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Title: A Prone Forearm Plank: Performance and Hemodynamic Response in Male and Female Adults

Authors/Affiliation: Macee Hadley, Elizabeth Olsen, Rachael Schepp, Mia Tickel, Preston Walter (Exercise Science Students), University of Mary, Bismarck, North Dakota

Purpose: This primary research study aims to investigate the hemodynamic response to a maximal plank exercise. **Methods:** A cross-sectional design was used to assess prone forearm plank (PFP) performance and self-reported physical activity (PA), age, sex, resting heart rate (RHR), resting blood pressure (RBP), peak HR, immediate post-BP, recovery BP, immediate post double product (DP) and total plank time (TPT). A total of 152 adult men (57) and women (95), ages 18 to 76 ($m=30.9$, $SD=14.6$), were recruited from the University of Mary and surrounding Bismarck and Mandan communities. Prior to the test, the participants' resting blood pressure (RBP) and resting heart rate (RHR) were recorded and individuals were grouped into one of three categories based on their RBP (normal (NBP) = $<120/<80$, elevated (EBP) = $120 - 129/<80$, Hypertensive (HBP) = $\geq 130/\geq 80$). Participants were instructed to perform a maximal PFP based on a uniform script of administration. Immediately post-test, HR and BP were obtained in the prone position once the participants lowered to their knees for support. The total time of the PFP was recorded. DP was calculated based on resting vitals and immediate post-test vitals and was analyzed to determine differences between blood pressure classification groups. Hemodynamic response based on TPT between groups was analyzed as well. **Results:** A Kruskal-Wallis test was conducted comparing peak DP values based on RBP classification. A significant result was found ($H(2) = 9.001$, $p<.05$), indicating that the groups were different from each other. Follow-up pairwise comparisons indicated that the HBP group had a significantly higher peak DP value than the NBP group. A Kruskal-Wallis test was conducted the change in DP from resting to immediate post PFP values based on TPT classification. A significant result was found ($H(5) = 16.87$, $p<.05$), indicating that the groups were different from each other. Follow-up pairwise comparisons indicated that the groups that performed the PFP for 60 – 119 seconds and 120 – 179 seconds had a significantly lower immediate post DP than the group that performed the PFP for 300+ seconds. No significant differences in DP were found between BMI or physical activity classifications. **Conclusion:** DP values were found to be higher in the HBP group when compared to the NBP group, however, DP in all three groups remained below the level of moderate myocardial workload ($<19,999$). DP did demonstrate an upward trend as TPT increased. Results of the study suggest the TPT could have a greater impact on myocardial workload than resting vitals, which warrants further investigation in the population of hypertensive individuals performing lengthened bouts of isometric exercise.

Title: An Overview of Ethical Issues Related to FDA-Approved Gene Therapies for Sickle Cell Disease: Casgevy and Lyfgenia

Author/Affiliation: Lydia Schaecher (MS Bioethics Student), University of Mary, Bismarck, North Dakota

Purpose/Objective: This paper provides an overview of ethical issues related to two gene therapies for sickle cell disease – Bluebird Bio’s Lyfgenia™ (lovotibeglogene autotemcel) and Vertex Pharmaceuticals and CRISPR Therapeutics’ CRISPR-based therapy Casgevy™ (exagamglogene autotemcel) – approved for use by the U.S. Food and Drug Administration (FDA) in December 2023. These ethical issues exist at the individual patient level and at the wider health care delivery system level. Background: There exist serious concerns about the financing of lovotibeglogene autotemcel (lovo-cel) and exagamglogene autotemcel (exa-cel), which have list prices of \$3.1 million and \$2.2 million, respectively. Given that many sickle cell disease (SCD) patients rely on Medicaid for their health insurance, the problem of paying for these gene therapies affects the wider community. Additionally, disparities in health care access for SCD patients existing along the lines of race, income/class, and country may be exacerbated by the introduction of multimillion-dollar gene therapies. This paper will first examine the historic FDA approvals of lovo-cel and exa-cel before moving on to ethical issues with regard to pricing, access, and reimbursement. It will also evaluate the many fertility preservation options available to SCD patients in light of Catholic bioethics.

Conclusions: Equitable access should be a priority as lovo-cel and exa-cel are being rolled out, and governmental support in this area should be encouraged, as a matter of justice, given the ways in which individuals with SCD may be considered vulnerable persons. Catholic teaching offers support for this argument, with the Ethical and Religious Directives for Catholic Health Care Services calling for the special care of vulnerable persons, including the poor, racial minorities, and those with incurable diseases. The ethics of fertility preservation options offered to SCD patients receiving gene therapy have also been overlooked, but Catholic bioethics provides depth to the moral analysis of such options, leading to the conclusion that many are morally illicit because of how they serve to offend the dignity of human persons and degrade the marital act.

Title: Benefits of Exercise Pre, During, and Post Chemotherapy and the Effects on Cardiotoxicity Biomarkers

Author/Affiliation: Kaitlynn Roberts (MS Clinical Exercise Physiology Student), University of Mary, Bismarck, North Dakota

Cancer and cardiovascular disease are among the leading causes of death in the US. Cardiotoxicity is a condition that ties these diseases together and is defined as heart damage that arises from certain cancer treatments or drugs, such as anthracyclines, trastuzumab and chemotherapy. Exercise has been shown to improve cancer treatment side effects and cardiovascular disease symptoms. Implementing exercise programs for those suffering from cardiotoxicity may decrease the negative effects associated with cardiotoxicity for individuals. **Purpose:** This systematic scoping review aims to determine benefits of exercise before, during, and after cancer treatment and identify effects on cardiotoxicity, particularly changes in cardiotoxicity biomarkers such as brain natriuretic peptide (BNP) and Troponin 1 and T. **Methods:** Research articles were obtained by conducting a systematic search using PubMed Medical Subject Headings (MeSH) and searching CINAHL, Cochrane, and Medline databases. The database search consisted of the following MeSH terms: cardiooncology, cardio oncology, cardio-oncology, cardiotoxicity, cardiotoxic, chemotherapy, cancer, cardiotoxicity biomarkers, brain natriuretic peptide, BNP, troponin, cardiac troponin, aerobic exercise, exercise, exercise pre chemotherapy, exercise during chemotherapy, exercise after chemotherapy. Filters included a date range of 2000 to 2023. These articles were screened and organized into Mendeley. Inclusion criteria consisted of outcome variables such as BNP and cardiac troponin 1 and T, independent variables such as exercise pre, during, and post chemotherapy compared to a control group of no exercise with chemotherapy, and the form of exercise as aerobic. Exclusion criteria consisted of other types of cancer treatments such as radiotherapy and immunotherapy. **Results:** A total of 730 articles were collected from the database search. After the removal of duplications, a total of 707 titles were screened, leaving 353 abstracts that were reviewed by 3 reviewers for inclusion and exclusion criteria. After the abstract review, 31 full articles were reviewed, leaving a total of 6 articles for analysis. The administration of exercise (pre, during, and post cancer treatment) was found to be beneficial in increasing cardiorespiratory fitness in cancer patients and showed that it can increase or decrease cardiac troponin and BNP depending on the length of exercise intervention and the length until follow-up (BNP; $p > 0.007 - < 0.05$, cardiac troponin; $> 0.001 - < 0.05$). **Conclusion:** This review found the implementation of exercise benefited people suffering from cardiotoxicity due to cancer treatment and showed some varying results in cardiac troponin and BNP biomarkers. These results only included chemotherapy as the treatment method and findings were limited to people with breast cancer. These limitations should be addressed in future research to assist in broadening the effects exercise may have on cancer treatment and cardiotoxicity biomarkers.

Title: Burnout Within Athletic Training

Authors/Affiliation: Natosha Sand, Sage Brooks, Tyler Huston-Stevens (MS Athletic Training Students), University of Mary, Bismarck, North Dakota

Introduction: Burnout is examined by healthcare professionals, such as nurses and doctors. Athletic Trainers can be overlooked due to the amount of burnout that may be present throughout the profession. This study investigated what setting burnout is most prevalent in as measured by the Copenhagen Burnout Inventory (CBI). The CBI score range starts at moderate burnout with scores ranging from 50-74, high burnout rate consists of scores that range from 75-99, and severe burnout consists of scores higher than 100. The potential outcome is that the college setting will have higher levels of burnout than other settings due to the long hours that are typical in the collegiate world.

Methods: Athletic trainers of all settings were emailed through the NATA directory and other athletic trainers. Participants in this study were practicing ATs in clinical, collegiate, high school, industrial, military, professional sports, physician practice, extreme sports, youth sports, occupational, and managers. The survey consisted of the Copenhagen Burnout Inventory (CBI) and demographic questions. Data was analyzed using SPSS and excel. **Results:** There were a total of 57 surveys that were viable to use for data collection. There were 33% of the participants identified as male and 67% were female. Most of the participants, 74%, did not have children. About half of the participants, 51%, were married. The settings with scores below 50 consist of the manager position at 49 demonstrating low burnout. The settings that have scores in the range of 50-74 reflecting moderate burnout consist of clinical, college, secondary, physician office, youth sports, military, and industrial with scores ranging from 51-69. The settings that have scores in the range of 75-99 reflecting high burnout consist of extreme sports and professional with scores ranging from 76-77.5. **Conclusion:** When comparing different settings that athletic trainers work in using the CBI survey it can be argued that every setting in this study is feeling moderate burnout. Future studies should be conducted to compare an equal number of responses of athletic trainers in each setting to get a better understanding of burnout with the CBI survey. Knowledge of burnout is valuable not only to ATs but also to employers. Recognition of the importance is most important in helping prevent burnout from occurring. The burnout inventory tools have been used in previous research and will be effective in assisting in furthering the knowledge of burnout in athletic training.

Title: Convergent Validity of Dual Task Timed Up and Go (TUG) Performance and Activity Balance Confidence (ABC) Scale and Predictive Value of Six-Month Fall Risk
Authors/Affiliation: Jake Glass, Grace Hartman, Zachary Jensen, Sophia Jung (Doctor of Physical Therapy Students), University of Mary, Bismarck, North Dakota

Study Design: The study was an observational, longitudinal design. **Background:** Detection of individuals at risk of falls is a key element of physical therapy practice. The DT-TUG and ABC Scale are assessments utilized to determine fall risk. **Objective:** To determine if a correlation exists between the DT-TUG assessments and ABC scale and to determine if the DT-TUG cognitive and/or the DT-TUG motor and ABC scale are predictive of falls after 6 months. **Methods and Measures:** Nineteen adults aged 65 or older completed the DT-TUG motor, DT-TUG cognitive, and ABC scale. Participants recorded falls, injuries, and circumstances surrounding the falls that occurred within the following six months. **Results:** Significant correlations were found between DT-TUG motor and ABC scale ($p = -0.714$) and between DT-TUG motor and DT-TUG cognitive ($p = 0.754$). No significant correlation was found between ABC scale and DT-TUG cognitive ($p = -0.453$). Not all assumptions were met for running a multiple linear regression or logistics regression. Therefore, no six-month predictive value for falls was able to be determined for the assessments. **Conclusion:** Results support the combined use of DT-TUG assessments, and ABC scale to assess risk of falls in community dwelling older adults, however no predictive value for six-month fall risk was identified for the assessments.

Title: Dignity Beyond Chromosomes: Trisomy 21 and Organ Transplantation Eligibility
Author/Affiliation: Jane Francis Thornton (MS Bioethics Student), University of Mary, Bismarck, North Dakota

Background/Purpose: This paper addresses the intricate ethical dilemmas entwined with organ transplantation eligibility, particularly examining the role of trisomy 21, or Down syndrome, in transplant decision-making. Those born with Trisomy 21 are at high risk of cardiac disease and thus may need a heart transplant. Despite legislative efforts such as the Americans with Disabilities Act (ADA) aimed at preventing discrimination, hurdles persist. This paper underscores the significance of personalized evaluation processes to confront discriminatory tendencies and secure equitable access to life-saving therapies for all individuals.

Title: Does Information Related to the Menstrual Cycle in the N620 Curriculum Impact Student's Knowledge of the Role of the Menstrual Cycle in a Woman's Overall Health?

Authors/Affiliation: Theresa Vyner, BSN, RN, MBioeth., Jennifer Zettl, BSN, CCRN, CFRN (DNP Family Nurse Practitioner Students), University of Mary, Bismarck, North Dakota

Background: Ovulation is a vital indicator of a woman's health. However, its recognition through biomarkers often remains underutilized in clinical practice. Furthermore, most healthcare professionals have no education regarding the role of the menstrual cycle in a woman's overall health, the scientific validity of natural family planning/ fertility awareness (NFP/FA) methods and its evidence-based applications for women's health. **PICO:** "Does the implementation of information related to the menstrual cycle integrated within the curriculum for N620 for graduate nurse practitioner students at University of Mary impact students' knowledge of the menstrual cycle's role in the overall health of a woman compared to current practice reflected within the existing N620?" **Project interventions:** Funded by a benefactor, the FACTS (Fertility Appreciation Collaborative to Teach the Sciences) curriculum was utilized to integrate NFP/FA education into NUR 620 course. Pre and post surveys evaluated knowledge, confidence, and familiarity. **Outcomes:** All students demonstrated growth in familiarity and confidence and 18/19 students demonstrated increased scores in knowledge. Qualitative feedback was overwhelmingly positive. Students cited an increased workload but considered the content to be valuable and empowering. The University of Mary intends to support the project's sustainability. **Conclusion:** Three recommendations (develop curriculum, create sustainability, and evaluate outcomes) were met. The NFP/FA curriculum was positively embraced by students, faculty, and the University of Mary. Educating healthcare professionals about the menstrual cycle and its relation to a woman's overall health can empower women with knowledge and tools to plan their family, monitor their health as well as self-advocate for disease prevention, earlier diagnosis/treatment, and better health outcomes.

Title: Effect of High and Low Intensity Resistance Training on Quality of Life, Muscular Strength, and Functional Outcomes after Stroke

Author/Affiliation: Brooke Knott (MS Clinical Exercise Physiology Student), University of Mary, Bismarck, North Dakota

Resistance training is an often-utilized tool when working to increase muscular strength, function, and balance. It can also have a beneficial effect on quality of life. Stroke patients often suffer from physical deficits after the event and can greatly benefit from resistance training. **Purpose:** The purpose of this review is to determine the effects of high and low intensity resistance training on various outcome measures after stroke. Those outcome measures include quality of life (QOL), balance, muscular strength, and function. **Methods:** Articles for this systematic review were gathered using medical subject headings (MeSH terms) and search of Medline, Cochrane, and CINAHL databases. The following MeSH terms were entered into the PubMed database: (((("Stroke"[Mesh]) OR "Ischemic Stroke"[Mesh]) OR "Hemorrhagic Stroke"[Mesh]) AND (("Resistance Training"[Mesh]) OR ("Rehabilitation"[Mesh]) OR ("Strength Training"[Mesh]) OR ("Resistance Exercise"[Mesh]) OR ("Strength Exercise"[Mesh])) AND (("Quality of Life"[Mesh]) OR ("Gait Disorders Neurologic"[Mesh]) OR ("Muscle Strength"[Mesh]) OR ("Postural Balance"[Mesh])))). To be included in the review, articles needed to have stroke participants undergo a resistance training intervention. Outcome measures to be measured in the articles included balance, QOL, muscular strength and function. Articles that used aerobic exercise in the intervention were excluded. All meta-analyses and systematic reviews were excluded as well. Risk of bias was measured using the Modified Downs and Black on only the randomized control trials. Three reviewers were used for screening of abstracts and the primary author completed full article reviews. **Results:** The initial search resulted in 2,985 articles with 2,919 remaining after duplicates were removed. 156 articles remained after titles were screened and 48 following abstract screening, where 32 were removed, leaving 16 articles for final analysis. Data from 10 randomized control trials and 6 uncontrolled trials were analyzed. All groups undergoing a resistance training intervention showed significant improvement in muscular strength and function outcomes. Moderate improvements were seen in balance and quality of life measures. **Conclusion:** It was found that resistance training after stroke is beneficial for recovery in muscular strength and function. Few studies covered the outcome measures of balance and quality of life. More research is needed regarding the relationship between resistance training, balance, and quality of life in post-stroke care.

Title: Effects of Consistent Summer Weight Training on Injury Incidence Among Male and Female High School Basketball Athletes

Author/Affiliation: Shantelle Rule, LAT, ATC (MS Kinesiology Student), University of Mary, Bismarck, North Dakota

Purpose/Objective: This research investigates the potential correlation between consistent summer weight training and injury incidence among male and female high school basketball athletes. **Background:** The supporting evidence shows injuries are highly prevalent in high school basketball athletes, females more than males. Additionally the evidence implicates that weight training in adolescents reduces injury incidence throughout a season. Data from five high schools in Bismarck and Mandan, North Dakota, including Century High School (CHS), Bismarck High School (BHS), Legacy High School (LHS), Mandan High School (MHS), and Shiloh Christian School (SCS), was collected for the 2023-2024 basketball season. The study aims to assess whether a supervised strength and conditioning program during the summer can reduce injury rates among athletes. The hypothesis posits that athletes with consistent attendance in the summer weight training program will experience lower injury incidence compared to those with poor attendance or no participation. The study acknowledges limitations such as prior injuries affecting the risk of re-injury, a small sample size limited to the specified schools, and financial constraints for some athletes regarding participation in weightlifting programs. **Methods:** Data analysis will utilize a paired sample t-test to examine the relationship between injury incidence and attendance in the supervised summer weight training program. Findings from this study could provide valuable insights for coaches, athletic trainers (ATs), strength coaches (SCs), and policymakers in designing effective injury prevention strategies for high school basketball athletes.

Title: Effects of In-Season Dynamic Effort Resistance Training on Back Squat One Rep Max in Collegiate Wrestlers

Authors/Affiliation: Kyler Harris, Matthew Kelley, Derek Schon, Matthew Strecker (Biomechanics/MS Kinesiology Students), University of Mary, Bismarck, North Dakota

Resistance training during the competition period of the season for collegiate athletes is vital in maintaining the physiological adaptations achieved in the offseason. When resistance training stops, physiological qualities such as strength, power, and hypertrophy decrease if certain training demands are not applied to the body. However, during the competition period, practices and matches are of higher importance than strength training. This raises the question of how to implement strength training methods to maintain physiological adaptations without over-taxing the body. Therefore, allowing the athletes to simultaneously practice and compete at a high level. The purpose of this study was to investigate if dynamic effort protocols during the in-season competition phase of training for collegiate wrestlers would be enough stimulus to maintain maximal strength levels. This retrospective study analyzed the effects of dynamic effort training on the pre-season one rep max back squat numbers of collegiate wrestlers. Submaximal lower body resistance exercises were performed for the entire competition season, followed by back squat one rep max assessments to distinguish the effects of the training. The expected study results are that maximal back squat strength efforts would be maintained. These results could show support for the effects of submaximal resistance training as a means to maintain maximal strength.

Title: Efficacy Analysis of the Impacts from Program Accreditation for the Clinical Exercise Physiology Profession

Author/Affiliation: Leonardo Bentivoglio (MS Clinical Exercise Physiology Student), University of Mary, Bismarck, North Dakota

Program accreditation is considered the gold standard for education programs to better improve the quality and delivery of education. Many fields such as nursing, engineering, social sciences, and others have aimed to draw the outcomes and impacts of program accreditation. However, in clinical exercise physiology (CEP), current research is limited without conclusive and definitive evidence. **Purpose:** To investigate the outcomes of students enrolled in education programs that are accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) under the Committee on Accreditation for the Exercise Sciences (CoAES) and determine the relationship of graduation rates, positive placement and the American College of Sports Medicine Clinical Exercise Physiology examination (ACSM-CEP) based on the size classification criteria of the accredited schools. **Methods:** A survey comprising fifteen questions was distributed electronically to fifteen accredited CEP programs to collect program outcome data from 2021 to 2023, ensuring confidentiality and anonymity. Initial communication was via email to program directors, followed by a phone call after two months to boost survey participation. If unanswered, a detailed voicemail was left, and a follow-up email was sent one week later. Data from CAAHEP and individual searches of accredited programs' websites were also utilized to supplement the findings. **Results:** In 2023, 15 accredited schools offered master's programs in CEP. Of these, 4 programs (27%) responded to the survey. Researchers supplemented this data with outcomes information obtained from public records, n=11. The total institution size classification criteria are: small n=4, medium n=3, large n=8 (total n=15). Where small classification $\leq 5,000$ student; medium $> 5,001$ to 9,999, and large $\geq 10,000$. On average, schools had a graduation rate of $91.67\% \pm 2.86$, an accreditation duration of 7.67 ± 2.06 SD years, and positive employment placement rate of $89.08\% \pm 2.2$. A positive correlation occurred between graduation rate and number of years accredited ($R=.79$, $p=.006$). A negative correlation was found between number of years accredited and ACSM-CEP exam pass rates ($R=-.812$, $p=.026$). **Conclusion:** The study yielded insights into accredited master's CEP programs. Despite the low survey response rate, an analysis supplemented with public records revealed a high average graduation rate, positive employment placement, and ACSM-CEP examination passing rate that exceed national averages. The inverse relationship between accreditation duration and examination success was unexpected but may suggest duration of accreditation status is less important than simply being accredited. Variance analysis indicated no significant differences in outcomes among schools of different sizes, highlighting the need for further exploration of factors influencing program effectiveness and student success.

Title: Empowering Faculty to Impact Nursing Student Success through the Implementation of a Nursing Student Retention Toolkit

Authors/Affiliation: Robyn Rentschler, MSN, RN, Melissa Moser, MSN, RN, Tracy Bina, MSN, RN (DNP Nursing Organizational Leadership Students), University of Mary, Bismarck, North Dakota

Background: This evidence-based practice project focused on enhancing nursing student retention rates in a practical nursing program in the Upper Midwest. Historically, nursing retention has plagued nursing programs despite ongoing efforts to address the problem. While study skills remain a factor in student retention, extrinsic factors such as financial, social, and mental health challenges significantly affect nursing student success. Yet, resources to mitigate these issues are typically absent in nursing programs. The project leaders collaborated with nursing faculty and institutional leadership at a community college to create and employ a retention toolkit for nursing faculty. **PICO Question:** In a practical nursing program in the Upper Midwest, how does the implementation of a retention toolkit provided for nursing faculty impact student retention rates compared to current practice? **Project Interventions:** Using a web-hosted site, the project leaders developed a faculty-focused nursing student retention (NSR) toolkit with faculty tools and resources that addressed the student's academic, mental health, financial, and social needs. The NSR toolkit also contains professional development resources for faculty to foster relationship-building with their students. After the eight faculty participants had been educated on the NSR toolkit, the project leaders conducted monthly check-in meetings with the faculty to support and encourage using the NSR toolkit. After the project's implementation phase, the faculty were asked to complete a Qualtrics survey that sought quantitative data utilizing a five-point Likert scale and qualitative data gathered through open-response questions. **Outcomes:** The project leaders analyzed the data from the Qualtrics survey using descriptive and thematic statistics to determine the success level of the project recommendations. The faculty reported increased confidence in their abilities to support nursing students after utilizing the toolkit. Quantitatively, there was no significant impact on the nursing student's retention rates compared to prior years' retention data. However, qualitative data indicated that the faculty perceived the toolkit positively impacted the program's student retention. **Conclusion:** The NSR toolkit provided comprehensive resources, empowering faculty to support and guide nursing students at an Upper Midwest community college. This evidence-based practice project enhanced faculty confidence by fostering a supportive culture, thus impacting student retention. However, acknowledging the complexity of student retention, ongoing evaluation, and refinement of the toolkit are crucial to ensuring the toolkit's continued relevance and effectiveness in addressing nursing student retention.

Title: Enhancing Pediatric Providers' Knowledge of Attention-Deficit/Hyperactivity Disorder Through Digital Health Technology: An Evidence-Based Project

Authors/Affiliation: Rhonda Bieber, BSN, RN, Elizabeth Eads, BSN, RN, Tanner Stavn, BSN, RN (DNP Family Nurse Practitioner Students), University of Mary, Bismarck, North Dakota

Background: Attention-deficit/hyperactivity disorder (ADHD) is a complex, chronic, and heterogeneous developmental disorder and one of the most prevalent mental health conditions among youth in the United States. Persistent displays of inattention, disorganization, and/or hyperactivity-impulsivity bring about levels of impairment for children with ADHD. Moreover, long-term outcomes and follow-up are typically suboptimal in children with ADHD. The application of technology-based practice improvement tools provides a chance for diagnosis and treatment improvement for children with ADHD. Early diagnosis and adequate treatment are critical in pediatric ADHD because thousands of children go undiagnosed, untreated, and face long-term consequences of the disorder. **Planning:** A knowledge gap in provider understanding of the technology tool, mehealth for ADHD, was identified through collaboration with a physician at the Sanford Children's Campus in Bismarck, ND. The literature review solidified the understanding of the importance of digital health interventions (DHI), early identification, early intervention, and close monitoring of pediatric ADHD. Early identification and thus early intervention of pediatric ADHD is helpful to prevent long term negative consequences. The goal of the DNP project was to create an evidence-based quality improvement project designed to impact provider knowledge of the process related to obtaining ADHD assessments for pediatric patients within a pediatric primary care clinic. The implementation plan to achieve this goal included a mehealth for ADHD staff education handout and provider education video. **PICO:** In a suburban Midwestern outpatient pediatric clinic, how does education prior to implementation of a digital health technology (DHT) impact the knowledge base and receptiveness of DHT usage compared to existing practice? **Implementation, Evaluation, and Outcomes:** The Evidence-Based Practice study was implemented as a system change through before surveys of provider knowledge of mehealth for ADHD, facilitation of provider education on mehealth for ADHD, and after education surveys for providers. The implementation survey, specifically designed for the usage of mehealth for ADHD at the pediatric clinic, was developed and would have been distributed to providers and staff if the technology tool would have been utilized prior to April 2024. Results were obtained through anonymous surveys completed by seven providers within the pediatric clinic. Prior to the education, the providers had little to no knowledge of mehealth, except the project champion. After education, the providers reported average to above average knowledge of mehealth, and expressed interest in rapid implementation of the technology. The education provided by the project team helped to teach the providers at the Sanford Children's Campus about mehealth for ADHD and paved the way for future implementation of digital health technology to impact patient care.

Title: Ethical Considerations of CRISPR-Cas9-Mediated Oncotherapies

Author/Affiliation: Blaise Boyle (MS Bioethics Student), University of Mary, Bismarck, North Dakota

Background/Purpose: This paper creates a rounded discussion of the ethical fields related to the gene editing system, CRISPR-Cas9, and its applications to cancer treatments. The CRISPR-Cas9 mechanism is a genetic tool that can be used to edit genomes with high specificity. In cancer therapies, CRISPR-Cas9 is utilized primarily in two viable methods: CRISPR-Cas9-mediated chimeric antigen receptor T cell therapy and genetically targeted knock-out/knock-in therapy. Ethical decisions (permissibility, financial determinants, regulatory actions, organizational responsibility, and the proper pursuit of success) are approached with a framework that is centered around and informed by Catholic bioethics, the dignity of the human person, and the true purpose of medicine. With medical and bioethical definitions, both treatments are deemed permissible and in line with the purpose of medicine and the promotion of human dignity. Regulation of distribution of care must be rightly ordered if these CRISPR treatments are to fulfill their whole role. This balance is assessed using three sub-fields: financial considerations, organizational responsibility, and pursuit of success. Financial considerations use a framework of moral courage and selfless action. Issues of organizational responsibility use theories of justice and the creation of a culture of ethics. The necessity of an ordered pursuit of success is urged and supported by the determination of ordered goals and by the continuous and constant maintenance of the Good. In this light, this discussion of CRISPR-Cas9-mediated oncotherapies can lead to a true betterment of the human person, the promotion of dignity, and accomplishment of its full good.

Title: Examining the Impact of a Sensory-Motor Gym on Emotional and Behavioral Regulation

Authors/Affiliation: Hannah Jacobson, Isabella Nankivel, Gabrielle Renelt, Alexis Tschetter, Sarah Zuelzke (Doctor of Occupational Therapy Students), University of Mary, Bismarck, North Dakota

Emotional and behavioral regulation is a critical skill developed during childhood and early adolescence due to its contribution to overall academic achievement and social participation. Engagement in physical activity and potentially a sensory-motor-based activity poses the potential to enhance emotional and behavioral regulation among youth. The purpose of this quantitative pre-post study was to examine the impact of using a sensory-motor gym on self-reported Zones of Regulation for school-age children enrolled in a level D-specific education program. Consent was obtained from school-aged participants with various disabilities (n=24) in addition to parental consent in order to participate in this research study. Each participant attended a 20 - 30 minute session in the sensory-motor gym up to 5 days per week. Participants ranked themselves on the Zones of Regulation each time they entered and exited the sensory-motor gym to obtain quantitative pre- and post-ranking data for the study. The analyzed data found 44.23% of participants entered the sensory-motor gym with a pre-rank in the green zone (calm-happy), and 54.17% had a green (calm-happy) post-ranking. This indicated a change in emotion to calm-happy (green zone) after participating in the sensory-motor gym. These findings suggested engagement in a sensory-motor gym may result in a positive impact on emotions. Additional research is recommended for further exploration of the use of sensory-motor gyms.

Title: Exploring Beyond the Immediate Neurophysiological Effects using Pain Pressure Threshold Following Lumbar Spinal Manipulation in Asymptomatic Individuals: A Randomized Controlled Trial

Authors/Affiliation: Colton Swanson, Rudy Aguilar, Rylee Orteza, Saydee Wolff (Doctor of Physical Therapy Students), University of Mary, Bismarck, North Dakota

Background/Purpose: Lumbar spinal manipulative therapy (SMT) is a common evidence-based intervention used to treat low back pain (LBP); however, the exact neurophysiological mechanisms of SMT using pain pressure threshold (PPT) in reducing pain have not been fully explored beyond an immediate timeframe (e.g., immediately or five-minutes after) referencing a control group. Therefore, the purpose of this study was to investigate the neurophysiological effects of lumbar SMT compared to subtherapeutic ultrasound using PPT up to 30-minutes following each intervention.

Methods: A longitudinal randomized control trial design was completed. Enrollment took place between September - October 2023 and was approved by the institution's institutional review board. Each subject was randomized to treatment group (right sidelying lumbar manipulation) or control group (subtherapeutic ultrasound). PPT recorded at the right posterior superior iliac spine (PSIS) was documented for each subject in each group prior to intervention, immediately, and 30-minutes after. An independent samples t-test was used to determine baseline differences between age and PPT measurements prior to intervention. A repeated-measures ANOVA was used to assess the within- and between-group differences in PSIS PPT with the appropriate assumptions being met. An alpha level was set a priori at $p < .05$. **Results:** Fifty-five subjects were randomized to receive either subtherapeutic ultrasound ($n=29$) or a right sidelying lumbar manipulation ($n=26$). Statistically significant differences between lumbar SMT and subtherapeutic ultrasound groups were found immediately after ($p=.05$) and 30-minutes after intervention ($p=.02$). A significant difference in the lumbar SMT group was identified from baseline to immediately following ($p < .001$) and 30-minutes following ($p < .001$), but no differences between immediately following and 30-minutes after intervention ($p=.10$). The subtherapeutic ultrasound group did demonstrate a difference between baseline and immediately after intervention with a reduced PPT ($p=.003$), but no significant difference was found from baseline to 30-minutes ($p=.11$) or immediately after intervention to 30-minutes ($p=1.0$).

Discussion/Conclusion: Lumbar SMT was shown to increase PPT at the ipsilateral PSIS immediately and 30-minutes following in asymptomatic individuals compared to subtherapeutic ultrasound control group. Properly understanding the mechanisms of lumbar SMT is paramount to properly educating patients and the public. These findings are clinically relevant on identifying a proper timeframe (e.g. "therapeutic window") for proper exercise and loading management to promote self-efficacy for LBP. Future studies should further explore beyond the immediate and short-term neurophysiological effects of lumbar SMT to validate these findings.

Title: Facilitating Team-Based Nursing to Impact Nursing Retention on a Medical-Surgical Unit

Author/Affiliation: Lisa R. Johnson, MSN, RN (DNP Nursing Organizational Leadership Student), University of Mary, Bismarck, North Dakota

Background: The registered nurse (RN) shortage continues to increase daily. Innovating healthcare is imperative for safe patient care, as the traditional model (RN and certified nurse assistant (CNA)) will not be sustainable. A team-based nursing model (RN, licensed practical nurse (LPN), CNA) has been examined, as evidence-based literature supports that when this model is implemented, it can impact quality, safety, satisfaction, and nurse turnover. **PICO:** In a Mid-West hospital, how does facilitating a change to a team-based nursing workflow on a medical-surgical unit influence nursing retention compared to previous practices? **Project Interventions:** Upon reviewing the literature, three themes were identified to support three recommendations: 1) Ascertain strategic vision and leadership alignment by developing team-based nursing talking objectives for leaders 2) Facilitate training and education by creating a bundle to include a scope of practice, delegation tactics, conflict resolution, resiliency, and burnout 3) Cultivate sustainability by building relationships with the area school systems (LPN students who complete clinical at a facility). **Outcomes:** All three recommendations were successfully implemented with a survey sent to leaders (regarding talking objectives), the creation of a training and education bundle, an initial and follow-up survey sent to the nurse participants (understanding the execution of team-based nursing), and attendance by the project leader to the area school systems monthly meetings. **Conclusion:** Survey results from the leaders showed that the talking objectives were effective in understanding the team-based nursing model of care. The follow-up survey for the nurse participants revealed that their knowledge of team-based nursing had increased, and the training and education bundle was effective. Building relationships with the area school system assisted with hiring more LPNs in the Mid-West hospital. Finally, the data showed an impact on patient satisfaction results, falls, and safety events.

Title: Factors Which Influence Physical Therapists' Decision to Practice in Geriatrics
Authors/Affiliation: Mckenna Weiler, Benjamin Giese, Dylan Obrigewitch, Jessica Schafer (Doctor of Physical Therapy Students), University of Mary, Bismarck, North Dakota

Background: Geriatric physical therapy focuses on providing care to the aging population. The need for geriatric physical therapists increases as the population continues to age. Many factors may contribute to a physical therapist's decision to specialize in geriatrics. A potential barrier to why physical therapists may not pursue a career in geriatrics is the complexity of treating older adults. **Objective:** To investigate the factors associated with a physical therapist's decision to practice, specialize, or both in geriatrics. Specific areas of investigation related to their perception and influence on a physical therapist's decision to practice, specialize, or both in geriatrics will include: (a) sociodemographic characteristics; (b) educational factors including clinical educational experiences; (c) clinical factors related to patient care (d) mentorship; and (e) additional personal and professional factors. **Methods and Measures:** A nonexperimental multi-methods study design was used. Data from an online survey, utilizing a 5-point Likert scale, assisted in the creation of the participants' perceptions and influences on practice in geriatric physical therapy, guiding and generating the conclusion. **Results:** 151 questionnaires were completed. Factors found to influence a physical therapist's decision to practice geriatrics; from highest to lowest; included clinical patient care, mentorship, education, personal experiences, and the discovery of additional findings. Factors related to the perception of a physical therapist's choice to practice geriatrics; in order from highest to lowest; included: education, mentorship, personal and professional time, patient care, personal and professional stress, personal and professional work experiences, and additional findings occurred. **Conclusions:** Based on the findings of this study, provision of proper education on geriatric pathophysiology with related educational experiences, along with superb mentorship by experienced geriatric care physical therapists could potentially result in an increased interest in future physical therapists' choice to specialize in geriatrics.

Title: Faculty Advising for Underrepresented Minority Student Populations: Implementation of an Advising Toolkit Utilizing Jeffrey's NURS Model

Authors/Affiliation: Sonya Anderson, MSN, RN, Kristopher Gillespie, MSN, MBA, RN, NE-BC, (DNP Nursing Organizational Leadership Students), University of Mary, Bismarck, North Dakota

Background: This Doctor of Nursing Practice (DNP) project aimed to enhance faculty support for un-represented minority (URM) nursing students through a comprehensive and user-friendly advising toolkit. The project drew on the framework proposed by Jeffrey's and utilized a structured evaluation process. The collaborative efforts with faculty advisors provided crucial insights into the advising landscape, including workload nuances and diverse advisement processes. The subsequent development of the advising toolkit led to a transformative shift from reactive to proactive advisement, resonating with Jeffrey's framework. Despite a partial implementation, the toolkit emerged as a dynamic re-source, addressing academic, environmental, and professional facets of advisement. Supporting URM students in nursing education is crucial for promoting diversity within the nursing workforce. Tailored faculty support and proactive advisement strategies are essential for retaining URM students in academic environments. **PICO:** The PICO question developed to frame this evidenced-based project is: Among faculty who advised underrepresented minority nursing students, how does a resource toolkit and associated training impact student success compared to past advisement practices? **Project Interventions:** This DNP project aimed to enhance faculty support for URM nursing students through a comprehensive advising toolkit. The project unfolded in four key recommendations: collaborating with faculty advisors, developing the advising toolkit, providing educational training, and conducting pre- and post-surveys for reflective analysis. **Outcomes:** Analysis of pre- and post-survey data revealed transformative shifts in faculty advisement practices. Faculty members reported heightened satisfaction, increased comfort in advising URM students, and refined strategies for identifying at-risk students. The advising toolkit emerged as a dynamic resource, seamlessly integrating into faculty practices and fostering a proactive and student-centric advisement paradigm. **Conclusion:** The project's success signifies a paradigm shift in nursing education toward inclusive practices. By emphasizing evidence-based approaches, strategic collaboration, and continuous assessment, the project has laid a blueprint for fostering inclusive academic communities. The toolkit highlights the importance of tailored faculty support and proactive advisement strategies in promoting diversity within the nursing workforce. Consequently, due to the time frame, the project will not see if retention rates were significantly impacted; however, based on preliminary feedback from faculty, the outlook is positive.

Title: Functional Neurologic Disorder in the Acute Care Setting: A Case Report
Author/Affiliation: Anthony McFadden (Doctor of Physical Therapy Student),
University of Mary, Bismarck, North Dakota

Background: Despite common acceptance and current studies supporting physical therapy as an effective treatment for motor deficits seen in patients with Functional Neurologic Disorder (FND), the literature is lacking high-quality studies of PT's specific role in improvement of said deficits. The inherent heterogenous nature of FND symptoms also makes existing evidence difficult to generalize. **Purpose:** The purpose of this case report is to examine the role, findings, and benefits of physical therapy in the acute care setting of a patient with Functional Neurologic Disorder. **Case Description:** A 26-year-old female was admitted to an inpatient facility after multiple, progressive bouts of bilateral lower extremity weakness and numbness leading to profound deficits in functional mobility. The patient was admitted for 8 days where she was co-evaluated by PT and OT. Patient participated in three additional PT sessions before she was transferred to an acute rehab facility. **Outcomes:** The patient showed dramatic regaining of motor function with improved gait, mobility, and transfers after one week of physical therapy and other services. However, patient still reported numbness and weakness in distal lower extremities shortly before acute rehab transfer. **Discussion:** This case highlights significant improvement of functional deficits in a patient with FND undergoing physical therapy in the acute care setting, although it is unclear to what extent treatment sessions had on patient's sudden and dramatic improvement. **Conclusion:** Physical therapy likely plays an integral role in improvement of motor deficits in patients with FND and can potentially serve as an adjunct for motivation, locus of control, and other psychological domains often affected in patients with Functional Neurologic Disorder.

Title: Healing Hooves: Caregivers' Perspectives on the Impacts of Therapeutic Horse Riding

Authors/Affiliation: Mercedes Flores, Regan Hall, Hanna Schaible, Brenna Skulley (Doctor of Occupational Therapy Students), University of Mary, Bismarck, North Dakota

The purpose of this qualitative study was to explore the perceptions and experiences from the caregiver's perspective for their child who participated in a therapeutic horse riding (THR) program. Six participants whose children participated in a THR program ranging from a period of 14 months to 7 years were selected using purposive sampling. Each participant participated in a semi-structured interview. Qualitative data was analyzed through coding, categorization, and identifying themes and assertions. Four themes emerged: (a) participants reflected on the influences of therapeutic horse riding that resulted in beneficial changes in their child's overall independence, positively impacting their caregiver role, b) participants encountered various conditions that presented problem-solving to successfully engage their child in therapeutic horse riding, c) participants experienced their child's enhanced self-efficacy responses that positively influenced their child's overall self-concept through participation in therapeutic horse riding, d) participants found meaning in the opportunity for their child to engage in therapeutic horse riding, allowing for a new-found sense of connection and network of support. Research results provide a deeper understanding of THR's impact on the caregiver and the child. This study suggests that following a child's participation in THR, the caregiver observed a new sense of meaning for their child and gained a new perspective of their caregiver role.

Title: Healthcare in High-Risk Pregnancies: The Ethics of Treating Fetal-Maternal Conflict

Author/Affiliation: Sister Maris Stella, O.P. (MS Bioethics Student), University of Mary, Bismarck, North Dakota

Background/Purpose: Since the overturn of Roe v. Wade in June of 2022, many states have restricted abortion access within their borders. Fourteen states have banned abortion from the moment of conception. However, even in the most pro-life states, one exception universally applies, i.e., when the life of the mother is in danger. A false notion prevails in this country that abortion is warranted, and even necessary, in cases of fetal-maternal conflict. Through the lens of Catholic teaching, one sees that a direct attack on unborn life is never ethically permissible, even to save the life of the mother. Medical procedures, such as early induction of labor and cesarean delivery pre-viability, that have as their aim the cure of a pathological condition, are morally permissible for treating women in high-risk pregnancies, though they may have as an unintended and indirect outcome the death of a pre-viable fetus.

Title: Human Assembly Lines: Addressing the Ethical Risk of Cerebral Assembloids
Author/Affiliation: Wyatt Parks, B.A. (MS Bioethics Student), University of Mary, Bismarck, North Dakota

Background/Purpose: Human Cerebral Organoids (HCOs) are three-dimensional, self-organizing, tissue structures that closely resemble the cellular and molecular composition of the human brain. Commonly referred to as “mini-brains,” HCOs have proven particularly useful in studying the development of the human brain and learning how certain infections (such as ZIKA) and disorders (such as Alzheimer's) interact with it. The win-win of HCOs is that they are both better able to recapitulate human brain development and viral infection than animal models, but also, they do not seem to pose the same ethical issues present in live-human or live-animal testing. However, recently, secular ethicists have begun discerning the possibility of HCOs obtaining levels of phenomenal consciousness and the capacity to experience suffering. As evidenced from numerous studies, these HCOs are daily progressing towards more and more human levels of consciousness, but no one is asking the question, “At what point might these assembloids become persons?” Far from this discussion is any hint of a Catholic anthropology or a Thomistic metaphysics of the human person. Words such as “ensoulment”, “matter”, and “form” are nowhere to be seen. In this paper, I will explain more about what HCOs are and why they are so useful in both a medical research and personalized healthcare setting. Then I will discuss the present secular ethics concerns regarding their right or wrong use. Last, I introduce a Catholic “voice” to the subject of HCOs and the growing likelihood of phenomenal consciousness, experiential suffering, and personhood. I will demonstrate how there is reasonable doubt to be raised against the claim that human ensoulment of a cerebral organoid could never occur.

Title: Identifying Physical Therapists' Attitudes, Beliefs, and Barriers Towards Diagnostic Imaging Referral: A Mixed-Methods Study

Authors/Affiliation: Kendra Karl, Mattias Stich, Christopher Dean, Sara Lawson (Doctor of Physical Therapy Students), University of Mary, Bismarck, North Dakota

Purpose/objective: The aim of this mixed-methods study was to identify North Dakota (ND) physical therapists' (PTs) attitudes, beliefs, and barriers towards direct diagnostic imaging (DI) referral. **Background:** Ten states, including the District of Columbia, have laws that currently permit PTs to directly order DI in the United States. Military and civilian PTs order DI judiciously and appropriately demonstrating optimal patient outcomes and satisfaction. However, no studies have explored perceived attitudes, beliefs, and barriers to PT DI referral. **Methods and Measure:** A total of 147 participants completed an online survey with a subset of 17 participants agreeing to an interview. Frequency counts of demographic data and perceived barriers were completed. A binary logistic regression was run on demographic data. One-on-one interviews were conducted with a thematic coding process completed within a qualitative analysis. **Results:** Seventy-four percent of PTs reported not currently referring for DI, although 71% felt that it would improve their patient outcomes. PTs with post-professional training (OR=4.59), a doctorate degree (OR=3.84), practicing in an orthopaedics/sports setting (OR=3.55), and practicing in an urban area of ND (OR=3.01) were more likely to refer for DI. The main barriers identified in the survey included: (1) logistics of performing a DI referral, (2) DI referrals only privileged to other medical providers, (3) provider/work relationship dynamics, (4) cost of continuing education (CE), (5) and the inability to identify CE. One-on-one interviews further identified five main themes related to DI referral. **Conclusion:** Several barriers resulted in nearly three quarters of PTs not directly referring for DI, although certain characteristics (post-professional training, doctorate degree, orthopaedic/sports setting, practicing in an urban area in ND) suggest higher referral rates. These results may serve as a point of reference for current and future states in addressing identified barriers to improve PTs' DI referral capabilities.

Title: Impact of a Student-Staffed Exercise Clinic on the Qualitative and Quantitative Outcomes of Clinic Participants with Chronic Conditions

Author/Affiliation: Ariel Kern (MS Clinical Exercise Physiology Student), University of Mary, Bismarck, North Dakota

Student-staffed pro bono healthcare clinics have been proven effective for both participants and students. The University of Mary offers a pro-bono exercise clinic that is staffed by exercise science and clinical exercise physiology students. There is limited information available regarding the effectiveness of pro bono exercise clinics in the United States. **Purpose:** To determine the impact University of Mary Exercise Clinic has on health fitness assessment outcomes of participants with chronic conditions and diseases. **Methods:** All Exercise Clinic participants completed a health fitness assessment upon entry and about every 12 weeks after, 9 of whom gave consent to have assessment data included in this research. Objective data was collected for heart rate (bpm), blood pressure (mmHg), sit-to-stand test (# of reps), and attendance record (#sessions out of 36) through an online charting system of Clinic Note. Other variables assessed through Clinic Note included life satisfaction and self-efficacy scores via validated surveys. Data was collected at three points in time: end of Spring 2023 semester, beginning of fall 2023 semester, and end of fall 2023 semester, where the Exercise Clinic was closed in summer months. Inclusion criteria required participants to have attended the Exercise Clinic at all three points in time. Analysis was complete via SPSS 28 Microsoft Word utilizing repeated measures ANOVA and paired T-tests, with significance established at $p < .05$. **Results:** $N=7$ paired responses were completed from Spring 2023 to Pre Fall and $N=9$ paired responses completed from Pre Fall to Post Fall. Overall attendance (#sessions) was comparable with Spring 2023 ($\bar{X}=27.86 \pm 4.1$ (77.37%) and Fall 2023 ($\bar{X}=26.11 \pm 7.24$ (74.61%). Spring 2023 to Pre Fall 2023 systolic blood pressure (SBP) (mmHg) showed significant increase (125.4 ± 16.4 and 132.3 ± 14.9 , $p=.025$, Cohen's $d=.620$). Post Fall 2023 SBP was 122.9 ± 13.3 ($p=.125$, Cohen's $d=.413$). Resting diastolic blood pressure (mmHg) showed a significant decrease for pre fall 2023 and post fall 2023 (76.7 ± 7.7 and 70.4 ± 7.4 , $p=.047$, Cohen's $d=.707$). Pre fall and Post fall resting heart rate (bpm) showed a significant increase (65.2 ± 6.6 and 68.6 ± 8.0 , $p=.019$, Cohen's $d=.570$). Life satisfaction showed a significant decrease from Spring 2023 to pre fall 2023 ($5.89 \pm .65$ and $5.43 \pm .79$, $p=.042$, Cohen's $d=.78$). Post fall Life Satisfaction was $5.9 \pm .91$ ($p=.468$, Cohen's $d=.446$). No significant changes were found in the sit-to-stand or self-efficacy outcomes. **Conclusions:** Changes in blood pressure from Spring 2023 to Pre Fall align with a decrease in structured exercise during the summer months, and although not statistically significant, returned to spring 2023 values during post fall reassessment. Life Satisfaction scores paralleled this pattern, which may suggest favorable clinical value. A larger sample size would offer more statistical power.

Title: Impact of Interprofessional and Intraprofessional Fieldwork Experiences on Exercise Science Student Outcomes

Author/Affiliation: Elise Hintz (MS Clinical Exercise Physiology Student), University of Mary, Bismarck, North Dakota

Interprofessional and intraprofessional collaborations between healthcare students have been shown to improve student outcomes, but there has been limited research on exercise science student outcomes. **Purpose:** To assess change in exercise science student outcomes, including general self-efficacy, skills self-efficacy, and perceived interprofessional roles and engagement, pre- and post- interprofessional and intraprofessional fieldwork experiences. **Methods:** This study used a non-controlled mixed methods pre-post survey design engaging 27 college-aged students who were enrolled in at least one of two different practicum courses (one entry-level and one senior-level). Participating students completed three validated surveys before and after their interprofessional and intraprofessional fieldwork experiences. Surveys included the Pre-Interprofessional Socialization and Valuing Scale-21 (ISVS-21), Skills Self-Efficacy (SSE), and General Self-Efficacy (GSE). In addition, students completed a skills checkoff form while on rotation in the student staffed Exercise Clinic as a course assignment. Prior to the interprofessional rotation, students also provided written responses to the question, “Identify two expectations you have for the interprofessional “Marauder Day” at the YMCA, working with group exercise classes for people with Multiple Sclerosis (MS) and Parkinson’s Disease (PD)”. Statistical analysis included Paired T-tests, One-way ANOVA, and a linear regression conducted with IBM SPSS 28. **Results:** 25 (93%) students completed both pre and post surveys. A significant difference was found between Pre- and Post-ISVS-21 survey scores ($\bar{x}=5.40 \pm 1.064$ and $\bar{x}=6.17 \pm 0.127$, respectively) ($p=.001$), between Pre- and Post-General Self-Efficacy scores ($\bar{x}=3.16 \pm 0.307$ and $\bar{x}=3.42 \pm 0.337$) ($p<.001$), and between Pre- and Post-Skills Self-Efficacy scores ($\bar{x}= 3.99 \pm 1.121$ and $\bar{x}= 4.76 \pm 0.22$) ($p<.001$). Three themes emerged from the qualitative question regarding expectations of the interprofessional experience: 1) (n=9) to participate and learn about special populations, 2) (n=10) to work collaboratively and learn about other health science profession, 3) (n=2) that graduate students would take the lead and assign roles to undergraduate students. **Conclusion:** Exercise Science students enrolled in courses that involve interprofessional and intraprofessional fieldwork experiences demonstrated favorable changes in ISVS-21, SSE, and GSE scores, supporting curriculum design and suggesting student growth over the semester. Themes emerging from student responses to expectations for the interprofessional provided insights for faculty, where perhaps communication could be clearer regarding levels of participation and leadership roles. Considerations for the entire curriculum must be considered to determine independent effects of the fieldwork experiences.

Title: Impact of Interprofessional and Single-discipline Fieldwork Experiences on Exercise Science Student Outcomes

Author/Affiliation: Nicole Selle (Exercise Science Student), University of Mary, Bismarck, North Dakota

University of Mary on-campus Exercise Clinic provides undergraduate exercise science students substantial fieldwork experience while serving participants with chronic conditions and disease. This program's fieldwork has recently been supplemented with interprofessional experiences off-campus. **Purpose:** To determine the effects of interprofessional and single discipline fieldwork experiences on exercise science student outcomes. **Methods:** Twenty-seven college-aged participants in two different 400-level exercise science practicum courses completed Pre-Interprofessional Socialization and Valuing Scale-21 (ISVS-21), Skills Self-Efficacy (SSE), and General Self-Efficacy (GSE) surveys before their interprofessional and intra-professional/single-discipline fieldwork experiences. While students staffed the Exercise Clinic on campus, they completed one skills checkoff aligning with objectives for their specified class. Upon completion of their single-discipline fieldwork rotations on-campus and interprofessional fieldwork off-campus, students filled out an additional three surveys consisting of the Post-ISVS-21, SSE, and GSE. This report focused on the skills self-efficacy outcomes in particular, where results of the larger study are reported elsewhere. The SSE survey (1-5 scale with 5 as the highest ranking) was established by modifying a validated GSE survey such that it related in context to skills expectations in the Exercise Clinic. Both parametric and non-parametric statistical analysis was conducted due to potential distribution concerns. **Results:** 25 participants completed both pre- and post- SSE surveys and 100% of students completed their skills checkoff. A Wilcoxon Signed Rank Test revealed a statistically significant difference between pre- and post- SSE (pre \bar{X} =4.04±1.10 and post \bar{X} =4.76±., z=-3.74, p<.001) Limitations included no evaluation on which courses were taken and incomplete participation on both pre- and post- surveys. **Conclusion:** Our study showed an increase in the exercise science students' skills, confidence in these skills and collaborative work with other health science professionals, a better understanding of different roles in the clinic, and good preparation the students for future goals (i.e., continuing education, graduate degrees, career preparation, etc.).

Title: Impact of Occupational and Physical Therapy Collaborative Intervention Strategies Addressing Chronic Pain: A Pilot Study

Authors/Affiliation: Alexandra Crain, Brynne S. Hauer, Hanna M. Johnson, Ashlyn D. Kessel, Laura N. Krom, Alli M. McCoy, Shaylin M. Sundby, Gabrielle R. Volk (Doctor of Occupational Therapy and Doctor of Physical Therapy Students), University of Mary, Bismarck, North Dakota

Background: Due to the complex nature of chronic pain, treatment strategies for this patient population can be challenging. Chronic pain impacts many aspects of wellness and treating it requires interventions that address the whole person. Due to limited research, a need has been identified to investigate an interdisciplinary approach to treating a multifactorial condition like chronic pain. **Objective:** The purpose of this quasi-experimental, pre-test/post-test design study was to determine the impact of a 5-week multimodal occupational therapy (OT) and physical therapy (PT) interdisciplinary pain management intervention on outcomes related to occupational competence and value, quality of life, and fear of movement for individuals with chronic pain. **Method:** Four participants, between 25 to 71 years of age, with chronic pain were recruited through convenience sampling. Participants engaged in OT/PT multimodal interventions consisting of mindfulness, cognitive behavioral therapy (CBT), pain neuroscience education (PNE), and physical activity. Pre- and post- assessment scores of the occupational self-assessment (OSA), Tampa Scale of Kinesiophobia (TSK), and 36-item short-form survey (SF-36) were analyzed using a Wilcoxon signed-rank test. **Results:** No significant differences ($p > .05$) in pre- and post- test scores were found in the OSA, TSK, and SF-36. However, several participants demonstrated small positive improvements in their outcomes. **Conclusion:** No statistically significant data was found to support the use of a multimodal interdisciplinary treatment for chronic pain. However, small positive findings suggest the need for further research to explore the effectiveness of an OT/PT multimodal interdisciplinary pain management intervention.

Title: Impact of Student Staffed Exercise Clinic on Satisfactory Measures Among Participants with Chronic Conditions

Authors/Affiliation: Kameron Selvig, MacKenna Arnold, Paige Lagge (Exercise Science Students), University of Mary, Bismarck, North Dakota

Background: Student-staffed pro bono clinics are proven to be educational for the students and beneficial towards health and therapy of patients/participants. However, there is limited research on pro bono exercise clinics that are staffed by exercise science and exercise physiology students, where exercise is part of the treatment and management of patients' chronic conditions or disease. **Purpose:** To determine the impact the University of Mary's Exercise Clinic has on participants' perceived satisfaction of the offered services and to promote advancement of other universities' exercise pro bono programs. **Methods:** Nine (4F, 5M) participants of the University of Mary Exercise Clinic completed the Modified Professionalism Assessment Tool (PAT) and Outpatient Dietetic Satisfaction Survey (ODSS) (22 questions, 1-5 scale), rating their perceived value and overall satisfaction with the clinic. Data was gathered at the beginning and end of the fall academic semester of 2023 and was analyzed using IBM SPSS 28. Paired samples T-test and descriptive analysis were conducted with statistical significance set at $p < .05$. **Results:** Pre and post PAT & ODSS scores were not significantly different ($4.69 \pm .328$ and $4.75 \pm .343$, $p = .356$, Cohen's $d = 0.128$). Specific questions within the survey were significantly different ($p < 0.05$). Question #4, "I did not have to wait long to start my session", improved from $4.56 \pm .53$ to $4.89 \pm .33$, $p = .040$, Cohen's $d = 0.667$. Question #6, "The care I received from the clinic has improved my general health", increased from 4.33 ± 0.50 to 4.78 ± 0.44 , $p = 0.018$, Cohen's $d = 0.843$. Questions #11, #18, and #19 were trending towards significance ($0.05 < p < 0.09$). Question #11 on recovery time of participants showed it was trending toward significance and was the only question that decreased from the initial survey. Question #18 on the students speaking clearly and #19 on dressing appropriately also showed they were trending toward significance. **Conclusions:** Patients were overall highly satisfied with the University of Mary's Student-Staffed Pro Bono Exercise Clinic pre and post survey. Several questions showed either significance or trending toward significance, indicating that the participants we surveyed exhibited satisfaction from the exercise clinic. Other universities may consider adapting their model towards the University of Mary's Exercise Clinic.

Title: Impact of Vaping on Pulmonary Function and Blood Pressure in Physically Active Young Adults

Authors/Affiliation: Kaden Auch, Cheyenne Clinton, Morgan Coauette, Sarah Martin, Ryleigh Wacha, Taylor Wentz (Exercise Science Students), University of Mary, Bismarck, North Dakota

Background: Electronic nicotine delivery systems (ENDS) are the most used tobacco product among adolescents and teenagers; however, current research on the effects of ENDS on pulmonary and cardiovascular function is limited within the physically active population. **Purpose:** This study investigated the impact of ENDS use in the past 30 days on pulmonary and cardiovascular function in physically active young adults.

Methods: Healthy and physically active young adults (18-30yoa) who either did not use any tobacco product or only used ENDS were recruited from the Bismarck-Mandan community. After signing the informed consent, participants filled out the IPAQ-Long Form to assess physical activity levels and a selection of questions regarding ENDS use from the ND High School 2021 Youth Tobacco Survey. After the survey resting heart rate (RHR), systolic blood pressure (SBP), and diastolic blood pressure (DBP) were assessed. Next, height and weight were measured. Testing concluded with a pulmonary function test from a seated position, values measured were FEV₁, FVC, FEV₁/FVC ratio, and Peak Expiratory Flow were recorded. Anywhere between three to six trials were conducted with the results taken from the best trial. Descriptive statistics were used to describe data for the ENDS group and non-ENDS group. **Results:** Eleven total participants (9 females and 2 males) completed data collection. Of those individuals, only one reported using ENDS. Three IPAQ surveys were incomplete in the non-vaping group and were not included in the physical activity classification. All subjects are included in heart rate, blood pressure, height, and weight. Those who did not vape had a SBP of 113.80 ± 12.59 mmHg, DBP of 67.30 ± 4.50 mmHg, and a RHR of 67.50 ± 7.20 bpm. The participant who used ENDS had a SBP of 119mmHg DBP of 74mmHg and a RHR of 73bpm. All individuals completed PFT assessment; however, 4 tests were removed in the non-vaping group due to a technical error with the PFT booth. **Conclusions:** This pilot study identified areas to improve for future research on the impact of ENDS in active young adults. Recruitment strategies should target ENDS users and non-ENDS users separately to ensure an adequate sample size. Additional questions should also consider an individual's primary sport or type of physical activity.

Title: Impacting Patient Flow through Implementation of a Discharge Lounge at Sanford Medical Center Fargo: An Evidence Based Practice Project

Authors/Affiliation: Gretchen Amundson, BSN, RN, Jennifer Olson, BSN, RN, Kate Utgaard, BSN, RN (MSN Nursing Leadership & Management Students), University of Mary, Bismarck, North Dakota

Background/Purpose: The purpose of this project is for the UMary Project Team to assist in implementing an EBP project that aims to determine if an inpatient discharge lounge improves inpatient discharge times and decreases ED holding times. The goals of this project consist of creating an area for the discharge lounge, developing operational guidelines, developing a sustainability plan, orientating employees to the purpose of and proper utilization of the area, and implementing the discharge lounge. With the implementation of the discharge lounge, inpatient discharge times are intended to be improved, which will additionally open more rooms for patients in the ED who need to be admitted to a hospital unit. **Case Description:** Sanford Medical Center Fargo (SMCF) functions as the level 1 trauma services and ED, which is the UMary Project Team's focus for this project's implementation. The Fargo community continues to grow; over the past decade, the City of Fargo has grown approximately 18%, projected to reach 350,000 residents by 2050 (The City of Fargo, 2023). This projected growth means more people are seeking medical services in the Fargo community, further complicating the current state of capacity within medical facilities. SMCF, like many organizations across the country, is in a predicament of overflow and throughput challenges. With the growing population of the Fargo area, the capacity at SMCF will continue to be stretched thin, which can negatively impact patient satisfaction and potential patient safety. In preparation for this continued community growth and current capacity constraints, the organization must prioritize expanding available resources to improve patient throughput. **Outcomes:** The organization saw 1,098 discharges during the 60-day trial period with a lounge approval rate of 49%, adding up to 536 potential lounge patients. Forty-four of those patients utilized the lounge, with an 8.21% utilization rate. This calculates 3,360 minutes or 56 hours of inpatient throughput time saved for the organization. **Discussion:** While this project noted significant challenges with the utilization of the discharge lounge, the UMary Project Team successfully identified barriers to timely discharges and raised awareness of the throughput challenges facing SMCF. The data collected created a rejuvenated focus on current capacity issues, garnering senior leadership level support for implementing a defined workflow and process to relieve bottlenecks or use of overflow successfully identifying barriers to timely discharges.

Title: Impacting Provider Confidence Regarding Skin Cancer Screening in a Primary Care Clinic: An Evidence-Based Practice Project

Authors/Affiliation: Hannah Krauter, BSN, RN, Emily Lund, BAN, RN, Paige Upham Wischer, BSN, RN (DNP Family Nurse Practitioner Students), University of Mary, Bismarck, North Dakota

Background: Skin cancer is a prevalent problem in the United States, as more than 1 million people live with melanoma. The incidence of screenings in primary care remains low despite primary care providers being the first line of defense against screening. This lack of focus on skin cancer screening translates to decreased provider confidence in skin cancer screening within the day-to-day practice. Decreased provider confidence is a barrier to providing skin cancer screening in the primary care setting. **PICO:** How does the implementation of a provider-centered educational program influence skin cancer screening rates among adult patients and provider confidence at a suburban midwestern primary care clinic compared to current practice? **Project Interventions:** This evidence-based project included developing and implementing a skin cancer educational session and a skin cancer educational handout. During the educational session, providers were educated on the use of a dermatoscope and assessing skin lesions. The effectiveness of the project's interventions were evaluated using before and after quizzes. **Outcomes:** The project was implemented over three months. The results of the project were based on the comparison of answers from the three providers using before and after quizzes ($n=3$). Out of the three providers, there was a 100 percent completion rate. Providers reported increased confidence in the use of a dermatoscope, identifying and managing suspicious lesions, utilizing an educational handout, and overall performance of skin examinations. The project did not have a significant influence on the rate of skin cancer screenings amongst the providers. **Conclusion:** The implementation of a provider-centered educational program aimed at enhancing skin cancer screening rates among adult patients and improving provider confidence within a suburban midwestern primary care clinic has produced promising results. Through the development and delivery of comprehensive educational sessions and informative handouts, this project has successfully addressed a critical gap in current practice by equipping primary care providers with the necessary skills, knowledge, and confidence to conduct effective skin examinations.

Title: Impacting Wait Time Transparency at a Suburban Urgent Care Facility

Authors/Affiliation: Kwame Acheampong, BSN, RN, Rebecca Anderson, BSN, RN, Carter Mosher, BSN, RN (DNP Family Nurse Practitioner Students), University of Mary, Bismarck, North Dakota

Background: The project undertaken at the Buffalo Crossroads Allina Health Urgent Care (BCAHUC) targeted the pervasive issue of prolonged patient wait times, recognizing its detrimental impact on patient satisfaction and overall healthcare quality. In an era where wait times are often accepted as an inevitable aspect of healthcare, the project aimed to challenge this norm by improving wait time transparency. This initiative stemmed from an understanding that delays affect patient outcomes and satisfaction levels, potentially leading to increased healthcare costs and adverse health outcomes. The comprehensive approach included a literature review that underscored the significant correlation between wait times and patient satisfaction, highlighting the importance of addressing this issue to enhance the quality of healthcare delivery. **PICO:** Among staff in a suburban Midwest urgent care facility, how does a nursing workflow impacting wait time transparency affect patient satisfaction compared to current practice? **Project Interventions:** The project's intervention was multifaceted, encompassing the development of a workflow in partnership with nursing staff, aimed at enhancing communication regarding wait times. This approach was informed by a thorough organizational needs assessment and a SWOT analysis, which identified both the opportunities for improvement and the challenges that might impede the project's success. The emphasis on wait time transparency as a critical component of patient care reflects a shift towards a more patient-centered healthcare model, acknowledging that informed patients are better equipped to manage their healthcare experiences positively. **Outcome:** Over 90 days BCAHUC provided care to 2570 patients, 403 patients completed the survey. Out of the total patients who responded to the survey 62% were seen by a provider within 15 minutes. 68% (n=225) of those that waited over 15 minutes confirmed they received updates from nursing staff. While 41% found the updates helpful for decision-making during visits, 21% did not see a benefit. The influence of wait time transparency on patient satisfaction was significant, with 48% of respondents reporting increased satisfaction due to the updates, contrasting with a mere 3% who felt less satisfied. **Conclusion:** The project's findings suggest that enhancing wait time transparency can significantly improve patient satisfaction and perceptions of care, aligning with the broader objectives of providing high-quality, patient-centered healthcare. Recommendations for future research include exploring additional strategies to mitigate wait times and further integrating patient feedback into healthcare service design and delivery.

Title: Implementation of a Social Determinants of Health Screening Tool to Support Community Referrals in a Rural Obstetrics Clinic

Authors/Affiliation: Cassandra Bommersbach, BSN, RN, Johanna Christensen, BSN, RN, CEN (DNP Family Nurse Practitioner Students), University of Mary, Bismarck, North Dakota

Background: The current state of prenatal care in the United States presents a complex array of challenges, blending individual patient factors with systemic issues in healthcare. Maternal mortality remains high at 17.4 deaths per 100,000 live births, with 66 percent of pregnancy-related deaths deemed preventable (U.S. Department of Health and Human Services, 2020). The stress of coping with food insecurity, limited access to transportation, low income, and housing challenges, all stemming from social determinants of health, significantly contributes to pregnancy-related mortality and morbidity. Recognizing the importance of addressing socioeconomic risk factors, The Joint Commission recommends screening patients accordingly (The Joint Commission, 2023). Beltrami County Public Health identified a lack of community resource referrals from Sanford Health in Bemidji, MN. **PICO:** How does implementing a social determinants of health (SDOH) screening protocol for obstetric patients at an upper Midwest obstetrics clinic impact referral rate to community resources as compared to previous practices? **Project Interventions:** In response to the identified deficiencies in community resource referrals, a social determinates of health (SDOH) screening tool and a community resource handout was created by the project leaders. The SDOH screening tool included domains involving food, housing, transportation, and intimate partner violence. A workflow change was implemented at an obstetrics clinic where SDOH screening occurred at the initial visit, the 20-week visit, and the 36-week visit. The community resource information handout was made available to clinic staff, providers, and patients. **Outcomes:** Results of the project were based on data received from Beltrami County Public Health referrals made by Sanford Health and a tabulated number of surveys completed from the project champion. Following implementation, a 600% increase in HRSA pregnancy program referrals occurred, and a calculated number of 328 surveys were completed. **Conclusion:** The utilization of a paper-based screening tool facilitated patients' openness, resulting in increased referral rates and created a potential to enhancing prenatal care outcomes. From the gathered data it can be concluded that implementation of a SDOH screening protocol for obstetric patients impacted the referral rate to community resources when compared to previous practices.

Title: Implementation of Universal Mental Health Screening to Support Identification and Treatment of Depression in an Urban Underserved Clinic

Authors/Affiliation: Lachelle Collins, BSN, RN, Mackenzie Irwin, BSN, RN, Lauren Tollefson, BSN, RN (DNP Family Nurse Practitioner Students), University of Mary, Bismarck, North Dakota

Background: The United States Preventative Services Task Force (USPSTF) recommends universal screening for depression in the general adult population. Despite these recommendations, less than 50% of individuals are being screened during routine healthcare visits. Healthcare providers often feel hesitant to screen patients for depression due to inadequate training and resources. This issue disproportionately impacts underserved, low-income populations who face additional barriers to accessing mental healthcare. **PICO:** How does the implementation of the PHQ-9 questionnaire in an urban ambulatory care clinic serving uninsured and underserved populations impact the rates of depression identification and management by providers compared to current practices? **Project Interventions:** This evidence-based project was conducted at the Good Shepherd Clinic, which is a clinic that offers free healthcare to uninsured individuals in Morrow, Georgia. All patients aged 18 and older were screened for depression using the PHQ-9. Staff members were provided with a training session on administering the PHQ-9 and education regarding the rationale for screening. A treatment reference guide was supplied to the healthcare providers to streamline the management of depression, including options for pharmacotherapy and behavioral health referrals. **Outcomes:** Of the 250 patients who completed the PHQ-9, 77.6% had no prior history of depression. Among those with no history, 60.8% had no depressive symptoms, while 24.2% had mild, 9.3% had moderate, 3.1% had moderately severe, and 2.6% had severe depression. In contrast, patients with a prior depression diagnosis showed more severe symptomatology, with 28.6% having moderate, 28.6% having moderately severe, and 21.4% having severe depression. After viewing the staff training video, 90% of the 21 staff members felt confident in administering the PHQ-9, and 86% felt comfortable explaining the results to patients. Pre and post provider surveys also showed improvements in their comfort, confidence, and perceived ability to identify, discuss, and manage depression after using the treatment reference guide. **Conclusion:** Implementing universal depression screening with the PHQ-9, providing a staff training video on depression, and supplying a treatment reference guide for healthcare providers has the potential to significantly improve depression identification and management, particularly in underserved, low-income populations. The findings also suggest this intervention may help address gaps in the recognition and treatment of depression among patients with a prior diagnosis.

Title: Implementing a DSME Toolkit for Type 2 Diabetic Patients in a Rural Primary Care Clinic: An Evidence-Based Project

Authors/Affiliation: Breah Christianson, BSN, RN, Randi Wicklund, BSN, RN (DNP Family Nurse Practitioner Students), University of Mary, Bismarck, North Dakota

Background: More than 37 million Americans live with diabetes, and roughly 90% have Type 2 Diabetes Mellitus (T2D). Rural communities experience a 16% higher rate of T2D than urban settings. Implementing Diabetic Self-Management Education (DSME) at critical points in a diabetic's journey is essential to improve glycemic control. Previously, diabetic education has been considered highly academic and challenging for the patient to understand and utilize. The DSME tool created by the American Diabetic Association (ADA) has shown improved patient understanding of diabetes, compliance, and patient outcomes. Successful implementation of DSME can improve a patient's HbA1c by as much as 0.45-0.57%. Those receiving follow-up support from nurses are more likely to be compliant and have a greater understanding of diabetes management. **PICO:** For primary care providers and ancillary staff at a rural Minnesota ambulatory care clinic, how do they perceive the implementation of a standardized diabetic self-management educational program compared to current practices? **Project Interventions:** After a thorough literature review, themes identified were the benefits of the DSME regarding diabetic education and its relation to improved HbA1c levels. Project leaders made four recommendations: 1) educate providers and nursing staff on DSME and its benefits, 2) implement the DSME and increase referrals, 3) implement a follow-up RN phone call to patients who had attended a DSME class, and 4) analyze the acquired data and disseminate the project findings to key stakeholders at the rural clinic and the University of Mary faculty. **Outcomes:** During the project's 12-weeks, an increase in provider knowledge surrounding DSME was noted comparing before- and after-education survey results [n=4]. Changes ranged from +0.75 points to +1.25, the greatest increase on when to refer to DSME. Referral rates increased from 10 to 24 referrals to DSME, 15 new referrals, and 7 for new T2D diagnoses. Seven patients had repeated HbA1c, with an average improvement of 5.4% or 0.7 points. Minimal follow-up nurse calls were made due to a loss of nursing staff and a process delay, resulting in the inability to assess its effectiveness. **Conclusion:** DSME has been successfully integrated into the providers' workflow at Lake Region Health Care: Elbow Lake. It was designed to be user-friendly and easily accessible by providers, creating a simplified referral process for these patients. The DNP students are confident that this "smart set" and DSME tool will be sustainable and an asset to the Elbow Lake community.

Title: Inpatient Rehabilitation for a Patient with Underlining Fear of Falling Following Complications with Urosepsis: A Case Study

Author/Affiliation: Brett Nunziato (Doctor of Physical Therapy Student), University of Mary, Bismarck, North Dakota

Background: Fear of falling is a common and significant concern among the older adult, especially those with a history of falls. Fear of falling has gathered a considerable attention in healthcare settings due to the increase in medical costs related to falls. This fear can have a profound physical, psychological, and social consequences, making it an important topic for this case report. **Purpose:** The purpose of this case reports was to identify the underlining factors behind fear of falling and the best therapy management to establish safety with ADLs in the home and community. Secondly, to identify effective care and management strategies for addressing fear of falling in an acute care setting while considering global impairments and disabilities. **Case Description:** A 63-year-old man who was diagnosed with urosepsis who was non-ambulatory, received inpatient rehabilitation over the span of five weeks. This case report investigates his background and family history of fear or falling which determined the best treatment plan in order to return home safely. **Outcomes:** The patient did improve on overall mobility and ambulation endurance. Which included increased stride length, cadence, and aerobic endurance. The patient was able to return home. **Discussion:** This case highlights the intricacy of fear of falling, physical health, and psychological well-being in older adults. The patient's complex fear, linked to parental Parkinson's Disease, a sedentary lifestyle, and comorbidities, stressed the need for comprehensive understanding. A Critical Illness Myopathy diagnosis adds complexity, demanding tailored interventions. The use of the Activities-Specific Balance Confidence Scale, guide evidence-based interventions. Collaboration with social work and family is crucial, exemplifying a multidimensional approach breaking the cycle of fear and immobility for improved aging health.

Title: Investigation of a Relationship Between Classifications of Autism Spectrum Disorder and Sensory Processing

Authors/Affiliation: McKenna K. Adolph, Rebekah H. Bell, Sophia L. Frear, Madison A. Wasson (Doctor of Occupational Therapy Students), University of Mary, Bismarck, North Dakota

Purpose/Objective: The purpose of this quantitative study was to examine the relationship between autism spectrum disorder (ASD) classification based on the Autism Diagnostic Observation Schedule 2 (ADOS-2) and categorical scores on the Toddler Sensory Profile 2 (TSP) in children ages 7-35 months. **Background:** ASD is a developmental disability with differences in social interaction, communication, and behaviors. In the year 2020, it was estimated that approximately 1 in 36 children had an ASD diagnosis (CDC, 2022). Children diagnosed with ASD often show unusual responses to sensory information as compared to typically developing peers (Sanz-Cervera et al., 2017). **Methods:** This quantitative study utilized an observational, cross-sectional design to investigate the relationship between scores on the TSP and the ASD classification. The ADOS-2 classifies ASD into the three classifications of autism, autism spectrum, and non-autism based on the child's assessment score. Data was collected through convenience sampling from the Montana Developmental Assessment Clinic on 44 participants. Data was analyzed using an Independent Samples Kruskal-Wallis Test and pairwise comparisons. **Results:** Significant results indicated a difference in sensory processing symptoms among the three classifications of ASD in the oral, movement, and seeking categories of the TSP. Specifically, the autism classification had more sensory processing challenges in seeking, movement, and oral compared to the autism spectrum or non-autism groups. **Conclusion:** Sensory symptoms in seeking, oral, and movement categories are associated with the classification of autism according to the ADOS-2. Occupational therapists can use these findings to plan individualized sensory interventions for children with ASD.

Title: Multiple Cerebrovascular Accidents Due to Varicella Zoster Virus Vasculitis: A Case Study

Author/Affiliation: Autumnne Haskell (Doctor of Physical Therapy Student), University of Mary, Bismarck, North Dakota

Study Design: A qualitative case study that looks at the recovery of someone who suffered 3 strokes, with the initial stroke being caused by Varicella Zoster Virus (VZV) vasculitis. **Objective:** To identify a patient who has been diagnosed with VZV vasculitis as the cause for the strokes, and to rouse interest and bring further insight to this topic. **Background:** A Cerebral Vascular Accident (CVA) is a disorder of the cardiovascular system that causes part of the brain to become damaged or to die. CVAs are one of the most common causes of death and disability in the United States (US). The prevalence of CVAs in the US is ~795,000 a year. **Setting:** Inpatient Rehabilitation Facility (IRF) – Encompass Health of Las Vegas. **Participant Demographics:** Patient was a 35-year-old African American female. **Methods:** Data collection. Patient was seen over 1.5-week period at IRF to determine if/when patient could return home. Structured interviews, observations, and interventions were used in data collection. **Main Outcome Measurements:** GG Codes. **Results:** Patient was discharged home with family assistance, and referral for outpatient physical therapy. **Discussion:** Varicella vasculitis may be a more prevalent cause to cerebral vascular accidents than once thought and may have the potential to cause multiple strokes. Though patients that have had a stroke due to varicella vasculitis are treated with standard evidence-based interventions, there may be potential to prevent these types of strokes. **Conclusion:** Further research on this topic is necessary to identify prevalence of varicella vasculitis as the cause for CVAs, and for the risk of it causing multiple strokes.

Title: Occupational Therapy and Health Literacy: A Pilot Survey

Authors/Affiliation: Allie Hughes, Nicole Joyce, W. Tanner Sitton (Doctor of Occupational Therapy Students), University of Mary, Bismarck, North Dakota

Purpose/Objective: This cross-sectional research survey aimed to identify the factors that impact the integration of health literacy in occupational therapy practice in the United States. **Background:** Health literacy is the degree to which an individual can obtain, process, and understand basic health information and services needed to make appropriate health decisions (U.S. Department of Health and Human Services, n.d.). Multiple factors influence an individual's health literacy, such as age, education level, race, and socioeconomic status (Bryant et al., 2022). Poor health literacy leads to decreased access to services, poor healthcare provider communication, inefficient use of preventative healthcare services, and higher healthcare costs (Gamsizkan & Sungur, 2021; Hosseinzadeh et al., 2022). Occupational therapists address an individual's abilities, circumstances, and personal factors related to one's health literacy and health management, using health education approaches and materials that are understandable, accessible, and usable, thus promoting better health among consumers (American Occupational Therapy Association, 2011). **Methods:** The participants (n=59) completed a researcher-created online survey, which was distributed through various platforms using a convenience sampling method. Participants included occupational therapy practitioners from the following regions: Midwest, West, South, Southeast, and Middle Atlantic. Participants had a wide range of experience with a majority having practiced between 0 and 5 years. Participants were sampled from various practice settings with a majority practicing in an outpatient setting. Data were analyzed using descriptive statistics and frequencies. **Results:** Formal and continued education were found to be the most important factors influencing health literacy integration in occupational therapy practice. Verbal, visual, and written formats were the most frequently used methods of providing health education. Participants reported the client's understanding of the educational material was influenced most by their education and age. Developing rapport with the clients was also reported as a significant factor in patient health education. The participants reported a lack of time as the most significant barrier to effective health literacy education. **Conclusions:** Improving health literacy should be a priority for healthcare professionals. This focus will create educational and organizational shifts that better serve everyone's unique health needs. Improving the integration of health literacy not only aligns with occupational therapy's values but is also an important step toward effective healthcare delivery.

Title: Patient-Centered Pediatric Oncology Education, Resources, and Tools at Diagnosis: An Evidence-Based Improvement Project

Authors/Affiliation: Davina Carr, BSN, RN, Jessica Horner, BSN, RN, CAPA, Nate McDonough, BSN, RN (DNP Family Nurse Practitioner Students), University of Mary, Bismarck, North Dakota

Background: This Doctor of Nursing Practice paper addresses the urgent need to enhance pediatric oncology education delivery for newly diagnosed patients and families at a midwestern clinic. In North Dakota, childhood cancer rates exceed national averages, emphasizing the importance of effective education. However, standardized protocols are lacking, leaving families overwhelmed and clinicians struggling to provide consistent, comprehensive information. At Sanford Children's Downtown Clinic in Bismarck, this gap in education delivery is keenly felt, impacting patient outcomes and straining the healthcare system. Thus, the project aims to investigate how standardized education delivery can improve pediatric cancer care, benefiting patients, families, and the healthcare system. **PICO:** "At a midwestern pediatric oncology clinic, what impact does a patient-centered education delivery workflow, robust resources, and 'game plan' have on the staff's ability to deliver education to newly diagnosed patients/families as compared to current practice?" The interventions were developed following a rigorous literature review, identifying gaps in patient and family education in pediatric oncology care. **Project Interventions:** In collaboration with Sanford Children's Downtown Clinic, the project implemented evidence-based education standards through a standardized delivery checklist, visual "game plan," and the Children's Oncology Group (COG) KidsCare app. The implementation process, guided by the Family Stress Theory and Kotter's Eight-Step Change Model, aimed to streamline education delivery, improve support for families, and empower organizational stakeholders to adapt resources to evolving needs. Addressing the profound implications of childhood cancer diagnoses, particularly in North Dakota, where resources are limited, the project emphasizes the importance of standardized education and psychosocial support. Despite existing resources like the Children's Oncology Group Family Handbook, the overwhelming nature of the diagnosis and the absence of concise educational materials exacerbate the challenges families and healthcare providers face. **Outcomes:** By implementing evidence-based interventions, significant improvements in education delivery and psychosocial support were achieved, benefiting local communities and hopefully, one day serving as a model for pediatric oncology education delivery regionally. **Conclusion:** The findings underscore the importance of evidence-based interventions and interdisciplinary collaboration in improving patient outcomes and quality of care in pediatric oncology, particularly in regions with limited resources.

Title: Physical Therapy Intervention for a Child with Encopresis and Behavioral Influence: A Case Report

Author/Affiliation: Diana Nathe (Doctor of Physical Therapy Student), University of Mary, Bismarck, North Dakota

Objective/Purpose: There is a lack of research and evidence linking the use of physical therapy in the treatment of urinary incontinence and encopresis in the pediatric population. Approximately 12% of these children with ASD are diagnosed with encopresis. The purpose of this case study was to explore interventions utilized in treating pediatric populations for encopresis with ASD. **Background:** This case describes a seven-year-old boy who was diagnosed with ASD, ADHD, and mixed anxiety disorder. This child had chronic constipation and encopresis. The child demonstrated decreased awareness and coordination of PFM, increased use of adductors and gluteals for pelvic support, decreased overall coordination, increased difficulty with task attention, decreased core strength, and increased sensory aversion. **Methods:** The child was evaluated in an outpatient rural clinic. Patients' hydration and constipation were measured via the wee and poo checker. Physical therapy interventions focused on treating awareness of PFM and core muscles, increasing coordination, and decreasing sensory aversion. **Results:** Treatment was done over twelve weeks and resulted in one smearing incident in a month, the child recognizing sensations for using the bathroom, and regulating sensory responses. **Conclusion:** This study demonstrates the effectiveness of education to a child and parents regarding encopresis and chronic constipation, increasing bathroom use and decreasing encopresis symptoms when focusing on PFM awareness in this child. Further research is needed to generalize these results to a larger population and prove the effectiveness of these treatments on a larger group of individuals.

Title: Physical Therapy Intervention for a Patient with Musculoskeletal and Neurological Deficits as a Result of Chronic Alcoholism: A Case Report

Author/Affiliation: Madison Ferderer (Doctor of Physical Therapy Student), University of Mary, Bismarck, North Dakota

Background/Purpose: There is a lack of research connecting alcohol use disorder with physical therapy intervention. Fourteen percent of the United States population is suspected to experience some form of alcohol use disorder and a variety of ailments can present as a result of this. This case report describes successful physical therapy interventions and proposes additional intervention strategies for a patient who was non-ambulatory due to chronic alcohol addiction. **Case Description:** A 32-year-old female with a medical history of alcohol addiction and major depressive disorder who presented to the emergency department with complaints of incontinence, 10/10 neuropathic pain within the bilateral wrists and hands, and being unable to ambulate or bear her own weight for at least two weeks. **Outcomes:** The patient was evaluated and treated by a physical therapist and a physical therapy student for thirteen days while she remained in the hospital to rehabilitate from several ailments that resulted from chronic alcohol use. The Activity Measure for Post-Acute Care or “6-Clicks” was utilized to track the patient’s basic mobility progress during her hospital stay and highlighted that physical therapy was successful in improving basic mobility. The patient demonstrated improvements in strength, functional mobility, and was ambulatory following physical therapy intervention. **Discussion:** This case serves to form connections between the benefits of physical therapy intervention and chronic alcohol use. Further research is indicated on this topic to better understand how physical therapy can be utilized in the plan of care for individuals experiencing alcohol addiction.

Title: Physical Therapy Management of Suspected Lindsay-Hemenway Syndrome: A Clinical Case Report

Author/Affiliation: Bret Papas (Doctor of Physical Therapy Student), University of Mary, Bismarck, North Dakota

Background/Purpose: Lindsay-Hemenway syndrome is an uncommon vestibular dysfunction with limited literature that impairs an individual's ability to perform daily activities. Physical therapy services often utilize vestibular rehabilitation as an intervention to treat and manage vertiginous conditions. The purpose of this case report was to describe the clinical presentation, diagnostic evaluation, and management of a patient who presented with suspected Lindsay-Hemenway Syndrome and will highlight the challenges and considerations of the physical therapist in diagnosing and treating this condition. **Case Description:** The patient was a 51-year-old female receiving outpatient physical therapy services for a suspected diagnosis of Lindsay-Hemenway syndrome. The interventions consisted of a treatment plan utilizing vestibular rehabilitation to improve functional strength and balance, reduce dizziness, and improve quality of life. **Outcome/Follow-up:** Following 10 sessions of outpatient physical therapy, improvements in Sensory Organization Test (SOT), Dizziness Handicap Inventory (DHI), and Functional Gait Assessment (FGA) demonstrated improved functional balance, mobility, strength, and quality of life without symptoms of vertigo. **Discussion:** Given the scarce literature on Lindsay-Hemenway syndrome, this case report provides information on signs and symptoms of an individual presenting with the suspected condition and utilizing evidence-based treatment interventions to manage this vestibulopathy.

Title: Physical Therapy Rehabilitation for ACL-Reconstruction Through Retro Exercise in Conjunction with Spanish Squats: A Case Report

Author/Affiliation: Keaton Boehm (Doctor of Physical Therapy Student), University of Mary, Bismarck, North Dakota

Background: Retro exercise is becoming a popular means for patient treatment in many different diagnoses as it has benefits in knee health, proprioception, motor planning, and pain reduction. This case report dives deeper into how retro exercise can be incorporated to treat individuals who are rehabilitating from ACL-R. **Case**

Description: A 19-year-old male college student who had previously torn their left ACL playing basketball. The patient went through an ACL-R procedure via left quadriceps autograft on January 30th, 2023. Episode of care began 3.5 months status post ACL-R.

Outcomes: The patient was evaluated and treated for seven visit and ran over the course of one and a half months. The patient was treated with standard physical therapy for ACL-R in conjunction with retro exercises and Spanish squats. Retro exercises included backward walking, band resisted backward walking, and reverse step-ups. The outcome measures that were utilized to track progress included the Lower Extremity Function Scale (LEFS), ACL Return to Sport after Injury (ACL-RSI), and the Y-Balance Test. **Discussion:** This case report works in conjunction with current research showing the overall benefits of retro exercise in many diagnoses. This case report was created to determine the generalizability of retro exercise in the treatment of ACL-R. Results from this research are positive, but further research must be produced to determine the true efficacy on retro exercise for ACL-R rehabilitation.

Title: Predictors of Prone Forearm Plank Performance in Healthy Adults

Authors/Affiliation: Sydney Binstock, Karley Gudajtes, Mabel Larson, Leo Mushinsky, Emily Needham, Natalee Sample (Exercise Science Students), University of Mary, Bismarck, North Dakota

Purpose: This primary research study aims to establish a normative data repository for the prone forearm plank (PFP) test by assessing PFP performance in a wide range of healthy adults and stratified by potential predictors of PFP performance such as age, BMI, sex, and/or self-reported level of physical activity (PA). The collected PFP performance data from this study may be used to create normative fitness classifications among a wider range of healthy individuals and serve as a control for future research projects with clinical or other special populations. **Methods:** One hundred fifty-two male ($n=57$) and female ($n=95$) nonathletes over the age of 18 (31.05 ± 14.63 years) without any orthopedic problems or metabolic, kidney, cardiovascular disease participated in a PFP. The study participants filled out an informed consent, health history questionnaire, and completed the international physical activity questionnaire-short form (IPAQ-SF). Before testing, resting blood pressure and heart rate were taken along with BMI calculations (kg/m^2). Researchers explained the PFP from a prompt including what anatomical body position to assume along with a picture. PFP terminated if the participant reached volitional fatigue or violated protocol. Heart Rate (HR) was taken every thirty seconds and systolic (SBP, mmHg) and diastolic blood pressure (DBP, mmHg), HR, test time, reason for test end, and diagram showing what part of the body fatigued the most were all recorded immediately posttest. Descriptive analysis and correlations were performed using IBM SPSS Statistics 28 software. **Results:** Mean SBP (115.70 ± 12.97), DBP (72.75 ± 9.38) and BMI (25.79 ± 4.96) indicated a normotensive and overweight sample. At least 85% of our participants fell into a moderately or highly active category based on the IPAQ-SF. No significant correlation was found between mean PFP time(s) and age, BMI, and self-reported PA level for the female or male participants ($p > .05$). A significant moderate correlation was found between sex and mean PFP time ($r(148) = -.399, p < .001$). Males produced significantly higher PFP times than females ($t(148) = 5.297, p < .001, 167.58\pm 70.22$ and 116.42 ± 47.95 , respectively). The fatigue of the shoulders, abdominal muscles, and the mid to lower back were the highest areas of fatigue reported during the PFP test for most of the female (75%) and male (74.2%) participants. Area of highest fatigue was not correlated to PFP performance in males ($r(29) = -.179, p > .05$) or females ($r(30) = -.143, p > .05$). Normative percentile rankings were generated for males and females and the results median was found to be 154(s) for males and 103(s) for females. **Conclusion:** Normative percentiles for abdominal endurance suggest that the PFP can be used as an abdominal assessment in active, healthy adults 18-68 years of age when stratified by sex. Further investigation is recommended prior to confirmation and generalization to other populations.

Title: Ready, Set, Grow: Assessing Self-Regulation in Elementary Students

Authors/Affiliation: Keary Aune, Kyle Cacho, Brooke McClure, Isabel Milich (Doctor of Occupational Therapy Students), University of Mary, Bismarck, North Dakota

Background: Occupational therapy practitioners (OTPs) provide intervention to children across domains that impact function. One area is self-regulation (SR). SR is the ability to use executive functioning, sensory processing, and emotional regulation skills in tandem to control thoughts, feelings, and actions to match expectations. OTPs are an established related service in public schools under special education law. There is an emerging effort within Multi-Tier System of Supports (MTSS) to further integrate OT into general education. OTPs can impact development of SR skills earlier on and for more children. **Purpose:** The purpose of this study was to determine the effects of SR intervention at the Tier 1 level of MTSS on elementary student SR skills. **Methods:** A quasi-experimental design was utilized. Student researchers integrated Zones of Regulation SR curriculum as a framework in a six-week program to target skills in a public 1st grade classroom. Pre- and post-test surveys were used for both teacher and student perceptions. **Results:** Statistical analysis indicated a significant increase in student ability to identify emotions ($Z = 2.260, p < .05$). A significant difference was also found in teacher perceptions of student SR abilities. **Conclusion:** OTP intervention at the Tier 1 level is effective at improving skills for children in general education. Implementing concepts from Zones of Regulation effectively increased students' ability to identify emotions in self and others, skills essential to SR development. OTPs can collaborate with teachers to deliver intervention to whole classes in order to effectively teach students SR skills.

Title: Relationship Between Accreditation for Clinical Exercise Physiology (CEP) Master's Programs and ACSM-CEP Exam Pass Rates

Author/Affiliation: Lindsey Larson (MS Clinical Exercise Physiology Student), University of Mary, Bismarck, North Dakota

Purpose: The purpose of this study was two-fold: 1) to compare ACSM-CEP exam pass rates of CAAHEP accredited CEP master's programs to national pass rates, and 2) to aggregate program outcomes data of accredited master's CEP programs for the years 2021-2023, establishing a comparison for CEP programs to benchmark variables including: initial year of school accreditation, school size, type of university/program (i.e., research or teaching), number of male and female students per cohort, number of students that have taken the American College of Sports Medicine Clinical Exercise Physiology (ACSM-CEP) certification exam, and number of students that passed the ACSM-CEP exam on their first attempt. **Methods:** Program directors of fifteen accredited CEP master's programs were recruited via email to fill out a questionnaire, of which four (26.7%) completed it. The questionnaire posed questions regarding initial year of school accreditation, school size, type of university/program (i.e., research or teaching), number of male and female students per cohort, the number of students that have taken the ACSM-CEP exam, number of students that passed the ACSM-CEP exam on their first attempt for years 2021-2023, and, optionally based on student feedback, the top two strengths of the program that might be considered a key to the program's success. Data from participants' responses were collected electronically and online using Microsoft Forms. The program directors were sent an email that contained information about the purpose and nature of the study and alerted them to the first question of the questionnaire that involved consent. Completion and submission of the questionnaire served as the program directors' informed consent. An online search of accredited CEP master's programs was also conducted to collect program outcomes reported on CAAHEP's website under 'Find An Accredited Program' ("Commission on Accreditation"). Descriptive analysis and correlations were performed using IBM SPSS Statistics 28 software. **Results:** Mean ACSM-CEP Exam pass rates from accredited CEP master's programs collected on CAAHEP's website were [85.3% ± 0.17], compared to the 2022 national pass rate of 55%. An unexpected significant negative correlation was found between number of years accredited (6.6 + 6.52) and ACSM-CEP exam pass rates (85.3 + 16.63) ($R = -.812$, $p = .026$). The majority (60%) of accredited programs are located in the Mid-Atlantic and Southeast ACSM regional chapters, 53% categorize as Large (15,000+) academic institutions, and about 47% of programs have been accredited for <1 to 4 years. **Conclusion:** ACSM-CEP exam pass rates for accredited CEP master's programs were about 30% higher than the national ACSM-CEP exam pass rate for 2022, suggesting effectiveness of graduate studies that are guided by accreditation domains aligning with this exam. The tenure of accreditation status may not be a factor in ACSM-CEP exam success.

Title: Respecting Life in Its Generation: Ethical Considerations Regarding the Intrauterine Insemination (IUI) Fertility Method

Author/Affiliation: Anna V. Jace, BSN, RN (MS Bioethics Student), University of Mary, Bismarck, North Dakota

Background/Purpose: Increasing infertility rates throughout the world have prompted couples to turn to Artificial Reproductive Technology (ART) for medical help in conceiving a child. Some ART procedures such as In-Vitro Fertilization have been consistently denounced by the Catholic Church as illicit forms of fertility treatment while others remain open for debate. Faithful Catholic couples are drawn to Intrauterine Insemination (IUI) techniques because the Catholic Church does not have a definitive stance on this fertility treatment option. It is through this perspective that IUI At-Home Conception Kits will be analyzed in their application to a committed and faithful Catholic marriage. This paper will argue that these IUI kits utilizing the Conception Cap Method and Syringe Insemination Method are illicit forms of fertility treatment as it severs the unitive and procreative nature of the marital act. It will conclude that the Catholic Church must continue to respect the gift of life in its generation by denouncing IUI At-Home Conception Kits that undermine the dignity of the human person.

Title: Spirituality and Occupational Therapy: Perspectives on Incorporating Spirituality in Practice

Authors/Affiliation: David Hanson, Peyton Klein, Kierra Krause, Grace Olson, Katelin Revier (Doctor of Occupational Therapy Students), University of Mary, Bismarck, North Dakota

In this study researchers explored the use of spirituality in practice. Researchers aimed to identify what factors influence the ability of Christian occupational therapists to integrate faith in secular and faith-based treatment settings. Participants discussed how they incorporate clients' spiritual needs through assessment, intervention methods, and the desire for support and training. Five female occupational therapists, who practice in adult care, participated in a focus group with semi-structured questions. Results were transcribed verbatim, and codes, categories, and themes were identified. The participant perspectives allowed for the development of five themes: 1) client-centered approach, 2) motivation, 3) coping mechanisms, 4) context, and 5) desired supports. The participants characterized spirituality as a client factor which resulted in a client-centered approach to care. Participants identified that the use of spirituality as a motivational factor can promote outcomes through more engagement in the rehabilitation process. Coping mechanisms included meditation, mindfulness prayer, journaling, silence, reflection, reading the bible, and conversation about faith. Context included both the client's environmental and personal factors. The social support of families, client's personal faith journey, and therapists' support of these beliefs influenced and supported the integration of spirituality into the therapeutic relationship. The necessary supports identified by the participants to effectively incorporate spirituality in practice included: 1) the development of an assessment tool, 2) evidence-based intervention strategies, and 3) continuing education. The results of this study have important implications for the future of occupational therapy practice and therapists' ability to integrate spirituality into practice.

Title: The Administration of Pre-Exposure Prophylaxis (PrEP) for HIV Prevention: A Moral Imperative or Moral Dilemma?

Author/Affiliation: Fr. Christopher Awiliba (MS Bioethics Student), University of Mary, Bismarck, North Dakota

Purpose/ Objective: Pre-Exposure Prophylaxis (PrEP) is a medication aimed at preventing Human Immunodeficiency Virus (HIV) transmission and is endorsed by the Centers for Disease Control and Prevention for individuals vulnerable to contracting HIV through sexual activity. This paper delves into the ethical dilemmas related to PrEP, particularly in healthcare settings, and assesses its compatibility with Catholic moral principles. It examines arguments supporting and opposing conscientious objection among healthcare providers, as well as debates regarding the accessibility of PrEP as a fundamental human right. Various viewpoints on PrEP's implications for public health, societal dynamics, and personal autonomy are explored, emphasizing the intricate nature of ethical decision-making.

Title: The Community Pharmacist's Role in Safeguarding Against Over-the-Counter Medication Abuse

Author/Affiliation: Lorren Postl (MS Bioethics Student), University of Mary, Bismarck, North Dakota

Background/Purpose: In recent decades, there has been a renewed societal attention to substance abuse disorder in response to social concerns stemming from methamphetamine and opioid epidemics. Under-researched, however, has been the subset of over-the-counter medications as drugs of abuse. Dextromethorphan and loperamide have emerged as substances of concern in the 21st century, but few efforts have been made to safeguard against their abuse. More efforts are warranted due to the easy accessibility of these medications and their dangers in overdose. A community pharmacist is in a distinctive position to guard against over-the-counter medication abuse because of the pharmacist's expertise in medication therapy and presence where the medications are commonly available. Making interventions to promote the safe use of these medications falls within the pharmacist's scope of practice and professional commitments, and should be considered an ethical obligation. After analyzing the appropriateness and effectiveness of existing attempts to restrict over-the-counter drugs of abuse and describing examples of pharmacist-initiated interventions, recommendations are made for pharmacy-based interventions to safeguard against over-the-counter medication abuse. The efforts of the local pharmacy should be supported by institutional and legal policies to limit access to over-the-counter drugs of abuse, and these policies should be implemented at the community pharmacy level through pharmacists providing good medication counseling to deter abuse and making referrals to substance use disorder treatments when abuse is detected.

Title: The Development of Occupational Therapy Practice Skills During a Level I Fieldwork in Peru

Authors/Affiliation: Emily Bicknell, Hannah Fladeland, Elise Lakin, Rose Soori, Jessica Tastad (Doctor of Occupational Therapy Students), University of Mary, Bismarck, North Dakota

Background: Healthcare programs are tasked with preparing students to excel in culturally diverse environments. One method gaining popularity among healthcare programs for increasing a student's ability to work with various cultures is international service learning (ISL). Few studies expand upon what professional and clinical skills OT students utilize during an ISL experience. **Purpose:** The purpose of this research was to identify professional and clinical skills OT students utilize during their ISL for their level I fieldwork. **Methods:** Two focus groups were conducted with OT students who completed ISL the summer of 2022 and 2023 in Peru (n=9). Focus group transcripts were analyzed utilizing a constant comparison analysis. **Results:** Four themes emerged: (1) All participants reported utilizing OT practice skills with seating and positioning, handwriting, therapeutic exercises, assessing home environments, transferring techniques, and teaching self-care skills with adaptive equipment. (2) All participants reported how the fieldwork challenged them to utilize clinical reasoning. As participants saw positive outcomes of their interventions, their confidence increased. (3) All participants reported that communicating with their clients was challenging because of the language barrier. This challenge raised their awareness about the significance of communication for successful client collaboration. (4) All participants identified that experiencing a different culture raised awareness about culture and contributed to an understanding of the importance culture has on OT treatment. **Conclusion:** This ISL experience provided OT students opportunities to practice utilizing the OT process, raised awareness about skills needed for providing client-centered care, and increased their confidence in their clinical abilities.

Title: The Difference in Grip Strength Between Those Who Use American Sign Language and Those Who Do Not Use American Sign Language

Authors/Affiliation: Clare Volkmuth, Kayleen Alexander (MS Athletic Training Students), University of Mary, Bismarck, North Dakota

Background: Anatomically fingers, hands, and forearms are more complex than most people think, and produce a great deal of force as well as performing fine motor skills. Many everyday movements of the hand translate to sports skills and performance, one of those being grip strength. When testing grip strength, a handheld dynamometer is used and the gold standard for testing grip strength is the Jamar Hydraulic Dynamometer (JHD). Also, when testing grip strength, it is important to consider previous injuries, occupation, hand dominance, age, and sex. American Sign Language (ASL) is the fourth most used language in the United States. It is known that ASL can increase the risk of developing a wrist or hand disorder such as carpal tunnel. It is unknown if there is an increase in hand muscle strength from ASL use and overall grip strength. This study aims to identify if there is a relationship between ASL use and grip strength. **Methods:** The research design of this study is experimental and is a pilot study. The independent variable for is the control group and long-term ASL signers, and the dependent variable is the grip strength. The volunteers will need a minimum of five years of ASL experience and be at least 18 years of age. There is a questionnaire they will fill out to ensure they qualify for this study. To increase reliability when testing grip strength, the gold standard JHD will be used and set up to fit the hand size of each participant. Four trials will be given to each participant with three trials being counted, the first one will be a practice trial that will not be counted. The practice trial is designed to make sure the patient knows how to use the JHD and how to exert maximum force. Each trial will be maximum effort with the JHD; if there is an extreme outlier in the three counted trials, one re-do will be allotted to collect the most accurate information. The participants will be seated for testing with their elbow flexed at 90° and the forearm held in a neutral position. After each of the four trials, a 60-second rest period will be given to help avoid muscle fatigue. **Results:** In this study, six non-ASL user volunteered to have their grip strength tested, three male and three female. On average the male non-ASL user had a grip strength of 145.16 and the female non-ASL users had a grip strength of 90.19. Six non-ASL users were also volunteered to have their grip strength tested as well, three male and three female. On average the male ASL users had a grip strength of 139.67 and the female ASL users had a grip strength of 103.78. **Conclusion:** This study aimed to determine the relationship of grip strength and the use of ASL by using the JHD to test grip strength, for the purpose of proper rehabilitation of hand injuries, especially for those who use ASL. The results have shown that male non-ASL users had a higher grip strength (145.16) compared to male ASL users (139.67). However, female non-ASL users had a lower grip strength (90.19) than female ASL users (103.78). Further research is needed due to the limiting access to ASL users in the geographical setting of this study, creating a lack of participants, as well as the lack of shoulder injury history and history of neuromuscular disease in the inclusion and exclusion criteria.

Title: The Ethics of Using Antipsychotic Medication to Modify the Behavior of Dementia Patients

Author/Affiliation: Sarah Kennedy, BAS (MS Bioethics Student), University of Mary, Bismarck, North Dakota

Background/Purpose: Haloperidol is a first-generation typical antipsychotic with a severe side effect profile for the elderly, especially for those with dementia. While the FDA has listed a black box warning against use for those with dementia, haloperidol is still prescribed to those with dementia to treat psychological side effects such as distressing or dangerous agitation, hallucinations, and paranoia. The following paper addresses whether such usage is in the best interest of dementia patients. Haloperidol tempers psychosis by serving as a mild to moderate sedative, with potentially severe side effects. The side effects in question not only increase the risk of mortality in the patients but also limit their ability to act autonomously. The concern is particularly acute since these people cannot advocate for themselves. The paper explores the ethical issues related to this usage of haloperidol and lays out viable alternatives as a way to treat the psychosis experienced by many dementia patients.

Title: The Impact of Certified Nursing Assistant Experience on the Educational Experience of Senior Nursing Students

Authors/Affiliation: Lea McCarthy, BSN, RN, Kelsey Norstog, BSN, RNC-NIC (MSN Nurse Educator Students), University of Mary, Bismarck, North Dakota

Background/Purpose: Certified nursing assistant (CNA) experience is a common shared experience among nursing students, and it is an admission requirement for many nursing programs. With no national standards guiding nursing school admission criteria, and few published studies describing the student nurse perspective on how a CNA background affected their clinical and didactic nursing school experience, the researchers sought to understand the lived experiences of senior nursing students who had a prior CNA background. **Methodology:** This phenomenological qualitative research study was undertaken to understand the individual impact CNA experience had on the academic experience of nursing students enrolled in baccalaureate or associate level nursing programs. Semi-structured interviews were conducted with 12 senior nursing students who met the inclusion criteria. **Outcomes:** Data analysis revealed largely positive results: participants reported many perceived benefits of their CNA experience, such as increased confidence and competence in the clinical and classroom settings. However, participants also shared unanticipated challenges they encountered due to their prior experience. **Discussion:** Understanding the lived experience of senior nursing students with this background can help nurse educators utilize concepts from Kolb's Experiential Learning Theory and tailor their teaching to the unique learning needs of the students with prior experience. The research findings could also have implications for nursing school admission requirements such as whether CNA experience instead of certification would be preferred and if either should be mandatory.

Title: The Use and Effectiveness of Ankle Injury Prevention Programs: Clinicians Perspective

Authors/Affiliation: Taylor Bergquist, Shawnee Hansen, Andrew Lalum (MS Athletic Training Students), University of Mary, Bismarck, North Dakota

The purpose of this study was to analyze clinicians' perceptions, through survey questions, the importance and prevalence of ankle injury prevention programs in the collegiate basketball setting. Eleven participants responded to the study. Participants were recruited through the NATA database via nonprobability convenience sampling. Participants for this study included clinicians, specifically those health care professionals that attain a current certification to practice as an athletic trainer. Participants were also chosen based off employment at a university in the Mid-America Athletic Trainer's Association (MAATA) District 5. The survey questions that were provided for clinicians were created by the researchers to gain the most prevalent information related to their hypothesis. The data was filtered through the survey platform Qualtrics. The researchers manually evaluated the data and analyzed the research. They looked for trends in the responses and made a qualitative summary based upon the responses of the participants in the survey. Most clinicians agreed that injury prevention programs, specifically for the ankle, are effective in reducing injury severity, and incidence. Additionally, results also showed that clinicians stated that when a program was implemented, reduction of injuries decreased by 25-50%, and rehabilitation and time away from sports decreased by 2 days. Although clinicians agreed that injury prevention programs are effective in reducing injury rate, it was revealed with unanimity that implementation of such programs is proven difficult due to coach buy in, lack of time, lack of research, and athlete compliance.

Title: Therapists' Perception on the Use of Co-treatment within an Interdisciplinary Team: A Phenomenological Study

Authors/Affiliation: Megan Cullinane, Anna Keller, Danielle Steinley, Alexis Tibor (Doctor of Occupational Therapy Students), University of Mary, Bismarck, North Dakota

Co-treatment in rehabilitative care encompasses two professionals of different specializations working to treat the same patient during the same session across a variety of healthcare settings. The purpose of this phenomenological qualitative study was to explore the perceptions of healthcare practitioners regarding the utilization of co-treatment in occupational therapy (OT), physical therapy (PT), and speech-language pathology (SLP). Through purposive sampling, six licensed practitioners with one to 20 years of experience participated in semi-structured interviews. Qualitative data was analyzed through coding, categorization, and identification of themes. A total of five themes emerged from the data analysis which included (a) practitioners reported a need for a preparatory understanding of co-treatment to utilize it effectively in practice, (b) practitioners voiced positive and negative perceptions of co-treatment, (c) practitioners reported that collaboration played a key factor in the utilization of co-treatment, (d) practitioners reported multiple factors that contributed to reasons why they did or did not use co-treatment, and (e) practitioners voiced positive and negative outcomes of co-treatment for both the practitioner and the patient. Findings have implications for enhancing interprofessional collaboration in both educational and clinical settings in efforts to optimize patient outcomes. Furthermore, emphasis on shaping educational standards, particularly in preparing students for interdisciplinary approaches may help support the utilization of co-treatment in healthcare practice.

Title: Unplugged: Impacting Adolescent Screen Time

Authors/Affiliation: Mary Joy Derla, BSN, RN, Tonia Lofgren, BSN, RN (DNP Family Nurse Practitioner Students), University of Mary, Bismarck, North Dakota

Background: The purpose of this Doctor of Nursing Practice (DNP) project was to impact screen time usage among the 5th and 6th grade students in a rural Midwest school district by incorporating a school and family-based program aligning with the school district's current strategic plan. The American Academy of Pediatrics (AAP) and the World Health Organization (WHO) recommend adolescents limit leisure screen time to two hours or less a day, however, adolescents spend four-six hours or more per day using screen time which has doubled from 2006-2016. The increase in screen time may have detrimental effects on all aspects of an adolescent's life. In addition, parents and educators have a limited understanding of the adverse impact of excessive screen time and are unsure how to convey, manage, and collaborate with their adolescents on balancing screen time use. School and parental involvement, including modeling healthy screen time usage, are vital interventions for reducing adolescent screen time.

PICO: How does a school-based screen time educational program impact overall screen time usage compared to previous screen time among adolescents?

Project Interventions: The project leaders facilitated the development and implementation of a school-based screen time educational program for teachers to present to 5th and 6th grade students. The project leaders created survey tools to assess screen time usage and provided educational materials to a monthly newsletter and local newspaper on topics including sleep hygiene, mental health, academic outcomes, physical activities, and a family media plan. The teachers distributed and collected the before and after assessment tool surveys given to students at least 12 weeks apart. The effectiveness of the school-based screen time education program was evaluated using post-implementation surveys to recognize future stakes and any domains for enhancements.

Outcomes: Between the two grade levels, an average of 61% of students had screen devices in their bedroom and 71% had their own screen devices. Additionally, 75% of the students spent less than 31 minutes on screen time before school which is less compared to after school and weekend use accounting for an average of 16% (5th gr.) and 19% (6th gr.). There was a slight increase in screen time use before and after school, however, there is a decrease in screen time use during the weekends.

Conclusion: Overall, the findings suggest that the school-based screen time educational program has a potential impact on adolescent screen time. Additionally, the data ingeminates the merit of family collaboration and how ongoing family education can undoubtedly impact adolescent screen time.

Title: Utilizing the Risk Analysis Index in Perioperative Patients: An Evidence Based Practice Project

Authors/Affiliation: Brianna Denning, BSN, RN, Katie Theisen, BSN, RN (MSN/MBA in Healthcare Administration Students), University of Mary, Bismarck, North Dakota

Background/Purpose: Surgical patients with multiple comorbidities, cognitive and functional impairment(s), and frailty, face an increasingly higher risk for postoperative outcomes and mortality. Frailty in patients continues to go undetected preoperatively and can contribute to complications recovery phase. Currently, there is no “gold standard” to screen patients preoperatively to ensure optimization based on individual health history. The purpose of this EBP project is to assess how the utilization of the Surgical Pause Risk Analysis Index (RAI) screen tool impacts the progression to surgery at the Saint Cloud Veterans Health Administration (SC VHA) and its ability to identify high-frailty veterans prior to surgery. **Case Description:** This evidence-based practice project focuses on the implementation and effectiveness of the RAI screen tool. The Surgical Pause RAI has gained immense attention throughout the Veterans Health Administration to combat complications after surgery by focusing on measuring frailty. The RAI screening tool can take less than 2 minutes to complete. It measures 14 variables on a weighted scale including age, sex, weight loss, appetite, cognitive impairment, active daily livings assessing in four areas including mobility, eating, toileting, hygiene, living location, any renal insufficiency/failure, congestive heart failure, shortness of breath at rest or minimal activity (measuring functional ability) and any history of cancer not in readmission. Based on these variables, a linear score obtained would range anywhere from 0-81. A patient with a score of 37 or higher is considered “high-risk.” Implementation of the screening tool and its use began on February 5th, 2024 in the podiatry department, followed by urology and general surgery departments in March. Education was provided to the surgeons, nurses, and medical support assistants on their roles. Every potential surgical patient was asked to complete the screening tool. Clinic nurses would then import the information from the tool into the VHA electronic health record and note the RAI score. Every provider would be alerted to each patient’s RAI score, high risk or not. **Outcomes:** From February 5th to April 5th, 2024, 22 RAI screen tools were completed at the facility. Of those, only three patients were “identified” as high-risk, and none of them were further indicated for surgery. **Discussion:** The EBP project was successfully implemented at SC VHA in three surgical departments. During this time, 22 RAI were collected, with only three indicating high-risk frailty and three missed opportunities. The limited data from the initial implementation cannot confirm if the RAI impacted the patient’s progression to elective surgery. Several missed opportunities highlight an opportunity for process refinement and further evaluation of the RAI’s impact on patient care.

Title: When 30 Days of Addiction Rehab is Not Enough

Author/Affiliation: Father Stephen Gemme, M.Div., MAT (MS Bioethics Student),
University of Mary, Bismarck, North Dakota

Background/ Purpose: Management of individuals living with alcoholism or addiction is no easy task. In this study, we will examine how the length of an inpatient addiction rehabilitation program impacts lasting recovery. Through research, observation, interviews, and personal testimonies, the outcome of a 30 day rehab program will be compared to one that is 90 days in length. Evidence supports the effectiveness of a longer 90 day model. Insurance companies often provide coverage for only up to 30 days. This gap in rehabilitation can limit progress in the areas of brain health, healing, adapting to new skills, practicing self-care, and incorporating the power of 12 step recovery. This paper also reveals the importance of providing a strong spiritual component in addiction recovery. Connecting with God takes time that only a 90 day program can fully offer. Recovery is possible, but it requires commitment and consistency to overcome the madness of addiction and allow the addict to experience the serenity of sobriety, healing, and recovery.