

# **Journal of Kinesiology and Wellness**

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# The Performance of Gender in American Dance

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## Abstract

With kinesiology defined as the study of human movement, then dance, as one of the oldest forms of physical activity, should be considered. Dance permeates contemporary American culture—from social dancing, to community dance studios, to popular television shows. Dance scholars and cultural theorists agree that the way a society dances elucidates cultural values. If we accept the notion that a culture's dances reflect the values of that culture, then a scrutiny of American gendered dance practices is warranted. Contemporary society views gender differently than the societies of the socio-historical context in which common Western dance genres, such as classical ballet, were born and developed. By highlighting ways that most dance training reinforces gendered codes of behavior, this paper contributes to discourses surrounding the evolution of dance in America and evolving notions of gender, while also providing a lens that might be applied to a multitude of physical practices.

## INTRODUCTION

In light of contemporary interests in evolving notions of gender, understanding how students are influenced and informed about their gender within dance training during the formative years of childhood might inform discussions about the future of dance education and demonstrate how physical practices may serve as a means of reinforcing gendered behaviors. Commonly taught Western dance forms, such as ballet, often reinforce traditional binary gender norms. Since contemporary society views notions of gender and the educational process quite differently than the individuals of the socio-historical context in which many traditional dance forms were first born and developed, methods of teaching various genres of dance and other physical practices might adapt to more adequately reflect current societal beliefs and practices. Due to the brevity of this paper, we will focus specifically on ballet as an example of how gender is performed through physical practice—understanding that the examples we give often translate to other gendered physical activities.

### Performing the Gender Spectrum

Gender is a timely and ubiquitous topic in American popular culture, and recent discourses focusing on gender have become even more complicated with the recognition of transgender and

gender-fluid individuals. Although traditional ways of thinking about gender in Western culture assess gender as a bipolar concept, recent scholars argue that gender might more adequately be represented on a spectrum (Monro, 2005). Even when gender is argued as a biological trait, and thus labeled correctly as sex and not gender, the notion of gender as one or the other is highly debated; for even in biology, variations exist creating a continuum of possibilities rather than an either/or scenario. Further, when biological variants intertwine with the psychosocial concepts of gender identity and gender expression, a gender binary is exposed as obviously overly simplistic, and an even more complex and nuanced model becomes necessary—thus the metaphor of the gender spectrum.

In addition to considering gender as existing on a spectrum, contemporary notions of gender also promote theories of gender as a social construct that it is taught, produced, and reproduced through performative acts. In her 1988 essay, “Performative Acts and Gender Constitution,” Butler argues that gender is a “historical situation rather than a natural fact” (p. 188). Claiming that gender is not simply a reflection of an innate or natural state, Butler reasons the performative acts we are taught and expected to exhibit actually *create* or *construct* gender. Butler writes:

...gender is in no way a stable identity or locus of agency from which various acts proceed; rather, it is an identity tenuously constituted in time—an identity instituted through a *stylized repetition of acts*. (p. 187)

Examining notions of gender through this contemporary lens, gender may be viewed as a social construct, existing on a spectrum, and created through performance. Our genders are learned and inscribed on our bodies through the repeated performance of learned gendered behaviors that reflect cultural and societal expectations, and we perform our genders in a multitude of ways—some are conscious choices, while others are subconscious iterations.

### **A Brief Exploration of Critical, Feminist, and Embodied Pedagogies**

Paulo Freire, more than any other theorist, contributed to the way contemporary scholars understand critical pedagogy as a concept. Believing the central theme of the current historical situation is domination, Freire argued that since the practice of domination is often perpetuated in conventional classroom settings, the goal of a more just society might be realized through educational reform. Freire was a proponent of empowering students, rather than dominating them.

In her book *Teaching to Transgress*, bell hooks follows Freire's line of thought, incorporating a feminist perspective and focusing on education as a means of liberation. Promoting a sense of "engaged pedagogy," in which students are encouraged to find joy and inspiration in educational practices, hooks illuminates the significance and potential of disrupting conventional pedagogical boundaries. Following hooks, many feminist scholars have elaborated on ways to create an educational environment that fosters notions of liberation, equality, and social justice. Defined as a philosophical approach to the teaching/learning experience, rather than a prescribed method, feminist pedagogy generally focuses on three themes: 1. resisting hierarchy; 2. using experience as a resource; and 3. education as a transformative practice.

To push these philosophies of education closer to our discussion of dance, another group of scholars such as Ellsworth, Giroux, McLaren, and Shapiro promotes the idea of the body as a site of knowing and knowledge production, rather than a passive instrument submissively inscribed by ideological discourses. These scholars challenge the perspective of earlier theorists of the body such as Mauss and Foucault. Mauss believed bodily training should be studied as biological, sociological, and psychological and argued that educational practices were dominant factors in bodily training (Mauss, 1973). Foucault, focusing on the body primarily as a site of power negotiations, defines "docile bodies" as those bodies that are subjected, used, transformed, and improved through systems of control and coercion (Foucault, 1977). But neither Mauss nor Foucault regarded the body as an active site of knowing and knowledge formation. Mauss tends to refer to the body as a tool or apparatus separate from the mind, and Foucault is primarily interested in the body as an entity that might be controlled for the purpose of exerting power. Both of these theorists held an outdated assumption that there is a separation between mind and body, i.e., dualism; and in contrast, postmodern ideas concerning embodied learning allow for a more holistic understanding of individuals as complete beings rather than a mind-body duality.

In an article titled "Schooling the Postmodern Body" McLaren (1991) argues bodies are cultural products imprinted with cultural ideologies, but also argues the body is a significant part of the learning self. Further, Ellsworth argues that knowledge formation, as an ongoing process, occurs through bodily experiences; in how we absorb the way our senses perceive the world that we inhabit. Throughout her text, *Places of Learning* (2005), Ellsworth refers to the self as "mind/brain/body" unwilling to distinguish these elements from one another. Shapiro (1998) takes this thinking a bit further by denying the mind-body dichotomy and arguing that all knowledge is mediated through the body, that learning is always a somatic practice.

Many dance scholars have adopted and/or adapted ideas concerning critical feminist pedagogy and theories of embodied knowledge construction to apply specifically to dance pedagogy. Lakes (2005) and Smith (1998) have called out the overtly authoritarian nature of Western dance teaching practices; Dyer (2009) and Alterowitz (2014) have argued for a more democratic means of teaching ballet; and Stinson (2011) and Risner (2008, 2011) have unveiled the hidden curriculum of gender, which is often prevalent in the dance classroom. These authors effectively challenge ballet teachers to re-evaluate their own pedagogical heritage and question any inherited values. In an effort to continue the line of thought introduced by these scholars, we highlight specific instances in which the expected performance of gender during early ballet training creates an environment that might be considered antithetical to the liberatory and empowering educational experience championed by critical feminist pedagogy.

### **In the Studio**

The art of ballet is gender specific and rife with examples of gender performance (Novack, 1993; Foster, 1996; Daly, 1987). However, the literature generally focuses on how gender is reinforced through stage productions and specific choreographic examples, rather than pedagogy. In an effort to establish a more pointed inquiry, we are focusing on how the performance of gender onstage is shaped through years of early dance training—not only in the actual physical training, but in learned expectations of appearance and behavior that are often taught beginning at a very young age. As Alterowitz (2014) writes: “Although it is evident that ballet’s philosophies and beliefs about the body are illuminated in performance, they are taught and learned long before being presented on stage” (p. 11).

Before proceeding further, we should make it clear that we have no intention of offering a simple solution or finding some sort of theoretical closure in this short discussion, we merely intend to raise questions, instigate awareness, and prompt a conversation about how traditional ballet training contributes to the bodily inscription of gender assignments on children. To that end, we shall examine a few common practices in early ballet training—practices that are so common and embedded in ballet culture, that ballet teachers usually take them for granted, assume them as normal, and do not notice them until there is non-compliance.

While we assume many ballet teachers and ballet schools have similar training procedures, we are aware not all instructors or institutions are the same; hence, we are drawing on the experiences of one of the authors as a ballet student and a ballet instructor, and we also use the Jacqueline Kennedy Onassis (JKO) School of Ballet, the affiliate professional school of American

Ballet Theatre (ABT), as a specific example of a traditional pre-professional ballet school. We have selected to use the JKO School as an example for the following reasons: 1. It is an organization with which we are familiar; 2. As this institution is a professional school geared toward training professional dancers, rather than recreational dancers, this is the type of school that perpetuates traditional modes of ballet training; 3. Due to its prestige the JKO school is often used as an example by other schools, especially since the creation and proliferation of ABT's National Training Curriculum, which is currently training teachers internationally.

Perhaps the most obvious gender specific element in early training for young dancers are standards for personal appearance, including dress codes and hairstyles. It is common practice for professional ballet schools to adhere to some variation of a gender specific dress code. At the JKO School for instance, female students wear pink tights, pink ballet slippers, and a leotard that is color-coded to specify the level at which they are training. At one of the youngest levels, the girls' leotards are pink and have a short skirt attached. As the girls move up in level, the color of the leotard changes, and the attached skirt disappears. During one of the author's training sessions for ABT's National Training Curriculum, one of ABT's instructors was asked about the pedagogical purpose of the skirt. The instructor replied that training the young girls to lightly hold the sides of the skirt between the thumb and middle finger while lifting the elbows to the side trains the students to establish a *demi-seconde* arm position and to shape the hands into a curved ballet position. Although this answer makes a certain amount of sense from a pedagogical and physiological perspective, these arm and hand positions are not gender-exclusive within ballet curriculum. The skirt, despite the instructors attempt to justify it through pedagogy, plays a part in the performance and construction of a feminine gender.

Unlike their female counterparts, male students of all ages wear the same uniform: a fitted white t-shirt, black tights, white socks, and white ballet slippers. Although all students must wear tights, girls wear pink tights, while boys wear black tights; and it is worth noting the girls' tights are sheer while the boys' tights are opaque. We have often heard ballet instructors justify the sheer pink tights by asserting that this specific kind of fabric allows instructors to better see the musculature of the leg; this in turn enables the instructor to better evaluate and assist in improving a student's technique. This may be true; but the expectation for boys to wear opaque black tights is another example of performing a specific gender identity. Further, the fact that male students wear the same uniform throughout their training years, while female students are ranked by colors, seems to signify that the male students are special in the sense that they are beyond the color-coded ranking. Females are ranked. Males are, at least as it is visibly signified, not.



Another gender-specific expectation of appearance is the manner in which the students style their hair. Although different schools have different rules, there is a general expectation at most schools for female dancers to have longer hair that may be fashioned into a bun, while male dancers have shorter hair. From one of the author's experience, even when there are not hard rules for these hairstyles, noncompliance is generally viewed as undesirable and often treated as an annoyance. Taken as a whole, these examples of managing the physical appearance of students demonstrates that, prior to these children even beginning to study the movement practice of ballet, they are trained to perform gender through their appearance.

In addition to the method in which the physical appearance of students is gender specific, the actual physical training is also gender specific. Although most male and female students train in class together on a regular basis, often around the age of twelve students are separated by gender for specific classes at least once per week: boys take *men's class*, and girls take *pointe* class. These classes focus on gender-specific dance training: the male students focus on jumps and turns, while the female students focus on pointe work. In classical ballet, certain steps are only performed by females, such as *bouffées*, small hummingbird like movements of the feet while on pointe; while other steps, such as *tours en l'air* in which the dancer jumps straight up in the air making a full revolution before landing, are only performed by male dancers. This gender-specific dance vocabulary is evident throughout the canon of classical ballets in which female dancers are expected to exhibit grace, appearing light and delicate, while male dancers exhibit strength, force, and power. To this end, Aalton (2004) writes:

The masculinity and femininity that is enacted through the bodies of male and female dancers can be seen as a reiteration and reproduction of cultural norms that assign strength and independence to men and weightlessness and passivity to women. (p. 270)

What is perhaps most interesting for the purposes of this discussion is the fact that gender specific expectations during training reach beyond the obvious—appearance and physical training—and often extend to the manner in which students are expected to behave in the dance studio. When analyzing the accepted etiquette within the process of ballet class, gender is constructed and performed in several ways. In traditional ballet classes, boys are trained to perform behaviors that serve as an early effort to establish the male role of the cavalier in classical ballet. Although male and female students might be mixed together during *barre* work, when center work begins usually segregation occurs. When students establish themselves in lines, male students are generally expected to assume the back line. When exercises are practiced in groups, the male

students are usually expected to dance last. In addition, when portable *barres* are used for a class, the male students are commonly expected to remove the *barres* after the warm-up is complete. While this behavior may be defended as gentlemanly, the expectation of the behavior reflects the manner in which the male dancer often is portrayed as the protector, the stronger sex, a masculine hero in the classical ballet canon...or in a much more mundane sense, the guy that carries things around—be they *barres* or ballerinas.

## CONCLUSION

By focusing on common practices of gendered expectations, we see traditional approaches to ballet training reiterating a bipolar notion of gender and inscribe gendered behaviors on young bodies. However, when considering contemporary notions of the body/mind as fluid rather than separate entities, it becomes apparent that the expectations for the performance of opposing genders is an actual, but sometimes hidden, part of the ballet curriculum. If we accept the notion that knowledge construction is always an embodied experience, then the ways we are informed about ourselves through repeated gendered practices, especially as young children, become instrumental in how we learn our value, our identities, and our place in society. In a society that accepts, or at least is beginning to accept, gender as a spectrum, educators must respond and adapt. Butler (2004) argues that if gender is indeed constructed, then it is “capable of being constructed differently” (p. 188). Rather than reproducing a historical situation of gender, educators must acknowledge that reinforcing outdated gender roles is an act of domination. To promote awareness and sensitivity to gender as constructed and performed rather than innate, educators might apply contemporary educational philosophies, like those of critical feminist pedagogy, to their education approaches.

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# THE PHYSICAL PRACTICE OF DANCE AND SPORT AS CULTURAL EXPRESSION

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## Abstract

Dance and sport are both considered prehistoric forms of human physical activity. Cultural scholars agree that values and belief systems may be reflected through physical practice and the way individuals within a culture move. Given the current situation of globalization, in which various cultures mix with historically unprecedented regularity, the study of cultural dances and sport activities might inform us about those cultures. Perhaps, much in the same vein as de Coubertin attempted to use sport as a means to bridge cultural differences through the Olympic movement, the sharing of cultural dance and sport might encourage harmony among those with vastly differing cultural backgrounds. This manuscript explores ways in which connections between physical cultural practices of dance and sport have historically reflected cultural values, thereby providing an additional perspective for the importance of human physical activity as a means of studying and understanding human culture.

## INTRODUCTION

Dance and sport are cultural phenomena. Both involve the medium of bodily movement and require a certain level of athleticism, permeate all levels of society, and hold deep cultural meanings. Thus, the physical practices of dance and sport can, and do, serve as a means of cultural expression. In this manuscript, we attempt to delve into the means of cultural expression via sport and dance, especially as these physical activities relate to the principle of Olympism, and how sport and dance, often in tandem, are representative of culture through physical practice.

The Olympic Games are the largest sporting event in the world. In 2016 at Rio de Janeiro, over 11,000 athletes representing 207 countries competed in the XXXI Olympiad (IOC, n.d., a). One of the main purposes of the Olympic Games is to promote international relations as well as cultural awareness. In fact, the principle of *Olympism* is defined thus:

Olympism is a philosophy of life, exalting and combining in a balanced whole the qualities of body, will and mind. Blending sport with culture and education, olympism seeks to create a way of life based on the joy found in effort, the educational value of good example and respect for universal fundamental ethical principles. (IOC, n.d., b)

The founder of the modern Olympic Games, Baron Pierre de Coubertin, coined the term Olympism in 1896. The fundamental premise of Olympism is “blending sport with culture...” to build a better world (IOC, n.d., b, p. 11). The Olympic Games are meant to bring about cultural awareness and to build camaraderie among the athletes. Interestingly, dance can be viewed in this very same vein. Dance is a culture's way of communicating its values, beliefs, and heritage. But, what specifically is culture? And, how are a culture's values represented through cultural practices?

### **Culture, Ideology, Tradition, and Orature**

Cultural identities are constructed through a myriad of experiences, social interactions, and shared practices. For our discussion concerning culture, we draw primarily from two authors, Williams (1976) and Hutnyk (2006), who, interestingly, both wrote works entitled “Culture.” Williams, in his attempts to articulate the origin and evolution of meanings of the word *culture*, admits that it is one of the most complex and complicated words in the English language. However, he manages to list three broad definitions of *culture* as a noun; the definition that most closely connects to this discussion asserts that the term *culture* “indicates a particular way of life, whether of people, a period, a group, or humanity in general” (p. 90). Thirty years after Williams published his chapter on *culture*, Hutnyk, an anthropologist, re-addressed the manner in which we use the term, particularly in light of scholarly usages. Perhaps a reflection of Hutnyk's postmodern perspective—a perspective in which decentering is encouraged—Hutnyk concurs with Williams's opinion concerning the difficulty of pinning down a clear and simple definition. Hutnyk writes, “any easy model of culture is delusional in its simplicity” and “is so fragile it should immediately be toppled” (p. 351). Problematizing the concept of culture even further, Hutnyk argues that in scholarly circles, the term is often a matter of interpretation.

So, we acknowledge that the term culture in and of itself is problematic. Thus, for our purposes within this paper, we use the term *culture* as it is defined simply by the Cambridge English Dictionary (n.d.): “The way of life of a particular people, esp. as shown in their ordinary behavior and habits, their attitudes toward each other, and their moral and religious beliefs.”

Any discussion of culture also must include discussion of ideology, for the concepts of culture and ideology are linked closely. Some might argue that a specific culture would not exist without its defining ideological pillars. Althusser's (2001) theories surrounding ideology are relevant here. Ideological systems exist ubiquitously throughout cultural practice, and these ideological threads weave throughout the ways in which cultural identities are constructed. As a

means of instilling common beliefs, groups of individuals that self-identify as members of a specific culture or community share traditions that fulfill significant ideological functions.

This brings us to the notion of *tradition*. Hobsbawm (2012) argues that tradition is manufactured; traditions, as sets of practices that are symbolic or ritualistic in nature, are invented with the purpose of perpetuating “certain values and norms of behavior by repetition, which automatically implies continuity with the past” (p. 1). So *tradition* might be defined as a set of repeated practices, valued by a culture, which fulfill specific ideological functions.

Roach (1995) asserts that, in the continued study of language and culture, there are a multitude of cultural texts that are not written, but living. He asserts that *orature*, which he defines as a “range of cultural forms invested in speech, gesture, song, dance, storytelling, proverbs, customs, rites, and rituals,” must be combined with literature for a true representation of a cultural or a historical reality. Insisting that literature and these other practices “have produced one another interactively over time,” (p. 45) Roach argues for the importance of both and gives a compelling rationale for studying cultural practices beyond what is written in the literature. Additionally, Taylor (2003) argues that the body is a living archive of culture...and this supports our argument that physical practices, such as in dance and sport, can be analyzed as a means of reflecting cultural ideologies.

### **Examples of Dance and Sport as Cultural Expression**

Consider the Māori’s haka or Brazil’s capoeira as excellent example of physical practices that might be considered dance or sport or a combination of the two as cultural expression. The physical practice of dance and sport, often working in tandem such as with the haka and capoeira, are interesting examples of culture being displayed through the medium of physical activity.

The haka is a traditional “war dance” that originated with the Māori of Aotearoa, or modern-day New Zealand. The haka is a group dance, characterized by physical posturing, the stamping of the feet, rhythmic shouting, and vigorous movements and facial expressions. The traditional purpose of the haka was to be a signal that warriors going into battle were strong and were ready to enter into battle. It served as a means of intimidation and was performed by men only.

Haka today are performed still mostly by men, but a few involve women and even children (Te Kete Ipurangi, n.d.). Today, haka are performed for numerous reasons such as welcoming dignitaries, recognizing great achievements or significant occasions as well as at funerals in honor of the departed.

With respect to sport, the haka is now recognized around the world because many of New Zealand's sporting teams perform a haka before athletic contests. One of the most famous athletic teams to popularize the haka is New Zealand's national rugby union team, the All Blacks. These performances are viewed as a source of national pride and are the perfect example of sport, working in tandem with dance, as a true measure of cultural expression. An excellent example of differing Polynesian war dances, or haka, can be seen in this stunning video of the Tongan and New Zealand rugby union teams performing war dances before a rugby match in 2015.

<https://www.youtube.com/watch?v=GyZEUeAoFKE>

Capoeira is considered part of the “intangible cultural heritage” of Brazil by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). Specifically, the “capoeira is an Afro-Brazilian cultural practice—simultaneously a fight and a dance—that can be interpreted as a tradition, a sport and even an art form.” Capoeira originated from the Brazilian slave trade roughly some 500 years ago. Its history was one of oral traditions, passed from one generation to another, and involved a mix of various African cultures, to include dance, food, sport, and other rituals. Today, capoeira, a once outlawed activity of “physical and spiritual empowerment” is viewed as a cultural phenomenon and a national sport (Capoeira Brasil, n.d.).

Capoeira is a Brazilian martial art that combines elements of dance, acrobatics, and music, usually referred to as a game. Considered by some as a symbol of the Brazilian culture and a symbol of resistance to oppression, capoeira definitely changed its image and became a source of pride to Brazilian people. An example of capoeira may be seen in this video clip from a film titled *Slave to the Rhythm*.

<https://www.youtube.com/watch?v=6H0D8Valli0>

## CONCLUSION

While these are only two examples, once we begin to consider physical practices such as dance and sport as cultural expression, we realize the opportunities for investigation are endless. One might explore the implied cultural beliefs concerning gender based on the fact that both the haka and capoeira are traditionally performed by men. Consequently, how might this exploration differ when investigating forms that are traditionally performed only by women, such as the Indian classical dance form of Bharatanatyam? What might these gendered performance practices imply about the cultures that created and perpetuate them? Scrutinizing the physical practices of different

cultures reveals ideological structures that may otherwise be unapparent, which in turn leads us toward de Coubertin's goal of cultural understanding.

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# **A STUDY ON VIOLENT CRIMES TO CHINESE ABROAD STUDENTS AND THEIR SELF-DEFENSE**

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## **Abstract**

The purpose of the study was to investigate violent crimes targeted at Chinese students studying abroad in different countries and self-defense behaviors of these students during attacks. It was expected that the findings of this research be used as a scientific base for designing self-defense curricula for these students and for all Chinese universities. The research analyzed all reported 106 women cases and 89 men cases from all sources of media during 2000-2016 years, based on six categories: murder, rape, aggravated assault, robbery, kidnapping, and bullying. The results indicated that USA had highest number of violent crimes to Chinese abroad students. Most victims were attacked by single attacker and some by two attackers. Violent crimes happened to Chinese abroad students in all academic status, including high school, under graduate, master, and doctoral programs. Attackers included strangers, former or current dates, classmates, and roommates. Weapons used by attackers included knives, blunt objects, and guns. The barehanded attacks included mainly kicks, punches, chokes, and throws. The attacking pattern used commonly was sudden attacks. The main triggering factors of violent crimes included date-oriented problems, arguments and conflicts, rape and robbery oriented, and hate. Self-defense behaviors showed in a few cases. The results suggested formal self-defense education, utilizing the findings of this research as a base for self-defense curriculum design, for Chinese abroad students and Chinese universities.

## **INTRODUCTION**

There has been a rapid increase of Chinese abroad students in recent years, and the population has reached nearly 300 thousand in the USA. However, the violent crimes targeted at these students also caused significant fear among these students and their parents; the child is the center of each Chinese family as a tradition and the one-child policy makes the only-child the only hope in each family (Chen, 2011). Unfortunately, Most Chinese students have not taken any self-defense courses in China before they went abroad (Chen, 2015a). This research concerns the safety of all Chinese abroad students and the reassurance of their families in China.

## **RESEARCH METHOD**

Content analysis was used in this study to collect cases and analyze the data. The research collected 106 women cases and 89 men cases from all available sources of media (internet, newspapers, books, magazines, etc.) mainly during 2000-2016 years, and those were all reported worldwide cases that the author could collect. Analysis was based on the four categories classified by Uniform Crime Report (2015): murder, rape, aggravated assault, and robbery. Two categories that the Chinese parents also worry, kidnapping and bully, were added.

The case reports showed a wide range of information. Some reports provided all details while some only had several sentences. Therefore, the numbers showed in tables represented only reported data. The results were reported based several aspects:

1. Countries and years of cases.
2. Age, gender, status, victims in each case, relationship with attacker, and consequence.
3. Attacker's gender, number, status.
4. Location, time, pattern, weapon, tricks in attacks.
5. Triggering factor, and self-defense behaviors

## **RESULTS AND DISCUSSION**

### **Cases in Countries and Years**

The results in Table 1 indicated that violent crimes occurred to male and female Chinese abroad students in all countries where they were studied. There were more cases in several countries but not all of the six types of crimes occurred in all countries. For female students, the USA had the highest number of cases and all six types of crimes occurred in the USA. Murder was the leading threat and bullying was the least for female Chinese abroad students. Rape, aggravated assault, robbery, and kidnapping showed similar numbers of cases. For male students, the USA had the highest number of cases and four types of crimes occurred in the USA. Murder was the leading threat and aggravated assault was the second. Robberies and kidnaps were equal in numbers of cases, while no rapes or bullies were reported. The following countries were not included in data collection for males: Italy, New Zealand, South Africa, and Sweden.

Table 1. *Cases of Male and Female Students in Different Countries*

| Country       | Murder |    | Rape |    | Aggravated Assault |    | Robbery |    | Kidnaping |    | Bullying |   | Total |     |
|---------------|--------|----|------|----|--------------------|----|---------|----|-----------|----|----------|---|-------|-----|
|               | M      | F  | M    | F  | M                  | F  | M       | F  | M         | F  | M        | F | M     | F   |
| Australia     | 4      | 8  | -    | 2  | 4                  | 2  | 2       | 5  | 1         | 3  | -        | - | 11    | 20  |
| Canada        | 7      | 7  | -    | 2  | 1                  | 1  | -       | 1  | 2         | 1  | -        | - | 10    | 12  |
| France        | 1      | 1  | -    | -  | 1                  | 2  | 1       | -  | -         | -  | -        | - | 3     | 3   |
| Germany       | 3      | 2  | -    | -  | 3                  | -  | -       | -  | -         | -  | -        | - | 6     | 2   |
| Great Britain | 2      | 5  | -    | -  | 4                  | 1  | 1       | -  | -         | 1  | -        | - | 7     | 7   |
| Italy         | -      | 1  | -    | -  | -                  | -  | -       | -  | -         | -  | -        | - | -     | 1   |
| Japan         | 8      | 5  | -    | 2  | 4                  | 2  | -       | -  | -         | -  | -        | - | 12    | 9   |
| Malaysia      | 3      | 1  | -    | 1  | 1                  | -  | -       | -  | -         | 1  | -        | - | 4     | 3   |
| New Zealand   | -      | 1  | -    | -  | -                  | 1  | -       | -  | -         | -  | -        | - | -     | 2   |
| Norway        | 1      | 1  | -    | -  | -                  | -  | -       | -  | -         | -  | -        | - | 1     | 1   |
| Russia        | -      | -  | -    | -  | 7                  | 1  | -       | -  | -         | -  | -        | - | 7     | 1   |
| South Africa  | -      | -  | -    | -  | -                  | -  | -       | 1  | -         | 1  | -        | - | -     | 2   |
| South Korea   | 1      | 3  | -    | -  | -                  | -  | -       | -  | -         | -  | -        | - | 1     | 3   |
| Spain         | -      | -  | -    | -  | -                  | -  | 1       | 1  | -         | -  | -        | - | 1     | 1   |
| Sweden        | -      | 1  | -    | -  | -                  | -  | -       | -  | -         | -  | -        | - | -     | 1   |
| Ukraine       | 1      | 1  | -    | -  | -                  | -  | -       | -  | -         | -  | -        | - | 1     | 1   |
| USA           | 15     | 24 | -    | 4  | 4                  | 2  | 2       | 2  | 4         | 4  | -        | 1 | 25    | 37  |
| Total         | 46     | 64 | 0    | 11 | 29                 | 12 | 7       | 10 | 7         | 11 | 0        | 1 | 89    | 106 |

The results in Table 2 showed that violent crimes occurred to male and female Chinese abroad students in all 17 years studied. There was no obvious trend of increasing or decreasing case numbers in these years. It seems that becoming victims of violent crimes is always a part of life of Chinese abroad students, even though the chance can be very small.

Table 2. *Cases of Male and Female Students in Different Years*

| Year        | Murder |    | Rape |    | Aggravated Assault |    | Robbery |    | Kidnaping |    | Bullying |   | Total |     |
|-------------|--------|----|------|----|--------------------|----|---------|----|-----------|----|----------|---|-------|-----|
|             | M      | F  | M    | F  | M                  | F  | M       | F  | M         | F  | M        | F | M     | F   |
| 2016        | 5      | 7  | -    | 1  | 3                  | 1  | 2       | 1  | -         | -  | -        | - | 10    | 20  |
| 2015        | 3      | 5  | -    | 2  | 1                  | 2  | 2       | 3  | 1         | 3  | -        | 1 | 7     | 12  |
| 2014        | 1      | 2  | -    | -  | -                  | 0  | 1       | -  | 1         | -  | -        | - | 3     | 3   |
| 2013        | 3      | 4  | -    | -  | 1                  | 2  | -       | -  | 1         | -  | -        | - | 5     | 2   |
| 2012        | 3      | -  | -    | -  | 2                  | 3  | -       | 1  | -         | 1  | -        | - | 5     | 7   |
| 2011        | 3      | 2  | -    | -  | -                  | -  | -       | -  | 1         | 2  | -        | - | 4     | 1   |
| 2010        | -      | 2  | -    | 3  | 2                  | 1  | 1       | 1  | -         | -  | -        | - | 3     | 9   |
| 2009        | 3      | 8  | -    | 1  | 5                  | 1  | -       | 1  | 2         | 2  | -        | - | 10    | 3   |
| 2008        | 5      | 6  | -    | -  | 3                  | 1  | -       | 1  | -         | -  | -        | - | 8     | 2   |
| 2007        | 1      | 2  | -    | -  | 2                  | 1  | -       | 1  | 1         | 1  | -        | - | 4     | 1   |
| 2006        | 7      | 4  | -    | -  | 7                  | -  | -       | -  | -         | -  | -        | - | 14    | 1   |
| 2005        | 5      | 5  | -    | -  | 3                  | -  | -       | 1  | -         | 1  | -        | - | 8     | 2   |
| 2004        | 2      | 3  | -    | 1  | -                  | -  | -       | -  | -         | -  | -        | - | 2     | 3   |
| 2003        | 1      | 3  | -    | -  | -                  | -  | 1       | -  | -         | 1  | -        | - | 2     | 1   |
| 2002        | 1      | 3  | -    | 1  | -                  | -  | -       | -  | -         | -  | -        | - | 1     | 1   |
| 2001        | 2      | 4  | -    | 1  | -                  | -  | -       | -  | -         | -  | -        | - | 2     | 1   |
| 2000/before | 1      | 1  | -    | 1  | -                  | -  | -       | -  | -         | 1  | -        | - | 1     | 37  |
| Total       | 46     | 61 | 0    | 11 | 29                 | 12 | 7       | 10 | 7         | 11 | 0        | 1 | 89    | 106 |

## Victim Age, Gender, Status, Number, Relationship, and Consequence

The results in Table 3 indicated that about 82% of female students were attacked when they were alone. This result reminds female students the danger of staying alone in a foreign country for school. However, 15% female students became victims of violent crimes even though they were staying with a partner, including a male partner. Male students showed similar pattern as female students, with 72% of male students were attacked when they were alone, and 20% became victims of violent crimes even though they were staying with a partner. In some cases, they were attacked even when they stayed with a small group of people.

Table 3. *The Number of Male and Female Victims in Each Case*

| Victim number | Murder |    | Rape |    | Aggravated Assault |    | Robbery |    | Kidnaping |   | Bullying |   | Total |     |
|---------------|--------|----|------|----|--------------------|----|---------|----|-----------|---|----------|---|-------|-----|
|               | M      | F  | M    | F  | M                  | F  | M       | F  | M         | F | M        | F | M     | F   |
| 1 Victims     | 32     | 49 | -    | 10 | 20                 | 9  | 6       | 12 | 7         | 9 | -        | 1 | 65    | 90  |
| 2 Victims     | 16     | 11 | -    | -  | 3                  | 3  | -       | 3  | -         | - | -        | - | 19    | 17  |
| 3 Victims     | -      | -  | -    | 1  | 2                  | -  | 1       | -  | -         | - | -        | - | 3     | 1   |
| 4 and more    | -      | 1  | -    | -  | 2                  | -  | 6       | 1  | -         | - | -        | - | 3     | 2   |
| Total         | 48     | 61 | -    | 11 | 27                 | 12 | 8       | 16 | 7         | 9 | 0        | 1 | 90    | 110 |

The results in Table 4 showed that both female and male students can become victims at any ages. Older students may have more experience in their life, but not necessarily on prevention and handling of violent crimes.

Table 4. *Ages Range of Male and Female Students*

| Age range | Murder |    | Rape |   | Aggravated Assault |   | Robbery |   | Kidnaping |   | Bullying |   | Total |    |
|-----------|--------|----|------|---|--------------------|---|---------|---|-----------|---|----------|---|-------|----|
|           | M      | F  | M    | F | M                  | F | M       | F | M         | F | M        | F | M     | F  |
| 16-17     | -      | 3  | -    | - | -                  | - | -       | - | -         | 2 | -        | - | -     | 5  |
| 18-19     | 1      | 4  | -    | 4 | 4                  | 2 | 1       | 2 | 1         | 1 | -        | - | 7     | 13 |
| 20-21     | 3      | 6  | -    | - | 1                  | 2 | -       | - | 2         | 3 | -        | - | 3     | 11 |
| 22-23     | 2      | 8  | -    | - | 2                  | 1 | -       | - | -         | - | -        | 1 | 5     | 10 |
| 24-29     | 12     | 13 | -    | - | 7                  | - | 1       | 1 | -         | 1 | -        | - | 5     | 15 |
| 30+       | 6      | 6  | -    | 1 | 1                  | 1 | 2       | - | -         | - | -        | - | 4     | 8  |
| Unknown   | 23     | 21 | -    | 5 | 16                 | 6 | 3       | 6 | 4         | 3 | -        | - | 3     | 41 |

The results in Table 5 indicated that female students of any academic status can become victims, no matter they were in high school, undergraduate programs, or graduate programs. Doctoral students cannot be excluded.

Table 5. *Academic Status of Male and Female Students*

| Status        | Murder |    | Rape |   | Aggravated Assault |    | Robbery |   | Kidnaping |   | Bullying |   | Total |    |
|---------------|--------|----|------|---|--------------------|----|---------|---|-----------|---|----------|---|-------|----|
|               | M      | F  | M    | F | M                  | F  | M       | F | M         | F | M        | F | M     | F  |
| High school   | -      | 3  | -    | - | -                  | 2  | -       | 4 | -         | 1 | -        | 1 | -     | 11 |
| College fresh | -      | 3  | -    | 4 | -                  | 1  | -       | 1 | -         | 2 | -        | 2 | -     | 13 |
| Sophomore     | 2      | -  | -    | - | 1                  | 1  | -       | - | -         | 2 | -        | 1 | 3     | 3  |
| Junior        | -      | 1  | -    | - | 1                  | -  | -       | - | -         | - | -        | - | 1     | 1  |
| Senior        | 1      | 2  | -    | - | 1                  | -  | 1       | - | -         | - | -        | - | 3     | 2  |
| Unknown       | 24     | 30 | -    | 6 | 20                 | 10 | 7       | 9 | 7         | 6 | -        | 6 | 58    | 67 |
| Master        | 14     | 15 | -    | - | 1                  | -  | -       | - | -         | - | -        | - | 15    | 15 |
| Doctor        | 4      | 3  | -    | 1 | 3                  | -  | -       | - | -         | - | -        | - | 7     | 4  |

The results in Table 6 indicated that the death rate was very high for female and male students when they were attacked. The chance of becoming disabled or suffering light or severe injuries was very high for both male and female students too. The chance of rape (possibly of getting AIDS or STD) was also a threat to female students. Very few female students escaped safely when they were attacked.

Table 6. *Consequences to male and Female Students*

| Consequence               | Murder |    | Rape |   | Aggravated Assault |   | Robbery |   | Kidnaping |   | Bullying |   | Total |    |
|---------------------------|--------|----|------|---|--------------------|---|---------|---|-----------|---|----------|---|-------|----|
|                           | M      | F  | M    | F | M                  | F | M       | F | M         | F | M        | F | M     | F  |
| Death                     | 45     | 52 | -    | - | 2                  | - | -       | - | 1         | - | -        | - | -     | 52 |
| Severe injury or disabled | 5      | 7  | -    | - | 12                 | 4 | 2       | 1 | -         | 1 | -        | 1 | -     | 14 |
| Light injury              | -      | 2  | -    | - | 17                 | 9 | 2       | 5 | 4         | - | -        | - | 3     | 16 |
| Raped                     | -      | -  | -    | 7 | -                  | - | 3       | - | 2         | - | -        | - | 1     | 7  |
| Molested                  | -      | -  | -    | 3 | -                  | - | -       | - | -         | - | -        | - | 3     | 3  |
| No injury                 | -      | -  | -    | 1 | -                  | - | -       | 2 | -         | 1 | -        | - | 58    | 4  |
| Unknown                   | -      | -  | -    | - | -                  | - | -       | 1 | -         | 9 | -        | - | 15    | 10 |

### **Attacker's Number, Gender, and Identity**

The results in Table 7 indicated that more attackers were acting alone when they attacked female and male students, even though victims may have had a partner. However, multiple attackers occurred often to both female and students as well. The results in Table 8 indicated that most attackers were males. This is similar to crime statistics in United States according to Uniform Crime Report (2015).

Table 7. *Numbers of Attackers in Each Case to Male and Female Students*

| Number of attacker   | Murder |    | Rape |    | Aggravated Assault |   | Robbery |   | Kidnaping |   | Bullying |   | Total |    |
|----------------------|--------|----|------|----|--------------------|---|---------|---|-----------|---|----------|---|-------|----|
|                      | M      | F  | M    | F  | M                  | F | M       | F | M         | F | M        | F | M     | F  |
| 1-on-1               | 20     | 37 | -    | 10 | 8                  | 6 | 3       | 4 | -         | 1 | -        | 1 | 31    | 59 |
| 1-om-2               | 9      | 10 | -    | -  | -                  | 2 | -       | 2 | -         | - | -        | - | 9     | 14 |
| 1-om-multiple        | 2      | 3  | -    | -  | 2                  | - | -       | - | -         | - | -        | - | 4     | 3  |
| 2-on-1               | 2      | 4  | -    | -  | 1                  | - | 1       | 2 | 3         | 1 | -        | - | 7     | 7  |
| Multiple-on-1        | 9      | 1  | -    | -  | 13                 | 3 | 2       | 2 | 4         | 1 | -        | 1 | 28    | 8  |
| Multiple-on Multiple | 1      | -  | -    | -  | 3                  | 1 | 1       | 1 | -         | - | -        | - | 5     | 2  |
| Unknown              | 4      | 6  | -    | 1  | -                  | - | -       | - | -         | 7 | -        | - | 4     | 14 |

Table 8. *Genders of Attackers*

| Gender          | Murder | Rape | Aggravated Assault | Robbery | Kidnaping | Bullying | Total     |
|-----------------|--------|------|--------------------|---------|-----------|----------|-----------|
| Male attacker   | 92     | 12   | 34                 | 19      | 9         | -        | 166 90.7% |
| Female attacker | 3      | -    | 9                  | 2       | 2         | 1        | 17 9.3%   |

The results in Table 9 demonstrated that although female students may be attacked by anyone, strangers (attackers) were the top threat to female students. Surprisingly, the second top group of attackers were their current or ex boyfriends or dates. For some, the closest boyfriends or dates became the most dangerous attackers to female students. Classmates or family members/relatives can be dangerous, too, if these female students cannot handle the relationship well. Strangers, classmates/roommates, and terrorists represented the main attackers to male Chinese abroad students even though they may be attacked by anyone. Like female students, these male students also need to learn how to prevent and handles all different types of potential attackers.

**Location, Time, Pattern, Weapon, and Tricks in Attacks**

The results in Table 10 indicated that attacks can occur anytime to both male and female Chinese abroad students. The daytime and dark time can be equally dangerous to male and female students, and the awareness for safety should be on all time.

The results in Table 11 showed that attacks occurred to both male and female students at various locations. Among these locations, the dorm/apartment and street can be the most dangerous places for both male and female students.

Table 9. *Identity of Attackers to Male and Female Students*

| Identity                   | Murder |    | Rape |   | Aggravated Assault |   | Robbery |    | Kidnaping |   | Bullying |   | Total |    |
|----------------------------|--------|----|------|---|--------------------|---|---------|----|-----------|---|----------|---|-------|----|
|                            | M      | F  | M    | F | M                  | F | M       | F  | M         | F | M        | F | M     | F  |
| Stranger                   | 16     | 24 | -    | 3 | 8                  | 8 | 5       | 10 | 1         | 2 | -        | - | 30    | 47 |
| Lover/<br>spouse/ex        | 2      | 16 | -    | - | -                  | 2 | -       | -  | -         | - | -        | - | 2     | 18 |
| Classmate/<br>roommate     | 10     | 4  | -    | 2 | 8                  | - | -       | -  | 1         | - | 1        | - | 20    | 8  |
| Family/<br>relatives       | 1      | 5  | -    | - | -                  | - | -       | -  | -         | - | -        | - | 1     | 5  |
| Gang/terrorist             | 2      | 3  | -    | - | 11                 | 2 | 2       | -  | -         | - | -        | - | 15    | 5  |
| Colleague/<br>coworker     | 1      | 1  | -    | 1 | 2                  | - | -       | -  | 1         | - | -        | - | 3     | 2  |
| Boss/landlord              | -      | -  | -    | 2 | 1                  | - | -       | -  | -         | - | -        | - | 1     | 2  |
| Internet/<br>advertisement | -      | -  | -    | 1 | -                  | - | -       | -  | 2         | - | -        | - | 2     | 1  |
| Known                      | 2      | -  | -    | - | -                  | - | -       | -  | 1         | - | -        | - | 3     | -  |
| Police                     | 3      | -  | -    | - | 2                  | - | -       | -  | -         | - | -        | - | 5     | -  |
| Professor                  | -      | -  | -    | 2 | -                  | - | -       | -  | -         | - | -        | - | -     | 2  |
| Unknown                    | 8      | 7  | -    | - | -                  | - | -       | -  | -         | 8 | -        | - | 8     | 15 |

Table 10. *Time Factor in Attacks to Male and Female Students*

| Time factor | Murder |    | Rape |   | Aggravated Assault |   | Robbery |   | Kidnaping |   | Bullying |   | Total |    |
|-------------|--------|----|------|---|--------------------|---|---------|---|-----------|---|----------|---|-------|----|
|             | M      | F  | M    | F | M                  | F | M       | F | M         | F | M        | F | M     | F  |
| Day time    | 14     | 14 | -    | 6 | 13                 | 7 | -       | 4 | 3         | 3 | -        | - | 30    | 34 |
| Dark time   | 16     | 22 | -    | 3 | 11                 | 3 | 7       | 5 | 2         | 1 | -        | - | 36    | 34 |
| Unknown     | 17     | 19 | -    | 1 | 3                  | 1 | 1       | - | 2         | 2 | -        | - | 23    | 23 |

Table 11. *Locations of Attacks to Male and Female Students*

| Location                    | Murder |    | Rape |   | Aggravated Assault |   | Robbery |   | Kidnaping |   | Bullying |   | Total |    |
|-----------------------------|--------|----|------|---|--------------------|---|---------|---|-----------|---|----------|---|-------|----|
|                             | M      | F  | M    | F | M                  | F | M       | F | M         | F | M        | F | M     | F  |
| Dorm/apartment              | 2      | 16 | -    | 1 | -                  | 2 | -       | - | -         | - | -        | - | 2     | 18 |
| Street                      | 11     | 12 | -    | 2 | 8                  | 5 | 2       | 5 | 1         | 3 | -        | - | 22    | 26 |
| Campus                      | 3      | 2  | -    | 3 | 6                  | 1 | 1       | - | -         | 1 | -        | - | 10    | 7  |
| Transportation              | 1      | 2  | -    | - | -                  | 4 | 3       | 1 | -         | - | -        | - | 4     | 7  |
| Park/wood                   | -      | 2  | -    | 1 | -                  | - | -       | 1 | 1         | - | -        | 1 | 1     | 5  |
| Workplace                   | 2      | 2  | -    | 2 | 2                  | - | -       | - | -         | - | -        | - | 4     | 4  |
| Entertainment/<br>shop/dine | 5      | 4  | 6    | - | -                  | - | -       | - | 2         | - | -        | - | 11    | 4  |
| Taxi/other car/<br>driving  | -      | 3  | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | 3  |
| Unknown                     | 6      | 6  | -    | - | -                  | 1 | -       | - | -         | 5 | -        | 0 | 8     | 12 |

Understanding attacking patterns and weapons should be a base for designing self-defense curriculum for these students. The results in Table 12 indicated several characteristics of attacking patterns to female students. Sudden attacks occurred to about 25% of female students before they had a chance to defend themselves. The most used weapons on attacks to female students were knives, seconded was blunt subjects, and followed up by firearms and pepper spray.

Among barehanded attacks to female students, kicks and punches were the most used attacks, seconded with strangulations and chokes. Throws, hair-pulls, arm-holds, bear-hugs, and pushes were also used commonly by attackers when attacking female students. Attacking patterns and weapons used to attack male students were similar to that of female students. However, the firearms were used more than to male students.

Table 12. *Attacking Patterns and Weapons to Male and Female Students*

| Pattern/<br>weapon       | Murder |    | Rape |   | Aggravated<br>Assault |    | Robbery |   | Kidnaping |   | Bullying |   | Total |    |
|--------------------------|--------|----|------|---|-----------------------|----|---------|---|-----------|---|----------|---|-------|----|
|                          | M      | F  | M    | F | M                     | F  | M       | F | M         | F | M        | F | M     | F  |
| Sudden attack            |        | 11 |      | 2 |                       | 5  |         | 5 |           | 1 |          | - |       | 25 |
| Knife/axe                | 15     | 25 | -    | - | 9                     | 2  | 5       | 1 | 2         | - | -        | - | 31    | 29 |
| Firearm                  | 15     | 7  | -    | - | -                     | -  | 2       | 1 | 1         | - | -        | - | 18    | 8  |
| Blunt object             | 6      | 8  | -    | - | 7                     | 1  | -       | 2 | -         | - | -        | - | 13    | 11 |
| Stun gun                 | -      | -  | -    | - | -                     | -  | -       | - | 1         | - | -        | - | 1     | -  |
| Pepper spray             | -      | -  | -    | - | -                     | 1  | -       | 1 | -         | - | -        | - | -     | 2  |
| Fist/foot/<br>elbow/knee | 6      | 4  | -    | 0 | 25                    | 11 | 6       | 3 | 1         | 1 | -        | 1 | 38    | 20 |
| Strangulation/<br>choke  | 4      | 14 | -    | 1 | 4                     | 1  | 2       | 2 | 5         | - | -        | - | 15    | 18 |
| Throw-down               | 2      | 3  | -    | 1 | 9                     | 3  | 2       | - | -         | - | -        | - | 13    | 7  |
| Arm-hold                 | -      | 1  | -    | 2 | 2                     | 2  | 2       | - | 4         | 1 | -        | - | 8     | 6  |
| Bear-hug                 | -      | 1  | -    | 2 | 3                     | 1  | -       | - | 4         | 1 | -        | - | 7     | 5  |
| Hair-pull                | -      | 1  | -    | 1 | 2                     | 4  | 1       | - | 1         | - | -        | - | 4     | 6  |
| Floor attack             | 1      | 1  | -    | - | 1                     | -  | -       | - | -         | - | -        | - | 2     | 1  |
| Hit private              | -      | -  | -    | 1 | -                     | -  | -       | - | -         | - | -        | - | -     | 1  |
| Bite                     | -      | -  | -    | - | -                     | 1  | -       | - | -         | - | -        | - | -     | 1  |
| Car hit                  | 1      | -  | -    | - | -                     | 1  | -       | - | -         | - | -        | - | 1     | 1  |
| Arson                    | -      | 1  | -    | - | -                     | -  | -       | - | -         | - | -        | - | 1     | 2  |
| Poisoning                | -      | 1  | -    | - | -                     | -  | -       | - | -         | - | -        | - | -     | 1  |
| DMT drug                 | 1      | 1  | -    | - | -                     | -  | -       | - | -         | - | -        | - | 1     | 1  |
| Push down<br>from height | 1      | 2  | -    | - | -                     | -  | -       | 1 | -         | - | -        | - | 1     | 3  |
| Pour chemical            | -      | -  | -    | - | 1                     | -  | -       | - | -         | - | -        | - | 1     | -  |
| Throw object             | -      | -  | -    | - | 1                     | -  | -       | - | -         | - | -        | - | 1     | -  |
| Stripe clothe            | -      | -  | -    | - | -                     | -  | -       | - | -         | - | -        | 1 | -     | 1  |
| Other violence           | -      | -  | -    | - | -                     | -  | -       | - | -         | - | -        | 1 | -     | 1  |
| Unknown                  | 9      | 7  | -    | - | -                     | -  | -       | - | -         | 9 | -        | - | 9     | 16 |

### Triggering Factors and Self-Defense Behaviors

The results in Table 13 indicated that attackers tended to use some tricks to get these students into their traps before they started actual physical attacks. The tricks used included helping them to rent a room, shop, find jobs, make friends, or play together. However, they were not enough cases to find out a pattern, and there were not enough cases to identify the differences between male and female students. More research on this topic is suggested.



Table 13. *Tricks Used by Attackers on Male and Female Students*

| Trick             | Murder |   | Rape |   | Aggravated Assault |   | Robbery |   | Kidnaping |   | Bullying |   | Total |   |
|-------------------|--------|---|------|---|--------------------|---|---------|---|-----------|---|----------|---|-------|---|
|                   | M      | F | M    | F | M                  | F | M       | F | M         | F | M        | F | M     | F |
| Help find job     | -      | - | -    | - | -                  | - | -       | - | 1         | - | -        | - | 1     | - |
| Entertainment     | -      | - | -    | - | -                  | 3 | -       | - | 1         | - | -        | - | 1     | 3 |
| Help rend room    | 1      | 1 | -    | 1 | -                  | - | -       | - | -         | - | -        | - | 1     | 1 |
| Make friends      | 1      | - | -    | - | -                  | - | -       | - | -         | 1 | -        | - | 1     | 1 |
| Make conversation | -      | - | -    | - | -                  | - | -       | - | -         | 1 | -        | - | -     | 1 |
| Help buy cell     | -      | 1 | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | 1 |
| Help buy car      | 1      | - | -    | - | -                  | - | -       | - | -         | - | -        | - | 1     | - |
| Threat to report  | -      | - | -    | 1 | -                  | - | -       | - | -         | - | -        | - | -     | 1 |

The results in Table 14 indicated different groups of triggering factors that led to attacks to female students. , The leading triggering factor was related to dating relationships. The second main triggering factor were arguments/conflict, rape, and robbery. The third group of triggering factors included bullying foreigners, hate, opportunity, and financial issues. For male Chinese abroad students, robbery and resistance to robbery were the leading triggering factors to attacks. Arguments and conflicts were the second leading triggering factor to male students. The third triggering factor was bullying foreigners and hates.

Since arguments and conflicts were a main factor that triggered attacks to both male and female Chinese abroad students, it is necessary to investigate what caused arguments and conflicts started. Based on Uniform Crime Report (2015), arguments are the leading cause of murder in the United States. The leading cause of arguments was dating related issues to female students (Table 15). Hate, improper conversation, violent date/people, and asking for money constructed the second group of causes. Other causes included borrowing money or things but not returning, competitions, drunk, and accidents. Arguments and conflicts also led to attacks to male Chinese abroad students. Bad temper, habits of using physical language, financial conflicts, and disturbing others were the first group of causes. The second group of causes included more mental problems and accidents.

The results in Table 16 show self-defense behaviors of male and female students when attacked. Many students had no time or opportunity to defend themselves during attacks since attacks occurred suddenly. Most victims were killed or injured during their instinctive struggle or defense, more likely due to the lack of self-defense training in Chinese universities (Chen, 2015b). Scarifying the body, money, and freedom seemed to be an effective way to protect the life. The

effectiveness of running, yelling for help, or playing dead type of defense could not be investigated due to the lack of enough cases.

Table 14. *Triggering Factors for Attacks to Male Students*

| Triggering factor         | Murder |    | Rape |   | Aggravated Assault |   | Robbery |   | Kidnaping |   | Bullying |   | Total |    |
|---------------------------|--------|----|------|---|--------------------|---|---------|---|-----------|---|----------|---|-------|----|
|                           | M      | F  | M    | F | M                  | F | M       | F | M         | F | M        | F | M     | F  |
| Robbery                   | 11     | 9  | -    | 0 | 1                  | 0 | -       | 0 | 6         | 1 | -        | - | 18    | 10 |
| Argue/fight/conflict      | 6      | 7  | -    | - | 11                 | 3 | -       | - | -         | - | -        | - | 17    | 10 |
| Bullied as a foreigner    | 15     | -  | -    | 5 | -                  | 3 | 2       | 1 | 1         | - | -        | - | 18    | 9  |
| Hate                      | 1      | 5  | -    | - | 11                 | 2 | -       | - | -         | - | -        | - | 12    | 7  |
| Rape                      | -      | 9  | -    | - | -                  | - | -       | 1 | -         | - | -        | - | -     | 10 |
| Date/reject/breakup       | 3      | 14 | -    | - | -                  | 1 | -       | - | -         | 1 | -        | 1 | 3     | 17 |
| Resist robbery            | 2      | 1  | -    | - | 1                  | - | 1       | 1 | -         | - | -        | - | 4     | 3  |
| In a murder robbery       | 2      | 14 | -    | 1 | 1                  | 1 | -       | 2 | -         | - | -        | - | 3     | 18 |
| Violent law/arrested      | 1      | -  | -    | - | 2                  | - | -       | - | -         | - | -        | - | 3     | -  |
| Glance at                 | -      | -  | -    | - | 2                  | - | 1       | - | -         | - | -        | - | 3     | -  |
| Jealous                   | 2      | 1  | -    | - | -                  | - | -       | - | -         | - | -        | - | 2     | 1  |
| Financial issue           | 2      | 6  | -    | - | -                  | - | -       | - | -         | - | -        | - | 2     | 6  |
| On-site by chance         | 2      | -  | -    | - | -                  | - | -       | - | -         | - | -        | - | 2     | -  |
| Gave an opportunity       | -      | -  | -    | 5 | -                  | - | -       | 2 | -         | - | -        | - | -     | 7  |
| Attacker mental problem   | -      | 3  | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | 3  |
| Attacked wrong person     | -      | 1  | -    | - | -                  | 1 | -       | - | -         | - | -        | - | -     | 2  |
| Asked for direction       | -      | -  | -    | - | -                  | - | -       | 1 | -         | 1 | -        | - | -     | 2  |
| Terrorism                 | -      | 2  | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | 2  |
| Retaliation               | -      | -  | -    | - | -                  | 1 | -       | - | -         | - | -        | - | -     | 1  |
| Drunk/drug                | -      | -  | -    | - | -                  | 1 | -       | - | -         | - | -        | - | -     | 1  |
| Road rage                 | -      | 1  | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | 1  |
| Bump attacker by accident | -      | -  | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | 1  |
| Business conflict         | 1      | -  | -    | - | -                  | - | -       | - | -         | - | -        | - | 1     | -  |
| Picked by troublemaker    | 1      | -  | -    | - | -                  | - | -       | - | -         | - | -        | - | 1     | -  |
| Helped others             | -      | -  | -    | - | -                  | - | -       | - | 1         | - | -        | - | 1     | -  |
| Tricked on job hunting    | -      | -  | -    | - | -                  | - | -       | - | 1         | - | -        | - | 1     | -  |
| Unknown                   | 12     | 10 | -    | - | 1                  | - | -       | - | -         | 7 | -        | - | 12    | 17 |

Table 15. *Causes of Arguments and Conflicts among Male and female Students*

| Cause                                | Murder |    | Rape |   | Aggravated Assault |   | Robbery |   | Kidnaping |   | Bullying |   | Total |    |
|--------------------------------------|--------|----|------|---|--------------------|---|---------|---|-----------|---|----------|---|-------|----|
|                                      | M      | F  | M    | F | M                  | F | M       | F | M         | F | M        | F | M     | F  |
| Date issues/<br>romantic<br>triangle | 1      | 14 | -    | - | -                  | 1 | -       | - | -         | - | -        | - | 1     | 15 |
| Bad temper                           | 1      | -  | -    | - | 4                  | - | -       | - | 1         | - | -        | - | 5     | -  |
| Bad<br>conversation                  | -      | 3  | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | 3  |
| Hate                                 | 1      | 3  | -    | - | -                  | 1 | -       | - | -         | - | -        | - | -     | 4  |
| Violent<br>opponent                  | 3      | -  | -    | - | -                  | 2 | -       | 1 | -         | - | -        | - | 3     | 3  |
| Job/Financial<br>aid competition     | 3      | 1  | -    | - | -                  | - | -       | - | -         | - | -        | - | 3     | 1  |
| Ask money<br>from lover              | -      | 2  | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | 2  |
| Disturb others                       | 1      | -  | -    | - | 1                  | - | -       | - | -         | - | -        | - | 2     | -  |
| Borrow/take<br>but no return         | 1      | 1  | -    | - | -                  | - | -       | - | -         | - | -        | - | 1     | 1  |
| Got drunk                            | -      | -  | -    | - | -                  | 1 | -       | - | -         | - | -        | - | -     | 1  |
| Attacked by<br>mistake               | -      | 1  | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | 1  |
| Bump by<br>accident                  | -      | -  | -    | - | -                  | 1 | -       | - | -         | - | -        | - | -     | 1  |
| Lonely/isolate                       | 1      | -  | -    | - | -                  | - | -       | - | -         | - | -        | - | 1     | 1  |
| Jealous                              | 1      | -  | -    | - | -                  | - | -       | - | -         | - | -        | - | 1     | -  |
| A glance                             | -      | -  | -    | - | 1                  | - | -       | - | -         | - | -        | - | 1     | -  |
| Mis-understand                       | -      | -  | -    | - | 1                  | - | -       | - | -         | - | -        | - | 1     | -  |

Table 16. *Self-defense Behaviors of Male and Female Students Dealing with Attacks*

| Self-defense                        | Murder |    | Rape |   | Aggravated Assault |   | Robbery |   | Kidnaping |   | Bullying |   | Total |    |
|-------------------------------------|--------|----|------|---|--------------------|---|---------|---|-----------|---|----------|---|-------|----|
|                                     | M      | F  | M    | F | M                  | F | M       | F | M         | F | M        | F | M     | F  |
| No time for<br>defense              | 14     | 20 | -    | 1 | 13                 | 7 | 1       | 3 | 1         | - | -        | - | 28    | 31 |
| Failed struggle                     | 21     | 20 | -    | 2 | 12                 | 6 | 1       | - | 2         | - | 1        | - | 35    | 32 |
| Barehanded<br>defense<br>successful | -      | 1  | -    | - | 1                  | 1 | 1       | 1 | -         | - | -        | - | 2     | 3  |
| Equipment<br>defense<br>successful  | -      | -  | -    | - | 1                  | - | -       | - | -         | - | -        | - | 1     | -  |
| Ran succeed                         | -      | -  | -    | 1 | -                  | - | -       | - | 1         | - | -        | - | 1     | 1  |
| Failed defense                      | -      | 1  | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | 1  |
| Ran failed                          | -      | -  | -    | - | -                  | - | 1       | 1 | -         | - | -        | - | 1     | 1  |
| Yell for help<br>succeed            | -      | -  | -    | - | -                  | - | -       | - | -         | 1 | -        | - | -     | 1  |
| Obey &<br>survived                  | -      | -  | -    | 4 | -                  | - | 4       | 5 | 3         | 1 | -        | - | 7     | 10 |
| Obey failed                         | -      | -  | -    | 2 | -                  | 1 | 1       | - | -         | - | -        | - | 1     | 3  |
| Play death<br>survived              | -      | -  | -    | - | -                  | - | -       | - | -         | - | -        | - | -     | -  |
| Unknown                             | 11     | 16 | -    | - | 1                  | - | -       | - | 1         | 6 | -        | - | 13    | 22 |

## CONCLUSIONS

Violent crimes occurred to Chinese abroad students in almost all countries studied. Chinese abroad students of any ages and of any academic status may be attacked by strangers or someone they know, at any time and any locations. Many victims lost their lives, became permanently disabled or suffered severe injuries. The causes of attacks included date-related issues, arguments, and robberies and rapes. Attacking patterns and weapons used by attackers included sudden attacks, firearms, knives, blunt objects, and strong arms. Most victim failed to take any self-defense actions.

## APPLICATIONS AND SUGGESTIONS

Chinese students and their families should be aware of the potential danger of violent crimes and take self-defense education before these students go abroad for study. The design of self-defense curricula and instruction should be based on solid research regarding what these student needs. This research can serve as a solid base for self-defense curricula in Chinese high schools and universities where these students were preparing themselves for study abroad. A comprehensive self-defense education is absolutely needed for Chinese high schools and universities based on the wide range of violent crimes and physical attacks to Chinese abroad students. Short term training on self-defense will not be enough to prepare these students for study abroad.

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2017 Conference Abstracts

**Oral Presentations. Wednesday, October 11, 2017**

***Cardiac and Perceptual Responses to Performing Tandem Cardiopulmonary Resuscitation.***

Alex Shafer & Jacob, Montana State University Billings.

**Introduction:** It is a common recommendation in first response organizations that, if another certified individual is present, tandem cardiopulmonary resuscitation (CPR) should be used in an emergency. Information regarding the physiological and perceptual response of the human body in the act of performing Tandem-CPR relative to Solo-CPR is lacking. **Purpose:** The purpose of this investigation is to compare rescuer heart rate (HR), rating of perceived exertion (RPE), and CPR quality during Tandem-CPR and Solo-CPR. **Methods:** Thirteen healthy young adults (aged  $26.5 \pm 4.3$  yrs) volunteered to complete two 6-minute bouts of CPR during a single session. Values for HR and RPE were recorded using a Polar V800 HR monitor and Adult OMNI-RPE scale, respectively. A Laerdal Resusci-Anne CPR manikin was used to record compression scores (0-100%). **Results:** Significant differences in the HR and RPE responses exist between Tandem-CPR and Solo-CPR. Minute-HR values were significantly lower during Tandem-CPR for all 6 minutes of each bout. Sample mean HR per bout was significantly lower in Tandem-CPR than in Solo-CPR ( $111.2 \pm 16.8$  bpm vs.  $126.1 \pm 19.3$  bpm,  $p < 0.0001$ ). Peak RPE was significantly lower during Tandem-CPR compared to Solo-CPR ( $3.2 \pm 2.0$  bpm vs.  $5.0 \pm 2.5$  bpm,  $p < 0.05$ ). Compression scores were significantly higher for Tandem-CPR when compared to Solo-CPR ( $96 \pm 3\%$  vs.  $94 \pm 5\%$ ,  $p < 0.05$ ). **Conclusion:** Current findings call for a professional recommendation that tandem CPR be used when available, based on perception, performance, and physiological differences. This confirms professional guidelines. This study does not account for the anecdotally reported stress incited in CPR context; further research should examine this aspect.

***A comparison of video conferencing versus in-person health coaching approaches in combination with mHealth devices on weight loss, physical activity, and glycemic control.*** Kelly Johnson, University of Saint Mary.

**Objective:** Compare health coaching efficacy on weight loss, physical activity, and glycemic control between individualized video conferencing (VC), in-person (IP) and control (CG) groups of adults with high BMIs. **Methods:** Thirty adults ( $BMI \geq 30$  kg/m<sup>2</sup>) were randomly assigned to create three groups of 10 members each. Participants received a wireless accelerometer watch and body weight scale to synch with their personal smartphones and downloaded apps. Participants assigned to VC and IP received weekly health coaching individualized based on data uploaded over the 12-wk intervention. Steps/day and weight loss were analyzed via analyses of covariance (ANCOVA). Between-group ANOVAs analyzed post-intervention changes in weight (kg), glucose, HbA1c, and HOMA-IR. **Results:** VC's weight loss ( $8.80 \pm 3.5$ kg; 7.7%) was significant. Weight loss for IP and CG were similar at  $2.4 \pm 1.6$  kg and  $2.4 \pm 3.1$  kg (3.4 and 3.5%), respectively. Steps/day differed between VC and IP at week 4 and between VC and CG at weeks 6, 8, 9, and 11 ( $p \leq .05$ ). No between-group differences were found for any glycemic control markers. **Conclusions:** Individually-targeted video conferencing sessions with our multidisciplinary team (M.D., R.D. and exercise physiologist) is an effective approach for weight loss.

**Tech-App Exchange.** Bethany Shifflett, San Jose State University.

We all have our favorite applications and tech tools. Some are an integral part of all we do and quite often are the key to making life manageable. Come to this session to share your favorite and pick up some new tips. The facilitator will lead off with information about a text and/or Socrative and after that it's show and tell time. A great chance to learn from each other! Faculty with a resource they'd like to share information about, just sign up when you arrive. A 1-page information sheet about the software/ hardware/tool will be there for you to fill out so the information can be shared with all conference participants. Each person will have about 5 minutes to describe the resource and how they use it.

**Walking with a weighted exercise vest: How much weight do you really need?** Jeffrey Bernard, Christian O. Madrigal, Krystle K. Sanders, & Matthew Frazee, California State University, Stanislaus; Yi-Hung Liao, National Taipei University of Nursing and Health Sciences.

Exercising while wearing a weighted vest has become a popular way to increase exercise intensity. Although it is well documented that weighted vests do increase the effort of exercise, it is not clear how much weight should be applied. In the framework of the American College of Medicine (ACSM) recommendations, one should exercise at moderate intensity for at least 30 minutes 5 days per week. Therefore, the purpose of this study was to determine how much weight should be applied to a vest for one to achieve moderate intensity exercise (i.e. 40-50% VO<sub>2</sub>max) while walking on a treadmill. Ten recreationally active college-aged students performed a VO<sub>2</sub>max test to determine their level of fitness. Next, they completed 5 exercise bouts, randomized on separate days, which consisted of a 15 minute walk (3.1 mph) on a flat surface treadmill in which an exercise vest was either 1) unweighted, 2) loaded with 30%, 3) 40%, 4) 50%, or 5) 60% of body weight respectively. Heart rate, oxygen consumption, caloric expenditure, and metabolic equivalents were determined using a metabolic cart. Based on these metrics we found that a vest weighted to at least 50% of body weight was needed for recreationally active college students to achieve moderate intensity exercise while walking on a treadmill. Thus, it appears possible that one can walk with a weighted vest to meet the ACSM recommendations. However, further research is warranted to determine if this percentage of body weight can be applied to others modes of exercise.

**Evaluation of the Video-Based Virtual Exercise Physiology Laboratory.** Young Sub Kwon, Humboldt State University; Hosung So, California State University, San Bernardino, Oh Seung Kwon, Arcata High School.

Kinesiology is one of the fastest-growing majors in the country. Exercise physiology is one of the gatekeeper courses of the Kinesiology major. Lab experience is one of the most important parts of this subject; however, most of California state universities may not have enough expensive equipment to provide hands-on lab activities to their Kinesiology major students. Video-based virtual exercise physiology laboratory (VBVEP) could remove enrollment bottleneck challenges for Kinesiology. The purpose of this project was to compare student learning outcomes from VBVEP with that from traditional exercise physiology laboratory activities. Student participants from exercise physiology course were randomly assigned to either experimental group 1 or group 2. Group 1 completed traditional laboratory activities, whereas group 2 completed the VBVEP. Both groups then completed the same assessment to evaluate their understanding of aerobic and anaerobic power laboratory concepts. Mean aerobic power lab activity assessment scores (%) were  $80.5 \pm 5.5$  and  $80.6 \pm 6.7$  and mean anaerobic power lab assessment scores were  $81.5 \pm 8.0$  and  $82.0 \pm 6.4$  for groups 1 and 2, respectively. In this investigation, 50% of the students indicated a preference for the traditional laboratory activity, and the other 50% of the class either preferred

the VBVEP (28.9%) or did not prefer one laboratory type over another (21.1%). Students agreed that the VBVEP was at least moderately educational (21%), but most students thought that the VBVEP was very educational (78.9%). These findings support that VBVEP instructs students as effectively as a traditional laboratory.

### **Oral Presentations. Thursday, October 12th**

***Effects of Aerobic and Resistance Training Effects on Short Term Memory.*** Salina Ramachhita, Bertha Alicia Mendoza; La Sierra University.

Many studies have shown that active participation in physical activity has a strong correlation with high cognitive performance levels. Thus, the interest regarding the effects of movements on cognition and how it affects neurochemistry and the brain has risen. A single bout of aerobic exercise at a moderate level for 30 minutes improves cognition prominently for memory, reasoning and planning. Therefore, our purpose is to investigate the acute effects of both aerobic and resistance training impacts on short term memory.

***Vascular Conductance and Peripheral Blood Flow in Individuals with Down Syndrome Following Lower Body Negative Pressure Challenge.*** Sang Ouk Wee, California State University, San Bernardino; A. Rosenberg, K. Bunsawat, T. Baynard, & B. Fernhall, University of Illinois at Chicago.

Individuals with Down syndrome (DS) commonly exhibit autonomic dysfunction, which contributes to chronotropic incompetence and reduced peak aerobic capacity (VO<sub>2</sub>peak). Impaired vascular conductance, blood flow, and hemodynamics to sympathoexcitation have been associated with autonomic dysfunction. Lower level of lower body negative pressure (LBNP) has been used to study autonomic function as a controlled stimulus. Purpose: To examine the differences in hemodynamics and peripheral vascular reactivity to sympathoexcitation using hypovolemic lower body negative pressure (LBNP) in individuals with and without DS. Methods: 24 volunteers (DS=12, 24 yrs; Control=12, 23 yrs) participated in this study. VO<sub>2</sub>peak was obtained via indirect calorimetry by an individualized maximal exercise treadmill protocol. Changes in hemodynamics and vascular reactivity (HR, BP, brachial diameter, blood flow and vascular conductance) were measured before, during and after LBNP (-20 mmHg). Results: Individuals with DS have significantly lower VO<sub>2</sub>peak (25.0 ± 1.7 vs. 42.5 ± 1.7 ml/kg/min for DS and controls, respectively) and higher BMI (23.1 ± 1.7 vs. 31.9 ± 1.8 kg/m<sup>2</sup> for controls and DS, respectively) (p<0.05). There were no group differences in hemodynamics at baseline. There was significant interaction in brachial blood flow (p<0.05) and trend to significant vascular conductance (p = 0.08) with decreased blood flow and vascular conductance in controls, whereas the group with DS did not exhibit changes with hypovolemic challenge. Conclusions: Our results demonstrate absences of vascular reactivity to sympathoexcitation in individuals with DS. This may indicate that individuals with DS exhibit autonomic dysfunction.

***Taking a Stand: The NSCA's Position Paper for Female Athletes and Its Impact on Strength Training Research, 1990-2017.*** Jason Shurley, University of Wisconsin, Whitewater; Jan Todd, The University of Texas at Austin.

In fall of 1989, the National Strength and Conditioning Association (NSCA) published a position paper titled "Strength Training for Female Athletes" (Holloway, et al., 1989a; Holloway et al., 1989b). The paper's authors asserted that, "due to similar physiological responses, it appears that males and females should train for strength in the same basic way, employing similar methodologies, programs, and types of exercises" (Holloway, 1989b). Further, the authors expressed a "major concern" about the paucity of research on strength training for female athletes

and called for more research that involved higher intensity and more “modern” programs. Nearly a quarter of a century later, one of the few studies that has examined the application of strength training for male and female athletes showed marked differences (Reynolds, et al., 2012). In that study, eighty-six percent of coaches of female athletes said that a different approach should be taken in the design and application of strength programs for female athletes, as compared to male counterparts. Accordingly, female athletes supervised by those coaches were more likely to perform “female preferred” activities like Pilates, yoga, and high volume/low-intensity repetition schemes. In light of the fact that the committee’s recommendations may not be widely implemented among strength and conditioning practitioners, it is worth exploring whether researchers have heeded their call. This paper will explore research on strength and conditioning for female athletes since the NSCA position paper and examine whether gaps remain in the scientific study of training adaptations in female athletes.

***Introducing Kinesiology STEM activities in the High School.*** Judy Schultz, Robert D. Catena, Christopher P. Connolly, & Kasee Hildenbrand, Washington State University.

Authentic scientific research experiences contribute to the recruitment and retention of students in STEM majors (Cervato et al., 2015). Inquiry based learning activities and problem based learning allow students to engage in actively exploring questions relevant to their lives, and increase engagement (Cooper, 2014; Cynarski, 2014). Cooper especially notes that sports can provide salient links to students’ personal identities, which is important for engagement in learning. Kinesiology is an interdisciplinary field of study which lends itself to increasing student engagement in science based inquiry that focuses not only on students’ interest in sport but also relates to their personal health and well-being. We presented hands-on Kinesiology biomechanics, motor control, and exercise physiology labs which focused on sport related questions to two high school classes. Compared with two similar control classes we expected to improve science engagement, understanding of scientific process, and awareness of Kinesiology as a science. Results indicated that we were able to achieve the last goal within one semester. However, results on science engagement and scientific process knowledge were mixed, and likely reflected the complex nature of educational engagement and thus scope of the measures used, and limitations on the length and size of the study. We discuss ways to improve measurement and implementation of the program on a larger scale within the high school science and mathematics program.

***Disability: The interconnection of beauty, body, and perception.*** Aubrey Shaw & Sharon Kay Stoll, University of Idaho.

Can people with disabilities be physically beautiful? Ancient Greeks held beliefs about physical beauty, which spread through many generations and through different cultures into modern times. We as a society hold implicit biases that effect how we view others and ourselves. For example, we have biases about beauty and we have biases about people with disabilities which all arise from perceptions. The perception of beauty affects everything all around us from objects to humans. Traditionally, culturally, and philosophically, athletes are beautiful because the movement of their body and physique. However, are athletes with physical impairments considered as beautiful? Hopefully, the presentation will create cognitive dissonance and will result in participants who: (1) are more informed, (2) leave with strategies that can be taught to others, (3) evaluate their own implicit bias, and (4) have a greater appreciation of competitive beauty in impaired populations.



***The Analysis of Post-Running Event Surveys: “Cemetery Hill Won’t Bury Me”.*** Andrea Ednie, University of Wisconsin, Whitewater.

Participation in the Discover Whitewater Series Half Marathon, 5k, and Kids Run continued to increase for the 4th annual event during September, 2016. The 700+ participants race is a focal community event in Whitewater, WI, (city population 15,000; university enrollment 12,600). The post-race participant survey provides feedback pertinent to race planning. The 2016 survey made evident that participant ratings of the course (race course design and challenge) had decreased, with the proportion of participants who rated the course as “excellent” dropping from 66% to 51% over 3 years. The majority (78%) of open-ended explanations for the course evaluations cited the hilliness of the course (either as a welcomed challenge, or because they felt it was overwhelming). A key finding was that the traditional college age students rated the course significantly worse as compared with the other (older) age groups ( $F(5, 170)=4.96, p<.001$ ). Moreover, a comparison of the participant demographics between 2014-16 indicated that representation of the college student demographic had significantly increased, from 6% in 2014 to 19% in 2016 ( $F(1, 353)=8.39, p<.01$ ). This presentation relates theoretical applications to the identified demographic patterns in order to provide the opportunity to implement targeted interventions. Additionally, race planning implications, including strategies to improve participant perceptions of the course in preparation for the 2017 race (September 17, 2017), will be presented.

***Adapted Aquatic Skills Program for Children with Autism and Autistic Related Spectrum.***

Walter L. Malsbary, David A. Kinnunen, Dawn K. Lewis, & Justine J. McAlpine, California State University, Fresno.

Data from the Center for Disease Control and Prevention (CDC) indicate two children 14 years and under die every day from drowning. Drowning is the third leading cause of all deaths for children ages 1 to 4. ([cdc.gov/media/subtopic/matte/pdf/summer\\_swim.pdf](http://cdc.gov/media/subtopic/matte/pdf/summer_swim.pdf)). For every child in this age group who drowns, five more survive after receiving some sort of emergency care. However, survival doesn’t indicate a lack of serious harm. A child who lives through a severe drowning episode may sustain permanent brain damage that leads to issues such as learning disabilities, memory malfunctions or even loss of the ability to think and/or move. The CDC identifies a variety of factors that can influence drowning risk, the most prominent being lack of swimming ability. According to the National Autism Association, drowning is a major cause of death in persons with autism spectrum disorder (ASD) and autism related spectrum (ARS) disorders. In this group, drownings accounted for approximately 91 percent of total U.S. deaths reported in children with autism. The purpose of this project was to develop a specialized swimming program for use in local public and private settings, schools (K-12), colleges, and universities to help insure individuals with autism or ARS survive in an aquatic environment. Additionally, swimming instruction can offer autistic individuals the chance to learn ‘life lessons’ (activities of daily living), improve speech, social skills, self-esteem, cognitive processing and related fitness components. CDC reports autism and ARS are on the rise, further justifying the need for adapted aquatic programs.

***Implicit Bias of Pre-Professionals in Kinesiology.*** Mindy Rice & Sharon Kay Stoll, University of Idaho; Jennifer M. Beller, Emeritus, Washington State University

Health professionals generally wish to help others meet their personal health/fitness goals. Unfortunately, research documents that health professionals are negatively biased towards overweight/obese individuals, and the longer professionals are in the field the more biased they become. Using the Anti-Fat Attitudes Questionnaire (the possible range of scores is 3-27), we surveyed 75 pre-professionals in two different college classes, to measure explicit fat bias. We analyzed the results by gender and class. Unlike the present literature, we found no significant

difference by gender or class on the dislike scale toward obese individuals. A significant difference was found by gender on Fear of Fat  $F(1, 72) = 6.0, p = .016$ . Females ( $M = 17.0 + .86$ ) scored significantly higher than males ( $M = 13.8 + .99$ ). A significant difference was found by class on Fear of Fat  $F(1, 72) = 4.32, p = .04$ . The 200 level class ( $M = 16.79 + .91$ ) had significantly higher scores compared to the 400 level course ( $M = 14.0 + .91$ ). In this population, women appear much more concerned and have a fear of being fat compared to men. It also appears regardless of gender in the 200 level class that they have an elevated fear of fatness. This presentation will examine this data in relation to the literature and offer possible solutions to address fat bias perspective in pre-professionals.

## Faculty Poster Presentations

***Relationship between Physical Activity Guidelines Knowledge and Physical Activity Behavior among College Students in South Texas.*** Soojin Yoo & Jung-il Oh, University of Texas, Rio Grande Valley; Bounghin Kang, Elizabeth City State University; Yoonsin Oh, University of Wisconsin, Eau Claire; Hosung So, California State University, San Bernardino.

**Purpose:** To establish a baseline of what the current knowledge of physical activity (PA) guideline and PA level are at based on a college-aged population in South Texas predisposed to obesity and diabetes. Chronic diseases such as coronary heart disease, stroke, type 2 diabetes mellitus, and obesity plague Americans and are linked with physical inactivity (Mokdad et al., 2004). The Southern region of Texas, specifically Mexican-American population, has been found to contain the highest percentage of the prevalence of obesity (Duran-Gonzalez, et al., 2011). **Methods:** Using a cross-sectional descriptive design, focus was on assessing PA guideline knowledge and PA level. Study participants were 151 Hispanic college students between the ages of 19-30 years of age. Participants completed a questionnaire designed to measure knowledge about PA guideline and their PA level. From the questionnaire developed and adopted by Morrow et al. (1999), 18 items assessed students' knowledge about PA guideline. Sample respondents were categorized based on PA level and PA guideline using correlations. All data analyses performed using Statistical Package for Social Science version 21.0 (IBM, 2012). **Results:** The relationship between PA guideline and PA level was investigated using Pearson product-moment correlation coefficient. There was a positive correlation between the two variables,  $r = .28, n = 151, p < .01$ , with high PA guideline knowledge associated with high levels of PA level. Also, correct answer rates were varied on each concept. Participants did not appear to know about PA guideline. The overall mean was 12.88 out of 18 (71.6%). **Conclusion:** The prevalence of diabetes and cardiovascular disorders is high in south Texas. To educate young Hispanic students that knowledge about PA benefit and regular PA behavior can reduce risks for the development of chronic diseases.

***Pre-service Classroom Teachers' Pedagogical Content Knowledge for Teaching Fundamental Motor Skill.*** Seung Ho Chang & Jihyun Lee, San Jose State University.

The ability to transmit teacher's subject matter (Content Knowledge) to their students in various ways (Pedagogical Knowledge) is the most important component to be an effective teacher in physical education (Ayvazo, Ward, & Stuhr, 2010). Shulman (1987) blended the concept of content knowledge and pedagogical knowledge and defined those two concepts as pedagogical content knowledge (PCK). The findings from many studies supported the notion that content knowledge is strongly related to the development of PCK. Despite these research efforts, there has been limited research conducted with pre-service classroom teachers who want to add physical education as one of their subject areas and teaching basic motor/fundamental motor skills (FMS) a major content in an elementary PE setting, specifically lower elementary. Therefore, the purpose of this study was to examine the effects of a course organized based on common content knowledge (CCK) and

specialized content knowledge (SCK) for teaching FMS to improve PCK of pre-service classroom teachers. Descriptive statistics (i.e., means and frequencies) were used to analyze teachers' teaching behaviors. Cohen's "d" (1988) was utilized to report effect sizes of teachers' PCK. The results showed that teachers' PCK variables changed as a function of the teachers' CK (effect sizes ranged from 1.49 to 6.23) and changes of teacher's PCK such as task representations and demonstrations prior to and following the course will be discussed in the presentation.

***A Study on Violent Crimes to University Students in America – What Contents Should Be Included in University Self-defense Curricula.*** Gong Chen, San Jose State University.

This study investigated violent crimes targeted at college students in America and the self-defense behaviors of these students during attacks. The purpose of this study was to provide a comprehensive view of crime patterns and to use the results as a new scientific base for designing self-defense curricula for students in universities. The content analysis technic was used as the research method to analyze cases that were reported in newspapers and on the internet in recent years, based on six categories: murder, rape, aggravated assault, robbery, kidnapping, and shooting. Each case was analyzed based on designed and open categories. The results indicated that violent crimes happened to college students in all academic status and age groups. About 84% of female victims and 61% of male victims were attacked when they were alone, and the top three consequences included death, rape, and severe injuries. Most attacks occurred on campus (43%), in their residence (32.3%) and on the street (17.4%). Many victims (59.3%) were attacked by a single attacker and 20.6% by multiple attackers. About 93% of attackers were males, including strangers, dates, classmates, and/or roommates. Attacking pattern used commonly was sudden attacks, firearms, knives, blunt objects, and strong arms. The results provided a scientific base for university self-defense education. Examples of recommended curricula contents based on this study included 1) mental strategies on prevention and on-site handling of different violent crimes, and 2) physical skills to counter sudden attacks, strikes, throws, grabs, floor attacks, and weapon attacks.

***Market Valuation of Playing Talent as Learning Platform: Comparative Analysis of MLB and Korean Baseball Salary Arbitration.*** Sungho Cho, Bowling Green State University; Seok-Pyo Hong (Corresponding Author), Kangwon National University; Howon Jeong, Kyungpook National University; Jongyeol Lee, SBS Broadcasting Group.

This project explores how sport science majors would learn the concept of market valuation by using baseball arbitration procedures. The study compares the Major League Baseball ("MLB" hereafter) and Korean professional baseball ("KBO" hereafter) salary arbitration systems and demonstrates how to incorporate them into learning environments. The MLB Salary Arbitration is governed by the MLB Collective Bargaining Agreement. The procedure has been regarded as one of the most crucial pieces of labor relations in the league. In the MLB arbitration, mostly, the players who have three or more years of service but less than six in the league are eligible. The system only determines one-single year salary. The KBO has also adopted an arbitration system to resolve impasses between teams and players. Because the system has not been settled between the league and players' association (not a certified union), there are various procedural ambiguities. Specifically, while the MLB system has provided parties with a set of procedural guidelines, the KBO system could not give such information. This project compares the MLB and KBO systems in terms of the procedural aspects and league-union dynamics. It expounds how the lack of market valuation methodology in the KBO system has resulted in unfair and arbitrary outcomes based on case analyses. Additionally, the study suggests how the dispute resolution systems would be used as pedagogical platforms for sport science majors to learn the concept of market-based valuation.

***An Analysis of Consumption Expenditure Determinants in Marine Sports.*** Euiyul Choi, Woojeong Cho, Haedong Ha, Shinbeum Kang, & Dahye Jang, Korea Maritime & Ocean University; Jeongwon Choi, University of New Mexico.

**Purpose:** Demand of developed countries for tourism shifts from land-based to marine tourism. This phenomenon occurs when GDP increases by more than \$ 10,000 to \$ 20,000. Based on recent domestic circumstances, government and municipalities are fostering the marine sports industry by recognizing marine tourism as a future growth engine. Purpose of this study was to analyze determinants of consumption expenditure in marine sports, which operationally includes 25 types of water based sports mentioned in the Water Leisure Act (2016) and provides fundamental marketing information that help attract consumers and increase profits for marine sports businesses. **Method:** Data from convenience sample of 303 consumers in B metropolitan city of South Korea were analyzed using a binary logistic regression method. According to Cho & Choi (2016), average consumption expenditure of a marine sports consumer was set at 43.5 dollars. Consumption expenditure (dependent variable) was analyzed as dichotomous data (more than 43.5 dollar or less than 43.5 dollar). Independent variables included gender, age, education, income and residence, and motivation for marine sports participation. **Results:** Age and residence were found to be the significant determinants of consumption expenditure. For age, 40s were 5.809 times more likely to spend more than 43.5 dollar in marine sports than 50s or older. However, other age groups such as 20s and 30s had no significant influences on the amount of consumption as compared to 50s. For residence, western residents, compared to easterners, were .261 times less likely to spend more than 43.5 dollar in marine sports.

***Exploring motivation factors for university selection of non-revenue sports athletes.*** Wanyong Choi, Marshall University; Yong Chae Rhee & Tae Ho Kim, Washington State University; Min Kil Kim, Troy University; Wonyoung Kim, Wichita State University; Jinwook Chung, Winthrop University.

The purpose of this study is to determine the influential factors in the decision-making process recruited non-revenue student-athlete use as they select a university and athletic program to attend. Most previous researches on analyzing factors to influence on college selections was conducted via quantitative approaches; however, it failed to provide descriptive language or encounters that could be associated with personal values and motivations. Thus, the current study utilized a qualitative research design through semi-structured interviews to discover influential factors comprehensively. A total of 10 student-athletes who were recruited by multiple universities for playing to non-revenue sports in the Northwest region of the U.S. Upon the completion of the semi-structured interviews, all audio recordings were transcribed and categorized by utilizing the In Vivo Coding process. The influential factors discovered through this research were looked through the self-determination theory to determine if these influences stemmed from internal or external motivations. The results indicated the financial assistance (e.g., scholarships), athletic amenities (e.g., facilities, conference and big-time sport), academics (e.g., tutors, classes, degree and career), coaching style, team culture, familiarity, belonging, campus aesthetics and social atmosphere (e.g., welcoming, comfortable, campus, fun and being part of a team) were considered as critical motivational factors and could be classified as an internal and external factors. The findings of this research revealed how important and persuasive internal and external factors are for potential student-athletes when making their decisions to select a specific university for attendance.

***University Students' (Sport Management Majors and Others) Perceived and Experienced Challenges and Benefits to Studying Abroad.*** Jinwook Chung & Seth Jenny, Winthrop University; Yong Chae Rhee & Tae Ho Kim, Washington State University; Min Kil Kim, Troy University; Wonyoung Kim, Wichita State University; Wanyong Choi, Marshall University.

Interest in studying abroad has grown amongst United States (U.S.) college students. In the 2013-2014 academic year, the number of American college students studying abroad increased 5.2% from the previous year; from 289,408 students to 304,467 students (NAFSA, 2016). Although study abroad experiences are continuing to grow in popularity, only about 1.5% of all U.S. college students study abroad (NAFSA, 2016). The U.S. government is attempting to increase the number of students studying abroad annually to one million by 2017 through a bipartisan federal commission established by President Bush and Congress in 2005 (Stroud, 2010). This study examined the perceived challenges and motivators to studying abroad for university students who had not previously studied abroad. Results indicated that "lack of interest", "lack of knowledge of opportunities", "being too far away from family", and "course requirements of existing curriculum" were significant perceived challenges, while "overall life experience", "personal development", "opportunity to life in a foreign country", and "support of academic advisor" were significant perceived motivators to studying abroad for participants with no study abroad experience. Group comparisons on gender, class year, and length of study abroad trips were also examined. Additionally, this study investigated the experienced challenges and benefits to studying abroad for university students who had previously studied abroad. "Finances" and "language" were biggest challenges for this group while "opportunity to live in a foreign country" and "personal development" were biggest benefits experienced from studying abroad. Implications and recommendations for study abroad organizers are discussed.

***Purchasing Impulse of a TV Basketball Broadcasting Program.*** JoonYoung Han, Yeungnam University, S. Korea; Minyong Lee; North Carolina A&T University; Junyoung Cho, University of Connecticut; Jongyeol Lee, SBS Broadcasting Company, S. Korea.

**Topic:** People often experience purchasing impulse to a certain degree while they are exposed to certain media contents, and television commercials have been great tools to increase viewers' purchasing impulse. Previous research has found that sport contents generally increase purchasing impulse, and diverse TV advertisement forms including direct commercial advertisements, sponsorship signboards, endorsements of athletes, and indirect advertisements affect onto viewers' purchase behaviors. However, scarcity of research has reported findings focused on performance-oriented viewers who regularly participate in a basketball club with high loyalty, although previous studies have shown significant results related to general TV viewers. **Purpose:** To evaluate the purchasing impulse of TV viewers who participate in a basketball club. **Methods:** Eighty adult males participated in this study, and were assigned randomly into two groups: experimental ( $n=40$ ) and control( $n=40$ ). Only the experimental group watched a TV basketball program; but the control group did not watch the program. Their purchasing impulse were examined before and after the TV program for both groups. Independent sample  $t$ -tests were conducted to verify differences between the groups ( $\alpha=.05$ ). **Results:** There were no significant differences between the groups on the four factors of purchasing impulse which include indiscreet purchasing, impulse purchasing, planned purchasing, and unplanned purchasing. Also, no significant difference was found in pre and post comparisons on the four factors. The results show that a TV basketball broadcasting program did not have any impact on purchasing impulse of basketball club participants.

**Exploring Middle Career Collegiate Physical Activity Instructors' Professional Development and Changes.** Boung Jin Kang, Elizabeth City State University; Minhyun Kim, Bridgewater College; Jun-Hyung Baek, University of Maine.

**Background/Purpose:** The purpose of this study was to examine the process of professional development and collegiate instructors' change in relation to curricular and instructional reform through the introduction of *Siedentop's* Sport Education (SE) Model. **Method:** Five middle career collegiate PE activity course instructors', 2 female and 3 male instructors, participated in this study. All five instructors were interviewed four times individually, for this study in particular. The open-ended items (e.g. class observations, informal interviews, and teachers' journals) and formal interview data are analyzed using the constant comparative method. **Analysis/Results:** All of the instructors concurred that the SE workshop provided new ideas and improved their pedagogical knowledge. Every instructor recognized the benefit of the SE curriculum model (i.e. students' responsibility, leadership, and actual involvement). At the end of the season, all instructors pointed to some positive outcomes from the SE curriculum model such as student ownership in it, fitness training, and duty teams, but they also commented on negative aspects of the SE curriculum model that implementing the new model took too much time at the beginning of the season. **Conclusions:** Despite much positive evidence, the major finding was that every instructor recognized the positive aspects of the SE model: the pressure the students applied to each other to attend class, the increased levels of student participation, the students' improved social behavior and leadership, and the students' enjoyment of the unit. While all instructors were collaborative, reflective, enthusiastic, and more certain about the model and likely advocates of SE model.

**Strategies to improve the quality of physical activity classes in college.** Minhyun Kim, Bridgewater College; BoungJin Kang, Elizabeth City State University; Hosung So, California State University, San Bernardino.

Physical activity classes in college play an important role in teaching skills and strategies. Students can also improve fitness levels by participating in various sports. Therefore, it is important to provide quality physical activity classes. In addition, instructors are continually being asked to find effective ways to teach classes. The main purpose of this study was to provide detailed ideas to enhance the quality of physical activity classes in college. This study was done by interviewing 13 physical activity instructors who have been teaching at least four years in college. All interviews were recorded and the constant comparative method and coding method were employed. The study findings revealed several practical strategies to enhance the quality of physical activity classes. First, the main goal of the class was not only to improve students' motor and physical skills, but to promote affective and cognitive domains. Second, evaluation was derived from multiple resources, including attendance, physical skill test, presentation, writing paper, and exam. Third, there was an educational support for students with disabilities to participate in the class. Fourth, instructors ensure safety and risk-management issues by obtaining consent form and medical history form. The results can offer practical guidelines for those who prepare and teach physical activity classes as well as those who manage instructors.

**A Therapeutic Exercise Program for Young Adults with Disabilities: Kinesiology Students' Service-learning Project.** Jihyun Lee, San Jose State University; Trenton H. Stewart, San Francisco State University.

Health-related issues due to physical inactivity in adults with disabilities have been addressed in literature. Unfortunately, young adults with disabilities who are in community-based transition programs often do not have enough opportunities to participate in physical activity (e.g., physical education or adapted physical education). This presentation aims to introduce a university-based

therapeutic exercise program, which was designed and used as a pilot service-learning project for undergraduate kinesiology students to achieve social justice by providing diverse movement experiences to young adults with disabilities. Eight participants took part in the program and all of them had developmental disabilities such as an intellectual disability, autism and orthopedic impairments. The program was held once a week for one hour in a large padded room.

Undergraduate students worked one-on-one with the participants and were expected to learn: a) the importance of physical activity for this population, b) social justice issues related to physical activity of transition aged students, and c) how to motivate the participants to be physically active. This presentation will share diverse physical activity needs of the participants and types of physical activity that were helpful. Future recommendations were made to advocate physical activity for young adults with disabilities in community-based transition programs.

***Pre-Service Physical Educators' Emotional Reaction to Challenging Behaviors.*** Hyun-Kyong Oh, California State University, San Bernardino; Jaewon Lee, Yong-In University

The purpose of current study was to examine predictors of Korean pre-service physical educators' emotional reaction toward challenging behaviors of students with disabilities. Participants were, 431 pre-service physical educators (319 males; 112 females;  $M = 22.53$  years,  $SD = 2.66$ ), asked to fill out the *Emotional Reaction to Challenging Behavior scale- Korean* (Oh, Seo, & Kozub, 2010). Prior to regression analyses, the exploratory factor analysis (EFA) was conducted to explore feasible factor structure and loading of the scale using SPSS 24.0. Following data reduction, the subscales identified as "Fear/Anxiety" and "Responsible" were regressed on key predictor variables (Behavior management class, APE related classes, Volunteer experiences, and Confidence) using multiple regression procedure. The EFA using principal component analysis method resulted in a five-factor (Depression, Positive, Fear/Anxiety, Confused, and Responsible) scale explaining 63% of the variability. The results of the regression of all four predictors produced  $R^2 = .035$ ,  $F_{(4, 426)} = 3.86$ ,  $p < .05$  for "Fear/Anxiety" emotional reaction. Another regression results indicated that the overall model significantly predicts "Responsible" emotional reaction,  $R^2 = .095$ ,  $F_{(4, 426)} = 11.15$ ,  $p < .01$ . It was found that only Volunteer Experiences ( $\beta = .125$ ,  $p < .05$ ) statically predicted for "Fear/Anxiety" emotional reaction and Volunteer Experiences ( $\beta = -.157$ ,  $p < .05$ ) and Confidence ( $\beta = .118$ ,  $p < .05$ ) statically predicted for "Responsible" emotional reaction. Findings indicated that volunteer experiences are a predictor of negative "Fear/Anxiety" emotional reaction and confidence is a predictor of "Responsible" emotional reactions to challenging behavior.

***Relationship of Psychological Needs to Exhaustion in Athletes with Disabilities according to Coaching Behavior.*** Hyun-Kyoung Oh, California State University, San Bernardino; Jae Won Lee, Yong-In University; Hunhyuk Choi, Dankook University; Jae Kwon Yoo, Kyonggi University; Jong Kyung Lee, Kyonggi University.

The purpose of this study was to examine the structural relationships of psychological factors perceived by athletes with disabilities, which were autonomy-supporting coaching behavior, controlling coaching behavior, basic psychological needs, self-determination motivation and exhaustion, on the basis of related sport theories and the results of earlier studies. The subjects in this study were 504 selected athletes who participated in the 34<sup>th</sup> National Para Games and the 12<sup>th</sup> National Winter Para Games ( $M$  age=31,  $SD=5.17$ , Female=142, Male=362). Participants were asked to fill out the questionnaire (30-items on a 5-point Liker-type scale and 41-items on a 7-point Liker-type scale). A pilot survey was implemented, and then a main survey was conducted. Descriptive statistics, principle component analysis, Cronbach's alpha estimates for reliability analysis were conducted. Further, a confirmatory factor analysis (CFA) and the structural equation modelling (SEM) were used to evaluated the goodness of fit of a path model. The results of the CFA and the SEM showed acceptable model fit for a six-factor model based on commonly accepted fit indices

including RMSEA (.07), CFI (.94), TLI (.93), and  $df=153$ . All indicated good fit of the model. The findings of the study that investigated the process of exhaustion among athletes with disabilities in association with the behaviors of coaches and from a psychological perspective are expected to make a contribution to the prevention of possible exhaustion and to provide useful information on how to bolster the athletic performance of athletes.

***Effects of a 5-week Summer Program on Total Antioxidant Status and Inflammatory Markers in Hispanic Adolescents.*** K.S. Park, Texas A&M International University.

The purpose of the study was to determine the effects of 5 weeks of summer school program including 2-hour exercise per day on total antioxidant status and systemic blood inflammation and in Hispanic adolescents. Fifty-three high school students were recruited. Twenty-seven students were assigned to the summer school attendant group (SA) and completed summer school program with 2-hour exercise daily for 5 weeks and 26 students were in non-summer school attendant group (NSA). Total antioxidants, plasma tumor necrosis factor alpha (TNF- $\alpha$ ), and C-reactive protein (CRP) were measured immediately before and after summer break. One-way ANCOVA was used to determine differences in TNF- $\alpha$ , CRP, and total antioxidant changes between the groups. As compared to before summer break, total antioxidant concentration was elevated in the SA group after summer break, compared to the NSA ( $2.13\pm 0.4$  mM/L vs.  $1.84\pm 0.3$  mM/L, respectively  $P=0.011$ ). TNF- $\alpha$  was decreased in SA group, compared to the NSA ( $7.64\pm 2.1$  pg/ml vs.  $8.26\pm 2.1$  pg/ml, respectively,  $P<0.001$ ). CRP level was reduced in the SA group, compared with the NSA ( $7.5\pm 0.6$  mg/L vs.  $8.1\pm 0.6$  mg/L, respectively,  $P=0.0027$ ). The 5-weeks summer school program may enhance antioxidant defense system and ameliorate systematic inflammation in underprivileged Hispanic adolescents due to its structured environment, restricted food access, and scheduled time for exercise as well as by minimizing effects of their psychosocial outcomes. Results indicated that non-summer school attendants may need comprehensive intervention for psychosocial outcomes and nutritional education to maintain antioxidant defense system and immune function during the summer break.

***Women Coaching Women - A Model of Sports(woman)ship?*** Heather Van Mullem, Lewis-Clark State College; Sharon Kay Stoll, University of Idaho.

The purpose of this poster on “sports(woman)ship” is to address the need for a care-giving women’s coaching philosophy in athletics. The 1972 passage of Title IX changed the landscape of participation opportunity in athletics for girls and women. However, the change also negatively affected first, the number of women coaching and second, the moral development of girls and women. This poster reviews these issues as well as offers an action plan to address the need for a model of sports(woman)ship in education, training, and coaching.

***Hemodynamics and Arterial Stiffness in Individuals with Down Syndrome.*** Sang Ouk Wee, California State University, San Bernardino; K. Bunsawat, A. Rosenberg, T. Baynard, & B. Fernhall, University of Illinois at Chicago.

Individuals with Down syndrome (DS), also known as accelerated aging condition, commonly exhibit autonomic dysfunction, which contributes to reduced peak aerobic capacity ( $VO_{2peak}$ ). Low level of  $VO_{2peak}$  is related to further health issues and future CVD risk. Arterial stiffness, pulse wave velocity (PWV), is an independent risk of coronary artery disease and future cardiovascular disease (CVD). Autonomic dysfunction in DS may differentially affect arterial stiffness in DS. OBJECTIVES: The purpose of this study was to investigate the differences in hemodynamics and arterial stiffness in DS measured by ambulatory blood pressure monitor (ABPM). METHODS: 40 individuals with and without DS (DS=20) participated in the study. Participants were rested for 10



minutes in a quiet room before hemodynamics and arterial stiffness (PWV) were measured. Hemodynamics and PWV were measured using mobilograph ABPM. Peak aerobic capacity (VO<sub>2</sub>peak) was measured by maximal exercise test on a motor-driven treadmill. One Way Analysis of Variance (ANOVA) was performed to investigate differences in hemodynamics and arterial stiffness between DS and non-DS controls. RESULTS: (See table) DS group has significantly shorter height, larger BMI and lower VO<sub>2</sub>peak compared to control group. (p<0.05) However, there were no statistically significant differences in hemodynamics variables including SBP, DBP, and MAP. Furthermore, PWV was not different between DS and controls. CONCLUSIONS: The results suggest that individuals with DS do not differ in hemodynamics and arterial stiffness compared to non-DS controls.

***The urgent needs and desire of students for self-defense education in Chinese universities.***

Fei Xie & Jing Zou, Shandong University; Liu Liu, Shenyang Sport University.

The purpose of this research was to investigate university students in China on their real life experience of becoming victims of violent crimes, their awareness of becoming victims, their self-confidence on preventing and handling crimes and attacks, and their interest and desire in learning self-defense in physical education classes. A total of 644 college women and 288 college men in a comprehensive university, and 58 college women and 89 college men in a physical education college took the survey with the validity and reliability at .05 level. The results indicated that 5-10% of college students in China experienced different types of violent crimes and thefts, while about 70% of students had a lack of awareness on their own chances of becoming victims. Most female students did not have self-confidence on preventing and/or handling violent crimes and attacks. About 95% of female college students and 85-87% of male college students showed a desire and interest in learning self-defense. The results suggest that self-defense education is absolutely needed for university students in China, and self-defense classes should be offered as a part of higher education in China.

**Student Poster Presentations**

**Research Critiques**

**Skin Tone Linked to Fruit and Vegetable Intake.** Uyen Tang; La Sierra University. Dietary sources of carotenoids originate from fruit and vegetables, this increases the yellowness and redness in our skin color. The purpose of the reviewed study was to compare the color changes in the skin between the intervention group (carotenoid-rich fresh fruit smoothie) and the control group (mineral water).

**Blood Flow Restriction Improves Vascular Circulation.** Nicholas Ruelas, Rachele Rapanut; California State University, San Bernardino. Blood flow restriction (BFR) may improve vascular endothelial function and peripheral blood circulation in healthy elderly people. The purpose of the reviewed study was to compare baseline measurements with post-training measurements after 4 weeks BFR resistance training.

**Effects of Motivational Music Video on High-Intensity Exercise.** Gregory Huffman, Hosung So; California State University, San Bernardino. The combined effect of motivational music and video may have an ergogenic effect on high intensity exercise. The purpose of the reviewed study was to determine the effects of using a motivational music and video intervention during a high intensity exercise routine.

**Dance Therapy on People with Parkinson's Disease.** Ro-Anne Khrystel Galleta; San Jose State University. Participating in Dance Therapy (DT) classes may have a rehabilitation effect on motor functions, cognitive functions and mental symptoms of PD. The purpose of the reviewed study was to compare the impact of dance therapy in patients with symptoms of Parkinson's Disease (PD) when compared to PD exercise interventions and a control group by examining each participant's gait, balance, memory, execution, attention, motor imagery, and symptoms of depression and apathy.

**Modifications on the Traditional Daily Undulating Periodization.** Joseph Quiroga, G. Escalante; California State University, San Bernardino. This study compared the effects of a traditional daily undulating periodization (DUP) strength training program versus a modified DUP program on one-repetition maximum (1RM) strength in the primary powerlifting lifts (squat, bench press, and deadlift), total volume (TV) of weight lifted, and temporal hormonal response.

**Decreasing Student Obesity through School-Based Intervention.** Abraham Elizarraras, C. Gentry, Hosung So; California State University, San Bernardino. A decrease in student obesity has been shown in studies that have included school-based interventions focusing on health. The purpose of the reviewed study was to see if changes to a low-income school district's meal plan, physical education curriculum, and equipment would improve the students' weight status over a three-year period.

**Physical Activity's Influence on Academic Performance.** S.Y. Sanford, C Gentry, Hosung So; California State University, San Bernardino. Physical activity may improve some components of Executive Function (EF) in young children. The purpose of this reviewed study was to discover if the amount of time spent in Physical Activity (PA) compared to sedentary behavior effects inhibition, working memory, cognitive flexibility, and planning processes.

**Reduced Falls Risk in Elderly with Osteoarthritis by Aquatic Exercise.** M. Luscombe, Hosung So, C. Gentry; California State University, San Bernardino. The purpose of the reviewed study was to investigate the effectiveness of a water-based exercise program (WBE) specific to training the balance of older adults with osteoarthritis (OA) to improve falls risk while improving measures of balance and general physical competence.

**Knowledge and Value Improvement in Physical Education.** L. Marin, C. Gentry, Hosung So; California State University, San Bernardino. Using Physical Best concept-based units may be an effective way of promoting exercise principles and knowledge of energy balance in physical education (PE). The purpose of the reviewed study was to examine the effects of using physical best lessons to promote adolescent knowledge of energy balance and exercise principles, as well as their perceived task values of PE.

## Literature Reviews

**Psychological Health after Abortion.** Rachel A. Scales, Lydia Boampong; La Sierra University. There is much debate regarding the psychological effects of abortion. Recent research suggests that abortion does not yield negative psychological effects and can even improve quality of life, specifically self-esteem. This review will examine the relationships between abortion experiences (a situation in which one seeks an abortion) and quality of life. Additionally, it will discuss the possible sources of the negative psychological effects that may accompany an abortion experience.

**The Dangers Pesticides on Children.** Brittany Whitney, Arlyne Flores; La Sierra University. Children in the United States are taking in higher levels of pesticides while their bodies are still developing and are unable to protect themselves. This causes problems such as autism spectrum disorder (ASD) and developmental delay (DD) due to agricultural pesticides, neurodevelopment issues, and an increased risk of ADHD.

**Cell Phone Electromagnetic Radiation Risks.** Linda Machen, Alexis Robles; La Sierra University. It is important to raise awareness of the risks of cell phone usage due to the increase of internet connectivity. The research review focused on three areas: cell phone usage and Electromagnetic radiation (EMR) exposure in passive use, glioma risk in different age groups, and child growth impairment and brain tumors.

**Effects of Melatonin Supplementation.** Eric Chen, Christian Zane; La Sierra University. In America, over 40 million people suffer from sleep and wakefulness disorders. Due to the high volume of sleep disorders present in society, over-the-counter melatonin has shown promise in effectively treating sleep-wake cycle disorders. The purpose of this review is to identify the effects of melatonin created in the body, determine if supplementing melatonin aids sleep, and recognize health and behavioral benefits.

**Effects of Lycopene on Prostate Cancer.** Samuel Bolivar, Johannah Macy; La Sierra University. Prostate cancer accounts for 10% of all cancer diagnosed in the United States (National Cancer Institute, 2016). Lycopene, a carotenoid found in tomatoes, has become a focal point in the prevention of prostate cancer. This review examined how prostate cancer can be affected by lycopene through apoptosis, proliferation, adhesion, inhibition, and diet

**Biological Factors Correlating to "The Zone."** Ivan Vegar, Jason Daniel, La Sierra University. The human body is capable of many fascinating endeavors. In sports, the limit of human possibility is challenged and is passed with the upmost focusing on a state of mind known as "the zone." Many biological factors researched have been found to influence an athlete's ability to surpass their limits and achieve this state of mind.

**The Effects of Weather on Mood Changes.** Hannah Loaisiga, Daniel Flores; La Sierra University. Weather has seemed to play an important role in how people feel throughout the day. People expect to have a positive mood on warm and sunny days, while rainy and cloudy days seem to bring out negative moods. This review will investigate how does weather affect a person's mood.

**Nutritional Value: Whole Fruit vs. Fruit Juice.** Natalia Gallo, Cassandra Savala; La Sierra University. Americans consume fruit in two major ways: whole fruit and fruit juice. There are outweighing benefits of whole fruit over fruit juice. These benefits include higher nutritional value, higher quality, and decrease risk of health implications. This review will compare the differences between whole and regular fruit and its impact on overall health.

**The Effects of Music on Exercise Performance.** Leena So, Seoyoon Jeon; La Sierra University. Numerous studies have determined the correlation between music and exercise. Music have been found to positively affect the individual's exercise experience. This review addresses the impact music has in enhancing exercise performance and perceived enjoyment, and discusses three musical attributes: tempo, genre, and rhythm, that would further reinforce one's exercise experience.

**Variations of Student Health and Wellness.** Shawna Roderick, Hannah Yaghoubian; La Sierra University. Many studies have been conducted to determine the overall health habits and physical wellness of university students. When comparing health-related majors (HM) and non health-related majors (NHM), significant differences were not found in the overall wellness between students enrolled in HM or NHM. These differences are evident when comparing the body mass index (BMI), daily recommended fruit and vegetable intake, and physical activity of the two groups.

**The Effect of Outdoor Exercise on Performance and Health.** Kristy Elliott; University of Wisconsin Whitewater. Aerobic exercisers consider a variety of factors to choose their regular workout environments. However, choosing an outdoor environment over an indoor environment has been shown to be a more effective option for these athletes both physically and psychologically. Therefore, this review will focus on the effects of outdoor exercise and its impact on performance and health.

**Benefits of Yoga on Exercise Induced Asthma.** Alexa Dralle; University of Wisconsin Whitewater. Exercise-induced asthma is a disease that affects breathing during activity and is accompanied by a variety of symptoms including bouts of coughing, wheezing, shortness of breath, and chest tightness. Studies have shown that yoga can act as a supplemental treatment for improving pulmonary functions, reducing asthma symptoms, and decreasing the need for drugs. Therefore, this paper will review the impacts of yoga on symptoms of exercise induced asthma.

**Causes of Tooth Decay of Young Children.** Boram Seo, Jihyun Yi; La Sierra University. The studies examine the role of sugar consumption and of bottle feeding in the etiology of dental caries in children. It is easy to find many children who struggle from dental decay. Obese children who tend to take more sugar than others do not associate it with dental decay (Goodson et al., 2013). Solely bottle-fed children marked the highest percentage (33.3%) among caries affected children while breastfeeding and mixed feeding was 15.7% and 25.3% respectively.

**Effective Teaching for Martial Arts in Physical Education Class.** Taemin Ha, H.K. Oh, Hosung So, E.O. Baek; California State University, San Bernardino. Students can benefit from participating and learning in martial arts that enhances various psychological variables while reducing some negative factors. Behavior problems and physical inactivity of students are physical education teachers' primary concern. Teaching martial arts in both elementary and secondary physical education classes would be one of the promising activities in school physical education to help school aged students physically active and socially-personally responsible. Therefore, the purpose of this paper is to review the issues and discuss about ways to minimize the violence and injury in physical education classes.

**Most Appropriate Physication for Students with Disabilities.** Ayendo-Vela, H.K. Oh, E. Reyes; California State University, San Bernardino. Many students with disabilities enter the educational system and the belief from their families is that they will receive the same educational opportunities as their peers without disabilities. Many of them will be part of a general physical education (GPE) class and be successful in it. However, based on the severity of their disability or disabilities, some students will have challenges to succeeding in the GPE class. Determining the most appropriate physical education (PE) setting for students with disabilities is still challenging issue.

**Physical Education for Students with Severe Disabilities.** E. Reyes, H.K. Oh, F. Avendo-Vela; California State University, San Bernardino. Federal law mandates that students with disabilities

should receive appropriate physical education services. However, including student with severe multiple disabilities (SMD) in general physical education (GPE) is a controversial issue. Some physical education teachers agreed to include students with SMD in the notion of providing equal opportunities, while the others argue that student with SMD should be excluded from GPE.

**Muscle Strength and Endurance in Patients with Cystic Fibrosis.** M. Serrano, Hosung So; California State University, San Bernardino. More than 30,000 people in the U.S. live with Cystic Fibrosis (CF) that is a known and non-contagious medical disease characterized by its inability to maintain a clear air pathway due to the loss of pulmonary function caused by abnormal production of mucus. Recent studies examined health individuals and CF patients' muscle strength and endurance by measuring respiratory and peripheral muscle strength, examining other pulmonary function parameters such as FEV<sub>1</sub>, total lung capacity, residual volume (RV), and airway resistance. However, individuals with pseudomonas aeruginosa and reduction of FEV<sub>1</sub> show no difference when resembled with healthy subjects.

**Impact of Dance Therapy on Skills Learned in Pediatric O.T.** Tami Williams; University of Wisconsin Whitewater. Many conditions require a person to need occupational therapy, and rehabilitation takes time. Current studies illustrate that dance therapy, when used in tandem with occupational therapy, has positively impacted many factors. Very few studies, however, consider differences in proficiency, rate, and retention of skills learned. Moreover, such considerations for pediatric patients do not exist.

## **Original Research**

**Enhancing Quality of Life via Health Promotion Programs for Older Adults.** Bora Jin; Texas A&M University. Physical function, perceived health, education, social contacts/social support, and housing quality were found to be determinants of older adults' life satisfaction. The purpose of this study was to explore impact of the participation in physical activity, health and wellness, and health screening and maintenance programs on older adults' life satisfaction within their socio-cultural contexts of home, community, and educational place. The following research guided this study: (1) What motivates older adults to participate in the health promotion program in the senior center and (2) How does participation in physical activity programs, health and wellness programs, and screening and maintenance affect older adults' quality of life.

**A Study on Golf Docents in Korean Professional Golf Tournaments.** Seolhee Han, Sungyoun Won; Chung-Ang University, Korea. A docent is a professional guide, which was derived from the Latin word Docere, which means "teach", and refers to a person who guides visitors or explains exhibits in an art museum or museum. The docent is not known to many people in Korea, but recently, docent can be found in various fields such as motor shows, zoos, and local public relations. Therefore, this study aimed to provide basic information required for the docents in golf in the future.

**An Analysis on the Difference in Recognition of Fine Dust Problem Depending on the Type of Participation in Leisure Activities.** Jeonghyung Cho, Eunjoo Cha, Youngjae Kim, Chung-Ang University, Korea. Fine dust and ultra-fine dust were added to the 'Agents classified by the IARC monographs' as 'Group1' carcinogen by International Agency for Research on Cancer (IARC) under WHO in 2013. Group 1 carcinogen indicates that there is a sufficient scientific evidence to prove that it may cause cancer. So special management measures on such carcinogens are required. However, there is insufficient emergency preparedness for fine dust and ultra-fine dust in leisure activities that are directly exposed to fine dust. Especially leisure activities are divided into indoor

and outdoor and accordingly the degree of exposure to fine dust also differs. Despite this, 2010-2016 survey on national leisure activity showed that there was an increase in participation in leisure activities regardless of type of leisure activity. Therefore, this study aims to draw the recognition of fine dust problem by setting up the null hypothesis that there will be no difference in recognition of fine dust problem despite the difference in degree of exposure to fine dust depending on type of leisure activity.

**Deviant Behavior of Female Pro Players Due to the Influence of Media (drug taking).** Yeon Kim, Eunjoo Cha, Youngjae Kim; Chung-Ang University, Korea. Deviant behavior refers to all behaviors that diverge from the sociocultural norms that are generally accepted. Deviant behavior in sports means a thing that violates the sportsmanship and includes match-fixing, violence during the game, bad manner, doping. Recently, media has been executing its big influence on club and players, fans, and even the entire Korean sports. Accordingly, female pro players focus on their looks and thus spend a lot of time and money on appearance. The purpose of this study was to identify how female pro players are managing their appearance and its influence on players themselves.

**A Comparative Analysis of the Professional Skill Test.** Peng Su, Quihan Zhu; Yeungnam University, South Korea. Professional skill test results of male players who attended Chinese National U17, U15, U14 basketball match were comparatively analyzed via paper mining, interview, test and statistics. The overall state for professional skill mastery as well as pros and cons of different age stage were figured out. The professional skill for male basketball player was primarily classified as factors of 'basketball steps' and factors of 'basketball handling', furthermore, professional skill feature factors of different ages were analyzed in dynamic view, to unveil objective laws of development. Finally, the purpose of this study was to examine suggestions with regards to the administration, training methods and logistical support, aiming to offer reference for reserve basketball player culture of China.

**Use of Back Translation Method in Korean Social Sciences of Sport.** Bo Chen, Peng Su; Yeungnam University, South Korea. Survey Research is one of the most used method in social sciences of sport. Also, there are many survey questionnaire and scales that originally were designed from a language, and then translated to other languages. Because of difference point in culture and language, the availability and the clarity of translated questionnaire had been declined. Thus, back translation is a method that can impactful improve this situation. However, many previous studies using questionnaire developed in another language tend to omit a necessary procedure to increase the reliability of the research, which is back translation. So, the present research aimed to find a frequency of using or not-using back translation technique in diverse academic journals of sport social sciences published in a different country where use different native language. Thus, this research intends to find out an important lesson of back translation now which we often forget to teach and learn in our discipline. The purpose of this study is to grasp the used status of questionnaire and back translation in Korean sports social sciences journal.

**Projectile Motion in Relation on how to Optimize Soccer Kick in Youth Collegiate Soccer Players.** Alexandar Wise, Nelson Wise, Lawrence E. Pabalinas; University of Texas of Rio Grande Valley. Projectile motion can be seen in many sports, one example in which it is seen is in the sport of soccer, when a player kicks the soccer ball into the air to reach a teammate down the field. To understand projectile motion, it must be defined. The purpose of this study was to dissect and analyze the components associated with projectile motion in relation to what projectile angle is needed for a soccer player to kick a pass to a teammate down the field to have the furthest range.

**Blood Pressure Related to Body Weight to Body Frame Ratio.** Richmond Lin, Jefferey Chen; La Sierra University. Today, rates of obesity and heart disease are increasing. If the current trend continues, it is estimated that 75 percent of the American population will be overweight or obese. The main purpose of this research was to divide the participants into two groups, one group was labeled with high body weight to normal body frame with higher lean mass, and the other group was labeled with high body weight to normal body frame with higher fat percentage.

**An analysis of 'Yolo' Trend Discourse in Korean by Textmining.** Cha Yoon-Suk, Kim Young Jae; Chung-Ang University, Korea. The newly coined term 'YOLO' emerged as a new trend in Korea, as high growth era ended and the transition to the deflation period began to rise. It is the specific of consumer life style. Commerce industry, social networking sites, and contents creators providing instant benefit instead of future planning are growing, because of the consumption style of 'YOLO' that have egocentric and present-oriented character. The purpose of this study was to find out how the Discourse of new trend in Korea is shaping up to build the story and discuss the direction of future deployment.

**Effects of Caffeine on College Students' One Repetition Maximum.** Daniel Flores, Roland Manurung; La Sierra University. Many supplements claiming to enhance performance and power output during exercise contains caffeine. The purpose of the study was to examine the effects of caffeine ingestion on college students' one repetition maximum (1RM). The null hypothesis for this study is that there will be no significant difference between the 1RM results when performed with, or without caffeine.

***Dose-Response Association Between Exercise Intensity and Manual Motor Performance in Individuals with Down Syndrome: A Preliminary Study.*** Chih-Chia Chen, Mississippi State University. Background: Manual motor deficits is a significant issue in individuals with Down syndrome (DS). This study was aimed at investigating the dose-response relationship between the intensity of acute exercise and its effects on manual motor control in this population. Methods: Grip force, measured as handgrip test and manual dexterity, measured as the Purdue Pegboard Test, were conducted in the current study. Twenty – eight participants were randomized into vigorous-intensity exercise (i.e., 75-85% of predicted maximum heart rate), moderate-intensity exercise (i.e., 50-75% of predicted maximum heart rate) or attentional control groups. The two exercise groups performed an incremental walking protocol on the treadmill and the attentional control group watched a video for 20-min. Measures of manual motor performance were tested pre and post-intervention respectively. Results: A quadric trend was seen in grip force, such that the moderate-intensity exercise was beneficial for the performance of grip force production. However, inconsistent with previous studies, neither a quadric trend nor a liner trend was evident in the performance of the Purdue Pegboard Test. Conclusions: It was speculated that acute treadmill walking exercise may alter peripheral sensory input to motor areas that further caused improvement in grip force. However, its motor speed was not sufficient to enhance manual dexterity. Future research is needed with a larger sample size and brain imaging measures to explore the mechanisms involved in the association between exercise intensity and manual motor performance in individuals with DS.

***The effects of topical aminophylline, yohimbe, L-carnitine, caffeine, and gotu kola on thigh circumference, skinfold thickness, and fat mass in sedentary females.*** Guillermo Escalante & Hosung So, California State University, San Bernardino. Aminophylline, l-carnitine, gotu kola (Centella asiatica), yohimbe, and caffeine may aid in reducing body fat. Lipoxyderm™ (LD) contains these ingredients and was used to test if regional fat loss of the thigh was facilitated via the topical application of this lotion. This was a double-blind, placebo controlled study that

investigated the effects of LD on thigh fat mass (TFM), circumference (TC), and skinfold thickness (SKF). Seven participants underwent pre/post exercise testing for weight, bilateral TC/SKF, and body composition/TFM assessment via Dual Energy X-ray Absorptiometry (DXA). Participants followed a hypo-caloric diet, walked a minimum of 150 minutes/week, and were randomly assigned to apply a placebo (PLA) to one leg and LD to the other leg for 28 days. Separate two-way mixed factorial repeated measures ANOVAs were used to compare the effects of LD to the PLA on TC, SKF, and TFM. A significant time x group interaction was found for TC ( $F_{1,6} = 18.2, p = 0.005$ ), TSF ( $F_{1,6} = 14.6, p = 0.009$ ), and TFM ( $F_{1,6} = 37.1, p = 0.001$ ). A topical application of LD compared to a PLA, combined with exercise and restricted calories, is more effective at facilitating region specific decreases in TC (1.2 vs 0.8 cm), SKF (3.7 vs 2.0 mm), and TFM (100.0 g vs 57.3g).

***Utilization of TESTWELL: A Health Practices Survey to Target Student Needs.*** Kim Knowlton, William C. Address, Sejal Madhani, & Rob Thomas, La Sierra University; Walter Wright, National Wellness Institute. At our university, all students are required to take an undergraduate course in health and wellness with an emphasis on physical activity. As part of the course they complete TESTWELL, a comprehensive 100 - point questionnaire developed by the National Wellness Institute that targets behaviors in 10 different dimensions of wellness. In this study, 2700 students, covering a 6-year span (2010 - 2015) were analyzed and compared with a national data bank of 103,000 respondents. This presentation reports our findings, some of which were unexpected as well as disturbing. For example, when looking at health status of various majors, those in the field of health or exercise science did not have the best profile. And in both our study and the composite national data, the dimensions of nutrition and physical exercise scored the poorest. This data is now being used to determine how best to modify our Lifetime Fitness courses to better meet student needs and thus improve their overall health profiles. The presentation will conclude with suggestions as to how other universities can use this tool to maximize the effectiveness of their wellness classes.

***High Impact Educational Programs at Undergraduate Teaching Universities.*** Jennifer J. Sherwood, Vanessa R. Yingling, Jenny O, & Penny McCullagh, California State University, East Bay; Helen Brown & Grace Goc Kar, University of Idaho. High-impact educational practices have been shown to contextualize content and encourage active learning, thereby enhancing student engagement and improving student retention. For the past ten years, high-impact educational practices such as student internships, service learning, learning communities and undergraduate research, have been heavily promoted in higher education. But at teaching universities, faculty are challenged to balance high impact practice with heavy teaching loads, limited funding, scarce resources and inadequate infrastructure to provide authentic, undergraduate research experiences, discipline-specific, service-learning opportunities and to maintain relationships with high quality and engaging field sites. In this session, California State University, East Bay (CSUEB) faculty from the Department of Kinesiology and the Director of the Center for Student Research, and faculty from the University of Idaho (UI), Department of Movement Sciences, will share their models of high impact student programs for course credit. Faculty from CSUEB will describe implementation and assessment of the Kinesiology Research Group, a faculty-student group designed to encourage and support student-generated research projects to publication and the Get Fit! Stay Fit! Program, a wellness program in which Kinesiology students gain professional, discipline-specific experiences while working with CSUEB faculty and staff. Faculty from UI will describe how they integrated a public health model into the course instruction, teaching, project development, evaluation and impact dissemination of a student-led healthy active lifestyle (HAL) assessment and intervention course that develops HAL projects reaching in schools, the UI campus and the community. Join us to learn more about these collaborative models of teaching, research and scholarship.



***The Right to Mobility: Modified Ride-On Cars for Exploration and Play.*** Samuel W. Logan, Oregon State University. Children with disabilities deserve equitable and inclusive opportunities to engage in self-directed mobility at a similar age as their peers without disabilities. For the purpose of this paper, self-directed mobility is defined as mobility that is controlled by an individual and may include (a) ambulation, such as walking, (b) use of non-powered technology, such as gait trainers and standers, or (c) use of powered technology, including motorized wheelchairs, battery-operated ride-on toy cars, or similar devices. Over 30 years of research has demonstrated that young children with disabilities can use powered mobility devices for self-directed mobility and developmental gains (see Livingstone & Field 2014 for a review). An emerging powered mobility device for young children with disabilities includes modified off-the-shelf, battery-operated ride-on cars. Modifications include installation of a large, easy-to-press switch that has a large surface area and responds to a light touch for activation. Common materials, such as PVC pipe, swimming kickboards, and Velcro are used to build a customized supportive seating system. Evidence suggests that modified ride-on cars are a feasible and fun option for exploration, play, and function for children with disabilities. While the current evidence is promising, it is necessary to continue examining the effect of modified ride-on cars with more rigorous research designs and larger cohorts of children of varying disabilities to contribute to the generalizability of findings.

#### **Oral Presentations. Friday, October 13th**

***The outcomes and reflections of Kinesiology and Exercise Science majors on the application of Service Learning through teaching physical activity classes to elderly participants in a long term care and assisted living facility.*** Lee Anne Wiggin, Lewis-Clark State College.

The teaching method of Service Learning (SL) is described as student activities providing a specific service that meets the needs of the community while also meeting specific course or curriculum objectives. The application of service activities in coordination with an institution of higher education are integrated and incorporated into specific learning objectives and include a fostering of civic responsibility and reflection on the SL experience (Cashman & Seifer, 2008). Service Learning is more commonly applied to the fields of public health, nursing, occupational therapy, pharmacy, and physical therapy (Brush, Marker, & Lazarus, 2006). Physical therapy (Hoppe, Bender, & DeGrace, 2005) and occupational therapy (Beling, 2003) skills have been incorporated into SL activities including screening and assessment skills. Communities and groups served by students often include patients and communities at risk of or diagnosed with chronic diseases (Juller, Alexander, & Hardeman, 2006). Colleges and universities have increasingly incorporated SL into allied health and general curricula (Campus Compact, 2009). In an attempt to enhance program planning at a small Northwest college, a survey was given to 36 Kinesiology and Exercise Science majors over 2 semesters, in an attempt to determine whether there was a need for more courses within the program that included SL as part of the curricula. In this presentation you will learn the outcome and personal reflections gained from surveys administered to students after the completion of an applied SL physical activity program with elderly participants at a local long term care and assisted living center.

***Validation of GymAware for Measuring Muscular Velocity in Healthy Older Adults.*** Jennifer J. Sherwood, Shannon Webb, Tori Coleman, Nicole Spink, John Adams, Michele Ossene Mintsas, Pavel Romanovski, Ranier Castillo, Connie Fok, & Trenton Ashizawa, California State University, East Bay.

Topic: Key to maintaining independence is the ability to generate adequate muscular power to carry out activities of daily living (ADLs) and reducing risk of injuries due to falls (Gray et al., 2014),

while muscular power declines faster with age than either strength or endurance (Heyward and Gibson, 2014). The sit-to-stand (STS) is a timed functional movement test that represents an ADL and can be administered in multiple settings, however direct velocity and power measures generated during this test have not been previously quantified using a linear position transducer (GymAware). Purpose: To validate the use of GymAware in measuring velocity and calculated power during a STS test in healthy older adults. Methods: Participants were healthy older adults between the ages of 60-95. Velocity produced during the STS test was measured using: 1) GymAware and 2) a video motion analysis software, Dartfish. Additional measures included: Hand grip dynamometer, Blood pressure (BP), resting heart rate (HR), and body mass index (BMI). Statistical analysis: paired t-test was used to assess significant differences between velocity measures for GymAware and Dartfish. Results: Paired Student's t-test results show no significant difference between velocity measures with Dartfish and Gymaware during a STS (n = 6). Conclusion: Preliminary results indicate that GymAware is a valid measure of measuring velocity and calculated power in older adults. Next phase will be to expand the sample size and compare STS power to bone strength and cognition.

***International Service Learning for Kinesiology: Sharing Procedures, Reflections, and Outcomes.*** Hosung So, Steven Doherty, Larry McMillen, Luis Lua, & Taemin Ha, California State University, San Bernardino.

Service learning can be conceptualized as a pedagogical model that connects meaningful community service experiences with academic course learning. Service-learning is a method of teaching, learning and reflecting, frequently youth service, throughout the community. As a teaching method, it falls under the philosophy of experiential education. More specifically, it integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, encourage lifelong civic engagement, and strengthen communities for the common good. Our schools become more diverse culturally and ethnically. In 2008, the California Commission on Teacher Credentialing (CTC) developed the Teaching Performance Expectations (TPEs) to describe the set of knowledge, skills, and abilities beginning teachers should have and be able to demonstrate. According to the TPEs, prospective physical education teachers should demonstrate sensitivity to students' cultural and ethnic backgrounds and include activities of global interest in the curriculum. To provide future physical education teachers with multicultural/ethnic awareness and experiences, the department of Kinesiology at California State University San Bernardino has launched international service learning projects. The purpose of this presentation is to provide and share the critical components of the project's preparation, implementations, and outcomes. In addition, the presenters will share and discuss benefits of SL in Korea that enriches student learning of course material, engages students in active learning that demonstrates the relevance of academic work for their lives and career choices, and increases awareness of current societal issues as they relate to academic areas.

***A University-based Therapeutic Exercise Program for Young Adults with Disabilities.*** Jihyun Lee, Trenton H. Stewart, & Ryan C. Taylor, San Francisco State University.

Health-related issues due to physical inactivity in adults with disabilities have been addressed in the literature (e.g., Carroll et al., 2014). Unfortunately, young adults with disabilities who are in community-based transition programs often do not have enough opportunities to participate in regular physical activity (e.g., physical education or adapted physical education). More physical activity opportunities and movement experiences should be provided to young adults with disabilities to help them maintain their physical functions and health. This article introduced a university-based therapeutic exercise program for young adults with disabilities who have sensory needs and movement delays, using low cost and accessible equipment and activities. Diverse

physical activity needs of the participants and types of physical activity that are helpful were described. Future recommendations were made to advocate for physical activity for young adults with disabilities in community-based transition programs.

***Identity in Escrow: A Case Study of a Professional Golf Management University Program.*** Cole G. Armstrong, San José State University.

Presentation of a case study focused on a group of individuals moving through a University-based golf-specific education program sanctioned by the Professional Golfer's Association of America. Informed by theories of identity (i.e., Social Identity Theory and Identity Theory), an 18-month active participant observation was conducted, including ten semistructured interviews with participants of a Professional Golf Management program located at a large University in the American Southeast. Results showed participants developed social mobility via their time in the PGM program, and the Playing Ability Test was a significant hurdle in the development of their perceived group membership and golf professional role identity. In addition, it was found that the identity of the participants was essentially held in escrow by the PGM program and the PGA of America until completion of the symbiotic programs at which time participants could garner external affirmation of their group and role identity through PGA Class A certification.