

Methodist University's OTD Program Presents the

Third Annual Occupational Therapy Class of 2023 Student Scholarship Research Symposium



April 23, 2022 | 8 a.m. (EST)

PA Auditorium, Medical Lecture Hall & Streamed Online

Methodist University

5400 Ramsey St., Fayetteville, NC 28311



TABLE OF CONTENTS

Introduction to the OTD Symposium 3

OTD Scholarly Agenda 3

Faculty Capstone Mentors 3

Agenda 4

Abstracts and Presenters 5-11

ZOOM LINK INFORMATION

<https://us02web.zoom.us/j/85467401901?pwd=RmhxRjd2cHRnbDYvNkQreFNSZ3Q5dz09>

Meeting ID: 854 6740 1901

Pass code: 415378



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 and 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, strives 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

Matthew Foreman, PhD

Meredith Gronski, OTD, OTR/L, CLA, FAOTA

Dana Kolbfleisch, OTD, OTR/L

Sheri Michel, OTD, OTR/L

Susan Misciagno, OTD, OTR/L, BCG, C/NDT

Amy Spence, OTD, MEd, OTR/L, ASDCS



April 23, 2022 | 8:30 a.m. to 2:30 p.m.

8 :30 - 8:45 a.m.	Opening Remarks	Meredith Gronski, OTD, OTR/L, CLA, FAOTA
8:45 - 9 a.m.	Effects on Perceived Caregiver Self-Efficacy and Mental Health During the Perinatal Period After Participation in a Community Initiative for New Mothers	Brittany Preston & Mary Boylan <i>Mentor: Kolbfleisch</i>
9 - 9:15 a.m.	Perspectives of Health Care Workers on Occupational Therapy Intervention to Increase Self-Efficacy and Participation of Caregivers of Infants in the Neonatal Intensive Care Unit (NICU)	Samantha Styron & Lauren Hadley <i>Mentors: Kolbfleisch & Spence</i>
9:15 - 9:30 a.m.	Exploring the Effects of Cultural and Occupational Differences on Stress Levels of Graduate Health Science Students	Iqra Malik <i>Mentors: Kolbfleisch & Spence</i>
9:30 - 9:45 a.m.	Exploring Occupational Therapy's Role in in the Maternal Health Crisis Among America's Black Women	BrieAnn Avery <i>Mentors: Kolbfleisch & Spence</i>
9:45 - 10 a.m.	Exploring the Role of Occupational Therapy in Postsecondary Education Programs for Students with Disabilities	Catherine Lovell <i>Mentor: Spence</i>
10 - 10:15 a.m.	Break	
10:15 - 10:30 a.m.	The Exploration of Occupational Therapy Interventions for Individuals with Mild to Moderate Intellectual Disabilities to Enhance Pre-Employment Skills to Achieve Post-Secondary Goals	Mary Grace Nance <i>Mentor: Spence</i>
10:30 - 10:45 a.m.	The Impact of Outdoor Activities and Movement on Executive Functioning and Self-Regulation in Preschool-Aged Children	Madison Walton & Paige Hill <i>Mentor: Gronski</i>
10:45 - 11 a.m.	The Relationship Among Caregiver Stress, Mealtime Experiences, and Feeding Behaviors in Children With and Without Disabilities	Holly Evans <i>Mentor: Gronski</i>
11 - 11:15 a.m.	Identifying Barriers in the Home Environment to Reduce Caregiver Stress: An Occupational Therapy Perspective for Older Adults With Neurocognitive Disorders	Mary Blake Avery & Olivia Giles <i>Mentor: Misciagno</i>
11:15 - 11:30 a.m.	Social Participation and Leisure as a Means to Increase Occupational Engagement and Satisfaction in Sexual Activity	Kendall Lahr <i>Mentor: Misciagno</i>
11:30 - 11:45 a.m.	Assessing Limitations within the N.C. DMV Medical Review Program for At-Risk Older Adult Drivers	Aleighsha Gresham <i>Mentor: Michel</i>
11:45 a.m. - 1 p.m.	Lunch	
1 - 1:15 p.m.	Participation in Soldier & Family Readiness Groups and its Effect on Resiliency in Military Spouses During Deployment	Virginia Savage, Joanna Williams, Madison Love, & Alexandria Kluttz <i>Mentor: Michel</i>
1:15 - 1:30 p.m.	Non-Immersive Virtual Reality in Stroke Rehabilitation: A Scoping Review	Cameron Cook <i>Mentor: Foreman</i>
1:30 - 1:45 p.m.	A Novel Assessment Comparing Upper Extremity Kinematics during Reaching Tasks Across Rehabilitative Contexts	Jennifer Gerst <i>Mentor: Foreman</i>
1:45 - 2 p.m.	Occupational Therapy in Equine Settings to Improve Occupational Performance of Women With Pelvic Floor Dysfunction (PFD)	Caroline Matthews <i>Mentor: Foreman</i>
2 - 2:15 p.m.	Investigating Aspects of Upper Extremity Motor Function, Sport Performance, and Occupational Participation in Classified Wheelchair Basketball Athletes	Paige Barham & Natalie Wright <i>Mentor: Foreman</i>
2:15 - 2:30 p.m.	Closing Remarks	Matthew Foreman, PhD

The Inaugural Occupational Therapy Symposium Presentations

April 23 | 8:30 a.m. - 2:30 p.m.

8:45 - 9 a.m.

Effects on Perceived Caregiver Self-Efficacy and Mental Health during the Perinatal Period after Participation in a Community Initiative for New Mothers

Author: Brittany Preston & Mary Boylan

Mentor: Dr. Dana Kolbfleisch

BACKGROUND: This study aimed to establish a community program that provides occupational therapy (OT) support to new mothers during the perinatal period to improve caregiver self-efficacy, reduce the onset of perinatal mood disorders (PMADs), and prevent the development of musculoskeletal impairments.

METHODS: The study sample included four women aged 24-27 in the perinatal period recruited through flyers placed in the community and personal posts on social media. A single group pre-post-test study design was used to investigate the effects of a community group on caregiver self-efficacy and maternal health in new mothers. Demographics were collected through QuestionPro. The recognition

of symptoms of PMADs and appropriate coping strategies was assessed by the Edinburgh Postnatal Depression Scale (EPDS) and a researcher-designed survey while the Barkin Index Maternal Functioning assessed caregiver self-efficacy.

RESULTS: Results revealed that perinatal women would benefit from an OT-based community support group evidenced by a strong correlation between improvement of average scores from following intervention in all three assessment measures. Assessment results were exported into Microsoft Excel for data analysis. Common themes identified included decreased self-report of depressive symptoms, improved understanding of coping strategies, and increased perceived caregiver self-efficacy.

DISCUSSION: The findings of this study indicate the benefit of an OT-based community support groups on maternal mental health for first-time mothers, thus bridging the gap between other maternal health care services and OT.

9 - 9:15 a.m.

Perspectives of Healthcare Workers on Occupational Therapy Intervention to Increase Self-Efficacy and Participation of Caregivers of Infants in the Neonatal Intensive Care Unit (NICU)

Author: Samantha Styron & Lauren Hadley

Mentor: Dr. Dana Kolbfleisch

BACKGROUND: Neonatal intensive care unit (NICU) staff assume intense responsibilities to manage an infant's care, rendering parental caregivers feeling unable to participate in the care of their infants. This study aims to further explore the perceptions of healthcare caregivers on occupational therapy's (OT) role in increasing parental participation in caregiving of infants in the NICU. OTs can serve as facilitators of parent-infant occupational participation by acquiring skills needed to care for these children and educate parents, thus increasing parental self-efficacy and reducing health care caregiver burden.

METHODS: This study used a one-group pretest-posttest design and recruited two participants who are current NICU healthcare providers. Participants were recruited utilizing convenience sampling via private groups through social media outlets and through community connections by email. Participants were asked to take an 18-question pre-survey, complete a one-hour in-service seminar, and seven question post-survey.

RESULTS: Two participants completed all parts of the pre-survey but did not complete the in-service or post-survey. Participants reported they were in the nursing and physical therapy professions. Results show differences in levels of comfortability with parental participation in various caregiving roles.

DISCUSSION: The long-term goal of this research was to expand the role of occupational therapists in the NICU to train parental caregivers of infants on skilled caregiving tasks to increase participation in caregiving occupations in this setting. Due to a small sample size and attrition, these results do not have enough power to be applied to the general population of NICU healthcare workers in the United States.

9:15 - 9:30 a.m.

Exploring the Effects of Cultural and Occupational Differences on Stress Levels of Graduate Health Science Students

Author: Iqra Malik

Mentor: Dr. Dana Kolbfleisch & Dr. Amy Spence

BACKGROUND: The purpose of this study is to determine the roles of cultural and occupational stress levels of students in graduate health science programs. An examination was conducted on how the stress levels of first-year Occupational Therapy (OT), Physical Therapy (PT), and Physician Assistant (PA) students affected their academic progress during the first year in their programs.

METHODS: This was a cross-sectional, survey-based, descriptive, and exploratory study design. The survey was distributed to graduate students across North Carolina by email and contained questionnaires designed to assess demographics, stress and anxiety (SAQ), and an

adaptation of Holmes Student Stress Scale (SSS).

RESULTS: In total, we received 62 completed surveys responses. Results indicated that 10 participants reported low stress (<150 on SSS), 28 reported moderate stress (15-299 on SSS), and 24 reported high stress (>300 on SSS). Of the 62 respondents, 83.87% have a level of stress that may be considered a potential health risk. The most common cultural and occupational stressors were associated with language barriers, religious and family responsibilities, gender norms, and time management. The responses also indicate that cultural and occupational stressors have at least some impact on academic performance.

DISCUSSION: The results can be used to expand knowledge regarding the effects of stress and anxiety on students in these programs, to determine what cultural and occupational stressors would contribute to their first-year experience, and to assist programs to meet students' needs.

9:30 - 9:45 a.m.

Exploring Occupational Therapy's Role in the Maternal Health Crisis Among America's Black Women

Author: BrieAnn Avery

Mentors: Dr. Dana Kolbfleisch & Dr. Amy Spence

BACKGROUND: Research has shown that race/ethnicity and social determinants of health substantially impact outcomes for Black mothers and birthing parents. However, there are limited studies in the occupational therapy literature on health disparities in maternal health. The aims of this study were to identify the occupations affected during and after pregnancy and explore factors (Ob/Gyn demographics, socioeconomic status, age) that may influence occupational therapy's role in Black mothers and birthing parents.

METHODS: A needs assessment was created to find relationships between gender, race, socioeconomic status, and perinatal care for Black mothers and birthing parents. The needs assessment was taken by a small cohort of participants (n = 31). Activities of daily living (ADLs)

affected during pregnancy were collected.

RESULTS: Participants with socioeconomic statuses of less than \$30,000 and \$30,000-\$59,999 were more than likely to have a white, male Obstetrician-Gynecologist compared to participants with higher socioeconomic statuses. Activities of daily living affected throughout pregnancy included rest and sleep; self-care; physical activity; and social participation. 96.77% of the participants have not used occupational therapy throughout pregnancy, although activities of daily living were affected.

DISCUSSION: Occupational therapy can explore occupational injustices in Black maternal health to increase participation in activities of daily living. As a member of the multidisciplinary team for Black mothers and birthing parents, the role of occupational therapy in Black maternal health includes educating them about occupational balance, self-advocacy, self-care, sleep, and helping them access resources and support. Future research should focus on routines and habits most affected in this underserved population.

9:45 - 10 a.m.

Exploring the Role of Occupational Therapy in Postsecondary Education Programs for Students with Disabilities

Author: Catherine Lovell

Mentors: Dr. Dana Kolbfleisch & Dr. Amy Spence

BACKGROUND: The Individuals with Disabilities Act (IDEA) provides access to free and appropriate educational services including occupational therapy (OT) to qualifying students with disabilities. At the end of age 21, IDEA services stop, and the Americans with Disabilities Act (ADA) takes effect. This could negatively impact a young adult's achievement of independent living, post-education, and employment goals. Occupational therapy practitioners (OTPs) have an important role in secondary education for students with disabilities, but only a minimum of OTPs work in this setting.

METHODS: A survey was designed to determine OTPs' role in post-secondary education programs for students with intellectual disabilities.

The survey was completed in interview format. Verbal and written interview responses were collected and analyzed to determine common themes amongst responses.

RESULTS: Survey participants reported on how OTPs can serve college students with disabilities by improving their performance skills, mental health and well-being, occupational performance for work, social participation, and independent living. Common participant responses also indicated that OTPs should receive training specific to young adults with disabilities, policies and rights, assistive technology, vocational rehabilitation, and advocacy.

DISCUSSION: Occupational therapy can be utilized in college settings to prepare students with disabilities for obtaining competitive employment and living independently. Future research should focus on determining effective OT intervention approaches that will support young adults in secondary education to achieve employment and independent living goals for a higher quality of life and compare the effectiveness of OT services for students in secondary education programs.

10:15 - 10:30 a.m.

The Exploration of Occupational Therapy Interventions for Individuals with Mild to Moderate Intellectual Disabilities to Enhance Pre-Employment Skills to Achieve Post-Secondary Goals

Author: Mary Grace Nance

Mentor: Dr. Amy Spence

BACKGROUND: Self-determination and soft skills are essential components for obtaining employment, however many adolescents with disabilities seeking employment lack these necessary skills to obtain employment upon post-school transition into adulthood. School-based occupational therapy (OT) practitioners are experts in work and life skill development, yet few provide transition services to adolescents in preparation for adulthood. This study examines the effectiveness of a six-week occupational therapy-based, postsecondary employment readiness transition program for adolescents with mild to moderate intellectual disabilities.

METHODS: This study was a one-group pretest/posttest design. Five high school students between 16 and 17 years old participated in a six-

week pre-employment program. The program consisted of six lessons: (1) self-determination and teamwork, (2) communication skills, (3) positive attitudes, (4) the job application process and resumes, (5) problem-solving and critical thinking, and (6) professionalism. The AIR Self-Determination Scale and portions of the Assessment of Functional Living Skills assessment measures were used.

RESULTS: Data collection is still in progress and full results for pre-posttest comparisons will be analyzed using the Wilcoxon signed-rank test upon the completion of this study.

DISCUSSION: There is growing attention toward the inclusion of OT services for adolescents with disabilities in school settings to assist students in achieving post-secondary vocation goals. This six-week OT-based program was designed to advance the pre-employment skills of students with mild to moderate intellectual disabilities. Future research should concentrate on identifying evaluative, intervention, and collaborative transition team approaches that assist adolescents and young adults in developing employment skills needed to obtain competitive work after graduation.

10:30 - 10:45 a.m.

The Impact of Outdoor Activities and Movement on Executive Functioning and Self-Regulation in Preschool-Aged Children

Authors: Madison Walton & Paige Hill

Mentor: Dr. Meredith Gronski

BACKGROUND: This study explored relationships between physical activity participation, executive functioning, and self-regulation in order to determine how the quality of outdoor environments affects these constructs. The benefits of physical activity increase when it occurs in outdoor environments. Not meeting the recommended standards of physical activity could potentially have devastating impacts on the health and development of young children.

METHODS: A convenience sample of preschoolers was recruited via word of mouth. Activity counts were measured using wrist-worn accelerometers over the span of three hours for three separate days. Researchers completed an assessment of each preschool's environment

and administered a self-regulation assessment to each participant. A parent packet was sent home to gather demographic and executive functioning data.

RESULTS: Participants in this observational, cross-sectional study were (N = 7) preschool children aged 36 to 71 months (M = 54.57, SD = 10.39). The results were analyzed using descriptive statistics and Pearson correlation coefficients. There were no significant relationships between activity level and self-regulation and executive function skills. Additionally, we were unable to capture a difference in activity levels between preschool environments. However, we found a trend towards nature-based play settings supporting more physical activity.

DISCUSSION: This study supports the consultative role occupational therapy practitioners can have in early childhood settings in order to support unstructured outdoor play as a facilitator for development and learning. Future research with a larger, more heterogeneous sample is needed to further explore the effects of outdoor movement on self-regulation and executive functioning skills in preschool-aged children.



10:45 - 11 a.m.

The Relationship Among Caregiver Stress, Mealtime Experiences, and Feeding Behaviors in Children With and Without Disabilities

Authors: Holly Evans

Mentor: Dr. Meredith Gronski

BACKGROUND: Feeding and eating difficulties occur in children with and without disabilities, yet families of children with disabilities report more feeding difficulties. With a greater understanding of the complexity of feeding behaviors, feeding practices, mealtime environment, and caregiver stress, occupational therapists will be more prepared to comprehensively provide an individualized, holistic, and effective approach to their services.

METHODS: This descriptive study used convenience sampling to distribute a 48-item survey that was formulated based on existing literature, various assessment tools, and modified questions from the

Parent Stress Index (PSI; Abidin, 1990). The survey invited caregivers of children ages 2-8 years old with feeding and eating difficulties to report on feeding behaviors, mealtime environment, and perceived caregiver stress.

RESULTS: A total of 25 caregivers of children with feeding and eating difficulties completed the survey. Of these caregivers, 12 reported that their child had a medical, educational, or developmental diagnosis. There was no significant difference of perceived caregiver stress between caregivers of children with and without disabilities. Positive correlation was shown between amount of feeding behaviors and level of caregiver perceived stress.

DISCUSSION: Feeding and eating difficulties are stressful for caregivers, in children with and without diagnosed disabilities. Pediatric professionals who work with children with feeding and eating difficulties are encouraged to provide comprehensive evaluations and interventions. Further research is needed to assess the benefits of caregiver education and involvement during feeding interventions.

11 - 11:15 a.m.

Identifying Barriers in the Home Environment to Reduce Caregiver Stress: An Occupational Therapy Perspective for Older Adults with Neurocognitive Disorders

Author: Mary Blake Avery & Olivia Giles

Mentor: Dr. Susan Misciagno

BACKGROUND: This study aimed to identify the current level of stress in informal caregivers caring for people with neurocognitive disorders (NCDs), identify gaps in the home environment, and address the caregiver's needs that induce stress and burnout.

METHODS: This research was a descriptive, cross-sectional study that used a 20-item online survey to obtain sociodemographic information, assessed the perceived level of caregiver burden using the Zarit Burden Interview (ZBI), and investigated the barriers within the home environment that caused caregiver stress and burnout. Participants were recruited through professional email correspondence, personal

posts on Facebook, and flyers placed throughout the community.

RESULTS: A total of 63 surveys were obtained through QuestionPro. Of these surveys, 41 were completed. The results were exported into Microsoft Excel for data analysis and were examined through QuestionPro. The results indicated a moderate correlation between the number of assistive technology devices and the perceived level of caregiver burden. Common themes identified include individuals being fearful of falling, showing mood swings, or challenging behaviors, and caregivers expressing safety concerns in the home. According to the ZBI and data comparison analysis, an increase in assistive technology correlates to a higher level of caregiver burden, $r(39) = .40$.

DISCUSSION: The findings from this study indicate that the environment and the number of adaptive equipment/durable medical equipment owned by the individual with NCDs moderately increased the level of caregiver burden.

11:15 - 11:30 a.m.

Social Participation and Leisure as a Means to Increase Occupational Engagement and Satisfaction in Sexual Activity

Authors: Kendall Lahr

Mentor: Dr. Susan Misciagno

BACKGROUND: Sexual activity, social and leisure participation are occupations that play essential roles in individuals' everyday lives. The occupational therapy practice framework (OTPF) states that occupations can support or promote engagement, participation, and other occupations. This study aims to determine if greater social and leisure participation increases sexual participation and satisfaction among individuals following a stroke.

METHODS: In this observational study, data was obtained from 16 individuals. Participants were eligible for inclusion if they (1) were diagnosed with a stroke at least six months ago and up to five years ago, (2) were willing to answer questions related to sexual activity, and (3) were at least 35 years of age. Recruitment was conducted by

sending flyers and emails to stroke support groups and social media. Those eligible participants completed the anonymous survey via QuestionPro. A spearman's rho correlation was used to determine the correlation between social and leisure participation and sexual activity participation and satisfaction.

RESULTS: Of the participants, 93.3% and 73.33% noted a decrease in sexual activity and social and leisure participation post-stroke, respectively. Seven participants (43.75%) indicated that participating in leisure activities "sometimes" leads to participation in sexual activity. In contrast, 31.25% of individuals stated they "often" were more likely to participate in sexual activity when they participated in social and leisure activities. A Spearman's Rho test indicated a low correlation (0.31) between leisure and sexual activity participation and no correlation (-0.07) between social involvement and sexual activity participation.

DISCUSSION: This study indicates a low to moderate correlation between leisure and sexual activity participation, but more research should be done to further investigate the relationship between social, leisure, and sexual activity participation and satisfaction.

 11:30 - 11:45 a.m.

Assessing Limitations within the N.C. DMV Medical Review Program for At-Risk Older Adult Drivers

Authors: Aleighsha Gresham
Mentor: Dr. Sheri Michel

BACKGROUND: The N.C. Department of Motor Vehicle Medical Review Program (MRP) assesses driving performance to determine license status using physician recommendations: restrictions, cessations, or drive unrestricted. Drivers are instructed to obtain a physician-only driving evaluation indicating that MRP may not fully recognize the potential of using a two-discipline (physician and occupational therapist [OT]) holistic evaluation. Older adult driver performance may not be addressed due to these limitations. Purpose: To determine limitations in the N.C. MRP licensure decision process. An interdisciplinary team approach between OT and physicians may increase accuracy of license decisions.

METHODS: Researcher electronically administered a survey to seven OTs recruited from the MRPs website. Total survey respondents (n=19) with a range of ages and a variety of medical conditions completed the survey. Results were analyzed only for participants within the qualifying age range and identified as experiencing age-related changes without a medical condition (n=5).

RESULTS: While MRP identified poor driving trends triggering a physician medical evaluation, it is up to the physician to refer to OT for a functional driving evaluation. MRP does not initiate referrals to both disciplines for a combined medical and functional driving evaluation.

DISCUSSION: From our results, we can infer that license decisions may not be accurately decided as MRP does not fully recognize the advantage of a two-discipline holistic evaluation. Utilizing an interdisciplinary team approach may increase accurate license status as both professions evaluate to provide driving recommendations. Additional research is necessary for further evidence on the effectiveness of this joint venture.

 1 - 1:15 p.m.

Participation in Soldier & Family Readiness Groups and its Effect on Resiliency in Military Spouses during Deployment

Authors: Virginia Savage, Joanna Williams, Madison Love, & Alexandria Kluttz
Mentor: Dr. Sheri Michel

BACKGROUND: This study aimed to determine the correlation between participation in Soldier & Family Readiness Groups (SFRG) and resilience in Army spouses. Resilience is necessary for times of deployment and foreign conflicts for Army spouses. Soldier & Family Readiness Groups are intended to increase resilience and preparedness for Army spouses during these times and serve as a communication liaison between the chain of command and families.

METHODS: Researchers distributed a survey through social media and flyers. The survey was completed via an online distribution software. Army spouses (n=70) with a variety of participation in SFRGs, as well as deployment experiences, completed the survey. The survey

focused on determining the level of stress during times of deployment and perceived benefits of SFRG participation. Results were analyzed using Spearman's Rho correlations, Kruskal-Wallis comparisons, and descriptive statistics.

RESULTS: The Spearman's Rho tests produced significant correlations between the stressors of parenting and work among SFRG attendance using a Spearman's Rho correlation. Kruskal-Wallis comparisons of the rated level of stress from different SFRG attendance groups generated no significant correlations.

DISCUSSION: From our results, we can infer that participants perceive varying levels of benefit from SFRG participation in regard to handling stressors during deployment. We wonder what the cause could be for the differing experiences. Given these differences, would it be beneficial to advocate for the addition of occupational therapy (OT) practitioners in SFRGs due to their expertise in role change, instrumental activities of daily living, and the importance of support/socialization in times of isolation. Additional research is necessary to acquire further evidence regarding SFRGs effectiveness.

1:15 - 1:30 p.m.

Non-Immersive Virtual Reality in Stroke Rehabilitation: A Scoping Review

Authors: Cameron Cook
Mentor: Dr. Matthew Foreman

BACKGROUND: Non-immersive virtual reality (VR) is a popular intervention strategy used across various disciplines within stroke rehabilitation, yet most existing research utilizes vastly different protocols. This scoping review aims to collect evidence for non-immersive VR therapy within stroke rehabilitation and summarize common practices for its effective implementation. The specific purpose of this study is to utilize identified commonalities, benefits, and limitations to make improvements to the non-immersive VR stroke rehabilitation protocol used within the Motion Analysis Laboratory at Methodist University.

METHODS: In total, 87 articles were searched between February 2022 and March 2022 using databases such as PubMed, Google Scholar,

Springer, ScienceDirect, Cochrane Library, and OneSearch through Methodist University. Specific inclusion/exclusion criteria related to level of evidence, participant demographics, sample size, and VR hardware type were used to screen articles for inclusion.

RESULTS: Of the articles searched, 11 were included in the scoping review. Data were extracted and analyzed according to aspects of the PRISMA guidelines. Common themes were found throughout the sample of evidence, including: participant inclusion/exclusion criteria, outcome measures and assessments, intervention frequency and dosing, and technology utilized. Beneficial results were found throughout all 11 articles regarding the use of non-immersive VR in stroke rehabilitation.

DISCUSSION: In the future, the results of this investigation may be used to update our non-immersive VR protocol to improve its feasibility and efficacy for stroke populations. Specific improvements may include sensor technology, virtual environments and video games, participant recruitment and inclusion/exclusion criteria, and aspects of the intervention protocol including duration, frequency, and dosing.

1:30 - 1:45 p.m.

A Novel Assessment Comparing Upper Extremity Kinematics During Reaching Tasks Across Rehabilitative Contexts

Author: Jennifer Gerst
Mentor: Dr. Matthew Foreman

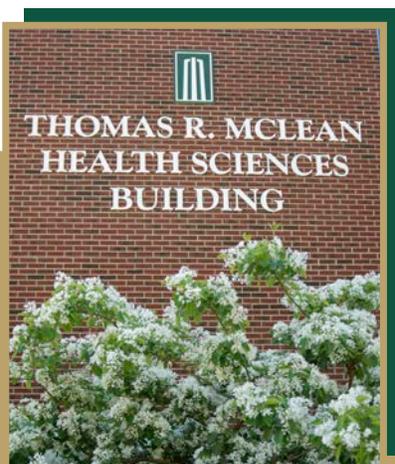
BACKGROUND: Current research demonstrates kinematic differences between hemiparetic individuals and healthy participants when performing lab-based reaching assessments. There is limited data comparing these results to functional reaching in simulated settings. This study aims to (1) determine the feasibility of a novel context-based reaching assessment and (2) determine the validity and reliability of the motion capture system used for this assessment.

METHODS: A cross-sectional, methodological study design with a small sample of healthy participants (n=7) was performed to test initial feasibility of the contextual reaching assessment. Participants first completed a standard lab-based reach test while measured simultaneously by a 14-camera Vicon Bonita motion capture system

and a Polhemus G4 electromagnetic motion tracking (EMT) system. Participants then performed predefined reaching movements within a simulated home environment while measured by the Polhemus G4 EMT system. Reach range of motion (ROM), upper extremity joint angles, and reach path ratios were compared across sensors, settings, and reaching activities.

RESULTS: Data analysis is ongoing, but initial results show there are significant differences between the Vicon and Polhemus systems when measuring non-extended movements (frontal, saption, sagittal planes) and extended movements (frontal, saption planes) within the laboratory setting. The Polhemus system differed from the Vicon with magnitudes ranging from 0.41cm-5.00cm for reach ROM.

DISCUSSION: While further analysis is required, the Polhemus G4 EMT motion tracking system demonstrates similar results compared to the Vicon system but is dependent on movement direction and placement of the system origin. Future work may seek to address hardware limitations and motion tracking fidelity during context-based movements.



1:45 - 2 p.m.

Occupational Therapy in Equine Settings to Improve Occupational Performance of Women with Pelvic Floor Dysfunction (PFD)

Authors: Caroline Matthews

Mentor: Dr. Matthew Foreman

BACKGROUND: The primary purpose of this research was to develop a novel pilot protocol to understand the potential of equine-assisted occupational therapy for women experiencing symptoms of pelvic floor dysfunction (PFD). The secondary purpose was to collect feedback from professionals to develop and iteratively improve the protocol based on overall attitudes toward equine-assisted occupational therapy for PFD treatments.

METHODS: A literature review was performed to assess the state of research on equine therapy and pelvic floor therapy. Professionals, including occupational therapists, physical therapists, pelvic floor specialists, and equine therapists were consulted to gain knowledge of

current clinical practices and considerations for protocol development and improvement. The current protocol is written as a pretest-posttest design for women with PFD symptoms and includes eight weeks of equine therapy with client-centered activities. The literature review, protocol, and an informal feedback survey were sent to content area professionals for feedback.

RESULTS: Professional feedback is being collected and synthesized for iterative protocol improvement.

DISCUSSION: A unique interaction of person, environment, occupation, and performance (PEOP) make PFD sensitive to address for many women. Therefore, the holistic approach inherent to occupational therapy and unconditional positive regard of equine therapy could be critical in conservative management of PFD for women. Through research of efficacy and optimal dosage of equine-assisted therapy for improved occupational outcomes with PFD, occupational therapists can establish treatment protocols that address habits, routines, roles, body structures and functions, and occupations.

2 - 2:15 p.m.

Investigating Aspects of Upper Extremity Motor Function, Sport Performance, And Occupational Participation in Classified Wheelchair Basketball Athletes

Authors: Paige Barham & Natalie Wright

Mentor: Dr. Matthew Foreman

BACKGROUND: The domains of upper extremity (UE) motor function, sport performance, and occupational participation are well-defined individually, but lack correlational evidence for wheelchair athletes. Additionally, the current National Wheelchair Basketball Association classification process is considered limited and could include further measurement to provide a more well-rounded perspective of athlete capabilities. This study aimed to create, through an occupational therapy (OT) lens, a holistic assessment protocol to investigate these domains in a small sample of wheelchair basketball players.

METHODS: This was a two-phase, cross-sectional, observational study. Five participants were recruited (four males and one female) to complete a battery of assessments. Phase 1 measures included goniometry of the shoulder, elbow, wrist, and fingers; electronic manual muscle testing of the shoulder and elbow; pinch and grip strength measurements; and the QuickDASH and Parts/M patient-reported outcome measures. Phase 2 data were not collected due to barriers in participant recruitment and follow-up. To provide a representation of the planned Phase 2 protocol, a 14-camera motion capture system was used to measure sport-specific movements, trunk control, and push kinematics with a single healthy individual.

RESULTS: Descriptive analyses of Phase 1 data showed differences in range of motion, strength, function, and participation in relation to patient demographics and classification level. Representative Phase Two data provided insight into the feasibility of the protocol.

DISCUSSION: We posit that Occupational Therapists are uniquely positioned to investigate relationships between motor function, sport performance, and occupational participation in order to provide a more holistic, comprehensive assessment of overall health and well-being for adapted sports athletes.





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 St., 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.