Pediatric Curriculum Content and Objectives

Our students participate in two courses dedicated to pediatrics, Human Development and Pediatrics, presenting information from both a normal and atypical development standpoint. In addition, they receive additional information regarding various neurological disorders commonly seen in pediatrics in a neurological course. Below you will find the learning activities the student experiences and the course objectives for Human Development and Pediatrics:

Human Development:

Lecture, small group discussions/activities during lecture class time, laboratory activities, interaction with babies during hands-on lab, interaction with school-age children at local daycare center, and small group projects using video analysis.

This course designed to give the student a firm understanding of changes that occur across the lifespan in the physical and sensory systems and an in-depth understanding of development in the first decade of life. Theories of development, particularly motor development, are discussed early in the course. The next few weeks are spent exploring prenatal development including changes in the skeletal, muscular, cardiac, pulmonary, sensory, and nervous systems. The students will then learn how development in these areas relates to problems that physical therapists encounter when working with developmental conditions. The students will also review the statistical properties related to development assessment administration and will gain exposure to several developmental assessment tools through lab and presentations during lecture. From prenatal development, infant and early childhood development is covered. Physical changes during these years are discussed in lecture while early labs are spent moving through and analyzing movements in the developmental sequence. Additional information is provided on speech / language and oral motor development. Labs with videos and real babies and children are used to reinforce the lecture material. In addition, the students are required to complete outside assignments based on observation of developmental changes between birth and early childhood and assessment of school-aged children using the BOT-2. In the last few weeks, adolescent and adult developmental issues are discussed as well as issues related to physical fitness across the lifespan.

Course Objectives: After completion of this course, the student should be able to:

1.0 Effectively communicate with other individuals in a professional manner regarding normal human development.

2.0 Consider implications of individual and cultural differences as applied to human development.

3.0 Employ professional behaviors when interacting with classmates, faculty, parents, and daycare settings.

4.0 Evaluate information regarding human development based on the current theories of motor development.

5.0 Critically assess the clinical relevance of literature on topics related to human development.

6.0 Determine the need for further examination or consultation by a physical therapist or for referral to another health care professional based on observation of developmental skills.

6.1 Differentiate between screening and assessment tools.
6.2 Differentiate between norm-referenced and criterion-referenced evaluation tools.
6.3 Apply knowledge of the ranges of normal.

7.0 Discuss normal embryologic development, emphasizing the cardiopulmonary, musculoskeletal, and neurologic systems.

7.1 Describe the timing of the major changes that happen in each system and the importance of these changes.
7.1 Identify the potential problems that may arise when embryonic development does not proceed normally.

8.0 Examine changes in structure and function of the cardiopulmonary, musculoskeletal, and neurologic systems across the lifespan.

8.1 Describe the timing of the major changes that happen in each system and the importance of these changes.
8.2 Identify the potential problems that may arise when development does not proceed normally in any of these systems.

9.0 Discus changes in sensory systems across the lifespan.

9.1 Describe the major developmental changes in vision, hearing, touch, proprioception, motion sense, smell, and taste from the prenatal period through the lifespan.
9.2 Identify how the changes in these systems influence changes in other developmental areas.

10.0 Explain the developmental changes that take place in postural control and volitional movement across the lifespan.

10.1 Discuss the role of reflexes in normal development.
10.2 Identify the age of onset and integration of various primitive and postural reflexes.
10.3 Describe the changes in standing posture across the lifespan.

11.0 Summarize the sequence of development of specific gross motor milestones from birth through childhood.

11.1 List the major milestones during the first year of life.
11.2 Describe the developmental sequences as they occur in prone, supine, sitting, quadruped and standing.
11.3 Discuss the development of gross motor skills during early childhood.

11.4 Describe the changes in gait and balance that occur with increasing age.

12.0 Analyze normal posture and movement, discussing/explaining the importance of each.

13.0 Describe the development of eye-hand coordination and fine motor skills.

14.0 Discuss the major developmental milestones in cognitive, speech, language, and psychosocial development.

15.0 Explain the role of play in the development of infants and children.

15.1 Analyze a toy, assessing its developmental properties.
15.2 Discuss the methods of how to adapt toys for children with special needs.

16.0 Accurately interpret the results of an assessment and make appropriate recommendations regarding the child's developmental level and motor needs.

16.1 Differentiate between available developmental assessment tools, selecting an appropriate tool based on type of test and content included.

16.2. Administer an appropriate assessment tool to a child in a manner that supports accurate analysis of the child's developmental level.

17.0 Explain the changes in physical fitness that take place across the lifespan.

Pediatrics

Lecture content and reading assignments cover various pediatric disorders, pediatric assessment, goal setting, orthotics, school based therapy, adaptive equipment, and family-centered care. Additionally, the students experience the effects of abnormal development during lab and practice handling techniques on dolls and on each other. Study questions are given to guide readings on a different pediatric condition/case each week. The students are also divided into small groups with each group assigned a particular case study including a video of that child. The group must plan and write-up how they would conduct an assessment on this child as well as write-up and turn-in a formal evaluation report. Other course assignments are used to reinforce evidenced based practice and clinical reasoning. As part of this course, each student must also complete an observation of a physical therapist in a pediatric setting. They must observe at least two different children, comment on what they observed, complete documentation on the treatment session, and submit a plan for how they would treat the child the following week. The examinations in this class use case examples to have the student demonstrate their ability to perform clinical reasoning in a pediatric population.

Course Objectives: After completion of this course, the student should be able to:

1.0 Effectively communicate in a professional manner with all other individuals when engaged in pediatric physical therapy.

2.0 Integrate implications of individual and cultural differences when engaged in pediatric physical therapy.

2.1 Explain the role of the family and family-centered care in pediatric physical therapy.

2.2 Address the concerns of the family or care giver during goal setting.

3.0 Demonstrate professional behaviors in all interactions with classmates, faculty, guest speakers, community physical therapists, and families.

4.0 Apply clinical decision-making skills, including clinical reasoning, clinical judgment, and reflective practice, in the context of various pediatric settings.

4.1 Justify treatment decisions using the findings of the patient/client evaluation, as well as with information found in the literature.

4.2 Discuss alternate acceptable and non-acceptable treatment plans.

5.0 Determine the need for further examination or consultation by a physical therapist, or for referral to another health care professional based on the client's/patient's developmental presentation.

5.1 Analyze human development from normal and abnormal perspectives.

5.2 Identify deviations from normal development in the following areas:

a. Sensory integration
b. Fine motor
c. Oral motor
d. Speech
e. Cognition
f. Vision
g. Fitness

6.0 Plan the examination/reexamination of a pediatric patient(s)/client(s) obtaining a pertinent history from the patient, family, and from other relevant sources, by performing a relevant systems review, including the selection of appropriate age-related tests and measures. Examinations include, but are not limited to, the following:

a) cardiopulmonary status and endurance
b) anthropometric characteristics
c) attention and cognition
d) assistive and mobility devices
e) posture and balance
f) motor function
g) muscle performance
h) neuromotor development
i) orthotic requirements
j) range of motion
k) reflexes
l) sensory integrity and integration
m) self care

7.0 Synthesize examination data to complete the pediatric physical therapy evaluation.

8.0 Describe strategies for collaboration with patients, clients, family members, payers, and other professionals regarding different pediatric diagnoses, clinical impressions, and realistic and acceptable plans of care.

9.0 Differentiate the etiology, common symptoms, clinical presentations, complications and medical management of the following pediatric conditions:

a. Cerebral Palsy
b. Traumatic Brain Injury
c. Spinal Cord Injury
d. Myelodysplasia
e. Brain Tumors
f. Muscular Dystrophy
g. Down Syndrome
h. Complications of Prematurity
i. Brachial Plexus Injuries
j. Orthopedic Conditions
k. Arthrogryposis
l. Osteogenesis Imperfecta
m. Autism and Pervasive Developmental Delay
n. Juvenile Rheumatoid Arthritis
o. Developmental Coordination Disorders
p. Mental Retardation
q. HIV

10.0 Recognize the benefits and possible side effects of medications commonly used in the treatment of pediatric conditions, to include:

a. Spasticity
b. Autism
c. ADHD
d. Cardiopulmonary compromise
e. Gastrointestinal difficulties

11.0 Determine patient/client prognosis based on evaluation of results from examination and medical and psychosocial information.

11.1 Explain the pathological course of various pediatric conditions resulting in functional impairments.

11.2 Explain the compensations and consequences that result from abnormal development.

12.0 Determine appropriate goals and functional outcomes associated with each of the following environments/settings:

a. Home
b. School
c. Daycare
d. Hospital
e. Outpatient clinic
f. Group home

12.1 Specify expected time duration for each goal identified in the patient's/client's plan of care.

12.2 Outline achievable patient or client outcomes within available resources.

13.0 Determine an appropriate plan of care that complies with the administrative policies and procedures of community, medical and educational settings.

14.0 Assess the implications of public law on the delivery of pediatric health care services.

15.0 Effectively monitor and adjust the plan of care in response to patient/client status.

16.0 Justify the design and implementation of patterns of best clinical practice for various pediatric populations.

16.1.1 Identify common delivery models/patterns in pediatric health care.

17.0 Select appropriate treatment interventions for the pediatric patient/client.

17.1 Apply appropriate safety techniques in the practice of pediatric therapy to minimize

risk to the child, therapist, or caregiver.

17.2 Perform appropriate positioning and handling skills in therapeutic activities to enhance a child's functional abilities.

17.3 Prepare child-related instructions for a family to successfully achieve outcomes based on child's/patient's/client's impairments, functional limitations, and disability.

17.4 Prepare appropriate and thorough documentation that adheres to specific guidelines and formats required in physical therapy practice settings for a pediatric treatment delivered in an outpatient or school setting.

17.5 Determine the need for adaptive equipment used for pediatric physical therapy interventions including:

a. Orthoses
b. Ambulation Aides
c. Seating systems
d. Powered mobility
e. Feeding chairs
f. Bath Chairs
g. Standing frames
h. Positioning devices
i. Augmentative communication devices