

Methodist University's OTD Program Presents the

Inaugural Scholarship Symposium Class of 2022 Capstone Research Presentations



April 24, 2021 | 8 a.m. - 4:30 p.m.

A livestream and recorded event:

<https://us02web.zoom.us/j/3890771091>

Meeting ID: 389 077 1091



TABLE OF CONTENTS

[Introduction to the OTD Symposium](#) 3

[OTD Scholarly Agenda](#)..... 3

[Faculty Capstone Mentors](#) 3

[Agenda](#)4-5

[Abstracts and Presenters](#).....6-15

[OTD Pinning Ceremony](#) 15



Introduction to the OTD Symposium

These student presentations represent a component of the OTD curriculum that meets the educational standards for scholarship and evidence-based practice. The Clinical & Community Capstone Scholarly Project is part one of the capstone curriculum and begins in the summer term of the first year of the program. This project is mentored by a faculty member and is aligned with the mentor's scholarly agenda. Completion of the Capstone Scholarly Project prepares the student and serves as the impetus for the culminating Capstone Experience. It generally begins with a literature review, PICO question generation, traditional qualitative or quantitative methods of inquiry, and culminates in the final didactic semester of the program with peer-reviewed dissemination efforts.

OTD Scholarly Agenda

Our departmental faculty scholarship agenda seeks to build quality evidence that spans the depth and breadth of the occupational therapy profession. The OTD program faculty, in collaboration with our students, strive to advance the profession through scholarly engagement, enrichment, and empowerment. Collectively, our scholarly work will create a well-rounded, creative, and collaborative environment that uses a multidisciplinary approach to incorporate the basic and applied sciences, including rehabilitation science, health and wellness, social sciences, and engineering. Pragmatically, our research is grounded in theory, molded by the grant-writing process, and executed in clinical and community-engaged settings. Simultaneously, our faculty scholarship agenda coincides with the evidence-based practice and research course series, allowing us to build a strong peer-mentor relationship with our OTD students and foster student-led capstone scholarship. The ultimate goals of our work are to create evidence-driven occupational therapists and scientists who will contribute to advancing human health and wellness through participation in everyday life activities.

Faculty Capstone Mentors

Cindy Erb, OTD, OTR/L, C/NDT, CLT
 Matthew Foreman, PhD
 Meredith Gronski, OTD, OTR/L, CLA
 Dana Kolbfleisch, OTD, OTR/L
 Sheri Michel, OTD, OTR/L
 Susan Misciagno, OTD, OTR/L, BCG, C/NDT
 Amy Spence, OTD, MEd, OTR/L



April 24, 2021 | 8 a.m. to 4:30 p.m.

8 - 8:15 a.m.	Opening Remarks	Meredith Gronski, OTD, OTR/L, CLA
8:15 - 8:30 a.m.	The Influence of Movement on Developmental Outcomes in Nature-Based Preschool Programs	Sydney Henn & Victoria Morgan <i>Mentor: Gronski</i>
8:30 - 8:45 a.m.	Trends in Research: Common Pediatric Assessment Tools Used in Occupational Therapy Studies	Kelsea Hunter <i>Mentor: Gronski</i>
8:45 - 9 a.m.	Effects of Modified Car Use on Independent Functional Mobility, Participation, and Parental Stress in Early Childhood: A Case Study Within the Home Environment	Dana Weber <i>Mentor: Gronski</i>
9 - 9:15 a.m.	Early Childhood Educators' Perspectives on Movement and Learning	Mikayla McLamb <i>Mentor: Gronski</i>
9:15 - 9:30 a.m.	Universal Design to Increase Positive Parent-Child Social Interactions on Public Playgrounds for Individuals with a Decrease in Lower Extremity Functioning	Lena Gipson <i>Mentor: Kolbfleisch</i>
9:30 - 9:45 a.m.	Occupational Deprivation and Maternal Well-Being of Mothers of Preterm Infants: How the NICU Experience Shapes Motherhood Roles and Occupations	Margaret Warren, Erica Santos, & Katherine Jones <i>Mentor: Kolbfleisch</i>
9:45 - 10 a.m.	Break	
10 - 10:15 a.m.	Does the Relationship Between Income and Preparedness Affect Postpartum Depression?	Cameron Harris <i>Mentor: Erb</i>
10:15 - 10:30 a.m.	Occupational Therapy: The Effects of MST on Meaningful Occupation	Christina Jackomin <i>Mentor: Erb</i>
10:30 - 10:45 a.m.	An Occupational Therapy Scoping Review: Continued Stroke Recovery after Rehabilitation	Kensleigh Davis & Julia Dunshee <i>Mentor: Erb</i>
10:45 - 11 a.m.	The Creation of Comprehensive Education on Human Trafficking for Health Care Professionals	Abigail Green <i>Mentor: Kolbfleisch</i>
11 - 11:15 a.m.	The Impact of COVID-19 on Occupational Therapists	Leigh Anne Pollard & Lexi Martinez <i>Mentor: Kolbfleisch</i>
11:15 - 11:30 a.m.	Effects of Biofeedback on Stress Management and Education on Overall Mental Health for Health Science Graduate Students	Taylor Malpass <i>Mentor: Kolbfleisch</i>
11:30 a.m. - 12:45 p.m.	Lunch	
12:45 - 1 p.m.	Kindergarten Transition Readiness for Children Receiving Occupational Therapy Services	Summer Crowell, Carly Garrard, & Hailey Harris <i>Mentor: Spence</i>
1 - 1:15 p.m.	Evidence-Based Design of a Meal Preparation Guide to Enhance Meal Preparation Intervention Implementation in Transition Services	Caroline Cheesborough & Keely Loesing <i>Mentor: Spence</i>
1:15 - 1:30 p.m.	Assessing the Effects of Playing Board Games on Levels of Depression, Stress, and Anxiety	Samuel Maycock <i>Mentor: Foreman</i>
1:30 - 1:45 p.m.	Comparing the Acute Effects of an Exercise- and Videogame-Based Occupational Therapy Intervention on Executive Functioning Skills in Children with and without ADHD	Natalie Khare <i>Mentor: Foreman</i>

Agenda, Continued

1:45 - 2 p.m.	The Effects of Therapeutic Dance Class on Quality of Life, Balance, and Occupational Performance in Children with Autism Spectrum Disorder: A Case Study	Abbey Tucker <i>Mentor: Foreman</i>
2 - 2:30 p.m.	Break	
2:30 - 2:45 p.m.	The Effects of Load-Bearing Equipment on Mobility, Posture, and Perceived Discomfort Impacting Performance in United States Law Enforcement Officers	Hannah Foster <i>Mentor: Foreman</i>
2:45 - 3 p.m.	The Effects of Rucking in Military Boots on Musculoskeletal Pain, Fatigue, Discomfort, and Occupational Performance in U.S. Military Soldiers	Katelyn Del Angel & Tyler Marinelli <i>Mentor: Foreman</i>
3 - 3:15 p.m.	Implementation of Virtual Reality-Based Rehabilitation to Increase the Strength, Range of Motion, and Quality of Life of Persons with Spinal Cord Injuries: A Case Study	Mary Dunn <i>Mentor: Foreman</i>
3:15 - 3:30 p.m.	Developing a Pilot Curriculum for Sexual Activity in Occupational Therapy	Kenan Stiehl <i>Mentor: Misciagno</i>
3:30 - 3:45 p.m.	Sexuality in Aging Populations: Identifying Barriers Hindering Sexual Participation and Engagement	Alleya James <i>Mentor: Misciagno</i>
3:45 - 4 p.m.	Scoping Review of Mirror Therapy for Older Adults with Stroke and Unilateral Spatial Neglect	Justin Sengkhamphong <i>Mentor: Misciagno</i>
4 - 4:15 p.m.	Closing Remarks	Matthew Foreman, Ph.D.
4:30 p.m.	Premiere of Inaugural OTD Pinning Ceremony	

The Inaugural Occupational Therapy Symposium Presentations

April 24 | 8:15 a.m. - 4:30 p.m.

Zoom link: <https://us02web.zoom.us/j/3890771091>
Meeting ID: 389 077 1091

8:15 - 8:30 a.m.

THE INFLUENCE OF MOVEMENT ON DEVELOPMENTAL OUTCOMES IN NATURE-BASED PRESCHOOL PROGRAMS

Author: Sydney Henn
Mentor: Dr. Meredith Gronski

BACKGROUND: Outdoor, nature-based early childhood learning programs provide children with increased play opportunities through contact with natural elements, physical activity, and opportunities to engage in social interactions both with peers and adults (Bento & Dias, 2017). The purpose of this study was to explore the effects of physical activity on cognitive functioning, motor functioning, and social behaviors among children attending a nature-based early childhood learning program.

Author: Victoria Morgan
Mentor: Dr. Meredith Gronski

BACKGROUND: The structure of play has changed for children within the education system. There has been a shift to focus on didactic and academic approaches ultimately, limiting a child's ability to engage in unstructured play. The purpose of this study was to identify the environmental supportiveness of a nature-based early childhood center and the effects on play behaviors in children.

METHODS: This study was a descriptive case series. The participants wore an ActiGraph GT3+ accelerometer that collected average activity during their time at the early childhood center. The Test of

METHODS: Three participants, ages 4-6 years participated in the study. Data for average amount of physical activity was tracked with an ActiGraph GT3+ accelerometer and the Bruininks-Oseretsky Test of Motor Proficiency, 2nd Edition - Short Form (BOT-II), Preschool and Kindergarten Behavior Scales (PKBS), and Behavior Rating Inventory of Executive Functioning - Preschool Version (BRIEF-P) were administered to each.

RESULTS: Early analysis indicated that there is a trending relationship between the physical activity of preschoolers and their developmental outcomes.

DISCUSSION: This study supports the enhanced environment of nature-based preschools and can be utilized to encourage further research on the developmental benefits of nature-based early childhood learning programs that benefit all citizens.

Environmental Supportiveness was administered to identify how the nature-based early childhood center influenced play. The Test of Playfulness was administered to measure the extent, intensity, and skill of the children's play skills.

RESULTS: A total of three participants were recruited and participated in this study. The primary hypothesis was that a nature-based early childhood center would have an optimal environment that supports play for children.

DISCUSSION: Nature-based preschool may provide an enhanced environment that is more supportive of playful behaviors in children. Average activity counts appear to be related to the play skills of a child.

8:30 - 8:45 a.m.

COMMON PEDIATRIC ASSESSMENT TOOLS USED IN OCCUPATIONAL THERAPY STUDIES

Author: Kelsea Hunter
Mentor: Dr. Meredith Gronski

BACKGROUND: Occupational therapy practitioners working with young children are often limited by the availability and affordability of assessment tools for conducting evaluations and tracking outcomes. In order to facilitate best practice recommendations, this study aimed to analyze the most commonly used assessment tools in peer-reviewed occupational therapy research studies.

METHODS: Researchers appraised Level I – IV studies from 2010 – 2020 conducted with children under the age of five years within the scope of occupational therapy practice. Studies were retrieved from searches across five databases (PubMed, EBSCO [Cinhal] Taylor & Francis, and Embase) in February 2021. Each article was reviewed for alignment with inclusion and exclusion criteria and the primary

outcome measures of each study were recorded.

RESULTS: The initial search identified 2,416 articles. After review, 127 articles were included in the final analysis, extracting 155 individual outcome measures. The most used measures were the Vineland Adaptive Behavior Scales, Second Edition (VABS-II), Test of Playfulness (ToP), Sensory Profile (SP), Goal Attainment Scale (GAS), Conners' Comprehensive Behavior Rating Scales (CCBRS), Canadian Occupational Performance Measure (COPM), Beery-Buktenica Developmental Tests of Visual-Motor Integration (BERRY-VMI), and the Bruininks-Oseretsky Test of Motor Proficiency 2nd edition (BOT-2).

DISCUSSION: The findings support those of previous studies exploring this issue among occupational therapists from different areas of practice. The results in this study highlighted the need for a multifaceted approach, encompassing educational, managerial, and individual responsibility for best practices in evaluation by pediatric occupational therapists.

8:45 - 9 a.m.

EFFECTS OF MODIFIED CAR USE ON INDEPENDENT FUNCTIONAL MOBILITY, PARTICIPATION, AND PARENTAL STRESS IN EARLY CHILDHOOD: A CASE STUDY WITHIN THE HOME ENVIRONMENT

Author: Dana Weber

Mentor: Dr. Matthew Foreman

BACKGROUND: A child's main occupation is play, which helps them to develop physically, cognitively, and socioemotionally as they learn about the world around them. Children with physical disabilities often miss out on opportunities to participate in play due to a lack of self-directed mobility unless the opportunity is facilitated by their parent or caregiver. Evidence has demonstrated higher levels of stress in parents of children with disabilities than that of parents of children without disability.

METHODS: A case study design was implemented to provide a

modified ride-on toy car to a single pediatric participant for an 18-week intervention to identify changes in the child's functional mobility and participation within the home environment both pre- and post-intervention, as well as at the 18-week follow up period. Parent stress levels were also observed across the span of the study. A weekly time log depicting minutes per day and the child's emotional response to utilizing the car was provided.

RESULTS: The participant enjoyed utilizing the car during playtime as a means of self-directed mobility within the home environment but struggled to steer the car during use. Participation in the childhood occupation of play with self-directed mobility was increased when the ride-on toy car was implemented. There were no observed changes in parent stress levels.

DISCUSSION: Modified ride-on toy cars can be utilized as a means to increase self-directed mobility and participation during playtime within the home environment.

9 - 9:15 a.m.

EARLY CHILDHOOD EDUCATORS' PERSPECTIVES ON MOVEMENT AND LEARNING

Author: Mikayla McLamb

Mentor: Dr. Meredith Gronski

BACKGROUND: Early childhood educators (ECEs) play a large role in facilitating opportunities for development, such as movement and learning but often face barriers to incorporating movement into the classroom.

METHODS: A mixed method design study was implemented to explore ECE's perspectives of using movement in the classroom and how it affects children's ability to learn. Participants completed an

online survey and optional virtual interview that focused on gaining understanding of ECE's knowledge and their perceptions on using movement in their classrooms.

RESULTS: ECEs reported high levels of knowledge on movement techniques but were willing to learn more about integrating movement into their learning environment. Participants reported positive attitudes toward integrating movement into their classrooms, but some participants believed that movement could cause disruptions to learning and take away time from academic instruction.

DISCUSSION: The findings from this study suggest that early childhood educators want to increase knowledge and skills to improve movement practices in the classroom.

9:15 - 9:30 a.m.

UNIVERSAL DESIGN TO INCREASE POSITIVE PARENT-CHILD SOCIAL INTERACTIONS ON PUBLIC PLAYGROUNDS FOR INDIVIDUALS WITH A DECREASE IN LOWER EXTREMITY FUNCTIONING

Author: Lena Gipson

Mentor: Dr. Dana Kolbfeisch

BACKGROUND: Individuals with a lower extremity disability still seek to independently meet the developmental needs of their children. Accessibility in community spaces can be a barrier to these parents interacting with their child in the way they prefer, leading to reduced parental comfort and a decrease in their use of these spaces. Decreased parent-child interaction has potential for negative impacts on child development. This study explores the experience of a parent with lower extremity disability when interacting with their child at public playgrounds with differing levels of accessibility.

METHODS: A qualitative case study approach was used to collect interview and observation data. Thematic analysis of the interviews was used to determine key experiential components. The PARCs rating scale was used to give an objective accessibility rating to the public playgrounds used. The parental sense of competency scale (PSOC) was used to objectively measure the sense of parental self efficacy after using each playground.

RESULTS: Participant interview correlated with objective scoring of park accessibility. Observation interview data revealed increased security and enjoyment with increased access to co-occupation of play structures.

DISCUSSION: This study examines the potentially harmful impact that a lack of accessibility to individuals with lower extremity disability. The experienced usability impacts parenting ability and parent-child interactions.

9:30 - 9:45 a.m.

OCCUPATIONAL DEPRIVATION AND MATERNAL WELL-BEING OF MOTHERS OF PRETERM INFANTS: HOW THE NICU EXPERIENCE SHAPES MOTHERHOOD ROLES AND OCCUPATIONS

Authors: Katherine Jones, Erica Santos, Margaret Warren, & Earthlyn Armstrong

Mentor: Dr. Dana Kolbfeisch

BACKGROUND: The stress that occurs during a neonatal intensive care unit (NICU) stay is long-lasting and can have negative implications for mother-infant bonding, maternal experience, and maternal mental health. One of the most significant issues at play that can negatively or positively affect a mother's NICU experience is collaboration and involvement in care. The purpose of this study was to gain insight on the experience of mothers when their infant had a NICU stay and assess how occupational therapists can be of assistance to the mothers during the infants' time in the NICU. Helping mothers understand their role, occupations, and psychosocial factors throughout the NICU experience is a clearly defined way for occupational therapists to help

increase positive outcomes for both mother and infant.

METHODS: Prospective data from survey responses collected from women who have given birth to a preterm infant were used to conduct this research study. A NICU survey consisting of a total of thirty-eight questions was created on QuestionPro and participants were asked to report demographics and questions in relation to their NICU stay, maternal occupations, and mental health. Survey responses were collected from women who have given birth to a preterm infant, then admitted to the NICU. Eligible participants included mothers who gave birth to a preterm infant(s) with a minimum of a seven-day length stay in the NICU.

RESULTS: All participants who participated in the additional interview portion shared that stress was prevalent, and additional support and resources would have been beneficial to assist the crucial time spent with their infant in the NICU. Data analysis is ongoing.

DISCUSSION: Initial results show indicate that occupational therapists may have a role care for both infants and mothers pre- and post-NICU.

10 - 10:15 a.m.

DOES THE RELATIONSHIP BETWEEN INCOME AND PREPAREDNESS AFFECT POSTPARTUM DEPRESSION?

Author: Cameron Harris

Mentor: Dr. Cindy Erb

BACKGROUND: Maternal mental health is an emerging area of practice in which occupational therapists can play a critical role. An occupational therapist can address the effects of postpartum depression by addressing factors and barriers to facilitate a smooth transition into the motherhood role.

METHODS: Self-disclosed survey data was collected using QuestionPro software. A combination of quantitative, qualitative patient and clinician-focused open-ended questions was used to

collect data analyzed with a descriptive statistical summary of range, reliability, and themes concerning the effects of postpartum depression. This data was then analyzed through chi-squared analysis and correlations.

RESULTS: The effects of postpartum depression can negatively impact the health of the mother, causing decreased sleep and occupational balance. Despite health professionals conducting postpartum evaluations, occupational therapy plays a vital role in identifying potential symptoms and creating material preparedness programs to improve role confidence.

DISCUSSION: An occupational therapist can gain the necessary skills and competencies in maternal mental health, screen mothers for maternal mental health disorders, and play an essential role in overcoming gaps in maternal mental health care.

10:15 - 10:30 a.m.

OCCUPATIONAL THERAPY: THE EFFECTS OF MILITARY SEXUAL TRAUMA (MST) ON MEANINGFUL OCCUPATION

Authors: Christina Jackomin

Mentor: Dr. Cindy Erb

BACKGROUND: This research is to determine the effects that individuals who have experienced military sexual assault and how it is affecting them in their daily lives.

METHODS: The participants for this survey were active or inactive

female service members who have experienced some form of military sexual assault. The researchers used the perceived stress scale to determine the effects of stress this individual may be having within the last thirty days of when they take the survey.

RESULTS: Twenty-five individuals completed the survey, 18 dropped out, and 467 individuals viewed the survey, with an average age of 26.21. It was shown that individuals who took the survey have a harder time reintegrating into society with reports of anxiety, depression, and loss of interest in activities they enjoyed before the military sexual assault.

 10:30 - 10:45 a.m.

AN OCCUPATIONAL THERAPY SCOPING REVIEW: CONTINUED STROKE RECOVERY AFTER REHABILITATION

Authors: Kensleigh Davis & Julia Dunshee

Mentor: Dr. Cindy Erb

BACKGROUND: Stroke affects more than 795,000 people in the United States each year (CDC, 2020). A stroke or cerebrovascular accident (CVA) results in decreased oxygen to the brain, with subsequent tissue damage that impedes brain function, which can ultimately result in sensory, motor, speech, and/or cognitive dysfunction for the individual. The purpose of this scoping review was to document the evidence of individual interventions post-stroke to support the implementation of a multi-modal protocol.

METHODS: A combination of basic and advanced searches were conducted with the date range 2011-2021 as the final inclusion factor to determine the number of full-text articles each researcher would review. Inclusion/exclusion criteria were determined by each researcher and are noted in the individual PRISMA Flow Diagrams, followed by a Data Charting Form depicting further details and analysis of

each research article. The following databases searched for literature published between 2011 and 2021: Google Scholar, PubMed Central, Cochrane Library, SAGE Journals, and PubMed. Single and combined search terms for electrical stimulation included stroke, hand function, hand, grasp, NMES, FES, and neuromuscular re-education. Search terms for kinesiotape included stroke, hand function, kinesiotape, and forearm. Search terms for exercise included stroke, hand function, exercise, grasp, and repetition.

RESULTS: A total of 789 articles were screened and analyzed by researchers. 20 articles were found relevant to the scoping review for electrical stimulation, 8 for kinesiotape, and 10 for exercise in relation to upper extremity stroke rehabilitation. Participants in each study with residual impairments due to hemiplegia demonstrated increased wrist and hand function from implemented evidence-based interventions.

DISCUSSION: The results of the scoping review indicated that these interventions are effective approaches for wrist and hand function post stroke, specifically in conjunction with one another. Based on the evidence of the scoping review, a 6-week multi-modal protocol was created to incorporate these interventions.

 10:45 - 11 a.m.

THE CREATION OF COMPREHENSIVE EDUCATION ON HUMAN TRAFFICKING FOR HEALTH CARE PROFESSIONALS

Authors: Abigail Green

Mentor: Dr. Dana Kolbfleisch

BACKGROUND: Human trafficking is a major human rights violation and a form of slavery, in which traffickers use force and coercion to make a profit from victims of trafficking through labor and/or sex trafficking. Victims of human trafficking are deprived of basic human rights and are subject to physical and psychological violence through various means including but not limited to unsafe living conditions, physical violence, and continual threats against their lives. The repeated exposure to multiple forms of violence can lead to physical health conditions that require treatment by a health care professional, which presents with the opportunity for the health care professionals to become aware of the trafficking situation and to take the necessary steps in protecting the victim. Due to the many barriers in identifying

a victim of human trafficking and the disconnect in education on human trafficking, health care professionals need more comprehensive education on this topic in order to better serve the potential victims that they may encounter in a health care setting.

METHODS: Current research on human trafficking and its relation to the health care system was analyzed to create a more comprehensive continuing education course on human trafficking for health care professionals. Many necessary topic areas were identified, and a case study was created in order to allow for application of new knowledge through clinical reasoning skills.

DISCUSSION: The human trafficking education course serves to educate health care professionals on the topic of human trafficking and to raise awareness of its severity and its implications for long-term health needs. Utilizing this educational material in a health care setting can help to improve identification and care efforts for victims and survivors of human trafficking and help to improve the self-efficacy of health care professionals in the future.

11 - 11:15 a.m.

THE IMPACT OF COVID-19 IN CURRENT LICENSED OCCUPATIONAL THERAPY PRACTITIONERS IN AMERICA

Authors: Leigh Anne Pollard & Alexandra Martinez

Mentor: Dr. Dana Kolbfleisch

BACKGROUND: The purpose of this study is to understand the impact of COVID-19 on occupational therapist practitioners across various settings and gain an understanding of the role of occupational therapy within the COVID-19 pandemic.

METHODS: This study was a cross-sectional, observational study design, that used a 29-question survey that examined the domains of mental health and occupational engagement. The survey took an average time of five minutes to complete. This study includes current licensed and registered Occupational Therapists within the United States who have practiced at any time since January 2020 in any setting and excluded any practitioner that lives outside of the United States, and any students who have clinical experience but were not licensed

practitioners. Participants were recruited from professional email correspondence, personal posts on Facebook, direct messages on LinkedIn, and forums within NCOTA and AOTA websites.

RESULTS: A total of 40 completed surveys through QuestionPro were obtained. Of the 40 surveys that were taken, 40 were completed producing a 100% completion rate with 0 dropouts. The results were exported into Microsoft Excel for data analysis. The results indicated that there was a significant impact on the occupational engagement, stress, and mental health of occupational therapists during COVID-19.

DISCUSSION: In the future, this research will help inform occupational therapists to be able to recognize and apply their roles and responsibilities as essential healthcare employees during a pandemic or disaster to reduce stress and improve occupational performance. Occupational therapists will become team leaders and healthcare pioneers when it comes to managing home, work, and personal life for both clients and their healthcare teams. Occupational therapists will use the evidence-based manual to refine their own ideas of practice and co-existing with a virus that turned fully independent patients to maximal assist patients overnight.

11:15 - 11:30 a.m.

EFFECTS OF BIOFEEDBACK ON STRESS MANAGEMENT AND EDUCATION ON OVERALL MENTAL HEALTH FOR HEALTH SCIENCE GRADUATE STUDENTS

Author: Taylor Malpass

Mentor: Dr. Dana Kolbfleisch

BACKGROUND: Health science graduate students experience a considerable amount of stress related to academic workload, clinical experiences, and personal stressors that need to be effectively managed.

METHODS: PA single blind randomized controlled trial was implemented to explore the effectiveness of two different stress management modalities of biofeedback and general guided mindfulness. Participants were randomized into a control and

experimental group where they participated in a six-week intervention, meeting once a week for 20 minutes. Participants completed pre- and post-surveys of the WHO Quality of Life BREF and Perceived Stress Scale to compare results before and after intervention.

RESULTS: The primary hypothesis for this study was to see a significant decrease in stress levels and an increase in quality of life for the PIP Biofeedback Device compared to the guided mindfulness meditation video. After completion of a Mann-Whitney Test for Two Independent Samples, it was evident that there were no significant differences in the control and experimental group across the pre-and post- assessment results.

DISCUSSION: The findings from this study indicate that both modalities are just as effective when it comes to effectively managing stress.



 12:45 - 1 p.m.

KINDERGARTEN TRANSITION READINESS FOR CHILDREN RECEIVING OCCUPATIONAL THERAPY SERVICES

Authors: Summer Crowell, Carly Garrard, & Hailey Harris
Mentor: Dr. Amy Spence

BACKGROUND: The transition from preschool to kindergarten is a critical time in a child's life. Kindergarten is their first introduction to academic expectations and therefore it is important to support the child and the family/caregiver to ensure a successful start to grade school. School-based occupational therapy (OT) practitioners have the expertise in motor and social-emotional health to play an essential role in the kindergarten transition process. This study investigates how OT practitioners assist educational teams and preschool aged children with disabilities in improving kindergarten readiness skills. The aim of this study was to explore OT's role in promoting a smooth and effective transition for preschool-aged children entering into kindergarten.

METHODS: A scoping review was conducted to identify OT's engagement within the preschool to kindergarten transition, as well

as thoughts and perceptions associated with kindergarten readiness. Data was also collected to obtain a comprehensive perspective from the main stakeholders, parents/caregivers, teachers, and OT practitioners involved in the transition planning process.

RESULTS: A total of 29 studies were chosen for review. Recurring themes within the literature included current OT services pertaining to kindergarten readiness, caregiver/teacher perspectives, and interventions to improve kindergarten transition processes. The transition process is a stressful event for caregivers and children, resulting in increased cortisol levels and challenging new routines. OT services can contribute to the transition planning process and improve the sensory-motor and social-emotional skill development identified for kindergarten success.

DISCUSSION: OT services can improve skills associated with kindergarten readiness in children. The current study indicates challenges to the transition into kindergarten for every child, particularly children experiencing cognitive, physical, or developmental impairments. OT practitioners have a unique lens to identify what deficits need addressing to increase successful transitions into kindergarten.

 1 - 1:15 p.m.

EVIDENCE-BASED DESIGN OF A MEAL PREPARATION GUIDE TO ENHANCE MEAL PREPARATION INTERVENTION IMPLEMENTATION IN TRANSITION SERVICES

Authors: Caroline Cheesborough & Keeley Loesing
Mentor: Dr. Amy Spence

BACKGROUND: Individuals with disabilities have a higher chance of experiencing barriers when transitioning to post-secondary education and employment (Lindsay et al., 2016). Daily living skills like meal preparation and kitchen safety skills are integral to independence in the home and in gaining employment in the food industry. Despite this, the involvement and role of occupational therapy to address these skills is not reflected in practice. The purpose of this guidelines for practice paper is to evaluate the importance and implications of a meal

preparation guide to enhance practitioner's knowledge and confidence in implementation of meal preparation interventions during transition services.

METHODS: The iterative design of the meal preparation guide was completed with feedback from four practicing occupational therapists with an average of 15.5 years' experience. The guide was evaluated on flow, content, and ease of use.

RESULTS: Preliminary results indicated the potential for significant impact for practitioners in transition services.

DISCUSSION: Implications for occupational therapy include increasing competence and confidence of practitioners in providing meal preparation interventions to positively benefit carryover and successful post-secondary transition and increasing available resources and tools regarding meal preparation assessment and intervention.

 1:15 - 1:30 p.m.

ASSESSING THE EFFECTS OF PLAYING BOARD GAMES ON LEVELS OF DEPRESSION, STRESS, AND ANXIETY

Authors: Samuel Maycock
Mentor: Dr. Matthew Foreman

BACKGROUND: Research has shown that playing boardgames may have a positive influence on mental health. The goal of this study is to analyze the effects of boardgame play on levels of depression, anxiety, and stress in a small sample of healthy individuals.

METHODS: Researchers performed an exploratory cohort study utilizing weekly assessments occurring over the course of three weeks. Participants were supplied with weekly assessment forms that consisted

of an initial Depression Anxiety Stress Scale short form (DASS-21) followed by questions that included estimated type and time of boardgames played. Depression (DASS-21) and gameplay assessments were compared across participants.

RESULTS: Of the 12 participants that agreed to participate in the study, seven completed the weekly forms. This study is ongoing and initial results support the hypothesis that regular boardgame play is associated with improved mental health according to the DASS-21.

DISCUSSION: The current study, along with previous research, shows that playing boardgames could have positive effects on mental health. Future studies should include a larger sample size and a longer data collection cycle.

1:30 - 1:45 p.m.

COMPARING THE ACUTE EFFECTS OF AN EXERCISE- AND VIDEOGAME-BASED OCCUPATIONAL THERAPY INTERVENTION ON EXECUTIVE FUNCTIONING SKILLS IN CHILDREN WITH AND WITHOUT ADHD

Authors: Natalie Khare

Mentor: Dr. Matthew Foreman

BACKGROUND: Executive functioning is a clinical term often used when describing components of higher-level thinking and an individual's ability to perform skills such as memory, attention, and problem-solving. Decreased executive function skills and overall academic performance has been seen in elementary school children with and without Attention Deficit Hyperactivity Disorder (ADHD) diagnoses. There is a strong correlation between ADHD diagnosis and academic underachievement from pre-school children all the way to college students caused by inattention and other executive function deficits. Simultaneously, children do not get enough exercise during the day through recess or physical education and research shows that this reflects in their academic performance. The objective of this research study is to identify how an acute bout of videogame-based exercise can

affect executive function skills in children with and without ADHD diagnoses.

METHODS: Eight participants between ages 5-11 were asked to complete three executive function tasks related to attention, memory, and problem-solving using Lumosity. Two of the eight participants had a diagnosis of ADD/ADHD. The participants then completed a 20-minute bout of moderate-intensity exercise using the Xbox Kinect system, where they were able to choose their own games. Post-exercise, the participant completed the same three executive function tasks to see results between scores pre- and post-exercise. Parents/caregivers of participants completed the Behavior Rating Inventory of Executive Function (BRIEF-2) form prior to their child participating in the research study.

RESULTS: All participants improved in at least one area of executive function from pre- to post-exercise. Memory scores showed the most improvement out of all the executive function tasks. Attention scores were the least improved pre- to post-exercise. Qualitative data indicated which games were preferred by the participants, which games were easiest, and which games were most challenging for them to complete.

1:45 - 2 p.m.

THE EFFECTS OF THERAPEUTIC DANCE CLASS ON QUALITY OF LIFE, BALANCE, AND OCCUPATIONAL PERFORMANCE IN CHILDREN WITH AUTISM SPECTRUM DISORDER: A CASE STUDY

Author: Abbey Tucker

Mentor: Dr. Matthew Foreman

BACKGROUND: Autism Spectrum Disorder (ASD) is a condition that can cause developmental motor, cognitive and behavioral impairments and is the most common pediatric developmental condition in the world. Research has shown that dance therapy may be effective for ameliorating certain aspects of these impairments. The purpose of this study was to examine the effects of weekly dance classes on the balance, daily occupational performance, and quality of life of a single participant with ASD.

METHODS: This is an observational, single-case study involving a pediatric participant with ASD. The participant was asked to continue participation in an established therapeutic dance program, "Chance

to Dance," in Lake City, S.C. The researcher did not take part in the intervention and only assessed at strategic timepoints. This study involved four separate data collections at the beginning and end of each of two dance class seasons (four data collections in total). In estimation, these collections took place before the Fall semester of 2020 (pre), before holiday break in 2020 (pre-holiday), after the new year in 2021 (post-holiday), and following the Spring semester of 2021 (post). The primary outcomes assessed at each timepoint were the Pediatric Quality of Life Inventory (PedsQL), the Pediatric Balance Scale (PBS), and the Canadian Occupational Performance Measure (COPM).

RESULTS: The study found that the weekly dance class did have a positive effect on the child's balance (PBS), occupational performance (COPM), and quality of life (PedsQL).

DISCUSSION: Dance therapy may be an effective modality for improving balance, occupational performance, and quality of life for children with ASD. Occupational therapists have a role in designing such interventions and future work is needed to establish the efficacy of dance therapy beyond case studies.

 2:30 - 2:45 p.m.

THE EFFECTS OF LOAD-BEARING EQUIPMENT ON MOBILITY, POSTURE, AND PERCEIVED DISCOMFORT IMPACTING PERFORMANCE IN U.S. LAW ENFORCEMENT OFFICERS

Authors: Hannah Foster

Mentor: Dr. Matthew Foreman

BACKGROUND: Uniformed police officers are mandated to complete occupational performance tasks while wearing issued load carriage systems to protect them in the field. While load bearing equipment is worn for personal protection, uniformed police experience a high incidence of musculoskeletal injuries. This study aimed to investigate the effects of load bearing equipment on mobility, posture, and perceived discomfort during various occupational tasks in United States law enforcement officers.

METHODS: Five participants were recruited (3 males and 2 females) to perform specific functional tasks for a single session in three different

conditions: wearing no load bearing equipment, wearing a ballistic vest and gun belt, and wearing a load bearing vest and gun belt. Kinematic and kinetic data (Vicon Bonita 14 cameras, Bertec forceplates) were collected during each of five activities: (1) walking on even ground, (2) entering and sitting in a simulated vehicle, (3) walking and running on a treadmill, (4) dragging a simulated dummy, and (5) climbing stairs. One and two-legged balance tests were also collected in each of the weighted conditions. Subjective assessments of occupational performance, pain, and exertion along with physiologic measures including heart rate and oxygen saturation were collected pre- and post-activity.

RESULTS: Data analysis is ongoing, but initial results show that kinetics (center of pressure) and physiologic variables may change because of carriage weight and specific occupation-related activity.

DISCUSSION: The amount of weight carried by law enforcement officers may provide a barrier for occupational performance in relation to movement, exertion, and pain. Occupational therapists have a role in assessment, intervention, and education for this population.

 2:45 - 3 p.m.

THE EFFECTS OF RUCKING IN MILITARY BOOTS ON MUSCULOSKELETAL PAIN, FATIGUE, DISCOMFORT, AND OCCUPATIONAL PERFORMANCE IN U.S. MILITARY SOLDIERS

Authors: Katelyn Del Angel & Tyler Marinelli

Mentor: Dr. Matthew Foreman

BACKGROUND: There are many risk factors to consider when examining the causes of pain, fatigue, and musculoskeletal injuries in military service members. Current literature suggests there is a connection between the standard-issue military boot and other boots with similar designs that might contribute to lower extremity (LE) injuries of military service members. Literature suggests that two different types of military boots, specifically ruck-type and work-type, may affect occupational performance, fatigue, perceived physical discomfort, and/or pain during functional activities (rucking and simulated work tasks) in active-duty service members.

METHODS: An observational study with a small cohort of five participants was performed to analyze differences in pain/discomfort, standing posture, and biomechanics between participants' preferred

ruck-type and work-type boot. Active-duty military participants were asked to undergo an initial strength assessment and then engage in a 4-mile ruck with a 45lb weighted rucksack. Following the ruck, pain and discomfort were measured using a self-report Pain and Discomfort Questionnaire and a follow-up strength assessment. During a series of occupational-style activities, kinematic and kinetic movement data were collected (Vicon Bonita 14 cameras and Bertec forceplates). The researchers hypothesized that participants would experience decreased pain/discomfort, LE muscle fatigue, and joint angle change after completing the ruck while wearing their preferred rucking boots (ruck-type) over their everyday work boots (work-type).

RESULTS: Results of manual muscle testing indicated that the most significant strength loss was found in plantarflexion for both boots. However, plantarflexion strength loss was greatest while wearing their daily work boots. On average, participants reported experiencing greater pain/discomfort while wearing their daily work boots in comparison to their preferred rucking boots.

DISCUSSION: While further analysis is required, participants became more fatigued and while wearing their work-type boots as compared to their ruck-type boots. Future research is needed to make recommendations about footwear for military personnel to improve comfort and occupational performance.

3 - 3:15 p.m.

IMPLEMENTATION OF VIRTUAL REALITY-BASED REHABILITATION TO INCREASE THE STRENGTH, RANGE OF MOTION, AND QUALITY OF LIFE OF PERSONS WITH SPINAL CORD INJURIES: A CASE STUDY

Authors: Mary Dunn

Mentor: Dr. Matthew Foreman

BACKGROUND: The average age of persons with spinal cord injury (SCI) has increased to approximately 40 years old in the last four decades. Persons living with SCI have impaired strength, range of motion (ROM), and health and wellness. Specifically, research shows that clients with incomplete SCI need continuous, massed, and spaced bouts of intensive rehabilitation to maintain or increase ROM, muscular strength, and quality of life (QOL).

METHODS: The current study is a single-case design with an individual participant living with chronic SCI. The participant took part in an 8-week virtual reality (VR)-based motor intervention (2x

week). The intervention involved VR-based motor rehabilitation utilizing an off-the-shelf sensor (Microsoft Kinect V2) and software that was customized to the participant's impairments, ROM, and gameplay choices. The protocol targeted high repetitions of wrist, elbow, and shoulder movements. Outcome measures assessed ROM, strength, and reach distance at each intervention session as well as pre-, post-, and follow-up (4-weeks after intervention). Quality of life (WHOQOL-BREF) was assessed at pre-, post-, and follow-up.

RESULTS: The participant was a 65-year-old incomplete SCI client with multiple conditions. Initial results show that right shoulder flexion improved 23 degrees from pre- to post-intervention. Along with that, there was an increase in the right arm reach distance from pretest to posttest.

DISCUSSION: There are multiple limitations to this study, specifically involving the individual participant's history. However, initial results show that repetitive upper extremity movements utilizing VR-based therapy may help to improve ROM for individuals living with incomplete SCI.

3:15 - 3:30 p.m.

DEVELOPING A PILOT CURRICULUM FOR SEXUAL ACTIVITY IN OCCUPATIONAL THERAPY

Author: Kenan Stiehl

Mentor: Dr. Susan Misciagno

BACKGROUND: Occupational therapy has long recognized sexual activity as an activity of daily living. However, sexual activity is often overlooked in both educational programs and practice settings. Sexual activity is not typically addressed due to discomfort and lack of in-depth instruction in the occupational therapy curriculum. There is a little understanding of how different occupational therapy programs include sexual activity in curricula and the extent to which the occupation is covered. This study aimed to illustrate the process of

developing pilot curriculum for the occupation of sexual activity and demonstrate the gaps in education.

METHODS: The outcome of this study is to develop an educational curriculum utilizing participatory action research methodology of collective inquiry and reflection as well as the iterative design process. The pilot curriculum expands on the complexity of sexual activity, incorporates theory and evidence, addresses perceived barriers, includes pedagogical approaches, and promotes occupational justice to address the discomfort felt by occupational therapy practitioners.

RESULTS: The produced curriculum can provide a framework for faculty to instruct sexual activity as holistically as other occupations to improve efficacy and competence for entry-level practitioners.

3:30 - 3:45 p.m.

SEXUALITY IN AGING POPULATIONS: IDENTIFYING BARRIERS HINDERING SEXUAL PARTICIPATION AND ENGAGEMENT

Author: Alleya James

Mentor: Dr. Susan Misciagno

BACKGROUND: Sexuality within the older adult populations has been widely known to be a specific population that has many preconceived notions, negative and positive, that can hinder or limit their physical and mental abilities, including sexuality. The purpose of this article is to investigate the barriers that older adults are encountering that are limiting them from participating in meaningful sexual activities and intimacy.

METHODS: The overall design for this study will be a descriptive design with qualitative research material. Individuals participated in phone interviews with pre-written phone scripts and survey questions to investigate various aspects of sexuality they current partake in, such

as sexual expression, sensuality, sexualization, intimacy, sexual health, and sexual identity. Other aspects were evaluated and assessed through various questions associated with ageism, lack of resources, lack of knowledge, knowing one's sexual rights and other assorted focus areas that are limiting expressions of sexuality.

RESULTS: Researchers evaluated qualitative and quantitative data from survey answers as well as audio recordings from the participants during the interviewing process. Quantitative data indicated strong associates between many of the focus areas, including sexual identity, ageism, stereotypes/ stigmas/ myths, lack of knowledge and how chronic illness(es) may influence participation and engagement in different aspects of sexuality identity. Implications associated with the qualitative and quantitative findings from overall study were small pool of participants, regional implications on results/ interested participants were from eastern states only, change the design of questions to a simpler format to allow better understanding, and short duration of phone interviews to obtain data could have been longer to obtain more participants.

3:45 - 4 p.m.

SCOPING REVIEW OF MIRROR THERAPY FOR OLDER ADULTS WITH STROKE AND UNILATERAL SPATIAL NEGLECT

Author: Justin Sengkhamphong

Mentor: Dr. Susan Misciagno

BACKGROUND: Complete a review of literature addressing the effectiveness of mirror therapy for older adults with stroke and unilateral spatial neglect delivered by occupational therapists. Multidisciplinary interventions aimed to improve upper extremity motor function, reduce unilateral spatial neglect, and maximize performance and independence in selected activities of daily living.
METHODS: Researchers completed a scoping review of studies

investigating the effectiveness of mirror therapy published from 2005 through 2018. Studies included participants with a diagnosis of a stroke, unilateral spatial neglect, and hemiparesis.

RESULTS: In total, eleven outcome-based studies are included in the review. Ten studies found a significant difference between the intervention and the control group; demonstrating improved upper extremity function, reduced unilateral spatial neglect, and better performance in self-care tasks.

DISCUSSION: Mirror therapy intervention provided by occupational therapy practitioners in multidisciplinary teams can improve upper extremity motor function. More evidence is needed to determine that mirror therapy can reduce unilateral spatial neglect and improve performance in selected self-care tasks.

Virutal OTD Pinning Ceremony



Join us on the Methodist University YouTube channel at 4:30 p.m. for the Virutal OTD Pinning Ceremony. The ceremony will include speeches by professors and class representatives, the pinning of the class of 2021 and 2022, as well as an opportunity for each of these classes to take the Creed for Occupational Therapists.

To join, click the thumbnail image above, or visit [YouTube.com/MethodistUMonarchs](https://www.youtube.com/MethodistUMonarchs). For more information, contact Dr. Meredith Gronski at mgronski@methodist.edu.



METHODIST UNIVERSITY

For more information, contact:

Methodist University Doctor of Occupational Therapy Program
College of Health Sciences & Human Services

910.480.8493 | 800.488.7110 Ext. 8493
5400 Ramsey Street, Fayetteville, NC 28311

Methodist University does not discriminate on the basis of age, race, gender, national or ethnic origin, religion, sexual orientation or disability for otherwise qualified persons in the administration of its admissions, educational policies, scholarships, loan programs, athletics, employment, or any other university-sponsored or advertised program.