

WESTERN SOCIETY FOR KINESIOLOGY AND WELLNESS

2019 Conference Abstracts

ORAL PRESENTATIONS, WEDNESDAY OCTOBER 9, 2019

Does the closing of physical retail stores selling sport equipment affect the participation of sport activity?

***Yongseek Kim (New Mexico Highlands University), Kyongmin Lee (Danbrook University)
and Woojeong Cho (Korea Maritime & Ocean University)***

Brick and Mortar stores, which is traditional physical retailers, are going through the hardest time ever. Many of them are either shutting stores or on the verge of bankruptcy. According to Fung Global Retail and Technology, a retail think tank, about 7000 retail stores announced store closing and there have been 662 bankruptcy filings in the retail sector so far in 2017 (Isidore, 2017). Even though many of them are small mom-and-pop stores, even some reputable retailers are either shutting down stores or filed bankruptcy. At a time when employers hired nearly 2 million workers and unemployment rate reached 17-year low, 36,000 jobs were lost in retail industry even though telecommunications lost more. Clothing stores such as Abercrombie and Fitch, American Apparel, BCBG, Babe, J Crew, The Children's Place, Guess, The Limited, Gymboree, and so on and Department stores such as J.C. Penny, Macys, and Big box stores, such as Toys R Us, Sears/Kmart, are good examples of this (Barrabi, 2018). Sporting goods stores are no exception: Sports Authority, Golfsmith (Dick's Sporting Goods bought it and changed its name to Golf Galaxy), Eastern Outfitters, Sport Chalet, MS Sport (Michigan Sports), and so on are the good examples (Bomey, 2017). Retail stores which are selling specific sporting equipment in a local area are also closing their doors, whether it is related golf, tennis, bicycles, and so on. Does this affect the participation of sport activity?

Bridging the Communication Gap Between Stakeholders - Promoting Healthy Participation

Karen Hostetter (Northern Arizona University)

The purpose of this presentation is to introduce the importance of communication between athletes, coaches, parents, administrators, and athletic trainers regarding safe and healthy participation in physical activity. Key points include A) a comparison of the "medical model" and "athletic model" of sport coverage; B) an introduction to NATA Position Statements (e.g., Standard of Care) for specific conditions, such as concussion and environmental conditions; C) defining negligence in athletic healthcare; and D) "examples from the trenches" of where we can do better to support each other in our professional roles.

Effects of aerobic fitness on cognitive motor interference during self-paced treadmill walking in older adults

***Giolla Chaparro (California State University, Dominguez Hills) and
Manuel Hernandez (University of Illinois at Urbana Champaign)***

Older adults (OA) have greater cognitive motor interference (CMI) due in part to declines in cognitive function [1]. Although aerobic fitness has beneficial effects on cognition [2], its association with CMI is unknown. The purpose of this study was to determine how aerobic fitness levels affect CMI as a measure of dual-task cost (DTC) in OA. Thirty-four participants (68.59 \pm 10.13 years old, 24 females) were included in a cross-sectional design study. Based off of their estimated VO₂max calculated from the Rockport 1 mile test, a median split was used to divide the participants into two cohorts of low and high fitness level. The dual-task paradigm consisted of single-task and dual-task walking (i.e., walking while performing the Modified Stroop Color Word Test) on a treadmill. DTC of gait speed was calculated as: $([\text{Single task walking} - \text{Dual task walking}]/\text{Single task walking}) * 100$. A linear mixed model was

performed to examine the effects of aerobic fitness and task on gait speed DTC. Low fit individuals exhibited higher DTC than the high fit OA ($p < .01$). When compared to the easiest dual-task cognitive Stroop condition, all participants exhibited decreases in DTC during the other dual-task walking conditions with increasing difficulty ($p < .001$). OA with low fitness levels possess greater CMI when compared to high fit OA. This provides a foundation of knowledge on how aerobic fitness levels in OA may affect CMI which can lead to examining the causal relationships between an aerobic exercise intervention program and CMI in OA.

Keynote Presentation

The Active Couch Potato

Dr. Colin Fehr (Lewis-Clark State College)

Dr. Collin Fehr is a faculty member in the Division of Movement and Sport Sciences at Lewis-Clark State College. As a three-sport collegiate athlete (basketball, tennis, cross-country/track), he became fascinated with the physiological realm of kinesiology and began a collegiate coaching career while pursuing a Master's degree in Exercise Physiology. During his 5-year coaching tenure, he realized that the psychological aspects of performance are just as important as the physical, so he pursued a Doctoral degree emphasizing the psychology of sport/exercise at the University of Montana. Always up for a good workout, Dr. Fehr utilizes his own garage gym daily and has completed six marathons, three of which he finished in first place overall. As a faculty member, Dr. Fehr specializes in performance enhancement from a holistic perspective. He believes that psychological skills can be trained just like physical skills. Through his work as a sport psychology consultant, Dr. Fehr helps athletes and coaches develop desirable behavioral skills ranging from goal setting to effective communication. During the summer months, Dr. Fehr directs a tennis and Pickleball facility in Sun Valley, Idaho, where he serves as the Head Professional. Pickleball is considered the fastest-growing sport in America, and Dr. Fehr became the first Certified Teaching Professional in the state of Idaho in 2017. A longtime believer in applied practice, Dr. Fehr believes the best way to teach health and wellness is to live it!

ORAL PRESENTATIONS, THURSDAY OCTOBER 10, 2019

Young Scholar Award Presentation

Eye-Hand Coordination: A Lifespan Perspective

Charmayne M.L. Hughes (San Francisco State University)

Eye-hand coordination is a complex neuromotor function that requires the coordination action of the proprioceptive and visual systems, as well as the motor apparatus. To date, most of the previous studies on eye-hand coordination have compared children to young adults or old adults to young adults. As such, it is unknown how eye-hand coordination changes over the full range of the human life-course. In order to elucidate when individual changes in eye-hand coordination occur across the human life-course, this study utilized a 3-degree of freedom robotic device (Wristbot) to examine eye-hand coordination in a cross-sectional sample of 232 individuals between 8 and 68 years of age. Results indicated differences in eye-hand coordination across the lifespan. Specifically, eye-hand coordination improved throughout late childhood and early adolescence, reaching adult levels by 14-17 years of age. Performance was stable across adulthood, decreasing only after 50 years of age. The evolution of eye-hand coordination across the age groups was best described using a 3rd order polynomial function. The present results provide quantitative information on eye-hand coordination across a large range of the human lifespan, and provide a basis against which eye-hand coordination in neurologically and physically impaired populations can be compared. This may aid the design of more effective sensorimotor intervention programs.

Young Scholar Award Presentation
Metatarsal Loading in Runners with Habitual Rearfoot and Forefoot Strike Patterns

James Becker (Montana State University)

Numerous studies have examined kinematic or kinetic differences between RFS and FFS patterns at the ankle, knee, and hip. However, relatively little is known regarding how different foot strike patterns influence loading of the metatarsals. Purpose: Compare metatarsal loading in runners who habitually use RFS and FFS patterns. Methods: 50 runners (30 with habitual RFS, 20 with habitual FFS) participated in this study. Participants ran on a treadmill for 10 minutes at speeds approximating their easy training run pace. Plantar pressures were recorded using an in-shoe pressure system. Six regions, metatarsals 1-5 (M1-M5) and a cumulative all metatarsals (Allmets), were defined. Peak forces, time to peak forces, loading rates, time to peak loading rate, and impulses for each region were determined. Results: Peak forces were higher under M1 ($p=.039$), M3 ($p=.034$), and Allmets ($p=.021$) regions in FFS runners. Peak instantaneous loading rates were higher under M1 ($p=.042$), M5 ($p=.034$), and Allmets ($p=.029$) regions, and occurred 10% earlier in stance for the Allmets region ($p=.024$) in FFS runners. Impulses were higher under M1 ($p=.034$), M3 ($p=.019$), M5 ($p=.017$), and Allmets ($p=.006$) regions in FFS runners. Conclusions and Implications: Using a FFS pattern results in higher loading of the metatarsals than using a RFS pattern. Consideration of the differences in metatarsal loading between foot strike patterns may be important for designing transition programs which minimize risk of injury for individuals who wish to switch their foot strike pattern.

Ethical Transitions from Students to Professionals

Karen Hostetter (Northern Arizona University)

The news is full of examples of coaches, athletic trainers, teachers, administrators, and others who lost their jobs because of unethical and/or illegal behavior. The purpose of this presentation is to highlight standards or Codes of Ethics related to coaching, athletic training, and teaching, and to encourage formal instruction in ethics education to reduce unethical and/or illegal incidences in education, sport and sports healthcare.

Peak Muscle Power Correlates with Bone Strength in Healthy Older Adults
*Kristine Magorien, Joaquin Tabera, Bri Vallente, Corrine Yague, Cathy Inouye,
Jennifer Sherwood, Shannon Web and Vanessa Yingling (CSU- East Bay)*

Purpose: To assess the relationships between muscle measures (maximal hand-grip strength and peak lower limb power and velocity) and bone strength parameters in older adults. Method: Peak lower limb power and velocity were assessed during the (sit-to-stand) STS and muscle strength with a hand-grip dynamometer. Radial bone strength was assessed with a peripheral quantitative computed tomography (pQCT). Relationships were assessed with Pearson's correlation analyses ($p<0.05$). Results: Peak muscle power and velocity were significantly correlated with cortical and trabecular bone strength parameters in the radius. Maximal hand grip strength was correlated with peak power, but not with bone strength parameters. Peak Power was found to strongly correlate with cortical bone parameters, except for cortical area, as indicated by the correlation coefficients (r): cBMD (0.923), J (0.982) and SSI (0.949); and with the trabecular bone parameter: T.Ar.tb (0.964). Velocity was found to strongly correlate with cortical bone parameters as indicated by the correlation coefficients (r): Ct.Ar (0.883) and J (0.982); and with the trabecular bone parameters including: vBMC.tb (0.987) and BScI (0.994). Conclusion: In this study, peak lower limb power and velocity during the STS were strongly correlated with radial bone strength. Although hand-grip strength was strongly correlated with peak power, it was not correlated with radial bone strength parameters. These results suggest that the STS may be used to monitor lower limb muscle power and bone strength.

Physical disability- "It does not seem to matter whether I take part or not. "Does it matter to you?

Aubrey Shaw & Sharon K. Stoll (University of Idaho)

Exclusion of students with physical disabilities from physical education exists (Hodge & Elliott, 2013; Martin, 2018). "I never had PE at school....either I sat and looked at the others or I biked on an exercise bike. I found it very boring

as I am quite an active person...I do not know. It did not seem to matter to them whether I took part or not" (Bredahl, 2013). Martin's 2018 literature review states students with physical disabilities are excluded due to: (1) implicit bias towards students with physical disabilities, (2) teacher perception that students with physical disabilities have lower than average physical ability, (3) physical educators not prepared to teach, and (4) physical educators view students with physical disabilities as objects rather than persons. Hodge and Elliot (2013) argue for pre-physical education teachers to have more education and experience in working with students with physical disabilities. Perspective taking is one option to improve decision making when including students with physical disabilities. Perspective taking allows for the teacher's focus to change from the student's impairment to their potential. Therefore, the purpose of this presentation is to discuss how perspective taking is a practical solution for inclusion and lessons will be supplied in how to perspective take. Participants will leave with: 1) a better understanding of real life exclusion issues for students with physical disabilities, 2) a tool to create perspective taking, and 3) suggestions on how to implement the perspective taking tool in the physical education classroom.

A Comparison of the DXA, BIS, and Ultrasound Body Composition Measurements in College Students

***Julio Mora, Jason Hernandez, Yadira Marin, Amanda Maravi, Zhaojing Chen
and Guillermo Escalante (CSU- San Bernardino)***

Purpose: This study compared the body composition estimations of the Dual-energy X-ray absorptiometry (DXA), Bioelectrical Impedance Spectroscopy (BIS), and Ultrasound (US) in college students. We hypothesized that there would be no differences in the body composition measurements between the devices and that there would be a high correlation between the devices for body composition. Methods: Four males (24.2 ± 2.1 years; 170.2 ± 6.1 cm; 84.9 ± 11.3 kg) and six females (22.1 ± 1.3 years; 157.4 ± 3.1 cm; 60.9 ± 15.5 kg) had their body composition measured using the DXA, BIS, and US. A one-way Analysis of Variance (ANOVA) was performed to determine if there was a difference between the body composition measurements between the devices. A Pearson correlation was also performed to determine the correlations in body composition. Results: Body fat percentage measures for the DXA, BIS, and US were 28.9 ± 9.5 , 25.7 ± 10.7 , and 21.2 ± 7.7 respectively. The ANOVA revealed there was no statistical difference in body composition results between the devices ($F_{2,29} = 1.716$, $p = 0.199$). The Pearson correlation coefficients between all three devices were strong with $r = 0.923$ ($p < 0.01$) for the BIS and US, $r = 0.932$ ($p < 0.01$) for the BIS and DXA, and $r = 0.938$ ($p < 0.01$) for the US and DXA. Conclusion: The results of this investigation indicate that all three devices have a high level of agreement in assessing body composition.

Attitudes Toward Grading in Secondary Physical Education

***Chris Gentry (California State University, San Bernardino), Terry Rizzo, Michael Ginter
and Kelli Reynolds (California State University, San Bernardino)***

If you polled physical education teachers about the most difficult challenges they face in their jobs, it is likely that many will include grading on the list. Despite the information that grades may provide about student learning and teacher effectiveness, grading practices in physical education continue to be an issue. At the state and national level, standards and benchmarks are available to assist teachers in creating meaningful outcomes based curriculums, but despite the standards, teachers continue to use subjective and inappropriate grading methods such as effort, attire, and participation. Although this is a major concern, there are minimal studies that explore the perceptions of physical education teachers on grading. Guided by the Theory of Planned Behavior (TpB), this qualitative study aims to understand physical education teachers' perceptions of grading at the middle school and high school level. Twenty-five California middle school and high school physical education teachers completed a nine question, open ended survey regarding the purpose and process of grading. Miles and Huberman's model of qualitative analysis (1994) was utilized to determine themes from the transcribed teacher responses. During the presentation, themes will be discussed along with the direction of future research including the creation of a validated grading questionnaire.

E.C. Davis Lecturer
Bridging “Changing” Human Behavior
Dr. Jason Slack (*Utah Valley University*)

Jason V. Slack is a Professor of Exercise Science and Associate Dean in the College of Science at Utah Valley University, he is starting his 19th year at Utah Valley University. In 2002, while completing his Ph.D. at the University of Utah he was activated with the Utah National Guard in support of Operation Iraqi Freedom, he spent 18 months supporting this conflict then returned home to complete his Ph.D. and fulltime employment at Utah Valley University. Dr. Slack was introduced to WSKW in 2004 and was an active member until 2014, he received the Dr. G. Arthur Broten Young Scholar award in 2005 and served as the treasurer from 2007 to 2014. Dr. Slack has been active in research and has worked with several undergraduate students to assist and mentor them on research projects from the IRB to presentations at national conferences. He is committed to teaching and student success and although he is in administration, he continues to teach one class each semester and loves every minute of it.

Is the Type of Conditioning or Body Composition a Greater Influence on Resting and Exercise Macronutrient Fuel Mix? (Round Table Discussion)
Clay Robinson, Collin Fehr, McKayla Austin & Mika Rives (Lewis-Clark State College).

The purpose of this research was to determine if type of conditioning (aerobic vs. anaerobic) or body composition had a greater effect on resting and exercise energy expenditure. Also investigated was macro nutrient fuel mixture at rest and during exercise. Participants were randomly recruited from a small North West College. All participants meet the minimum ACSM recommendation for exercise of 150 minutes of aerobic exercise per week. The population group included athletes and non-athletes. Body composition for participants ranged for lean to overweight based on hydrostatic and DEXA assessments. Methods: All participants were measured for resting energy metabolic rates by means of a ParvoMedic metabolic cart. Participants were in a prone position for at least ten minutes until a metabolic baseline could be determined. Participants then completed a graded bike ergometer test to determine what percentage of their exercise heart rate they reached before they started burning more carbohydrates than fat. Body composition was accessed through hydrostatic weighing after measuring residual volume and also was accessed by means of GE Lunar DEXA 3500. Results: Test were performed to determine if body composition or type of conditioning had a greater effect on resting energy fuel mix and caloric expenditure. An ANOVA was performed to determine if there was any significant difference in resting metabolic rate and macronutrient fuel mix by sport. Also a t-test was performed to determine if there was any significant difference in body composition between DEXA and Hydrostatic assessments. Results will be shared and discussed at the conference.

The Relationship of Basic Health Knowledge and Health Behaviors among Undergraduate Healthcare Students
Hyun Ji Kim & Chelsea Choi (La Sierra University)

This research study observed the association of health knowledge and health behaviors among pre-health undergraduate students from a private university in Southern California. The goal of this research was to observe the influence health knowledge has on health behaviors of healthcare students. Our null hypothesis stated that there will be no significant association between health knowledge and health behaviors among undergraduate healthcare students. This study involved 45 healthcare students comprised of 15 pre-medicine, 15 pre-dentistry, and 15 pre-nursing students. The respondents were given an online self-reported questionnaire which included questions on basic health knowledge and personal health behaviors. The results showed a very weak relationship ($r = 0.149$) between health knowledge and health behaviors; therefore, the null hypothesis was accepted. Between pre-medicine, pre- dentistry, and pre- nursing students, there was no statistically significant difference ($p = 1.0, 0.129, 0.062$) in health knowledge and behavior.

Coaching Yourself Through Failure: An Applied Philosophy

Mark Sowa & Sharon K. Stoll (University of Idaho)

As coaches and educators, we become very skilled at assisting our athletes and students through struggles, slumps, and failings. How do we, as coaches, deal with our own failures? What can we learn from our missteps and more importantly, how can our failures be used to help us be better coaches? Success in athletics at every level is now, more than ever, judged solely on outcome, score, wins, and losses. One needs to look at the number of fired Division I football coaches still being paid by former universities to understand the climate in which we find ourselves. This presentation is an applied philosophical approach to coaching that will provide both a practical and theoretical framework assisting coaches, administrators, and educators in understanding the value of failure. The reflective approach will offer the following steps: How to know yourself as coach, How to clearly define what you believe, How to be gentler to yourself, How to define success before stating failure, How to value risk taking, How to stay consistent, How to embrace perspective and How to focus on “Sweet tension of uncertainty of outcome” (Kretchmar). This presentation will not make losing any easier or less painful. It will however give you the tools to coach yourself through the dark places we all experience as educators. One should remember that the Major League Baseball Hall of Fame is filled with batters who failed seven out of ten times they appeared at the plate.

Predatory Journals: Scholars Beware (Roundtable Discussion)

**Bethany Shifflett (San Jose State University), Andrea Ednie (UW Whitewater),
Cathy Inouye (CSU East Bay) and Jeff Bernard (CSU Stanislaus)**

This session explores the increasingly perilous environment scholars face when trying to publish their research. At its best, open access publishing does indeed get research disseminated widely and swiftly and can be of as good quality as any hard-copy based journal. However, a dark side to online publishing has led to the emergence of predatory journals whose unscrupulous practices prey on those for whom publish or perish is a reality. The panel will provide context for a facilitated open-ended round table-style discussion designed to draw on the experiences of WSKW members in order to better understand the publishing pitfalls and challenges these journals present, and how faculty might best side step potential mine fields with respect to the retention, tenure, and promotion process.

**Dietary, Exercise, Drug Use Practices, and Body Composition Changes Among
Physique Competitors Preparing for Competition**

Guillermo Escalante (California State University San Bernardino)

Physique athletes competing in bodybuilding, physique, figure, and bikini are required to achieve extremely low body fat percentages to be successful in competition. During the contest preparation period competitors incorporate a combination of hypocaloric diets, resistance training and aerobic exercise to maximize fat loss and preserve muscle mass. Use of performance enhancement drugs, which are sometimes obtained illegally, are sometimes used as part of their preparation. Furthermore, use of nutritional supplements is often common practice among these athletes. Prolonged dieting during the contest preparation phase, along with illicit drug use, can lead to a number of unfavorable physiological consequences, mood disturbances, and menstrual cycle disruptions (2014 Trexler; 2013 Rossow; 2016 Halliday). The objective of this study is to report the diet, exercise, supplement, and drug use practices of physique competitors as they prepare for a competition. All data obtained for this study will be evaluated and presented descriptively with means, standard deviations, and frequencies. The information obtained from this study can be used to examine the current practices of physique competitors which will offer insight into potential future interventions that may be implemented to help these athletes improve their body composition in a safe manner.

ORAL PRESENTATIONS, FRIDAY OCTOBER 11, 2019**Gender Balance in ESPN and espnW Content*****Bethany Shifflett, Aurelyn Ancheta, Joanna Peet, and Anthony Abuyen (San Jose State University)***

With an increasing number of females participating in sports, coverage of women's sport is still disappointingly unbalanced. The launch of espnW seemed like an excellent platform to expand coverage of women's sport. For five days in each of three weeks in April 2018, two pairs of researchers conducted a content analysis of: (a) top headlines/stories, (b) Buzz articles, and (c) photos located at or near the top of articles. Results indicated that differences are still present. There was a statistically significant difference in proportions with a $Z = 3.96$. On the espnW site, only 23% of the top stories focused entirely on female athletes and 33% of the top stories on espnW focused on male athletes. When data were examined at the paragraph level, the relationship between the site and the amount of coverage by gender in top stories was significant (Chi Squared = 437.4). These results parallel previous studies' findings of gender bias in sport media coverage.

A study on Deception/Tricks Used by Attackers When Committing Violent Crimes***Gong Chen (San Jose State University)***

Attackers used numerous deception tactics while committing violent crimes based on reported cases. These tricks caught victims/self-defenders off guard and made it impossible to defend themselves. Therefore, recognizing and dealing with these tricks and deception tactics accordingly is an important part of self-defense education in universities, schools, and communities. The purpose of this study was to summarize these deception tactics and tricks used by attackers and their effects in thousands of cases worldwide in the last two decades. Content analysis was used in this study on cases published on the internet, newspapers, TV reports, magazines, and books. All deceptions/tricks were listed case by case, analyzed by different types of tricks, and tallied based the numbers of occurrences. Percentages of several types of tricks in each type of violent crime were used to describe the findings. Numerous tricks/deception tactics have been identified in cases of murders, rapes and sexual attacks, robberies, aggravated assaults, kidnapping, burglaries, and terrorism attacks, etc. Examples of tricks that were used very often included sudden attacks, disarm (using poison, drugs, or alcohol), distracting, acting as police or doctors, and following/stalking, etc. It was expected that the findings of this study could be used to develop effective strategies on prevention and handling these types of tricks/deception tactics in self-defense curriculum for students. Furthermore, self-defense instructors may use these findings for instructions, and students/self-defenders may also use these findings to help themselves understand and recognize these tricks/deception tactics for their self-defense.

The Effects of Expiratory Muscle Strength Training on Exercise Capacity and Health Status in Obese College Males***Jeff Bernard, Krystle Sanders, and Nou Thao (CSU Stanislaus)***

Expiratory muscle strength training (EMST) is a simple and effective technique shown to improve respiratory capacity. EMST can provide an isometric overload for the muscles involved with the expiratory phase of breathing. Although the positive effects of EMST are well documented in those with deficient respiratory capacity, the benefits of such training in those with normal breathing is not as clear. Therefore, the purpose of this study was to investigate the effects of EMST on exercise capacity and markers of health status in obese college males. The 5-week EMST intervention program utilized a pre- and post-test design. Fifteen obese college males volunteered for the study and performed tests for exercise capacity, pulmonary function, and body composition, as well as various blood biomarkers were assessed. EMST was performed 5 days/week starting at 75% maximal expiratory pressure (PE_{max}) with the resistance increased throughout the 5-weeks. Participants were asked to not modify their diets and to refrain from exercise. Following the intervention period PE_{max}, forced vital capacity (FVC), and forced expiratory volume (FEV) significantly improved. Aerobic endurance improved despite no statistically significant improvement in maximal oxygen consumption (VO_{2max}). There were no improvements in body composition or blood biomarkers

following the EMST intervention. These findings suggest that 5-weeks of EMST can improve respiratory and exercise capacity in obese individuals. However, EMST alone does not appear to improve health status as determined by body composition and blood makers. Thus, further research is needed to determine the long-term benefits of EMST in this population.

Strength Through Time: A Fascinating History

Lee Ann Wiggin (Lewis-Clark State College)

The earliest text references to strength training date as far back as 3600 B.C. in China (Jarmin, 2018). Since this early time in history, strength training, in a variety of forms, used for strength, competition and aesthetic purposes, have been recorded throughout history. The early Chinese were not alone. Worldwide, numerous societies, including the Greeks, Egyptians and Romans were all early contributors that have led to the multiple disciplines and methods used for strength training today. Strength training has had an impact on modern culture, predominantly in sport, health and aesthetics. There are a variety of disciplines and terms used under the umbrella known as strength training, including weight lifting, bodybuilding and more. Each of these disciplines, to name a few, have played a key part in how far the activity known as strength training has come, and how it is used today. The significant events and the important individuals who have had an important role in the history of strength will be a part of this presentation. From the use of rocks and large animals, to Nautilus, Venice Beach, Strongman, Crossfit, and everything in between, this presentation will give you a fascinating and informational look at how the early pioneers of strength helped guide us to the variety of disciplines and practices associated with strength training today.

The relationship between natural sounds and wellness motivations among protected area visitors in Aysén, Chile

Andrea Ednie (University of Wisconsin-Whitewater), Trace Gale (Center for Patagonia Ecosystem Research (CIEP), Coyhaique, Chile), Andrés Adiego (Center for Patagonia Ecosystem Research (CIEP), Coyhaique, Chile) and Karen Beeftink (University of Maine at Machias)

Little is known about the relationship between natural sound perceptions and visit motivations among recreationists in protected areas. A body of literature is emerging within protected area research about the impact of sound pollution on visitor experiences; however, very little research has been conducted to date about natural sound observations. Meanwhile, visit motivations to protected areas have long been studied in a variety of contexts, but a gap remains in terms of wellness motivations and characteristics of the natural landscape such as sound. This study used an on-site visitor survey including a sound observation activity in order to examine the relationship between wellness-related visit motivations and sound perceptions. Sound observations (n=990) were open-coded, and bivariate correlation analyses were conducted to identify relationships between sound perceptions and visit motives. Several significant correlations were identified that provide insight into the interrelationship between wellness motivations for PA use and sound perceptions. For example, participants motivated for sensory experiences such as enjoying the smells of nature held high perceptions of wind, bird, and insect sounds ($p < .05$). Also, those with intrinsic motivations such as seeking a mind rest and seeking peace and quiet held higher perceptions of the sounds of insects ($p < .05$). Interpretations and implications of the identified relationships will be discussed within the context of incorporating nature's sensory environment into outdoor recreation wellness initiatives.

FACULTY POSTER PRESENTATIONS

1. *What are Some Issues Associated With Team Sports in Middle School Physical Education?*

Minhyun Kim (Sam Houston State University), BoungJin Kang (Elizabeth State City University), Jose Santiago (Sam Houston State University) and Hosung So (California State University San Bernardino)

- 2. Understanding parental perceptions of Taekwondo education**
JunHyung Baek (Gyeongin National University of Education)
- 3. Preservice Elementary Teachers' Past Experience in Elementary PE and its Impact on Pedagogical Beliefs**
JunHyung Baek and Jae-Yong Lee (Gyeongin National University of Education)
- 4. A Study on the Deviation of Campus Football Policy Implementation in China from the Perspective of Institutional Environment**
Xingquan Zhang and Yaping Wang (Shenyang Sports University, China)
- 5. Developing an Educational Packet : Preventing Concussions for Parents and Youth**
Justin Honda and Seung Ho Chang (San Jose State University)
- 6. Study on the Effect of Fitness Activities on Subjective Well-being of Urban Residents**
Ke Xu .Xi'an (Jiaotong University)
- 7. Understanding Body Image and Motivation in Physical Education: A Mixed Methods Approach**
Sean Sullivan, David Pearson & Marco Esparza (California Baptist University)
- 8. Analysis of Aggregate Data Trends in Doctor of Physical Therapy Programs in the United States**
Juan Gonzalez, Soojin Yoo & Anahina Becerra (The University of Texas Rio Grande Valley)
- 9. I Feel Pretty?: Exploring Feelings and Perceptions about the "Ideal Body"**
Heather Van Mullem, Clay Robinson & Jessica Savage (Lewis-Clark State College)

STUDENT POSTER PRESENTATIONS

RESEARCH CRITIQUES

1-1. Effects of Cell Phone Use on Gait Characteristics

Paloma Granados, Christa Rodriguez & Gioella Chaparro (CSU- Dominguez Hills)

While the effects of walking and sending texts on gait have been examined [1], the effects of performing smartphone usage such as internet browsing or taking pictures is unknown. The purpose of the reviewed study was to examine the effects of smartphone usage on gait characteristics [2]. Participants walked on a treadmill while performing five different conditions: 1) Phone in pocket (control) 2) Reading a text 3) Dialing/talking 4) Internet searching and 5) Taking a selfie. Gait parameters assessed included: gait speed, cadence, and double stride length (see Table 1 for full list). Statistical analyses were run using SPSS 20 with the significance level set at .05. ANCOVAs were used to test for differences between conditions for each gait parameter. Thirty-six healthy adults (24.7 ± 1.97 years, 23 females) were included in a cross-sectional design study. Significant differences were found between the control and the smartphone use conditions in gait speed ($p < 0.001$), cadence ($p < 0.001$), and double stride length ($p < 0.001$). These effects on gait may reflect a feeling of uncertainty with gait stability which can lead to a greater risk of falls. While this study does have strengths in the statistical design, there was no report of the accuracy/response rate of smartphone use which can be critical for interpreting the effect of an additional task on gait. Additionally, future research should examine these effects on older adults who are at a higher risk of falls when taking part in multi-tasking.

2-1. Aerobic fitness and Cognitive Control in Preadolescent Children

Laura Contreras, Chris Gentry & Hosung So (CSU- San Bernardino)

Higher fit children may demonstrate superior task performance due to cognitive control strategies gained from quality aerobic fitness. The purpose of the reviewed study was to use conditional accuracy function (CAF) to assess the usage of cognitive control strategies of higher-fit children (HF) and lower-fit children (LF). Thirty-eight preadolescent children were categorized as 19 HF and 19 LF. The methods that determined the categorization included VO₂max, BMI, and IQ. Overall, HF children displayed superior performance than LF children. The reviewed study does present the association between aerobic fitness and cognitive control strategies, however, a brain activity test may have been a good supplement to the method of research. This study would seem to support the value of a health optimizing physical education curriculum to increase fitness levels in children (Kao et al., 2017).

STUDENT PRESENTATIONS

LITERATURE REVIEWS

3-1. The Effects of Foam Rolling on Range of Motion and Muscle Fatigue

Alexandra Khartabil & Guillermo Escalante (CSU- San Bernardino)

Foam rolling (FR) is believed to relieve certain symptoms of exercise-induced muscular exhaustion or damage and is thought to increase range of motion (ROM) (Macgregor, Fairweather, Bennett, & Hunter, 2018). FR may be used as an alternative to other common remedial methods of muscular pain management such as the use of supplementation, compression garments, or stretching exercises (Fleckstein, Wilke, Vogt, & Banzer, 2017).

4-1. Fasted vs Fed Cardiovascular Exercise for Fat Loss

Jessica Heredia and Guillermo Escalante (CSU San Bernardino)

Cardiovascular exercise is often prescribed to help facilitate fat loss. Performing cardiovascular exercise in a fasted state is a strategy often employed by individuals attempting to maximize fat loss. In a fasted as opposed to fed state, the body theoretically shifts energy utilization away from carbohydrates and more toward stored fat for fuel. Although there is a theoretical basis as to the potential improvement of fat loss in a fasted state as compared to a fed state, conclusive evidence is lacking.

1-2. Sportsmanship Behaviors: What We Know and What We Can Do

Brock Morris & Sharon Stoll (University of Idaho)

The purpose of this meta-analysis is to identify, organize, and describe existing literature investigating the behaviors of athletes in competitive environments. This study combines a range of studies that are descriptive, predictive, and experimental designs that focus on the behaviors of athletes. The descriptive designs gather information that show that athletes participate in antisocial and negative sportsmanship behaviors at a high rate. The predictive studies analyze various factors that can predict a player's prosocial and antisocial behaviors. Various factors have been found to accurately predict the possible behaviors in athletes. Positive behaviors, coaching techniques, and role modeling have been found to be beneficial in the development of prosocial behaviors. The experimental design studies look at the effects of sportsmanship interventions on the behaviors of athletes. Teaching character and sportsmanship needs to be intentional. Sportsmanship intervention programs also need to be engaging to those in the program. An athlete that is not actively engaged may not develop the positive sportsmanship characteristics that are sought after with implementation of a sportsmanship program. Overall, sporting environments, if left alone, will produce athletes with lower moral reasoning than non-athletes. However, with the proper approach and implementation of sportsmanship programs, sports can develop higher moral reasoning levels in athletes.

2-2. Utilizing Hypergravity to Reverse Bone Loss***Richmond Beckham & Zhaojing Chen (CSU- San Bernardino)***

Hypergravity is defined as any gravitational acceleration in excess of 9.8m/s² or 1g. Bone and muscle loss is well documented in microgravity such as prolonged space flight or in the elderly particularly in postmenopausal women. The primary mechanisms of bone loss are reduced mechanical stress on the skeletal system and/or hormonal changes over time. Current treatments for osteoporosis involve drug therapy and weight training with limited effects. Hypergravitational therapy may present an improvement to existing treatments.

STUDENT PRESENTATIONS**ORIGINAL RESEARCH****3-2. Cross-Calibration of Two Dual-energy X-ray Absorptiometry for the Measurement of Bone Mineral Density in Young Adults*****Erick Ramirez, Julio Mora, Amanda Maravi, Guillermo Escalante & Zhaojing Chen (CSU- San Bernardino)***

Purpose: To properly cross calibrate between the Prodigy and iDXA in young healthy adults. Methods: Thirty healthy college age individuals, ten males and twenty females, participated in the study. Bone Mineral Density (BMD) at lumbar spine and dual femur were measured using the Prodigy and iDXA by a licensed technician on the same day. Results: Paired sample t-test and regression analysis showed that the lumbar spine and dual femur BMDs were significantly higher in the iDXA than the Prodigy, suggesting that calibration equations are needed when comparing BMDs of young adults between the two scanners.

4-2. The Intra-rater Reliability of the Force Plate Peak Forces at Three Specific Time Frames***Jessica Heredia, Alexandra Khartabil, David Howard, Irania Rojas, Mathew Rodriguez, Zhaojing Chen & Guillermo Escalante (CSU- San Bernardino)***

Purpose: Rate of force development (RFD) in functional activities is important to measure for post anterior cruciate ligament (ACL) reconstruction athletes to assist in the decision to return to play. Most ACL injuries occur within 100 milliseconds (msec) of contact to the ground; hence RFD at the 25, 50, and 100 msec time frames are critical. The purpose of this study was to assess the intra-rater reliability of the software program designed to read the RFD at these specific time frames as a precursor to an ACL study. Methods: Seventeen healthy participants (Females = 6, Males = 11) between 18-30 years old participated in this study. After a brief warm-up and familiarization period, participants performed a single leg countermovement jump to a self-selected depth while keeping their hands on their hips. Upon landing from their vertical jump, the participants rapidly stabilized to remain vertical. Each participant completed 2 trials for each leg. Data were collected for peak force at 25, 50, and 100 msec. An intraclass correlation coefficient (ICC) was calculated to determine the intra-rater reliability between the two trials. Results: The ICC values and 95% confidence intervals (CI) between the two trials for 25, 50, and 100 msec were 0.990 (95% CI 0.971 - 0.996), 0.971 (95% CI 0.922 - 0.990), and 0.956 (95% CI 0.878 - 0.984) respectively. Conclusion: There is a strong intra-rater reliability for assessing forces developed at 25, 50, and 100 msec with the software program designed to read the RFD at these time frames.

5-2. Physical and Cognitive Effects of Sleep Deprivation Among College Students***Makayla Christopher, Billy Meeks & Nathan Lee (La Sierra University)***

This study served as a way to assess the effects of sleep deprivation among college students. The study included 50 full time college students. The physical testing consisted of examining reaction time, blood pressure, and waist-to-hip ratio. Cognitive tests included a questionnaire, a ruler drop test, and a squares test to measure attention span. Memory was assessed through image recall. A Pearson correlation test was used and results showed insignificant findings. Therefore, we rejected the hypothesis.