



**Allied Health
Scholarship Colloquium
Abstract Compendium**

Friday, April 29, 2011

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Rooms 101, 102, 103 and 104

Bismarck, North Dakota

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ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION:
BONE TENDON BONE (PATELLAR TENDON) AND POSTOPERATIVE INFECTION

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A large amount of the bodies stress is placed on the knee, so it is considered one of the most traumatized joints in the body. There are a lot of injuries that can occur at the knee, but the most common injuries include anterior cruciate ligament (ACL) pathologies. ACL reconstruction with infection is rare but can occur as we discovered with our subject. Although complications are rare, as with any other surgical procedure, there is always a possibility. The purpose of this study is to see the affect of poor wound healing on ACL rehabilitation for a bone-tendon-bone repair.

SUNDOWNING PHENOMENON: A CHALLENGE FOR RESIDENTS AND CAREGIVERS

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Individuals with dementia occasionally display negative behaviors that worsen during the late afternoon or early evening hours. The exacerbation of these behaviors is now recognized as sundowning phenomenon. Research suggests that involvement in meaningful occupations may reduce the occurrence of these behaviors resulting in less agitation and better quality of life. This mixed methods study examined the effect of a six week intervention in which researchers engaged residents of a memory care facility in a Nintendo Wii activity during the typical sundowning time frame. Researchers used an agitation inventory (CMAI) to assess frequency of behaviors for a period of time before, during, and after the activity intervention. Results from the 14 question CMAI indicated that although many behaviors were reduced, only one item, "hiding things, hoarding things", was statistically significant. Qualitative data included caregiver interviews to learn about the experience of working with individuals with sundowning behaviors. Three themes emerged from qualitative data: 1) Caregivers use a variety of strategies for managing residents who display sundowning behaviors, 2) Sundowning behaviors impact not only the individual but their caregivers and other residents, and 3) Typical dementia behaviors occur throughout the day but intensify later in the afternoon. In conclusion, it is evident that sundowning phenomenon is present and persistent in this memory care facility and residents may benefit from increased opportunities for involvement in activity or occupation during late afternoon or early evening to help alleviate these behaviors.

COMPARISON BETWEEN ONE-REPETITION MAXIMUM
USING CYBEX CHEST PRESS MACHINE VS. BENCH PRESS FREE WEIGHTS

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The American College of Sports Medicine (ACSM) measures upper body strength norms using the free weights bench press. The Cybex machine chest press is commonly used for upper body strength assessment employed in fitness analysis, but has no norms. This study determined if the one-rep-maximum (1-RM) chest press can predict the 1-RM bench press, therefore enabling professionals to use the norms categories published in the ACSM Guidelines for Exercise Testing and Prescription, 8th Edition. Healthy males (n=13) and females (n=6) aged 30-50 (mean age =39.9) were recruited and randomly assigned to complete a 1-RM chest press or a 1-RM bench press. Subjects were instructed to rest (no heavy upper body exercise) for 48 hours between 1-RM measures. Data was analyzed by using SPSS 18.0 statistical software for Windows. Pearson correlation, regression analysis, and paired T-tests were conducted. Results showed a very strong correlation between chest press and bench press for all subjects ($R^2=0.98$; $p<.05$). Chest press predicted bench press after adjusting for experience and sex. There were no differences between 1-RM chest press and 1-RM bench press for any of the training group categories. In conclusion, it is felt the bench press norms published in the ACSM Guidelines for Testing and Prescription, 8th Edition, can be used to categorize upper body strength based upon 1-RM measures on Cybex chest press machine. These results are very similar to a previous study done involving a healthy college age population where the correlation was $R^2 = 0.991$; $p<.05$.

GROIN STRAINS IN COLLEGIATE MEN'S SOCCER PLAYERS

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Groin pain is prevalent in sports such as hockey, soccer and rugby due to the constant eccentric contraction of the hip musculature. This case study analyzes collegiate men's soccer players that were diagnosed with groin strains throughout the season. Diagnosis of groin strains is difficult, therefore it is important to correctly evaluate the individual and apply appropriate treatment. Factors that predispose athletes to groin strains include sport mechanics, proper warm up techniques and stretching, and off season conditioning. The purpose of this study is to compare the subjects that participated in this case study with those found in other case studies and formulate a preventative protocol.

THE EFFECTS OF SENSORIMOTOR ACTIVITIES ON FINE MOTOR SKILL DEVELOPMENT OF CHILDREN AT HEAD START

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The purpose of this study was to explore the use of sensorimotor approaches in improving the fine motor skills of preschool students at Head Start. Two classrooms were chosen to be part of the study. Ten children were in the control classroom and 10 children were in the experimental classroom. Interventions of 15 minute sessions of sensorimotor activities were administered to children in the experimental classroom three times a week for eight weeks for a total of 24 sessions. The Peabody Developmental Motor Scales-2 Fine Motor subtest was administered to children in both classrooms before and after the eight weeks of treatment to measure and compare the changes in fine motor skills. Based on analysis of data using Independent Samples T-tests, no differences were noted between the two groups before or after the intervention. Comparing changes within groups using Paired Samples T-tests indicated fine motor skills for both groups improved from pretest to posttest. Significant improvements were seen in the control group's grasp standard score ($p=.005$) and fine motor quotient ($p=.012$) score. This study suggested that sensorimotor activities prior to free play did not influence the development of fine motor skills in preschool aged children.

COMPLEMENTARY AND ALTERNATIVE MEDICINE FOR THE TREATMENT OF ADHD

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Attention deficit hyperactivity disorder (ADHD), a common psychiatric condition that affects children, is characterized by impulsivity, hyperactivity, and decreased levels of attentiveness.¹ According to Sorgi et al.², sixty to eighty percent of children affected by ADHD will continue to experience these symptoms as they move into adulthood. ADHD carries a high risk of comorbidities such as learning disorders, anxiety disorders, difficulty with social function, and poor outcomes as children age.³ Psychomotor stimulants have long been the first choice for the treatment of ADHD with success rates from seventy to ninety percent.⁴ Psychomotor stimulants have a long list of side effects including insomnia, anorexia, and the potential for abuse.⁵ Newer non-stimulant medications have recently been approved for the treatment of ADHD. Many of the same adverse effects have been noted with these medications as with the stimulant medications. An increased interest in the treatment of ADHD using nutritional supplements with a lower risk of adverse effects has become prevalent as parents and children begin to have a lower threshold for the adverse effects associated with psychomotor stimulants.⁶ The purpose of this literature review is to identify possible benefits of complementary and alternative medications, such as nutritional supplements, in the treatment of ADHD when compared with traditional stimulant treatment.

ASSOCIATIONS BETWEEN CHARACTERISTICS OF PREGNANT WOMEN AND EXERCISE HABITS

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Study Design: Cross sectional study design was utilized to determine the association between characteristics of pregnant women and exercise habits and adherence.

Objective: To determine whether associations exist among certain demographic variables and women's exercise habits, perceptions, and beliefs about exercise during pregnancy.

Background: Awareness of exercise benefits may be important in self-efficacy and adherence to exercise. This study provided information that may potentially influence exercise habits based on certain existing associations.

Methods and Measures: Subjects in their first or second trimester were recruited from a university hospital during a prenatal visit. The group received a survey measuring demographics, beliefs, and current exercise habits.

Results: Forty-two surveys were allocated. A chi-square test for independence was completed to find associations among survey variables. Significance existed ($X^2(1) = .048, p < .05$) between trimester and exercise frequency. In their first trimester 10% of women weren't exercising compared to 40% in the second.

Conclusions: More women in their first trimester were exercising than in their second. Clinicians should educate women about exercise during their pregnancy as its benefits have been proven through research. Further research is needed to validate our findings and examine the implications of exercise education on exercise habits of pregnant women.

THE USE OF PHOSPHODIESTERASE-5 (PDE-5) INHIBITORS IN THE TREATMENT OF PULMONARY ATRIAL HYPERTENSION: A LITERATURE REVIEW

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Purpose: This article reviews the pathophysiology, clinical presentation, diagnostics, and current treatment options for Pulmonary Arterial Hypertension (PAH) available to nurse practitioners, with a focus on advances in Phosphodiesterase-5 (PDE-5) therapy.

Data Source: Review of scientific literature and clinical management guidelines for PAH treatment and PDE-5 therapy from the PubMed, CINAHL, Medline databases, and other World Wide Web resources.

Conclusions: Sildenafil, tadalafil, and vardenafil significantly improve clinical status, exercise capacity, and hemodynamics of PAH patients.

Implication for Practice: PDE-5 inhibitors are a viable treatment option for patients with PAH, specifically with sildenafil and tadalafil, which can significantly improve clinical status, exercise capacity, and hemodynamics of PAH patients.

STRUCTURED GROUP ACTIVITIES FOR ADULTS WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES IN A DAY PROGRAM: EFFECTS ON ENGAGEMENT AND AFFECT

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This study examined level of engagement and observable affect of individuals during structured group activities as compared to unstructured parallel activities in a non-profit, community-based adult day program. Participants included 3 males and 7 females (N=11), ranging in age from 26-67 years (M=39, SD=12.05) with intellectual and developmental disabilities (IDD). A 6-week intervention program incorporated structured group activities with a sensory component including balloon and/or parachute activities. Active support methods were utilized to assist participants during structured group activities. The assessment tools used were the Menorah Park Engagement Scale-Brief Version 2 © 2004 (MPES), which measured level of engagement and the Observed Emotion Rating Scale (OERS), which measured observable affect. These assessments were completed on each participant during structured group activities and unstructured parallel activities. A Wilcoxon signed-rank test was used to analyze results of the MPES and OERS to compare the levels of engagement and observable affect between structured group activities and unstructured parallel activities. An alpha level of $p < .05$ was set to establish significance. Results of both scales indicated a significant increase in "pleasure" during structured group activities. The MPES indicated a significant increase during structured activities for "commented on target activity" and a significant decrease for "did or attended to things other than target activity". Anecdotal evidence, gathered through observations and field notes, supported the findings of this study. Researchers concluded use of structured group activities with a sensory component positively influenced level of engagement and observable affect of individuals with IDD in this adult day program.

THE EFFECT OF HYDRATION ON RESTING ENERGY EXPENDITURE

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The purpose of this study was to determine if hydration has an effect on resting energy expenditure (REE). Fourteen subjects, ages 18 – 36 years of age, participated in the study. REE was assessed on two separate occasions for each individual using the Vacumed VO2 Vista Lab. Six of the fourteen subjects did not meet acceptable dehydration levels and were not included in the results of this study. The subjects were instructed to follow a hydration or dehydration protocol for 24 hours prior to each test and fluid intake was altered to provide a difference in subsequent levels of hydration. The subjects then provided a urine sample to determine their level of hydration on the day of testing. The subjects then lied supine without movement for 30 minutes prior to the REE test and underwent a fast of eight hours prior to the test. Measured oxygen consumption was used to provide an estimate of REE. The results of this study found a significant difference between hydration levels of subjects when in the dehydrated state as compared to the hydrated state ($p < .001$). However there was no significant difference found when comparing the REE of the subjects in both the hydrated and dehydrated states ($p < .376$). The conclusion of the study was that hydration levels may not effect on REE. Additional research should include methodology to account for additional confounding variables such as exercise and sleep, which can affect REE, and perhaps involve a more stringent hydration/dehydration protocol.

THE EFFECTS OF WATER-BASED VS. LAND-BASED EXERCISE ON THE SENSORY ORGANIZATION TEST IN THE ELDERLY

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Study Design: Mixed before-after design with 2 groups of subjects.

Objective: To determine whether a structured water-based or a land-based exercise program has a greater effect on the NeuroCom Balance System Sensory Organization Test Scores.

Background: Literature is conflicting as to which type of exercise, water or land, has more of an effect on balance. Therefore, further research is warranted.

Methods and Measures: Seventeen subjects (≥ 60 years) participated in either a 10 week water or land-based FallProof! Balance Class 2 times per week (20 sessions) at the Waterford community-dwelling facility. The water-based program was the FallProof! program established by Debra J. Rose. Components of the FallProof! program were incorporated into the land-based exercise program to make the two exercise modes as similar as possible. One-week prior and one-week following completion of the balance program, subjects were tested using the composite score of the Sensory Organization Test (SOT).

Results: A 2-way ANOVA was performed on the means of the composite score and on each of the six conditions that make up the composite score of the SOT. There were no significant pre-post x training program or training program effects observed ($p > .05$) with the exception of condition 6 ($p = .012$) and for the composite score ($p = .015$). The land-based group demonstrated a mean increase of 7.9 (SD = ± 8.5) in the composite score of the SOT while the water-based group had a mean increase of 5 (± 10.8).

Conclusions: Both groups showed statistically significant improvements from pre to post testing in condition 6 and the composite balance score after a 10 week training program.

RARE AND TRAUMATIC LOWER LEG AND ANKLE INJURY IN A COLLEGIATE FOOTBALL ATHLETE

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Lower leg and ankle injuries are very common incidences among the athletic population. The combination of a fibula fracture, ruptured syndesmosis, and ruptured deltoid ligaments is a rare and uncommon occurrence. Within our research, only one other documented case of the combination of this injury has been reported, it also involved a football athlete. The subject that participated in this case study was injured during a football game. He was treated on the field and transported to the emergency room where he underwent surgery. The athlete then began the rehabilitation process monitored by his doctors and the certified athletic trainers and athletic training students at the University of Mary. The rehabilitation of this athlete was compared to the other documented case. The purpose of this presentation is to introduce this combination of injury and to follow the athlete's progress in the rehabilitation process.

THE EFFECT OF FOCUSED ACTION THERAPY UPON QUALITY OF LIFE FOR WOMEN WITH MAJOR DEPRESSION

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The purpose of this study was to determine if participating in a Focused Action Therapy Group, based upon psychodramatic principles and individual therapy with a cognitive behavioral focus had an effect upon overall quality of life in four women diagnosed with major depression. Participants were administered the RAND as a pre-post test measure and were interviewed about their experience as well. Quantitative results indicated significant improvement in role limitations due to emotional problems ($p < .001$), energy and fatigue ($p < .01$), and emotional well-being ($p < .01$). Qualitative data supported these results with the following themes: 1.) participants experienced a feeling of connectedness with others in the group, which decreased feelings of loneliness and isolation; 2.) participants experienced a decrease in symptoms of depression and anxiety; 3.) participants experienced increased personal insight, discovered concrete strategies for change, and reported an improvement in the quality of their relationships with others. The results show that Focused Action Therapy, when provided in conjunction with individual therapy, has a positive effect on overall quality of life.

CONJUNCTIVITIS: AN UPDATE FOR THE PRIMARY CARE PROVIDER

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Red eye is a very frequent complaint in the primary care setting. Conjunctivitis is one of the most common causes of red eye symptoms. In the primary care setting, providers should have the ability to differentiate the difference between bacterial, viral or allergic conjunctivitis. This article will review the process of diagnosis including specifics about a thorough history and careful physical examination concentrating on the eye for patients whom present to the clinic setting with complaints of red eye. The different types of conjunctivitis include viral, bacterial, and several different types of allergic conjunctivitis. Correct diagnosis is very important to determine the appropriate treatment plan. This article will discuss treatment options available for all types of conjunctivitis and when it is appropriate to refer the patient to an eye care specialist.

VALIDITY AND INTERRATER RELIABILITY OF PHYSICAL THERAPY STUDENTS' VISUAL ESTIMATION OF KNEE RANGE OF MOTION

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Study Design: Repeated measures design

Objective: To determine the validity and interrater reliability of physical therapy (PT) students' visual estimation (VE) of range of motion (ROM) at 30°, 90°, and a random angle between and 0° and 90°.

Background: Physical therapists frequently assess range of motion as part of their examination. The use of universal goniometers and electrogoniometers (EG) have been found to be reliable and valid in both clinicians and physical therapy students. However, the use of visual estimation has not been extensively researched, especially in the PT student population.

Methods and Measures: All measurements were taken on one male subject positioned in long sitting. An EG was secured to the lateral aspect of his knee. After the subject's knee was positioned at 30°, 90° and the random target ROM as determined by the EG (gold standard), tester subjects, PT students whom had completed a didactic course in ROM measurement with at least one 8 week clinical education experience, visually estimated knee ROM at all 3 knee positions. Validity and interrater reliability were analyzed using the Pearson correlation coefficient.

Results: Strong validity was found ($r = .871$) for VE at the random target ROM. Poor interrater reliability was found at both the 30° ($r = .108$) and 90° ($r = -.200$) for VE. The results of the 2-way ANOVA found a significant difference between VE and the target ROM at 30° ($P < .001$) and the random knee joint angle ($P = .004$). No significant difference found in difference between tester subjects (second and third year) and VE at all 3 positions. The paired t-test demonstrated high accuracy for VE at 90° as compared to 30°.

Conclusion: VE should not be the preferred way of physical therapy students to measure ROM at the knee joint.

DIABESITY: A LOOK INTO AN EMERGING EPIDEMIC

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The term "diabesity" is a new description for diabetes caused by excessive weight; the condition of having both diabetes and obesity. This article briefly describes the primary care providers' role in assessment, diagnosis and treatment of these patients. A search of recent recommendations was conducting through medical databases and journal articles with the purpose of educating health care providers and providing the knowledge necessary to care for patients experiencing this epidemic called "Diabesity".

ABC'S OF OMEGA-3'S:
ALA/DHA/EPA AS AN ADJUNCT TO PATIENT CARE

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The World Health Organization defines health as “a state of complete physical, mental, and social well-being, not merely the absences of disease or infirmity.” This definition includes a positive range of health, well beyond the absences of sickness. Many patients take the first step of responsibility of their health by incorporating nutritional supplementation into their lifestyle and diet. Omega-3 fatty acids are one of the most common supplements used in the adult population according to a 2007 survey by the National Center for Health Statistics (NCHS) and National Center for Complementary and Alternative Medicine (NCCAM). There has been an immense amount of studies regarding omega-3 fatty acids (DHA, EPA, & ALA) since its first emergence as the potential for being the supplement of choice for a variety of diseases. This presentation/paper condenses information about recent studies to provide the nurse practitioner information relevant for their practice as providing education is a prevalent and vital part of the nurse practitioner's practice.

THE RELATIONSHIP BETWEEN ESTIMATED VO₂ MAX AND MEASURED VO₂ MAX IN ENDURANCE ATHLETES

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The purpose of this study was to determine the ability of the American College of Sports Medicine (ACSM) metabolic calculations, the Bruce-Submax estimation equation published by ACSM's Health-Related Physical Fitness Assessment Manual, 2nd Edition (ACSM-Bruce), and the ACSM extrapolation equation, to predict actual measured VO₂ max in endurance athletes. This study consisted of 7 subjects, 3 male and 4 female, who completed one maximal treadmill test using a modified Bruce protocol, while simultaneously using the information to estimate their VO₂ max. The subjects were connected to the Vista Metabolic Cart system during the maximal test in order to record their measured VO₂ max. Regression analysis was used to determine whether VO₂ max estimation results could predict measured VO₂ max. The VO₂ estimation results were compared to the actual measured VO₂ max obtained. A correlation between the ACSM extrapolation equation and measured VO₂ max was not found to be significant ($p = .095$). A positive correlation was found between the Bruce-Submax estimation equation and measured VO₂ max ($p = .010$). The Bruce-Submax estimation equation was found to be a strong predictor of measured VO₂ max ($r = .764$). Despite being a strong statistical predictor of measured VO₂ max the Bruce-Submax estimation equation underestimated VO₂ max by 16.2% in the endurance athletes tested, which is a clinically important difference.

RELATIONSHIP BETWEEN FUNCTIONAL MOVEMENT SCREEN AND STRENGTH, POWER, AND AGILITY MEASURES IN PRE-ADOLESCENT AND ADOLESCENT FEMALES

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Study Design: Cross sectional design, in which every subject completed all assessments on the same day.

Objective: To determine the relationship between the score achieved on the Functional Movement Screen™ (FMS) and performance on strength, power and agility tests in pre-adolescent and adolescent female athletes.

Background: There is limited research on the validity of the FMS™ as a pre-participation screen for strength, agility and power. To our knowledge there are no current studies that have correlated the FMS™ to strength, agility, and power tests in adolescent female athletes.

Methods and Materials: Eleven healthy pre-adolescent and adolescent female subjects ages 10.38 years to 14.29 years (SD \pm 1.28 years) volunteered for this study. All subjects then completed the FMS and a strength, power, and agility test. Independent investigators performed either the FMS or the strength, power, and agility tests and were appropriately blinded to test results. The results of these tests were compared.

Results: Within 68% of the subjects tested, the FMS successfully predicted subjects' scores on strength, power, and agility measures within 143.83 points (1 SD); 95% will be within 287.66 points (2 SD). Therefore 47% of the variation in strength, power and agility measures is directly explained by the FMS scores and 53% of the variation is from other variables not accounted for in this study.

Conclusions: In this study, we found a strong correlation between FMS scores and scores of strength, power and agility testing. Further, using the FMS as a screening tool may be an effective way to assess strength, power, and agility in pre-adolescent and adolescent female athletes. However, further research is needed to verify the FMS as a tool to determine strength, power and agility in subjects by using a larger sample size, and varying the age and genders of the populations in order to achieve more significant findings.

DIAGNOSIS AND TREATMENT OF POLYCYSTIC OVARY SYNDROME

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Polycystic ovary syndrome (PCOS) is a common endocrine disorder with metabolic and reproductive implications. The prevalence of PCOS ranges from 5% to 10% of all reproductive aged women. PCOS is not only associated with distressing physical manifestations, but also with distinct metabolic and cardiovascular risk factors. Early diagnosis and appropriate treatment are essential in order to reduce both the emotional impact associated with PCOS and the risk for the development of type 2 diabetes mellitus and cardiovascular disease complications. The information in this review will aid the advanced practice nurse in recognition of PCOS, which will facilitate timely and appropriate treatment, thereby decreasing the risk of both short and long term adverse health effects.

THE IMPACT OF A STRESS MANAGEMENT INTERVENTION ON BURNOUT LEVELS FOR COMMUNITY BASED DIRECT SUPPORT STAFF AS MEASURED BY THE MASLACH BURNOUT INVENTORY

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The purpose of this quantitative study was to explore the effects of a stress management intervention on burnout levels of direct care employees working with individuals with disabilities. Participants ($n = 11$) were volunteers who were assigned to the experimental group ($n = 6$) or control group ($n = 5$). A stress management intervention was implemented using a cognitive behavioral approach. Quantitative data was collected using the Maslach Burnout Inventory in a pretest-posttest control design approach. Using a Related-Samples Wilcoxon Signed Ranks Test, it was found the experimental group experienced no significant difference pre and post intervention. However, there was a significant decrease ($p < .05$) in personal accomplishment indicating increased burnout levels. The implementation of a stress management intervention may have prevented the experimental group from experiencing the burnout levels of the control group. Limitations include a small sample size, participant recruitment methods, insufficient power, and nonrandomized sampling. Limitations regarding generalization to the population warrant further research conducted with larger sample sizes.

NURSE PRACTITIONER ROLE IN NURSING HOME PATIENTS WITH HEART FAILURE

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The population growth of individuals aged 65 and over impacts health care costs due to medical needs of the aging. The elderly population is the fastest growing segment of today's society and is projected to grow from 37 million to 71.5 million by the year 2030. More than 80% of patients hospitalized for heart failure are 65 years of age or older. Improved survival rates with heart failure and an increase in the aging population will have a devastating impact on patients, families, healthcare systems and health care dollars. With this in mind, patients with heart failure need to have more frequent monitoring and readily available providers to intervene when symptoms present or become worse. Studies have shown that patients in nursing homes, staffed with a Nurse Practitioner, had a reduction in emergency department transfers and acute care hospitalizations. This reduction of transfers to an acute care setting was the product of having a consistent provider available who has thorough knowledge of the patient to include the medical history, medications, and cognitive state.

PHYSICAL THERAPY REHABILITATION STRATEGIES FOR DANCERS: A QUALITATIVE STUDY

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Study Design: Qualitative design utilizing a phenomenological approach

Objective: To determine what rehabilitation strategies physical therapists used with dancers, and to discuss techniques and strategies for implementation of relative rest from both the dancer's and the physical therapist's perspective.

Background: Dancers delay seeking treatment for their injuries because they feel medical professionals lack sufficient knowledge regarding dance injuries. Various methods and techniques are implemented to promote relative rest.

Methods and Measures: Qualitative approach implemented through analysis and interpretation of self-administered questionnaires sent via email to dancers and therapists. Purposeful sampling was done through use of a criterion sampling method, requiring participants to have experienced dancer rehabilitation. Data was correlated to find a common thread of strategies for rehabilitation and to encourage modification of current approaches.

Results: Physical therapists returned 29 surveys, while dancers returned eight. Five themes were identified in the areas of: 1) evaluation, 2) dance modification, 3) interventions, 4) education, and 5) communication.

Conclusions: Successful approach strategies of physical therapists involved ongoing evaluation including dance technique and performance, dance-centered movement modification that is clearly defined, and an understanding of dance requirements and dance lingo.

THE RELATIONSHIP BETWEEN PERCEIVED WELLNESS AND BODY IMAGE AMONG FEMALE COLLEGIATE ATHLETES

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Study Design: Cross-Sectional study

Objective: To determine the relationship between perceived wellness and body image. An additional purpose was to determine the difference between soccer, cross country, and volleyball athletes mean Perceived Wellness Survey (PWS) scores and body image.

Background: Females are becoming increasingly involved in athletic participation; therefore, it is important to understand how sport participation can influence health and wellness. Research is needed to distinguish the impact that different sports have on female athletes in regard to body image and perceived wellness.

Methods/Measures: Thirty-one female athletes between the ages of 18 and 24 were recruited to participate in the study during the 2010 fall season. Height and weight were measured to determine body mass index (BMI). Perceived wellness was measured using the PWS, a 36-item questionnaire that provides information about one's perceived wellness within 6 wellness subscales, as well as a total wellness score. Body image distortion (BID) was measured by comparing a self-description of weight to actual BMI category.

Results: Of the 31 subjects, 3 volleyball players and 1 soccer player displayed BID. However, there was no relationship found between perceived wellness and body image. Scores from the PWS showed that wellness did not predict BID, nor did BID predict one's wellness. The most significant finding revealed a correlation between the participants' perceived weights and their physical wellness subscale scores.

Conclusion: The significant correlation between perceived weight and physical wellness revealed the perception of one's weight was inversely proportional to their perceived physical wellness. Thus, those with lower physical wellness perceived themselves to be heavier.

VITAMIN D DEFICIENCY
TO D, OR NOT TO D: THAT IS THE QUESTION

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Vitamin D deficiency affects persons of all ages. It is currently considered a pandemic, with more than half of the world's population at risk. Adequate vitamin D levels not only reduce the risk for bone disease, but current research suggests that it also plays a role in pain, Type II diabetes, cardiovascular disease, autoimmune diseases, and depression. On the basis of this emerging understanding, improving patients' vitamin D status has become an essential role for the nurse practitioner. The purpose of this presentation will be to examine the significance of vitamin D, vitamin D deficiency, causes and risk factors of vitamin D deficiency, and effects of vitamin D deficiency. Finally, treatment and management of vitamin D deficiency, and the potential risks of vitamin D toxicity will be examined.

“FOOD DESERTS”: DOES AVAILABILITY AND PRICE OF HEALTHY FOOD DIFFER BETWEEN NEIGHBORHOODS OF LOW, MODERATE, AND HIGH INCOME STATUS? A NEMS STUDY

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The purpose of this research project was to determine if areas in Bismarck, North Dakota had “food deserts”. The term “food desert” was defined as an area that has limited availability of healthy food options. Three elementary school districts were assessed and categorized based on percentage of free or reduced meals: a high income (lowest percent subsidized meals), low income (highest percent subsidized meals), and middle income (median percent subsidized meals) neighborhood. The Nutritional Environment Measures Survey (NEMS) was the template for gathering data. NEMS online training was completed to learn how to gather data from restaurants, convenience stores, and grocery stores. The information gathered was based on menus, posted nutritional information, and a number of other measures NEMS provided. Information was also gathered prior to this project by a group from NDSU, and their data for 2 stores was incorporated into the overall analysis of this project. Results found more restaurant food options available in the low income school district (N=24) compared to the moderate (N=17) and high income school districts (N=10). Two grocery stores were in the low and one in the moderate income neighborhood, where the high income neighborhood did not have a grocery store. The analysis found costs were similar between healthy and non-healthy entrees and did not differ among neighborhoods. Overall results demonstrated that from the combined data of each school district, only one in every five restaurant entrees was healthy. The results suggest there an imbalance of availability of healthy options compared to non-healthy options in restaurants of the city of Bismarck, ND, where non-healthy are far more prevalent.

ELECTROMYOGRAPHIC ACTIVITY DURING ABDOMINAL EXERCISES ON A LEVEL AND DECLINE SURFACE

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Study Design: Repeated measures design in which all participants performed abdominal exercises on a decline and level surface during electromyography (EMG) recording.

Objective: To determine the influence of a decline surface on the EMG activity within the right upper and lower rectus abdominis, right external and left internal oblique muscles during the performance of abdominal crunch exercises.

Background: Abdominal exercises are used to increase muscle strength in a variety of patients. To our knowledge, no known studies have examined EMG activity for abdominal exercises performed on a decline surface.

Methods and Measures: Five healthy subjects (mean age, 25 ± 2 ; age range, 20-29 years) participated in this study. Surface EMG recordings were taken from the right upper and lower rectus abdominis, right external oblique and left internal oblique muscles. The subjects completed 5 crunch exercises with left rotation and 5 crunch exercises without rotation (straight) on both a level surface and a declined surface.

Results: The left internal oblique demonstrated significantly increased ($P < .05$) EMG recordings during (1) a rotational crunch on a decline surface versus a straight crunch on a level surface ($P = .009$), (2) a rotational crunch on a decline surface versus a rotational crunch on a level surface ($P = .022$), (3) a rotational crunch on a decline surface versus a straight crunch on a decline surface ($P = .01$), (4) a rotational crunch on a level surface versus a straight crunch on a decline surface ($P = .042$), and (5) a rotational crunch on a level surface versus a straight crunch on a level surface ($P = .008$).

The right external oblique demonstrated significantly increased ($P < .05$) EMG recordings during (1) a rotational crunch on a decline surface versus a straight crunch on level surface ($P = .037$) and (2) a rotational crunch on a decline surface versus a straight crunch on a decline surface ($P = .03$).

The right upper rectus abdominis demonstrated significantly increased ($P < .05$) EMG recordings during (1) a rotational crunch on a decline surface versus a straight crunch on a level surface ($P = .023$) and (2) a rotational crunch on a decline surface versus a rotational crunch on a level surface ($P = .022$).

Conclusion: The right upper rectus abdominis, right external oblique, and left internal oblique muscles showed increased ($P < .05$) EMG recruitment during a crunch on a decline surface compared to a level surface. The right lower rectus abdominis did not show significant ($P > .05$) changes in EMG recruitment during the crunch on a decline surface versus a level surface.

WOLFF-PARKINSON-WHITE SYNDROME IN A FEMALE COLLEGIATE SOFTBALL ATHLETE

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Wolff-Parkinson-White Syndrome is a rare syndrome that affects the heart. It can be very difficult to diagnose, but life-threatening if not treated. Understanding the symptoms of this heart defect is a crucial step in recognizing and preventing further complications. The purpose of this case study is to further understand Wolff-Parkinson-White Syndrome. We will follow the recovery of a female collegiate softball player following an ablation surgery to correct the syndrome.

RAMSAY HUNT SYNDROME: A RARE DIAGNOSIS IN CLINICAL PRACTICE

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Purpose: Ramsay Hunt Syndrome (RHS) is a rare and often misdiagnosed disease that if left untreated can have debilitating long- lasting effects. Thus it is imperative that nurse practitioners (NPs) are able to recognize the signs and symptoms and appropriately treat patients with RHS. A case study is presented to illustrate the diagnosis of RHS in a patient. Clinical manifestations, diagnosis, interventions, and complications for RHS are also discussed.

Data sources: Incorporation of primary care literature and pertinent neurology literature seeking a comprehensive overview of the disease and its symptoms, diagnosis, and complications with a special focus on evidenced based approaches to management of Ramsay Hunt Syndrome.

Conclusion: Ramsay Hunt Syndrome can present with vague signs and symptoms. Proper diagnosis and effective treatment options can assist patients with therapeutic management and prevent potentially destructive disease manifestations.

Implications for practice: Many patients with RHS are often seen initially in primary care practices, such as the situation for this particular patient in the case study. Familiarity with RHS can increase the NPs awareness which can lead to early diagnosis and treatment.

POWER BALANCE BANDS: ANALYSIS OF EFFECTS ON BALANCE

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The purpose of this study was to determine if wearing a Power Balance Band improves balance. The randomized controlled trial consisted of three different protocols utilizing a Power Balance Band, a placebo band, and no band on 72 college aged students. Balance was assessed using two different measures: 1) a single leg stance while blindfolded on a half foam roll for 3, thirty-second balance trials, and 2) a double support stance with each foot was placed on a dyna-disk while blindfolded for 3, thirty-second trials. A One-Way ANOVA analysis showed no difference in balance checks between subjects wearing the Power Balance Band, placebo band, and no band. The number of "balance checks" a subject utilized did not differ while utilizing the Power Balance Band ($p < .05$), thus indicating that wearing the Power Balance Band does not effect balance.

TREATMENT OF LATERAL ANKLE SPRAINS IN HIGH SCHOOL ATHLETES: A CASE SERIES

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Study Design: Case series

Objective: To describe the outcomes in two subjects who received early fibular mobilization and the standard of care, and to describe the examination and treatment following lateral ankle sprains in high school athletes.

Background: Ankle sprains are among the most common musculoskeletal injuries in athletics. Currently, the protection, rest, ice, compression, elevation (PRICE) method is the standard of care for ankle sprains, but involves a period of immobilization which can lead to soft tissue complications. New evidence suggests that early fibular mobilization may reduce the extent of these complications and return to play earlier.

Case Descriptions: Two athletes were seen to identify and treat lateral ankle sprains. The focus area of treatment involved mobilizations with movement of the distal fibula in weight bearing and non weight bearing and a fibular repositioning tape technique.

Results: Following the treatment sessions, both subjects had a decrease in pain, edema and Foot Function Index score. Subject one showed an increase in dorsiflexion range of motion while subject two did not have a significant change. Both subjects showed improvements in Lower Extremity Functional Scale score and perceived athability and returned to play within one week of injury.

Discussion: This case series has described a treatment plan utilizing early mobilization and improvements in outcome measures in two high school athletes. However further research in this topic area is still warranted in a randomized control trial design.

FIBULAR STRESS FRACTURE DUE TO A LOOSE POSTERIOR TALOFIBULAR LIGAMENT IN A FEMALE COLLEGIATE SOCCER ATHLETE

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Fibular stress fractures most commonly occurs in sports that involve extended periods of cardiovascular activity. This condition is highly influenced in an athlete that uses the lower extremities excessively for long periods of time, mainly due to overuse. Our athlete is an 18- year old freshman female collegiate soccer athlete who developed issues with a stress fracture of her right fibula due to a misdiagnosis of a loose and non-healed posterior talofibular ligament. When the ankle condition originally began, the subject stated a gradual onset of pain that occurred until about the month of March 2010. From there, the pain started to continually get worse, until our athlete finally went in for an x-ray. The x-rays revealed a stress fracture along the distal two-thirds of the fibula. The athlete was treated for a stress fracture and then started getting ready for the soccer season here at the University of Mary. During the first week of practice, the athlete started to feel a very sharp and intense pain which lead to her being referred to Bone and Joint Clinic. From there, the athlete received second opinions on her condition and found out that her condition was due a tear in her posterior talofibular ligament. The athlete has progressed with minimal complications, and is still in the rehabilitation process.

ENGAGING THE SENSES: EFFECTS OF SENSORY INTEGRATION WITH INDIVIDUALS WITH DEMENTIA

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The purpose of this quantitative study was to examine the level of engagement of individuals with dementia in activities following a sensory integration technique and the level of engagement in activities without a sensory integration technique. Sensory integration techniques can involve any of the five senses and this study focused primarily on tactile stimulation used in various forms including but not limited to, drawing letters and shapes in shaving cream, touching various fabrics, and searching for candy in containers filled with rice, beans, and sand. Participants included 9 females and 1 male, ages 67-87 years, who were residents at a memory care facility in Bismarck, North Dakota. Levels of engagement in activities were assessed following implementation of a sensory integration technique and in absence of a sensory integration technique for six weeks. Data was gathered through observation of residents and implementation of the Menorah Park Engagement Scale Brief Version 2- Revised © 2004. An alpha level of $p \leq .05$ was set to establish significance. A Wilcoxon signed ranks test indicated the implementation of a sensory integration technique significantly decreased ($p = .05$) the amount of time residents spent with their eyes closed, sleeping, or staring into space during the target activity. Anecdotal evidence gathered through field notes and observations further supported the findings of this study. Researchers concluded the use of sensory integration techniques benefited residents in this memory care facility and additional research is recommended.

THE ROLE OF THE NURSE PRACTITIONER IN THE DIAGNOSIS AND MANAGEMENT OF RHEUMATOID ARTHRITIS

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Rheumatoid Arthritis (RA), a devastating illness that can have lifelong and potentially disabling consequences. Affecting 1.29 million Americans, nurse practitioners can expect to encounter a patient that suffers from this disease sometime during their career. Early diagnosis is crucial in the management of this disease. The purpose of this article is to provide nurse practitioners an understanding of the clinical presentation and diagnosis, treatment options available and follow-up required for the patient with rheumatoid arthritis. With the current shortage of specialists available to provide care to patients with this disease, there will be increasing opportunities for nurse practitioners to partner with other health care providers in the management of the patient with rheumatoid arthritis.

EFFECTS OF PHYSICAL THERAPY TRAINING DURATION ON FUNCTIONAL OUTCOMES FOR INDIVIDUALS WITH A CHRONIC STROKE: A CASE SERIES

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Study Design: Case Series

Objective: The purpose of this study was to determine the effects that physical therapy 2 times a week had on functional outcome measures of individuals with a chronic stroke.

Background: Major impairments causing disability in individuals with chronic stroke include decreased cardiovascular endurance, decreased strength, poor balance and increased muscle tone. Previous studies examined effects of exercise 3-5 days a week following a stroke while we are investigating exercise effects only 2 days a week.

Case Description: Two participants volunteered who were diagnosed with a chronic stroke and had residual impairments. Participants were assessed with the 6-Minute Walk Test, the Five Time Sit-to-Stand Test and the Dynamic Gait Index. Both participants were treated with a 45 minutes exercise regimen that was completed every Tuesday and Thursday for 6 weeks.

Outcomes: Percent change was determined with each outcome measure as well as the functional strengthening and cardiovascular training interventions. Participant A had an overall average percent change of 22.5% and participant B had a 37.3% improvement.

Discussion: Both participants demonstrated improvements in each of the outcome measures and the interventions as mentioned above by receiving an exercise protocol carried out only 2 times per week.

Conclusion: The case series documents the success of the protocol in increasing individuals' functional components. This was demonstrated through recorded improvements in the subjects' post-test scores for the 6 Minute Walk Test, the Five Time Sit-to Stand, and the Dynamic Gait index.

PRESENTATION AND CURRENT TREATMENT OPTIONS FOR VARICOSE VEINS

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Varicose veins are a common disorder that occurs in approximately 25 % of women and 10 to 15 % of men. Varicose veins can be related to several risk factors ranging from lifestyle to genetics. Today the treatment options, whether cosmetic or symptomatic have greatly expanded, providing the patient with numerous options. Education regarding preventative measures, and conservative therapy should be initiated primarily to patients. This article describes the anatomy, pathophysiology, risk factors, clinical presentations, clinical assessment, preventative measures, treatment options, and current recommendations regarding interventions for varicose veins.

A MATTER OF LIFE AND DEATH: PERCEPTIONS OF SELF-EFFICACY AS REPORTED BY BACCALAUREATE NURSING STUDENTS AND NEW GRADUATE NURSES FOLLOWING AN END OF LIFE HIGH FIDELITY SIMULATION EXPERIENCE

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Effective clinical nursing experiences are essential to student learning and can lead to higher levels of self efficacy. As nurse educators, it is important to provide effective clinical nursing experiences. Because death is not a timed event, opportunities for nursing students to manage and provide end of life (EOL) cares to patients, family members, and members of the healthcare team in the clinical setting can be limited. The use of high fidelity simulation (HFS) is an innovative tool for nurse educators and provides opportunities for nursing students to better understand and manage EOL experiences. This study was conducted at one baccalaureate nursing program located in a Midwestern state and examined nursing students' levels of self-efficacy following an EOL HFS experience. A demographic data sheet and a Simulation Effectiveness Tool (SET) were administered to junior nursing students, senior nursing students, and recent nurse graduates. All participants had experienced an EOL HFS during the first semester of their junior year of nursing school. The SET consisted of 13 questions that evaluated students' levels of confidence and overall learning as they related to a simulated clinical experience (SCE). At the end of the SET, a comments section was included for students to offer unsolicited qualitative data. A total of 72 surveys were completed and analyzed. All three groups of students who were evaluated agreed that having an EOL HFS experience was an effective experience and contributed to their overall learning. The majority of participants indicated that they strongly agreed that they felt better prepared to care for real patients, were more confident in their decision making skills, and felt better prepared to recognize and predict changes in their patients' conditions in an EOL situation. Overall, the participants identified that their EOL HFS was a positive learning experience. Results from a chi square analysis indicated there was no significant difference in the levels of confidence among the three participants groups. These finding were significant in that the most inexperienced junior participants rated the same levels of confidence as compared to the senior participants who had an extra year of education and the graduate participant who also had an extra year of education as well as one half year of nursing practice. The findings of this study indicate EOL HFS has a positive effect on nursing students' levels of self-efficacy toward managing EOL events. Recommendations of this study concluded that the EOL HFS should be continued to be used as a teaching tool for this aspect of nursing and reviewed for its effectiveness on students' levels of self-efficacy for these patient situations.

ON THE MOVE: THE EFFECTIVENESS OF AN ELEMENTARY SCHOOL PHYSICAL ACTIVITY AND NUTRITION INTERVENTION

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The purpose of implementing On the Move into the Bismarck Public Schools' fourth grade curriculum was two-fold: 1) to educate and increase awareness of healthy nutrition and physical activity appropriate for the specific age group and 2) to increase knowledge, awareness and support for healthy behaviors in the guardians. On the Move program was delivered in five, 1-hour sessions over the course of five weeks, and focused on behavioral change in individual students as well as the family as a whole. Pre and post survey data was collected via a standardized self-report survey by the students and their guardians. The University of Mary Program in Exercise Science worked collaboratively with the Bismarck Public Schools, NDSU Extension Services, Bismarck Burleigh Public Health, Go! Bismarck Mandan community coalition, and other local volunteers. Student participation was strong (N=762; 15.5 schools out of 17 (91%); 37 4th grade classes out of 42 (88%)). Data from 14 schools was available for analysis (Student pre and post surveys N=637; N=14 schools). Schools' mean pre and post percentage scores were compared for health behavior variables. All variables showed positive changes. Statistically significant changes were found in consumption of fruits and vegetables, and decreased screen time, as reported by students ($P<.05$), and increased fruits and vegetables served, as reported by guardians ($p<.05$). Results suggest the On the Move intervention was successful at five weeks. Further study is needed to determine long-term impact.

DEVELOPMENT OF MORAL REASONING SKILLS IN GRADUATE PHYSICAL THERAPY STUDENTS

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STUDY DESIGN: Survey design

OBJECTIVE: To examine the components of the development of moral reasoning skills in undergraduate pre-physical therapy and Doctorate of Physical Therapy (DPT) students.

BACKGROUND: As physical therapists move into a role as primary care givers they will be making ethical decisions regarding patient care and reimbursement. Many educational factors have been suggested to contribute to moral reasoning skills. As physical therapy educational programs move to a DPT, it becomes important to isolate these factors to shape ethically moral graduates.

METHODS AND MEASURES: Fifty students completed the Defining Issues Test-2 (DIT-2), an assessment of moral reasoning, and a biographical/demographic survey as first and third year DPT students. Correlations between student's DIT-2 scores and factors on their biographical/demographic survey were evaluated to determine the significance of each factor in the development of moral reasoning.

RESULTS: N2 scores were calculated from the DIT-2 tests. A Pearson correlation was then calculated for the relationship between these N2 scores and 13 biographical and demographical factors. A moderate positive correlation was found between N2 scores and the number of philosophy courses taken ($r(48) = .308, p < 0.05$). Correlation between all other factors was weak and not significant.

CONCLUSIONS: A moderate positive correlation between N2 scores and the number of philosophy courses taken indicates that a larger number of philosophy courses taken by a student entering the DPT program may improve the development of moral reasoning. The weak correlation between other factors and N2 scores indicates that variability in academic preparation and personal characteristics does not negatively affect moral reasoning skills. For educators in DPT programs, this may indicate that current educational requirements for admission as well as curriculum material do not have an effect on the development of these skills, but further research is required to determine if these results are seen in other programs.