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The Lived Experience Of New Physical Therapy Graduates Working In The Early Intervention Setting: Perceptions Of Preparation

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THE LIVED EXPERIENCE OF NEW PHYSICAL THERAPY GRADUATES WORKING IN THE EARLY INTERVENTION SETTING: PERCEPTIONS OF PREPARATION

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ABSTRACT

Understanding the experiences of new physical therapists transitioning to the early intervention workforce will provide a richer exploration of the preparation of physical therapists, which can guide educators to ensure adequate preparation. Since passage of the Individuals with Disabilities Education Act (IDEA) in 1994, an increasing number of children qualify for service creating a growing need for physical therapists to provide service in the early intervention program. In this qualitative, interpretive phenomenological analysis, the researcher explored the lived experience of new physical therapy graduates. The preparation and adequacy of entry-level physical therapist education to work in the early intervention setting following graduation using a Discrepancy Evaluation Model was studied. A thorough review of the literature found significant variability in pediatric content taught in entry-level Doctor of Physical Therapist (DPT) programs. Additionally, limited research exists related to the lived experience of physical therapists working in the early intervention setting, specifically new graduates embarking on a career in this setting. The study was guided by the research question of how recent physical therapy graduates with less than two years of practice describe their lived experience of transitioning from a student to a therapist working in early intervention. The researcher used semi-structured, individual interviews with eight physical therapists working in the early intervention setting that graduated within 24 months. Findings suggest that, despite gaps in the participants' preparation to work in the early intervention setting and numerous job challenges, therapists chose to enter and remain in this specific practice setting because they find purpose

and validation in their relationships with children and families. The most meaningful pre-professional preparation strategy was full-time pediatric clinical education experiences. Mentorship and post-professional continuing education were necessary during the transition into the early intervention workforce. Recommendations for future research include exploring the unique provider-patient relationships in early intervention, the impact of mentorship in this setting, cross-disciplinary competencies necessary for comprehensive personnel development in the DPT curriculum, and exemplar pedagogy.

Keywords: Early Intervention, Physical Therapist Education, Clinical Education, Mentorship, Parent-Provider Relationships

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CHAPTER 1: INTRODUCTION

The process of transitioning from a college student to a Doctor of Physical Therapy (DPT) in the workforce is a monumental achievement for the 10,545 students who graduate each year (Commission on Accreditation in Physical Therapy Education, 2019a). The unlimited combination of practice settings, conditions treated, and various patient populations that require skilled service has contributed to a healthy job outlook for physical therapists (Bureau of Labor Statistics, U.S. Department of Labor, 2020). Physical therapist education programs prepare students to enter the workforce with a framework of a generalist practitioner. Education programs average 123 weeks in length and cover a breadth of knowledge to manage the care of patients and clients in all practice settings across the lifespan (Commission on Accreditation in Physical Therapy Education, 2019a). This broad base of professional education is to ensure safe practice; however, insufficient time in the curriculum to may be devoted to the increasing complexity of patients and expectations for clinical decision making in specific practice settings.

The first year of employment is a challenging time for novice therapists as they experience the angst and realities of practice before developing adaptive strategies to transfer knowledge to clinical practice (Jones et al., 2010; Tryssenaar & Perkins, 2001). Many students do not feel competent or prepared for employment in all practice settings (Jones et al., 2010). The complexity of health care professions and expectations from stakeholders that physical therapists have specialized knowledge has resulted in the call to investigate excellence in physical therapy education to meet the needs of society (Jensen, Hack, et al., 2017; Jensen, Nordstrom, et al., 2017).

Each physical therapy program has the autonomy to develop a unique educational curriculum aligned with the mission and resources of their institution and with the Commission

on Accreditation in Physical Therapy Education's (CAPTE) required standards and elements (Harris, 2018). This variety in educational models results in great diversity across physical therapy education programs (Jensen, Hack et al., 2017). Significant variability in pediatric physical therapy education has been well documented, including limited content about early intervention competencies and complex pediatric conditions (Anderson et al., 2019; Campbell et al., 2009; Kenyon et al., 2017; Schreiber et al., 2011). Students are prepared to pass the National Physical Therapist Examination and secure employment but lack the nuanced knowledge and skills to work in the early intervention setting (Commission on Accreditation in Physical Therapy Education, 2019a; Rapport et al., 2014). A lack of alignment between entry-level education standards and early intervention competencies that reflect the complexity of clinical practice has created a gap in the knowledge and skills necessary to provide services under the Individuals with Disabilities Education Act (IDEA), Part C (Campbell et al., 2009; Weaver et al., 2018).

Bruder and Dunst (2005) called attention to physical therapists reporting the lowest levels of confidence in unique areas of early intervention practice, mandated by the Individuals with Disabilities Education Act (IDEA), in comparison to other related service providers. These specific areas include providing service in the natural environment, the use of a family-centered care framework, and the development of an individualized family service plan (Bruder & Dunst, 2005). Employers and family members of pediatric patients expect that physical therapy programs are preparing graduates that are ready to enter the complex and rapidly-changing workforce (Barradell, 2017; Effgen & Chiarello, 2001). An understanding of preparation to work in the early intervention setting is vital in light of a combination of more children are being diagnosed with a disability than providers available to provide service (Sopko, 2010; Vail et al.,

2018; Zablotsky, 2017). The decade-long problem of pediatric provider shortages has yet to be resolved (Council of Exceptional Children, 2019; IDEA Infant & Toddler Coordinators Association, 2018).

Statement of the Problem

A discrepancy exists between entry-level physical therapy education standards and the complexity of clinical practice in the early intervention setting. This poor alignment results in physical therapy graduates being prepared to take the National Physical Therapy Exam, but lacking the specialized knowledge and skill to work in this unique setting (Rapport et al., 2014). Physical therapists are trained to become generalists to work in any practice setting and with patients across the lifespan after graduation. It is unrealistic to expect adequately-prepared clinicians to treat any condition with less than three years of formal education (Commission on Accreditation in Physical Therapy Education, 2019a; Rapport et al., 2014).

Several recent studies highlighted the need for evidence-based educational practices to improve the quality and consistency of didactic pediatric physical therapy education (Anderson et al., 2019; Kenyon et al., 2017; Moerchen et al., 2020). Researchers have given little attention to the experience of a physical therapist transitioning to the workforce despite the increasing complexity of clinical practice and minimal changes to the entry-level curriculum. To date, the perspective of the new physical therapist employed in the early intervention setting after graduation is absent from the literature. This perspective is essential to understand the adequacy of the preparation of entry-level education to work in in this unique setting. Educators and policymakers who understand therapists' lived experiences are in the best position to design and implement educational strategies and curriculum to help students transition into the workforce with confidence. Equally important, understanding the therapist's perspective is critical to

address the problem of a preparation-practice gap and address the shortages of physical therapists working in the early intervention setting (Council of Exceptional Children, 2019; IDEA Infant & Toddler Coordinators Association, 2018; Zablotsky, 2017).

Purpose of the Study

The purpose of this Interpretative Phenomenological Analysis (IPA) was to explore the lived experience of newly graduated physical therapists as they transitioned to working in the early intervention setting. Specifically, this study focused on identifying perceptions of preparation utilizing a Discrepancy Evaluation Model. Physical therapists receive variable entry-level pediatric education and the lowest amount of pre-professional training in key areas of early intervention practice compared to other related service providers (Bruder & Dunst, 2005; Kenyon et al., 2017; Schreiber et al., 2011). The impact of this variability on students that choose to work in the early intervention setting after graduation is unknown. Physical therapy graduates are the best individuals to explore the adequacy of their pre-preprofessional education in preparing them to work with young children and their families after graduation. The impact of potential discrepancies between what is taught in physical therapist education programs and early intervention-specific knowledge and skills will extend the body of knowledge of best-practice in pediatric education and close the preparation-practice gap.

Research Question

It is only within the last two years that researchers have begun to explore the complex concept of physical therapy student readiness for clinical education experiences (Irwin et al., 2018; Timmerberg et al., 2019). A limited number of studies have explored physical therapists' work readiness, and a gap in the literature exists, exploring the experience of physical therapy students transitioning into the pediatric therapy workforce (Jackson, 2019). To better understand

the graduates' experience transitioning to the workforce, this study was guided by the following research question:

> How do recent physical therapy graduates (less than two years of practice) describe their lived experience of transitioning from a student to a therapist working in early intervention?

Conceptual Framework

One of the purposes of education in the United States is to prepare students to be future citizens by teaching the necessary knowledge and skills to prepare students for their chosen career paths (Kim, 2018). The Commission on Accreditation in Physical Therapy Education (CAPTE) provides a pragmatic approach to physical therapist education and establishes a set of minimal quality assurance standards to ensure public safety (Barradell, 2017; Commission on Accreditation in Physical Therapy Education, 2017). Consistent with social efficiency theory, physical therapist education emphasizes knowledge, skills, and behaviors to pass the National Physical Therapy Exam (NPTE) and treat patients across the lifespan in all practice settings (Fallace & Fantozzi, 2013).

Provus' (1969) Discrepancy Evaluation Model (DEM) is a systematic approach to assessing the adequacy of education programs by comparing actual performance against desired standards. The DEM, developed in the 1960s to evaluate the effectiveness of programs receiving federal funds, has been used extensively in the field of education but is absent in the physical therapy literature (Clemmer, 2012; Neuman & Wyatt, 1981; Provus, 1969). Exploring the relationship between the pediatric content in the curriculum and identifiable early intervention standards provides a framework to assess the effectiveness of preparing physical therapy students to work in an early intervention setting after graduation (Buttram & Covert, 1978; Fox, 2011;

Provus, 1969). Identification of discrepancies is particularly crucial in light of considerable variability in the pediatric content and limited clinical education experiences for exposure to working with children and their families (Kenyon et al., 2017; Schreiber et al., 2011). Literature from other health professions may offer additional insight into discrepancies between pre-professional preparation and the demands of clinical practice.

The gap between educational preparation and the demands of clinical practice is well established in the nursing literature. It is a similar profession that educates generalists capable of managing the care of patients across the lifespan in all practice settings (Hickerson, Taylor et al., 2016; McCalla-Graham & De Gagne, 2015). The concept of a preparation-practice gap in physical therapy has been under-researched, and the perspective of a new graduate working in the early intervention setting is absent.

An understanding of the discrepancies between education and practice is vital for academic institutions and employers to minimize deterrents to physical therapists entering practice in the early intervention setting. Physical therapists working in an early intervention setting are the best source to determine the adequacy of their entry-level preparation to meet clinical practice demands. Exploring the lived experience of this specific group of therapists through a qualitative approach provided information to understand the impact of pre-professional educational experiences on workforce readiness.

Assumptions, Limitations, and Scope

This phenomenological study adopted an inductive approach to understand the meaning of the physical therapist educational experience and influence on practice in the early intervention setting. The inclusion criteria of the sample ensured all participants have experienced a similar phenomenon, the experience of graduating from an entry-level Doctor of

Physical Therapy (DPT) program. The study assumed that participants would accurately report their educational and workforce experiences and reflect on their professional careers. Participants were volunteers with a genuine interest in the research who could withdraw from the study at any time. Measures to protect participants included safeguarding confidentiality, increasing the likelihood of honest answers. Exploring the experiences of individuals through an interpretive phenomenological approach provided great detail about the impact of the educational experience to gain new insights (Neubauer et al., 2019; Smith et al., 2009). Participants' pediatric education is varied because CAPTE guidelines allow individual physical therapy programs to develop a unique curriculum as long as they meet minimum standards (Commission on Accreditation in Physical Therapy Education, 2017; Schreiber et al., 2011). This study may offer insight into the therapists that chose not to work in the early intervention settings by studying the discrepancy between entry-level education and early intervention practice.

A limitation of this qualitative study was the exploration of the experience of a small number of physical therapists working in a specific practice setting. The exact number of physical therapists working in early intervention is unknown. Purposeful sampling was used to identify eight to 10 participants. This small number of participants is suggested for an Interpretive Phenomenological Approach to explore the lived experience in great depth (Althubaiti, 2016; Smith et al., 2009). Results are not be generalizable to all graduates or across settings, but may allow for a deep exploration of the impact of the physical therapists' education.

An additional limitation was the influence of bias. The possibility existed that some participants may be former students of the researcher and could engage in biased-self reporting. Participant bias was minimized by validity testing through a pilot test of interview questions. Additionally, recall bias may be present but was limited by narrowing the recall period to two

years or less from graduation. Finally, the relationship of the researcher as both an educator and former mentor to new graduates working in early intervention holds the potential for researcher bias regarding the participant's description of the phenomenon. A rigorous research methodology and specific procedures for collecting and analyzing data in combination with bracketing was used to set aside personal experience and opinions (Smith et al., 2009).

The scope of this study includes recruiting physical therapists providing early intervention service within two years of graduation from any CAPTE accredited program in the United States. This includes both traditional in-person and hybrid physical therapist education programs. Variability in entry-level pediatric physical therapy education is a national problem (Kenyon et al., 2017; Moerchen et al., 2020; Schreiber et al., 2011). Participants taught by the researcher may be included in the study and have additional bias. Exploring the preparation-practice gap in one practice setting, early intervention, allows the researcher to offer recommendations on how to prepare physical therapists of the future to work with children and their families.

Rationale and Significance

This research was timely because of the shortage of physical therapists working in the early intervention setting and the growing number of children diagnosed with a developmental disability. A physical therapist's pre-professional education covers a breadth of information across the lifespan to ensure graduates have the knowledge, skills, and attitudes to render safe, autonomous, evidence-based judgments concerning patient/client care. Still, it fails to address the depth of knowledge in any one practice setting or clinical exposure to a specific patient population (American Physical Therapy Association, 2018). The combination of a lack of alignment among early intervention-specific competencies and the Commission on Accreditation

in Physical Therapy Education (CAPTE) standards has resulted in considerable variability of the in the specific early intervention content taught in physical therapy programs (Bruder & Dunst, 2005; Schreiber et al., 2011). Physical therapy students receive the lowest amount of training in early intervention of all related service providers, and less than 2.5% of programs require a full-time clinical education experience in this setting (Bruder & Dunst, 2005; Campbell et al., 2009; Kenyon et al., 2017). Graduates lack the specialized knowledge of fundamental principles of early intervention and skills for family-centered practice due to limited didactic preparation and clinical experience (Commission on Accreditation in Physical Therapy Education, 2019a; Field & Moyer, 2013; Weaver et al., 2018).

Momentum is growing to understand excellence in physical therapist education and determine best practices in pediatric education (Anderson et al., 2019; Jensen, Hack et al., 2017; Jensen, Nordstrom et al., 2017). Exploring the subjective perceptions of physical therapists' experiences in entry-level physical therapist's education programs allows educators at the program and national level to consider ways to better prepare students for the workforce they will be entering. This decade-long, unresolved, and widespread problem has placed the onus on therapists and employers to address gaps in knowledge and skills (Catalino et al., 2015). Knowledge gained from this study may also guide the growing effort to change the physical therapist education model from a generalist framework to a staged licensure model with specialty education to prepare a workforce that can treat the increasing complexity of pediatric clients.

Families, employers, and government agencies that pay for early intervention services expect adequately trained physical therapists (Fallace & Fantozzi, 2013). The transition of physical therapy graduates into the early intervention workforce has the potential to discover a preparation-practice gap that impacts workforce readiness. An educated workforce is consistent

with meeting the needs of the patient, their families, and society in a financially responsible manner and reducing the demand for costlier special-education services as children enter the school system (Nabozny, 2018).

Definition of Terms

Commission on Accreditation in Physical Therapy Education (CAPTE): The nationally-recognized body that assures the quality of physical therapy education by acknowledging programs that have met a set of quality standards through accreditation status (The Commission on Accreditation in Physical Therapy Education, 2017; *Who We Are*, 2018).

Clinical Education Experience: Educational experiences in the entry-level physical therapy curriculum that allow students to "apply and attain professional knowledge, skills, and behaviors within a variety of environments" and " include physical therapy services for patients/clients across the lifespan and practice setting" under the direct supervision of a physical therapist (Erickson et al., 2018).

Early Intervention: A program established by Part C of the Individuals with Disability Education Act of 1990 and administered by each state that provides at no cost developmental services for infants and toddlers under three years of age at risk for a disability or with a disability because they are experiencing a developmental delay measured by diagnostic instruments (U.S. Department of Education, 2019). Physical therapy is one type of early intervention service children may need to promote motor development.

Full-Time Clinical Education Experience: A clinical education experience that occurs in the community under the supervision of a licensed physical therapist not employed by the academic institution for a minimum of 35 hours per week to meet the patient care experience requirements for CAPTE accreditation (Erickson et al., 2018).

Integrated Clinical Education Experience: An intentional placement of clinical education experiences aligned with didactic curricular content for exposure and acquisition of knowledge, skills, and behaviors before the final full-time clinical educational experience (Erickson et al., 2018)

Pediatric Physical Therapy: A specific area of physical therapy practice that involves working with children and their families to maximize functional independence and participation in the home, school, and community (Academy of Pediatric Physical Therapy, 2019). Physical therapists working in this setting should have knowledge of human development, engage in age-appropriate patient/client management, provide family-centered care in all interactions, promote child-specific health promotion and safety, as well as understanding of legislation and policy that defines practice under The Individuals with Disabilities Education Act (IDEA) (Rapport et al., 2014).

Physical Therapist: A licensed health care provider that diagnoses and treats movement impairments to reduce pain, restore function, and prevent disability for people of all ages in a variety of settings (American Physical Therapy Association, 2019b).

Related Service Provider: An individual that provides developmental, corrective, or supportive services to help a child with a disability benefit from special education services (U.S. Department of Education, 2017b). A physical therapist is one type of related service provider that evaluates and treats children in the Early Intervention Program.

Conclusion

The purpose of this Interpretative Phenomenological Analysis was to explore the lived experience of newly graduated physical therapists as they transition to working in the early intervention setting. Specifically, this study focused on identifying perceptions of preparation

utilizing a Discrepancy Evaluation Model. There is a gap in the literature about the experience transitioning from a student to a therapist working in the early intervention setting. Most of the research on this topic suggests the insufficiency of the current approach to entry-level physical therapists' preparation to work in the early intervention setting. Although physical therapy students are prepared to pass the NPTE, they lack specialized knowledge and skill to work in the early intervention setting (Commission on Accreditation in Physical Therapy Education, 2019). This is due to the poor alignment of entry-level standards that fail to reflect the complexity of early intervention practice (Catalino et al., 2015; Weaver et al., 2018).

A phenomenological approach to explore the lived experience of new graduates working in the early intervention setting has the potential to identify discrepancies between education and clinical practice. The individuals best positioned to recommend effective means of preparation are those that working the specific practice setting (Jackson, 2019). Through semi-structured interviews with physical therapists working in the early intervention setting with two years or less experience, the adequacy of entry-level preparation was explored with a discrepancy evaluation model (DEM) framework. Findings have the potential to close the preparation-practice gap for this specific group of physical therapists.

Chapter 2 will explore the literature about physical therapist education, early intervention, and the preparation-practice gap that affects workforce readiness. Chapter 3 will present the methodology of this study, which includes a description of the participants, research design, data collection procedures, and data analysis. Chapter 4 will present the research findings. Chapter 5 will discuss a summary of the findings, implications for educational programs, and suggestions for future research.

CHAPTER 2: LITERATURE REVIEW

The purpose of this Interpretative Phenomenological Analysis (IPA) was to explore the lived experience of newly graduated physical therapists as they transition to working in the early intervention setting. Specifically, this study focused on identifying perceptions of preparation utilizing a Discrepancy Evaluation Model (DEM). This critical review explores the perception that physical therapy graduates are well prepared to pass the National Physical Therapist Examination but lack the specialized knowledge and skills for practice in the early intervention setting due to limited didactic and clinical preparation (Commission on Accreditation in Physical Therapy Education, 2019a; Field & Moyer, 2013; Weaver et al., 2018). The purpose of physical therapy education is to provide pre-licensure physical therapy students with the knowledge, skills, and attitudes to render safe, independent, evidence-based judgments concerning patient/client needs (American Physical Therapy Association, 2018). A review of the literature on physical therapy education, early intervention practice, and the preparation-practice gap of health care professionals provides an understanding of the context, history, and rules under which physical therapy students transition to working professionals in the early intervention setting.

Each physical therapy practice setting requires a unique body of knowledge and skills beyond the minimal standards for safe practice, and it is unrealistic to expect a physical therapy graduate to be prepared to practice in any setting immediately after graduation (Rapport et al., 2014). The American Physical Therapy Association (APTA) states that the scope of physical therapist practice "consists of activities for which an individual physical therapist is educated, trained, and is competent to perform" (American Physical Therapy Association, 2017). Chiarello and Effgen (2006) identified nine content areas, including specific competencies, in which

physical therapists should have expertise when working in the early intervention setting with children birth to three years of age. Specific early intervention competencies are absent from the minimal accreditations standards endorsed by the Commission on Accreditation in Physical Therapy Education (CAPTE), creating a gap between pre-professional education and professional practice.

A lack of alignment between entry-level education standards and the complexity of clinical practice has created an unresolved national problem of inadequately trained physical therapists (Campbell et al., 2009; Spence et al., 2018). Working with young children requires a specific body of knowledge and skills in addition to discipline-specific requirements for graduation and licensure (National Association for the Education of Young Children, 2020). Multiple agencies have established guiding documents to identify specific competencies for providers working in the early intervention setting; however, the competencies in these guiding documents do not align with entry-level practice accreditation standards Campbell et al., 2009; Chiarello & Effgen, 2006; Spence et al., 2018).

Research on pediatric education in the entry-level physical therapist program has passed through multiple stages in its development beginning in the 1990s when significant variation was noted in didactic and clinical education (Cherry & Knutson, 1993; Gandy, 1993). Over a decade later the variability remains (Campbell et al., 2009; Chiarello & Effgen, 2006; Schreiber et al., 2011; Spence et al., 2018). Less than 2.5% of physical therapist education programs require a full-time pediatric clinical education experience (Kenyon et al., 2017). Physical therapy programs have the lowest amount of training in the unique areas of early intervention, specifically in development of Individualized Family Service Plans (IFSP), teaming practices, providing service in the natural environment, and service coordination (Bruder & Dunst, 2005;

Campbell et al., 2009). Multiple recommendations were made to minimize variability in education; however, this decades-long unresolved problem persists and impacts student preparedness for practice.

The growing complexity and number of children receiving early intervention services continue to rise (Zablotsky, 2017), creating an urgent need for providers trained to meet the unique needs of young children with delayed development. Children have a critical window of neuroplastic change in the first 35 months of life within which PT can minimize or prevent developmental delays, changing the life trajectory of a child and reducing the need for costly special education services when entering school (Campbell et al., 2017). Novice providers entering the workforce often lack the specialized knowledge and skill to provide cost-effective quality service to children with disabilities and their families during this period of critical development (Catalino et al., 2015; Chiarello & Effgen, 2006). This preparation-practice gap is partially attributed to antiquated pre-professional training that has failed to adapt to rapid changes in healthcare.

Employers, consumers, and payers expect adequately trained providers to provide therapy services. Shortages of well-trained personnel affect the ability of children in need of PT intervention to reach their full developmental and academic potential (McManus et al., 2019). Few published studies with methodological rigor exist to guide the pedagogy of professional development programs or support changing licensure requirements to support the preparation and availability of these health professionals.

This integrative literature review explores the literature and identifies current knowledge related to the discrepancies between the skills required for initial physical therapy licensure and the knowledge and skills needed to practice in the early intervention setting effectively. A

literature review of entry-level physical therapist education and the variability of pediatric content embedded in entry-level physical therapist education program is central to understanding the educational experience of physical therapy students. Additionally, a review of the foundational tenants of early intervention practice is necessary to understand the demands of clinical practice. Furthermore, a review of the literature of a preparation-practice gap will highlight how educational deficiencies impact physical therapy graduates as they enter the workforce and contributes to the conceptual framework. Identification of important gaps and omissions in the literature will be highlighted to convey the importance of studying and addressing this topic.

Key databases searched included *EBSCOhost*, *ERIC*, *ProQuest*, and *ProQuest Dissertations and thesis*. Credible sources reviewed included peer-reviewed journal articles, scholarly books by experts, current conference proceedings in the areas of pediatrics and physical therapist education, and other unpublished, yet relevant, web materials and documents. Key terms to guide the literature search process included physical therapy, physical therapist education, pediatrics, early intervention, personnel preparation, preparation-practice gap, and work readiness. Additionally, various internet sources were consulted, including the American Physical Therapy Association (APTA) and the Commission for Accreditation of Physical Therapist Education (CAPTE). Many literature sources were used to build a comprehensive understanding of critical concepts central to the purpose of this study across multiple disciplines.

This chapter is organized into four sections. Part one introduces the theoretical framework of discrepancy evaluation. Part two discusses physical therapy education and the extent of early intervention-specific content and clinical education in the entry-level curriculum. Part three discusses the Early Intervention program and setting specific knowledge and skills for

effective physical therapy clinical practice. Part four addresses the preparation-practice gap and the transition from student to physical therapist.

Conceptual Framework

A conceptual framework is the structure of a research process that logically and sequentially presents an argument for the importance of a study and methodological choices (Ravitch & Riggan, 2017). This iterative process changes an understanding of a topic to create an organized, written argument of the justification of decisions made, rigor applied, and convince readers of the importance of the research study. It is a "dynamic meeting place of theory and method" that requires intentionality in a researcher's work (Ravitch & Riggan, 2016, p. 199). Following a conceptual framework in this study will ensure an organized exploration of the pediatric education in a Doctor of Physical Therapy (DPT) program and the impact of those educational experiences on therapists that have been working less than two years in the early intervention.

Social efficiency theory states that the purpose of education is social utility, and the preparation of students is to meet the needs of society (Fallace & Fantozzi, 2013). Provus' (1969) Discrepancy Evaluation Model (DEM) represents a systematic way to approach the difficult task of evaluating the adequacy of entry-level education programs in preparing physical therapists to provide services to children eligible to receive early intervention services. By exploring the relationship between program resources dictated by CAPTE's minimal accreditation standards (input), didactic educational activities and clinical education experiences in the curriculum (process), and performance measured against the standard of practice for early intervention providers (output), educational effectiveness can be explored (Buttram & Covert, 1978.; Provus, 1969).

There is a paucity of literature to inform entry-level physical therapist education in the area of early intervention to ensure graduates have the knowledge and skills to meet the demands of this practice setting. The DEM represented a structured method to explore the adequacy of entry-level preparation through the identification of discrepancies between education and clinical practice requirements. The aim of this assessment was consistent with the mission of the profession, which is to ensure educational programs train safe, autonomous, physical therapists to improve the quality of life for all members of society (American Physical Therapy Association, 2018).

Theoretical Framework

Provus' (1969) Discrepancy Evaluation Model (DEM) is a process to evaluate academic program effectiveness by identification of discrepancies between established standards and outcomes. The actual performance of "what is" is compared against desired standards of "what should be" (Provus, 1969). A multi-stage evaluation process explores the relationship between the variables of resources (input), educational program (process), and performance (output) against an identified standard to determine educational effectiveness (Buttram & Covert, 1978; Provus, 1969). The broad application of this model allows educators to make evidence-based decisions regarding maintenance, modification, or termination of programs (Fox, 2011). Forms of data collection vary based on performance standards such as expert opinion, educational records, or observations (Provus, 1969). Student development is specifically amendable to the DEM with application in K-12 education, higher education, and continuing medical education programs (Buttram & Covert, 1978; Fox, 2011; Provus, 1969). A DEM approach has assessed nursing and athletic training education; however, a scarcity of research exists on the application of DEM to physical therapist education (Clemmer, 2012; Neuman & Wyatt, 1981).

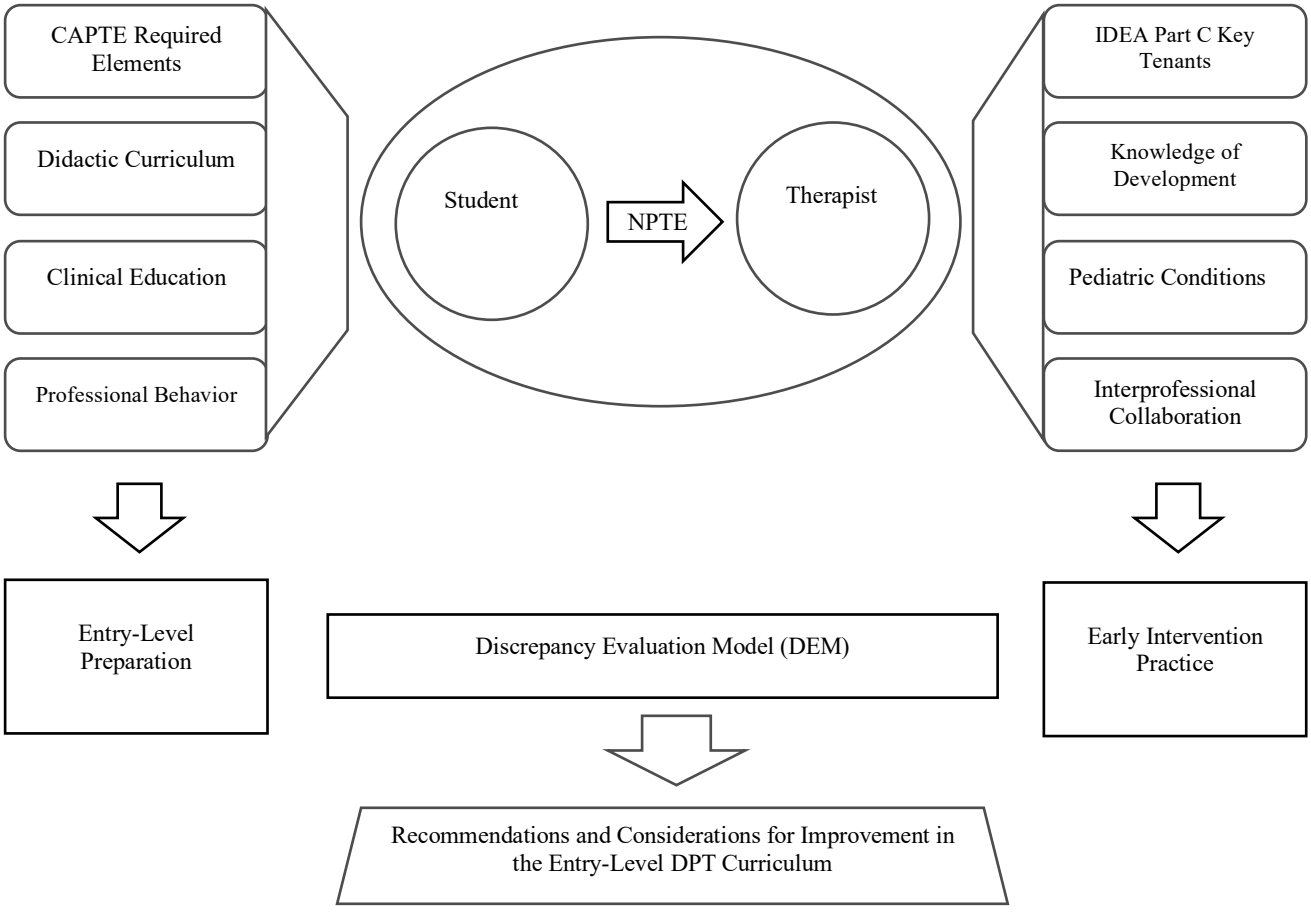
Accreditation standards ensure that all graduates from PT programs have minimal knowledge and skills to safely treat patients and clients across the lifespan in all areas of practice. PT students are well prepared by pre-professional education to pass the National Physical Therapy Examination (NPTE) but lack the nuanced knowledge and skills for practice in the early intervention setting (Commission on Accreditation in Physical Therapy Education, 2019a; Field & Moyer, 2013; Golub-Victor & Dumas, 2015; Weaver et al., 2018). This study explored the adequacy of early intervention work readiness in recent physical therapy graduates to meet the needs of young children and their families. Considerable variability in the breadth and depth of pediatric content taught in entry-level programs has resulted in the lowest amount of early intervention-specific training of any related service profession (Bruder & Dunst, 2005; Cherry & Knutson, 1993; Gandy, 1993; Schreiber et al., 2011; Stuberg & McEwen, 1993). Chiarello and Effgen (2006) provided a set of early intervention-specific competencies for practice comprised of specific skills and knowledge to effectively serve infants, toddlers, and their families. These core competencies can serve as a performance standard for physical therapists to ensure competency to practice in this setting.

The DEM was used to examine the perceptions of physical therapy students (in the first 24 months of practice in early intervention), regarding the efficacy of their pre-professional education. This study assumed that graduates working in early intervention were the best individuals to determine the adequacy of their educational preparation to meet workplace demands. An exploration of the lived experience of these therapists at work gathered information about the knowledge gained from entry-level physical therapy education and the self-perceived competence and confidence in professional practice to identify potential discrepancies. Information collected using a qualitative approach provided data to compare the early

intervention knowledge and skills gained throughout the didactic coursework and clinical education experiences during pre-professional preparation, with workplace demands. The analysis identified discrepancies between education and professional practice requirements in the early intervention setting. Results and recommendations can inform educational policy, educate employers regarding the skills of novice physical therapists, and inform personal professional development plans. Figure 1 shows these competing interests graphically.

Figure 1

Visual Representation of the Conceptual Framework



Note: Commission on Accreditation of Physical Therapy Education (CAPTE); National Physical Therapy Examination (NPTE)

Review of the Literature

Physical Therapy

Physical therapists (PT) are state-licensed health care professionals who use movement to optimize health, assist patients and clients in their recovery from injury or illness, and improve the quality of life for patients and clients of all ages (American Physical Therapy Association, 2020). In the United States, more than 238,000 licensed PTs practice in a variety of different settings, providing care to patients across the lifespan (American Physical Therapy Association, 2020). In 2016, 3.3% of physical therapists worked in educational settings with children, however, workforce data on the number of physical therapists that work in the early intervention setting does not exist.

Physical Therapist Education Programs

Physical therapist education programs offer a Doctor of Physical Therapy (DPT) degree that includes didactic and clinical education experiences to prepare graduates to work with patients and clients across the lifespan in various practice settings (American Physical Therapy Association, 2019). Currently, 250 accredited programs exist in the United States, with 34,218 enrolled students (Commission on Accreditation in Physical Therapy Education, 2019c). An additional 34 institutions have developing programs (Commission on Accreditation in Physical Therapy Education, 2019a). Physical therapist education programs are accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE) through a voluntary, peer-reviewed process to ensure the institution has met a minimal set of quality standards (The Commission on Accreditation in Physical Therapy Education, 2017).

The *Minimum Skills of Physical Therapist Graduates at Entry-Level* (American Physical Therapy Association, 2013) identifies the minimum skills that are indispensable for a new

graduate to perform safely and competently perform job duties (American Physical Therapy Association, 2013). Minimal skills include screening, examination, evaluation, diagnosis, prognosis, creation of a plan of care, safe performance of interventions, outcome assessment, education, and practice management, professionalism, communication, cultural competence, and promotion of health, wellness, and prevention. Physical therapists are expected to be competent in these skills in the cardiac, pulmonary, integumentary, musculoskeletal, and neuromuscular systems for patients and clients across the lifespan.

Accreditation Requirements

Accreditation is a voluntary, rigorous, peer-reviewed process that ensures the institution provides graduates a minimal set of quality standards to practice as a generalist physical therapist (Commission on Accreditation in Physical Therapy Education, 2017). CAPTE, the regulating body of the physical therapy profession, ensures and advances excellence in physical therapist education (Commission on Accreditation in Physical Therapy Education, 2019c). In addition to gaining knowledge and skills for identification and remediation of movement impairments for practice, curricula must ensure students develop professionalism, strong interpersonal and communication skills, innovation and creativity, problem-solving, and critical thinking (Commission on Accreditation in Physical Therapy Education, 2020a). Skills are gained through didactic and clinical education components of the curriculum.

The *Standards and Required Elements for Accreditation of Physical Therapist Education Programs* (Commission on Accreditation in Physical Therapy Education, 2020a) outlines minimal curriculum content, learning experiences, and assessment procedures to prepare students for initial practice in physical therapy (Commission on Accreditation in Physical Therapy Education, 2019c). Programs demonstrate compliance with CAPTE standards and required

elements through a written self-study document and multi-day site visit to verify compliance (Harris, 2018). Assurance that graduates acquire essential skills to enter the profession by qualified faculty is vital to accreditation (Harris, 2018). Furthermore, proof of graduation from a CAPTE accredited program is required to sit for the National Physical Therapist Exam (NPTE) and provide services to patients/clients with Medicare (Commission on Accreditation in Physical Therapy Education, 2017).

Didactic and Clinical Education Requirements. The *Standards and Required Elements of Accreditation of Physical Therapist Education Programs* include both didactic and clinical education as required components of the curriculum (Commission on Accreditation in Physical Therapy Education, 2020b). The didactic component educates students on foundational, clinical, and physical therapy sciences through classroom and laboratory experiences. The clinical education component of the curriculum provides opportunities for students to apply the knowledge, skills, and behaviors taught during the didactic component of the curriculum. All programs must demonstrate that students complete a minimum of 30 weeks of full-time clinical education (Commission on Accreditation in Physical Therapy Education, 2020b). In 2018-2019, physical therapy students received an average of 88 weeks of didactic instruction and 36 weeks of full-time clinical education for an average total length of 123 weeks of professional education (Commission on Accreditation in Physical Therapy Education, 2019). Nationally, full-time clinical education experiences averaged 20% of the entry-level curriculum (Commission on Accreditation in Physical Therapy Education, 2019).

Pediatric Physical Therapy in Entry-Level Curriculum. The amount of pediatric content in entry-level physical therapist programs has increased; however, the concern of the adequacy of student preparation persists (Anderson et al., 2019). CAPTE requires that all programs include

pediatric content in the areas of typical development and pediatric-onset conditions that affect development. Many behaviors and skills critical to the care of all patients across the lifespan include interprofessional practice, communication, professional ethics and values, and evidence-based practice (Commission on Accreditation in Physical Therapy Education, 2020b).

Considerable variation in the breadth and depth of pediatric content in entry-level curricula is attributed to different academic settings, resources, and curriculum designs. The variability of didactic pediatric content taught, contact hours dedicated to pediatric content, and pediatric clinical education experiences was initially recognized in the 1990s (Cherry & Knutson, 1993; Gandy, 1993; Stuberg & McEwen, 1993). The reported variability makes it difficult to understand what information physical therapy graduates have when entering the workforce. Donahoe-Fillmore (2002) surveyed physical therapist programs to explore the extent of pediatric content in the entry-level curriculum and concluded programs are adequately incorporating pediatric content into the curriculum with strengths in the areas of normal development and hands-on experience with children. However, these results should be viewed with caution secondary to a 37% response rate with incomplete answers that may not be representative of all physical therapist preparation programs.

In response to the variability in pediatric content in entry-level physical therapy programs, the Pediatric Section of the American Physical Therapy Association developed guidelines for recommended pediatric content in 2004 and updated the guidelines in 2006 to reflect contemporary clinical practice (Chiarello & Effgen, 2006). A 2010 survey described the content taught in entry-level programs and confirmed the continued variability across educational programs (Schreiber et al., 2011). In the 91 academic programs that participated in the survey, pediatric didactic content ranged from 0-170 hours, laboratory hours ranged from

0-126 hours, and child contact hours ranged from 0-70 hours. Seven percent of programs reported a required pediatric clinical education experience. Kenyon, Anderson, and Frost (2017) identified that 2.5% of physical therapist education programs require a full-time pediatric clinical education experience. The low number of mandatory pediatric clinical education experiences reinforces the importance of pediatric knowledge embedded in the didactic portion of the curriculum as all students do not have the opportunity to experience working with pediatric clients during full-time clinical education experiences. Some programs have chosen to include integrated clinical education experiences in pediatrics to supplement didactic content and provide students hands-on experience in working with children (Tovin et al., 2017). Integrated clinical education experiences are supervised clinical experiences that occur concurrently with didactic content in the curriculum to allow students the opportunity to apply specific knowledge and skills aligned with didactic content in the clinical environment (Erickson et al., 2018). Pediatric integrated clinical education experiences can be an effective component of the pediatric curriculum in applying pediatric course content, practicing psychomotor skills, developing communication skills, and exposing all students to pediatric clients (Schreiber et al., 2015; Tovin et al., 2017).

A 2012 Educational Summit by the Section on Pediatrics, now known as the Academy of Pediatric Physical Therapy, examined and responded to the inconsistencies in pediatric physical therapy education and the challenges of teaching this content in entry-level programs. The result of the summit was the creation of Five Essential Core Competencies (ECCs). The ECCs represent the essential knowledge, skills, and abilities specific to pediatrics that are essential for all graduates of physical therapy programs (Rapport et al., 2014). The five ECCs reflect the framework of learning for practice, which encompasses the knowledge, clinical reasoning, and

virtuous behavior to ensure graduates meet the needs of children that receive physical therapy service. Content of the ECCs includes human development, age-appropriate patient/client management, family-centered care, health promotion and safety, and legislation, policy, and systems (Rapport et al., 2014). The ECCs address the essential competencies across all pediatric practice settings, including specific competencies directly related to early intervention practice. These competencies intended to ensure consistent pediatric education for all physical therapy students from academic faculty and clinical instructors. The Academy of Pediatric Physical Therapy is currently prioritizing the dissemination and application of the ECCs through educational conferencing. Kenyon, Birkmeier, Anderson, and Martin (2015) presented specific learning activities to apply the ECCs during clinical education experiences to address the challenges specific to the clinical education setting.

Early Intervention Physical Therapy in Entry-Level Curriculum. Currently, specific early intervention competencies are not included in CAPTE accreditation standards, resulting in inadequate training to meet the needs of infants and children. Early childhood personnel preparation standards established by multiple national agencies are not aligned with CAPTE standards nor do they mandate essential content (Bruder & Dunst, 2015; Chandler et al., 2012; Division for Early Childhood, 2017; Marlin-Eile & Ellis, 2020; Mayoral et al., 2020). Physical therapist education programs prepare safe generalists with limited time to teach students the nuanced practice in all areas (American Physical Therapy Association, 2013). As the profession transitioned to a doctoral level of training and states adopted direct access of PT services without a required physician referral, students receive extensive training in medical screening, examination, evaluation, diagnosis, prognosis, and interventions for patients across the lifespan. However, it is an unrealistic expectation that a physical therapy graduate is prepared to practice

in any setting after graduation (Rapport et al., 2014). Each area of physical therapy practice requires a unique body of knowledge and skills beyond the minimal standards for safe practice. The knowledge and skills required to provide effective early intervention services for children and families are vastly different from those necessary to provide services to older children, adolescents, or adults. This discrepancy results in physical therapy students that are prepared to pass the national licensure exam but lack the nuanced knowledge and skill for practice in the early intervention setting (Golub-Victor & Dumas, 2015).

Current accreditation standards mandate interdisciplinary training and exposure to diverse patients to prepare students to work with all consumers; however, education of early intervention-specific knowledge and skills in pre-professional training programs is limited (Campbell et al., 2009a; Commission on Accreditation in Physical Therapy Education, 2020; Spence et al., 2018a). Therapists must first gain discipline-specific knowledge and skills before they can effectively contribute to an interdisciplinary team. The gaps in pre-professional education require on-the-job training after employment that affects his or her ability to provide comprehensive and coordinated services. Bruder and Dunst (2005) and Weaver et al. (2018) report similar findings of physical therapists failing to receive sufficient training in family-centered care, natural environment, Individualized Family Service Plans, teaming practices, and service coordination. Inadequate preparation results in two-thirds of pre-service students feeling not very well prepared to work with young children and their families (Bruder et al., 2013). Bruder et al. (2013) advanced the notion of a self-perceived feeling of being well prepared is a sign of a highly qualified practitioner. Federal legislation combined with state licensure guidelines ensures practitioners provide safe service, but does not ensure the highly-skilled service required when working in the early intervention setting.

The Regional Resource Center Program (RRCP) reviewed the critical early intervention principles for alignment with supporting statements from physical therapy resources (Whipple, 2014). Recommended early intervention principles are disseminated in fact sheets produced by the Section of Pediatrics; however, recommendations do not translate into minimum standards for the profession. The mismatch between practice competencies in entry-level programs and actual early intervention practice creates a need for additional post-professional training and mentoring for therapists (Weaver et al., 2018).

Clinical Education in the Entry-Level Physical Therapy Curriculum. Clinical education is an essential component of all physical therapist education programs with a minimum of 30 required weeks (Commission on Accreditation in Physical Therapy Education, 2020a). Clinical education is "formal supervised experiential learning, focused on development and application of patient/client-centered skills and professional behaviors… designed so that students gain substantial, relevant clinical experience and skills, engage in contemporary practice, and demonstrate competence before beginning independent practice" (Erickson et al., 2018, p. 757). The immersion of the students in a clinical environment mimics an apprenticeship model of learning (Gwyer et al., 2003). Students complete full-time clinical education experiences for a minimum of 35 hours per week in multiple practice settings to demonstrate a breadth of clinical experience with a specific requirement established by each academic program. Nationally in 2018-2019, the average duration of clinical education experiences in physical therapy curriculum was 36 weeks per student, and programs reported an average of 537 clinical education sites (Commission on Accreditation in Physical Therapy Education, 2019). Clinical performance is assessed by the Clinical Performance Instrument; a valid standardized assessment tool to gather information about clinical performance in 23 performance areas with observable

behavioral indicators during full-time clinical education experiences (Task Force for the Development of Student Clinical Performance, 2002). Students progress from beginner to entry-level performance across their clinical education experiences as a requirement for graduation. The time spent in various practice settings provides exposure to the unique knowledge, skills, behaviors, and values of each setting. Clinical education is a vital component of entry-level education to ensure entry-level competency for public safety and is distinct from workplace training.

Pediatric Clinical Education. CAPTE accreditation criteria require all students to have exposure to pediatric patients and clients (Commission on Accreditation in Physical Therapy Education, 2020b). Education programs have the freedom to structure exposure to this group of patients in the manner best aligned with program values. The number of physical therapy programs requiring a pediatric clinical education experience has steadily decreased. In the 1960s, 80% of programs required experience working with children; by 1974 this decreased to 38% (Gwyer et al., 2003). This created an inverse relationship between the amount of didactic pediatric content in entry-level programs and the number of children receiving special education services. Schreiber et al. (2011) surveyed PT education programs and discovered significant variability in pediatric content with 7% of programs requiring students to complete a pediatric clinical education experience. Kenyon, Anderson, and Frost (2017) further explored pediatric clinical education and reported 2.5% of programs required a pediatric clinical education experience. A majority of pediatric clinical education experiences occur during the final year of the program (Schreiber et al., 2011). These low numbers support the importance of pediatric didactic content and integrated pediatric clinical education experiences in the curriculum to sufficiently prepare graduates for general pediatric practice (Kenyon et al., 2013). Integrated

clinical education experiences are an effective way to apply pediatric knowledge, improve clinical reasoning, interact with children and families, and provide therapeutic interventions (Benson et al., 2013; Tovin et al., 2017; Wynarczuk & Pelletier, 2017). Kenyon et al. (2017) reported that only 11% of pediatric full-time clinical education experiences occurred in the early intervention setting. Minimal exposure to the early intervention setting during didactic and clinical education reduced opportunities to gain the necessary skills to work with young children and families, to build confidence working within the guidelines of IDEA, and develop professional support networks.

Early Intervention Programs

The 1986 amendments to the Education for All Handicapped Children Act (PL 94-142), was ground-breaking legislation that created a structure to provide developmental services for infants and toddlers from birth to three years of age. Reauthorized in 1997 as the Individuals with Disabilities Education Act (IDEA) and again in 2004 as the Individuals with Disabilities Education Improvement Act (IDEIA), these laws are commonly known as IDEA (University of Kansas Scholl of Education and Human Sciences, 2020). IDEA Part C provisions allocated federal funds to states for the establishment, implementation, and coordination of a system of service for infants and young children with a developmental delay, a disability, or those at risk for delayed development (U.S. Department of Education, 2017f). The program is known is as the Early Intervention Program.

According to the Early Childhood Technical Assistance Center (2019), 388,694 children received early intervention services in 2018. According to the IDEA Infant and Toddler Coordination Association (2020), the percentage of the population of children under three years of age that used early intervention service has steadily risen from 1.39% in 1998 to 3.48% in

2018. A critical window of significant brain development exists in the first three years of life (Kohli-Lynch et al., 2019). Intervention minimizes the potential for developmental delay, reducing the educational costs to society by reducing the need for special education services when a child enters school (Nabozny, 2018). Early intervention also maximizes the potential for independent living and enhances a family's ability to raise a child with a disability (U.S. Department of Education, 2017a). Early intervention service can minimize or eliminate developmental delays, changing the life trajectory of a child, and reducing the need for expensive special education services when entering school (Campbell et al., 2017). Federal mandates require services to be coordinated, provided in the natural environment, and individualized to each family (U.S. Department of Education, 2019). Children may receive services from a team of providers to address developmental delays, including services to address delayed gross motor development and movement impairments by physical therapists (U.S. Department of Education, 2017d).

Federal law supports the rights of children birth to three years with a disability or those children at high risk for substantial disabilities of age to receive developmental services. Specific referral procedures written into federal law and states have the freedom to establishing eligibility guidelines based on medical diagnosis or developmental delay measured by standardized outcome measures (U.S. Department of Education, 2017g, 2017h). Services and supports are determined and documented in the Individualized Family Service Plan (IFSP), a unique legal document created collaboratively with the early intervention team and family (U.S. Department of Education, 2017i). The law describes a family-center approach to care. A service coordinator, acting as a case manager, is assigned to each family to ensure supports comply with federal and state mandates and facilitate communication among team members to meet the need of the child

and family (U.S. Department of Education, 2017e). Services occur in the child's natural environment. Defined by law, natural environments include settings in which a typically-developing infant or toddler would be in a typical day, not a health care provider's office (U.S. Department of Education, 2017c).

Unlike early childhood educators that are exclusively trained to work with young children and their families, physical therapists are trained to manage patient care across the lifespan. State licensing standards assure providers are adequately trained for safe practice; however, they fail to include assurance of the specialized knowledge and skill to provide quality service to children with disabilities and their families in this critical developmental period.

Workforce Shortages in Early Intervention

More than half of U.S. states report a workforce shortage in addition to inadequately trained providers, resulting in delays between the identification of delayed development and initiation of services (Bruder et al., 2009). Shortages of providers cause a delay in the start of care, at times beyond the legally-mandated timeframes, reducing the already short critical window of development when intervention is most effective (Kohli-Lynch et al., 2019). Waiting three to six months for service is a significant amount of time in a child's life. Workforce shortages are attributed to challenging working conditions, unmanageable caseloads, a lack of support and mentoring, low reimbursement for services resulting in low salaries, and the increasing cost of education (National Coalition on Personnel Shortages in Special Education and Related Services, 2020). One county in New York State reported that 20% of children that qualified for services were placed on a waitlist, increasing the risk of further developmental delay (Nabozny, 2018). Shortages are most significant in diverse, high-poverty, and rural areas (Bruder et al., 2009; Nabozny, 2018; Sopko, 2010).

In 2003, the Center to Inform Personnel Preparation Policy and Practice in Early Intervention and Preschool Education first identified that the shortage of early intervention providers, including physical therapists, persists and has the potential to grow (Bruder et al., 2009; Bruder & Dunst, 2005; Lupo, 2015). The National Coalition on Personnel Shortages in Special Education and Related Services report "acute" shortages of qualified personnel to deliver services to children with disabilities (National Coalition on Personnel Shortages in Special Education and Related Services, 2020). This problem remains as 90% of states reported a shortage of qualified early intervention providers in 2018 (IDEA Infant & Toddler Coordinators Association, 2018).

Shortage of Physical Therapists in Early Intervention

A growing national shortage of physical therapists working in the early intervention setting continues in many U.S. states. In 2005, 47% of states reported a shortage of physical therapists, which grew to 71% by 2010 (Bruder & Dunst, 2005; Sopko, 2010). In 2018, 77% of states reported a shortage of physical therapists (IDEA Infant & Toddler Coordinators Association, 2018). The combination of a student debt crisis in physical therapy education that produces financial hardship, the questionable return on the investment of their education, and salaries significantly lower than other practice settings makes practice in the early intervention setting undesirable for many graduates and potentially unsustainable to meet basic living expenses (Ambler, 2020; Pabian et al., 2018; Shields & Dudley-Javoroski, 2018). The reimbursement rates for early intervention providers in New York State remained unchanged during the 2000s, was reduced by 10% in 2010, and reduced by an addition 5% in 2011, resulting in salaries 24% less than the regional median salary of the profession (Nabozny, 2018). The number of physical therapists working in the early intervention setting is currently unavailable.

Early Intervention Specific Competencies

Working with young children and their families in the natural environment presents a unique set of challenges. Multiple agencies have established guiding documents to identify specific competencies for providers working in this setting (Chandler et al., 2012; Lifter et al., 2011; Rapport et al., 2014). Knowledge of federal policy, key terms, and definitions, as well as evaluation and service processes, is essential to provide comprehensive and coordinated care. Several professional associations, private agencies, and government-funded departments have examined the similarities and differences between personnel standards. The Early Childhood Personnel Center (ECPC) suggested the development of common competencies for all professionals working with young children and their families to reduce variability in licensure requirements and preparation to work in early intervention (Chen & Mickelson, 2015). The Division for Early Childhood (DEC) of the Council for Exceptional Children standards include specific areas of knowledge and skills vital to early intervention practice (Lifter et al., 2011). This information should be used by state licensing agencies and universities to develop programs that produce a workforce of highly qualified early childhood professionals (Chandler et al., 2012; Division for Early Childhood, 2017; Lifter et al., 2011). Acknowledging the differences between knowledge required for entry-level practice and advanced skills, the DEC recommended two sets of standards; one for initial preparation and another for professional development (Division for Early Childhood, 2017). These standards have yet to be adopted by the accrediting bodies of the related service professions or state licensing agencies. Illinois established in Early Intervention Credentialing Office to ensure early intervention competency, to reimburse providers for services rendered, and ensure ongoing professional development and competency (Illinois Department of Human Services, 2020). Connecticut requires early intervention providers to acquire a *Birth to*

Three Certification and Florida mandates *Infant Toddler Developmental Specialist* training for providers (Children's Medical Services, 2009; Connecticut Birth to Three System, 2016).

Qualification to Practice in Early Intervention

The concept of a "qualified" provider was introduced by the IDEA amendments of 2004 and defined in Section 303.31 as a professional that has met state requirements for education and licensure in the areas providing services (U.S. Department of Education, 2017d). Required training to work with young children is absent from federal law. State licensure for professional practice does not ensure a service provider has received training in early intervention, resulting in providers considered "qualified" under federal law but may lack the knowledge and skills to provide coordinated care of young children with disabilities and their families (Stayton et al., 2012). Some states, such as Illinois, have identified this gap and responded by establishing a state-specific system of initial certification and continued competency (Spence, Connor, Burke, Cheema, & Ostrosky, 2018).

Early Intervention Competencies for Physical Therapists. The Pediatric Section of the American Physical Therapy Association, also known as the Academy of Pediatric Physical Therapy, endorsed guidelines for minimal early intervention competency (Chiarello & Effgen, 2006b). These competencies should supplement entry-level education, guide workplace standards, and direct professional development. Physical therapy programs have the lowest amount of training in the unique areas of early intervention (Bruder & Dunst, 2005; Campbell et al., 2009). Furthermore, physical therapy students receive very little training in IFSPs, teaming practices, natural environments, and service coordination (Bruder & Dunst, 2005). In the absence of this content in the curriculum, graduates benefit from post-professional continuing education

and mentoring to acquire knowledge and expertise (Campbell et al., 2009; Chiarello & Effgen, 2006).

Early intervention competencies for physical therapists are basic guidelines for clinical practice that academic faculty reference to ensure an adequately trained workforce (Chiarello & Effgen, 2006b) the early intervention guidelines to structure didactic courses and clinical education experiences; however, the competencies do not align with entry-level practice accreditation standards (Campbell et al., 2009; Chiarello & Effgen, 2006; Spence et al., 2018). Programs individualize the breadth and depth of curriculum content to meet accreditation standards and align with the institution and program vision. The resulting variability in the specific early intervention content is vast and unchanged since the Individuals with Disabilities Education Act (IDEA) amendments of 2004 (Bruder & Dunst, 2005). There is a paucity of literature from the perspective of a new graduate working in the early intervention setting to inform entry-level physical therapist education curriculum and ensure graduates have the knowledge and skills to meet the demands of this practice setting.

Preparation-Practice Gap

Nurses and physical therapists are both educated as generalists with the expectation that upon competition of entry-level education, graduates effectively manage the care of patients across the lifespan in all practice settings. Nurses reported gaining requisite knowledge necessary to pass the national licensure exam during their educational programs, but lacked the practical skills to cope with stress and the pace of patient care in the hospital setting (McCalla-Graham & De Gagne, 2015). The result is a multidimensional preparation-practice gap that explains the discrepancies between the demands of clinical practice and educational preparation for practice which dates back to the 1970s (Hickerson, Taylor, et al., 2016). Gallagher (2004) described the

concept of a gap as two disparate elements, theory and practice, at separate locations with the inherent belief that it is more desirable for the two components to be drawn together. This phenomenon of a preparation-practice gap is described as the inadequate generalization of requisite knowledge taught in the classroom to make clinical decisions in the presence of real-life, stressful environments (Berkow et al., 2009; Higgins et al., 2010; Manns et al., 2015; McCalla-Graham & De Gagne, 2015). Described by Patterson, Boyd, and Mnatzaganian (2017, p. 101) as "developmental lag between achieving competency as an undergraduate student nurse and competency as a novice graduate nurse," the gap suggests the level of preparedness for a successful transition from student to employee is inadequate. The undesirable results of this gap include excessive levels of employee stress, poor clinical performance leading to poor patient outcomes, and ultimately high job turnover (Baumann et al., 2019; Hickerson, Terhaar, et al., 2016).

Academic faculty and employers disagree on the adequacy of student preparation to enter clinical practice. Ninety percent of academic faculty believe that graduates are fully prepared to provide safe and efficient patient care; however, only 10% of administrators believe that nurses are prepared for the job (Berkow et al., 2009). The discrepancy between faculty and novice nurses' ability and expectations of managers leave students that were confident at graduation to feel overwhelmed when they start working (Hickerson et al., 2016). Clinical education experiences that occur during the educational program and preceptorship provide a transitional period between academic knowledge learned in the classroom and application in clinical practice (Higgins et al., 2010; Patterson et al., 2017). Nurses may encounter more difficulty adapting to the demands of clinical practice if they did not complete a clinical education experience in the same setting during their training program (McCalla-Graham & De Gagne, 2015). A lack of

mentored clinical practice, professional networking, refinement of communication skills, and understanding of job expectations may pose challenges during the transition to the workforce (McCalla-Graham & De Gagne, 2015).

The Student to Clinician Transition

Graduating from a Doctor of Physical Therapy (DPT) program marks the transition from student to therapist. The transition from a PT student to a PT is a stressful and challenging time when new graduates are not using their skills to inform practice and often are overwhelmed in the complex health care setting (Manns et al., 2015). A predictable pattern of emotions emerged upon entering the workforce beginning with enthusiasm upon entering the workforce, discovery of the realities of autonomous clinical practice, and finally adaptation to the requirements of the practice setting (Tryssenaar & Perkins, 2001). Consistent with the work of Benner (1982) these stages parallel the process of skill acquisition as a novice health care provider becomes an expert; values evolved as they began to understand the realities of clinical practice. Clinical education experiences during entry-level education are often viewed as a strategy to help students transition to the workforce (Doherty et al., 2009; Tryssenaar & Perkins, 2001). Reagor (2010) reported a statistically significant difference in self-reported perceived nurse work readiness following a clinical internship, suggesting that these immersive clinical education experiences play a role in the transition from student to clinician. The experiential learning that occurs during integrated or full-time clinical education experiences may ease the transition to the workplace; however, it is not the purpose of clinical education experiences.

Doherty et al. (2009) reported that students feel supported in the transition when entry-level preparation programs provide diverse clinical education experiences and coursework emphasizes evidence-based practice. Role models and mentoring programs that provide feedback

and support, help new graduates assimilate into the culture of their place of employment, help them “learn the ropes” through formal and informal channels, and assist them in developing a professional identity and gaining confidence across all practice settings (Black et al., 2010; Hayward et al., 2013). Additional life and work experience gained before enrolling in graduate programs may help new graduates feel prepared for their new careers (Cantlay et al., 2017).

Real and perceived barriers to a successful transition include limited time developing discipline-specific skills; in particular skills necessary for specialized areas such as pediatrics (Doherty et al., 2009; Tryssenaar & Perkins, 2001). Communication difficulties with patients and feelings of stress are frequently reported during the first year of practice (Black et al., 2010). At this point in their professional development, graduates may mistakenly assume that entry-level education has taught them everything they need to know rather than the true purpose of giving them a set of foundational problem-solving skills to maintain patient safety.

Despite feelings of adequate preparation and self-reported confidence in interprofessional collaboration, essential tasks of the profession, and clinical reasoning skills, students acknowledged a gap between preparation and practice (Cantlay et al., 2017; Doherty et al., 2009; Hunt et al., 1998). Academic programs are required to ensure students obtain the knowledge, skills, and behaviors to be competent for clinical practice and so they pass the National Physical Therapy Examination (NPTE) with minimal curricular space to support the transition to the workplace. Educators in both academic and clinical settings need a better understanding of the process to assist students in this transition and ensure they are adequately prepared to enter the workforce.

Work Readiness

The concept of work readiness is rarely discussed in the physical therapy literature. Nursing is a similar profession that prepares students to be generalists after graduation and has a robust body of literature of work readiness. The exploration of the vague and ill-defined concept of work readiness in nursing is an attempt to discover solutions to workforce shortages and attrition from the profession. Jackson (2019) advocates for the narrowest definition of work readiness with an emphasis limited to mastery of relevant knowledge and skills necessary to survive in the workplace. This narrow definition could explain why higher education institutions believe students are prepared to enter the workforce upon completion of entry-level programs. Theory and information taught in the classroom do not automatically translate to high-quality care in the presence of real-time pressures and stressors (Higgins et al., 2010; Manns et al., 2015). Several authors adopt a broader definition of work readiness. According to Baumann et al. (2019), four constructs impact work readiness in graduate nurses: personal characteristics, clinical characteristics, relational characteristics, and organizational acuity. Reagor (2010, p. 1) defined the concept as the clinician's ability "to assume the roles of provider of care, designer/manager/coordinator of care, and member of the nursing profession." An inclusive concept of work readiness is closely aligned with employers' expectations of job performance.

The role of life experiences and background characteristics have been explored to determine the impact of work readiness. Generational differences in older students include greater self-perceived readiness to practice, and more confidence believed to be due to accumulated life experiences (Pillai, 2014). Predictors of academic success may assist academic programs in the identification of students at risk for academic difficulty, but risk estimators such as undergraduate GPA, SAT, or GRE scores cannot predict work readiness (Utzman et al.,

2007). Physical therapy leaders have begun to explore the complex concept of student readiness for clinical education experiences (Irwin et al., 2018; Timmerberg et al., 2019), but a lack of literature exists on the topic of work readiness.

Preparation-Practice Gap in Physical Therapy. The transition period from student to a therapist in the United States has been under-investigated in the physical therapy literature. Research from Europe, Australia, and Canada report similar findings despite different entry-level education requirements and national health care systems, suggesting universal challenges students encounter when transitioning to the health care workforce (Atkinson & McElroy, 2016; Chipchase et al., 2007; Jones et al., 2010; Solomon & Miller, 2008). New graduates report fear and anxiety, low confidence in skills, and poor coping skills (Atkinson & McElroy, 2016; Foster-Seargeant, 2001; Hunt et al., 1998; Solomon & Miller, 2008; Tryssenaar & Perkins, 2001). Students struggle to transfer skills learned in the classroom to the workplace without explicit guidance (Jones et al., 2010). Despite the identification of these challenges, the core values of the profession and CAPTE accreditation standards do not explicitly mandate programs to help students transition to the workforce (American Physical Therapy Association, 2009).

Clinical education is an educational pedagogy for students to practice skills and apply knowledge gained during entry-level education programs for basic competency; it is not an alternative to workforce training programs (Gwyer et al., 2003). The exposure to clinical practice during integrated clinical education experiences embedded in the entry-level DPT curriculum is a promising way to close the gap and prepare students for the complexity and time demands of the workforce. Additional specialized training in the form of post-professional physical therapy residency programs provide advanced clinical training through mentored, specialist practice that may ease the transition from student to a therapist and respond to the increasing complexity of

practice (Black et al., 2010; Delitto, 2008; Di Fabio, 1999). Inherent in this recommendation is the assumption that the current doctor of physical therapy degree is insufficient to prepare students to enter the workforce and provide care to the public seeking the service of physical therapists.

Preparation-Practice Gap in Pediatrics. Early intervention is considered by some to be a specialty area of practice due to the high complexity of care and the nuanced knowledge and skills that extend beyond discipline-specific training to manage the needs of young children and their families. Physical therapy and nursing literature have failed to identify a minimum number of direct pediatric contact hours necessary to achieve entry-level competency (Bowling et al., 2018). An understanding of the discrepancies between education and practice is vital for academic institutions and employers to minimize barriers to physical therapists working in early intervention to improve retention and reduce workforce shortages. The holistic view of the transition from student to a therapist working in the pediatric setting, and specifically the early intervention setting, is absent in the literature.

Conclusion

Chapter two provided a review of the literature about the preparation of physical therapy graduates to work in the early intervention setting. A lack of alignment among the critical competencies for physical therapist practice in the early intervention setting, accreditation standards for physical therapist preparation programs, and state licensure requirements results in a system where physical therapist graduates are prepared to pass the National Physical Therapy Examination, but not to practice in the early intervention setting (Field & Moyer, 2013; Weaver et al., 2018). The variability in pediatric content and clinical education experiences in entry-level programs is vast (Anderson et al., 2019; Schreiber et al., 2011). The current philosophy of the

physical therapy profession to prepare graduates for generalist practice limits the acquisition of nuanced knowledge and skills required to practice in the early intervention setting. Employers, consumers, and payers expect adequately trained providers to provide service, however, physical therapists receive the lowest amount of early intervention-specific training of any related service professions (Bruder & Dunst, 2005; Fallace & Fantozzi, 2013).

The growing complexity and number of children receiving early intervention services continue to rise, creating an urgent need for change (Zablotsky, 2017). Pre-professional training and federal policy have failed to adapt to current clinical practice and ensure providers have the necessary knowledge, skills, and behaviors to provide high-quality, cost-effective service for young children and their families (Weaver et al., 2018). Post-professional development specific to early intervention is not a federal mandate, and recommendations by professional organizations are merely guidelines that may not reach the intended audience. Difficulties recruiting and retaining a highly-trained early intervention workforce persist due to barriers such as low salaries, low reimbursement rates, lack of professional support, and challenging work conditions (Sopko, 2010; Vail et al., 2018). As a result, stringent PT preparation policies to ensure providers enter the system prepared to meet the standards of IDEA, Part C cannot be created or enforced. Parents and guardians, agencies employing physical therapists, and state agencies reimbursing providers expect qualified providers that possess the knowledge and skill to achieve developmental outcomes. As the complexity of pediatric practice continues to expand, so does the discrepancy between entry-level education and skills for clinical practice. This discrepancy has the potential to impact the developmental trajectory of children with disabilities enrolled in the early intervention program, and wastes precious federal and state funds.

CHAPTER 3: METHODOLOGY

A discrepancy between entry-level physical therapy education standards and the complexity of clinical practice in the early intervention setting has created physical therapy graduates prepared to take the National Physical Therapy Exam (Commission on Accreditation in Physical Therapy Education, 2019b). These therapists lack the specialized knowledge and skill to work in this setting (Catalino et al., 2015; Weaver et al., 2018). This discrepancy creates a preparation-practice gap. The average length of 123 weeks of the initial training of physical therapists covers a breath of education across the lifespan from birth to death for safe practice, but the depth of specific practice settings is limited (The Commission on Accreditation in Physical Therapy & Education, 2019a). The transition of physical therapy graduates into the early intervention workforce has not been explored and may provide information to address shortages in the number of physical therapists providing early intervention services.

Consistent with the underpinning of utility in Social Efficiency Theory, education should prepare students to meet the needs of society (Fallace & Fantozzi, 2013). The Discrepancy Evaluation Model (DEM) is a systemic way to explore the adequacy of entry-level education programs in preparing physical therapists to provide services to a specific population of society, such as children eligible to receive early intervention services (Provus, 1969). Individuals best positioned to recommend effective means of preparation for employment after graduation are those that have lived the transitional experience (Jackson, 2019). A qualitative exploration of the lived experience of students who have completed an entry-level physical therapy program provided the opportunity to understand and interpret their training as it relates to their entry-level educational experience, preparing them to work in the early intervention setting.

Chapter 3 outlines the research design, including descriptions of the participant setting and sample, the connection between the information sought and the type of data, and the analysis to interpret results. This chapter also discusses limitations and ethical considerations as part of a phenomenological study. Chapter 3 conclude with a summary of the concepts and a discussion focusing on how the research study expands the sbody of knowledge of a preparation-practice gap in the physical therapy profession.

Purpose of the Study

There is a critical need to ensure students feel prepared to practice pediatric physical therapy (PT) after graduation due to the inconsistencies in pediatric educational experiences. The profession has a large number of vacant pediatric PT positions and an increasing number of children that qualify for early intervention service (Schreiber et al., 2011; Zablotsky, 2017). Data from this study included evidence of the variable didactic and clinical education in the physical therapy curriculum. The adequacy of preparation to practice in pediatrics was explored for recommendations to improve entry-level education. This exploration was accomplished by comparing information about preparation with the required pediatric knowledge and skills necessary for clinical practice.

The purpose of this Interpretative Phenomenological Analysis (IPA) is to explore the lived experience of newly graduated physical therapists as they transition to working in the early intervention setting. Specifically, this study focused on identifying perceptions of preparation utilizing a Discrepancy Evaluation Model. A detailed understanding of the student experience allowed the researcher to construct a robust and nuanced understanding of the adequacy of pre-professional pediatric education. Equally important, the research examined pediatric education

and workforce expectations to better understand the effects of a preparation-practice gap for physical therapy graduates working in the early intervention setting.

Research Questions & Design

The central research question on which this study focused was:

> How do recent physical therapy graduates (less than 2 years of practice) describe their lived experience of transitioning from a student to a therapist working in early intervention?

This qualitative study used an Interpretive Phenomenological Analysis (IPA) design to gather information about the lived, conscious experience of participants' perceptions of events (Creswell, 2013; Smith et al., 2009). Phenomenology is the study of lived experience through a systematic approach to gain a deeper understanding of the meaning of daily experiences, and involves transformation of the experience into a textual expression of the essence of a phenomenon (van Manen, 2017). It is through the search for the meaning embedded in the lived process unique to each person's relationship to the world that a universal meaning of human experience is understood (Smith et al., 2009). IPA design is consistent with the epistemological position of understanding the lived experience of the participants, informed by prior knowledge and events, using constructed meaning to guide the iterative interpretive process of inquiring about a phenomenon (Smith et al., 2009).

Interpretive Phenomenological Analysis (IPA) is used to understand how individuals make sense of their life experiences by engaging with their reflections on the significance of life events (Smith et al., 2009). A major underpinning of IPA is the understanding that analysis is bound by the participant's ability to articulate their experiences and the researcher's ability to interpret the meaning of those experiences in light of personal preconceptions, known as

hermeneutics (Smith et al., 2009). Engaged in a double hermeneutic, the researcher makes sense of the participant, who is making sense of the phenomena of interest (Moustakas, 1994; Smith et al., 2009).

The phenomenon of this study is the experience of students who graduated from an entry-level Doctor of Physical Therapy (DPT) program, accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE). Understanding the impact of limited pre-professional pediatric preparation from the student perspective is lacking. The researcher's positionality identified two related aspects for constructing a robust and nuanced understating of a preparation-practice gap: entry-level education and knowledge for clinical practice.

The second underpinning of IPA is the concept of idiography (Moustakas, 1994; Smith et al., 2009). Idiography is committed to the individual by constructing the phenomena through a detailed analytic procedure to understand the perspective of a specific group of people with a similar experience and a shared context (Smith et al., 2009). A small, purposively selected and carefully situated sample offers a deeper understanding of the unique perspective of each participant on their relationship to a phenomenon (Smith et al., 2009). Understanding the universal pediatric educational experience can be constructed from the rich information gathered in this study (van Manen, 2017).

The research design aligned with the problem of practice discovered through the researcher's observations of pediatric clinical practice and role as an educator. An exploration of the lived experience of the participants provided the opportunity to understand and interpret their experience as it relates to their entry-level educational experience, preparing them to work in the early intervention setting. IPA methodology also provided the grounds for a range of

interpretation and the ability to make connections with other theoretical frameworks during analysis (Smith et al., 2009).

Site Information & Population

The target population of this study was physical therapy graduates from any CAPTE accredited program in the United States with two years or less clinical experience working in as a physical therapist in the early intervention setting. In 2019, 10,545 Doctor of Physical Therapy degrees were conferred in the United States with 90.8% of these students passing the National Physical Therapy Examination on the first attempt (The Commission on Accreditation in Physical Therapy & Education, 2019). Ninety-nine percent of graduates reported being employed within 12 months of graduation (The Commission on Accreditation in Physical Therapy & Education, 2019). Only 3.3% of physical therapists work in all pediatric settings combined, which includes practice in the early intervention, preschool, school-based settings (American Physical Therapy Association, 2019a). The number of physical therapists working in the early intervention setting is unknown. Focusing on participants working in the early intervention setting controlled the study more than including all pediatric settings. This study was not dependent on a single institution or state; participants were included across the United States. Participants taught by the researcher may be included in the study. The unresolved national problem of a physical therapist preparation-practice gap requires a broad population to explore similarities and differences among individuals in this population (Hunt et al., 1998; Manns et al., 2015).

Sampling Method

Purposeful criterion sampling was employed to select individuals for whom the research problem has relevance, and whose lived experience may provide great depth of insight to construct a detailed understanding of the phenomenon (Creswell, 2015; Merriam, 2014). Criterion sampling ensured participants have the perspective of a new graduate transitioning to the early intervention workforce during recruitment, supporting the purpose of the study (Patton, 2002). The uniformity of the sample provided the opportunity to examine the variability of the experience, allowing for a pattern of convergence or divergence to emerge (Smith et al., 2009). IPA studies benefit from the depth of information gathered from a small number of cases to develop a detailed account of the participant's experience rather than compiling a breadth of information (Smith et al., 2009).

In this study, approximately 30 individuals were recruited from the population to ensure a final sample of eight to ten participants. This provided a sufficient number of cases to gather information to the point of saturation for an in-depth analysis to answer the research question (Merriam, 2014). Participants graduated from an entry-level DPT program in 2018 or 2019 with two years or less post-professional work experience in the early intervention setting. Students graduating in 2020 were excluded from the study as the altered educational experience from the COVID-19 pandemic may have influenced the students' educational experience. The rationale for selecting participants within two years of graduation ensured the ability of the individuals to recall information regarding their educational experience prior to employment. Participants' workload included at least 25% of services in the early intervention setting to ensure integration of the specialized competencies of early intervention into their clinical practice.

Instrumentation and Data Collection Procedures

An Interpretive Phenomenological Analysis (IPA) was selected because the researcher wanted to explore what it was like for graduates of an entry-level physical therapist education program to begin working in the early intervention setting. A personal account of a phenomenon reveals information about the individual's feelings and thoughts (Smith et al., 2009). Reflexivity and bracketing ensured interpretations of the experience of transitioning to the workforce are grounded in the specific context of a new graduate. The desire to collect data rich in detail, embedded in the context of the workplace, to understand the lived experience of this specific group of therapists was consistent with qualitative methods and the purpose of the study. Data, in the form of unstructured text from transcriptions of audio recordings, were collected during individual, semi-structured interviews (Creswell, 2015; Smith et al., 2009).

In-depth, individual, semi-structured interviews are a data collection tool that allows participants the opportunity to tell their stories and create meaning from their experiences (Seidman, 2019; Smith et al., 2009). The rationale for using this data collection method was that it was a legitimate way to interact with people in a manner that provides the space to capture the meaning of their experiences in their own words (Patton, 2002). This format provided the opportunity to develop a rapport with the participant and space for a personal discussion of (Smith et al., 2009). Semi-structured interview questions encouraged participant engagement as they articulate their story in their own words and identify everyday experiences. This type of interview allowed the researcher to ask probing questions to encourage reflection on the emerging worldview of the participant (Merriam, 2014).

Despite the strengths of interviews, limitations exist with this form of data collection. Interviews are the result of the interaction between the researcher and participant; thus, they

cannot be considered a neutral way to collect data (Seidman, 2019). Researcher skills in conducting interviews may affect data collected, and participants may have varying abilities to articulate their experience (Bloomberg & Volpe, 2016). Weakness or bias in the instrument can hinder or prevent the researcher from collecting the necessary information to answer research questions (Seidman, 2019).

The researcher developed an interview protocol consisting of four sections with open-ended sub-questions and possible prompts based on the theoretical framework of the study to collect a detailed account of the experience under investigation (Smith et al., 2009). Castillo-Montoya (2016) suggests an Interview Protocol Refinement (IPR) framework to ensure interview questions align with the research question and strengthen the reliability of the interview protocol. The four-phase process to refine the interview protocol and ensure congruency includes (1) ensuring the interview questions align with the research question, (2) constructing an inquiry-based conversation, (3) receiving feedback on the interview protocol, and (4) piloting the interview protocol (Castillo-Montoya, 2016). An interview protocol matrix assures interview questions will collect relevant data to answer the research question.

Interview Protocol

Individual semi-structured interviews gathered information about the meaning of participants' experiences in the context of their lives (Merriam, 2014; Seidman, 2019). The interview lasted 30-45 minutes to collect demographic information and establish the context of the participant's experience. Questions focused on the participant's life history to reconstruct the events of their entry-level educational experiences, to collect details of the participant's transition to the workforce, documented experience as an early intervention physical therapist, and allowed reflections on factors that impact the meaning of their current experience.

Pilot study

A pilot test of interview questions improved the validity of questions asked during the semi-structured interviews. Validation ensured data gathered answered the research questions with sufficient depth, minimized researcher bias, and avoided leading questions (Castillo-Montoya, 2016; Smith et al., 2009). Two experts reviewed the questions on the interview guide with the Rubric for Expert Validation of Survey or Interview, and asked to provide feedback (Simon & White, 2018). Feedback on the interview protocol was consistent with the iterative nature of IPA and provides the opportunity to adjust the instrument, data collection procedures, or the data analysis process prior to the commencement of data collection (Seidman, 2019; Smith et al., 2009).

Study protocol

Research participants were recruited in multiple ways. Professional networking was used to contact physical therapists known to the researcher via email and social media to request an interview. A recruitment message was posted on the researcher's department's LinkedIn page for graduates pending approval from the department chair. Directors of local agencies that provide early intervention services were contacted and asked to share the recruitment email with employees that meet the inclusion criteria. A recruitment email was shared on the New York/New Jersey Clinical Education Consortium and Early Intervention Special Interest Group of the Academy of Pediatric Physical Therapy pending administrator approval.

The researcher sent individual emails to prospective participants meeting the inclusion criteria, which included a description and purpose of the study, inviting their participation, and requesting a convenient time and place for a virtual interview via Zoom. Individuals who responded to recruitment e-mails were sent a pre-screening email to ensure they met the

inclusion criteria. Additionally, the purpose of the study was reviewed with the participants and how their participation would help the researcher understand the preparation-practice gap for physical therapy graduates working in early intervention. This e-mail included a review of the informed consent, a reminder of the time commitment to participate in the study, and a request to schedule the interview. Individuals who agreed to participate were sent a consent form to review, electronically sign, and return before the virtual interview. Copies of the informed consent that represent the participant's agreement to participate in the study were kept in a locked drawer in the researcher's office.

Eight participants were interviewed. Each interview lasted approximately 45-60 minutes and began with a review of informed consent and asked for participant assent before proceeding. Virtual interviews were recorded with a MacBook Pro using Zoom recording software and a backup recording using an iTalk recorder app for iPhone. Participants were reminded that they could ask to turn off the recording and only notes of the conversation would be recorded. The recordings were kept on an encrypted external hard drive was kept in a locked drawer in the researcher's office. The interviews were transcribed verbatim using the electronic transcription service Rev.com, and data were in the form of an extended text. Participants were assigned pseudonyms, and an interview de-identification log was stored on the encrypted external hard drive to protect their privacy and confidentiality.

Participants were emailed a de-identified copy of the transcript to review for accuracy via member checking, and had the opportunity to make changes and comments via e-mail. The de-identified transcripts were kept on the researcher's password-protected computer.

Data Analysis

Consistent with Interpretive Phenomenological Analysis (IPA) methodology, the analysis was completed by developing an interpretive relationship to the transcript to understand the participant's experience with the complex phenomena and make meaning of their educational experiences. Analytical notes were taken throughout the process to document steps of the analysis to ensure consistency and explain decisions (Saldana, 2015). Bracketing preconceptions and bias occurred through discussion with the dissertation committee and use of a reflective journal (Miles et al., 2018). Creating meaning extended beyond the frequency a theme occurs; it included a close inspection of the complexity of the meaning of the participants' experiences.

Smith et al. (2009) describe the iterative and inductive cycle of data analysis utilizing a set of standard processes to analyze each case in detail before moving to the next and comparing the cases. The first step was for the researcher to immerse themselves in the data by reading and rereading the transcript, listening to the audiovisual recording of the interview, and logging any powerful recollections. The next step was initial noting of the text, making descriptive comments about what matters to the participant and the meaning of those experiences with them. Exploratory comments about the use of language provided insight to understand the things that mattered to the participant. De-contextualization helped the researcher understand the importance of the context in which the participants' experiences are grounded.

The third step was the development of emergent themes by analyzing exploratory comments and reducing the volume of notes while mapping the interrelationships, connections, and patterns among the notes. Themes represented the words of the participants in addition to the researcher's interpretation (Smith et al., 2009). The search for connections across emergent themes and mapping how the themes fitted together occurred through analytical ordering.

Abstraction identified patterns between emergent themes to develop “super-ordinate” themes, or an emergent theme may become a super-ordinate theme, which is known as subsumption. Polarization, contextualization, numeration, and/or function created clusters of super-ordinate themes. Analytical notes described the analysis process and decisions (Saldana, 2015). A graphical representation of the structure of emergent themes was created.

Each transcript was analyzed following transcription during the interview phase of the study. The process was repeated for each case, followed by an exploration of patterns across cases. At this stage, the researcher moved to a more theoretical level, prioritizing and reducing themes as recurrent super-ordinate themes emerged to represent higher-order concepts (Smith et al., 2009). Consistent with the iterative process of IPA, the researcher reviewed earlier transcripts for more profound levels of analysis and interpretation in the data.

Data analysis began with two rounds of "open coding" by hand or with NVivo to develop categories of information to highlight the salient features of data collected (Miles et al., 2018; Saldana, 2015). Codes, descriptive labels that assign symbolic meaning to data, were assigned to the data for grouping (Saldana, 2015). Similar words and phrases were condensed into descriptive categories and subcategories, assembling the data in a meaningful way for further analysis of deeper meaning (Miles et al., 2018). “Axial coding” collapsed a large number of categories from the first cycle of coding into smaller, more meaningful analytical units by hand and using software such as NVivo (Miles et al., 2018). This process allowed the researcher to explore the relationships among categories and subcategories, constructing a new understanding of the phenomenon (Saldana, 2015).

Further, analytical memos were written to understand the decisions made during the analysis as the researcher worked to achieve data saturation (Saldana, 2015). This process helped

the researcher to see the “big picture” and build a conceptual model with sufficient data to support that interpretation (Miles et al., 2018). Emergent themes identified in the analysis were emailed to the participant to review for accuracy as part of the member-checking process. Final themes were written as a narrative report with rich detail that included participant’s stories and meaningful quotations.

Limitations of Research Design

A limitation of the data collected in an Interpretive Phenomenological Analysis (IPA) study was that it may not be generalizable to a larger population (Smith et al., 2009). Participants were purposefully selected to represent a specific group of physical therapists with the unique experience of working in the early intervention setting after graduation. This work intended to reflect the lived experience of a small number of participants who experienced this phenomenon. Documenting the experiences of physical therapy graduates transitioning to the workforce, regardless of the small sample size, has the potential to add to the body of knowledge of the physical therapy profession by identifying areas for future research and make recommendations for curricular changes.

Data collection and analysis were time-consuming as a successful analysis required time for reflection and discussion. This study's findings were compared to empirical research to contribute to the understanding of excellence in physical therapy education. Dissemination will expand the scholarship of teaching and learning to consider the perceptions of preparation from participants' lived experiences to inform curriculum and course development (Yardley, 2000).

The researcher, a former early intervention provider and currently a professor in an entry-level physical therapist education program, had prior experience mentoring new graduates in early intervention. The act of mindfully engaging with the participants during interviews to focus

on their story, and facilitate sharing their experience, allowed the researcher to bracket preconceived ideas (Smith et al., 2009). Potentially, the analysis could be influenced by the researcher's preconceived ideas. Bias was formally addressed with analytical memos documentation of coding choices and rationale for decisions to shape the analysis process (Saldana, 2015).

Credibility

Credibility in this study was an accurate and ethical portrayal of the participant's perceptions (Bloomberg & Volpe, 2016). An in-depth interview ensured prolonged engagement with the participants to allow sufficient time to build trust. Establishing trust was essential to understand the context of their entry-level education and current clinical practice is understood to collect rich data. Member checking, in the form of reviewing both transcripts and emergent themes during data analysis, minimized potential errors or bias (Birt et al., 2016; Bloomberg & Volpe, 2016; Carlson, 2010). The result of this process was thick, rich descriptions that are a hallmark of phenomenology (Merriam, 2014). These descriptions ensured a sophisticated understanding of the essence of the participants' educational experiences. Data collection to the point of saturation allowed comparison across cases (Maxwell, 2013; Merriam, 2014). Reflexivity in the form of a written self-reflection in analytical memos identified the researcher's positionality and identification of potential bias and safeguard credibility (Alase, 2017).

Transferability

Transferability is the ability to apply research to other situations and contexts (Bloomberg & Volpe, 2016). The purpose of IPA was not to produce generalizable findings (Smith et al., 2009). Consistent with this approach, sensitivity to context was established in this study with purposeful homogenous sampling to ensure participants have similar educational and work

experiences to understand their lived experience (Smith et al., 2009). A rich description of the background of the participants and research process, including demographics and information about the context, allows readers to evaluate the degree of congruence and transferability of findings to other contexts (Bloomberg & Volpe, 2016; Smith et al., 2009).

Dependability

Dependability was made certain by using specific, well-documented procedures implemented with integrity to ensure results are accurate and reproducible (Bloomberg & Volpe, 2016; Maxwell, 2013). Interviews were the best form of data collection and allowed participants to share their life experiences about the phenomenon of pre-professional education in an IPA study. The data collection protocol ensured the research process was completed in the same fashion for each participant (See Appendix A for the interview protocol that was used in this study). Following the completed analysis, the researcher reviewed the open and axial coding with analytical memos to ensure they were directly from the transcript data. An auditor can assess if the IPA process was used throughout the study to ensure themes are the product of the data and not due to over-interpretation (Smith et al., 2009).

Confirmability

Confirmability in this study ensured that the findings were derived from the captured experiences of the participants and not due to the subjectivity or bias of the researcher (Bloomberg & Volpe, 2016). Transparency was protected by clearly documenting all procedures and analytical decisions to ensure full disclosure during the study, and including excerpts of data in the final written document (Smith et al., 2009; Yardley, 2000). A well-documented audit trail of decisions ensured themes from the transcripts were not the product of the researcher's over-interpretation (Smith et al., 2009). An audit trail was created during both rounds of open coding

and during axial coding to document interesting results, thoughts when coding, rationale for merging codes, and explain the meaning of emergent themes. Journaling to achieve reflexivity during the analysis process allowed the researcher to be transparent on how assumptions and values may have impacted the study (Miles et al., 2018). Collectively, the audit trail and reflexive journaling explained decisions made and how themes emerged.

Ethical Issues in the Study

A continuous process of informed consent was followed, beginning with initial inquiries from respondents interested in participating to share information, ensuring participants comprehend what is shared, and that their decision to participate was free of coercion (Department of Health, Education, and Welfare, 1979). A response email was sent that outlined the nature of the study and its purpose. Participants were informed that the study intended to document the pre-professional, early intervention preparation of physical therapy students through exploring their life experiences and was not intended to cause harm. Topics may include entry-level education, work experience, and preparedness to enter the workforce. A discussion of personally sensitive information during the interview may occur, and participants had the right to refuse to answer any questions. Discomfort was closely monitored by the researcher and immediately addressed by adjusting the experience to a gentler manner or discontinue questioning. There was no direct benefit from participating in this study, however, reflection on the participants' educational experience may have identified areas to pursue post-professional continuing education to improve clinical practice.

Participants who wished to proceed were contacted to schedule the interview at a mutually agreeable time. Before the interview, the researcher reviewed the purpose and nature of the study, and participants were given the opportunity to participate or not participate in the

study, free of coercion or repercussion, and receive any clarification requested. If the participant wished to proceed with a virtual interview, they were given time to electronically sign the informed consent form and email it back to the researcher before the interview (see Appendix D). Member checks verified the accuracy of descriptions and allowed participants to determine the information that would identify them prior to publication (Miles et al., 2018).

Respect

Respect for persons was achieved through voluntary participation, reminding participants that they can discontinue participation at any time, decline to answer any questions, request that the recording be turned off, and only written notes would be taken, or end the interview without penalty (Department of Health, Education, and Welfare, 1979). These rights were explicitly noted on the informed consent form (Appendix D). Participants chose their pseudonym at the beginning of the interview or a pseudonym was assigned if they declined to provide a pseudonym. A de-identification log served as a temporary means of identifying participants and was kept on the researcher's encrypted external drive in a locked office. Participants were provided, in writing, the steps taken to protect their identity. Participants were able to opt-out of the study until the point of data categorization. Copies of informed consent were saved separately from the data files in a locked drawer in a locked office. It is intended that the results of this study be published in a doctoral dissertation that will be accessible through ProQuest Central. There is no funding, nor will the researcher receive funding, for this study. The researcher was employed at an academic institution during the study, taught in an entry-level physical therapist education program, and had an interest in the outcome of this study to improve the educational experience for students.

Confidentiality

Confidentiality was closely monitored as privacy and the use of pseudonyms may not adequately protect the confidential nature of in-depth interviews with a small sample size. The researcher protected the participants from harm by employers or educational instructions by maintaining the confidentiality of the participant, school, and other details that may lead to exposure. Audiovisual transcripts were kept on an encrypted external drive in a locked office. De-identified data were stored on the researcher's password-protected computer. No references to provider names or other identifying factors such as educational institutions or employers were included in the results, protecting confidentiality during dissemination. All data were reported honestly and in the highest ethical manner.

Conclusion

Interpretative phenomenological analysis (IPA) and its connection to hermeneutics and idiography can establish a deep understanding of the meaning of the lived experiences of a specific group of participants (Smith et al., 2009). This methodology was well suited to explore the lived experience of physical therapy students in order to understand their preparation to work in the early intervention setting. Physical therapy graduates from 2018 and 2019 who have worked less than two years in the early intervention setting were the most appropriate individuals to enroll in order to explore their pre-professional physical therapy education. Pediatric education and clinical practice vary across programs and states; purposeful sampling from across the country ensured participants have the lived experience to ensure transferability of results. Interviews captured the participants' views to understand the impact of the educational experience on workforce skills. Analysis identified discrepancies between education and skills for practice in the early intervention setting to describe a preparation-practice gap.

Rich descriptions of successes and barriers provide information for academic leaders and employers to reflect on the needs of the newest members of the profession working with young children and their families. Understanding physical therapists' entry-level preparation for the roles and responsibilities of the early intervention practice has the potential to uncover discrepancies between preparation and practice to improve the educational experience. Despite variability in pediatric physical therapy education and a national shortage of physical therapists working in the Early Intervention Program, no study has focused on the lived experience of physical therapists working in this unique setting. Subsequent chapters will discuss the interpretive analysis, make suggestions to improve entry-level education, and offer recommendations for future research.

CHAPTER 4: RESEARCH FINDINGS

The purpose of this qualitative, Interpretive Phenomenological Analysis (IPA) design was to gather information about the lived experience of physical therapists working in the early intervention setting after graduation. Participants reflected on the significance of life events to explore their perceptions of preparation. This study focused on the central research question of how recent physical therapy graduates describe their lived experience of transitioning from a student to a therapist working in early intervention. The researcher interviewed eight physical therapists for this study. The participants were selected from the pool of therapists working in the early intervention setting; however, the exact number of physical therapists working in the early intervention setting is unknown. The interviews, completed via Zoom, were structured around nine qualitative questions. The first three questions explored the pediatric education received during the Doctor of Physical Therapy (DPT) program. The next section of the interview focused on participants providing physical therapy services in the early intervention setting. The last portion included questions for the participants to reflect on the student-to-therapist transition. The names of the physical therapy school and agency of employment were de-identified in this study; however, the state in which the physical therapy program was located and the current state of practice were included as demographic information. Participants were assigned a pseudonym to protect their confidentiality.

This chapter presents the key findings of the data collected. Data were collected on a MacBook Pro using Zoom recording software and a backup recording using an iTalk recorder app for iPhone. Interviews were transcribed using Rev.com, a transcription service. The transcriptions were downloaded, reviewed, and edited for accuracy against the interview recording and de-identified. Errors were minimal. A de-identified copy of the transcript was sent

to each participant for member checking to ensure an accurate representation of ideas and ensure de-identification. The participants recommended minimal edits. Once the transcripts were clean, the researcher reviewed the information multiple times for themes that emerged. After reviewing the data collected from the eight participants, no new information emerged, suggesting saturation.

The researcher completed the qualitative analysis by hand according the method developed by Smith et al. (2009). The analysis included reading and rereading the transcripts, listening to and watching the audiovisual files, initial open coding, axial coding to collapse codes into smaller analytical units and developing emergent themes. The initial open coding was categorized by in vivo, descriptive, process, emotion, and value comments. After the initial coding was complete, the researcher looked for connections among the comments and developed emergent themes, which were organized in Microsoft Excel. The emergent themes were sent to the participants for member checking, and then were connected into key theoretical findings to highlight the interconnected nature of the findings.

Participants

Participants of this study were purposefully chosen to include individuals whose lived experience included employment in the early intervention setting to provide a great depth of insight and understanding of the study's phenomena. Each of the eight participants was selected by their voluntary interest, graduation from a DPT program in 2018 or 2019, and current employment in the early intervention setting. Criterion sampling ensured uniformity of the sample, maximizing the generalizability of findings. At the beginning of the interview, demographic questions captured information about the type of physical therapy program,

location of education and employment, and personal factors such as age and gender. A summary of this information is located in Table 1.

Table 1

Summary of Participant Demographic Information

Participant (Pseudonym)	Gender	Age	Year of Graduation	PT School Location	Curriculum Model	Pediatric Course Model	# Pediatric Clinical Education Experiences
Jenna	F	25	2019	NY	Traditional	Stand-Alone Course	2
Bridget	F	25	2018	NY	Traditional	Stand-Alone Course	2
Leah	F	25	2019	NY	Traditional	Stand-Alone Course	2
Mia	F	28	2019	VA	Traditional	Stand-Alone Course	2
Amanda	F	28	2018	VA	Traditional	Stand-Alone Course	1
Marie	F	41	2018	NM	Traditional	Stand-Alone Course	1
Alanna	F	27	2018	FL	Traditional	Stand-Alone Course	2
Megan	F	27	2018	KS	Traditional	Stand-Alone Course	1

Presentation of Results

In completing the analysis of the eight interviews of the study's participants, an extensive review and examination of the transcripts as well as coding was performed to extract the most meaningful perceptions and experiences. Three themes emerged during the analysis that provided a rich understanding of the participants' lived experience of working in the early intervention setting. Within each theme, sub-themes were identified that represented identical or very similar words, and phrases that were intertwined among many of the interviews. A summary of the themes and subthemes are presented in Table 2 and will be discussed in detail in this section.

Table 2

Summary of Themes and Subthemes

Themes	Subthemes
1. Finding purpose and validation	1. Enjoyment working with children 2. Dedication to children and families 3. Relationships with families 4. Progress as a source of motivation
2. Meaningful pre-professional preparation strategies	1. Clinical education experiences 2. Other meaningful experiences
3. Commitment despite struggles	1. Mentoring and support from colleagues 2. Self-directed continuing education to fill knowledge gaps

The themes and subthemes were constructed into key theoretical findings to highlight the interconnected relationship of the findings. Three key thematic findings emerged from coding and data analysis. The participants persisted in their employment in the early intervention setting despite struggles. Full-time clinical education experiences were the most meaningful experiences in teaching the participants how to work with children. Finally, support from colleagues through mentorship or informal discussions were vital for the participants as they embarked on their careers. Results will be discussed in-depth in Chapter 5.

Theme 1: Finding Purpose and Validation

The participants' responses appeared to indicate a commonality in seeking purpose in their work with young children and their families. Leah chose her current position in early intervention for "the prospect of being really close with a family" and being "helpful to families." Observing progress and change as the children on her caseload grew was "super rewarding" to Bridget. Mia's desire to be connected to all family members and "figuring out truly what the family's goals are" was described as an essential part of her job.

Subtheme 1: Enjoyment When Working with Children

There was consensus among all participants that working with children was enjoyable and pleasurable. Three participants, Mia, Alanna, and Jenna, knew they wanted to work with children before they began their physical therapy education. Bridget recognized her desire to work with children early in her college education. Megan considered a pediatric job when she began school, and her education confirmed her passion for working with children. Leah identified joy in working with children during her DPT education. Amanda loved working with the birth to three population, and Marie was drawn to working with young children.

The participants noted that working with children was pleasurable and "joyful." Facilitating "firsts" and setting the foundation for a lifetime of movement, a unique aspect of working with children experiencing gross motor development for the first time, was impactful. The participants referred to the play-based nature of their work as fun, and Jenna relished the ability to "play all day." Using songs and being silly to engage their clients was pleasant, and the participants felt the work kept them "young and silly." The creative nature of the work required to engage children in therapeutic activities was professionally gratifying. Leah stated,

> For me, pediatrics, it doesn't feel like work. It just feels so fun, and it's just such a joy to get to play, even though it's skilled and it's something I went to school for a long time for. It still, a lot of times, just feels like play. It feels really fun.

Subtheme 2: Dedication to Children and Families

The participants expressed a desire to make a difference in their work and change the lives of children on their caseloads, which helped them find their purpose. In addition to providing therapeutic interventions to address gross motor delays, the participants described additional work-related tasks. Helping families understand the vital role of extending therapeutic

activities into their daily routines was essential for helping families build capacity to raise their child. Obtaining resources for families (n = 4) and making referrals (n = 5) for additional needed services was imperative to help children develop age-appropriate skills and close the developmental gap.

The participants discussed the impact of raising a child with a disability or developmental delay on the family and the need to provide emotional support to parents. Megan noted that "sometimes, they need more than just the physical therapy. It's listening to them and being there for emotional support." The participants discussed how sensitivity to unique family dynamics impacted a therapy session, noting the importance of carefully considering each family's physical, emotional, and environmental factors during interactions and when developing a plan of care.

Many reported that they "love" their job despite the challenges of working in this setting. The participants dedicated a great deal of personal time to completing paperwork, gathering information about beneficial resources, and pursuing continuing education. Bridget stated that she was "constantly checking" her work phone. Mia described the self-imposed perception of being a "constant resource" for families and the need to reassure and calm anxious parents by answering questions and texting parents between sessions. This pattern of action was discussed by many participants. Service to the children and families on their caseload can come at a personal cost. Megan discussed how involvement in "situations of abuse or hard social factors" can take an emotional toll on the therapist. One participant explained the burnout she experienced and her struggle to maintain healthy professional boundaries.

Subtheme 3: Relationships with Families

All eight participants discussed the "special and unique" relationship they had with the children's families. Bridget consistently referenced the parents of her clients as "my families." Providing services in the child's home gave them what Megan described as a "really unique opportunity to get to have a more intimate relationship with parents and families." Mia called attention to witnessing family dynamics and being in the physical environment provided additional insight into strengths and challenges to "get down to what is important to them" and meet the family's goal. This knowledge was the foundation of close relationships with the parents built upon understanding and trust. Bridget stated: "You get really close with these families. You learn all the ins and outs, not just sometimes about PT, you get everything." Megan felt that working the home provides "the opportunity to see things a little differently than therapists and other settings do."

Collaboration and communication with families was an essential part of the participants' role as an early intervention therapist. Listening to parents was a crucial component for therapists to support children on their caseload. Bridget said: "It's about working with and listening to families to make their lives easier and their kids as independent as possible." Parent education was a collaboration strategy used to build parents' capacity to foster their child's development. Effective education of parents was a source of pride for multiple participants. The need to "convey what you've done with the parent, why you're doing it" was critical and Alanna underscored the importance of education by saying, "give them [parents] some accountability so that they know that it's not just me. It's not the magic 30 minutes of the week, and then we're going to see changes." The participants dedicated time in their sessions to gather information

from the family that would both inform interventions and educate parents to ensure carryover of the therapeutic activities.

All participants provided examples of professional respect in the relationships with the families of children on their caseload. Acknowledging the parent's critical role as the expert on their child was the foundation of a respectful relationship. Multiple participants expressed that listening to the lived experience of families was a critical way to respect their expertise and be less directive. Marie attested to "it's that listening piece, people will tell you a lot if you just listen. I think the majority of what I've done is just pull information about what's really wrong and what's really challenging." Learning the etiquette of going into a family's home was an essential part of relationship building. Respecting the family's resources, even if limited, was essential and displayed by using items in the family's home during sessions, allowing parents to continue therapy at home outside of therapy sessions. Practicing cultural humility and embracing each family's unique nature instead of viewing differences as barriers was an indispensable factor in building trusting relationships with families.

Subtheme 4: Motivated by Progress

Seven participants said that observing client progress toward therapeutic goals, overall development, and parent interaction impacted their motivation. The therapists "see the impacts that you're making" and "make lifelong differences" on the children's lives was validating and fulfilling. The potential for change and growth was exciting to participants, and they were grateful for the "unique opportunity" to witness "first moments." Marie enjoyed helping children build a foundation, not reestablish function after an injury. The positive response from families was motivating to the participants. Alanna brought cognizance to validation from parents, "the gratefulness for parents when you are the one that's facilitating first steps the first time they

enroll, even just the tiniest things, it's just so fulfilling." Conversely, Leah, Bridget, Alanna, and Jenna reported frustration when parents did not "buy in" and become active participants in the plan of care. Feelings of obstruction added pressure to facilitate progress, making the participants feel "unimportant."

Theme 2: Meaningful Pre-Professional Preparation Strategies

The consensus among participants was that their pediatric clinical education experience was the most effective and meaningful preparation to work in the early intervention setting. All participants completed a pediatric clinical education experience during their entry-level physical therapy education. Additionally, other learning experiences helped the participants learn to work with children and their families. Lecture content taught foundational gross motor milestones and laboratory experiences with children provided opportunities to apply communication skills, paid employment or volunteer work with children foster engagement strategies and equally important was personal time spent with young family members.

Subtheme 1: Clinical Education Experiences

All participants completed at least one full-time pediatric clinical education experience during their entry-level physical therapy education program, summarized in Table 3. Clinical education experiences were collectively completed in the following settings: early intervention, itinerant preschool services, school-based, inpatient pediatrics, outpatient pediatrics (private practice and hospital-based clinic), and prescribed pediatric extended care center. All participants stated this experience was the most meaningful part of their DPT pediatric education.

Table 3

Summary of Participants' Clinical Education Experiences

Participant	Settings of Pediatric Clinical Education Experiences
Jenna	1. Outpatient Clinic & Integrated Preschool 2. Early Intervention, Preschool, Outpatient Pediatric Clinic
Bridget	1. Early Intervention 2. Early Intervention & Preschool
Leah	1. Early Intervention 2. School-based in District
Mia	1. Inpatient Pediatrics (Acute, Pediatric Intensive Care Unit, Neonatal Intensive Care Unit) 2. Outpatient Pediatric Clinic
Amanda	1. Outpatient Pediatric Clinic
Marie	1. Early Intervention
Alanna	1. Prescribed Pediatric Extended Care Center 2. Hospital-based Outpatient Clinic
Megan	1. Children's Hospital Outpatient Orthopedic Clinic

Clinical education experiences provided the opportunity to apply didactic knowledge and receive vital hands-on experience working with various children under the supervision of licensed physical therapists. Engaging and interacting with children was valued and appreciated by all and epitomized by Alanna's quote: "hands-on and seeing it actually happening; I don't think can be taught just in a classroom." Marie felt that the clinical education experiences "helped to see those pieces [what she learned in DPT school] coming together." Despite feelings of uncertainty and anxiety during these experiences, the participants enjoyed working with children and expressed gratitude for these experiences that helped them achieve their professional goals. Students were motivated and inspired by their Clinical Instructors (CI) and emulated their CIs' interactions and handling skills. Learning to adapt their communication and interventions to ensure child-engagement led to meaningful moments during these experiences.

Bridget felt that being “thrown into the situation” of a therapy session taught her the importance of being creative and adjusting “on the fly” to children’s needs.

Participation in pediatric clinical education experiences impacted the participants’ employment choices after graduation. Five participants voiced that their clinical education experience confirmed their desire to pursue pediatric employment. Leah reported that the clinical education experience not only taught her skills but impacted her employment: “If I didn’t have a pediatric clinical, I don’t know that I would have taken a job in peds. I probably wouldn’t have.” Bridget stated feeling confident to work in early intervention due to her clinical experiences.

Multiple Pediatric Clinical Education Experiences. Five participants had two full-time pediatric clinical education experiences. Alanna and Mia stated that they needed to “fight” with the Director of Clinical Education (DCE) because their program typically did not allow multiple pediatric experiences. These participants felt that they were “lucky enough to get two out of my four clinicals in pediatrics," and the two settings provided “a whole array of different experiences.” Two participants, Jenna and Marie, reported integrated clinical education experiences during the didactic portion of the curriculum helped prepare them to work with children.

Early Intervention Clinical Education Experiences. Four participants completed a clinical education experience in the early intervention setting. These experiences provided exposure to children birth to 3 years of age and their families, a different experience from working with older children in a therapeutic setting. Jenna said this clinical education experience filled a gap, “you can think about handling a baby all day long, but until you do it, you don’t really know what it’s going to be like.” Bridget reported that the significant amount of hands-on

experience during her early intervention clinical “made me more confident” and confirmed her desire to help children and families achieve their goals.

Subtheme 2: Other Meaningful Experiences

Additional meaningful experiences prepared the participants to work with children. Exposure to children and families in a non-clinical fashion was perceived as very relevant by the participants, with those experiences preparing them for their role as early intervention therapists. Time spent with young family members, raising children, and lived experience as a family member of individuals with a disability shaped their interactions and ability to manage behaviors. Paid employment or volunteer jobs with children was a consequential preparation strategy. Pediatric internships, tutoring, coaching, and teaching experiences provided skills to work with children. Megan felt that her job as a care provider for a nine-year-old girl with Cerebral Palsy “gave me good insight into what families that have a kiddo who has special needs can be experiencing.” The family mentorship experience embedded in Mia’s Leadership Education in Neurodevelopmental Disabilities (LEND) fellowship program influenced her knowledge of parental perceptions of working with therapists.

Didactic experience in the classroom and laboratory was also an essential component of the participants’ pre-professional training. Participants reported learning gross motor development, common pediatric medical diagnoses, administration and interpretation of tests and measures, intervention strategies, and legislation during the participants’ didactic education. Communication strategies and interprofessional practice was taught in other non-pediatric courses. The most meaningful learning experiences identified were lab experiences with typically-developing children and children receiving physical therapy services. Six participants reported hands-on lab experiences or integrated clinical education experiences with children,

providing what Bridget referred to as “a taste of what it would really be like in a pediatric outpatient setting.”

Theme 3: Commitment Despite Struggles

The participants described working in early intervention as challenging but driven by what Jenna portrayed as “amazing rewards.” Additional meaningful factors included joy working with children, the play-based nature of the setting, witnessing progress, and seeing children’s potential. These factors were enough to overcome the chaotic, hectic, and uncertain nature of the work. Participants valued access to a global view of the child and family working in the home as it informed their plan of care.

A range of perceptions of preparation to work in the early intervention setting were reported from feelings of “not prepared at all” to having a “baseline” level of knowledge. Five participants felt prepared clinically with the entry-level knowledge necessary to be a pediatric physical therapist. Others, such as Alanna and Mia, felt that they were “just not ready” to work in early intervention immediately after graduation, because, as one stated “knew the concept of what EI was, but specifics of what actual sessions looked like, I had no idea.” Mia’s perception of an inadequate entry-level education made the transition to early intervention more difficult, “I don’t really feel like I learned anything in our pediatric lab that was transferable to my pediatric clinicals or current practice.”

Regardless of the perception of preparation, all participants wished they had more information in the real-world application of early intervention practices, better handling skills, additional behavior management strategies, and more knowledge of other developmental domains. Additionally, the participants wanted more information on the practical implementation of parent-driven coaching and some in adopting a service-coordination role. Some participants

sought out additional pre-professional activities, including taking a pediatric elective course during the DPT program and participating in a Leadership Education in Neurodevelopmental Disabilities (LEND) fellowship program. Participants reported engaging in additional post-professional learning after graduation. Post-professional activities included completing an American Board of Physical Therapy Residency and Fellowship Education (ABPTRFE) in pediatrics after graduation and informal continuing education.

Subtheme 1: Mentoring and Support from Colleagues

Post-professional formal (n = 6) or informal (n = 2) mentoring was an essential mode of continued learning during the transition from a student to an autonomous physical therapist. The participants expressed gratitude for their colleagues' assistance during the transition to the workforce and found security in support provided by experienced colleagues. Multiple participants admitted that they relied "very, very, heavily" on their mentors. The transition to working was described as "scary at first," "terrifying," "a whirlwind," and initially "nerve-racking" to enter families' homes, by Leah, Mia, Jenna, Amanda, and Jenna respectively. Mentoring helped reduce the stress and anxiety associated with the transition from a student to a licensed therapist. Mia stated, "even though I'm alone going into people's houses, I am not alone by any means, because I can ask multiple people for guidance at any point that I need it."

Support included an experienced mentor or colleague that would "talk through any questions" and would discuss therapeutic interventions to address the client's impairments. The mentors would "come with her [Jenna] for visits in-person" if experiencing a challenging situation and helped Leah "talk to the parents about certain things that were difficult." Equally important, the mentors "look over IFSPs, program reviews" and provided feedback on paperwork and deadlines. Mentors and colleagues extended professional respect to the new

graduates by respecting the new graduates' professional autonomy, independence, and most important to Bridget "trusting my judgment." Shadowing opportunities for the new graduates allowed them to observe sessions and learn by watching experienced therapists in action.

Informal mentoring from colleagues occurred for participants with and without a formal mentoring program established by their employer. Informal mentors included colleagues, former clinical instructors, and former professors contacted for support as the participants transitioned to early intervention employment. The informal nature required the participants to initiate contact and be what Marie labeled as the "remote leader" of those interactions due to the itinerant nature of early intervention. Team meetings provided time and space for participants to connect with colleagues. Participants shadowed other disciplines to expand knowledge of age-appropriate development. One participant sought out mentoring opportunities outside her employer by participating in the American Academy of Pediatric Physical Therapy Students and New Professionals mentoring program. Gradually, the support required by all participants decreased.

Subtheme 2: Self-Directed Continuing Education to Fill Knowledge Gaps

Participants indicated that learning to work with children and families did not end when they graduated from PT school. Consistent with Megan's reflection, "there was a lot that I had to learn on the job," the participants accepted the need for post-professional continuing education to effectively manage the care of children on their caseloads. Consistently, these participants were self-motivated to learn, become a better physical therapist, and be as Amanda shared "as functional as you can be in the clinic." One participant recognized the gaps in her preparation, applied, and was accepted into a post-professional pediatric residency program to advance her knowledge and skills. Many others searched for online resources, read textbooks, and watched videos to improve their skills in their personal time. Exploring the literature to answer clinical

questions or provide evidence-based interventions occurred independently as well as during journal article review meetings. The American Physical Therapy Association and Academy of Pediatric Physical Therapy had “awesome resources” that the participants found valuable to fill knowledge gaps.

Conclusions

This study explored the lived experience of physical therapists working in the early intervention setting after graduation by reflecting on the significance of life events to explore their preparation perceptions. Findings based on eight semi-structured interviews revealed that their experiences influenced these therapists and their careers. Therapists reported pre-professional clinical education experiences in pediatrics and post-professional mentoring as the most meaningful ways to learn how to work with children and their families. Seeking a close, intimate relationship with children’s families was a significant factor in pursuing employment in the early intervention setting. A sense of dedication to families and children was motivating despite struggles inherent to the setting and entry-level preparation. A detailed interpretation of the findings, informed by the literature review, will be presented in Chapter 5.

CHAPTER FIVE: ANALYSIS OF FINDINGS AND INTERPRETATIONS

The purpose of this interpretive phenomenological analysis (IPA) was to explore the lived experience of newly graduated physical therapists as they transition to working in the early intervention setting. Specifically, this study focused on identifying perceptions of preparation utilizing a Discrepancy Evaluation Model (DEM). By analyzing each narrative, the researcher attempted to make sense of the lived experience of eight pediatric physical therapists working in the early intervention setting. IPA's primary purpose is not to develop generalization or causation but rather to create rich descriptions of the lived experience through commonalities among the participants (Moustakas, 1994; Smith et al., 2009). This chapter presents findings and interpretation from the interviews conducted with these physical therapists.

This study aimed to address a gap in the literature by exploring the lived experience of physical therapist graduates as they transitioned to the early intervention workforce. In this study, the therapists felt they needed additional knowledge and skills to effectively practice in the early intervention setting as their entry-level education did not include sufficient training in early intervention practices. Previous studies explored the education of physical therapists and early-intervention specific information included in the curriculum with little consideration of how omissions impact new graduates' lived experience (Bruder & Dunst, 2005; Campbell et al., 2009; Kenyon et al., 2017). Research suggests that therapists employed in the early intervention setting may encounter similar struggles to novice therapists in other practice settings (Catalino et al., 2015; Jones et al., 2010; Tryssenaar & Perkins, 2001). This study sought a better understanding of the impact of academic preparation for physical therapists working in the early intervention within two years of graduation.

The general theoretical context of the significant variability in pediatric physical therapy education has been well documented, including limited content about early intervention competencies and complex pediatric conditions (Anderson et al., 2019; Campbell et al., 2009a; Kenyon et al., 2017; Schreiber et al., 2011). A lack of alignment between entry-level education standards and early intervention competencies that reflect the complexity of clinical practice has created a gap in the knowledge and skills necessary to provide services under the Individuals with Disabilities Education Act (IDEA), Part C (Campbell et al., 2009a; Weaver et al., 2018). To address the preparation gap, this study's goal was to explore pre-preprofessional education's adequacy in preparing them to work with young children and their families after graduation. The following research question was used to guide this study and understand the lived experience of newly graduated physical therapists as they transition to working in the early intervention setting: How do recent physical therapy graduates (less than two years of practice) describe their lived experience of transitions from a student to a therapist working in early intervention?

Summary of Findings and Interpretations

This chapter begins by discussing how the findings were connected to the relevant literature. Following this interpretation, the implications of the study are presented. The chapter concludes with recommendations for future research into the preparation of physical therapists transitioning into the early intervention workforce. The three key thematic findings (KTF) in this chapter were derived from the theme and subthemes presented in Chapter 4, highlighting the findings' intersectionality. Appendix E shows the relationship among the KTFs, themes, and subthemes in exploring the transition into the work force and the participants' perceptions of their preparation. This chapter presents the interrelated narratives in specific detail, connecting the data to the relevant literature.

The interrelated themes and subthemes were the foundation of the interpretive analysis of the study's phenomena. Physical therapists who have transitioned from a student to a physical therapist are the individuals best positioned to recommend effective means of preparation for employment in the early intervention setting (Jackson, 2019). Participants used identical words and phrases to describe their lived experiences despite conducting the interviews independently. In combination with bracketing, this linguistic pattern made it clear to the researcher that the responses were related to their entry-level educational experiences, and their perceptions of preparation to work in the early intervention setting were connected across themes and subthemes. The participants expressed gaps in their entry-level education and described how they addressed the identified gaps and why they persisted in working in this specific setting.

The lived experiences of physical therapists working in the early intervention setting were explored through semi-structured interviews with eight participants. Purposeful sampling was used to recruit participants through personal contact, social media sites such as LinkedIn, and listservs directed toward pediatric physical therapy. Participants were chosen based on their graduation from a CAPTE accredited Doctor of Physical Therapy (DPT) program in 2018 or 2019 and who have a caseload of at least 25% early intervention clients.

Interviews were conducted via zoom and transcribed via a web-based software company. The transcripts were edited to remove any identifying factors. The de-identified transcripts were sent to the participants for member checking. The analysis process was completed according to the method developed by Smith et al. (2009). It included reading and rereading the transcripts, listening, watching the audio files, initial open coding, axial coding to collapse codes into smaller analytical units, and developing emergent themes. The initial open coding was categorized by in vivo, descriptive, process, emotion, and value comments. Following the initial

coding, the researcher looked for connections among the comments and developed emergent themes. The emergent themes were sent to the participants for member checking. The emergent themes were connected to key theoretical findings to highlight the interconnected nature of the findings.

Consistent with the variability in pediatric physical therapy education established by preceding studies, the participants reported varied didactic educational experiences and perceptions of preparation (Anderson et al., 2019; Campbell et al., 2009a; Kenyon et al., 2017; Schreiber et al., 2011). The DEM framework guided the analysis to compare performance, defined by this study as the didactic and clinical education a DPT student received in his or her entry-level education, against a standard, the collective knowledge, and skills necessary to meet the job requirements of an early intervention therapist. The comparison between the participants' educational experience and description of job requirements obtained through their lived experience uncovered areas of discrepancy. The participants' reflections highlighted a preparation-practice gap in implementing a parent-driven model of intervention, role extension to support overall child development beyond gross motor milestones, and additional hands-on skills with babies and infants to facilitate play-based interventions.

The analysis process highlighted examples of the dedication these participants had to the children and families on their caseloads. This dedication to making a difference in these families' lives was connected to seeking employment in early intervention settings. Inspection of the data revealed the importance of child-provider and parent-provider relationships related to the participants finding purpose and validation in their work. These relationships motivated the participants to seek mentorship and continuing education to close gaps in their pre-professional education and meet the multiple challenges of working in this specific practice setting.

Key Thematic Finding 1

All participants expressed the need for support from colleagues as they embarked on their careers as a physical therapist in the early intervention setting. Consistent with previous research, the importance of mentorship was clear. The supportive environments created by mentors and colleagues helped the participants adapt to becoming a physical therapist in this setting and achieving career success (Solomon et al., 2004; Solomon & Miller, 2008; Straus et al., 2009). One participant, Bridget, acknowledged that she needed support and said that she was "ready to not have someone directly over my shoulder the whole time but to have people close by if I needed them." Closely intertwined with the need for mentorship was the realization that "learning on the job" was ongoing to ensure children's positive outcomes and trusting relationships with parents.

Participants' excitement from the freedom and autonomy that accompanied being a therapist aligned with research noting that the benefits were accompanied by the pressure of making decisions, constant stress, and need for professional development (Tryssenaar & Perkins, 2001). The initial nerves and fear experienced by the participants were gradually replaced with feelings of pride and accomplishment after successful sessions, raising their confidence (Black et al., 2010, 2010; Solomon & Miller, 2008). A "supportive work environment" and the "right kind of support" reduced the stress associated with insufficient knowledge, lack of clinical experience, or ambiguity in complex cases. The participants viewed support from mentors and colleagues as essential for professional growth rather than a sign of inadequacy, consistent with the findings of Strauss et al. (2009). The self-directed actions of the therapists to maintain regular contact with their mentor and participate in learning experiences embedded in clinical practice to reach a level of professional achievement was consistent with the self-regulated learning framework proposed

by Sitzmann and Ely (2011). The therapists' control in shaping the mentoring relationship empowered the therapists to determine the type of frequency of support, contributing to the positive feelings reported in this study. The relationship evolved as the therapists gained confidence and acquired additional knowledge and skills to view the mentor as an accessible resource, contributing to feeling expressed by Mia that "even though I'm alone going into people's houses, I'm not alone."

Participants found that the respect that experienced colleagues extended to them was especially motivating and validating. During the novice therapist's first one-to-two years of practice, the reciprocity of their respect for the clinical expertise of their mentor and the mentor's trust in their mentee's judgement was an essential factor in the therapist's growth. A notable positive change in the participants' affect as they expressed how pleased they felt in discussing the respect from experienced colleagues was observed. The findings of this study appear to be in general agreement with the work of Straus et al. (2009) on the importance of mutual respect and open communication in the mentor-mentee relationship. The mentors were described as accessible, flexible, and knowledgeable, characteristics of good professional relationships that were valued by the participants. While a discussion of the benefits of mentoring for the mentor is beyond the scope of this study, the literature suggests that experienced therapists receive different benefits from participation in mentorship (LaFleur & White, 2010; Yoon et al., 2016).

The mentor-mentee relationship is different from that of a student and clinical instructor during a clinical education experience. Clinical instructors (CI) are assigned to teach students tasks in the clinical environment for a predetermined short period to bridge the gap between theory learned in the classroom and clinical practice (Meyer et al., 2019; Yoon et al., 2016). The conflicting responsibilities of mentoring and assessing clinical competence create a power

differential and results in a very different student-CI relationship than a mentor-mentee relationship (Meyer et al., 2019; Yonge et al., 2007; Yoon et al., 2016). The language the participants used to describe their interactions with the CIs during clinical education experiences reflect the difference from mentoring post-graduation. The participants discussed being taught, applying information learned, imitating actions of the CI, and getting feedback for improvement.

In contrast, mentorship between two licensed therapists is a nurturing relationship grounded in support and sharing knowledge that guides the mentee to self-actualization, evolving professional judgment, and greater autonomy (Yonge et al., 2007). The participants used phrases such as obtaining support, receiving suggestions, and getting advice to describe their mentors' interactions. Confidence in asking their mentors questions was a common theme that demonstrated exposing their limited knowledge without fear of repercussion. One participant, Alanna, described how she learned the difference between being taught during clinical education with "someone over [her] shoulder" to trusting her clinical judgment and "using these mentors to help guide my critical thinking." Professional development occurred by discussing clinical cases, shadowing to observe interactions, and interprofessional dialogue to expand knowledge beyond discipline-specific expertise. These learning experiences were described as "building capacity" during the first few years of practice, consistent with the unspoken purpose of mentoring programs to help mentees be efficient and autonomous therapists.

The knowledge of the early intervention system did not automatically translate into the implementation of early intervention practices, even for those participants that had clinical education experiences in early intervention. Most participants felt that their didactic pediatric education was not adequate preparation for employment in this specific setting. This finding highlighted the vital importance of mentorship during the transition to the workforce. Early

intervention practice mechanics and learning the finer points such as making a schedule, juggling caseloads, time management, the etiquette of going into homes, and paperwork were challenging even if they completed a clinical education experience in this setting. Novice physical therapists, similar to novice nurses, must navigate unfamiliar clinical practice issues and depend on mentorship from experienced colleagues (Benner, 1982). Research suggests the importance of mentorship, yet there is a paucity of literature exploring mentorship in the early intervention setting for physical therapists.

The participants needed assistance to assimilate family-centered practice expectations, timelines, procedures, paperwork, and their participation in IFSP meetings. These findings are consistent with previous research that stated physical therapists have the lowest training level in these areas (Bruder & Dunst, 2005; Campbell et al., 2009). Participants noted that they needed to refer to their mentors and colleagues to learn more about development outside the motor domain. Consistent comments regarding the desire to have learned more about child development in all developmental areas highlight the inadequate preparation in these areas. Shadowing other disciplines or inviting occupational therapists or speech-language pathologists to their sessions with clients was beneficial for learning about development other than gross motor development to support families with developmentally appropriate activities and make timely referrals for additional evaluations.

Key Thematic Finding 2

All participants persisted in their employment in the early intervention setting despite struggles. None reported a desire to abandon work in this specific practice setting. Participants indicated that working with children was enjoyable and validated by their work with clients' families. Consistent with the ethics of care, many participants reported that their greatest

professional satisfaction was in the close relationships established with the children and families (Shapiro & Gross, 2013; Solomon et al., 2004). The participants were dedicated to the children on their caseloads and their families. Despite significantly lower salaries when compared to other practice settings, the therapists expressed no indications of resentment (Ambler, 2020; Nabozny, 2018; Shields & Dudley-Javoroski, 2018). It is reasonable to extrapolate Noddings' (2013) work to the lived experience of these participants and interpret the child-therapist and parent-therapist relationships formed gave meaning to their work as physical therapists.

Consistent with the ethics of care, the participants articulated the special relationship they developed as part of their work as “being a really close family,” “extended family that comes with this position,” "intimate relationship with patients and families," "collaboration with the whole family," and being a "family friend." Two participants, Bridget and Alanna, noted that the relationship with some families extended past discharge. Parents maintain contact to report continued skill development or ask questions. Bridget said that "you miss those relationships once they’re gone." Recognition of this phenomenon raises the possibility of the importance of special bonds that are part of this specific therapeutic relationship in the early intervention setting (Branch, 2000). Consistent with early intervention philosophy, home visits focus on building partnerships with families by maximizing family-based routines to promote child development (Bruder, 2000). The participants identified the importance of considering the emotional needs of families to build empathic, trusting provider-child and provider-parent relationships.

Brotherson et al. (2010) proposed that both families and providers have emotional needs that impact the patterns of partnerships that develop in the home-visit model of early intervention. It is the "match" between the family's emotional needs and the provider's emotional needs and skills that determines productive partnerships and meets the needs of all involved. The

participants' responses indicated that work in this setting was mutually beneficial for the child, parents, and therapists themselves. Physical therapy is a profession closely related to altruism by adopting it as a core value of the profession (American Physical Therapy Association, 2019). The APTA explicitly includes "devotion to the interest of patients and clients" in its definition of altruism, a component of professionalism in entry-level physical therapy education (American Physical Therapy Association, 2019). Altruistic behavior aligns with servant leadership's foundations, yet often self-interested behavior accompanies altruistic intentions (Kraut, 2020). Working with children and their families afforded a sense of "joy" and pleasure that "doesn't feel like work." The therapists personified the servant leadership role as they instructed, empowered, and nurtured families through trusting partnerships built upon empathy and stewardship (Gersh, 2006). Professional validation occurred when observing progress and their client achieving desired outcomes, contributing to the feeling that the therapists were making a difference in the children's lives. The child, family, and providers' needs were met in this mutual symbiotic relationship, contributing to a good "match" and unique parent-provider relationship discussed at length in this study.

The finding that provision of therapy services in the home setting can provide access to information that can make a provider more effective was supported by the therapists in this study. The enmeshment in family dynamics can blur professional boundaries differently than treatment in an office. Phrases such as "[seeing] you as a family friend" and being an "extended family that comes with being in this position whether you want it or not" suggests a different relationship with the parents of children on their caseloads that physical therapists have with patients in outpatient or inpatient settings. Multiple participants described how the parent-provider relationship extended beyond the end of therapy services by sending updates on the

child's development to the therapist or asking questions. The literature has explored the perceptions and attitudes of family-center care implementation of both physical therapists and parents; however, there is a paucity of research regarding the unique relationship between parents and therapists working in the early intervention setting described by the participants of this study (Miyagishima et al., 2017; O'Neil et al., 2001).

The participants in this study reported deficits in early intervention-specific practices, knowledge of development beyond gross motor skills, and hands-on facilitation of movement. Insufficient time in the field contributed to limited clinical judgement at this point in their careers. These therapists addressed the gaps in their entry-level education by pursuing post-professional mentorship and self-directed continuing education to gain knowledge and skills to respond to each situation's varied needs in clinical practice. The progress that resulted from their therapeutic interventions and caring relationships satisfied the emotional needs of the participants and were described with pleasure and "joy," the satisfaction of seeing "amazing rewards," and validation "[seeing] the progress and the change and meet goals. That is so rewarding, so rewarding."

Descriptions of the participants' experience suggested that they personified the ethic of the profession of physical therapy and ideals of servant leadership mandated by the Commission on Accreditation of Physical Therapist Education (CAPTE) as part of entry-level physical therapy education. Consistent with the American Physical Therapy Association's (APTA) core values of the profession, the knowledge of each child and family's unique lived experience gained by working in the family's natural environment contributed to the compassion and caring discussed by all participants (American Physical Therapy Association, 2009; Gersh, 2006; Swisher & Hiller, 2010). Compassion was built through close, trusting relationships established

with the families, and led to a strong sense of caring for both the children on their caseloads and their parents. These therapists embodied this core value of compassion and caring by understanding the interdependent influences on the family unit, respecting parents as the expert on their child, consistently collaborating and communicating to ensure the highest level of function possible, advocating for additional resources, and attending to emotional needs (American Physical Therapy Association, 2019). Caring for the children and families was essential to the participants, consistent with the finding of Greenfield et al. (2008). The participants described faculty teaching respect and care for families and observing the interactions of their clinical instructors with children and families. Interestingly, the therapists failed to mention any professional or ethical training in their entry-level programs as a means to work in the early intervention setting despite serving as the foundation of their clinical practice.

Key Thematic Finding 3

All participants expressed the significant impact of full-time clinical education experiences in learning to work with pediatric clients in preparation for employment in the early intervention setting. A closer inspection revealed that this experience impacted the participants in two significant ways. First, pre-professional clinical education experiences helped students to develop the entry-level, discipline-specific skills of a physical therapist. Additionally, experience in pediatrics impacted the participant's choice of employment after graduation.

Participants' statements supported the idea that the clinical environment was a richer, context-specific environment to reinforce what was learned in the didactic setting. All eight participants said that their full-time clinical education experiences were the most significant component of their DPT for learning to work with children. Despite this rich learning environment, only 2.52% of DPT programs require a full-time clinical education experience in

pediatrics (Kenyon et al., 2017). The immersive learning environment taught lessons that could not be acquired in the classroom, such as being flexible and adjusting in the moment to engage children. Bridget summarized her experience, “[I’m] learning and I’m adapting on the fly and making it purposeful to them [children] and relate to them.” The combination of scaffolded feedback from clinical instructors and variety of “invaluable” experiences increased the participants’ confidence in their skills. Acknowledging the national shortage of pediatric physical therapists and the importance of the clinical education experience, four of the participants were grateful to have a pediatric clinical education experience to prepare them to work in their preferred setting after graduation (Kenyon et al., 2017).

Preceding studies have suggested that integrated clinical education experiences can be an effective means to learn how to provide family-centered care was supported in this study (Lardinois et al., 2017; Tovin et al., 2017). This concept was supported in the current study. The two participants that completed pediatric integrated clinical education experiences in a pediatric clinic, Jenna and Marie, valued this learning experience to gain additional hands-on experiences with children in a therapeutic setting and "learn more about interacting with the family as well as the child." Integrated clinical education experience may be an effective strategy to scaffold learning and fill the gap for students interested in working in the pediatrics without a full-time clinical education experience in a pediatric setting.

Exposure during clinical education impacted employment by introducing or confirming the desire to work in the pediatric setting. Exposure to different pediatric settings during clinical education experiences helped multiple participants, who knew they wanted to work in pediatrics, to discover the specific setting that would best align with their professional goals. Three of the four participants that felt they were ready to be an early intervention therapist had the most

pediatric clinical education experience, all with at least one clinical experience in early intervention. These results should be viewed with caution secondary to potential researcher bias, as all three participants reported a previous relationship with the researcher. The one participant with two early intervention clinical experiences during her entry-level education, Bridget, stated that her experiences confirmed that she wanted to work with children. Those experiences contributed to her confidence to work in early intervention. She was "not as nervous to work as a PT as [she] thought was going to be" despite acknowledging the need for continuing education.

Implications for Practice

Early intervention therapists continues to provide services for an increasing number of children with a developmental disability and those at risk for a developmental delay, yet significant variability in pediatric education among Doctor of Physical Therapy (DPT) programs exists (Anderson et al., 2019; Schreiber et al., 2011). Despite this, there are national and regional shortages of physical therapists working in this setting (Council of Exceptional Children, 2019; IDEA Infant & Toddler Coordinators Association, 2018; Zablotsky, 2017). This study explored the lived experience of newly-graduated physical therapists as they transition to working in the early intervention setting and their perceptions of preparation. Research on the formal education of pre-professional education physical therapists found that they receive the lowest amount of training in early intervention practices as compared to other related service professions (Bruder et al., 2009). Another study examined the variability of pediatric physical therapy education and the transition of the physical therapist into other settings of practice. The current study addressed the research question of how recent physical therapy graduates describe their lived experience of transitioning from a student to a therapist working in early intervention.

This research suggests that new physical therapists working in the early intervention setting after graduation have gaps in their preparation. Nevertheless, the desire to work with children, make a difference in their lives, and create close partnerships with parents were so powerful that it motivated DPT graduates to seek and retain employment in the setting despite the numerous challenges. None of the participants discussed leaving the early intervention setting, and all were motivated to continue to build capacity to improve their ability to help children and their families.

The participants credited the power of mentorship and support from colleagues for professional development during the transition to the workforce. Academic faculty should prepare students to engage in self-directed post-professional continuing education and setting-specific learning necessary to work in pediatrics after graduation. The results of this study argue for employer investment in mentoring programs for new physical therapy graduates to hire and retain applicants. Novice therapists should be encouraged by academic faculty to seek formal mentorship from employers or information mentoring in the absence of structured support to ease their transition into the workforce and promote post-professional growth (Black et al., 2010; Greenfield et al., 2008; Hayward et al., 2013; Straus et al., 2009). The profession would benefit from a system of training experienced therapists to become mentors not associated with the American Board of Physical Therapy Residency and Fellowship education and incentives to encourage mentorship.

This research may provide academic faculty clarity on salient content and educational approaches for DPT students. The results indicated that full-time clinical education experiences were the most effective preparation to work in early intervention. Experiential learning during laboratories with typically and atypically developing children promoted the application of

information learned in the classroom. Careful consideration of learning activities to provide scaffolded exposure to working with both children and parents can support entry-level pediatric practice preparation. Integrated clinical education experiences can provide additional learning opportunities to work with children and their families as many physical therapy students may not complete a full-time clinical education experience. The development of professionalism and leadership skills can help students establish effective partnerships with parents in a family-centered care model and maintain appropriate boundaries when provided in the child's home.

Limitations

A significant limitation of this study was that data collection occurred during the COVID-19 pandemic and social unrest of 2020. The stress and uncertainty for essential health care workers as professionals and individuals during a global pandemic may have impacted the number of participants, geographic diversity of participants, and how they answered the interview questions. Additionally, many early intervention programs quickly pivoted to provide legally-mandated services via telehealth, a new and challenging way to deliver services in this setting.

Despite demographic information collected by the American Physical Therapy Association on the number of annual graduates from Doctor of Physical Therapy (DPT) programs and practice settings of members, the exact number of physical therapists working in the early intervention setting is unknown. This study focused on a small number of participants, which limited its generalizability. Response bias may have been present as three of the participants reported being taught by the researcher.

Recommendations for Future Research

Physical therapy graduates' lived experience of transition to working in the early intervention setting is a complex yet unresearched topic. Understanding the transition and learning that occur during the first year on the job can help academic faculty and clinical instructors prepare students for the workforce they will enter. Until now, no substantial research on the transition to working in this specific setting had been conducted and the most recent literature on the preparation of physical therapists to work in early intervention is nearly 20 years old. This study used participants' lived experiences to understand their pre-professional educational preparation better. The participants suggested they had gaps in the nuanced knowledge and skills necessary to practice in this setting, but persist despite the struggles because of personal commitment to the children they serve and validation from their work. The relationships the participants had with families of the children on their caseloads played a significant role in their decision to work in this specific setting.

The following areas of investigation are recommended to help increase the understanding of the preparation of physical therapists to work in the early intervention setting:

- The perceptions of the preparation of new physical therapists by other stakeholders, including but not limited to parents and supervisors, and comparison between groups.
- The unique relationships established between early intervention providers and the families they service
- The use of established cross-disciplinary competencies for personnel serving infants and young children aged birth through 5 years with disabilities and their families in physical therapist education programs

- The impact of specific education pedagogy on the preparation of physical therapists to work in the early intervention setting
- The impact of pre-and post-professional voluntary training programs on the perceptions of preparation to work in early intervention
- The impact of mentorship for new graduates in pediatric physical therapy, specifically those practicing in early intervention.
- The impact of mentorship on experienced therapists that are mentors to novice therapists. Specially, do mentors relish working with new graduates that are excited to work with children and their families or resent incomplete preparation from academic institutions.

Conclusions

The themes and key thematic findings identified in Chapter 4 and Chapter 5 provide information to answer this study's research question: How do recent physical therapy graduates (less than two years of practice) describe their lived experience of transitioning from a student to a therapist working in early intervention? Based on the themes and findings, implications, and recommendations for future research have been presented.

The participants articulated in great detail their positive learning experiences during clinical education experiences and enjoyment working with children confirmed their desire to work in pediatrics. Previous studies focused on deficits in the physical therapists' entry-level education in key areas of early intervention practice (Bruder & Dunst, 2005; Fallace & Fantozzi, 2013). The participants confirmed the findings of Spence et al. (2018) and Bruder et al. (2013) that disciplinary-specific and cross-disciplinary post-professional continuing education was necessary for these pediatric therapists. Self-directed strategies to build professional capacity included mentorship, observations, reading, and seeking online resource to answer clinical

questions. This motivation to improve knowledge and skills was related to the desire to promote child development and support families in their role of raising their child.

The findings of this study suggest that, despite imperfect preparation to work in the early intervention setting and numerous job challenges, the therapists sought and maintained employment in this practice setting out of enjoyment and a sense of purpose. The knowledge of the family unit gained by treating children in their natural environments contributed to close, family-centered relationships established with families. The intimacy of these relationships was highly valued by the participants. Working with children and the creativity required to provide play-based interventions made work feel fun and enjoyable. The positive clinical outcomes validated the efforts of the therapists in seeking purpose in their clinical work.

While some research addresses the most effective means of entry-level pediatric education, this study suggests that continued exploration of knowledge and skills to be an effective early intervention therapist is needed. Knowledge gained may address the shortages in the field and encourage more students to consider a fulfilling career by pursuing employment in this setting after graduation.

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APPENDICES

Appendix A: Semi-Structured Interview Protocol

The Lived Experience of New Physical Therapy Graduates Working in the Early Intervention Setting: Perceptions of Preparation

Thank you for taking the time to meet with me today and share your experiences. As you know, I am working towards my doctorate degree at the University of New England. With your consent, I would like to record our interview today so it can be transcribed and analyzed later. This analysis will contribute to my findings in my dissertation. Do I have your consent to record the interview?

Protecting your confidentiality is extremely important to me. Identifying factors that may impact this confidentiality will be replaced with pseudonyms to protect you. I will also change the names of any individuals you mention during the interview to protect you and the individual named. Raw data with identifying information will only be viewed by my chairperson, committee members, and the UNE IRB board during an audit. Your name will not be used in the written findings and your status as a participant will be disclosed to other participants or the public. Do you have a preferred pseudonym for yourself?

If you are uncomfortable answering any questions, please let me know. Let's begin.

Let's begin with an introduction. Can you please tell me about yourself by answering the following demographic questions?

1. What is your age?
2. How do you identify for gender identity?
3. In what state did you attend PT school?
4. Did you attend a traditional DPT program or a hybrid program?
5. In what state you are licensed to practice PT?
6. Thank you for sharing. And for full transparency, can you describe the nature of any preexisting professional relationship with me?

We are now going to discuss your DPT program and what you learned in the curriculum. Please think back to your time in PT school.

1. Describe, in detail, your pediatric education and educational experiences during your entry-level PT education?
2. How did you learn how to work with children and their families?
3. What parts of your pediatric education were most meaningful to you?

We are going to start by talking about your work experience providing physical therapy service in the early intervention setting.

4. Describe your decision to work in the EI setting with young children and their families.
5. What was your experience as you started to work as a physical therapist for the first time as a licensed physical therapist?

6. Describe your job as a pediatric EI physical therapist.
7. There are aspects of jobs that are easy and other aspects that are challenging. What has been your experience as an EI therapist?

We have discussed your education experience and current work environment. Now, I'd like you to discuss your transition from a student to a PT working in Early Intervention.

8. Describe your feelings of preparation to work as a physical therapist in the EI setting.
9. What factors might determine a smooth transition for one physical therapist into the EI workforce, but not others?
10. Is there anything else from your education or practice as an EI therapist that we did not discuss that you would like to add?

Closing:
Thank you very much for participating in this interview. I appreciate your time and level of depth and thoughtfulness in each of your responses. The information you shared has allowed me to gain a rich and detailed understanding of your perception of the adequacy of your entry-level education to work in the early intervention setting. This information will be useful to gain a better understanding of the preparation of physical therapists and understand of the transition to the workforce.

If you have any further questions for me, please do not hesitate to contact me. A written transcript of this interview will be emailed to you within one-to-two weeks to verify accuracy of your views and experiences. As a reminder this information will remain confidential and will be destroyed at the end of the project.

Let me confirm your email one more time.
Thanks, and have a day/evening.

Appendix B: Email to Potential Participants

Subject: Research Study Participant Search

Dear,

I am an Undergraduate Program Director, Director of Clinical Education, Associate Clinical Professor at Nazareth College, and a current doctoral student at the University of New England. I am working on dissertation, "The Lived Experience of New Physical Therapy Graduates Working in the Early Intervention Setting: Perceptions of Preparation." I am looking to recruit eight to ten volunteers to interview. The criterion to participate in this study includes:

- A graduate from a Commission on Accreditation in Physical Therapy Education (CAPTE) entry-level physical therapy in 2018 or 2019
- Full or part time employment in the early intervention setting
- A minimum of 25% of caseload is providing service to children in the early intervention setting

A series of three interviews will be conducted virtually through Zoom, an online communication platform and are expected to each last 45-60 minutes. The researcher will review a consent form at the beginning of the interview, then volunteers will be asked to sign the form. Volunteers will have the opportunity to review the transcript of each interview, three total, and the emergent themes to ensure information is accurately captured. The identity and privacy of all participants will be protected.

Your participation would be greatly appreciated and your input will benefit future students. If you would like more information about this study or would like to schedule an interview, please contact me at mdonahue6@une.edu.

Thank you,

Michelle Donahue

Appendix C: Email to Post on Listserv and LinkedIn Groups

Subject: Seeking Research Study Participants that Work in the Early Intervention Setting

Dear Administrator,

I am writing this email to request your assistance in obtaining research participants for my doctoral study "The Lived Experience of New Physical Therapy Graduates Working in the Early Intervention Setting: Perceptions of Preparation." The purpose of this Interpretative Phenomenological Analysis is to explore the lived experience of newly graduated physical therapists as they transition to working in the early intervention setting. Specifically, this study will focus on identifying perceptions of preparation utilizing a Discrepancy Evaluation Model.

In this study I am looking to recruit eight to ten volunteers to interview. These participants must:

- Graduated from a Commission on Accreditation in Physical Therapy Education (CAPTE) entry-level physical therapy in 2018 or 2019
- Secured full or part time employment in the early intervention setting
- Have a minimum of 25% of caseload is providing service to children in the early intervention setting

The names of the participants, schools they attended, and places of employment will be kept anonymous. Will you please post this email to your listserv or LinkedIn page so that I can gather participants? Volunteers can communication directly with me at mdonahue6@une.edu if they would like additional information about the study or would like to schedule an interview. Feel free to contact me if you have any questions or concerns.

Thank you for your time and assistance,

Michelle Donahue

Appendix D: Consent Form

UNIVERSITY OF NEW ENGLAND

CONSENT FOR PARTICIPATION IN RESEARCH

The Lived Experience of New Physical Therapy Graduates Working in the Early Intervention Setting: Perceptions of Preparation

Principal Investigator: Michelle L. Donahue, Graduate Student, University of New England
Email: mdonahue6@une.edu Phone: (585) 738-5879

Introduction:

- Please read this form, you may also request that the form is read to you. The purpose of this form is to provide you with information about this research study, and if you choose to participate, document your decision.
- You are encouraged to ask any questions that you may have about this study, now, during or after the project is complete. You can take as much time as you need to decide whether or not you want to participate. Your participation is voluntary.

Purpose of the study:

The purpose of this Interpretative Phenomenological Analysis is to explore the lived experience of newly graduated physical therapists as they transition to working in the early intervention setting. Specifically, this study will focus on identifying perceptions of preparation utilizing a Discrepancy Evaluation Model.

Who will be selected for the study?

To be selected the participant must meet the following requirements:

- Graduate from a Commission on Accreditation in Physical Therapy Education (CAPTE) entry-level physical therapy in 2018 or 2019
- Full or part time employment in the early intervention setting
- A minimum of 25% of caseload is providing service to children in the early intervention setting
- Eighteen years of age or older

What will I be asked to do?

- The researcher will discuss and review the consent form prior to the interview, at which time the participant will be asked to sign the form. Electronic signature and an emailed consent form will be accepted.
- Participate in one virtual interview (30-45 minutes).
- Review the typed transcript of the interview and comment or make changes to transcripts via telephone, video call, email, or through a virtual interview.
- Review the emergent themes developed from the interviews and comment or make changes to transcripts via telephone, video call, email, or through a virtual interview.

What are the possible risks of taking part in this study?

- There are no foreseeable risks associated with participation in this study.
- You may skip or refuse to answer any question(s) for any reason.

What are the possible benefits of taking part in this study?

- Although it is not expected that the participant receives any benefit from participation, the participant may reflect on their educational experience and identify areas to pursue post-professional continuing education to improve clinical practice.
- Your participation may also help educators understand what knowledge, skills, and values are necessary for physical therapists to work in the early intervention setting and make recommendations for curriculum change.

What will it cost me?

- There are no associated costs. Virtual interviews will take place through Zoom, a free communication platform, at a time that is convenient for the participant.

How will my privacy be protected and data be kept confidential?

- Pseudonyms will be assigned and all participants and employers
- Paper documents including the consent forms and transcripts will be stored in a locked file cabinet only accessible to the investigator. Documents will be maintained by the investigator for five years after the study is completed; after which they will be destroyed.
- Electronic documents will be stored on the password protected personal laptop of the investigator.
- Audio recordings of the interviews will be stored on an encrypted external drive stored in a locked file cabinet that only the investigator has access to and destroyed after completion of the study.
- Transcripts and emergent themes will be sent to participants for review and information may be shared with the faculty advisor.

What are my rights as a research participant?

- Your participation is voluntary. Your decision to participate will have no impact on your current or future interactions with your employer or physical therapy program.
- You may skip or refuse to answer any interview question for any reason.
- You may withdraw from the study at any time.
- The principal investigator may terminate your participation in the study at any time for any reason, with or without notice to you.

Whom may I contact with questions?

- The researcher conducting this study is Michelle L. Donahue. For questions or more information concerning this research you may contact her at mdonahue6@une.edu or via phone at (585) 738-5879.
- The faculty advisor, Ella Benson may be contacted at ebenson2@une.edu or via phone at (757) 450-3628.

- If you have any questions or concerns about your rights as a research subject, you contact Mary DeSilva, Chair of the UNE Institutional Review Board at mdesilva1@une.edu or irb@une.edu.

Will I receive a copy of this consent form?

- You will be given a copy of this consent form.

Participant's Statement

I understand the above description of this research and the risks and benefits associated with my participation as a research subject. I agree to take part in the research and do so voluntarily.

Participant's signature or Legally authorized representative	Date
Printed name	

Researcher's Statement

The participant named above had sufficient time to consider the information, had an opportunity to ask questions, and voluntarily agreed to be in this study.

Researcher's signature	Date
Printed name	

Appendix E: Key Thematic Findings Linked to Themes And Subthemes

Key Thematic Finding 1: Participants expressed the need for support from colleagues as they embarked on their career as a physical therapist in the early intervention setting

- **Correlating Theme 3:** Commitment despite struggles
  - **Correlating Subtheme 3.1**: Mentoring and support from colleagues
  - **Correlating Subtheme 3.2**: Self-directed continuing education to fill knowledge gaps

Key Thematic Finding 2: Participants persisted in working in the early intervention setting despite the struggles encountered

- **Correlating Theme 1:** Finding purpose and validation
  - **Correlating Subtheme 1.1:** Enjoyment of working with children
  - **Correlating Subtheme 1.2:** Dedication to children and families
  - **Correlating Subtheme 1.3:** Relationships with families
  - **Correlating Subtheme 1.4:** Progress as a source of motivation
- **Correlating Theme 3**: Commitment despite struggles
  - **Correlating Subtheme 3.1**: Mentoring and support from colleagues
  - **Correlating Subtheme 3.2**: Self-directed continuing education to fill gaps

Key Thematic Finding 3: Participants expressed the significant impact of full-time clinical education experiences on working with pediatric clients.

- C**orrelating Theme 2:** Meaningful pre-professional preparation strategies
  - **Correlating Subtheme 2.1:** Clinical education experiences
- **Correlating Theme 1:** Finding purpose and validation
  - **Correlating Subtheme 1.1:** Enjoyment working with children
  - **Correlating Subtheme 1.3:** Relationships with families