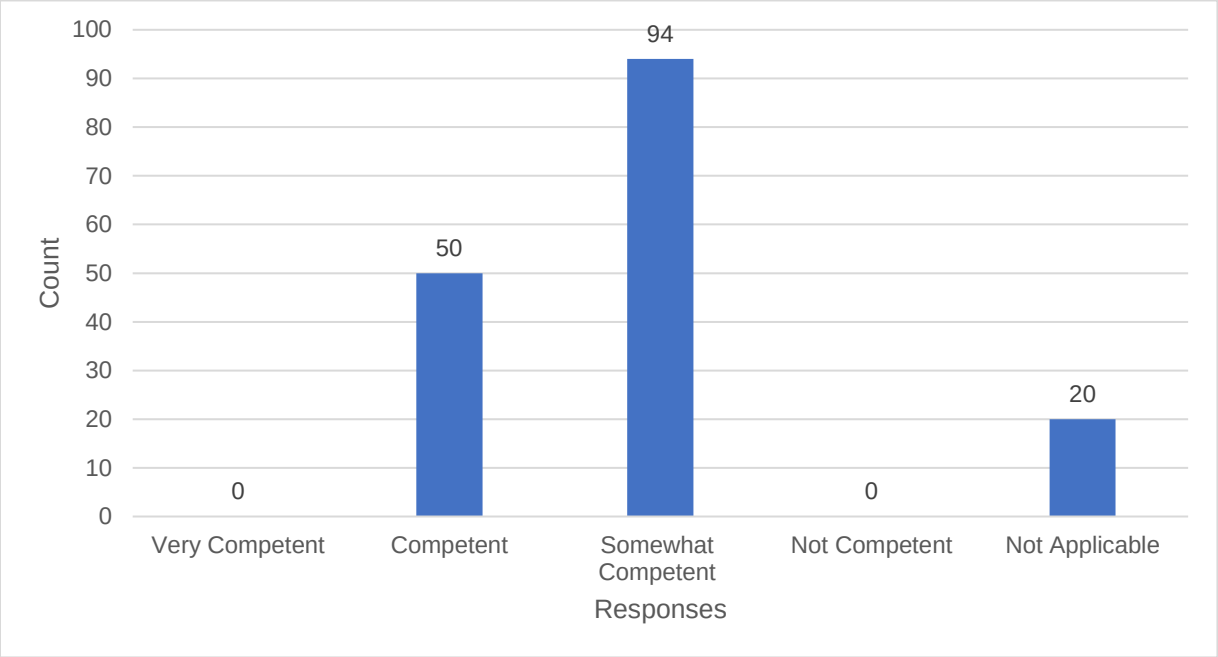
Figure 11: Are Level II OT Students Prepared to Make Dynamic Orthoses?



Occupation-based Practice

With regards to occupation-based practice, 0% (N= 0) of therapists report students are neither very competent or not competent. Thirty percent (N=50) of therapists report that students are competent with utilizing occupation-based assessments. In addition, 57% (N= 94) reported students are somewhat competent, and 12% (N= 20) stating this question did not apply to them (Figure 12).

Figure 12:Are Level II OT Students Competent with Utilizing Occupation-based Assessments?



Open Responses

Occupation-based Assessments

OT fieldwork educators in the UE orthopedic setting were asked to list occupation-based assessments. Word clouds depict what words respondents reported most frequently, with larger type signifying more frequent use. Many participants report using the DASH or Quick DASH, ergonomics, work assessments, fine motor and gross related to ADL, functional-based outcome questionnaires and occupational profile history, Moberg Pick up test, two-point discrimination, and nine-hole peg tests (Figure 13).

Figure 13: Participants List of Occupation-based Assessments

Occupation-based Interventions

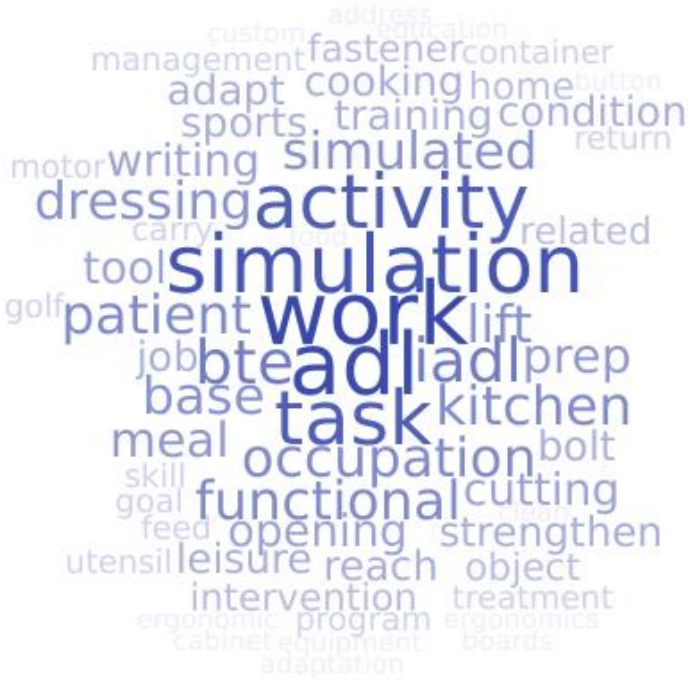
Study participants commonly described occupation-based treatment interventions as work and ADL simulations using weights or resisted bands, education on ergonomics, sleep positioning, use of adaptive equipment, and joint protection (Figure 14). Participants in the current study made statements such as “no one has time for those things [occupation-based intervention] these days and they are not reimbursed”, “hand therapy requires far more than occupation-based treatments”, and “it’s somewhat difficult in our outpatient facility”.

Another participant stated:

> “We use more occupation focused interventions in the clinic but just like their home exercise program they have occupation-based things that they do in their home or work environment. I don’t have to actually see them doing all of these things in front of me, but I can still consider them an intervention because we address problems negotiate

solutions and adaptations and then they put them to place in their real environment. It's important to consider these occupation-based interventions because they truly are guided and an important part of the rehab."

Figure 14: Participants List of Occupation-based Interventions



Improving Student Preparedness

Participants recommended improving occupational therapy programs with the addition of more anatomy and cadaver courses, splinting practice, occupation-based assessment implementation, and overall better preparedness with biomechanics, range of motion, strength, and treatment protocols (Figure 15). Less commonly cited recommendations were completing case studies/clinical scenarios, subscribing to the *Journal of Hand Therapy*, and an elective course for OT students interested in hand therapy.

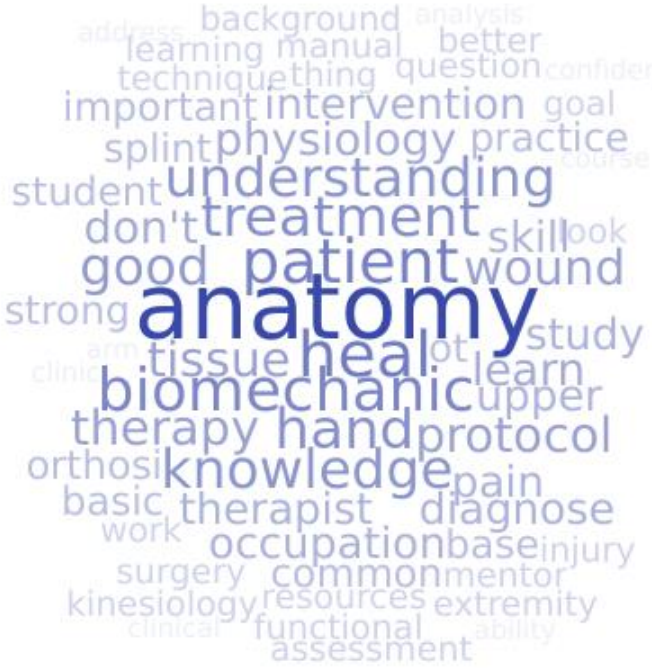
Figure 15: Participants Recommendations to Improve OT Programs

When asked what therapists believe they would do differently if they had the opportunity, many survey participants report they would not change anything, however others report hoping for internships with hand surgeons, more hand therapy fieldwork preparation, and fellowship or mentorship opportunities (Figure 16). Other answers included studying sooner, attending ASHT conferences, and observing surgeries.

Figure 16: Participants Responses to What They Would Do Differently

When asked what the most important topics to learn when preparing to work in hand therapy, many therapist participants reported anatomy and physiology, splinting, wound care, and treatment protocols (Figure 17). Other responses were flexibility/personalization of treatment interventions, knowledge of tissue healing, and networking with other therapists.

Figure 17:Participants List of Most Important Topics to Learn in Hand Therapy



Discussion

The majority of practicing occupational therapists surveyed for this capstone project report that OT Level II fieldwork students are generally not prepared or competent to begin a clinical internship in hand therapy. Therapists reported lack of competency with basic orthopedic content knowledge, such as anatomy and physiology, orthotic fabrication, wound care, and occupation-based practice, for work in UE rehabilitation clinics. In addition, respondents reported little preparedness with frames of references or theories, assessments, and interventions related to both biomechanical and occupation-based practice.

This study found that 60% of occupational therapists currently working in the field of hand therapy believe current occupational therapy program curricula are not preparing OT Level II Fieldwork students sufficiently for beginning practice in hand therapy. Researcher's results are thus congruent with previous research that has found significant program content discrepancies with anatomy and physiology knowledge (Carroll & Lawson, 2014; Schofield, 2018), orthotic education (Schofield & Schwartz, 2018), and wound care (Keller & Ward, 2002).

Anatomy and Physiology

In this study, 82% of participants believed their OT students are not competent with anatomy and physiology in preparation for beginning an upper extremity orthopedics Level II fieldwork placement. This finding complements Carroll and Lawson's (2014) which states that there is a need for more evidence to determine "minimal anatomical competencies" for students who have Level II fieldwork placements in hand therapy (Carroll & Lawson, 2014, p.499). In addition, occupational and hand therapist participants reported they recommended the inclusion of UE anatomy into occupational therapy programs, and also that it is a priority in preparation for working in hand therapy.

The inclusion of anatomy and physiology into occupational therapy is a critical part in establishing a strong foundation and preparedness for working in hand therapy. It is a necessary and basic means of understanding the many diagnoses seen in the clinic (Carroll & Lawson, 2014). Schofield (2018) found that while overall participants reported adequate anatomic knowledge for competent practice, respondents with less than two years of experience reported they did not possess adequate anatomic knowledge for competent practice. Most experienced occupational and hand therapists have developed their depth of anatomical knowledge while in practice and may expect higher standards for newer therapists and Level II fieldwork students.

Orthosis Fabrication

All 164 respondents (100%) reported OT Level II fieldwork students were not prepared to fabricate dynamic orthoses, and 93% of respondents report inadequate preparedness for static orthoses. In addition, the majority of therapist participants recommend splinting courses be implemented inn OT programs. Respondents state that splinting education is vitally important when preparing for working in hand therapy. Schofield and Schwartz (2018) found great variability in course content in current OT programs in orthotics preparation. The findings in this study strongly question whether occupational therapy programs are meeting the ACOTE (2018) standard that students be able to demonstrate how to design, fabricate, and assess orthoses.

Wound Care

The current study found 97% stated OT Level II students are not prepared to address wounds. AOTA (2018) states that occupational therapists have a unique role in managing wounds. The wound healing process can predetermine a client's level of occupational performance and OT's can create an intervention plan accordingly. In contrast to AOTA's (2018) statement paper, Keller and Ward (2002), which included both physical and occupational therapists, found practitioners somewhat prepared in wound and burn care practices. In the capstone study, findings note there may not be sufficient curricular education on how to address wounds within hand therapy practice. More research studies are needed to determine what wound care education OT students currently receive in their academic preparation and if that is sufficient for hand therapy students and novice practitioners.

Occupation-based Practice

OT and hand therapists are also reporting that Level II OT students are not prepared nor competent in the core fundamentals of hand therapy rehabilitation. OT's believe students are not

able to utilize biomechanical or occupation-based assessments or interventions appropriately. These findings are concerning as previous research has shown the importance of understanding the biomechanical concepts while addressing functional use of the upper extremity in occupation. Grice (2015) aptly stated that the hand therapy setting needs to return to more "holistic, client-centered approaches that supplement the strong manual skills of more biomechanical approaches" (Grice, 2015, p. 301). Short et al. (2020) recommends the use of occupation in occupational therapy programs to better bridge occupation-based practice within hand therapy. Findings of the current study calls into question whether students can clinically bridge the occupational perspective and the biomechanical frame of reference when in a hand therapy Level II fieldwork placement.

This study was unable to determine whether occupational therapy programs are not training students in an occupation-based practice approach or if the known barriers of hand therapy practice (time, reimbursement, and caseload demands) are placing students at a disadvantage in use of OBP assessments and OBP treatment interventions. 65% of the OT practitioners in this study did report utilizing occupation-based intervention with clients 40-59% of the time. The OT study participants also noted they used the Quick DASH, ergonomics assessments, outcome questionnaires, and occupational profile history as their occupation-based assessments. Literature has questioned whether the DASH or Quick DASH should, in fact, be considered an occupation-based assessment. Burley et al. (2018) argues that it does not address the impact of the environment on clients' performance and occupational engagement. This study accentuates previous research of the possible misconception that therapists working in hand therapy may believe they are using OBP assessments that may not actually be occupation-based. However, in congruence with Grice's (2015) conclusions, this study finds more research is

needed to reach a consensus as to which occupation-based assessments best fit in working with upper extremity orthopedic clients in occupational therapy.

With regards to occupation-based intervention, the current study found that therapists reported a reliance on ADL simulations, using weights, and resisted bands in the hand clinic. Also, clients were educated on ergonomics, sleep positioning, use of adaptive equipment, and joint protection as part of OBP treatment interventions. Previous research found a predominant use of purely exercise-based interventions due to the adherent focus towards the biomechanical model. Colaianni et al. (2015) found that occupation-based care in the hand therapy field requires more effort. Pragmatic dilemmas such as time, pressure for productivity, documentation, meeting goals, pragmatic concerns, reimbursement, and the environment impact their practice and use of OBI. The current study's findings have moderate congruence with previous research in that while many therapists use simulations in the workplace, and study participants also reported many barriers with using OB interventions in the hand therapy setting.

Limitations

The barriers to investigating this topic include the decreased generalizability due to small sample size, population bias, and the low comparative existing research, which can make it difficult to ascertain the strength of current evidence. The lack of current relevant evidence highlights the concern about student preparedness in assessing and treating clients with upper extremity orthopedic conditions. Finally, the use of a non-standardized survey is an identified limitation of this study.

Implications for Practice

This study can inform academic educators about perceived limitations in current OT program course offerings when preparing OT students for hand therapy Level II fieldwork

placements. The beliefs currently practicing occupational and hand therapists have can encourage upper extremity rehabilitation practitioners to be more open to mentorships for students and novice practitioners. Joint efforts can be made by practitioners and academic educators to participate in educational platforms and journal clubs to further identify what students need to do to be prepared for Level II fieldwork hand therapy placements.

Future Research

This capstone reported information on basic descriptive statistics regarding demographics and OT practitioners' beliefs regarding students' preparedness for OT Level II fieldwork hand therapy placements. Further work could explore the relationship among variables using correlational statistical techniques. The current study also collected qualitative data using open-responses questions to obtain current therapists' perceptions regarding improving OT programs, important content topics recommended for inclusion in OT programs, and advice from experienced practitioners. However, further analysis of these responses could uncover deeper patterns of beliefs that were not analyzed in this study due to time limitations. More research is needed on what is considered adequate content inclusion within occupational therapy programs to improve the veracity of occupational therapy programs in preparing OT Level II students for fieldwork in hand therapy clinics and upper extremity rehabilitation.

Conclusion

The researcher's capstone reports a pattern of beliefs amongst current practicing occupational therapists and hand therapists who supervise Level II fieldwork OT students. These beliefs delineate that fieldwork educators in hand therapy clinics find OT students unprepared in the areas of anatomy and physiology, orthotic fabrication, wound care, use of modalities, and treating complex diagnoses. In addition, OT students need more academic preparation for both

biomechanical and occupation-based practice, including frame of reference, assessments, and treatment interventions in the upper extremity rehabilitation setting. The current study's evidence shows there needs to be more academic preparation in occupational therapy programs to ensure OT students are ready to meet OT and hand therapy practitioners' expectations for a Level II fieldwork placement in UE hand therapy.

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Appendices

Appendix A: Survey

Occupational Therapists' Perceptions of OT Student Preparedness Regarding Hand Therapy and OBP

INTRODUCTION TO STUDY SURVEY: This research survey will examine if occupational therapists think OT students are prepared for a Level II hand therapy placement. My name is Stephanie Ye, and I am a Post-professional doctorate student at Eastern Kentucky University. You are eligible to participate if you meet ALL of the following criteria:

- An occupational therapist who may or may not hold the Certified Hand Therapist (CHT) credential.
- Currently working in the field of hand therapy.
- Have at least one year of hand therapy experience.
- Have been a fieldwork educator to Level II OT students in a hand therapy placement

The survey should take about 10 minutes. Your participation is completely voluntary and your responses to the online survey are anonymous. You may quit the survey at any time.

If you have any questions about this study, please contact the principal investigator, Stephanie Ye by email at stephanie_ye@mymail.eku.edu. <o:p></o:p> If you have any questions about your rights as a research volunteer, you can contact the staff in the Division of Sponsored Programs at Eastern Kentucky University at 859-622-3636. By completing this survey, you are giving consent to participate in this study.

DEMOGRAPHICS

Q1 How many years of experience do you have practicing as an occupational therapist? (Please do not leave any spaces after inputted number)

_____

Q2 Are you a Certified Hand Therapist (CHT)?

- ○ Yes
- ○ No

Q3 If you are a CHT, how long have you held this certification? (Please do not leave any spaces after inputted number)

_____

Q4 What occupational therapy degree do you currently hold?

- ○ Bachelors
- ○ Masters
- ○ Entry-Level doctorate
- ○ Post-professional doctorate

Q5 What is your employment status?

- ○ Full time
- ○ Part time
- ○ Per Diem

PERCEPTIONS OF PREPAREDNESS

Q6 How many OT Level II Fieldwork students have you supervised in the past?

- ○ 1-3 OT Level II Fieldwork students
- ○ 3-5 OT Level II Fieldwork students
- ○ 6+ OT Level II Fieldwork students

Q7 Please rate the following: How prepared do you believe your OT level II Fieldwork students are to begin Level II fieldwork in hand therapy based on their preparation in their occupational therapy academic program?

- ○ Very Prepared
- ○ Prepared
- ○ Somewhat prepared
- ○ Not prepared

Q8 How competent do you believe your OT Level II students are with frames of references, theories, and models of hand therapy other than the biomechanical frame of reference?

- ○ Very competent
- ○ Competent
- ○ Somewhat competent
- ○ Not competent
- ○ Not applicable

Q9 How competent do you believe your OT Level II Fieldwork students are with implementing biomechanical upper extremity assessments when beginning a fieldwork in hand therapy?

- ○ Very competent
- ○ Competent
- ○ Somewhat competent
- ○ Not competent
- ○ Not applicable

Q10 How competent do you believe your OT Level II Fieldwork students are with utilizing occupation-based assessments? (For example, COPM, FIM, OP, FOTO, etc.)

- ○ Very competent
- ○ Competent
- ○ Somewhat competent
- ○ Not competent
- ○ Not applicable

Q11 How competent do you believe your OT Level II Fieldwork students are with implementing biomechanical upper extremity interventions when beginning a fieldwork in hand therapy?

- ○ Very competent
- ○ Competent
- ○ Somewhat competent
- ○ Not competent
- ○ Not applicable

Q12 How competent do you believe your OT Level II Fieldwork students are with anatomy and physiology when working in upper extremity orthopedics?

- ○ Very competent
- ○ Competent

- ○ Somewhat competent
- ○ Not competent
- ○ Not applicable

Q13 How prepared do you feel your Level II OT students are with making any kind of STATIC orthoses for the upper extremity? (i.e. wrist and hand orthosis, wrist, hand and finger orthosis, thumb orthosis, etc.)

- ○ Very prepared
- ○ Prepared
- ○ Somewhat prepared
- ○ Not prepared

Q14 How prepared do you feel your OT level II Fieldwork students are with making any kind of DYNAMIC orthoses for the upper extremity?

- ○ Very prepared
- ○ Prepared
- ○ Somewhat prepared
- ○ Not prepared

Q15 How competent do you believe your OT Level II Fieldwork students are with using superficial physical agent modalities when working in upper extremity orthopedics?

- ○ Very competent
- ○ Competent
- ○ Somewhat competent
- ○ Not competent
- ○ Not applicable

Q16 How competent do you believe your OT level II Fieldwork students are with wound care when working in upper extremity orthopedics?

- ○ Very competent
- ○ Competent
- ○ Somewhat competent
- ○ Not competent
- ○ Not applicable

Q17 How competent do you believe your OT Level II Fieldwork students are with using deep physical agent modalities when working in upper extremity orthopedics?

- ○ Very competent
- ○ Competent
- ○ Somewhat competent
- ○ Not competent
- ○ Not applicable

Q18 How competent do you believe your OT Level II Fieldwork students are with treating complex diagnoses such as flexor/extensor tendon tears/repairs, amputations, and/or bony related issues?

- ○ Very competent
- ○ Competent
- ○ Somewhat competent
- ○ Not competent
- ○ Not applicable

Q19 In your opinion, are current occupational therapy program curricula preparing OT Level II Fieldwork students sufficient for beginning practice in hand therapy?

- ○ Yes
- ○ Somewhat
- ○ No

OCCUPATION-BASED PRACTICE

Q20 What would be the closest estimate percentage that you (not your students) utilize occupation-based interventions with your clients?

- ○ 0-10%
- ○ 11-39%
- ○ 40-59%
- ○ 60-88%
- ○ 89-100%

OPEN-ENDED QUESTIONS

Q21 Please list occupation-based assessments you use in your clinic.

_____

_____

Q22 Please list occupation-based treatment interventions you use in your clinic.

_____

Q23 What recommendations would you offer to occupational therapy programs to improve OT students' knowledge preparing to work in the hand therapy field?

_____

_____

Q24 If you could go back and do one thing differently related to becoming a hand therapist it would be?

_____

_____

Q25 In your professional opinion, the most important thing to learn to prepare for working in hand therapy is:

_____

_____