TABLE OF CONTENTS

2  ICHPER•SD Officers and Editorial Policy Board

Sport

3  Street Soccer USA Cup: Preliminary Findings of a Sport-for-Homeless Intervention
   Jon Welty Peachey, Alexis Lyras, John Borland, Adam Cohen

12  Climate and Motivation for Women Athletes in Palestine
    Shima Younes, Lori Ciccomascolo, Minsuk Shim

20  Gamesmanship Beliefs of High School Coaches
    Brad Strand

Motor Control and Learning

25  Learning Strategies Used While Developing Motor Skill Assessment Competency
    Luke E. Kelly, Jason Bishop

32  A Comparison of the Motor Ability of 8 and 9 Year Old Primary School Children in
    Hamburg, Melbourne and Cape Town - An Exploratory Study
    Jürgen Kretschmer, John Saunders, Liz Bressan, Jan Erhorn, Daniel Wirszing

Sport Management

40  Exploring Factors that Affect Purchase Intention of Athletic Team Merchandise
    Donghun Lee, Galen T. Trail, Cindy Lee, Linda J. Schoenstedt

Health

49  Self-Regulation of Physical Education and Teacher Education Students' Attitudes
    Towards Exercises and Diet
    Carol Wilkinson, Keven Prusak, Tyler Johnson

55  Correlations among Stress, Physical Activity and Nutrition: School Employee Health
    Behavior
    Wynn Gillan, Millie Naquin, Marie Zannis, Ashley Bowers, Julie Brewer, Sarah Russell

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Street Soccer USA Cup: Preliminary Findings of a Sport-for-Homeless Intervention

by Jon Welty Peachey, Texas A&M University; Alexis Lyras, Georgetown University; John Borland, Springfield College and Adam Cohen, Texas A&M University

Abstract

Over the last decade, the emerging field of sport-for-development (SFD) has advanced global efforts of related and applied scholarship and programming. While most of the existing SFD body of knowledge addresses social challenges of the “global south”, today’s economic global recession spreads challenges beyond these regions. Scholars and practitioners of this emerging field are called to address this gap with related and applied scholarship and programming in the “global north.” Thus, the purpose of this preliminary study was to investigate the perceived impact of the U.S.-based Street Soccer USA Cup on its homeless participants and identify the event’s structures and processes that can facilitate positive outcomes. Data collection consisted of conducting focus group interviews with 11 players and six coaches, and engaging in direct observations. Data were analyzed through the process of open, axial, and selective coding. Results indicated positive perceived impact on participants through building a sense of community, creating hope, cultivating an outward focus, fostering goal achievement, and enhancing personal development. The Cup was effective in achieving positive impact through creating a celebratory and festive space for social interaction, and by creating an inclusive climate where achievement was celebrated. Findings derived from this research provide intriguing foundations for further research and development of the SFD field.

Key words: sport interventions, sport-for-development

Across the globe, there are a great number of sport-for-development (SFD) initiatives working to facilitate personal and societal change at the local, national, and international levels. SFD is the use of sport to exert a positive influence on public health, the socialization of children, youth and adults, the social inclusion of the disadvantaged, the economic development of regions and states, and on fostering intercultural exchange and peace (Schwery, 2003). One area within the SFD field that is beginning to generate attention among scholars and practitioners is the use of sport to address issues of social inclusion (Bailey, 2005; Sherry, 2010), as social inclusion has been recognized as a fundamental step in improving the social situations of disadvantaged people (Jarvie, 2003). While most of the SFD literature refers to projects and initiatives in the global “south”, given the global economic crisis, Lyras and Welty Peachey (2011) suggest that more research and interventions are also needed in the global “north.” In the U.S., homeless individuals have been marginalized and socially excluded from civil society. The number of people experiencing homelessness on a single night in the U.S. was approximately 643,000 in 2011, with the homeless population continuing to rise (National Alliance to End Homelessness, 2012). Although shelters and soup kitchens are valuable resources that aid thousands of people, they are often just Band-aids and cannot prevent the issue from continuing and expanding.

Feelings of being outcast, unwanted, and having minimal access to social outlets can lead to social exclusion (Sherry, 2010; Spaaij, 2009) and a lack of desire to improve one’s homeless status (Biswas-Diener & Diener, 2005). However, some sport-related research has focused on how sport can be utilized to empower and support marginalized, disadvantaged, and socially excluded groups such as the homeless (see Frisby, Crawford, & Dorer, 1997; Sherry, 2010). There has also been only a little research on the sufficient conditions, processes, and structures needed for achieving positive outcomes through SFD programs in specific settings (Coalter, 2007; Jarvie, 2003). Given this backdrop and gap in the literature, the purpose of this study was to conduct a preliminary investigation of the perceived impact of one sport-for-homeless intervention (the Street Soccer USA Cup) on its participants and to assess the structure and processes of this initiative that may leverage positive outcomes. Through this research, which was supported by the North American Society for Sport Management (NASSM) Research Grant Program, we addressed the following questions: (a) What is the perceived impact of the Street Soccer USA Cup on its participants?; and (b) What are the structures, processes, and program components of the Cup that contribute to its potential impact on participants?

Theoretical Framework

To understand and explain the outcomes, structures, processes, and program components of a sport-for-homeless initiative, we adopted a theoretical grounding that utilized sport-for-development theory’s (SFDT) elements of effective programming (Lyras, 2007, 2012a, 2012b; Lyras & Welty Peachey, 2011) coupled with Chalip’s (2006) social leverage theory. SFDT’s framework is useful for assessing the impacts, structures, processes, and program components of SFD interventions and social leverage theory helps us understand how sport events can foster positive outcomes.

Sport-for-Development Theory

SFDT (Lyras, 2007, 2012a, 2012b; Lyras & Welty Peachey, 2011) was developed to help understand the structures, processes, conditions, and program components of SFD interventions that can facilitate impact and produce liminality and communitas. Using grounded theory methodology, SFDT was developed out of the Doves Olympic Movement Project in Cyprus (Lyras, 2007, 2012a, 2012b), a SFD initiative that aimed at addressing issues of social exclusion and inter-ethnic conflict among Greek and Turkish Cypriots. SFDT proposes that Olympism, blending sport with cultural enrichment activities (e.g., arts, dance, and music) and educational activities (e.g., life skills, goal setting, global issues awareness, human rights) can provide a platform to help address various social issues and challenges in different contexts (Lyras, 2007, 2012a, 2012b; Lyras & Welty Peachey, 2011). SFDT and social leverage theory (Chalip, 2006) suggest that the blend of...
Preliminary Findings of a Sport-for-Homeless Intervention

Sport with an educational, festive, and cultural dimension creates conditions of belongingness, fosters a creative sense of community, and promotes peak experiences, all of which are essential foundations for personal development and well-being. When individuals interact in such conditions, individual psychological needs are being fulfilled (self-esteem and self-confidence, altruism and sense of belonging, hope, and trust). This fulfillment transcends individual thoughts, emotions, and behaviors to a more outward focus and perspective, and allows individuals to think, care, and act beyond self (Bandura, 1989; Lyras, 2007, 2012a). Lyras (2007, 2012a, 2012b) suggests that SFDT interventions can be effective if they utilize five components: (a) impacts assessment, (b) organizational, (c) sport and physical activity, (d) educational, and (e) cultural enrichment. These components encompass the organizational aspects, the environmental setting, and the conditions and the quality of the experience (e.g., process, content, and outcomes) (Lyras, 2007, 2012a, 2012b).

The first component of SFDT, impacts assessment, posits that SFD researchers should use scientific assessment procedures to identify the program components that lead to positive outcomes. Within the impacts assessment component, SFDT suggests that macro, meso, and micro levels of change should be evaluated to assess the impact of sport programs that promote positive social change (Lyras, 2007; Lyras & Welty Peachey, 2011). Macro refers to changes in infrastructure, economic resources, socio-economic indicators, and systems that provide opportunities to poor and underprivileged communities. Meso addresses changes in social networks, inter-group relationships, values, norms, group cohesion, social integration, and social capital. Finally, micro refers to psychological impacts such as self-esteem, perceptions, stereotypes, and empowerment (Burnett, 2006; Burnett & Uys, 2000). SFDT suggests that these indicators can be best facilitated and evaluated by utilizing the impacts assessment component and the remaining four components as building blocks for sport interventions (Lyras, 2007; Lyras & Welty Peachey, 2011).

The other four SFDT components refer to the process, structures, and conditions of sport interventions. The second component (organizational) proposes that participants in an SFD program should be actively involved with organizers in shaping and helping lead interventions, thus, merging top-down and bottom-up management. For example, in the Doves project coaches, youth, and organizers worked together to plan the structure and programming for the event (Lyras, 2007). The third component of SFDT is the physical activity/sport program, which should be based on five principles: (a) an inspiring moral philosophy, (b) educationally oriented engagement of the sport experience, (c) inclusive teams, (d) quality experiences, and (e) linking sport with cultural enrichment activities and active citizenship (Lyras, 2007; Lyras & Welty Peachey, 2011). The educational (fourth) component of SFDT is based upon social cognitive theory (Bandura, 1989), flow theory (Csikszentmihalyi, 1996), and problem-based learning (Brown & King, 2000). SFDT holds that an interdisciplinary curriculum can provide situated learning environments to help participants transfer knowledge to the real world that was gained through the sport intervention. Finally, SFDT suggests that the cultural enrichment (fifth) component can provide opportunities for recruiting individuals with diverse interests and backgrounds (beyond sport) and provide opportunities for luminal experiences (Chalip, 2006). In short, SFDT posits that in addition to using sport and physical activity to engage participants, SFD initiatives should provide educational and cultural enrichment designed to help participants make positive changes in their lives.

While conditions facilitated by the five building blocks of SFDT can provide positive and pleasant emotional, cognitive, and social experiences (e.g., satisfaction, communitas, sense of belonging), SFDT advances that SFD initiatives should aim for transferability of positive outcomes over time and space (e.g., into participants’ everyday lives in their respective communities) (Lyras, 2007, 2012a, 2012b; Lyras & Welty Peachey, 2011). Thus, SFDT’s contention that sport can develop community and peak experiences that transcend the self complements Chalip’s (2006) social leverage theory, which advances that the liminality and communitas evinced through sport events can serve as catalysts for building social capital and facilitating social change.

Social Leverage Theory

In social leverage theory, Chalip (2006) positions sport events as having the ability to build social capital and strengthen the social fabric through two interrelated themes of liminality and communitas. Liminality is the concept that something more important than sport is taking place at an event, that there is a collective energy and vitality that makes social rules and distinctions less important and which transcends sport. This liminality, also known as peak or optimal experiences, enables discourse and brings together divergent groups that might not otherwise come together, which facilitates the formation of new networks that can have both cognitive and affective impacts. It thus creates a safe space for sensitive issues to be explored, symbolized, and considered. The sense of community that is engendered through liminality is then labeled communitas. To enable and facilitate the development of liminality and communitas, Chalip (2006) recommends that event organizers can foster social interaction and evoke a feeling of celebration by employing several structural and process elements. Organizers should enable sociability among event visitors, and create event-related social events, such as parades and concerts, to produce a celebratory atmosphere. Organizers should also facilitate informal social opportunities as well as incorporate ancillary events, such as arts and music activities, as a complement to the sport programming. Finally, organizers should scheme widely, using symbols, colors, decorations, rituals, narratives, and stories to “make a visual statement that something special is happening” (Chalip, 2006, p. 117). Chalip then suggests that the celebratory nature of sport events creates the link between liminality and communitas, which facilitates the development of social capital and which can be leveraged to address social issues, build networks, and bring community action.

Street Soccer USA Background Information

Given the empirical gap in investigating how sport can be utilized to combat homelessness, we chose to situate our investigation within the Street Soccer USA (SSUSA) Cup, the premier event sponsored by SSUSA, a non-profit, SFD organization that uses soccer to provide a support system to homeless men, women, and youth for making positive life changes. SSUSA was founded in
2005 by Lawrence Cann in Charlotte, North Carolina. Cann has since expanded the initiative to 19 more cities across the U.S. SSUSA has three goals: (a) build community and trust through sports, transforming the context within which homeless individuals live from one of isolation, abuse, and marginalization, to one of community, purpose, and achievement; (b) require participants to set 3, 6, and 12-month life goals; and (c) empower individuals by marrying clinical services to sport programming and providing access to educational and employment opportunities (SSUSA, 2012).

The four-day tournament called SSUSA Cup is held each year in Washington, D.C. or New York City and brings together teams of homeless individuals from the cities in which SSUSA operates. Twenty-three teams (two cities fielded two teams), including one team from Russia, took part in the 2010 Cup in Washington, D.C. Each team was guaranteed five games in pool play, and the results of the pool play were used to create four different brackets for a championship tournament, with teams of similar skill level competing for one of four Cups. Kicking off the event was an opening ceremony, where the participants and their coaches paraded into the stadium in front of a large crowd holding signs representing their respective cities. The ceremony also featured guest speakers such as the mayor of Washington, D.C., as well as musical performances. Other celebratory concerts and activities were also held, along with 12-step meetings for individuals recovering from substance abuse. At the closing ceremony, trophies and medals were awarded, which included the MVP and Fair Play team award for sportsmanship. Also, the men’s and women’s national teams were announced. These national teams represented the U.S. at the 2010 Homeless World Cup in Rio de Janeiro, Brazil.

Methodology

This study is part of an ongoing, multi-year, research and capacity building partnership between the authors and SSUSA designed to assess the long-term impact of SSUSA on its participants and other key stakeholders, and to evaluate the programming, structures, and outcomes of the initiative. For the current study, we used a qualitative research design - specifically, focus groups - to provide preliminary data for further validation of an applied instrument design. Qualitative data collection is often used to understand the experiences of marginalized groups involved in intervention programs (Burnett, 2001, 2006; Sherry, 2010; Spaaij, 2009). Focus groups were utilized primarily because this method gives researchers the ability to explore topics that may not be understood well or fully developed in the literature (Morgan, 1997), and interactions among participants enhance data quality because participants can serve as checks and balances on one another (Krueger & Casey, 2000).

Participants and Data Collection

Participants were 11 players and six coaches and administrators who represented the geographic areas served by SSUSA. Purposive sampling was utilized to select participants from cities representing different geographic areas and with varied lengths of involvement in the SSUSA program. Selecting both coaches and participants and drawing our sample purposively from teams located in the West and Midwest and on the East Coast served to increase data dependability. As recommended by Neuman (2006), focus groups consisted of four to eight participants, thus giving each participant adequate time to talk and interact with others. The 11 players came from six different cities and ranged in age from 17 to 54. Their length of involvement in SSUSA varied from six months to two years. Three were female, four were White, four were African-American, two were Hispanic, and one reported a mixed race. There was a lower percentage of females involved in the Cup, so it was not unusual to have more males in the player focus groups. Two pre- and two post-focus group interviews were conducted with the players. In the coach/administrator focus groups, the six participants came from five different cities. One was female, five were White, and one was Hispanic. Five participants were coaches and administrators while one participant was a volunteer who had worked at the SSUSA Cup for the past two years. The years affiliated with SSUSA ranged from three months to three years. One pre- and one post-focus group interview was conducted with the coaches and administrators.

Participants were asked to consent to two focus group interviews, one the day before the SSUSA Cup began, and the second on the last day of the four-day event after their participation ended. The pre- and post-focus group interviews were conducted to assess possible changes in participants over the event. The research team conducted the interviews immediately before and after the event to minimize the potential for intervening variables. The focus group discussions lasted 60-90 minutes and were audio recorded with participant consent. Each participant was assigned a pseudonym. The focus group interview guides were semi-structured and based upon the tenets of social leverage theory (Chalip, 2006) and SFDT (Lyras, 2007; Lyras & Welty Peachey, 2011), and they were examined for face validity by SSUSA administrators prior to finalizing the guides. In addition to focus groups, field notes were collected, which included informal conversations with other key stakeholders, such as referees, others coaches, administrators, and psychologists. Direct observation was also utilized as the researchers witnessed approximately 50 matches and observed study participants’ involvement in many facets of the event.

Data Analysis

The data analysis process consisted of open, axial, and selective coding (Strauss & Corbin, 1990). Numerous codes were created through the open coding process (Miles & Huberman, 1994), with some of the open codes assigned a priori based on the tenets of SFDT (Lyras, 2007; 2012a; Lyras & Welty Peachey, 2011) and social leverage theory (Chalip, 2006). Following the open-coding process, similar codes were grouped under one category for ease of analysis, and then codes mentioned by fewer participants were winnowed out. The data were then reduced into a few general, emerging themes (axial coding). Finally, in the selective coding process, two of the researchers put “side by side” the stories of the participants to pinpoint similarities and differences between their experiences that fell under the emerging themes. Using this selective coding, quotations from participants were identified that illustrated the themes that emerged in the axial coding phase. Triangulation of measures and investigators was employed to enhance the dependability and credibility of the study (Lincoln & Guba, 1985). The researchers kept field notes of direct observations.
and informal conversations with referees, volunteers, and SSUSA staff members. Further, information was collected through pre- and post-focus group interviews. Additionally, member checks were conducted with participants, where they were asked to review transcripts and interpretations and provide feedback.

Findings and Discussion

Our first research question sought to ascertain the perceived impact of the SSUSA Cup on its participants. Findings revealed that the event had a mostly positive perceived impact, which we have crystallized into five broad themes: (a) building community and enhancing social networks; (b) creating hope and positive outlook on life; (c) cultivating an outward focus: trusting and helping others; (d) fostering goal achievement; and (e) enhancing personal development. To address our second research question, we will discuss the structural, process, and programmatic components of the SSUSA Cup, which facilitated these impacts within our presentation of each theme.

Building Community and Enhancing Social Networks

Every participant said the SSUSA Cup helped their teams form closer bonds, build bridges back to society at large, develop relationships with individuals from other teams, and expand their social networks. Thus, at the meso level of impact (Lyras, 2007), the Cup created a sense of communitas (Chalip, 2006) and gave participants the potential for increasing social capital development. For example, this was the first year that a team from one West Coast city came to the Cup. The team only practiced together once a week for two months before traveling to the Cup, so there was little opportunity for strong bonds of friendship and support to develop between team members. Early in Cup play, the team was losing and frustrated, and players were observed shouting at each other and expressing varying degrees of anger. However, as the days progressed, they began playing better and supporting and encouraging each other, and actually ended up winning one of the four Cups. In his post-event interview, Carter commented that the Cup “has built a better connection between me and my team. . . . We have this strong bond now.” In her post-event conversation, one of the coaches for the team, Anne, also spoke about how the team came closer together during the tournament; “When we first got here, we had people that really didn’t get along. . . . They never huddled the first five games. And then the last day and a half, we have a huddle, we have a chant, it’s great.”

Other players made similar comments as to how the Cup brought their teams closer together, built friendships, and facilitated teamwork. We also observed that all of the players and coaches for another team, men and women alike, wore Mohawk style haircuts to demonstrate team solidarity. In addition, many players spoke about how the Cup allowed them to connect with homeless individuals from other cities and helped them realize they were not alone in their struggles. For instance, Ben was an older participant in the Cup who had been homeless for a number of years before connecting with SSUSA in his city. This was his second year playing in the Cup. As such, he was considered a leader by many of the Cup participants and coaches. He commented that the previous year’s experience was an opportunity to “come here with other people that have the same kind of experience and I get to go out there and almost meditate with them.” Mitch, one of the oldest participants in the Cup, saw the event as an opportunity to “be in communion with my brothers . . . because I believe everybody is connected.” Mitch was an enthusiastic cheerleader throughout the event, bringing a positive attitude with him to the Cup, due in part to his positive experience with the local SSUSA team that helped create communitas with others. Dakota thought the Cup built friendships because “you see the similar experiences [to] what you’ve gone through and what they’ve gone through.”

In addition to fostering community, many players explained how the Cup and their preparations for the Cup expanded their social networks with their volunteer coaches and other individuals different from themselves, which could provide opportunities and open doors for them in the future (i.e., job placement, housing, education). The principal means through which these expanded networks began to emerge was through relationships with the coaches. Many players said their coaches played with them in their practices and games and that this inclusive structural feature, which connects to SFDT’s organizational component of top-down and bottom-up collaboration, helped forge stronger relationships. Dakota, for example, said “it’s just a really good experience because your coach . . . is doing as much work as you are.” Mike, one of the coaches, thought that playing with the participants enabled deeper relationships to form, “being physical with them and communicating on the court and then also doing some coaching. . . . It’s pretty cool.” At the Cup, coaches did not play in matches, but did practice with the teams and were actively involved in team workouts. Thus, connections were formed between participants and their coaches prior to the Cup through the SSUSA local structures, but the Cup appeared to accentuate and enhance these relationships. In our direct observations, we noted a “we’re in this together” mentality between and within many of the teams. Participants and coaches were observed eating together, practicing together, going on sightseeing trips through the city, and sitting in the stands for long periods of time talking, which built upon the relational foundation established back in home communities.

Communitas and the potential for social capital development were facilitated through the organizational structure and programming of the Cup. Numerous social activities were planned, such as musical entertainment and group dinners, which provided opportunities for individuals from different cities to communicate with each other. Additionally, all players and coaches stayed together in a youth hostel, which facilitated additional opportunities for networking and bonding. Several participants commented that the hostel experience was a highlight of the event. Thus, similar to Sherry (2010) and Spaaij (2009), we found that participants began to develop the capacity for increased social capital through the event, with the potential for these relationships to then leverage other economic (job attainment, sustainable income, and housing) and cultural capital resources (Chalip, 2006; Misener & Mason, 2006). Skinner et al. (2008) contend that one of the greatest challenges for disadvantaged groups is to find a community in which to belong. Therefore, according to Green (2008), SFDT interventions should focus on building community and relationships to facilitate positive outcomes, or a sense of communitas (Chalip, 2006), as this would allow for social network expansion and increased social mobility (Darnell, 2010). As SFDT suggests (Lyras, 2007; Lyras &
Welty Peachey, 2011), the Cup included non-sport programming (cultural and educational activities) in its structure, and fostered inclusionary competitive activities (coaches practicing and playing with the players), to facilitate expansion of social capital. One reason the SSUSA Cup was effective, then, is because it developed **communitas** and social network expansion through its structure and programming, which could allow participants to develop linking social capital (Woolcock, 2001) and leverage additional economic, cultural, and social capital resources to make positive changes in their lives (Skinner et al., 2008).

**Creating Hope and Positive Outlook on Life**

The Cup helped to cultivate a sense of hope and a renewed positive outlook on life among some of the participants – individuals who may have lost faith in humanity through harsh living on the streets or in shelters – through its liminality (Chalip, 2006), where there was a collective energy and vitality that made social distinctions less important and which transcended the Cup. For instance, George was a coach but also a formally homeless individual, who participated as a player in the Cup the previous two years. He reflected on how the Cup could instill hope in participants:

> Maybe they’ve never been in a stadium before in their lives and when they play on that pitch tomorrow and these seats are filled . . . and they walk through this parade, it will instill hope in them that they can achieve something much more off the soccer field.

After the event, Mitch also commented that the Cup “reinforced my faith in the human race. There are some good things going on and we don’t always see them.” Mitch had had a difficult life on the streets, moving in and out of shelters. For him, the positive experience at the Cup not only created hope, but renewed his belief that society could change. Ben also spoke about his previous experience at the Cup and how it increased his belief that positive change could happen, saying that, “we can go back there and show that homelessness isn’t permanent and that you can change your life through sports.” Finally, Trevor, a player on an East Coast team who was a former college soccer athlete but ended up homeless when he lost his job, said that “I played for the crowd [in college] . . . but I’m playing for something different now. A greater cause. . . . I play for self respect and hope.” This renewed sense of hope and positive outlook towards life (micro-level impacts) were engendered by the inclusive nature (bottom-up structuring) of the Cup’s programming (organizational component of SFDT), where participants interacted with, and engaged in decision-making processes with, coaches, volunteers, organizers and community members who generally treated participants with respect and as equals. This inclusive focus and liminality (Chalip, 2006) appeared to motivate participants to want to make positive changes in their lives and to work for change at the societal level.

However, we cannot claim that the Cup was effective in generating hope among all participants. For example, one player, Rick, was despondent over his play and had nothing to say in the focus group following the tournament, sitting dejectedly the entire time with his head down. Before the Cup, he was excited about the opportunity to play in front of a crowd, saying, “I’m really looking forward to the experience.” But due to his team’s poor play and his own performance, his enthusiasm was severely diminished. For Rick, the Cup did not cultivate a sense of hope or positive outlook on life, but rather, reinforced his already low opinion of himself.

In an informal follow-up conversation 10 months after the Cup with one of Rick’s coaches, we learned that Rick had relapsed into depression and substance abuse struggles. While Rick was the only individual in our sample who had a negative experience at the Cup, we can assume that other participants experienced some negative moments as well. In addition, we heard the institutional rhetoric of “I Play for Hope” (part of the SSUSA Cup slogan) repeated many times by participants. Participants may have been reciting institutional rhetoric, and as such, we must interpret our findings with caution. Potentially, though, the enrichment of activities, adjusted to the unique interest and potential of each participant, can create conditions for engagement and “healing” beyond the traditional sporting experience. While sport experts can provide conditions for engagement, sense of belongingness and well-being, it is recommended that social work and mental health experts be included in initiatives for an ongoing, close monitoring of the progress of the condition of each participant.

**Cultivating Outward Focus: Trusting and Helping Others**

The third impact of the Cup was its ability to cultivate an outward focus in some of its participants, enabling them to trust others again, show empathy, and develop a desire to assist others in similar circumstances. This micro-level impact was accomplished through the liminality and sense of **communitas** that emerged during the event (Chalip, 2006). For instance, one of the process elements Cup organizers used to facilitate these altruistic actions was to give a Fair Play Award at the end of the tournament to the team which best demonstrated sportsmanship and exemplified the SSUSA mission and ideals, embracing the educational component of SFDT (Lyras & Welty Peachey, 2011). Recognition was given to those teams and individuals who displayed good sportsmanship on the pitch. We observed several teams exhibiting better sportsmanship as the tournament progressed, as evidenced by helping opposing team players up after being knocked down, exchanging hugs and handshakes before and after matches, to even exchanging and signing jerseys, and providing opposing teams with gifts (T-shirts, flags, memorabilia from their cities) of friendship before the matches began. These acts of sportsmanship seemed to evolve as the days progressed and players learned to know members of opposing teams and bonded with them.

For example, Ben’s team in particular had a goal of “winning the Fair Play Award.” Ben also talked after the event about how the Cup helped him develop an outward focus, saying, “It’s made me more aware that I need to help other people . . . I need to have responsibility and help someone else come here next year. That’s what I want to do. That’s where the change is complete.” One of the most talented players at the Cup was Jenny, a former Division I intercollegiate soccer player who fell into difficult times through substance abuse and saw her life unravel, ending up homeless. Before the Cup, she said she was not sure what to expect, but afterwards, she explained how she was amazed at the impact the Cup had on her:

> It gives me a lot more faith in people, because a lot of the small things they recognize here, I overlook them – like effort,
getting acknowledgment, and people just coming out to play and acknowledging their effort and spirit.

Jenny also said that “I would love to praise [SSUSA] where I’m from and get my city more involved . . . make our city more aware of Street Soccer.” Other players mentioned their desire to help spread the word about Street Soccer back in their home communities, and to come back next year to the Cup not as players, but as volunteer coaches to help others make positive changes in their lives.

The coaches spoke about a positive change in good sporting behavior and outward focus among players. One coach observed her team “becoming more supportive of each other” as the Cup progressed, while another coach, when asked if he observed any changes in his team, replied, “Certainly . . . help the next guy up when he falls down. If it’s a hard push, remember why you’re here. Set your ego to the side.” However, not all players displayed good sportsmanship or developed an outward focus. We would observe Lamar, for instance, one of the participants in our study, often knocking opposing players down during matches and not helping them back up, or trash talking. Other players seemed to be focused entirely on winning, neglecting the message of fair play, demonstrating little concern for others.

Nevertheless, on the whole, through its educational focus on fair play (Lytras, 2007) and liminality evolving from the event (Chalip, 2006), the Cup was able to cultivate an outward focus among many participants, re-establishing trust and a sense of empathy that may have been lost while living in the harsh conditions of the street or shelter. This is a critical impact, and a necessary component of re-engaging the marginalized in society (Sherry, 2010), as without a renewed trust in humanity and compassion for others, it would be difficult for long-term sustainable change in the lives of the marginalized to be achieved (Skinner et al., 2008). Scholars advance that trust is a key element of social inclusion programs and must be established first before positive change can be enacted (Crabbe et al., 2006; Skinner et al., 2008). As a psychologist affiliated with SSUSA told us informally at the Cup, on the streets, the homeless lose trust and do not want anyone else to invade “their space.” Kaufman and Wolff (2010) also suggest that the team environment in sport can foster interdependence and a collective conscience, more so than in other environments, while Arnold (2003) advances that fair play learned through sport can help develop a socially conscious outlook such that one acts in a way that is just and fair. Here, then, the Cup’s educational focus on fair play helped to cultivate socially conscious behavior among the marginalized. This also extended into the desire of some participants to continue the legacy of the Cup by wishing to remain involved in the future and help provide other disadvantaged individuals with the same opportunities they had. An altruistic motivation on behalf of participants will be critical for the sustainability of SSUSA, as Skinner et al. (2008) have noted that SFD programs must recycle participants as volunteers and organizers to achieve sustainability.

Fostering Goal Achievement

The SSUSA Cup was also instrumental in motivating many participants to achieve their goals (micro-level impact), both prior to the actual tournament as a reward for making positive life changes, and through the Cup’s inclusively focused competition structure and provision of awards to participants. Many participants spoke about how the idea of playing in the Cup motivated them in the months preceding the tournament, to attend practices, set life goals, and achieve them. Donald’s response was typical:

“It’s going to change my life by playing here. It’s motivating me and making me reach my goals again. When I don’t have goals, I fall behind, and when I fall behind it’s putting my family down . . . Now it’s time to make it back up. Get my family back and prove something to myself.

Donald also mentioned that, “our team that’s here today, we based it off of who came the most for every time we started doing [practices] two days a week.” He was referring to the fact that selection criteria for participation in the Cup in the various cities was based on who made the commitment to show up at practices, and who was able to set positive life goals and achieve them. Anne described how the Cup was used as a reward for players in her program: “the Cup is like the cherry-on-the-top. . . . It’s just one of those great rewards that they get for their hard work and consistency.” Anne’s thoughts were echoed after the event by George, when he related the experience of one of his players:

“We have a guy who’s 20 years old. . . . He didn’t think he would score a single goal in this tournament. He turned out to be the leading goal scorer on our team . . . and he far exceeded his goals. . . . I think that is what this thing is about, to have a tangible goal in mind . . . and then ideally we would succeed and overachieve.

For others, just the fact that they showed up at the Cup was an accomplishment, as they had lost motivation and a passion for life as homeless persons. Jenny’s story exemplified how the Cup helped some participants find motivation and learn that they could commit to life again. As a former Division I soccer player, she had visions of playing professionally, but then poor life choices saw her living on the streets, not playing soccer. She related that:

“I was intending to go pro . . . and when you don’t it’s just a hard reality check. It’s a blown commitment. I didn’t think I’d ever play again. . . . This to me is more rewarding than any competitive game I’ve ever played in college. . . . It’s already created a lot of opportunities for me.

At the conclusion of the Cup, Jenny was one of the players selected to represent the U.S. at the Homeless World Cup, which she said was thrilling for her, and a reward for her hard work and commitment to making positive life changes. The national team was selected by the coaches, and individuals were chosen for the team based upon not only their performance at the SSUSA Cup, but also their commitment to making changes in their lives.

While it is difficult to disentangle the effects of the SSUSA Cup on goal achievement from the effects of participation in SSUSA at the local sites, it does appear that the SSUSA Cup was used as a motivational tool by organizers at many sites to reward players for achieving goals. At the local sites, participants set 3-, 6- and 12-month life goals as part of SSUSA programming, which were then interconnected with the SSUSA Cup, as the event served as reward for positive change. Without the Cup being positioned as a “carrot” for participants, the efficacy of goal setting and achievement in the local arena may have been diminished. Thus, the Cup did have a positive effect on goal achievement, both before and during the event. In fact, all of our study participants except for Rick spoke about how the event fostered goal achievement. As mentioned
earlier, Rick had a negative experience at the event, but he did not comment either positively or negatively on how the SSUSA Cup impacted his goal achievement, although we can infer that he did not achieve his competitive goals due to his despondency after the Cup. Likely, other Cup participants as well would not have achieved their goals fully.

However, the structure and programming of the Cup did facilitate goal achievement for many participants. Selection of the national team, as well as the Fair Play and MVP awards, were motivators for participants to play well and achieve their life as well as soccer goals (i.e., winning the Cup). Many participants spoke about their desire to win the Cup, and how this motivated them to achieve. Organizers recognized the need to foster goal attainment, and thus, instead of only crowning one champion, they awarded four different Cups, allowing teams to play against similar caliber teams after the round-robin part of the tournament. Medals were awarded to all participants, regardless of a team’s win-loss record. This structural component aligned with SFDT’s (Lytras, 2007; Lytras & Welty Peachey, 2011) contention that the sport component of SFD interventions should strive to foster inclusivity and participation rather than exclusionary competitive models. By focusing on inclusion, the Cup enabled many participants to realize goals, which would hopefully be a stepping stone to achieving other positive life goals upon returning home.

Enhancing Personal Development

In the end, the activities, competition, and structure of the Cup, which created the liminoid space of the event (Chalip, 2006), enhanced the personal development of many participants, engendering enhanced self-esteem and self-confidence, cultivating leadership skills, and helping participants make positive life choices (micro-level impact). Consequently, the potential for building greater social capital was facilitated through the event. Almost all of the players in our focus groups noted the Cup increased their self-esteem and self-confidence. At the beginning of the Cup, there was an opening ceremony featuring a parade of participants, where players and coaches entered the stadium as the crowd cheered and clapped. National media also attended, capturing the parade on film and interviewing players. These cultural enrichment activities, as explained through SFDT (Lytras, 2007; Lytras & Welty Peachey, 2011), subsequently enhanced the self-esteem of the players, providing recognition to individuals who perhaps the day before were sleeping on the streets or in a tent in the woods. For example, Jared commented on all of the attention and how this made him feel:

I’ve never done this before. I feel like a star right now. I feel like we got a professional team, [being] watched on NBC, playing soccer for the USA Cup. I never would have thought in a million years being interviewed. Man, that’s a big event. I’ve never had it before. It feels good.

Dakota also said after the Cup that she learned “that I’m talented. I can do whatever I want as long as I put my life into it.” while Jenny commented afterwards “I feel like we won but we didn’t really win.” Finally, George provided an illustrative quote as to how the Cup impacted him and those individuals he played with last year:

They [the crowd] weren’t staring at me because I was asking for money or they weren’t staring at me because I hadn’t been able to shower in a couple of days. They were looking at me . . . like . . . there’s this guy out there, or there’s this women out there working hard and trying to better themselves . . . . It really lifted their spirits.

For others, the tournament helped to build leadership skills. Carter, for instance, when asked what he learned through the Cup, said, “I learned that I can become a motivational speaker. I was just amazed at all of the inspiring words I could give to anybody.” Throughout the four days, we observed Carter growing in his leadership ability. At first, he was quiet and playing a passive role with the team, but by the end of the tournament, he was a vocal, inspirational leader, helping his team win one of the Cups. Anne also observed the growth of leadership in her team. Early in the tournament, she did not see strong leadership emerging, but then as the days progressed, she noted “the last few games, everyone stepped up . . . we really had leaders.” Finally, personal development was enhanced through the Cup by helping participants learn how to make positive life choices. George shared his perspective about playing at the Cup:

I think for those of us who have made poor decisions in the past, on the pitch I’m not being judged for whatever it is I’ve done . . . I’m one person, part of a team, trying to accomplish a common goal . . . . It’s making the right decisions on the pitch . . . and then that translated off the field, making right decisions off the field.

Jenny commented on how her training for the Cup helped her feel like she was making positive choices again; “I haven’t felt like I’ve been doing the right thing . . . this feels good to be doing the right thing for the right reason. It feels so empowering.” However, as mentioned earlier, not all participants had a positive experience at the Cup. We cannot say that personal development was enhanced for Rick, who was highly despondent and disappointed in his play. Lamar was another participant who made a few positive comments about his experience at the Cup, but his demeanor and sarcasm suggested that he was not really taking the experience seriously, and that he was in D.C. more to just have a good time. A few other players were also observed to not fully participate in the Cup programming (not interacting with others, staying to themselves, disappearing for long periods of time).

In spite of these challenges, it was perceived that the Cup did enhance a number of personal development indicators of many participants (self-esteem, self-confidence, leadership, positive life choices) through providing inclusive, competitive opportunities for success, and through offering cultural enrichment activities (such as the parade during the opening ceremony) that provided much-needed recognition. This structure and programming is in line with the tenets of SFDT, which suggest that blending inclusive structures and programming with cultural enrichment activities will create the conditions to facilitate social change (Lytras, 2007; Lytras & Welty Peachey, 2011). Our results are also congruent with findings from other studies with marginalized populations, which have concluded that sport can be an effective tool for building self-esteem, self-confidence, and enhancing personal development among the marginalized and disadvantaged (Burnett, 2006; Frisby et al., 1997; Sherry, 2010).
General Discussion, Implications for Theory, Research and Practice

Through this study, we sought to identify the perceived impact of the SSUSA Cup on its participants and identify the structures, processes, and program components that facilitated positive impacts. We found that the event was perceived by participants to have a positive impact on many, but not all, of the homeless men and women playing in the Cup, which was facilitated by its inclusive programming, and blend of cultural enrichment and educational activities (Lyras, 2007; Lyras & Welty Peachey, 2011). The preliminary findings of this study represent a contribution to the SFD literature given that it is one of the first empirical assessments in the “north” that aims to understand the processes and the impact of a sport-for-homeless initiative. This study also provides the foundation for further instrument design and demonstrates how SFDT can be utilized in various SFD contexts (Lyras, 2007, 2012b; Lyras & Welty Peachey, 2011).

Further longitudinal studies are needed to ascertain whether or not SFD initiatives have lasting impacts on their participants. Cross-sectional designs, while able to contribute to assessment of immediate impact, do not aid in determining lasting effect. There is need to examine the characteristics and constraints of individuals for whom SFD initiatives have the best (or least) effect. Academicins should begin partnerships to launch new SFD initiatives, as well as work with existing SFD organizers, participants, and policy makers to collaborate on program design and assessment strategies. From a practical standpoint, organizers of SFD initiatives targeting the marginalized should strive to de-emphasize competition and focus on inclusionary activities that build community and provide recognition. Modifications to existing sport structures should be incorporated, such as mandating that all players on a team receive equal playing time, and providing all participants with awards regardless of whether or not they “won” the competition, so that self-esteem and self-confidence can be enhanced. Educational and cultural activities should be merged with sport programming to facilitate positive impact, as suggested by SFDT and social leverage theory (Chalip, 2006; Lyras, 2007, 2012a; Lyras & Welty Peachey, 2011). As Spaaij (2009) reiterated, the transformational capacity of SFD can only be realized when interventions are offered in conjunction with non-sport activities. Finally, those engaging in SFD work should realize that interventions are most effective when partnered with other social services (Crabbe, 2000), and that they must occur within a broader developmental framework for change. Stand-alone SFD programs will have marginal impact if they are not tied into other community resources to facilitate long-term engagement and impact.

Findings should be interpreted with caution due to limitations such as social desirability bias, the pre-post focus group methodology perhaps not allowing time for participants to deconstruct the event, and not ascertaining long-term impact. However, given the sensitivity of the population and the preliminary stage of this research, our study respected both the uniqueness of the group under investigation and the scientific value, without overwhelming the participants with long and extensive data collection processes. SFD interventions should apply a mixed methods approach utilizing multiple sources of information (Lyras, 2007, 2012a; Lyras & Welty Peachey, 2011). Lastly, SFD researchers and practitioners are cautioned not to oversimplify the complexity of challenges such as poverty and homelessness, since such problems entail institutional, cultural, political, and financial complexities beyond integration of the marginalized into the political economy and culture of a society (Lyras, 2012a, 2012b; Lyras & Welty Peachey, 2011).

Author’s Notes:

This research was supported by the North American Society for Sport Management (NASSM) Research Grant Program. All authors contributed equally to this work.

References


Climate and Motivation for Women Athletes in Palestine

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Abstract

The purpose of this study was to investigate the factors that motivate women athletes to participate in sport in Palestine and the motivational climate created by coaches and parents. Additionally, participants' commitment to sport was investigated as well as the social constraints that Palestinian women athletes face. Participants (n = 107) included women athletes who were members of the following sport federations: soccer, volleyball, basketball, table tennis, and track and field. The athletes were asked to complete the following surveys: 1) Sport Motivation Scale, 2) the Perceived Motivational Climate in Sport Questionnaire-2, 3) the Parent-Initiated Motivational Climate Questionnaire, and 4) the Sport Commitment Model Scale. T-test and multiple regression analysis were utilized between the variables in the study as well as descriptive statistics. The results indicated women athletes in Palestine reported more intrinsic motivation to play sport than extrinsic motivation. Also, motivational climate created by the coach was the only factor to predict women's motivation to play their sport. Finally, women athletes in Palestine are highly committed to their sport.

Key words: sport, women athletes, motivation

Introduction

One of the most popular approaches to examining motivation in sport is self-determination theory (SDT) which suggests that behavior can be intrinsically motivated, extrinsically motivated, or that amotivation can exist (Deci & Ryan, 1985; Ryan & Deci 2000a). Intrinsic motivation refers to engaging in an activity purely for the pleasure and satisfaction derived from doing the activity (Ryan & Deci, 2000b). Researchers have proposed different types of extrinsic motivation can be ordered along a self-determination continuum (Ryan, Connell, & Großnick, 1992). The third dimension of self-determination theory is amotivation, which takes place when contingencies are perceived between the behavior and their outcomes. The individual is not intrinsically or extrinsically motivated but only feels incompetence and loss of control (Deci & Ryan, 1985, 2000).

The motivation for participating in sport and striving for improvement is likely to vary considerably from person to person (Montague, 2008). Pederson (2002) suggested that men and women had a similar pattern of sport motives and they participated in sport mainly for intrinsic reasons. Further, the type of motivational factors “intrinsic or extrinsic” depends upon the personal characteristic of the participants as well as the type and amount of sport participation and whether this sport participation is casual or intense, individual or group, coerced or chosen (Pedersen, 2002).

Fortier and associates examined the relationship of competitive and recreation sport structures and gender to athlete sport motivation (Fortier, Vallerand, Briere, & Provencher, 1995). Using a sample of 399 French-Canadian athletes (collegiate: 220; recreational: 179), the authors found the competitive athletes showed less intrinsic motivation to experience stimulation and less intrinsic motivation to accomplish than recreational athletes, while exhibiting more identified regulation and more amotivation than recreational athletes. The authors explained this finding due to the increased pressure to win experienced by the competitive athletes. Fortier et al. (1995) also found women athletes were more intrinsically motivated to accomplish and exhibited more identified regulation than men athletes, while displaying less external regulation and less amotivation than men athletes. These results are similar to those reported previously regarding extrinsic motivation (Nunez, Martin-Albo, Navarro, & Gonzalez, 2006; Vallerand & Bissonnette, 1992). However, no statistically significant sex differences related to intrinsic motivation were found by Nunez et al. (2006). The authors explained these differences due to several factors that have affected motivation (e.g., cultural differences, socioeconomic status, and age).

A similar study to Fortier et al. (1995) examined the relationship between motivation and elite performance using 98 (M = 63; F = 35) Bulgarian athletes (Chantal, Guay, Dobreva-Martinova, & Vallerand, 1996). The participants’ athletic performances in national and international events over the prior two years were documented and compared. The results indicated that, in comparison with less successful athletes, title and medal holders displayed higher levels of non-self-determined extrinsic motivation and higher levels...
of amotivation. Furthermore, the motivation of women athletes was more strongly characterized by intrinsic motivation when compared to their men equivalents.

Additional factors, including the motivational climate created by parents and coaches, can affect an athlete's intrinsic and extrinsic motivation. Motivational climate is the goal structure of the situation perceived by the athletes and is affected by significant adults such as parents and coaches. It reflects the significant features of an environment that create a task or ego involving climate (Ames & Archer, 1988). According to Waldron and Krane (2005) sport psychology researchers have been interested in how the actions of coaches and parents, such as their use of rewards, punishments, and feedback, can affect a motivational climate. For example, a motivational climate created by parents may affect children’s perceptions about how their mothers and fathers viewed the importance of learning new physical activities (Papaioannou, 1992). Further, parental pressure to participate in sport has been shown to negatively affect their children’s enjoyment of sport (White, Duda, & Hart, 1992).

Although research suggests that motivational climate created by parents and coaches plays a role in an athlete's motivation, sport commitment is another important variable in why an athlete participates in sport. Sport commitment is defined as a psychological state representing the desire to resolve or continue sport participation (Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993a). Zahariadis, Tsorbatzoudis and Alesandris (2006) found that there is a positive relation between self-determination and sport commitment as self-determination is encouraging of sport commitment, whereas low self-determination decreases sport commitment. Therefore, an athlete's sport commitment is a function of motivation. Furthermore, a number of researchers have recently turned to the Sport Commitment Model Scale (SCMS) to understand athletes' desire and determination to continue participation. The SCMS was developed by Scanlan and associates, to examine the reasons for individuals to continue participation in sports (Scanlan, Simons, Carpenter, Schmidt & Keeler, 1993b). The 14-item SCMS measures sport commitment, sport enjoyment, social constraints and involvement opportunities (Scanlan et al., 1993b). Sport commitment has been defined as a psychological construct representing the desire and resolve to continue sport participation. Sport enjoyment is defined as a positive affective response to the sport experience that reflects generalized feelings such as pleasure, liking, and fun. Social constraints are the social expectations or norms that create feelings of obligation to remain in the activity. Involvement opportunities are valued opportunities that are present only through continued involvement (Scanlan et al., 1993a).

Women’s Sport in Palestine

Between 1948 and 1967, women’s sports clubs did not exist; therefore, women in the Middle East, particularly Palestine, could only practice sport in elementary, preparatory, and high schools. In the early 1970s, some sports clubs such as the YMCA in Jerusalem and the Orthodoxy Club of Beit-Jala, established women’s basketball and table tennis sport teams (Younes, 1992). At that time Palestinian community colleges, which offered associate degrees, also started to set up sport recreational activities for women. In 1974, the first events for women in college, table tennis and semi-marathon, were organized. Later in the 1970s, many Palestinian community colleges were converted into universities and began offering women’s teams in basketball, volleyball, table tennis, and track and field. As a result, more sports clubs established women's teams. The first official tournament for women was in basketball and was organized by the Palestinian Sports Club Union in 1990 (Younes, 1992). Consequently, women athletes started to participate in regional and international sport events. In addition, women athletes with special needs participated in regional and international Paralympics sport events (Younes, 1992).

In 1994, many sport federations in Palestine were recognized by their respective international federations, and thus, women athletes’ participation abroad became more frequent and organized (Ministry of Youth and Sport, 2003). As a result, the Ministry of Youth and Sport in Palestine created a strategic plan in 1995. This plan has succeeded in co-operating with the federations of different sports to establish women’s teams within most sport federations, including the Football Federation (Al-Yaziji, 2002). As a result, there are now women national teams in Palestine for basketball, tennis, handball, karate, taekwondo, fencing and athletics (Al-Yaziji, 2002).

There are obstacles facing women in sport in Palestine. For example, the lack of financial support to assist in carrying out sports activities (BZU, 2004; El-Masri, 2010) and supporting sport clubs as well as the lack of a wide base of specialized women physical education teachers in schools are considered the main obstacles for women sport in Palestine (BZU, 2004). According to Younes (2004) school curriculum offers only one physical education class of 45 minutes per week, which is not sufficient for effective sport participation. However, while boys have alternatives in terms of practicing sport in clubs, girls do not.

Another obstacle facing women’s sports in Palestine is the resistance, which comes from a combination of conservative social traditions and religious fundamentalism which varies from one city to another (Montague, 2008). For example, the majority of people in the conservative and religious society in Palestine still views women’s football as something of an aberration. According to Montague (2008), one coach explained how difficult it is to be a coach for girls in a conservative society like Palestine. The coach also added some cities are very conservative and totally off-limits for recruitment.

The Palestinian society is very conservative, with religion and family having a great impact on women’s sport participation. Walseth and Fasting (2003) found the different interpretations of Islam greatly affect, whether directly or indirectly, the ways women participate in sport in Egypt. The same could be applied to the Palestinian society due to the similarity between the two countries in term of religion and culture. Moreover, parents also have great influence on their daughters’ involvement in sport. Some parents are noticeably culturally sensitive to sport and prefer their daughters to spend their free time at home (Cortis & Muir, 2007). Furthermore, there are certain cultural and religious requirements that must be fulfilled in order for the majority of women to play sport in Palestine. These requirements consist of dress code (i.e., accommodating the different sports dress rules to Muslim women’s dress codes), family expectation and responsibilities (i.e.,
Climate and Motivation for Women Athletes in Palestine

permitting families members to attend their daughters training and activities), and facilities used only by women (i.e., planning in the future to have facilities that are only used by women) (Cortis & Muir, 2007).

Finally, the movement restrictions between cities in Palestine make it impossible for the sport teams to practice together (Montague, 2008; El-Masri, 2010). Thus, the players travel to another Middle Eastern country like Egypt to meet for practice. Additionally, the ring of the checkboxes that surrounds the city of Bethlehem in Palestine prevents the players from practicing on a grass pitch which is only 10 miles away from the city and instead they practice on a nearby concrete court (Montague, 2008).

The Significance of the Study

Women in Palestine face many obstacles to participate in sport from their parents and the society. These obstacles vary from one city to another in West Bank, Palestine. Besides, women in professional leagues (federations) face gender bias in their participation in sport. Despite that, there are women athletes in the Palestinian sport federations who were able to face all these obstacles and have the motivation to continue their participation in sport. Few studies address women sport in Palestine (Younes, 2004; Al-Masri, 2008). When examining the motivational climate for women athletes in sport federations in Palestine, there is almost no research (Ministry of Youth and Sport, 2003). With this gap in research, it is understandable why the obstacles are still present, and why women’s sport in Palestine has progressed slowly. However, by understanding the different kinds of motivation women athletes experience and the obstacles they are facing, perhaps then more opportunities for empowering women to be athletes should be afforded to them. The purpose of this study was to investigate the factors that motivate women to participate in sport on a professional level in Palestine; that is, whether they are intrinsically or extrinsically motivated. A secondary aim of this study was to examine if the motivational climate created by the coaches and the parents was different in commitment between the athletes from the north and south of West Bank, Palestine.

Method

Participants

A total of 107 women athletes from the following sport federations took part in this study: 1) soccer, 2) volleyball, 3) basketball, 4) table tennis, 5) swimming, and 6) track and field. Participants ranged from 10 to 25 years of age. The majority (63%) of the sample was from the south of Palestine and the remainder was from the north.

Instrumentation Description

The Climate and Motivation for Palestinian Women’s Athletes survey has four subscales: 1) Sport Motivation Scale, 2) the Perceived Motivational Climate in Sport Questionnaire-2, 3) the Parent-Initiated Motivational Climate Questionnaire, and, 4) the Sport Commitment Model Scale.

The Sport Motivation Scale (SMS) was utilized to assess various components of intrinsic motivation, extrinsic motivation, and amotivation toward sport (Pelletier et al., 1995). The SMS is a 28- item questionnaire containing seven subscales that assess three types of intrinsic motivation (Intrinsic Motivation to Know, Intrinsic Motivation Toward Accomplishments, and Intrinsic Motivation to Experience Stimulation), three forms of extrinsic motivation (Introjection, Identification, and External Regulation), and an Amotivation subscale. Respondents completed the SMS using a 7-point Likert scale with 1 signifying “does not correspond at all” and 7 representing “corresponds exactly”. Cronbach’s Alpha scores for the SMS scale, intrinsic motivation subscale, extrinsic motivation subscale and amotivation subscale were .91, .88, .88, and .75 respectively. Thus, scores were highly reliable as a measure of these three types of motivation.

Motivational climate created by the coaches and the parents was assessed in this study. First, the Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2) was used to measure two high- order scales of motivational climate; the task-involving climate subscale had the ego-involving climate (Newton, Duda, & Yin, 2000). Task involving climate has three subscales: Effort/ Improvement, Important Role, and Cooperative Learning. As well, ego involving climate has three subscales: Intra-Team Member Rivalry, Unequal Recognition and Punishment for Mistakes (Newton et al., 2000). This scale consists of 33 items; we selected 21 of the original 33 items in order to reduce the length of the overall survey. Items with the highest standardized factor loading from each subscale were selected (Newton et al., 2000). Respondents normally complete the PMCSQ-2 by using a 5-point Likert scale with 1 signifying “strongly disagree” and 5 representing “strongly agree,” but a 7-point Likert scale was utilized in the present study to allow for the use of standard 7 point responses for all survey instruments (Andrew, 2004). A study by Colman, Norris, and Preston (1997) examined changing a survey scale from 5-point scale to 7-point scale, examining comparability, equivalence, and estimation in both directions (i.e., between 5-point and 7-point scales and between 7-point and 5-point scales). The results support the equivalence of changing a survey scale in linear regression equations. Cronbach’s Alpha scores for the PMCSQ-2 scale, task-involving climate subscale and Ego-involving climate subscale were .83, .90 and .85 respectively. Thus, scores were highly reliable as a measure of these two types of motivational climate created by the coach.

Next, the parent-initiated motivational climate questionnaire was taken from White et al. (1992) adaptation of Papaioannou’s (1992) scale. The questionnaire has 28- items and contains three subscales labeled Worry Conducive Climate, Success Without Mistakes (Newton et al., 2000). Respondents normally complete the PMCSQ-2 by using a 5-point Likert scale with 1 signifying “strongly disagree” and 5 representing “strongly agree,” but a 7-point Likert scale was
The Sport Commitment Model Scale (SCMS) was utilized to evaluate the determinants of sport commitment (Scanlan et al., 1993b). Sport commitment is described as a psychological state representing the drive and/or desire to continue sport participation (Scanlan et al., 1993a). The 14-items SCMS measure sport commitment, sport enjoyment, social constraints to continue participating in the sport activity, and involvement opportunities afforded by continued participation (Scanlan et al., 1993b). Nine of the original 14 items were selected in order to reduce the length of the overall survey. Three items from sport commitment subscale as well as sport enjoyment subscale were selected. Items with the highest standardized factor loading were selected (Scanlan et al., 1993b). All the items (3 items) from the social constraints subscale were selected. The involvement opportunities subscale questions were not used due to the irrelevance of the items in this subscale to the items used in the questionnaire. For example, "Would you miss your friends in your sport if you left the program?" Respondents completed the SCMS by using a 5-point Likert scale, with 1 signifying "not at all/none or nothing" and 5 representing "very much or a lot," but a 7-point Likert scale was utilized in the present study to allow for the use of standard 7 point responses for all survey instruments. Cronbach’s Alpha scores for the SCMS, sport commitment subscale, sport enjoyment subscale and social constraints subscale were .78, .84, .92 and .86 respectively. Thus, scores were highly reliable as a measure of these three types of commitment. Finally, demographic questions were administered that incorporated the following items: the name of the participant’s village/city, years of playing the sport overall, and the number of coaches the participant had during playing experience.

Procedures and Statistical Analysis
The researcher mailed the Climate and Motivation for Palestinian Women’s Athletes survey to the Ministry of Youth and Sport in Palestine. The Ministry of Youth and Sport, which was established in 1994, is the official organization in charge of sports in Palestine. It is responsible for planning and supervising youth and sports activities in accordance with the national sport plan as well as with the Olympic Committee. The questionnaires, along with IRB approved parental consent forms and a clear list of instructions created by the researcher on how to administer the questionnaires, were then mailed by the Ministry to the respective coaches at the following sport federations: 1) soccer, 2) volleyball, 3) basketball, 4) table tennis, 5) swimming, and, 6) track and field. After receiving affirmative parental consent, the coach at each federation distributed the questionnaire to the athletes who then completed and returned them to the coach. The federations then mailed the completed questionnaires back to the Ministry of Youth and Sport. The swimming federation chose not to participate in this study. The researcher then collected the questionnaires from the Ministry. During the survey process, two reminder phone calls were made to the coaches by the Ministry of Youth and Sport, and 41% of the questionnaires were returned. The questionnaires were translated from English to Arabic and adequate translation procedures were followed using the parallel back-translation procedure (Brisling, 1986).

T-Test analysis was utilized to determine if women athletes in Palestine were intrinsically or extrinsically motivated to play sport on a professional level. Multiple regression analyses were utilized to determine how much coaches and parents affect women athletes’ motivation; whether intrinsically or extrinsically, to play sport on a professional level. Descriptive statistics were computed to determine how committed women athletes are to their sport. A t-test was utilized to determine if women athletes from the north were more committed to their sport than women athletes from the south of West Bank, Palestine. Finally, Pearson correlation analyses were utilized to determine a correlation between the sport commitment subscale, sport enjoyment subscale and the years of playing sport as well as the number of the coaches each player had since they started playing their sport.

Results
The purpose of this study was to investigate the factors that motivate women to participate in sport on a professional level in Palestine; that is, whether they are intrinsically or extrinsically motivated. A secondary aim of this study was to examine if the motivational climate created by coaches and parents affected women athletes’ motivation to play sport on a professional level. The third aim was to investigate if there was a difference in commitment between the athletes from the north and south of West Bank, Palestine. It was hypothesized that: 1) Women athletes in Palestine were intrinsically motivated rather than extrinsically motivated to participate in sport; 2) Coaches and parents do affect the motivational climate of women athletes in Palestine; and, 3) Women athletes in the northern region of Palestine were more committed to their sport than women athletes from the southern region.

The sample featured a total of 107 women athletes. The majority (63%) of the sample were from the south of the country and the remainder (37%) from the north. Years of playing sport ranged from two to 14 years (x = 4.9 ±2.3). The number of coaches each player had since they started playing sport ranged from one to 20 coaches (x = 2.6 ±2.7).

Table 1 displays the mean and standard deviation of the four subscales of the Climate and Motivation for Palestinian Women’s Athletes survey. The lowest observed mean was x = 3.56±2.04 (i.e., Father Learning) and highest was x = 5.71±1.05 (i.e., sport commitment). The Father Learning subscale had the highest variability among all subscales (% CV ~ 57%) and the intrinsic subscale had the lowest variability (% CV ~ 15%).

T-test analysis was utilized to determine if women athletes in Palestine were intrinsically or extrinsically motivated to play sport on professional level. The result showed there was a significant difference between intrinsic and extrinsic motivation with mean difference of 0.4063 and 95% CI between 0.22 and 0.59. Women athletes in Palestine reported more intrinsic motivation to play sports (x = 5.60±0.86) than extrinsic motivation (x = 5.18±1.04); with p-value = 0.0001.
In examining the effects of coaches and parents on women athletes’ intrinsic and extrinsic motivation (dependent variables) to play sport on a professional level, the authors first utilized blockwise multiple regressions with coach variables first entered, father variables second entered and then mother variables entered to demonstrate how the variances were explained by each block. Then for a parsimonious model, we used the stepwise selection and compared the results.

For intrinsic motivation (see Table 2), the first block (coach variables) explained 12% of the variances (p < .01). The second block (father variables) explained an additional 1.5% of the variance although it was not a significant increase in $R^2$. The coach and father blocks together explained significant proportion of variances (p < .05). The third block (mother variables) explained an additional 1% of the variance. However, the proportion of variance explained by the all three blocks became insignificant (p > .05).

The small sample size with many predictors in the model may be the reason for this aberrant pattern. However, the whole population from which the sample was taken was approximately 140 participants at the time the study was conducted. Out of eight predictors in the model, Task was the only significant variable. In other words, coaches’ task involving climate (where efforts are rewarded and cooperation is valued and mistakes are considered part of the learning) had positive and significant effects on women athletes’ intrinsic motivation to play professional sports. Moreover, adjusted $R^2$ also shows that the addition of father and mother variables did not add to the explanatory power of the model. In search of a parsimonious model, the authors then used the stepwise selection. It presented the model with one predictor (Task), which alone explained 12% of the variance in intrinsic motivation. Adjusted $R^2$ shows that this simple model is the best fitting model.

Similar analyses were conducted for extrinsic motivation (see Table 3). The coach variables explained 11% of the variance (p < .01). When the father and mother variables were added, the increase in the proportion of variance explained was minimal and insignificant.

Again, stepwise method presented the best fitting model, which included only one predictor, Ego. In other words, coaches’ ego related climate (where recognition is only given for a talented athlete, emphasizing on intra-team rivalry and mistakes are punished) had positive and significant effects on women athletes’ extrinsic motivation to play professional sports. Women athletes’ perception of their family support was not significantly related to both intrinsic and extrinsic motivation. For both intrinsic and extrinsic motivation, only one variable turned out to be a significant predictor making this a simple regression rather than a multiple regression (Pedhazur, 1997).

Descriptive statistics were computed to determine how much committed women athletes were to their sport. Results showed that women athletes were highly committed to sports with mean response of 5.19 out of 7.0. Of the three subscales, sport commitment was the highest ($\bar{x} = 5.71$ ± 1.05), followed by sport enjoyment ($\bar{x} = 5.60$ ± 1.28) and social constraints ($\bar{x} = 4.26$ ± 1.83).

A t-test was utilized to determine if women athletes from the north were more committed to their sport than women athletes from the south.
from the south of West Bank, Palestine. Results showed there were significant differences in the sport commitment subscale between athletes from the north and south with a mean difference of 0.4644 and 95% CI between 0.03 and 0.90; and there were significant differences in the sport enjoyment subscale between athletes from the north and south with a mean difference of 0.9404 and 95% CI between 0.49 and 1.4. Results also suggested there were significant differences in social constraint subscale between athletes from the north and south with mean difference of -1.465 and 95% CI between -2.21 and -0.72.

Finally, Pearson correlation analyses were utilized to determine a correlation between the sport commitment subscale, sport enjoyment subscales and the years of playing sport as well as the number of coaches each player had since the started playing their sport. The results indicated no significant correlation between years of playing sport and the two subscales (sport commitment subscales and sport enjoyment subscale). Results also indicated no significant correlation between sport commitment subscale, sport enjoyment subscale and the number of coaches each player had.

**Discussion**

The results indicated that women athletes in Palestine engaged in a particular sport activity for a combination of intrinsic and extrinsic reasons. However, women athletes in Palestine were more intrinsically motivated to play sport. These results are similar to those reported previously (Pedersen, 2002; Pelletier et al., 1995; Vallerand & Bissonnette, 1992). According to Pelletier et al. (1995) when people are intrinsically motivated and self-determined, they are more involved in the activity itself and thus display better performance. Therefore, women athletes in Palestine who are intrinsically motivated may perhaps be eager to become more proficient in their sport. In addition, they may be more willing to face the obstacles in their society that prevent them from either participating in their favorite sport or continuing this participation. Such motivation and commitment are important in a conservative society like Palestine where women face many obstacles from their families and society that eventually force many of them to quit sport. It is important to cultivate intrinsic motivation among the girls who are already playing sport as well as those who are not playing sport but are contemplating future participation.

However, having intrinsic or extrinsic motivation to play sport is not enough in a conservative country like Palestine. Women athletes in Palestine need a climate that facilitates their participation and motivates them to continue participating in sport. Although the results showed that all the variables (of the climate created by the coach and parents) do contribute to women athletes' motivation; however, only the task and ego-involving climate created by the coach were the significant predictors. Results demonstrated that intrinsic motivation is positively associated with the task-involving climate created by the coach. While extrinsic motivation is positively associated with the ego-involving climate created by the coach, coaches in Palestine can enhance the intrinsic motivation of their women athletes when they create a task-involving climate. This is consistent with the Waldron and Krane (2005) study which also suggested that coaches would do well to emphasize effort, learning, and improvement (task involving climate) as the key to success instead of emphasizing intra-team member rivalry, unequal recognition, or and punishment for mistakes (ego-involving climate). For example, women athletes in Palestine who are intrinsically motivated believed their coaches emphasized the importance of self-improvement rather than outplaying others and emphasized effort rather than winning by rewarding athletes when they tried their best.

In addition, women athletes in Palestine believed that their mothers and fathers did not affect their motivation to play sport, whether it was intrinsic or extrinsic. However, White et al. (1992) stated that parents had a great influence on their child’s reaction to their sport experience. The present finding could be related to the nature of the Palestinian society; as a religious and conservative society that views sport for girls as an aberration. Therefore, most parents do not appreciate the idea that their daughters are playing sport on the professional level. Thus, it may be important to study in-depth parents’ effects on women athletes’ motivation in Palestine particularly on young athletes. According to Lopiano (2004), if a girl does not play sports by the time she is 10 years old, there is a less than a 10% chance that she will be involved in sports when she is 25 years old.

Finally, the results showed that women athletes in Palestine are highly committed to their sport and also enjoy participating in sport; however, women athletes from the north of West Bank are more committed and enjoyed participating in their sport more than women athletes from the south. Moreover, the results showed

<table>
<thead>
<tr>
<th>Table 3. Results of Multiple Regression on Extrinsic Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Block 1 (Coach)</strong></td>
</tr>
<tr>
<td>Intercept</td>
</tr>
<tr>
<td>Task</td>
</tr>
<tr>
<td>Ego</td>
</tr>
<tr>
<td>Father</td>
</tr>
<tr>
<td>Mother</td>
</tr>
<tr>
<td>R² change</td>
</tr>
</tbody>
</table>

*p<.05   **p<.01
that athletes from the north reported less social constrain from their parents than athletes from the south. In other words, women athletes from the north are not committed to their sport because they want to please their parents but because they are enjoying it. In addition, Montague (2008) reported there are differences between cities from the north and the south of West Bank in terms of conservatism and the will to have more women engage in sport. This finding is important because it highlights important facts that should be considered when establishing new strategies to engage more women in sport in Palestine as well as how these strategies can use different ways to approach the parents and the society depending on their geographic location.

Furthermore, although the results showed that women athletes are highly committed to their sport and also enjoy participating in sport, the social and cultural obstacles women athletes are facing have forced many of them to stop playing their favorite sport. Women athletes in Palestine in this study believed that their mother, father, and society played no role on either encouraging or discouraging their participation in sport. However, due to culture and family stress, the women soccer team has already lost two first-team players to husbands who demanded their wives give up soccer (football) for duties in the home (Montague, 2008). Furthermore, women in Palestine have been competing at the international level since 1994 and this participation has been progressing slowly since then (Younes, 2004). And although there are women national teams for basketball, tennis, handball, karate, taekwondo, and fencing, women national tournaments in these different sports are rarely held (Al-Yaziji, 2002). Without understanding these obstacles, it is suggested that women athletes’ participation in sport in Palestine will become more difficult and infrequent.

It is essential to investigate the parents and the society view and influence on women’s sport in Palestine to be able to change it. Such changes could be done by educating youth at schools about the importance of playing sport for both genders and by conducting more research regarding women’s sport which, in both cases, may result in having a new generation who values and plays sport at both professional and non-professional levels. Currently, there are very few studies that address the history of women’s sport in Palestine and its teams’ participation in regional and international tournaments (Al-Masri, 2008; Younes, 2004). When examining the motivational climate for women athletes in sport federations in Palestine, there is almost no research (Ministry of Youth and Sport, 2003). With this gap in research, it is understandable why the obstacles are still present, and why women’s sport in Palestine has progressed slowly.

Conclusion

As the results of this study have suggested, women athletes in Palestine in the sports federations are more intrinsically than extrinsically motivated to participate in sport. This motivation can be enhanced by factors in the home and sport environments. Women athletes believed their coaches provided them with the desired level of task-involving climate, and therefore, influenced their intrinsic motivation that reflected generalized feelings such as pleasure, fun, and enjoyment. Thus, the coach has the capability to influence the athlete’s desire to continue sport participation (Andrew, 2004). However, surprisingly, women athletes in this study believed that their parents played no role in their motivation to play sport.

The significance of the findings of this study is that if Palestinian women athletes are intrinsically motivated to play sport and their coaches play an affirmative role in continuing to participate in sport, then perhaps more opportunities for empowering women to be athletes should be afforded to them. Currently, there is no national policy that supports women athletes’ right to participate in sport in Palestine, although women in Palestine are allowed to play sport on the professional level (sport federations). The results of this study may encourage officials in the Palestinian sport federations, mainly the football federation, to continue their work to achieve gender equality, to address women’s rights to play sport, and to have equal opportunities (compared to men athletes) in sport activities, perhaps even creating a policy similar to Title IX in the United States.

Limitations

This study was designed to investigate women athletes in several sport federations in Palestine. In some federations, all the women athletes were from one or two cities due to the popularity of some sports in certain cities, or due to the tradition in other cities. This resulted in not having a representative sample and thus limits the generalizability of this study. Also, women athletes in the sport federations do not necessarily represent all women who participate in sport in official leagues. Different forms of participation in sports exist, including reasons such as leisure.

Recommendations for Future Research

Future studies should incorporate other populations such as women athletes who participate in sport for other reasons such as leisure, to support the generalizability of results. Also, there is a need to investigate other samples to compare the sport motivation scale factors depending upon other variables, such as the reason for participating in sport (e.g., competition, fun, coaching and leaderships styles). Future studies could also compare the sport motivation for women athletes between individual and team sports. Finally, future studies should look at the governmental policy that promotes equality between girls and boys sport teams.

Acknowledgment

The authors would like to thank Ibrahim Elsabbah from the Ministry of Youth and Sport for his help in distributing and collecting the survey.

References


Gamesmanship Beliefs of High School Coaches

by Brad Strand, North Dakota State University

Abstract

This study evaluated gamesmanship beliefs of high school coaches from a rural Midwestern state in the United States. Two hundred and fifty-six coaches participated in this study with comparisons drawn by gender, highest level of participation, formal coaching training, years of experience, and officiating experience. Participants completed a 25-statement survey. The survey consisted of 25 gamesmanship statements that asked subjects to indicate if an action was clearly acceptable (1), acceptable (2), unacceptable (3), or clearly unacceptable (4). Chronbach's Alpha measure (α=.938) indicated a high consistency and reliability for the statements on the survey instrument. A crosstabs analysis provided Pearson Chi-Square or Fischer Exact tests to identify statistical significance within the variables. For all of the statements, a majority of respondents identified the statements as either unacceptable or clearly unacceptable. In addition, there were very few significant differences based on gender, highest level of participation, years of coaching experience, formal coaching education, or officiating experience.

Sport participation is an important part of today’s society with an estimated 50 million girls and boys participating in organized, non-scholastic youth sport and another seven million involved with school-sponsored sport activity (National Council of Youth Sports, 2008; National Federation of State High School Associations, 2007). The sports that children participate in are numerous with many children participating in two or more sports into their adolescence (Sporting Goods Manufactures Association, 2010; Strand, 2006).

A common problem within sports is that many children and athletes become frustrated with a lack of playing time, an overemphasis on winning, and poor ethical coaching strategies, resulting in youngsters quitting at a time when they should be having fun playing a game, instead of competing for a championship (Burnett, 2001; Weinberg & Gould, 1999). It is often claimed that coaches tend to lose sight of the fact that they are working with impressionable boys and girls or young men and women and emphasize winning more than other important values (Martens, 2012; Sage & Eitzen, 2013). This is not unique to youth sports, as all levels of athletic participation are plagued by poor sportsmanship and questionable ethical decisions by coaches (Harrison-Dyer, 2011; Vallerand, Deshaies, & Cuerrier, 1977). These questionable decisions can have long-lasting effects on the ethical decision making of future generations (Engh, 2002).

The coaching profession places many demands upon coaches. A majority of athletes think they deserve to play, if not start; parents expect their sons and daughters to be treated with respect; spectators and the media scrutinize coaching decisions via Monday morning quarterbacking; and everyone expects that his or her favorite team will win (Strand & Ohm, 2007). The manner in which coaches act during the course of practices and games may reflect their true character and certainly impacts many others (Clark, 2002). When a coach yells at or challenges game officials, his or her actions are critiqued by athletes, parents, spectators, fans, and the media who are in attendance or participating in the competition. Depending on the perception of an individual, a coach can be viewed as passionate or pathetic, demanding or demeaning. Coaches tend to talk about sportsmanship and fair play, but often, while in the heat of a game, they take the “win at all cost” approach, and pull out all the stops to earn a victory (Garbin, 2010). This “win at all cost” approach is found in youth league sports as well as high school sports (Garber, 2006; Garner, 2013).

Sport scholars have long studied sportsmanship, ethical beliefs, and moral reasoning of athletes and coaches (Beller & Stoll, 1995; Doty, 2006; Hahm, 1989; Kavussanu & Roberts, 2001; Rees, Howell & Miracle, 1990; Rudd & Stoll, 2004; Weiss & Bredemeier, 1990). Not studied as extensively; however, is the concept of gamesmanship (Howe, 2004). Gamesmanship has been defined as “the art or practice of winning games by questionable means without actually breaking the game’s rules, but violating their spirit”; or “the use of ethically dubious methods to gain an objective” (Gamesmanship, n.d).

Acts of gamesmanship are not confined to arguing with officials, opposing players, opposing coaches, and opposing fans. Coaches break, bend, or fail to assist in the application of rules that are implemented to protect the integrity of the game. An example would be an ice hockey coach who sends a player in as the “enforcer” or “goon” to intimidate or protect a teammate. The “brushback” pitch or even “beaning” a player on purpose in baseball is an act that is often viewed as “part of the game”, but it is considered deplorable when it happens to a player on one’s own team. Designing trick plays that bend the rules or embarrass an opposing team, such as hidden ball tricks, distraction plays, or some plays that purposely deceive the opposing players on a team has long been a part of sports.

A recent, real-life act of gamesmanship played out during an American football game in Manchester, CT (Roberts, 2010). During the first half of a football game a player from Team A lost his list of coded plays from his armband. Apparently the list ended up in the hands of the first year coach from Team B. During the second half the coach of Team B used the list of plays to determine the play calls of Team A. Although this act was not illegal, many would consider it unethical and an act that violates the spirit of the game.

A press release by the Josephson Institute was titled: Report Reveals Propensity of More High School Athletes to Lie and Cheat When the Stakes Are High. A subtitle in the release stated: National Survey Suggests Many Coaches, Especially in Football, Baseball, and Basketball Are “Teaching kids to cheat and cut corners” (Josephson Institute, 2007). This report summarized the responses of 5,275 high school athletes to a written survey administered in 2005 and 2006 and based it’s judgment of coaches’ behavior on the answers provided by athletes. Specific examples included: 1) 43% of boys thought it was proper for a coach to teach basketball players how to illegally hold and push in ways that are difficult to detect, 2) 40% saw nothing wrong with using a stolen playbook
sent by an anonymous supporter before a big game, and 3) 27% believed it is a proper gamesmanship strategy for a football coach to instruct a groundskeeper to soak the field to slow down the opposing team.

In an attempt to gather information from a coaches’ perspective, the general purpose of this study was to investigate the gamesmanship beliefs of high school coaches.

Method

Participants

The participants for this study were 256 high school coaches from a rural Midwestern state in the United States who were members of the state High School Coaches Association (HSCA). The HSCA had an active membership of 921 coaches. The response rate for this study was 27.8%. The study was available to member coaches through a listserv of coaches’ e-mail addresses obtained from the HSCA membership data-base.

As shown in Table 1, there were more males (197) than females (59) who elected to complete the survey, with 77% of the respondents being male and 23% female. With respect to years in the coaching profession, the data showed that it was fairly even between percentage of respondents with 1-10 years of experience (93 coaches, 36.5%), 11-20 years of experience (79 coaches, 31.0%), and 20+ years of experience (83 coaches, 32.5%). One hundred and fifty-one of the coaches had experience as officials (93 coaches, 62.1%), while 97 had no experience officiating (37.9%). A majority of high school coaches (62.5%) also played collegiate or professional sports, while 37.5% had played high school sports only. Finally, a high percentage, 75.8%, of the coaches, had formal training in coaching.

Table 1. Demographic Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>197</td>
<td>77.0%</td>
</tr>
<tr>
<td>Female</td>
<td>59</td>
<td>23.0%</td>
</tr>
<tr>
<td>Highest Level of Sport Participation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>96</td>
<td>37.5%</td>
</tr>
<tr>
<td>College</td>
<td>159</td>
<td>62.1%</td>
</tr>
<tr>
<td>Professional</td>
<td>1</td>
<td>00.4%</td>
</tr>
<tr>
<td>Years of Coaching Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-10</td>
<td>93</td>
<td>36.5%</td>
</tr>
<tr>
<td>11-20</td>
<td>79</td>
<td>31.0%</td>
</tr>
<tr>
<td>21+</td>
<td>83</td>
<td>32.5%</td>
</tr>
<tr>
<td>Officiating Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>159</td>
<td>62.1%</td>
</tr>
<tr>
<td>No</td>
<td>97</td>
<td>37.9%</td>
</tr>
<tr>
<td>Formal Coaching Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>194</td>
<td>75.8%</td>
</tr>
<tr>
<td>No</td>
<td>62</td>
<td>24.2%</td>
</tr>
</tbody>
</table>

Analysis of the Data

Completed surveys were collected via Survey Monkey and converted to an Excel spreadsheet. The data on the spreadsheet were entered into the Statistical Package for the Social Sciences (version 19) for analysis. Statistical analysis used to analyze the data included crosstabs to determine percentages and a contingency chi-square test to find statistical differences for gender, highest level of participation, years of coaching experience, formal coaching education, and officiating experience. For further analysis, the responses were combined into two categories: clearly acceptable/acceptable (a.k.a. acceptable) and unacceptable/clearly unacceptable (a.k.a. unacceptable). A crosstabs analysis provided Pearson Chi-Square and Fischer Exact tests to identify statistical significance within the variables.

Results

Table 2 shows the survey statements and the percentage of high school coaches who identified the statement as clearly acceptable/acceptable. Significant differences in identifying the actions as clearly acceptable/acceptable or unacceptable/clearly unacceptable were found within gender for statements 7 (P = 0.047, Fisher’s Exact Test, FET), 13 (P = 0.005, FET), 15 (P = 0.017, FET), and 22 (P = 0.035, FET). For statements 7 (A player trash talks the defender after every score by demeaning the defender’s skill.) and 22 (To get his team worked up, the coach deliberately swears at an official to get thrown out of the game.) significantly more females
Jane Doe

Gamesmanship of Coaches

Table 2. Percentage of High School Coaches Who Believe the Statement is Clearly Acceptable or Acceptable.

<table>
<thead>
<tr>
<th>Statement</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A coach orders a player to “attack” a pre-existing injury of the top</td>
<td>.6%</td>
</tr>
<tr>
<td>2. In baseball, a key player for X is hit by a pitch. In retaliation,</td>
<td>4.4%</td>
</tr>
<tr>
<td>3. In football, a lineman deliberately seeks to inflict pain on an</td>
<td>9.6%</td>
</tr>
<tr>
<td>4. In football, a coach’s team is out of time-outs at a crucial point</td>
<td>2.4%</td>
</tr>
<tr>
<td>5. A basketball coach teaches players how to illegally hold and push in</td>
<td>12.0%</td>
</tr>
<tr>
<td>6. In softball, a pitcher deliberately throws at a batter who homered the</td>
<td>5.6%</td>
</tr>
<tr>
<td>7. A player trash talks the defender after every score by demeaning the</td>
<td>2.8%</td>
</tr>
<tr>
<td>8. In baseball, a coach instructs the groundskeeper to build up the third</td>
<td>15.3%</td>
</tr>
<tr>
<td>9. In ice hockey, a coach sends in a player to intimidate opponents and</td>
<td>23.3%</td>
</tr>
<tr>
<td>10. In hockey, a player illegally alters a hockey stick in a manner that</td>
<td>1.6%</td>
</tr>
<tr>
<td>11. After scoring, a player does an elaborate showboat dance in front</td>
<td>0.4%</td>
</tr>
<tr>
<td>12. In basketball, player X is fouled. Player Y, the team’s best free throw shooter, goes to the line undetected by the ref.</td>
<td>3.6%</td>
</tr>
<tr>
<td>13. In football, a coach instructs the groundskeeper to soak the field</td>
<td>14.5%</td>
</tr>
<tr>
<td>14. In soccer, during a penalty kick, a goalie, hoping the referee will</td>
<td>4.8%</td>
</tr>
<tr>
<td>15. On the winning point of the game, a volleyball player touches the</td>
<td>48.8%</td>
</tr>
<tr>
<td>16. A coach argues with an official intending to intimidate or influence</td>
<td>14.5%</td>
</tr>
<tr>
<td>17. In tennis, a ball is called out though the player is certain it hit</td>
<td>42.1%</td>
</tr>
<tr>
<td>18. In soccer, a player deliberately fakes a foul hoping the best player</td>
<td>4.0%</td>
</tr>
<tr>
<td>19. While on the bench, players boo, taunt and jeer opponents.</td>
<td>0.4%</td>
</tr>
<tr>
<td>20. In volleyball, an official makes a mistake in the score. The coach</td>
<td>10.9%</td>
</tr>
<tr>
<td>21. Before an important game, a coach receives an anonymous envelope with</td>
<td>10.0%</td>
</tr>
<tr>
<td>22. To get his team worked up, the coach deliberately swears at an official to get thrown out of the game.</td>
<td>1.6%</td>
</tr>
<tr>
<td>23. To motivate players, a coach uses profanity and personal insults while coaching.</td>
<td>0.0%</td>
</tr>
<tr>
<td>24. In a high school game, a parent continually screams coaching</td>
<td>1.2%</td>
</tr>
<tr>
<td>25. At a youth soccer game, a parent yells insults at players whenever</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

than males chose the statements to be acceptable. For statements 13 (In football, a coach instructs the groundskeeper to soak the field to slow down an opposing team) and 15 (On the winning point of the game, a volleyball player touches the ball before it goes out, but the referee misses the touch. The player says nothing.), more males than females chose those statements as acceptable.

Significant differences within years of experience were found in statements 9 (P = 0.014, FET) and 16 (P = 0.005, FET). For both statements, (9 - In ice hockey, a coach sends in a player to intimidate opponents and protect his own players; 16 - A coach argues with an official intending to intimidate or influence future calls.) more males than females chose those statements as acceptable.

Significant differences within officiating experience were found in statements 4 (P = 0.029, FET) and 13 (P = 0.042, FET). Those with officiating experience compared to those without officiating experience were more likely to identify statement #4 (In football, a coach’s team is out of time-outs at a crucial point in a big game. He instructs a player to fake an injury to get a needed time-out) as unacceptable, while for statement #13 (In football, a coach instructs the groundskeeper to soak the field to slow down an opposing team) they were more likely to identify the action as acceptable.

Significant differences within levels of participation were found in statements 13 (P = 0.046, FET) and 16 (P = 0.005, FET). For both statements, (13 - In football, a coach instructs the groundskeeper to soak the field to slow down an opposing team; 16 - A coach argues with an official intending to intimidate or influence future calls.) coaches with college/professional playing experience compared to those with only high school playing experience were more likely to believe the actions were acceptable. A significant difference within formal coaching training was found in statement 20 (P = 0.014, FET). For this statement, (In volleyball, an official makes a mistake in the score. The coach who benefits says nothing), coaches without formal coaching training compared to those who had training were more likely to believe the action was acceptable.

Discussion

Research by CHARACTER COUNTS!\textsuperscript{SM} Coalition has suggested that high school athletes participating in sports have problems with cheating, poor sportsmanship, and improper gamesmanship (Character Counts, 2004, 2008). Why is it that certain athletes develop the attitude that it is acceptable to exhibit the aforementioned traits, while others do not?

Coaches have a profound effect on how athletes develop certain aspects of their character (Green & Gabbard, 1999). Through the duration of their high school playing careers, players develop an understanding of gamesmanship by observing and experiencing the ways in which their coaches handle particular situations (Stankovich, n. a.; Turman, 2003; University of Washington, 2009). Because of this impact on the character development of young athletes, coaches must perform their jobs with a high level of moral character, respect of the rules, and an understanding that the game being played is not bigger than the effect it may have on the lives of the participants.

It has been suggested that there is a possibility that athletes
develop characteristics such as cheating, poor sportsmanship, and improper gamesmanship from the individuals who coach them in the sports in which they compete (Josephson Institute, 2007). However, from the results of this study, it appears that the problem may not be that coaches are unethical or “poor” sports. In fact, coaches showed a deep understanding of proper gamesmanship and in every case identified the more appropriate choice. Additionally, there were very few significant differences based on gender, highest level of participation, year’s of coaching experience, formal coaching education, and officiating experience.

It was found that the coaches as a collective group most often responded to the statements as either unacceptable or clearly unacceptable. While it is difficult to determine right and wrong for the statements, it is fair to say that the more appropriate response would be to identify the statements as unacceptable or clearly unacceptable. For almost every statement, a majority of the coaches responded believing that the statement was unacceptable or clearly unacceptable.

Two statements, 15 and 17, warrant specific discussion. Approximately 49% of the respondents believed it was acceptable/clearly acceptable that “on the winning point of the game, a volleyball player touches the ball before it goes out, but the referee misses the touch, the player says nothing” and 42% believed it was acceptable/clearly acceptable that “in tennis, a ball is called out though the player is certain it hit the line. The player says nothing and takes the point.” The ethical paradox in these two statements is very interesting. Many coaches believe that it is a referee’s job to regulate the game and make the decisions that pertain to a game’s rules. If a referee misses a call that goes in one’s favor, coaches believe they should not have to do the referee’s job. However, if the coaches are on the negative end of the call, they may request a “conference” with the officials in an attempt “to help” the official.

Of all the acts of unsportsmanlike behavior that fans read about, hear about, or even witness, it is suggested from the results of this study that most coaches would not knowingly exhibit the characteristics of an individual who would act violently, exhibit poor sportsmanship, or act aggressively towards officials, other coaches, fans, or other players. Furthermore, it is the opinion of this author that these unethical, unsportsmanlike, or gamesmanship acts are isolated. While the mentioned actions may have a profound effect on the athletes who witness them, most coaches would not act in such a manner. It is apparent from the results of this survey that an overwhelming majority of coaches believe in conducting themselves in a manner that would be deemed sportsmanlike and ethical.

It is possible that some coaches may condone the use of instrumental aggression towards an opposing player. Instrumental aggression is geared at intimidating an individual to help one accomplish a goal (Loughhead & Leith, 2001). Throwing inside on a batter in baseball or attacking an existing injury of an opponent are both examples that occur in sports. In statement 9, 23% of the coaches indicated that it was acceptable/clearly acceptable for an ice hockey coach to send in a player to deliberately intimidate opponents and protect their own players. Ice hockey is an aggressive, if not violent sport, and condoning violent actions could have devastating effects on how players conduct themselves on the ice.

In trying to establish the source that has the greatest influence on athletes and coaches, it is important to begin educating athletes, parents, coaches, and fans (especially extended family and students of all ages who watch games) on what is ethical, what is gamesmanship, and what is considered “good taste” at sporting events.

**Conclusion**

In the end, the high school coaches’ responses to the statements showed that they would most often exhibit proper gamesmanship in the settings the statements depicted.

The coaches in this study, as a whole, are not to blame for the individual, isolated cases of extremely poor gamesmanship, violence, or aggression that occur in sport. They do need to be careful, however, since their words, actions, and other cues are analyzed, interpreted, and sometimes embedded into the minds of young athletes; and could be misinterpreted, misused, contorted, or negatively changed.

But where should a coach draw the line to preserve the general gamesmanship of the competitive game? A coach must remember that his or her actions can have consequences that extend beyond the game itself. Coaches have been reprimanded, fired, and even arrested for poor decisions regarding sportsmanship and gamesmanship (Simon, 2004). Overall, a coach must remember that when properly channeled, participation in sports may offer young people a positive avenue for character development, since the challenges and situations that occur during competitive sports are similar to what young adults may face later in life (Wellman, 2007). Tragically, coaches often lose sight of the fact that the impressionable athletes they coach are watching all that they do, and eventually may emulate a coach’s unsportsmanlike or unethical demeanor on the court and possibly in real-life situations. It is imperative that coaches not only preach sportsmanship and ethics in sports, but also become models of the good gamesmanship they seek to develop in their athletes.

Although a fine line can be drawn between intentionally breaking the rules and unknowingly breaking the rules, it is much harder to determine if a coach is doing either one when it ultimately comes down to the admittance of guilt. In a well-known 1990 American football game between the University of Colorado and the University of Missouri, the seven officials on the field, the “chain-gang” working the sidelines, and the scoreboard operator, all lost track of the downs (Simon, 2004). This ultimately led to a fifth down for Colorado that allowed them to score the game-winning points. The ethical question that could be asked is, “Did the Colorado team intentionally cheat by accepting the win?” Colorado did not intentionally give themselves an extra down. The referees simply made a mistake. Many would argue that Colorado was not in the wrong. One could, however, fault the ethical decision of the Colorado coaches and administration for not forfeiting the win to the team that truly earned it within the rules. A clear example of cheating would be a situation in which a football player moves an already spotted ball, prior to the first down measurement while the coach contests the spot. This is an obvious act of cheating and would draw a 15-yard penalty, but the new spot could give the team a first down and 10, instead of a turnover on downs.
One limitation of this study is that it is reliant on the honesty of the coaches who were surveyed. A second limitation relies on the interpretation of the statements by the coaches. It is possible that some of the statements could have been confusing since coaches could interpret some of the terminology differently than what was intended by the researcher. Closely related to the limitation of interpretation would be an uncertainty of the rules of particular sports. If a coach was not familiar with the rules or gamesmanship values of a given sport, he or she may not have been able to make a fair evaluation of the statement. Finally, it must be noted that the survey was only given to coaches in one state, thus limiting the analysis to the coaches of that state.

References


Learning Strategies Used While Developing Motor Skill Assessment Competency

by Luke E. Kelly, University of Virginia, U.S.A. and Jason Bishop, Northern Michigan University, U.S.A

Abstract

This study investigated the effectiveness of a web-based assessment training program and whether explicitly guiding the participants toward the recommended learning sequence would improve their performance on assessing the underhand roll compared to participants that were given free choice of their learning sequence. Participants were 48 volunteer pre-service undergraduate kinesiology majors from two universities that were randomly assigned to two treatment groups. The data collected on the participants included pre and post assessment scores, as well as program usage data: the frequency and time spent using each of the training program options. Results revealed a non-significant treatment effect was found between the two treatment groups, but significant overall pre to post performance gain of 24.4 percent (ES = .772). Program usage data revealed that participants with higher competency scores significantly used the guided practice option more frequently and for more time and overall used the program for more time than participants with lower competency scores.

Keywords: physical education, teacher training

A requisite of teaching motor skills (e.g., kicking a soccer ball, shooting a basketball) is the ability to accurately evaluate motor performance and identify what components are correctly performed and what errors are being made (Horvat, Block, & Kelly, 2007; Kelly, Wessel, Dummer, & Sampson, 2010). Research has indicated that physical education teachers are not proficient in motor skill assessment, and often performed no better than undergraduate students, coaches, or classroom teachers in assessing motor skills (Behets, 1996; Biscan & Hoffman, 1976; Hoffman & Sembiante, 1975; Imwold & Hoffman, 1983; Walkley & Kelly, 1989).

Physical education teacher education (PETE) programs have also been shown to be ineffective in teaching PETE students how to assess the performance of motor skills (Lounsbury & Coker, 2008; Pinheiro & Simon, 1992; Reeves, 2000). Typically, PETE programs assume that motor skill assessment skills are learned when pre-service students complete a theory-based course such as biomechanics or motor development (Hoffman, 1974; Lounsbury & Coker, 2008). However, research indicates that the theory-based knowledge of movement concepts do not transfer to motor skill assessment skills (Daniels, 1984; Knudson, Morrison, & Reeve, 1991).

Many barriers have been identified as to why motor skills are not effectively taught in the PETE curriculum, with one of the greatest barriers being time (Lounsbury & Coker, 2008). Pre-service students are limited by the amount of class time available and the number of courses available, in a typical PETE curriculum. As such, PETE students do not have adequate opportunities to become competent in each topic in their curriculum (Nielsen & Beauthamp, 1992). Specifically, motor skill assessment training is often limited to the teaching of concepts of qualitative assessment as opposed to motor skill assessment competency (Walkley & Kelly, 1989).

Computer-based instruction (CBI) has been found to be as effective, if not more effective, than traditional teacher-directed instruction in teaching foundational skills (Huang, Liu, & Chang, 2012; Jenks & Springer, 2002; Lee, Shen, & Tsai, 2008). The advantages of CBI over teacher-directed instruction are that it can be programmed to adjust the pace and path of instruction based on the needs of the learner, it can be accessed 24/7, it can provide immediate feedback, and it can manage and record the learners’ performance. The effectiveness of CBI in education has been supported by several meta analyses reporting moderate effect sizes in favor of CBI. For example, Kulik and Kulik (1991) examined 254 studies on general use of CBI and found a moderate effect size (ES = 0.30) while Cohen and Dacanay (1992), examining 47 studies in CBI in health professions, reported an ES of 0.41. Additionally, a study by McNeil and Nelson (1991) with 63 studies involving interactive video and cognitive development found an ES of 0.53.

In response to the need for an innovative way to improve motor skill assessment training and the efficacy of CBI, the Motor Skill Assessment Program (MSAP) (Kelly, 2007) was developed. The MSAP is a web-based application that provides individualized motor skill assessment training designed based on behavioral and adult learning theory. Behavioral learning theory was selected because it provides alignment between appropriate learning strategies (i.e., cues, stimulus, response, feedback, and associations) and the desired goals of MSAP (i.e., foundational knowledge of correct motor skill assessment). Behaviorism is based on the basic principles of operant conditioning, and learning is associated with observable changes in behavior. Learning is demonstrated by a correct response after a particular stimulus is presented (Ertmer & Newby, 1993). The primary focus of behaviorism is “how the association between the stimulus and response is made, strengthened, and maintained” (Ertmer & Newby, 1993, p. 55). In behavioral learning theory, the presentation of the stimulus and resulting environmental consequence is key, as responses that are followed by reinforcement are more likely to be repeated in the future (Ertmer & Newby, 1993).

The user control and learning sequencing of MSAP were designed using adult learning theory (ALT), which proposes that adults have different learning needs than children, and therefore, programs must be designed to address their particular learning needs and characteristics (Cercone, 2008). ALT is based on five assumptions that address the difference between children and adults as learners: (a) self-concept of the adult learner is one of self-directed learning, (b) past experiences of the adult learner serve as a resource, (c) readiness to learning is related to changing social roles, (d) orientation to learning is problem-centered and...
Developing Assessing Competency

Based on immediate application of knowledge, and (e) motivation to learning is by internal factors (Knowles, 1977, 1980; Merriman, 2001).

MSAP addresses each of the five assumptions of ALT in its design. For the first assumption, learners are able to choose and control options and the ways of progressing through the MSAP modules; resulting in self-directed learning opportunities. For the second assumption, learners' previous experiences of performing, teaching, and assessing motor skills are accounted for. Due to these past experiences, it is possible that the learner has a background and understanding of how to perform motor skills correctly. Therefore, learners can choose to view correct performances and errors of focal points if needed, but are not required to utilize these options if they have an understanding of the focal points from past experiences. The third assumption theorizes that adults are ready to learn new and required content to address their changing social roles. Adult learners will choose to use MSAP because they are at a point in their education where they need and understand the benefit of becoming proficient in motor skill assessment. The fourth assumption is that adults are motivated to learn if they perceive it will be applicable and will help them in their real-life situations. The MSAP was designed for use by individuals who have a need to correctly assess motor skills in their current or future professions, including physical educators, pre-service physical educators, and kinesiology majors. As motor skill assessment is necessary to provide best teaching practices, it is anticipated that these learners perceive that the ability to analyze movement patterns is directly applicable in their current or future professions. The fifth assumption was addressed through the design of MSAP in that adult learners would be motivated to use MSAP to improve their motor skill assessment because it would be intrinsically rewarding. Adult learners should be internally motivated to learn how to accurately assess motor skill performance and earn the highest score possible on the competency assessments because these are essential skills of the profession.

The MSAP recommended learning sequence (See Figure 1), based upon behavioral and ALT, would be that the learner would choose to maximize their efficiency by using the tutorial option to learn the focal points of the skill and to develop a mental image of what each focal point looked like when performed correctly as well as some of the common errors made on each focal point. Then the learner would use the MSAP guided practice option to develop and evaluate their assessment skills. The learner would refer back to the tutorial as needed if they consistently had trouble accurately assessing one or more of the focal points. Finally, when the learner could consistently and accurately assess practice clips in the guided practice option in three trials using only real speed, they would elect to evaluate their performance using the competency assessment option.

Figure 1. MSAP recommended learning sequence

Recommended Learning Sequence

- Learn the Skill
  - Use the Tutorial option to learn the focal points of the skill so you can observe them without referring back to the prompts.
  - Use the Tutorial option until you have a mental image of what the correct focal point performances look like.
- Practice
  - Use the Guided Practice option until you can consistently and accurately assess students.
  - As you practice, identify problem areas and review the tutorial on these focal points.
  - As your assessing skill increases, gradually limit your practice to real speed and three trials. When you can consistently score over 90% using these options, proceed to the Competency Assessment option.
- Competency Assessment
  - The goal of MSAP is to develop your assessment skills so that when you take the Competency Assessment you do very well - score in the 90's.
  - The Competency Assessment can ONLY be taken 3 times, therefore to maximize your performance you should only select this option after you have consistently scored well using the Guided Practice option.
  - The Competency Assessment is composed of 10 underhand roll clips. Each clip can be viewed a maximum of 3 times and only in real speed to simulate actual assessment conditions in the field.
  - At the end of the Competency Assessment you will be given a report that shows your overall accuracy as well as your accuracy on each focal point.

To date, two studies have investigated the effectiveness of MSAP. Kelly and Moran (2010) found that MSAP training produced a significant pre to post improvements in assessment competency and was as effective as teacher-directed training for 72 pre-service physical education majors. Kelly, Taliaferro, and Krause (2012) investigated whether assessment competency acquired via MSAP generalized to accurately assessing live students in a gymnasium setting. The findings revealed that 36 pre-service kinesiology majors performed significantly better from pre to post (ES = .91) on assessing a motor skill after training using MSAP and this training transferred to significant improvements (ES = .80) in accurately assessing actual students in a gymnasium setting. While these results were very positive, the authors noted that informal observations and conversations with some of the participants suggested that they may not have been using the most efficient learning strategies as suggested by adult learning theory. Based on these previous studies, the current study was designed to address three research questions. The first question was to confirm the effectiveness of MSAP training and to evaluate whether MSAP training produced similar findings as reported in previous studies. The second question examined whether explicitly guiding the participants toward the recommended learning sequence would improve their assessment performance of the underhand roll. The third question examined how the participants used the MSAP options (e.g., tutorial, guided practice, and competency assessment) and how this usage corresponded to their overall performance on
assessing the underhand roll. This study is significant because it evaluates the validity of ALT and whether preservice students act according to ALT when they employ the MSAP training options to learn how to assess motor skills.

**Method**

**Participants**

The participants were a convenience sample of 48 (19 males and 29 females) volunteer pre-service undergraduate kinesiology majors (age: \( M = 20.54 \) years, \( SD = 1.56 \)) attending two universities in the southeast United States. With regard to the number of hours of physical education teaching experience, the participants reported little prior teaching experience: 91.7% reported 0-20 hours, 6.3% reported 21-50 hours, and 2.0% reported 51-100 hours. When asked about prior training in assessing motor skills, 2.0% reported no prior training, 62.5% reported 1-10 hours, 29.2% reported 11-25 hours, and 6.3% reported 26+ hours of training. When asked how important they felt it was for physical educators to be competent in assessing motor skills 2.0% reported they were unsure, 25.0% reported it was important, and 73.0% reported it was very important. When asked how comfortable they were using technology 2.0% reported being uncomfortable, 25.0% reported being unsure, 60.4% reported being comfortable, and 12.6% reported being very comfortable. Finally, when asked how competent they currently felt assessing motor skills, 2.0% reported no competency, 27.1% reported being not competent, 39.6% reported being unsure of their competency, and 31.3% reported being competent. Participants were informed of the opportunity to participate in the study by e-mail. All participants that expressed interest were sent a link to access MSAP via the internet.

**Instrumentation**

The research design for this study involved randomly assigning the 48 participants recruited from two universities to either the guided choice (GC) treatment or the free choice treatment (FC). The independent variable was the type of MSAP training received by each group. Two versions of MSAP were used in this study. The FC group used a version of MSAP based on ALT, which allowed them to freely move between the tutorial, guided practice, and competency assessment options employing their own learning strategy. The GC group used a modified ALT version of MSAP that was programmed to guide them towards the recommended learning sequence. In this version the recommended learning sequence was displayed each time they logged in and the program required them to go to the tutorial option once before they could access the guided practice option and to use the guided practice option once before they could access the competency assessment option. After receiving these prompts, they were free to use the options in the same manner as the FC group. The primary dependent measures for this study were the participants’ pre and post test competency MSAP assessment scores.

MSAP (Kelly, 2007; Kelly & Moran, 2010; Kelly, et al., 2012) has three training options: Tutorial, Guided Practice, and Competency Assessment. For this study MSAP was designed to present training on one motor skill – the underhand roll. In the tutorial the participants are taught the focal points of the underhand roll and shown video clips of the correct performance as well as common errors that participants might see when assessing each focal point of the skill. The guided practice option allows the participants to practice assessing video clips. Under the guided practice option, participants can view a given clip an unlimited number of times and in either real speed or slow motion. Then the participants assess each focal point by selecting if the focal point was performed correctly or not. After they entered their assessment, the program provides immediate feedback on the accuracy of their assessment (i.e., correct, incorrect) of each focal point and the option to view the clip again to see their errors. After every five practice clips, the participants are provided a report that summarizes their overall assessment accuracy as well as their assessment accuracy by focal point. When participants consistently demonstrate 90% competency using the guided practice option, it is recommended they take the competency assessment. In the competency assessment, the participants are shown 10 clips, from a dedicated pool of clips, of students performing the motor skill. They can only view each of these clips three times and only in real speed. After 10 clips are evaluated, participants are provided a summative report of their competency. For this study, the competency assessment could only be taken a maximum of three times and the participants were encouraged to try and get the highest score they could.

The Everyone CAN (Kelly, Wessel, Dummer, & Sampson, 2010) motor skill assessment item for the underhand roll was used for this study. This item consisted of 7 focal points that defined the key components of the skill each of which was rated on a binary scale (1 or 0) depending upon whether the focal point was correctly performed or not. The focal points used for the underhand roll were:

- **a.** Stand with body square to target, weight evenly distributed on both feet, feet shoulder-width apart, eyes on target, ball held in palm of dominant hand at waist level in front of body.
- **b.** Arm swings back, elbow extended, until dominant hand is behind the thigh, with trunk rotation back.
- **c.** Arm swings forward below the shoulder until dominant hand is in front of the thigh, with trunk rotation forward.
- **d.** Weight shift to the foot on the arm-swing side of the body during the arm swing back, and stride forward with weight shift to the foot on the opposite side of the body during the arm swing forward.
- **e.** Ball released close to ground, bending hips and knees with trunk near vertical, palm facing forward toward target.
- **f.** Arm follows through well beyond ball release toward the target.
- **g.** Smooth integration (not mechanical or jerky) of the previous focal points.

**Procedures**

Participants were sent the URL to access MSAP and were informed they could access MSAP 24/7 for one week. When the participants logged into MSAP the first time, they read and agreed to the IRB consent form, were randomly assigned to either GC or the FC groups, and then completed a short survey designed to collect information about their experience with assessing motor skills and their comfort level using technology. Training ended after
Developing Assessing Competency

the week-long access period or after the participants completed their third attempt at the competency assessment.

Data Collection

The first time MSAP was used by each participant, the program administered a pretest. The pretest was composed of assessing 10 clips of students performing the underhand roll. Each clip could only be viewed three times and only in real speed. No formative or summative performance feedback was provided at the end of the pretest. During the study the participants could take the competency assessment a maximum of three times. The competency assessment used the same clips as the pretest from a dedicated pool of clips and was administered in the same manner as the pretest. At the end of each competency assessment summary feedback was provided. This feedback consisted of an overall percent accuracy score as well as the percent accuracy achieved for each of the seven focal points. The participants’ best competency assessment score was used as their post score. The criterion assessment ratings for evaluating each clip were determined by a panel of five motor assessment experts (Kelly, et al., 2012) prior to the study. Each expert independently rated each of the clips using repeated slow-motion and real speed analysis. The results were compiled, viewed, and discussed with the experts. After the review the experts were asked to rate the clips again which produced an overall agreement of 98% for the clips. Given that each test was composed of 10 clips and each clip was evaluated based upon 7 focal points, the maximum score that could be achieved on each test was a score of 70. The participants’ scores were calculated by dividing the number of focal points assessed correctly, by 70, and then multiplying the quotient by 100.

In addition to recording the test results, MSAP was also programmed to record how many times each program option (i.e., tutorial, guided practice) was used and for how long. It also recorded the total time each participant spent using MSAP.

Data Analysis

Three research questions were addressed in this study. The first question was to confirm the effectiveness of MSAP training and to evaluate whether MSAP training produced similar findings as reported in previous studies. The second question examined whether explicitly guiding the participants toward the recommended learning sequence would improve their performance. The third question examined how the participants used the MSAP options, how this usage corresponded to their overall performance, and whether their usage patterns were consistent with ALT. To address these questions descriptive statistics were calculated for all variables used in the study. For the first two questions a three factor School (university attended) by Treatment (guided or free) by Test (pre & post) ANOVA with repeated measures was used. To answer the third question the participants’ best MSAP competency score was used to stratify all the participants into three performance groups (low, middle, and high). The frequency of use and the time spent using the MSAP tutorial and guided practice options, as well as total time using MSAP were analyzed across these three performance groups using a MANOVA. Since total time was a combined variable including tutorial and guided practice time, a separate ANOVA was run on the total time using MSAP across the three groups. In addition, a step-wise regression analysis was conducted to determine if any combination of the frequency and temporal usage variables could predict post assessment performance. An alpha level of .05 was used for all statistical analyses; LSD pairwise comparisons were used to interpret group differences, and the Eta squared was used to calculated effect sizes. SPSS 19th edition was used to perform all the statistical analyses.

Results

Descriptive statistics by school and group for the participants’ MSAP pre and post competency assessments are shown in Table 1. Data were graphed and visually inspected to ensure normalcy. Homogeneity of variance was tested with Levene’s test of equality of error variances for both the pre (F(3,44) = 1.05, p = .312), school by test (F(1,44) = 3.40, p = .063) and post (F(3,44) = 1.598, p = .203) measures. A three-way fixed effects ANOVA with repeated measures was conducted comparing the schools and treatment groups on the pre and post assessment tests. The only significant main effect found was for test (F(1,44) = 149.28, p = 0.000) indicating that the participants’ overall performance significantly improved from the pretest to the post test. The non-significant main effect for school (F(1,44) = .103, p = .750) indicated that there was no difference between the performances of the participants from the two universities. The main effect for treatment (F(1,44) = 3.08, p = 0.086), while approaching significance, was not significant indicating that the participants that used the guided version of MSAP did not perform differently than those that used the free choice version. No significant interaction effects were found for treatment by test (F(1,44) = 1.05, p = 0.312), school by test (F(1,44) = 3.40, p = 0.072) or school by treatment by test (F(1,44) = 2.33, p = 0.134).

Table 1. MSAP Pre and Post Competency Scores by School and Treatment Group (Guided Choice and Free Choice)

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</table>

*The overall pre to post change was significant p <.05
Finding no significant school or treatment main effects the total sample was combined and then stratified by their post competency assessment scores to form three performance groups: low (cut-off score ≤ 77) performance group (LPG), middle (cut-off score ≤ 87) performance group (MPG), and high (cut-off score >88) performance group (HPG). The performance groups were compared on their MSAP usage in terms of their frequency of use of the tutorial and guided practice options and time spent using the tutorial and guided practice options as well as the total time spent using MSAP. Descriptive statistics for the performance groups MSAP usage are shown in Table 2. The MANOVA analysis of the MSAP frequency and temporal variables across the performance groups was significant $F(12,80) = 9.82$, $p < .000$; Wilk’s $\Lambda = .164$, partial $\eta^2 = .60$. Significant univariate differences were found between the performance groups on frequency of using the guided practice option ($F(2,45) = 4.92$, $p = .012$, ES = .18) and time using the guided practice option ($F(2,45) = 8.32$, $p = .001$, ES = .27). LSD pair-wise comparisons were conducted to interpret the performance group differences on these variables. For frequency of guided practice usage it was found that HPG used the guided practice options significantly more than the LPG but not significantly more than the MPG. For the time in minutes using MSAP, the HPG significantly used this option for more time than both the MPG and the LPG, and the MPG used it significantly more than the LPG. The ANOVA results on MSAP total time usage was also significant ($F(2,45) = 8.57$, $p = 0.001$, ES = .28). For total time in minutes using MSAP, the HPG significantly used this MSAP for more time than both the MPG and the LPG and the MPG used it significantly more than the LPG. Finally, a stepwise regression analysis was conducted to determine if any combination of these variables would predict post competency performance. Total time using MSAP significantly predicted MSAP performance, $b = .526$, $t = 4.19$, $p < .000$. Total time using MSAP also explained a significant amount of variance in MSAP performance, $R^2 = .277$, $F(1,46) = 17.60$, $p < .000$, $\hat{y} = 73.901 + (.142 \times \text{Total Time})$.

**Discussion**

The overall competency level of the participants on the pretest ($M=56.8$) is consistent with the literature indicating that preservative kinesiology majors were not proficient in assessment (Behets, 1996; Biscan & Hoffman, 1976; Hoffman & Sembiante, 1975; Inmold & Hoffman, 1983; Walkley & Kelly, 1989). The significant main effect for test in the present study supports previous studies using MSAP that reported significant pre to post assessment improvements for pre-service kinesiology majors on learning to assess motor skills (Kelly & Moran, 2010; Kelly, et al., 2012). Kelly et al (2012) found a 28.3 percent improvement (ES = .91), which is comparable with the 25.41 percent improvement (ES = .77) found in this study.

The current study compared two versions of MSAP. One version, used by the GC group, was designed to provide the participants more guidance on how to effectively use the MSAP options with the goal of increasing the efficiency of their learning. The FC group used the standard version of MSAP that gave the participants complete freedom to use any of the program options. This change was employed based on anecdotal comments from participants in previous studies that suggested that at least some of these participants spent most of their time learning by trial and error in guided practice option and did not take advantage of the guided practice feedback by using the tutorial options. The group main effect was found to be non-significance ($F(1,44) = 3.08$, $p = 0.086$), but was approaching significance. Cautionly examining this difference (See Figure 2) reveals that although the participants were randomly assigned to group, the GC began higher on the pretest (GC: $M = 58.48$; FC: $M = 50.96$) and finished only slightly higher on the post assessment (GC: $M = 81.16$; FC: $M = 79.35$) with no significant differences between groups on the pre and post measures. Overall, the GC showed a 22.68% improvement compared to a 28.39% improvement by the FC, indicating that any group effect favored the FC. These findings indicate that explicitly informing the participants in the GC of the recommended learning sequence and requiring them to use both the tutorial and guided practice options at least once before taking the competency assessment did not appear to enhance their performance compared to the FC and may have potentially hindered it. Further research is warranted to investigate whether not treating participants as adult learners and constraining their access to the program options actually hinders their performance.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
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<tr>
<td>Post Competency (Score)</td>
<td>Low</td>
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<td>66.8</td>
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<td>Medium</td>
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<td>83.8</td>
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<td></td>
<td>High</td>
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<td>90.3</td>
<td>1.44</td>
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<tr>
<td></td>
<td>Total</td>
<td>48</td>
<td>80.3</td>
<td>11.11</td>
</tr>
<tr>
<td>Tutorial Frequency (# times used)</td>
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<td>1.63</td>
<td>0.81</td>
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<td>2.06</td>
<td>1.53</td>
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<td></td>
<td>High</td>
<td>16</td>
<td>2.37</td>
<td>1.09</td>
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<td>Total</td>
<td>48</td>
<td>2.02</td>
<td>1.19</td>
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<tr>
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<td>7.39</td>
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<td></td>
<td>High</td>
<td>16</td>
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<td>6.83</td>
<td>5.84</td>
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<tr>
<td>Guided Practice Frequency (# times used)</td>
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<tr>
<td>Guided Practice Time (Minutes)</td>
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<td></td>
<td>Medium</td>
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<td>High</td>
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<td></td>
<td>Total</td>
<td>48</td>
<td>44.94</td>
<td>41.10</td>
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</tbody>
</table>

*HPG was significantly ($p < .05$) better that the LPG
**MPG was significantly ($p < .05$) better that the LPG
***HPG was significantly ($p < .05$) better that the MPG & LPG

Table 2. Descriptive Statistics for MSAP Usage by Performance Group

Developing Assessing Competency

volume 8, issue 1 29
It appears that forcing the participants in the GC to at least review the recommended learning sequence and use the tutorial and guided practice options once did not enhance their performance. Although the participants in the FC appear to have performed better, this does not necessarily mean they were acting like adult learners. The third question investigated in this study examined how the participants used the MSAP options and how these usage patterns corresponded with their overall performance. Not finding significant school or treatment group effects, the total sample was stratified by their post competency assessment score and divided into three performance groups of 16: low, middle, and high. The groups were then compared on their frequency and temporal usage of the tutorial and guided practice options as well as their total time using MSAP. The findings revealed that overall there was no difference between the three groups in their use of the tutorial option, which was used on average only two times and for a total of 6.8 minutes by each participant. Significant differences were found by group for both frequency and time usage of the guided practice option. The HPG used the practice option significantly more frequently than both the MPG and the LPG and the difference between the MGP and LPG approached significance (p = .075). Finally, for overall time using MSAP the HPG used MSAP for more time than both the MGP and the LPG and the MPG used MSAP for significantly more time than the LPG. On a positive note, these findings indicate that participants in the HPG were able to achieve 90+% competency after using primarily the guided practice option for a little more than an hour (M = 64 minutes) and for the MGP to achieve 84% accuracy after only 45 minutes. These results demonstrate that the guided practice option in a trial and error fashion can produce significant gains in competency in relatively short periods of time.

The dominant use of the MSAP guided practice option is consistent with previous informal observations and anecdotal comments from past participants. The concern is that the participants are not taking advantage of the tutorial information that explicitly defines each focal point and provides video examples of the correct performance. While the current results support that one can clearly learn by just using the guided practice option, it is not the most effective means since it only focuses on identifying the participant’s errors and does not show them what the correct performance should look like. After participants evaluate a clip in guided practice they receive immediate feedback on which focal points they judged as correct and which ones were judged incorrectly. They then have the option to view the clip again to see their errors.

After every five clips, they are given a summative report that indicates their overall percent accuracy as well as their percent accuracy for each focal point. For any focal point where their percent accuracy is less than 60% they are encouraged to return to the tutorial and review the correct performances and explanations with the goal of developing a better mental image of what that correct performance of the focal points should look like. Given that the participants on average only used the tutorial two times for a total of 6.8 minutes suggests that the participants were not fully taking advantage of this option to facilitate the efficiency of their learning. This is particularly noteworthy and hard to explain in light of the fact that the GC group was explicitly informed of the recommended learning sequence and had to go to the tutorial once when they initially used MSAP.

There are several other implications and recommendations for future research that can be drawn from the MSAP usage data. While the participants were acting in some ways like adult learners in that they were choosing their own learning path, from a design and learning efficiency perspective they were not taking full advantage of the program options or using the most efficient learning path. More research is needed to investigate whether this usage pattern is unique to pre-service college-aged participants and whether other groups, such as in-service physical education teachers, would use MSAP differently.

It is recommended that future studies using MSAP with both pre-service and in-service participants conduct follow up interviews and/or focus groups after the training phase to investigate what strategies the participants were actually using and to explore specifically why and how they chose to use the tutorial option. The five assumptions of ALT (Merriman, 2001; Knowles, 1977, 1980) should be used as the basis for formulating questions to determine the degree to which these different participant groups meet these assumptions. These findings should then be used to revise and refine MSAP so that it can achieve the greatest degree of competency in the shortest amount of time. This is an important consideration given the large number of physical and motor skills a physical educator must be able to competently assess.

As technology advances continue and the cost effectiveness of distance education increases, increasingly more PETE will become computer based. It is therefore important to understand how learners interact with different forms of computer delivered training so that these applications can be designed to optimally address the needs of these learners.

References


by Jürgen Kretschmer, University of Hamburg; John Saunders, Australian Catholic University; Liz Bressan, Stellenbosch University; Jan Erhorn, University of Flensburg and Daniel Wirszing, University of Hamburg

Abstract

An increasing worldwide concern about a decline in the quality of the motor ability of children was the motivation for this exploratory comparative study. It involves a comparison of the motor ability of children aged 8 and 9 years from Hamburg (n=774), Melbourne (n=141) and Cape Town (n=81). Since each of these global cities represents a typically culturally diverse modern center of population, data were also tentatively analyzed according to ethno-cultural background, as a potential contributing variable to better understand the results of studies such as these.

The children’s motor abilities were tested by five items from the Allgemeiner Sportmotorischer Test für Kinder or AST 6–11 (Bös, Opper, Woll, Liebisch, Breithecker, & Kremer, 2001). Results were analyzed in terms of city and sex by means of a two-way Analysis of Variance (ANOVA). A composite motor profile was also constructed using all five items. This was then used in a further comparison of major ethno cultural groups within each of the three cities.

Differences in motor ability were evident between the children of the three cities. The children from Hamburg demonstrated the highest levels of performance overall and those of Melbourne the lowest. Both sex and ethno-cultural background were significant mediating variables in all contexts. Boys scored higher than girls on the AST 6-11 at all locations. For children of a European background in both Hamburg and Melbourne, a higher performance was identified when compared with their same city peers of Asian origins. The best performing cultural group overall were the Black African (Xhosa) children of Cape Town. The limitations of the study were identified and some suggestions for future comparative studies of motor ability were made.

Keywords: comparative studies, culture

Concern about the levels of motor ability and motor fitness of children and adolescents is emerging worldwide. However, to date there have been few published reports of this phenomenon from outside the high-income nations of the Organisation of Economic Co-operation and Development (OECD). Rather, studies in the USA (Kuntzleman & Reiff, 1992), Canada (Craig, Beaulieu, & Cameron, 1994) and Australia (Booth, et al., 1997; Tomkinson, 2004) have been among the first to have reported such a decline in motor achievement. In Germany some authors have made similar claims (Bös, 2003). Questions as to what extent this is a worldwide issue and, what may be the main factors related to it, can only be answered by comparative studies. However, comparative studies at the international level investigating both motor ability and the environmental factors, which relate to it have been limited (Baur, 1993). This is, at least in part, because the administration of comparative studies is complex, difficult, and consequently expensive.

As a starting point for exploring some of the conceptual and methodological issues to be addressed in such studies, this study compared the motor ability of children from three modern world cities on three different continents. It is based on some of the protocols developed for the Hamburg study - Motorische Leistungsfähigkeit von Grundschulkindern in Hamburg (MOLE, Kretschmer & Wirszing, 2008), which were then applied to two smaller convenience samples of children from Melbourne in Australia and Cape Town in South Africa. The purpose was to look for similarities and differences in the motor ability of the children who were the participants in these three examples of contemporary city life. At the same time, acknowledging the growing ethnic and cultural diversity of major world cities and accepting this as being a possible source of increasing variance in movement culture within populations, we also sought to explore the potential significance of ethno-cultural group membership upon motor-related activity and performance even within the same geographical regions.

Research Background and Design

This study investigated the motor ability of selected primary school children from the greater metropolitan areas of Hamburg, Melbourne and Cape Town. The common ground between the three locations is that they are all cities within countries in which a decline in the motor ability of children has been reported (Armstrong, 2009; Bös, 2003; Tomkinson 2004). The three cities are fairly similar in population (from 2 million to 4.16 million), are the second largest cities in their relative countries, important and prospering seaport and commercial centers suggesting their suitability for comparison. Differences in population densities between the three need to be acknowledged as a potentially relevant source of difference, as there are 2,382 people per square kilometer in Hamburg, 1,665 in Cape Town and only 462 in metropolitan Melbourne. This, however, appears to reflect characteristics of city growth in their respective global regions of Europe, Africa and Australia. At the same time, as exemplifying modern international cities, all three boast populations that are characteristically diverse in terms of a variety of socio-cultural variables such as ethnicity and religious orientation. The explanations behind these diversities are varied and reflect the national and regional histories of each city.

For our exploration, the common ground was that in each city clearly identifiable and numerically significant subgroups could be found which preserved a culture that had unique characteristics and differentiated them from others in their shared geographical environment. We, therefore, posed the question as to whether these differentiated experiences might impact on the ways that children
experienced physical activity and hence their motor performance. In the case of Hamburg, 15% of the population were classified as aliens, the largest group of which were of Turkish origin (The Times, 2012). In Melbourne over a third (36%) of the population was born overseas exceeding the national average of 23.1% (Australian Bureau of Statistics, 2011). Melbourne has the second largest Asian population in Australia, as a result of immigration patterns over recent years. Increasing numbers in recent years have come from India and Sri Lanka but traditionally the intake has been from East and South East Asia. South African census figures (Statistics South Africa, 2012) report its population using the following categories - Black African, Coloured, White, Asian and others. Figures for the 2011 census for Cape Town report the majority as being either Coloured (42%) or Black African (39%). Whites and Asian comprised 16% and 1% respectively (City of Cape Town, 2012). It should be noted however that the Cape Town figures are not reflective of South Africa’s national distribution, which reports 79.2% as Black and only 8.9% as Coloured (Statistics South Africa, 2012).

A number of German studies have indicated that the level of motor performance is culturally marked. Stemper, Meier, Bachmann, Diehlmann & Kemper (2006) investigated the motor ability of 3,982 children of grade 2 with 80.1% of German origin and 19.9% comprising migrants of 62 nationalities. A comparison of the means of the motor abilities revealed that children with a migrant background achieved a significantly worse motor performance than their native German classmates (p<0.01). The motor ability and the proportion of those with membership of a sports club were significantly higher in the case of the migrant boys (35.1%) than in that of the girls (19.65) with a migrant background (Stemper et al., 2006). Similar findings have been reported by Greier and Riechelmann (2012) for kindergarten children (n=1,063) from age 4 to 5, Kretschmer and Wirszing (2008) for primary school children (n=2,118) from age 6 to 10 and Bös, et al. (2009). The latter was a nationwide representative study of the motor ability and the physical and sports activities of children and adolescents (n=4,529) conducted on behalf of the German Ministry of the Interior. Differences in participation in physical activities were commonly observed in these studies as providing a possible explanatory link for the observed differences in performance. Similar findings linking culture and participation in physical activity have been reported in an Australian context. Booth, et al. (2006) reported that boys (and to some extent girls) from Asian backgrounds and girls from Middle Eastern backgrounds were less active, and that boys from an Asian background were more sedentary than other boys. They also reported that motor proficiency was markedly lower among students from Middle Eastern backgrounds, particularly girls, and that children with Middle Eastern backgrounds were more likely to be in an unhealthy weight range.

Although South Africa presents a different case in terms of migration, it is also a country embracing different ethnic groups where integration has been inhibited over time as an inheritance of apartheid. Today, Whites and Coloureds experience a higher socioeconomic status, a better education and greater facility with English or Afrikaans language. In contrast the majority of the Blacks are on a lower socioeconomic level, less well educated, and speak only one of the African native languages fluently. Physical activity and motor ability differences, have likewise been reported between these groups. In a study of 10,295 children aged 6-13, Armstrong (2009) reported that while White children spent an average of 130 minutes per week playing sport, Black children spent 29 minutes. White children generally had the highest scores on the tests of physical fitness, with Black children scoring the lowest. The performance of Coloured children tended to fall between that of the other two ethnic groups (Armstrong, 2009). Differences in height and mass were also observed between the different ethnic groups, with the White children being the tallest and heaviest and the Black children the shortest and lightest across both genders (Armstrong, 2009).

For this current exploration of whether such differences would be likely to persevere between children raised in the same or similar cities, each of the samples from each of the cities were classified with regard to their major cultural origins. The criterion used for this classification was the language the children reported speaking at home in their family. Language is the most widely assessed cultural practice associated with ethnic identity (Phinney, 1990, 505) and it has been used successfully in several studies (Greier & Riechelmann, 2012).

The initial study (Kretschmer & Wirszing, 2008) originated in Hamburg before being extended into the South African and Australian contexts. When the authors decided to progress to the present comparative study, it was decided to collect basic anthropometric data (height and weight). These were collected for the Cape Town and Melbourne samples, but were not a part of the original German study and therefore not available for the Hamburg sample.

Methods

Participants

A total of 996 students aged 8 and 9 years provided the data for this study. To the 774 eligible students from the Hamburg study were added a total of 141 Melbourne and 81 Cape Town students. Prior to the collection of data, ethical approval for the conduct of the research at each location was obtained in accordance with the procedures of the local university involved. The classification of the sample into ethno-cultural groups in each of the three cities, together with numbers and percentages in each category, is

<table>
<thead>
<tr>
<th>Classification of Ethno-cultural Groups</th>
<th>City</th>
<th>‘Dominant’ group</th>
<th>‘Minority’ Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamburg</td>
<td>German origin (88.6%)</td>
<td>Near and Middle Eastern origin (11.4%)</td>
<td></td>
</tr>
<tr>
<td>n = 774</td>
<td>M 353: F 333</td>
<td>M 45: F 43</td>
<td></td>
</tr>
<tr>
<td>Melbourne</td>
<td>European origin (predominantly Anglo/Celtic) (83.7%)</td>
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<tr>
<td>n = 141</td>
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<td>M 12: F 10</td>
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</tr>
<tr>
<td>Cape Town</td>
<td>White and Coloured origin (56.8%)</td>
<td>Black African (Xhosa) origin (43.2%)</td>
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</tr>
<tr>
<td>n = 81</td>
<td>M 23: F 23</td>
<td>M 20: F 15</td>
<td></td>
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</tbody>
</table>
summarized in Table 1. It should be noted that the application of the ‘language of the home’ criterion, placed what in South Africa are considered two distinct racial groups – ‘white’ and ‘coloured’ - in the same category. On the basis that the consistent application of the criterion of the study still identified a consistent cultural difference between the two Cape Town groups, this was considered appropriate for an exploratory study of this nature.

**Instruments**

The motor abilities of the children were tested by selected items from the *Allgemeiner Sportmotorischer Test für Kinder* (AST 6 – 11) (Bös et al., 2001). The AST 6-11 had been originally developed in 1984 by Bös and Wohlmann and published in 1987. It had good face validity being underpinned by a theoretically appropriate model of motor ability based on measurement of the components of speed, power, cardiovascular endurance, agility, hand-eye and whole body co-ordination. The items were easy to administer and required only simple equipment, an important consideration in international studies of this nature. Inter-rater reliabilities have been reported of between 0.74 – 0.94 for each test item and 0.93 for the entire battery. The following five items have been included (see limitations).

20 m-run. The test item 20 meter run provided a measure of speed. Children had two attempts; the best one was used. Time was recorded to the nearest tenth of a second.

Target throw. The test item target throw provided a measure of hand-eye co-ordination for accuracy. The children had to throw a tennis ball as close as possible to the center of the target, which was three meters away and consisted of three concentric cardboard discs (10, 30 and 60 cm squares). 0, 1, 2 or 3 points were given. The sum of 10 throws was recorded.

Ball-legs-wall throw. The test item ball-legs-wall throw checked the co-ordination of the entire body under precision pressure. The child started the exercise by standing with their back at three meters distance from the wall. The ball was then thrown through the legs onto the wall and an attempt made to catch the rebounding ball before it hit the ground after completing half a turn of the body, - all with as little locomotion as possible. Depending on how well the three components (throw - turn around - catch) of the item were performed, 0 - 5 points were given. The sum of 10 attempts was then recorded.

Medicine ball push. The test item medicine ball push measured the strength and power of the arm and shoulder muscles. A one kilogram medicine ball was pushed with both hands as far as possible from a standing position. The better result out of two trials was recorded to the nearest 10 cm.

Six-minute run. The test item six-minute run provided a measure of aerobic cardiovascular endurance. The children ran along the side lines of a volleyball court for six minutes. The distance achieved in that time was recorded in meters.

In all settings children were tested in a single session on a whole class basis. Trained student assistants were placed at a single station and the children were rotated between stations at the direction of the senior author. In all cases the six-minute run was administered after completion of the other items. A verified English translation of the original German manual outlining the protocols used in the Hamburg study was used in Cape Town and Melbourne. Student assistants were all prepared and trained by the lead author before data collection. Training involved the setting up of the test environment, the introduction of the students to the execution of each task and measurement of the test performance.

**Limitations**

The sampling procedures used prevent any true generalizability from this study; nonetheless it is believed that the convenience samples from Cape Town and Melbourne were largely characteristic of the children in those cities. Brett Schneider and Brandl-Bredenbeck, (1997) observed it is simply impossible to ensure equivalent environmental circumstances when collecting field based data in studies like this, especially when, as in the testing for the Cape Town and Melbourne children, they were collected outdoors. As reported above, efforts were taken to minimize inter-rater variability. However, from the environmental perspective, for the Hamburg sample all tests were administered indoors, whereas those in Cape Town and Melbourne were administered outdoors in their normal physical education environment. While the children of the Hamburg sample predominantly wore sports clothes and shoes, the children in the Melbourne sample completed the test tasks in their school uniforms, and the Xhosa children in their street clothes and sometimes barefoot. With regard to the assessment instruments, despite attempts to standardize equipment used, one item - the boomerang run- used to measure agility, had to be excluded from the analysis due to an inability to assemble apparatus in Cape Town and Melbourne comparable to that used in Hamburg.

**Data Analysis**

The mean scores for performance on each item for the sample from each city are presented for boys and girls. The effects of city and sex on performance were analyzed by using a two-way analysis of variance (ANOVA) and presented for each item. To examine the relationships between weight, height, BMI, and performance on the individual items (for the Cape Town and Melbourne samples only) the performance results were correlated with the available anthropometric data. Finally composite motor profiles were calculated by summing performance on all five individual items. In order to add items with different metrics all performances were first compared with the standardized sample of Bös et al. (2001) according to age and sex. The raw scores were then converted into individual Z-values based on the Bös et al norms, before being summed for each participant. These composite scores were then reported as group means for city, sex and ethno-cultural group membership.

**Anthropometric Data**

A comparison of the basic anthropometric data (Table 2), which had been recorded for the Australian and South African children only, shows that in Melbourne the boys were taller and heavier than the girls. However in Cape Town, the girls though smaller than those in the Melbourne group were both taller and heavier than their male peers and with a higher BMI. In the case of the boys the differences in height and weight between the Australian and the South African children were highly significant ($p = .000$), for the
The boys from Cape Town achieved the best result, the girls from Hamburg the poorest. The results show clear differences both by city ($F_{2,990} = 21.737; p = .000$) and sex ($F_{1/990} = 80.371; p = .000$) with the greater difference being by sex, with no significant interaction ($F_{2,990} = 1.100; p = .333$) being observed. No correlation was found between height, weight and BMI measures and the target throw item.

### Table 2. Basic Anthropometric Date for the Melbourne and Cape Town Samples (X) (g); n=213

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<tr>
<th>Anthropometric Data</th>
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<th>Female</th>
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<tbody>
<tr>
<td>Height (cm)</td>
<td>132.4 ± 6.5</td>
<td>130.7 ± 6.1</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>30.5 ± 6.6</td>
<td>28.1 ± 6.3</td>
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<tr>
<td>BMI</td>
<td>17.3 ± 2.8</td>
<td>16.4 ± 3.4</td>
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### Table 3. Performance on the 20 m Run (Mean Scores in Seconds with Standard Deviations in Parentheses)

<table>
<thead>
<tr>
<th>City</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamburg</td>
<td>4.33 (.25)</td>
<td>4.57 (.39)</td>
</tr>
<tr>
<td>Melbourne</td>
<td>4.46 (.41)</td>
<td>4.65 (.39)</td>
</tr>
<tr>
<td>Cape Town</td>
<td>4.34 (.41)</td>
<td>4.49 (.41)</td>
</tr>
</tbody>
</table>

### Table 4. Performance on the Target Throw (Mean Scores in Points with Standard Deviations in Parentheses)

<table>
<thead>
<tr>
<th>City</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamburg</td>
<td>13.42 (4.02)</td>
<td>9.84 (4.41)</td>
</tr>
<tr>
<td>Melbourne</td>
<td>13.27 (4.49)</td>
<td>10.48 (3.68)</td>
</tr>
<tr>
<td>Cape Town</td>
<td>17.09 (3.44)</td>
<td>12.58 (3.73)</td>
</tr>
</tbody>
</table>

### Hand-eye coordination (Target throw). A highly significant difference between the groups was found on this item ($F_{2,990} = 19.389; p = .000$). The performance of the children of Cape Town with a mean score of 11.91 points was significantly better than the performance of the children of Melbourne with a mean score of 11.84 ($p = .000$), closely followed by the children of Hamburg with 11.7 points ($p = .000$). The difference between the performance of the students of Melbourne and Hamburg was not significant. The boys from Cape Town achieved the best result, the girls from Hamburg the poorest. The results show clear differences both by city ($F_{2,990} = 21.737; p = .000$) and sex ($F_{1/990} = 80.371; p = .000$) with the greater difference being by sex, with no significant interaction ($F_{2,990} = 1.100; p = .333$) being observed. No correlation was found between height, weight and BMI measures and the target throw item.

### Comparison of Motor Ability

The analysis revealed a number of differences in the comparative performance of the Hamburg, Melbourne and Cape Town children in all test items. These are reported in terms of the components best represented in each item.

### Speed (20 meter run). Table 3 shows that the performance of the children from Hamburg ranked slightly higher than that of their peers from Cape Town. The Melburnian children ranked the lowest. An ANOVA showed a highly significant difference between the three samples ($F_{2,990} = 10.928; p = .000$). Once again both city and sex showed a significant main effect ($F_{1/990}= 35.164; p = .000; F_{1/990}= 77.186; p = .000$) with no significant interaction between them ($F_{2,990} = .519; p = .595$). The Hamburg girls performed significantly better than the girls from Melbourne ($p = .000$) and Cape Town ($p = .000$). Hamburg’s boys also achieved better results than their peers from Melbourne ($p = .016$) and Cape Town ($p = .001$). No significant correlation was observed between performance on this item and the BMI, weight or height measures.

### Whole body co-ordination (Ball-legs-wall throw). The children of Hamburg reported significantly higher scores than the children of Melbourne and Cape Town ($F_{2,990} = 30.887; p = .000$). Once again both city and sex showed a significant main effect ($F_{1/990}= 35.164; p = .000; F_{1/990}= 77.186; p = .000$) with no significant interaction between them ($F_{2,990} = .519; p = .595$). The Hamburg girls performed significantly better than the girls from Melbourne ($p = .000$) and Cape Town ($p = .000$). Hamburg’s boys also achieved better results than their peers from Melbourne ($p = .016$) and Cape Town ($p = .001$). No significant correlation was observed between performance on this item and the BMI, weight or height measures.

### Power (Medicine ball push). Once more there was a significant effect for city ($F_{2,990} = 35.773; p = .000$) with the children of Hamburg gaining the highest scores compared to the children of Melbourne ($p = .000$) and Cape Town ($p = .000$). The differences between the Melbourne and the Cape Town students, however, were not significant. The German girls actually performed better than the boys of the other two cities on this item and the gap between the girls and the boys in Melbourne and Cape Town was noticeably smaller. Consequently for this test, although sex still provides a significant main effect on performance ($F_{2,990} = 23.603; p = .000$); there is a significant main effect between the two ($F_{2,990} = 5.335; p = .005$) which means that the nature of the impact of sex differs between the three samples. A significant correlation was found to exist between performance of the medicine ball push and participants’ BMI ($r = .174; p = .011$), weight ($r = .413; p = .000$) and height ($r = .524; p = .000$).
Cardiovascular endurance (Six minute run). The results achieved by the samples differed significantly ($F_{2/954} = 16.837; p = .000$). The Cape Town children performed best and they were significantly better than both the Melbourne ($p = .000$) and Hamburg children ($p = .009$). Sex featured as a more highly significant variable in determining performance ($F_{1/955} = 28.652; p = .000$) with an interaction between city and sex ($F_{2/954} = 8.188; p = .000$). It can be seen that across the three samples the performances of the girls did not differ much. The Melbourne girls ran about 36 meters less than the top performing girls’ group from Cape Town which was not significant ($F_{2/468} = .948; p = .388$). However this was quite different in the case of the boys. The Melbourne sample only completed a mean distance of about 860 meters in the available time which was about 185 meters less than the distance run by their Cape Town counterparts ($F_{2/484} = 22.108; p = .000$).

Not unexpectedly for this endurance test, a negative correlation was found in the case of the Melbourne and Cape Town children between performance and both BMI ($r = -.284; p = .000$) and weight ($r = -.272; p = .000$).

**Composite Motor Profiles**

Figure 1 provides a comparison of the overall performances of the children in this study by means of a composite motor ability score, obtained by summat ing the results for the five individual measures obtained in this study. The results reported here represent a standardized score with 100 points representing the average score recorded by the original German sample of Bös et al. (2001). Scores have been separately standardized according to gender. The scores between the samples in this study differ significantly ($F_{2/965} = 10.648; p = .000$). The students from Hamburg performed best overall and they were better than the Cape Town ($p = .402$) and significantly better than the Melbourne students ($p = .000$).

The comparison of the general motor ability of the ethno-cultural groups presented in Figure 2, underlines the complexity of the total picture. The differences between the standardized levels of performance of the six ethno-cultural groups are significant ($F_{5/931} = 11.276; p = .000$). In terms of ranking, the Xhosa (Black African) children scored the highest closely followed by the German and Near or Middle Eastern children of Hamburg, the European children of Melbourne and, the White and Coloured of Cape Town.

The difference between the groups is significant only in the case of the East and Southeast Asian children of Melbourne ($p = .000$). Sex, naturally, had no significant main effect on performance in this comparison ($F_{1/968} = .025, p = .875$) because it had been accounted for in advance by using the Z-value calculation. But there is a significant interaction between ethno-cultural groups and sex ($F_{5/968} = 2.551, p = .026$), which means that the impact of sex...
differs between the samples. While in Hamburg only the girls with a Near and Middle Eastern background showed poorer relative achievement, in Melbourne it was both the male and female South and East Asian children. In Cape Town, however, not only did the Xhosa boys have a better relative performance than the boys of White/Coloured origins, but they performed the best of all the groups. This was mainly attributable to their above average performance in the target throw and their extraordinarily good performance in the 6-minute run. A breakdown of all the relative group performances for each of the items is shown in Table 8. This provides for an item-by-item comparison by using the standardized scores for each task as a basis to categorise the performance of each group by quintiles. Performance of the group was thus rated on each item as being far below average (0-20 percentile), below average (20-40 percentile), average (40-60) above average (60-80) or far above average (80-100) in comparison with the 2001 German reference group.

The most consistent performance was shown by the German children of Hamburg, who achieved the average four times (20 meter run, target throw, medicine ball push, 6-minute run), and missed it once. The performance in the target throw was average or above for all ethno-cultural groups, which indicates improved levels of hand-eye co-ordination in comparison with the German reference population. However all groups performed below the reference population in the ball-legs-wall task which also reflects co-ordination, but at the level of whole body management. This difference may reflect increased exposure to perceptually dominated tasks perhaps through computer style games but less experience of managing whole body responses in association with such external stimuli. The significance of this difference needs attention in future studies.

**Table 8. Categorisation of individual test items performances against German Reference Group (Bös et al., 2001)**

<table>
<thead>
<tr>
<th>City and Ethno-cultural Groups</th>
<th>Hamburg</th>
<th>Melbourne</th>
<th>Cape Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Item</td>
<td>German</td>
<td>Middle Eastern</td>
<td>European East White and Black</td>
</tr>
<tr>
<td></td>
<td>Near</td>
<td>S/east Coloured African</td>
<td>Black</td>
</tr>
<tr>
<td>20 metre run</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Target throw</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Ball-legs-wall throw</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Medicine ball push</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>6 minute run</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

1 = far below average (percentile range 0 to 20)
2 = below average (percentile range 21 to 40)
3 = average (percentile range 41 to 60)
4 = above average (percentile range 61 to 80),
5 = far above average (percentile range 81 to 100)

**Discussion**

Our findings, using an adaptation of the AST 6-11, offer support for the hypothesis that there are clear differences between the performances of children growing up in the differing contexts provided by major international cities in the first decade of the twenty-first century. In the three contexts of this study, the Hamburg students achieved the highest level of motor performance, followed closely by the students of Cape Town. The performance of the children of Melbourne was significantly lower ($F_{1969} = 10.648; P = 0.000$) than that of the children in both the other cities. However there is a degree of complexity within this broad general picture which needs to be further unravelled. For example there were differences with regard to performance on individual test items within the three samples. In three of the five test items (20m run, ball-legs-wall throw, and medicine ball push) the Hamburg children achieved the best results consistent with their overall superior motor ability. However, in two test items (target throw, 6-minute run) the Cape Town children were the best performing. The Melbourne children were poorer throughout, yet scored a little better in the throwing measures – both throwing for accuracy and throwing for power - when compared with the other items. Whether this reflects differences in the general movement culture or the impact of specific curriculum interventions such as the Fundamental Motor Skills program, which is a part of the PE curriculum in Melbourne, would be an interesting line of further enquiry. For example, studies in the neighbouring state of New South Wales reported that proficiency in fundamental movement skills increased markedly between 1997 and 2004 (Booth et al., 2006), possibly in association with their education system initiatives in that area.

The nature of the observed differences in the performance between the sexes confounds the issue even more. This study reveals clearly that sex was a consistent variable in distinguishing differences in performance and far more significant than city of residence alone. The persistent strength of this variable at this age surprised us and it was almost entirely independent of location, with only two test items showing any interaction between city and sex – the 6-minute run and the medicine ball push. The latter was largely because of the poor performance of the boys from Cape Town and Melbourne, who both performed more poorly than the girls of Hamburg in this test of upper body power.

Not unexpectedly a significant correlation was found between the anthropometric data collected for the Cape Town and Melbourne samples and the motor abilities of speed, power and endurance. Their higher BMI, weight and height may contribute to an explanation of the relatively poorer performance of the Melbourne children in the running items - both 20 meter and 6 minutes - and their better performance in the medicine ball push.

The findings of this study also suggest that ethno-cultural group membership does add further complexity to attempts to interpret results such as these. In these findings, the children with a German and European background in Hamburg and Melbourne performed better than their peers with Middle Eastern and East Asian backgrounds. In the case of Cape Town the Black African (Xhosa) children demonstrated a higher level of performance than their White and Coloured peers which is contrary to the findings of Armstrong, (2009) in her South Africa wide study of children from 6-13. Indeed the Xhosa boys were the best performing group in this study and the only one to perform above the reference point set by the 2001 German sample (Bös et al., 2001). This latter point of
course suggests that these data provide, albeit tentative, support for the hypothesis that there is a general decline occurring in children’s motor ability within our globalized communities worldwide.

This study is an initial attempt to generate data which are comparable, using standardized tests and measurement protocols as a means to a longer term goal of pursuing well-controlled comparative studies that can both identify and increase understanding of changes in children’s motor ability and performance in association with changes in contemporary lifestyle. It comes from a belief that despite all the difficulties involved, it is through comparative studies that we can best improve our knowledge by identifying differences and suggesting some reasons for them. The results of this exploratory study show that we can continue to expect to see some differences in the characteristic motor abilities of children located in different cities around the world. Whether within a globalizing world, we should expect increasing convergence in response to increasingly convergent lifestyles, is not yet clear. Further, the results of this descriptive and exploratory study show that despite recent changes in gender definitions, sex still appears to be an important variable in understanding differences in motor ability, as girls’ motor performance remains persistently lower than that of boys. More cautiously our findings also suggest that the influence of family culture will have an impact on motor ability that can match or even exceed that of the larger societal culture. We believe there is a need for more extensive research to deepen our understanding of the range of cultural impacts on motor ability. Increasing amounts of literature have been emerging on the differences in children’s movement behavior and experience based on culture and ethnicity. For example de Knop, Theeboom, Wittocka, and de Martelaer (1996) explored the experience of Muslim girls in sport within Western Europe, while Brodersen, Steptoe, Boniface, and Wardle (2006) have charted trends in physical activity and sedentary behaviour amongst Black Asian and White British youth.

Recognizing the extent and nature of differences in children’s motor development and abilities and progressing on to provide explanations, can ultimately only come from well controlled and resourced comparative studies conducted over time. Such studies will need to be well resourced in order to address some of the issues recognised in this exploratory study and to generate data that are really comparable. However, we believe that children’s motor development must remain a major concern of all communities. The fact that variables of gender, location, and ethno-cultural family background are all associated with some differences in performance measures, adds weight to the need for further systematic enquiry around these variables and whether and how they might have some explanatory significance.

Unravelling more of the complexity of how our dynamic and developing 21st century environment impacts upon children’s motor development is necessary if we are to enhance our understanding of children’s motor development and the situations in which it might be optimized. This is a worthy goal in light of the potential health and educational advantages that could accrue for those children who learn to move effectively and confidently.

References


Exploring Factors that Affect Purchase Intention of Athletic Team Merchandise

by Donghun Lee, Ball State University; Galen T. Trail, Seattle University; Cindy Lee, West Virginia University; Linda J. Schoenstedt, Xavier University

Abstract

The purpose of this study was to test a structural model to determine which psychosocial constructs affected the purchase intention of athletic team merchandise (ATM). Results from the analyses indicated that the twelve-factor ATM model fit the data from collegiate athletic events well, explaining the various impact factors that lead to purchase intention of athletic team merchandise among sports consumers. Based on values theory, identity theory, attitude theory, and satisfaction theory that influence product consumption, this study suggests that consumer intentions to purchase athletic team merchandise are significantly associated with personal values, team identification, brand/product attitude, product attributes, expectancy, previous purchase, and satisfaction. Given the finding that team identification had marginal impact on attitude toward brand and/or product in general, it is suggested that sport marketers should select appropriate brands for the products that represent their team or athletic department. Fitness of brand image may suggest an alternative explanation for future studies.

Key words: values, team merchandise

Trends in the Sport Merchandise Industry

Estimates of the total production and consumption of sporting goods and services reached $560 billion at the end of the 1990s (Howard & Crompton, 2004). During the same time period, Howard and Crompton (2004) also estimated direct sales of team merchandise within stadiums and arenas to be approximately $9 billion. More recently, Brochstein (2006) indicated that this market trend has continued to grow as it reached $13 billion in 2005. Increased evidence of team merchandise sales has been seen at various levels of sports including minor league baseball (e.g. the 2004 merchandise sales were close to $40 million; Broughton, 2005). The sales of sporting goods have continued to grow, as it has become a $76 billion industry by the end of 2010 (U.S. Census Bureau, 2010). By the same token, Lee and Trail (2012) indicated that wearing athletic team merchandise by fans during events and on non-event days as leisure wear has become very common. As such, sales of athletic team merchandise have become a lucrative and synergistic business for sport franchises.

Limitations in the Literature

We recognized several issues related to limitations that were involved in this study. First, there are few research findings that explain specific consumption activities such as athletic team merchandise purchasing. Second, existing studies fail to provide quantifiable information that systematically explains what triggers individuals to consume athletic team merchandise. More specifically, these studies tended to focus on narrow topics by accounting for only a few constructs, which often resulted in explaining only a small amount of variance (Lee & Trail, 2012). For example, personal values are a common construct used to explain consumption behavior because they are central to one’s thought processes and are typically enduring. As a result, they are less likely to be affected by other external sources (e.g. specific consumption situations like retail shopping). However, personal values have not explained a large amount of variance in licensed merchandise consumption behavior (amount of variance explained was about 10% in Lee & Trail’s 2011a study). For instance, personal values may not be immediate antecedents of behavior due to their conceptual abstractness, suggesting the need for additional research to study potential mediation or moderation functions that may explain the structural relationships better.

Review of Relevant Literature

Values theory. This theory elaborates on relationships among a diverse range of values that affect human behavior. Personal values are defined as “established beliefs that result in a specific mode of behavior or end-state of existence [that is preferred to an opposite mode of behavior or end-state]” (Rokeach, 1973a, p. 25). Schwartz (1992) extended the values study and proposed 11 motivational types of values, which were represented by higher dimensions. For example, stimulation (a motivational type) was represented by three values (i.e., an exciting life, a varied life, and daring). Values have further been identified as influential factors for domain specific behaviors. Homer and Kahle (1988) suggested that attitudes mediate the relationships between personal values and actual behaviors. Other researchers have completed values studies across the domains of media preferences, leisure activities, or shopping behaviors to determine how values lead to attitudes and in turn to specific behaviors (Beatty, Kahle, Homer, & Misra, 1985; Kahle, Beatty, & Homer, 1986).

Identity theory. Identity plays an important role in people’s behaviors in that “internalized role expectations” provide a guideline for interpreting life experiences (Stryker & Burke, 2000, p. 286). As a result, an individual may develop one or multiple identities based on the types of roles in which they find themselves (Stryker & Burke, 2000). Therefore, any roles with which an individual identifies will then define who they are (e.g. sports fan). The influence of identity on actual behaviors has been supported by additional empirical research findings. For example, Stryker and Serpe (1994) found that identity salience explained 3% to 8% of the variance in time spent in various role-related behaviors (e.g. an extracurricular role or an athletic role). Boninger, Krosnick, and Berent (1995) indicated that identification is an antecedent of attitude importance. How consumers identify themselves in a particular role may influence their respective attitudes and therefore their subsequent consumption behaviors.

Attitude theory. Attitude is defined as “a learned predisposition to respond in a consistently favorable or unfavorable manner
with respect to a given object” (Fishbein & Ajzen, 1975, p. 6). Eagly and Chaiken (1993) indicated that an attitude is cognitively learned through direct sources such as information related to a specific brand as well as indirect sources such as information obtained from the media. Affective responses resulting from cognitive learning portray how consumers evaluate product attributes. An evaluation process may actually take place when an individual encounters classes of stimuli (e.g., product features or attributes) either directly or indirectly which may result in different attitudinal consequences. As such, an attitude may be derived from past behavioral responses to a stimulus. In these circumstances, previous experience may supply sources of information that act as a reference benchmark for future evaluation of a product and subsequent purchasing intention. Affective dimensions such as like (dislike) or favorable (unfavorable) tend to indicate signs of attitude (Ajzen & Fishbein, 1977). Past empirical findings in the general marketing industry support the influence of attitude toward brand on purchase intention (e.g., purchase of toothpaste; Lutz, MacKenzie, & Belch, 1983).

Homer and Kahle (1988) indicated that there is conceptual flow from personal values to attitudes to behaviors. In their research, personal values explained about 33% of the variance in attitude while attitude explained about 31% of the variance in behaviors. However, it is worth noting that when a direct link from personal values to behaviors was measured, the amount of variance explained dropped to a mere 2%. Fazio, Powell, and Williams’ (1989) research supported the influence of attitude on actual product consumption (i.e., general products such as candy bars and soft drinks) and established a significant correlation between attitude and behavior.

**Satisfaction theory.** Oliver (1997) explains the process of consumer satisfaction in that previous experience sets an expectation, and the confirmation of that expectation mediates the level of satisfaction. Consequently, such a confirmation process affects the formation of an attitude, which in turn affects one’s intention to consume products. Leeuw, Quick, and Daniel (2002) indicated that one’s satisfaction with a product is determined when relative product attributes are compared and appraised in accordance with one’s prior experience with the product. The expectancy confirmation or disconfirmation in a purchase situation may indicate that the meaning of the product may vary depending on one’s preexisting expectation because the expectation becomes a threshold for consumers to evaluate the product attributes (Oliver, 1980, 1981). An individual may develop an expectation of a product from either direct (e.g., past personal experience) or indirect information (e.g., word of mouth, media, product attributes).

Oliver and Linda’s (1981) research findings supported these relationships in that disconfirmation of expectancies explained 21% (for male consumers) and 30% (for female consumers) of the variance in satisfaction with general products (e.g., sleeping apparel). In the same study, satisfaction explained a large amount of variance (71% for male and 67% for female) regarding intention to purchase.

**Rationalization for the Current Research**

Within the context of sport, external factors such as promotions, facilities, and other types of environmental sources have frequently been recognized as influential factors of game attendance (Zhang, Smith, Pease, & Jambor, 1997). In addition, internal factors such as motivation and identification have been recognized as influential factors for sport consumption (Branscombe & Wann, 1991; Cialdini, et al., 1976; Laverie & Arnett, 2000; Sutton, McDonald, Milne, & Cimpberman, 1997; Trail, Fink, & Anderson, 2003; Trail & James, 2001; Wann, 2002; Wann & Branscombe, 1993). However, there may be other variables that influence the aforementioned external and internal factors that impact behaviors among sport consumers including the purchasing intention of consumers. To address these questions, a theoretical framework has been proposed that incorporates multiple psychological constructs such as personal values, identity, attitudes, satisfaction, personal involvement, attributes, and intention (refer to Lee & Trail, 2011b and the Overview of the ATM Model section for detailed information of the framework). Homer and Kahle’s (1988) value-attitude-behavior hierarchy may explain the overall flow of relationships in that values may influence behaviors through the mediating role of attitudes. Therefore, the primary objectives of this study were to (1) statistically examine the structural relationships among the constructs (i.e., personal values, attitudes, team identification, satisfaction, expectancy, product attributes, and previous purchase) within the proposed model, and (2) provide relevant management and/or marketing implications especially to identify the psychosocial constructs affecting the purchase intention of athletic team merchandise (ATM).

**Model Development**

Various theories have been applied to explain different criterion variables (e.g., identification, attitude, satisfaction, game attendance, product consumption, and media consumption) within the context of sport. For example, researchers within the context of sport frequently indicate that team identification and behavioral intention are two common factors that have disparate effects on sport consumption (Madrigal, 2001; Trail, Anderson, & Fink, 2000, 2005; Wann & Robinson, 2002). As well, attitude has been studied as an influential factor for sport consumption (Cunningham & Kwon, 2003; Mahony & Howard, 1998; Mahony & Moorman, 1999). Several researchers investigated mediating functions of attitude on various sport behaviors and included televised game watching (Mahony & Howard, 1998; Mahony & Moorman, 2000), sponsored product purchases (Irwin, Lachowetz, Cornwall, & Clark, 2003; Kuzma, Veltri, Kuzma, & Miller, 2003; Roy & Graeff, 2003) and game attendance (Cunningham & Kwon, 2003). Numerous researchers (Laverie & Arnett, 2000; Leeuw et al., 2002; Madrigal, 1995; Trail, Anderson et al., 2005; Zhang, Smith, Pease, & Lam, 1998) also studied satisfaction to explain game attendance. Other variables studied have included behavioral intention that has been frequently reported as a consumption behavior in the sport domain (Cornwell & Coote, 2005; Cunningham & Kwon, 2003; Mahony & Moorman, 1999). Another example that may explain athletic team merchandise purchasing behavior would be attributes such as the price, aesthetic appearance, or quality of a product that influence a consumers’ choice of one product over another (Lee, Trail, Kwon, & Anderson, 2011). Likewise, there could be many factors that have either direct or indirect (mediated by
other factors) influence on actual sport behaviors and subsequent product consumption.

Overview of the Athletic Team Merchandise (ATM) Model

The ATM model consists of two major parts. First, the model explains the latent structural relationships flowing from values to attitudes to behavioral intention (i.e., purchase intention toward product and brand). Second, the model explains the influence of satisfaction (i.e., the disconfirmation or confirmation of expectancies about the purchase and satisfaction with the purchase) and perceived product attributes (i.e., perceived benefits of products) on the formation of an attitude.

In the former premise, one’s attitude about the athletic team merchandise was further classified into two aspects: attitude toward the brand and attitude toward the product. The model posits that the influence of personal values on the formation of attitudes toward the product may be mediated by both identification with a team and attitude toward the brand. Four values, patriotism, ambition, hedonism, and conservatism, were particular selected to present value construct because they were significantly related with sport merchandise purchases in Lee and Trail’s (2011a) study. In the latter premise, it was further hypothesized that an individual may have a perception about a product’s attributes based on satisfaction with a prior purchase. The perception about product attributes was hypothesized to influence the formation of attitudes toward the brand and the product and in turn, influence purchasing intention of products.

Bagozzi and Warshaw (1990) argued that situational contingencies such as scarce supply, scarce resources, time constraints, lack of willpower, and unconscious habits might prevent one from consuming a product. However, the proposed model purposefully excludes the impact of contingency factors on behavior because the ultimate consumption behavior this study focuses on is deliberate action. In other words, this study has been developed based on an assumption that a purchase behavior takes place even if situational contingencies may exist to deter or prevent individuals from the purchasing action.

Methods

Sample Population

A convenience sample of 80 undergraduate students in sport management classes was used for pilot testing and a convenience sample from the general population of athletic event attendees was used for the main data analysis. To determine the sample size to test the theoretical model, four factors were considered as suggested by Hair, Anderson, Tatham, and Black (1998; pp. 574-575): (1) model specification, (2) model size, (3) departures from normality, and (4) estimation procedure. Considering the number of potential items, a sample size of approximately 300 was desired for the main study. The analyses were conducted on the final sample of 358 Division I collegiate athletic game attendees in the Mid-Atlantic region. The majority of the final sample consisted of the following: male (77.6%), White (82.2%), and mean age of 23.51 (SD = 6.94).

Data Collection Procedures

Prior to data collection, Institutional Review Board (IRB) approval was obtained. Brief instructions were given to the respondents about the purpose of the study, voluntary participation, and confidentiality of the information to be collected. Three graduate students were recruited for data collection and took research-training sessions. The time to complete the questionnaire was approximately 15 minutes.

Measurement Scales

To measure latent constructs, we borrowed measurement scales used in Lee and Trail’s (2012) study. The scales were designed to ask about athletic team merchandise in particular. Through two stages of pilot testing, Lee and Trail (2012) concluded that the scales were equipped with good psychometric properties to measure various impact factors for the purchase intention of athletic team merchandise. They reported model fit indices of the following: RMSEA = .053, CFI = .901, SRMR = .065, and $\chi^2$/df = 1.92. The following is a description of each scale. A seven-point Likert-type scale was used to measure all items ranging from (1) strongly agree to (7) strongly disagree. The only exception was the expectancy scale that used the following: (1) worse than expected to (7) better than expected. Refer to Table 1 for the questionnaire statements and psychometric properties of the overall scales.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Values</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patriotism</td>
<td>Loyalty to country is an important value to me</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Ambition</td>
<td>An important value to me</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Competence</td>
<td>An important value to me</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Hedonism</td>
<td>An important value to me</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Self-indulgence</td>
<td>An important value to me</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Social norm</td>
<td>An important value to me</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Conformity</td>
<td>An important value to me</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Identification</td>
<td>I consider myself to be a “real” fan of the team</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Attitude toward Brand</td>
<td>I think that the brand is good</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>My feelings toward the brand are positive</td>
<td>1.00-7.00</td>
<td></td>
</tr>
<tr>
<td>Attitude toward Product</td>
<td>I like the piece of team licensed merchandise I purchased</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Product Attributes</td>
<td>In general, I think that the team licensed merchandise I purchased is good</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Expectancy</td>
<td>The overall quality of the team licensed merchandise was</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>I am satisfied with my decision to buy the team licensed merchandise</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Intention to Purchase of Brand</td>
<td>I intend to purchase more of the same brand of team licensed merchandise</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Intention to Purchase of Product</td>
<td>I intend to purchase more team licensed merchandise of the same brand</td>
<td>1.00-7.00</td>
</tr>
<tr>
<td>Note: Statistical method: Descriptive statistics (SPSS) and structural equation modeling (EQS).</td>
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Personal values. Four personal values (i.e., Conservatism, Ambition, Hedonism, and Patriotism) were measured. An example item that represents the Ambition value included the following: “Competition is an important value to me.” In previous studies, Cronbach’s alphas ranged from .60 to .91, and AVE values ranged from .37 to .78 (Lee & Trail, 2011).

Team identification. The Team Identification Index (TII) developed by Trail and James (2001) was used to measure the level of identification towards a specific sport team. An example item included the following: “I consider myself to be a ‘real’ fan of the team.” The TII has shown good reliability across many studies (e.g. $\alpha = .87$ in Trail, Anderson et al., 2005 and .85 in Lee & Trail, 2012).

Brand attitude and product attitude. Two aspects of attitude were measured: attitude toward brand and attitude toward product. An example item that represented Brand attitude included the following: “My feelings toward the brand are positive.” Oliver (1980) claimed reliability and validity for the scale in the text but did not report any values. This scale was internally consistent in other studies (e.g. $\alpha = .85$ in Hagger, Chatzisarantis, & Biddle, 2001) and Lee and Trail’s (2012) study ($\alpha = .87$).

Intention to purchase. Two sets of purchase intention items were used: intention to purchase brand and intention to purchase product. An example item that represented Purchase Intention of Brand included the following: “In the future, I intend to purchase more team licensed merchandise of the same brand.” This scale was internally consistent in Hagger et al.’s (2001) study ($\alpha = .77$) and Lee and Trail (2012; $\alpha = .86$).

Past experience. The magnitude of the respondent’s team merchandise consumption (i.e., dollar amount spent in the previous year) was measured. It was a single item in ratio type.

Expectancy (dis)confirmation. Respondents were asked whether their expectation was met with a previous experience of athletic team merchandise they purchased. More specifically, the items in the scale evaluated participants’ expectation on product attributes or benefits to the extent that it was better, equal, or worse than expected. Alpha reliability was .91 in Trail, Anderson et al. (2005) and .85 in Lee and Trail (2012).

Satisfaction. The respondents were asked to express their general level of satisfaction with previously purchased athletic team merchandise. More specifically, the items measured the respondents’ satisfaction with their decision to buy the products. An example item included the following: “I was satisfied with my decision to buy the team licensed merchandise.” Cronbach’s alpha was .79 in Lee and Trail (2012).

Perceived product attributes. To measure perceived value of product attributes, six attributes were measured that included: worth for the time, value for the money, consistent performance, effort to buy, overall product quality, and aesthetic appeal. The items were reliable as evidenced in the Cronbach’s alpha of .75 in Lee and Trail (2012).

Data Analysis

To examine the structural relationships among the latent constructs within the theoretical model, we conducted structural equation modeling (SEM). Using the multivariate software EQS, the robust maximum likelihood method using a direct estimation process was employed to estimate the theoretical model. The assumptions of multivariate normality and linearity were evaluated through descriptive statistics using SPSS and CFA using EQS 6.1. To check normal data distribution, both skewness and kurtosis values were examined. The following indices are suggested to meet the criteria for good fit: $\chi^2/df < 3.0$; RMSEA < .08; SRMR < .10; CFI >.90 (Bollen, 1989; Hair, Black, Babin, & Anderson, 2010; Kline, 2010).

Results

Normality Check

Skewness and kurtosis values for the manifest variables ranged from $|0.13|$ to $|1.89|$ and $|0.01|$ to $|2.62|$, respectively, which are within the range of two standard deviations (SPSS, program manual). The only exception was team identification 1, which had a kurtosis value of $|3.58|$. The frequency distribution of the residual covariances appeared to be symmetric in that approximately 90% of

<p>| Table 2. Inter-Factor Correlations, Cronbach’s Alpha, and AVE Values |
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<th>(9)</th>
<th>(10)</th>
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<td>Conservatism (1)</td>
<td>1</td>
<td>.85</td>
<td>.46</td>
<td>.35</td>
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<td>.43</td>
<td>.59</td>
<td>.47</td>
<td>.42</td>
<td>.45</td>
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<td>Hedonism (2)</td>
<td>1</td>
<td>.41</td>
<td>.53</td>
<td>.45</td>
<td>.39</td>
<td>.41</td>
<td>.58</td>
<td>.49</td>
<td>.40</td>
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<tr>
<td>Patriotism (3)</td>
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<td>.56</td>
<td>.39</td>
<td>.39</td>
<td>.38</td>
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<td>.27</td>
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<td>Ambition (4)</td>
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<td>.59</td>
<td>.63</td>
<td>.66</td>
<td>.57</td>
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<td>.45</td>
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<td>Team Identification (5)</td>
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<td>.52</td>
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<td>.64</td>
<td>.71</td>
<td>.44</td>
<td>.57</td>
<td>.82</td>
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<td>Attitude toward Brand (6)</td>
<td>1</td>
<td>.85</td>
<td>.77</td>
<td>.73</td>
<td>.58</td>
<td>.86</td>
<td>.62</td>
<td>.82</td>
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<tr>
<td>Attitude toward Product (7)</td>
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<td>.98</td>
<td>.68</td>
<td>.83</td>
<td>.89</td>
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<tr>
<td>Product Attributes (8)</td>
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<td>.88</td>
<td>.68</td>
<td>.77</td>
<td>.77</td>
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<td>.77</td>
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<tr>
<td>Satisfaction (9)</td>
<td>1</td>
<td>.68</td>
<td>.78</td>
<td>.85</td>
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<td>Expectancy(10)</td>
<td>1</td>
<td>.54</td>
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<tr>
<td>Intention to Purchase Brand (11)</td>
<td>1</td>
<td>.84</td>
<td>.84</td>
<td>.84</td>
<td>.84</td>
<td>.84</td>
<td>.84</td>
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<tr>
<td>Intention to Purchase Product (12)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cronbach’s Alpha</td>
<td>.73</td>
<td>.76</td>
<td>.91</td>
<td>.76</td>
<td>.84</td>
<td>.87</td>
<td>.86</td>
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<td>.83</td>
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<tr>
<td>AVE</td>
<td>.50</td>
<td>.44</td>
<td>.78</td>
<td>.47</td>
<td>.64</td>
<td>.65</td>
<td>.52</td>
<td>.50</td>
<td>.59</td>
<td>.57</td>
<td>.66</td>
<td>.57</td>
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Note. Statistical method: confirmatory factor analysis (EQS). All correlations significant at .05 level.
of the residuals centered around zero.

Psychometric Properties of the Scales

Reliability. The AVE values were close to or exceeded the .50 cut-off level (Fornell & Larcker, 1981; Hair et al., 2010) in all latent variables. The only exception was Hedonism (.44). Cronbach’s alpha for the latent variables ranged from .73 to .91. Overall factor loadings, AVE values, and Cronbach’s alphas met the suggested criteria (see Tables 1 and 2).

Discriminant validity. An initial discriminant validity check showed that 5 out of 66 inter-factor correlations in the hypothesized model did not exceed .85 (Kline, 2010). Six latent variables failed Fornell and Larcker’s (1981) more stringent level of discriminant validity (i.e., discriminant validity is evident when the squared correlations between one factor and any others are lower than the AVE for each factor; see Table 2). These issues indicate that there may be multicollinearity problems among some of the variables. However, this is not surprising as many of the constructs were created to measure aspects that should have good predictive validity. This will be discussed more in a later section.

Model Estimation

After reexamining psychometric properties of the ATM model \(\chi^2/df = 1.83, \text{ *RMSEA = .048 (90% CI for *RMSEA = .044, .052), *CFI = .899, and SRMR = .051}\), the current study pursued the next level that included estimation of structural relationships. To increase generalizability of the results, a more general sample was used in the current study. Because the normalized estimate of 62.90 is a possible indication of non-normality in data distribution (Bentler, 2005, indicated values greater than 5 are indicative of non-normal distribution), as suggested by Byrne (2006), we used Satorra-Bentler’s (S-B) robust fit statistics to estimate the structural model. Goodness-of-fit statistics were as follows (see Table 3): [S-Bχ^2(880) = 1942.59; χ^2/df = 2.20, *RMSEA = .06 (90% CI for *RMSEA = .056, .063), *CFI = .820, and SRMR = .183]. Both the chi-square per degrees of freedom and RMSEA values met the suggested criteria while both SRMR and CFI did not meet the criteria although the values were close to the threshold. Based on the review of the overall results, we concluded that the ATM model fit the data moderately well.

Discussion

Focus of the Study

The primary objective of this study was to develop a model that explains consumption of athletic team merchandise. The ATM model consisted of 12 latent factors that were derived from values theory (Rokeach, 1973a), identity theory (Stryker, 1968), attitude theory (Fishbein & Ajzen, 1975), satisfaction theory (Oliver, 1980), and several other specific concepts (i.e., perceived product attributes) that have been publicized to influence consumer behavior. In the model, it was originally hypothesized that the latent structural relationships flow from Personal Values to Attitudes (toward the product and the brand) to Purchase Intention (represented by intention to purchase a brand and/or product). Further, it was hypothesized that the impact of Satisfaction (i.e., expectancy disconfirmation about the purchase and satisfaction with the purchase) and Perceived Product Attributes (i.e., past expenditure and perceived value of product attributes) on the formation of Attitudes influenced Purchase Intention toward a Brand and Product. The model was then statistically examined in terms of its structural relationships among the constructs within the model.

Overview of the Significant Findings

Informed by the measurement model test in Lee and Trail (2012), the structural relationships in the ATM model were examined using a general population sample in the current study. Results from the analyses indicated that the 12-factor ATM model fit the data from collegiate athletic events well and explained the various impact factors that led to purchase intention of athletic team merchandise among sports consumers. In the model, the four first-order latent variables, Hedonism, Patriotism, Conservatism, and Ambition, were all significantly associated with the second-order latent variable, Personal Values (PV; the average of 57% of the commonality was explained by the four first-order latent variables). The Personal Values construct was also significantly associated with Team Identification (TI) and explains approximately 32% of the variance. Personal Values, Team Identification, and Satisfaction (SA) were significantly associated with Attitude toward Brand (AB), collectively explaining a little over 53% of the variance. Team Identification, Attitude toward Brand, Product Attributes (PA), and Satisfaction were significantly associated with Attitude toward Product (AP), collectively explaining 98% of the variance. Team Identification, Previous Purchase (PP), and Satisfaction were significantly associated with Product Attributes, collectively explaining nearly 78% of the variance. Expectancy (EX) was significantly associated with Satisfaction, explaining approximately 50% of the variance. Attitude toward Product and Satisfaction were significantly associated with Intention to Purchase (IP), explaining close to 86% of the variance.
Comparison with the Existing Literature

This section discusses supporting theories for the tested structural relationships. The results of the SEM in the current study were generally consistent with prior studies. The literature supports the premises in this study that many conceptualizations lead to sports product consumption. Some of these theories include values theory (Rokeach, 1973a, 1973b), identity theory (Stryker, 1968), attitude theory (Fishbein & Ajzen, 1975), and satisfaction theory (Oliver, 1980), and other related information for perceived product attributes.

In the current study, PV explained 32% of the variance in TI. This finding supports Lee and Trail’s (2011a) results, in that they found ambition, patriotism, conservatism, and hedonism were all significantly correlated with TI (correlations ranged from .16 to .39). While Lee and Trail’s study (2011a) may be one of a few studies that have investigated the relationship between personal values and team identification in the context of sport, there are very few empirical findings that allow us to compare the results of the current study with the existing literature. This signifies the need for further studies that empirically explores the relationship between PV and TI.

In the current study, PV, TI, and SA explained 53% of the variance in AB. In addition, TI, AB, PA, and SA explained nearly 98% of the variance in AP. The influence of TI on the formation of AB and/or AP partially supports the existing literature in brand equity. More specifically, Gladden and colleagues (Gladden, Irwin, & Sutton, 2001; Gladden & Milne, 1999; Gladden, Milne, & Sutton, 1998) argued that consumers’ attitude toward a brand constitutes brand association, which is derived from the concept of team identification. In the current study, SA contributed the most to the formation of AB. Also, this finding was the same for AP. This finding partially supports Oliver and Linda’s (1981) argument that satisfaction (with a product, specifically sleeping apparel) mediates the relationship between expectancy (dis)confirmation and attitude (toward a product, again, sleeping apparel) or intention.

In Oliver and Linda’s (1981) study, satisfaction explained up to 4% of the variance in attitude. The finding that SA contributes to the formation of AB and AP is also consistent with Madrigal’s (2003) finding that performance satisfaction explained 15% of the variance in optimism about the team’s future performance. This is an equivalent concept to attitude because Madrigal’s (2003) study used affect to represent the optimism.

TI, PP, and SA explained 78% of the variance in PA in the current study. Out of the three factors, SA contributed the most to PA, while the influence of TI was weak, and PP’s influence was nonexistent. This finding is somewhat inconsistent with Kwon, Trail, and James’s (2007) study in which they tested three models (direct effect, partially mediated, and fully mediated) explaining relationships among team identification, perceived value of product attributes, and purchase intention. Kwon et al. (2007) indicated that team identification influenced purchase intention of licensed-sport apparel, which was mediated by a consumers’ perceived value of product attributes. Team identification explained a fair amount of variance (13.2%) in perceived value, but in the current study, the influence of TI on PA was relatively weak.

In the current study, it was also found that EX explained 50% of the variance in SA. This result is consistent with previous studies in that numerous researchers have found that expectancy disconfirmation often explained a large amount of variance in satisfaction for competitive running (Caro & Garcia, 2006), general sport fan satisfaction (Madrigal, 1995) and spectators’ game satisfaction (Trail, Fink, & Anderson, 2003; Leeuwen, Quick, & Daniel, 2002). Leeuwen et al. (2002) argued that disconfirmation of preexisting expectations is directly associated with customer satisfaction. The influence of EX on SA in the current study was also consistent with Oliver and Linda’s (1981) study in that EX explained a large amount of variance (21% and 30% for male and female consumers, respectively) in satisfaction with general products (i.e., sleeping apparel).

AP and SA collectively explained 86% of the variance in IP in the present study. These results are somewhat consistent with previous findings in that Matsuoka, Chelladurai, and Harada (2003) showed that satisfaction influenced intention to attend future games (satisfaction with performance explained 26% of intention to attend future games). The influence of product attributes on purchase intention was also found in previous studies in that perceived value of product attributes explained 42.6% of the variance in purchase intention (Kwon et al., 2007). The influence of satisfaction on purchase intention was also found in previous studies in that attitudes explained 8% of the variance in intention to attend a hockey game (Cunningham & Kwon, 2003).

Practical Implications

Although many of the discussed theories have been applied to explain a form of sport consumption (frequent game attendance), it is crucial to develop a model that incorporates various independent constructs within the context of ATM consumption. Comprehensiveness of such a model would allow scholars and researchers to develop theories that explain various commonly occurring consumption activities at a domain level such as athletic product purchasing. In turn, this research effort will enable retailers to effectively communicate with sport product consumers, which could consequently increase the overall sales of ATM.

The findings of this study reveal whether each of the proposed theoretical constructs contributes to elucidate a specific consumption activity that results in purchasing ATM. Given the influence of merchandise sales on the overall sport industry as well as its continued growth trends, marketers of ATM should continue to search for ways to study and incorporate psychosocial constructs that influence consumption behaviors. These constructs include personal values, team identification, attitudes toward brand/product, satisfaction of consumers, perceived attributes of products, and purchase intention. More specifically, the finding that personal values impact team identification and brand attitude is helpful for sport marketers to develop effective marketing strategies. For instance, we now know that sport consumers who purchase ATM tend to be patriotic, ambitious, conservative, and hedonistic, and that these personal values influence a higher level of team identification as well as a strong brand loyalty. It is evident that the sport industry is being globalized (e.g., Olympic Games, soccer World Cup, World Baseball Classic), and as a result, billions of dollars are being spent on ATM within the international market (Foster, Greyser, & Walsh, 2006). Thus, utilization of a personal value such as patriotism in developing a marketing plan...
is prudent and necessary. It is further evident that promoting ATM that represents one’s own country by emphasizing the value of patriotism is a common modern sport business trend.

Given the information that the impact of team identification on attitudes toward brands was very minimal, it is reasonable to assume that when an individual displays low identification with a team, it would be more likely for the consumer to have a stronger attitude toward a brand (e.g. Under Armor). In this circumstance, sport marketers will need to emphasize the equity of the brand (strong and positive) to promote increased product consumption rather than persistently appealing to team identification. In contrast, if an individual displays high identification with a team, it would be an effective strategy for sport marketers to take advantage of team identification rather than spending marketing dollars to create new attitudes towards brands and/or products.

Previous research has indicated that it is helpful for sport marketers to understand the importance of perception of product attributes in purchase decisions (Lee et al., 2011). Surprisingly, in this data set, there was no significant relationship between product attributes and attitude toward the product. It has been noted previously that consumers often consider various product attributes such as price, craftsmanship, aesthetics (e.g. color/design), nostalgia, and prestige/status as important features when making product purchase decisions. Thus, due to the inconsistency with these prior results and the current data, sport marketers should determine if emphasizing these features when manufacturing products makes sense. Sport marketers would be even more effective if they knew which factors influence the formation of one’s perception about product attributes. It is also worth noting that satisfaction contributed most of the variance in perceived product attributes in the current study. Satisfaction with previous purchases is a powerful impact factor that influences not only consumers’ perception of product attributes but also brand attitude and intention to purchase a brand and product. Therefore, sport marketers will constantly need to monitor the level of fan satisfaction and gather information about consumers’ experiences with a product. The following section discusses some limitations we have identified and recommendations for future study.

**Limitations and Recommendations for Future Study**

Nonsymmetrical distribution of residuals was found among the results of the current study. The frequency distribution of the residual covariances should be symmetric because nonsymmetrically distributed residuals in the frequency distribution may signal a poor-fitting model (Tabachnick & Fidell, 2001). To reduce negative influence of these results, multiple fit indices were carefully examined to estimate the model in each step. Eliminating a few cases that contribute large residual values may be considered.

Multicollinearity issues were evident in this data set through the high correlations of some of the constructs and a standardized path coefficient that exceeded 1.0. As Jöreskog (1999) notes “if the factors are correlated (oblique), the factor loadings are regression coefficients and not correlations and as such they can be larger than one in magnitude” (p. 1). He goes on to note that this suggests that there is probably a high degree of multicollinearity in the data. In our data set this is not surprising as the wording of the items in all of the constructs that had high correlations included the wording “team licensed merchandise.” In hindsight, the items in the Satisfaction scale and the Attitude toward the Product scale were probably too similar. Although the concepts of satisfaction and attitude are distinct and satisfaction should lead to attitude, many respondents to the survey probably did not make a distinction between “I think that I did the right thing when I decided to buy the team licensed merchandise” (Sat3) and “I think that the team licensed merchandise I purchased is good” (AP2). Thus in the future, these scales probably need to be adapted to make sure that they are distinct, although, both satisfaction and attitude have affective (emotional) components and thus should always have high correlations.

**Summary and Conclusion**

The purpose of this study was to test a structural model to determine which psychosocial constructs resulted in the purchasing of athletic team merchandise (ATM). This study reviewed the various theories that are specific to psychosocial constructs that influence consumption activity such as behavioral characteristics related to personal values, identity, attitudes, satisfaction, product attributes, and intention. The model explains the latent structural relationships that develop as consumers move from values to attitudes and finally to behavioral intentions to purchase a product and/or brand. Second, the model explains the influence of satisfaction about the purchase and perceived benefits of the product(s) on the formation of a consumer’s attitude related to the purchased product or brand.

Results from the analyses indicated that the twelve-factor ATM model fit the data from collegiate athletic events well and explained the various impact factors that lead to purchase intention of athletic team merchandise among sports consumers. Based on values theory, identity theory, attitude theory, satisfaction theory, and other concepts that influence product consumption, this study suggests that consumer intentions to purchase athletic team merchandise is significantly affected by various factors including personal values, team identification, brand/product attitude, product attributes, previous purchase, expectancy, and satisfaction.

Given the influence of merchandise sales on the overall sport industry, marketers of ATM should continue to search for ways to develop a better understanding of various psychosocial constructs that affect purchasing behaviors. These constructs include personal values, team identification, attitudes toward brand/product, satisfaction of consumers, perceived attributes of products, and purchase intention. More specifically, the finding that personal values impact team identification and brand attitude is helpful for sport marketers to develop effective marketing strategies. As previously mentioned, we now know that sport consumers who purchase ATM tend to be patriotic, ambitious, conservative, and hedonistic, and that these personal values influence the level of team identification as well as a strong brand attitude. Knowledge of how these traits along with an individual’s personal values, identification with a team, their learned attitudes about a brand and/or product as well as an understanding of their satisfaction levels and expectations for a product were significant. For example, a significant finding was that team identification impacts attitude toward brand and/or product. This provides useful information for sport marketers to select appropriate brands for the products.
that represent their team or athletic department. Researching appropriate brands using potential fans and consumers may be a critical factor in developing and maintaining fan identification and subsequent purchasing of athletic team merchandise. The importance of consumer satisfaction on the perceived product attributes, attitude formation, as well as purchase intention was also confirmed in the current study. Service providers will need to monitor consumer satisfaction with ATM on a consistent basis. The structural model used in the current study further provides researchers with a reliable and valid tool that measures consumers’ purchase of athletic team merchandise.

References


consequences. Advances in Consumer Research, 10(1), 532-539.
Self-Regulation of Physical Education Teacher Education Students' Attitudes Towards Exercise and Diet

by Carol Wilkinson & Keven Prusak - Brigham Young University, Provo, UT; Tyler Johnson - Boise State University, Boise, ID

Abstract

The purpose of this study was to assess differences in self-regulation of attitudes towards engaging in exercise and eating a healthy diet between physical education teacher education (PETE) students and general education (GE) students, and between male students and female students. Participants were university students (n = 194) at a university in the Intermountain West in the U.S. Results showed that PETE students were more autonomous in their attitudes towards exercise than other students, all female students were more controlled in their attitudes towards diet than males, and PETE females’ attitudes towards diet were more controlled than PETE males. PETE curricula should include experiences to help students internalize exercise and healthy diet values so they will develop attitudes towards engaging in exercise and eating a healthy diet for autonomous reasons.

Key Words: self-determination, healthy lifestyles

In 2009 there was not a single state in the U.S. that met the Healthy People 2010 obesity target of 15% or less for adults. In fact the opposite seems to be the trend with the number of states with obesity rates of ≥ 30% increasing from zero in 2000 to nine in 2009. The overall estimated rate of adult obesity in 2009 was 26.7% (Centers for Disease Control and Prevention, 2010). Children and adolescents are not far behind. Using measured heights and weights, an estimated 17% of U.S. children ages two to 19 are obese (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010), and Sing, Mulder, Twisk, Van, Chinapaw (2008) state that childhood obesity often continues into adulthood.

Perfectly placed to help prevent childhood obesity are physical education (PE) instructors who have a prime opportunity to educate about the benefits of exercise, encourage children and young adults to participate regularly in physical activity (Sallis & McKenzie, 1991; Wright, Patterson, & Cardinal, 2000), and to engage in other healthy behaviors such as good diets (Prusak et al. 2011). Prusak et al. reinforced the view that PE should be a public health tool with a healthy and active lifestyle management (HALM) focus. They suggest such a focus should include elementary classes in which the children are highly active, successful and having fun; and utilizing a health club model in secondary schools which allow for activity choices, teaching HALM skills, and accountability. In addition, Prusak et al. further emphasized the need for Physical Education Teacher Education (PETE) programs to prepare new teachers so they can teach with this HALM focus and model appropriate exercise and diet habits.

Modeling healthy lifestyles is important according to Melville and Maddalozzo, (1989). They found that high school students expressed a decreased intent to exercise and a less favorable rating of an overweight instructor’s expertise and role model appropriateness. Indeed, Social Learning Theory proposes that most behavior is learned from observing (Bandura, 1986), underscoring the need for current and future physical educators who are good role models of healthy lifestyles in order to exert a positive effect on their students (National Association for Sport and Physical Education, 2004). Some physical educators espouse the value of living a physically active lifestyle, but do not regularly participate in physical activity (PA) themselves (Melville, 1999). In fact some in-service PE teachers’ health-related fitness scores did not meet the standard of achievement expected of a ninth-grade student (Castelli & Williams, 2007).

Cardinal (2001) found that PE professionals and pre-professionals who were physically active and had lower body mass index (BMI) scores had more favorable attitudes toward role modeling compared to inactive respondents and respondents with higher BMIs. He also found that self-perceived fitness level and actual physical activity were important variables in forming a positive attitude toward role modeling (Cardinal & Cardinal, 2003). From these findings, positive attitudes towards role modeling are linked to healthy lifestyle behaviors and this should be considered by PETE programs that are preparing new teachers who model appropriate exercise and diet behaviors, as previously mentioned. Attitudes that precede behavior are affected by factors that cause an individual to be motivated, or moved to do something (Ryan & Deci, 2000b). For example, a PETE student may not value eating a healthy diet, yet he/she knows it is something they should do. So the student is motivated by guilt, and has an attitude of “I do not want to eat a healthy diet but I will because I know I should,” which leads to the behavior of eating a healthy diet. Hence, it is helpful to examine how PETE students are motivated in their attitudes towards exercise and dietary habits. In order to do so, we will consider one theory that explains the foundation of self-determined attitudes and behavior.

Self-Determination Theory

Ryan and Deci’s (2000a) self-determination theory (SDT) provides a theoretical framework to examine the motivational processes of PETE students for engaging in regular exercise patterns and a healthy diet. SDT proposes that people are active in their pursuit of behaviors and activities, and that this activity results in personal growth and a unified, coherent sense of self. According to this theory, behavioral engagement is motivated according to one’s position along a graded continuum of regulations ranging from being more coercive in nature to being highly self-determined (or self-regulated) and, therefore, autonomous. Specifically, SDT posits that there are three motivational states that lie on this continuum of self-determined attitudes and behavior: amotivation (the state of lacking the intention to act); extrinsic motivation (doing an activity in order to attain some separable outcome), and intrinsic motivation (doing an activity for the inherent satisfaction of the activity itself).
Additionally, Ryan and Deci (2000a) propose that there are four levels of extrinsic motivation that vary in their relative autonomy, moving from more coercive to more autonomous. The way that extrinsically motivated attitudes and behaviors become more autonomous is through a process referred to as ‘organismic integration.’ With this process, the regulation and underlying values of an externally motivated behavior are internalized, and progressively blended with other aspects of the core self. The more a behavior is internalized and becomes part of one’s self, the more a person will experience autonomy in their attitudes and when performing the behavior (Ryan & Deci, 2000a; Ryan, Sheldon, Kasser, & Deci, 1996). The four levels of extrinsic motivation are external regulation, introjected regulation, identified regulation, and integrated regulation. Externally regulated behavior is engaged in by an individual to gain a reward or avoid punishment, and therefore reflects an influence by others. Since the locus of control lies outside of the individual, it is the least autonomous form of extrinsic motivation and is perceived as controlling in nature. For example, a person who exercises because another person makes him/her exercise is externally regulated.

Moving along the regulatory continuum, the next point is introjected regulation which is behavior that occurs due to feelings of guilt or to gratify pride, and is controlled by forces within the individual. (Ryan & Deci, 2000a; Ryan & Deci 2000b; Ryan et al. 1996). An example is someone who eats a healthy diet to avoid feeling guilty if she/he does not act according to what others think is the best thing to do.

Whitehead (1993) identified the ‘threshold of autonomy’ (located between introjected and identified) which provides a distinction between controlling and autonomous regulation. Identified behavior is therefore more autonomous than external and introjected regulation. For example, when a person consciously accepts the value of eating a healthy diet, he/she is engaging in identified regulation. The person identifies with the importance of a healthy diet and adopts the regulation of that diet as his/her own. However, the identified behavior is not always compatible with the individual’s other values and actions, and thus, some degree of internal conflict is still felt.

Integrated regulation is the most autonomous form of extrinsic motivation. It occurs when an identified behavior is fully incorporated with the self and is consistent with a person’s values and actions. Behavior is performed with a sense of choice that is congruent with the core self. However, the behavior is aimed at the attainment of separate outcomes rather than enjoyment of the activity itself, and therefore, still has some element of extrinsic motivation. An example of this is when a person exercises to maintain fitness, because he sees himself as being a fit person.

Intrinsic motivation is the archetype of self-determination and is the root of behaviors that are engaged in for their own sake, simply for the pleasure, interest and satisfaction derived from doing them (Levesque et al., 2007). SDT (Ryan & Deci, 2000a) further proposes that as individuals move along the motivation continuum from amotivation towards intrinsic motivation, there will be an increase in cognition (deeper understanding), behavior (increased participation), and affect (better attitude). Thus, according to application of this theory, the self-regulated PETE student would be more likely to practice healthy diet and exercise patterns because they either value the outcome (identified regulation), having healthy diet and exercise habits is part of who they are as an individual (integrated regulation), or because it is pleasurable, satisfying, and interesting (intrinsic motivation).

Indeed, a sense of autonomy is deemed to be an essential factor for achieving durable behavior change (Deci & Ryan, 1985; Ryan & Deci, 2000a; Sheldon, Williams, & Joiner, 2003). Hence, an autonomous motivational state with respect to personal healthy diet and exercise habits is surely a desirable motivational state for future physical educators to help them be good role models of healthy lifestyles for their students.

Based on SDT, and the fact that individuals’ attitudes influence their behavior, we felt that it was important to examine the motivational attitudes of PETE students towards engaging in exercise and eating a healthy diet compared to other university students. To date there have not been any studies that have examined this topic.

The purpose of this study was to assess differences in self-regulation of attitudes towards engaging in exercise and eating a healthy diet between PETE students and general education (GE) students, and between male students and female students.

Method

Instruments

The 15-item Treatment Self-Regulation Questionnaire (TSRQ), which is part of the Health-Care, SDT Questionnaire Packet (Williams, Ryan, & Deci, 2011a) was used in this study. The TSRQ measures the degree of autonomous self-regulation regarding why people do, or would do, some healthy behavior. It was first developed by Ryan and Connell (1989) and since then has been modified to assess a variety of health behaviors. This study utilized two questionnaires, the TSRQ (Exercise) and the TSRQ (Diet) (Williams, Ryan, & Deci, 2011b), which have both shown to be valid instruments with acceptable internal consistency of each subscale (most values >0.73; Levesque et al., 2007). Autonomous forms of extrinsic motivation (i.e. identification and integration) have been found to be associated with positive health (Williams, McGregor, Zeldman, Freedman, & Deci, 2004), whereas controlling forms of motivation (i.e. external and introjection) and amotivation have all been linked to poorer health (Williams, 2002).

In the TSRQ (Exercise) participants are first given the introductory statement, “The following question relates to the reasons why you would either start to exercise regularly or continue to do so.” In the TSRQ (Diet) the introductory statement is, “The following question relates to the reasons why you would either start eating a healthier diet or continue to do so.” In both instruments, participants are then presented with a stem, “The reason I would exercise regularly/eat a healthy diet is,” followed by 15 items that represent reasons that vary in the degree to which they reflect autonomous regulation specific to exercise and healthy diet.

There are three subscales to the questionnaire: the autonomous regulatory style (six items which focus on identification and integration); the controlled regulatory style (six items); and amotivation (three items). Examples of more autonomous reasons include “Because I feel that I want to take responsibility for my own health” and “Because I personally believe it is the best thing
and GE students’ scores by gender. A Bonferroni adjustment to used to compare PETE students’ self-regulation scores by gender, up univariate ANOVAs were calculated. The same procedure was computed examining the effect of major and gender, on the exercise and diet regulation scores. When significance was found, follow-up univariate ANOVAs were calculated. The same procedure was used to compare PETE students’ self-regulation scores by gender, and GE students’ scores by gender. A Bonferroni adjustment to

for my health.” Examples of more controlled reasons are “Because I would feel guilty or ashamed if I did not exercise regularly/eat a healthy diet” and “Because others would be upset with me if I did not.” Examples of more motivated reasons are “I really don’t think about it” and “Because it’s easier to do what I’m told than think about it.” Participants rate each reason on a 7-point Likert scale, which ranges from “not at all true” (1 point) to “very true” (7 points). Responses to the respective items for each regulatory style, (autonomous, controlled, and amotivation) are averaged to give a self-regulation score for each of the three styles that forms the reflection of motivation for the target behavior of exercise and diet.

Participants and Procedure
The participants were 194 students (males, n = 82, and females, n = 112) from a university in the Intermountain West of the U.S and were predominantly (90%) Caucasian. Students were voluntarily selected from the PETE major (males, n = 28, and females, n = 69) and other majors (males, n = 54, and females, n = 43). Students in the other majors were enrolled in GE classes that were not health-related.

Permission to conduct the study was obtained from the Institutional Review Board at the university. A researcher from the institution contacted two professors, one who taught a GE course, and one who taught PETE courses, to obtain their permission to talk to the students in their classes about the study. Then the researcher took five minutes at the beginning of these classes to explain the study, and ask for volunteers. Volunteers immediately signed and returned an informed consent form, then anonymously completed the two paper questionnaires in class.

Data Analysis
Data was entered into a Microsoft Excel file and missing data were dealt with using a list-wise deletion. The dependent variables for exercise were the averaged self-regulation scores for: autonomous regulation of exercise (EAU), controlled regulation of exercise (EC), and amotivation towards exercise (EA). The dependent variables for diet were the averaged scores for: autonomous regulation of diet (DAU), controlled regulation of diet (DC), and amotivation towards diet (DA).

Cronbach’s alpha was used to assess internal consistency and reliability for each subscale (e.g. EAU) for both the TSRQ (Exercise) and the TSRQ (Diet). Pearson correlations were computed among the self-regulation scores to: 1) assess the simplex pattern (i.e. there is a positive/stronger correlation between adjacent items and a negative correlation between distal items on the proposed continuum) of the questionnaire, and 2) assess the relationship between exercise and diet variables that were in similar regulatory categories (e.g. EAU and DAU).

Subjects were grouped based on major (PETE and GE). Means and standard deviations were computed for all dependent variables: EAU, EC, EA, DAU, DC, and DA. One-way MANOVAs were computed examining the effect of major and gender, on the exercise and diet regulation scores. When significance was found, follow-up univariate ANOVAs were calculated. The same procedure was used to compare PETE students’ self-regulation scores by gender, and GE students’ scores by gender. A Bonferroni adjustment to the traditional .05 alpha level was made because there were three dependent variables for exercise (EAU, EC, and EA), so the alpha level was .05/3 = .017. There were three dependent variables for diet (DAU, DC, and DA), so the alpha level was also set at .017 for computations to do with diet. Effect sizes were calculated for each significant difference using eta square (η²).

Results
Reliability and Internal Consistency
Cronbach’s alpha was used to assess internal consistency for the three subscales of the TSRQ (Exercise) and the three subscales of the TSRQ (Diet), and values are located on the diagonal (in parenthesis) in Table 1. The overall reliability score was .75 for the TSRQ (Exercise) questionnaire and .76 for the TSRQ (Diet) questionnaire. Reliability scores are considered adequate when values are alpha .70.

Simplex Pattern of the TSRQ (Exercise) and TSRQ (Diet)
Pearson correlations (shown on Table 1) were computed among the three exercise self-regulation scores (EAU, EC, EA) and among the three diet self-regulation scores (DAU, DC, and DA), and generally supported the simplex pattern of the TSRQ. Regarding the exercise scores, a weak, negative correlation was found for the relationship between EAU and EA (r(191) = -.294, p .01) indicating a significant relationship between these two variables at opposite ends of the self-determination continuum. A weak, positive correlation between EAU and EC was found (r(191) = .179, p .05). However, no significant correlation was found between EC and EA. Similar correlations were found for the diet scores. In addition, significantly positive correlations (p <.01) were found between comparable exercise and diet variables (not included in Table 1). Specifically, r value of correlation between EAU and DAU, between EC and DC, and between EA and DA is .715, .819, and .710 respectively.

<table>
<thead>
<tr>
<th>Table 1. Internal Consistency Values: Cronbach's Alpha and Pearson Correlation for TSRQ (Exercise) and TSRQ (Diet)</th>
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<td><strong>Subscale</strong></td>
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<tr>
<td><strong>TSRQ (Exercise)</strong></td>
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<td><strong>Subscale</strong></td>
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<td><strong>TSRQ (Diet)</strong></td>
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<td><strong>Note. EAU = autonomous regulation of exercise; EC = controlled regulation of exercise; EA = amotivation towards exercise; DAU = autonomous regulation of diet; DC = controlled regulation of diet; DA = amotivation towards diet.</strong></td>
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<td><strong>Mean alpha of all subscales.</strong></td>
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<td>*<strong>p &lt; .05. ** p &lt; .01.</strong></td>
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Self-Regulation of Diet and Exercise Attitudes

Self-Regulation of Attitudes Towards Exercise and Diet

Descriptive statistics (means and standard deviations) are shown in Tables 2-3. All students were relatively autonomous in their attitudes towards engaging in exercise and eating a healthy diet. A one-way MANOVA was computed examining the effect of major on the exercise regulation scores. A significant effect was found (Wilks’ Λ (3,189) = .931, p > .003). Follow-up univariate ANOVAs indicated there was a significant difference for EAU, (F(1,191) = 13.88, p = .000, η² = .07; see Table 2). Green and Salkind (2005) proposed that η² values of .01, .06 and .14 could be interpreted as small, medium and large effect sizes, respectively.

PETE students were significantly more autonomous in their attitudes towards exercise than GE students. Results of a one-way MANOVA examining the effect of major on the diet regulation scores revealed no significant effect (p = .463).

With respect to the relationship of gender and self-regulation attitudes, no significant effect of gender on the exercise was found (p = .182). However, the effect of gender on the diet was significant, with Wilks’ Λ (3,190) = .939, p = .007). Follow-up univariate ANOVAs indicated there was a significant difference for DC, (F(1,192) = 11.88, p = .001, η² = .06; see Table 2). Female students felt significantly more controlled in their attitudes towards diet than male students.

To compare gender differences in self-regulation scores among PETE students’ one-way MANOVA was used. A significant effect was found for diet (Wilks’ Λ (3,93) = .868, p > .004). Follow-up univariate ANOVAs indicated there was a significant difference for DC, (F(1,95) = 12.63, p = .001, η² = .12; see Table 3). PETE females felt more controlled than males for diet. Results of a one-way MANOVA examining the effect of gender on PETE students’ exercise regulation scores revealed no significant effect (p = .095). The same comparison of gender differences in self-regulation scores was conducted among GE students as well and the results of one-way MANOVA on exercise regulation scores revealed a significant effect (Wilks’ Λ (3,93) = .915, p > .041). Follow-up univariate ANOVAs indicated there was a significant difference for

| Table 2. Means and Standard Deviations of Self-regulation Scores by Major and Gender |
|----------------------------------|----------------|----------------|-----------------|----------------|----------------|----------------|----------------|
| **PETE**                        | **GE**         | **Males**      | **Females**     | **Males**      | **Females**   | **p**         | **η²**         |
| (n = 97)                        | (n = 97)       | (n = 82)       | (n = 112)       | (n = 82)       | (n = 112)      |               |                |
| **Exercise Scores**             |                |                |                 |                |                |               |                |
| EAU                             | 6.36*          | .66            | 5.94            | .87            | 6.19          | .65           | 6.12           | .89            | .000           | .07            |
| EC                              | 3.59           | 1.34           | 3.50            | 1.13           | 3.35          | 1.20          | 3.68           | 1.25           |               |                |
| EA                              | 1.97           | 1.04           | 2.05            | .85            | 2.02          | .90           | 2.00           | .98            |               |                |
| **Diet Scores**                 |                |                |                 |                |                |               |                |
| DAU                             | 5.94           | .82            | 5.78            | .89            | 5.79          | .83           | 5.92           | .89            |               |                |
| DC                              | 3.23           | 1.35           | 3.30            | 1.07           | 2.92          | 1.07          | 3.51*          | 1.26           | .001           | .06            |
| DA                              | 2.24           | 1.03           | 2.27            | 1.00           | 2.30          | 1.00          | 2.21           | 1.02           |               |                |

* p<.017 (Bonferroni alpha adjustment for multiple comparisons).

| Table 3. Means and Standard Deviations of Self-regulation Scores by Gender within Major |
|----------------------------------|----------------|----------------|
| **PETE**                        | **GE**         |                |
| (n = 28)                        | (n = 69)       | (n = 54)       | (n = 43)       |
| **Exercise Scores**             |                |                |                |
| EAU                             | 6.31           | .57            | 6.38           | .69            | 6.13          | .69           | 5.71           | 1.01           |
| EC                              | 3.04           | 1.45           | 3.80           | 1.24           | 3.50          | 1.03          | 3.50           | 1.25           |
| EA                              | 1.95           | 1.13           | 1.98           | 1.01           | 2.06          | .78           | 2.04           | .94            |
| **Diet Scores**                 |                |                |                |
| DAU                             | 5.70           | .79            | 6.04           | .82            | 5.83          | .85           | 5.71           | .95            |
| DC                              | 2.51           | 1.24           | 3.52*          | 1.28           | 3.14          | .90           | 3.51           | 1.23           | .001           | .12            |
| DA                              | 2.26           | 1.09           | 2.23           | 1.00           | 2.33          | .96           | 2.19           | 1.06           |

* p<.017 (Bonferroni alpha adjustment for multiple comparisons).
EAU, \((F(1.95) = 5.76, p = .018, \eta^2 = .06; \) see Table 3). However, with the Bonferroni adjusted alpha level of .017, this result was not significant. Results of a one-way MANOVA examining the effect of gender on the diet regulation scores of GE students revealed no significant effect \((p = .148)\).

**Discussion**

The purpose of this study was to assess differences in self-regulation of attitudes towards engaging in exercise and eating a healthy diet between PETE students and GE students, and between male students and female students. Overall, the self-regulation means showed that all students were relatively autonomous in their attitudes towards exercise and diet. The results of this study showed that PETE students were more autonomous in their attitude towards exercise than other university (GE) students, all female students were significantly more controlled in their attitudes towards diet than males, and PETE females were significantly more controlled in their attitudes towards diet than PETE males.

It is not surprising that PETE students would be more autonomous in their exercise views, as one would hope that students entering the profession would be more autonomous than other students towards exercise. The PETE students may have internalized a healthy approach in their attitudes towards exercise due to a combination of factors. For example, they may have self-selected into the major due to an inherent interest in the field of physical education and a desire to help combat the huge, national obesity problem. In addition, the PETE program may have had a positive effect on helping them become more autonomous towards exercise. A higher level of autonomy may lead to more durable exercise habits (Deci & Ryan, 1985; Sheldon et al., 2003). As for the attitude toward diet, while there was no significant difference between PETE and GE students in attitudes toward diet, both groups were relatively autonomous. However, there is room for both groups to move to being more autonomous in eating a healthy diet.

As for gender differences, we found that all females, regardless of major, were significantly more controlled in their attitudes towards diet, than males. Further analysis showed there was no difference between the GE male and GE female students for any of the exercise or diet variables. However, PETE females felt more controlled for diet (medium effect size) than PETE males. PETE students experience many physically active situations where their bodies are on display, e.g. they wear shorts or swimsuits. Fredrickson and Roberts (1997) propose in their objectification theory that many individuals internalize an outsider’s view of their own bodies, termed self-objectification, whereby they become preoccupied with how the body appears to others. Women experience an increase in body dissatisfaction when exposed to self-objectifying situations (Hebl, King, & Lin, 2004). This pressure may have contributed to the fact that PETE females felt more controlled in their attitudes towards diet than PETE males.

While autonomous regulation is optimum to achieve durable change (Deci & Ryan, 1985; Sheldon et al., 2003), it seems important to point out that according to SDT (Ryan & Deci, 2000a) people might still initiate and engage in positive behaviors (in this case exercise and healthy eating habits) while feeling controlled to greater or lesser degrees. Therefore, they might still achieve healthy outcomes in their own lives and be good role models as future physical educators. However, the likelihood of enduring change is increased for those who remain engaged in the process of internalization and moving towards greater autonomy (Deci & Ryan, 1985; Sheldon et al., 2003). The process of moving towards greater autonomy may happen in stages, so that an individual in one situation could be in the process of moving towards autonomy, but still feeling controlled to some degree in another situation. In other words they do not suddenly become fully autonomous. Rather, moving towards autonomy is a process as students begin to internalize values, but are still not entirely free from the original controlling factors at work in their lives (Ryan & Deci, 2000a).

In summary, all students in this study showed high levels of autonomy in their attitudes regarding exercise and eating a healthy diet. This is a positive sign that the university population is autonomously regulated towards these very important behaviors. PETE students were more autonomous in their attitudes toward exercise, all female students were more controlled in their attitudes towards diet, and female PETE students were more controlled in their attitudes towards diet than PETE males. We now recommend further research to explore why females felt more controlled in their attitudes towards diet, and also to discover the relationship between self-regulation and the actual exercise and diet behaviors of this population.

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Self-Regulation of Diet and Exercise Attitudes

Correlations among Stress, Physical Activity and Nutrition: School Employee Health Behavior

by Wynn Gillan, Millie Naquin, Marie Zannis, Ashley Bowers, Julie Brewer & Sarah Russell, Southeastern Louisiana University, Hammond, LA

Abstract

Employee health promotion programs increase work productivity and effectively reduce employer costs related to health care and absenteeism, and enhance worker productivity. Components of an effective worksite health program include stress management, exercise and nutrition and/or weight management classes or counseling. Few studies have documented correlates of health behaviors in school-based employees. A multi-component survey was used to examine relationships among stress, physical activity and specific food choices among employees in a southeastern Louisiana school district. Significant differences were found in coping styles by gender and employee status. Findings also indicated that employees who selected healthful foods were more likely to use task-oriented coping, considered an effective coping style. Further those employees who engaged in vigorous physical activity on a regular basis reported less perceived stress as well as more effective coping strategies. Since these behaviors appear to be interrelated, those conducting health promotion programs may consider a multi-dimensional approach when planning programs for employees. Intervention studies in a school-based population are needed to examine specific effects of different coping styles and healthy behaviors on employee productivity.

Keywords: coping, worksite health promotion

Introduction

Given the current economic conditions, inclusion of health promotion programs is becoming a more important component of worksite health. The Centers for Disease Control and Prevention report that employers, on average, spend $1,685 per employee per year for lost productivity costs related to health conditions or $225.8 billion in the U.S. annually (Stewart, Ricci, Chee, & Morganstein, 2003). Research further indicates that health promotion programs at worksites can result in a 25% reduction in costs associated with absenteeism, health care and disability workers’ compensation (Carnethon et al., 2009; Chapman, 2005). Such programs are among the most useful non-medical strategies to improve and maintain the health of employees while controlling health care costs (Louis, Schultz, McDonald, Champagne, & Edington, 2006). Worksire health programs have also been found to improve dietary and physical activity behaviors (Anderson et al., 2009) both of which are imperative to employees’ health.

Worksite health promotion programs in school settings are among the eight interrelated components of the Coordinated School Health Program, as recognized by the Centers for Disease Control and Prevention (Allensworth & Kolbe, 1987). Under this component, teachers and non-teaching staff have the opportunity to participate in health assessments, education and health-related fitness activities. According to the School Health Policies and Programs Study 2006, about two-thirds of states provided support to school districts for activities and services that promote healthy lifestyles in faculty and staff (Eaton, Marx, & Bowie, 2007). In addition, Healthy People 2020 maintains the need to provide comprehensive health promotion programs at the worksite (U.S. Department of Health and Human Services [USDHHS], 2010). As noted in Healthy People 2020 several components of an effective worksite health program include stress management, employer-based exercise facilities, and nutrition/weight management classes or counseling.

Many school-based worksite programs include stress management strategies for staff. Stress is an inevitable part of a school employee’s life (Stern & Cutler, 2002) and the physiological response may lead to teacher attrition, absenteeism and other disorders such as anxiety and depression (Austin, Shah, & Muncher, 2005; Hammond & Onikama, 1997). As such, its effects can be costly to the employer. Programs that help employees manage their stress have been shown to reduce anxiety, fatigue, depression and teacher burnout (Anderson, Levinson, Barker, & Kiewra, 1999). In a study of teachers, it was found that allowing employees to identify their own levels of stress assisted them in devising a personalized intervention program (Gold, 1987).

Healthy People 2020 reports that physical activity is among the leading indicators for sound health (USDHHS, 2010). In turn, physical activity builds resilience to stress and provides long-term effects in preventing future stress episodes (Nagel & Brown, 2003). Teachers who engage in both competitive and noncompetitive forms of physical activity are found to have lower levels of stress than their higher-stressed counterparts (Austin et al., 2005). Furthermore, physical activity reduces the physical indicators of stress including inflammatory markers (Pedersen & Hoffman-Goetz, 2000). For instance, those who engage in physical activities often experience a reduction in their risk for high blood pressure, high cholesterol (Thompson et al., 2007), diabetes, cancer (Bernstein, Henderson, Hanisch, Sullivan-Halley, & Ross, 1994; Peters et al., 2009), anxiety disorders (Mather et al., 2002), and depression (Blumenthal et al., 1999). Also, it has been found that individuals with higher self-efficacy are more likely to engage in physical activity (Kaewthummanukul & Brown, 2006).

Worksite programs have also addressed the area of healthful eating, particularly increasing nutrient dense foods and reducing the intake of sugary ones. In the past two decades, sugared beverage consumption has increased substantially (Bleich, Wang, Wang, & Gortmaker, 2009; Cant & Graubard, 2006; Putnam & Allshouse, 1999) and mirrors increased rates of many chronic conditions. Cohort studies have linked sweetened soft drinks with obesity (Woodward-Lopez, Kao, & Ritchie, 2010), type 2 diabetes (Schulze et al., 2004), and components of the metabolic syndrome (Dhingra et al., 2007; Yoo et al., 2004). Certain types of sodas are associated with reduced bone mineral density (Tucker et al., 2009).
2006), calcium excretion (Heaney & Rafferty, 2001), gout (Choi & Curhan, 2008; Winkelmayer, Stampfer, Willett, & Curhan, 2005), and pancreatic cancer (Larsson, Bergkvist, & Wolk, 2006). High consumption of sugared beverages may also reduce intakes of more nutrient rich foods, adversely affecting health (Howard & Wylie-Rosett, 2002).

Worksite stress may contribute to increased consumption of snack foods and sweets (Payne, Jones, & Harris, 2005). Consumption of sweet energy dense foods (high in refined sugar and fat) is associated with higher levels of perceived stress (Oliver, Wardle, & Gibson, 2000). Further, individuals who are emotionally upset tend to choose more energy dense foods than those who are non-emotional eaters (Garg, Wansink, & Inman, 2007; Wainer, 2010; Zellner et al., 2006). One study found that teachers who exhibited high organizational climate scores (favorable relationship with co-workers and administrators) reported higher fruit and juice intake than did teachers with lower organizational climate (Cullen et al., 1999). Another study examined job strain and its relationship to healthy eating and participation in exercise. Those who perceived higher job strain were more likely to eat energy dense foods, although there was no relationship between job strain and exercise behaviors (Payne et al., 2005).

Some studies have looked at the relationship between food consumption and stress. Fewer studies have examined the relationships among stress, physical activity and nutritional intake among school employees at the worksite. This study sought to determine associations among stress, physical activity, and specific food choices among employees in a southeastern Louisiana school district.

**Methods**

A convenience sample of employees who were eligible for participation in a rural southeastern Louisiana school board health promotion program (high school faculty and staff, employees of the school district and school board members) were sent an online questionnaire by email. Faculty and staff who did not respond after two or four weeks were sent a follow-up email with a survey link. Incentives were offered to faculty and staff members during all three waves of emails. After a random drawing, incentives of four $25.00 gift certificates to office supply stores were presented to participants.

Questions consisted of demographic information, stress, physical activity and nutrition items. We used two instruments to measure perceived stress, the Coping Inventory for Stressful Situations (CISS) (Endler & Parker, 1990) and the Perceived Stress Scale (PSS) (Cohen, Kamarck, & Mermelstein, 1983). Individuals were also asked certain items regarding physical activity from the NHANES (2007-2008) survey (Centers for Disease Control & Prevention [CDC], 2000) and selected beverage and dietary questions from the Nurses’ Health Study (2009).

All items related to demographics, stress, physical activity, and nutrition were added into an electronic survey via SurveyMonkey®. A team of experts in worksite health (academicians, practitioners, and content specialists) ensured content and face validity by completing the online survey and making suggestions to clarify content, except for questions from a standardized instrument. In turn, six teachers not participating in the study took the survey and provided an estimated completion time of 15 minutes with additional suggestions for rewording of items. Estimated completion time was provided to survey participants.

**Instruments and Survey Items**

The Perceived Stress Scale (PSS), developed by Cohen, et al. (1983), measures perception of stress, specifically the degree to which individuals appraise situations in life as being stressful by being unpredictable, uncontrollable and overloaded. This 14-item scale asks about feelings and thoughts during the past month. Participants were asked how often they had felt a certain way. A sample item was, “In the last month, how often have you been upset because of something that happened to you unexpectedly?” Likert-type scale responses included the following: never, almost never, sometimes, fairly often and very often.

The level of readability for the PSS is that of a junior high school reading level. To calculate a total level of perceived stress, seven items are reverse scored and then all are summed. Higher scores indicate higher levels of perceived stress. Previously determined alpha coefficients of reliability for this instrument were .84, .85, and .86 (Cohen et al., 1983).

The second stress instrument used in this study was the Coping Inventory for Stressful Situations (CISS) (Endler & Parker, 1990) which has 48 items. The three main subscales of the CISS include task-oriented, emotion-oriented and avoidance coping with each having 16 items and a possible range of scores from 16-80. Task-oriented coping is directed toward problem solving which includes cognitive restructuring and actions to change a situation. Emotion-oriented coping involves emotional reactions that are self-oriented such as self-blame, anger and becoming tense. Avoidance coping consists of activities or thoughts aimed at curtailing a stressful situation by escaping a situation such as engaging in social activities or performing non-problem related tasks. Avoidance coping is divided into two additional scales: distraction and social diversion. The distraction subscale contains eight items with a score range of 8-40; the social diversion subscale has five items with a range of 5-25.

For each item on the CISS, participants were asked to indicate how much they engaged in this activity when they encountered or experienced a difficult, stressful or upsetting situation. Sample items included: “Feel anxious about not being able to cope”; “Focus on the problem and see how I can solve it”; and “See a movie.” Likert scale responses ranged from 1-5 with 1=not at all to 5=very much.

Physical activity questions were adapted from the National Health and Nutrition Examination Survey (NHANES) instrument ([CDC] & [NCHS], 2000). Participants were provided examples of moderate activities such as brisk walking, vacuuming, or anything causing an increase in breathing or heart rate. They were then asked how many days they engaged in those activities for at least 10 minutes at a time. In addition to the number of days, participants were asked how much time (in minutes) they spent engaging in those activities. Examples of vigorous exercise included running, aerobic, or anything that caused large increases in breathing or heart rate. Participants selected how many days they engaged in vigorous activities and the duration of those activities.
Beverage intake was measured using selected questions from the Nurses’ Health Survey (2009) food frequency questionnaire. Participants were asked how often they consumed selected food and drinks. Responses included: (a) never, (b) 1-3 times per month, (c) 1 time per week, (d) 2-4 times per week, (e) 5-6 times per week, (f) 1 time per day, (g) 2-3 times per day, (h) 4-5 times per day, and (i) 6 or more times per day. For purposes of analyses, the previous response options were collapsed into five categories of the following: (a) never, (b) 1-3 times per month, (c + d) 1-4 times per week, (e + f) once a day, and (g + h + i) more than once a day.

Analyses
Data were downloaded from SurveyMonkey® into Excel and then SPSS version 15 for analyses. Descriptive statistics were used and correlations were conducted to determine relationships among physical activity, stress and nutrition. Analysis of variance was used to examine differences in exercise and nutritional behaviors and physical activity questions. Overall styles of coping with stress were determined by the use of the CISS. Task-oriented coping was used by most of the participants ($M = 55.1$), followed by avoidance coping ($M = 45.2$), and emotion-oriented coping ($M = 38.3$), with no significant differences among their use, overall. However by gender, males had a significantly higher use of task-oriented coping ($M = 58$) than females ($M = 53.9$), $F = 4.2$, $p = .043$. In addition, teachers were more likely to use emotion-oriented coping ($M = 39.8$) than non-teachers ($M = 36.2$), $F = 3.9$, $p = 0.05$.

Among the respondents, 72% participated in moderate physical activities. Of those that participated in moderate activity, 66% engaged 3-5 days/week for 26-60 minutes at a time. More than half of the participants (56%) engaged in vigorous exercise, 70% of them for 3-5 days per week and 52.4% for 31-60 minutes.

### Table 1. Demographic Characteristics

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### Table 2. Cronbach’s Alpha - Scales and Subscales

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<th>No. of Subjects</th>
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<td>Emotion-oriented coping</td>
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<td>14</td>
<td>112</td>
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<td>Nutrition - beverage</td>
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<td>8</td>
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<td>Nutrition – vegetables</td>
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### Table 3. Food and Beverage Frequency (%)

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<th>1-4 days/wk</th>
<th>Once a day</th>
<th>2 or more/day</th>
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<td>14.2</td>
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<td>Carbonated beverages with caffeine and sugar4</td>
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<td>9.2</td>
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<td></td>
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<tr>
<td>Other carbonated beverages with sugar</td>
<td>62.5</td>
<td>19.2</td>
<td>10.8</td>
<td>6.7</td>
<td>8</td>
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<td>Herbal tea with caffeine</td>
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<td>10.0</td>
<td>5.8</td>
<td>1.7</td>
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<td>Tea with caffeine</td>
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<td>4.2</td>
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<td>Fruit juice</td>
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<td>Fruit not juice</td>
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<td>41.7</td>
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<td>13.3</td>
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<td>Green salad</td>
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<td>58.5</td>
<td>28.0</td>
<td>2.5</td>
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<td>Potatoes not french fries or potato chips</td>
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<td>20.0</td>
<td>65.0</td>
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<td>8</td>
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<td>Carrots</td>
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<td>8.6</td>
<td>36.2</td>
<td>34.5</td>
<td>18.1</td>
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### Findings
Of the 136 respondents ($N = 400$, for a 34% response rate), 71% were female, 81% were college graduates, and 24% had less than six years of work or teaching experience. Most respondents were teachers (60%). Respondents’ ages ranged from 23–67 years with a mean of 44.4 (SD = 10.4). See Table 1 for additional demographics. Cronbach’s Alpha (Table 2) was used to determine the reliability of the PSS and CISS scales along with the nutrition and physical activity questions.

Among the respondents, 72% participated in moderate physical activities. Of those that participated in moderate activity, 66% engaged 3-5 days/week for 26-60 minutes at a time. More than half of the participants (56%) engaged in vigorous exercise, 70% of them for 3-5 days per week and 52.4% for 31-60 minutes.
Males (71%) were more likely to engage in vigorous activity than females (52%), X^2 (1) = 3.3, p = 0.05. With regard to dietary intake, 61% reported eating fruit and 48% ate vegetables less than once a day (only 4 or fewer times per week). Pertaining to sleep, 37.8% reported getting 5-6 hours per night and 60.5%, 7-8 hours.

**Relationships between Nutrition and Stress**

Regarding beverage consumption, over 40% of employees drank caffeinated coffee at least once a day. In addition, more than 32% drank a low calorie beverage containing caffeine at least every day. Fewer individuals (22%) drank decaffeinated coffee at any time. Other reported beverage consumption is found in Table 3.

Relationships between beverage and food consumption revealed that drinking sugar sweetened soft drinks with caffeine was associated with a lower consumption of fruit. Decaffeinated coffee drinking was positively associated with green salad consumption. Green salad consumption increased the likelihood of selecting carrots and other vegetables. Those who chose “low calorie” beverages were less likely to drink herbal decaffeinated tea. Those selecting green salad and fruit were more likely to use task-oriented coping. Those engaging in moderate levels of exercise were more likely to consume decaffeinated coffee and green salads. In addition, those engaging in more minutes of vigorous exercise per session were also less likely to consume diet decaffeinated beverages or potatoes. See Table 5 for more information.

**Table 4, Correlations with Nutritional Intake**

<table>
<thead>
<tr>
<th>Items</th>
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<th>significance</th>
<th>n</th>
<th>Power %</th>
</tr>
</thead>
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<tr>
<td>Low calorie beverage with caffeine</td>
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<td>.00</td>
<td>120</td>
<td>90</td>
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<tr>
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<td>.02</td>
<td>120</td>
<td>64</td>
</tr>
<tr>
<td>Herbal tea without caffeine</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbonated beverages with caffeine and sugar</td>
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<td>Other carbonated beverages with sugar</td>
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<tr>
<td>Fruit</td>
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<td>120</td>
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<td>Potato</td>
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<td>.00</td>
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<td>Green salad</td>
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<td>Carrot</td>
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<td>.00</td>
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**Relationships among Stress, Physical Activity, and Nutritional Behaviors**

Correlations were performed to ascertain possible relationships among physical activity, nutritional intake, coping styles, and perceptions of stress. For example, those reporting more days of moderate exercise per week were more likely to consume decaffeinated coffee and green salad. These individuals were also less likely to engage in emotional-oriented coping. Further, those engaging in more minutes of moderate exercise per session were more likely to use task-oriented coping. Moreover, those who engaged in more days of vigorous exercise per week were less likely to report perceived stress or to use emotional-oriented coping. In addition, those engaging in more minutes of vigorous exercise per session were also less likely to consume diet decaffeinated beverages or potatoes. See Table 5 for more information.

**Table 5, Correlations with Physical Activity**

<table>
<thead>
<tr>
<th>Items</th>
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<th>significance</th>
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<td>Vigorous minutes</td>
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<td>64</td>
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<tr>
<td>Vigorous days</td>
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**Discussion**

Engaging in health-related behaviors such as stress management, exercise and making healthy food selections appears to be interrelated. Healthy behaviors such as consuming green salads, vegetables, fruits and regular exercise correlated with other health-related behaviors such as selecting decaffeinated coffee and using task-oriented coping, a healthier coping style to control stress (Endler & Parker, 1990). Conversely, those choosing sweetened soft drinks were less likely to select fruit. There exists concern about low consumption of nutrient dense foods which may increase the risk for a variety of chronic diseases (U.S. Department of Agriculture, 2010; Bleich et al., 2009). Increased intake of sweetened beverages is associated with obesity and diabetes and reducing soft drink consumption improves health status (Vartanian, Schwartz, & Brownell, 2007). Worksite health promotion programs that educate about healthy eating, stress coping strategies and the selection of wise food choices may impact overall health and employee productivity.

In our study, those who exercised tended to make healthy food choices. Engaging in moderate levels of exercise may predict other healthy behaviors such as consuming decaffeinated coffee and green salads. In addition, moderate or vigorous exercise may lead to more health-oriented stress coping styles and less perceived stress, respectively. Those who exercised moderately to vigorously were less likely to engage in an emotional-oriented coping style, a less effective coping mechanism. Further, they were also less likely to report perceived stress. Having employees engage in even moderate exercise may help improve their resilience to stressful events and promote healthier coping styles. This may improve employee attendance and increase job performance.

Employees who make healthier lifestyle choices tend to use healthier stress management techniques, such as task-oriented coping. In this study, males were more likely to use task-oriented coping styles and the selection of wise food choices may impact overall health and employee productivity.
coping than females. This may imply that the specific selection of stress management techniques would be important in helping female teachers and employees deal with perceived stress and environmental demands. However workplace strategies should be in place to help employees manage stress regardless of gender.

Of course, self selection bias may have influenced these results since those interested in health may also be more likely to participate in this study. These individuals may be more likely to participate and engage in a worksite health program and engage in health enhancing behaviors. It would be beneficial to confirm these results with a larger or more demographically varied sample.

Conclusion
Since health-related behaviors appear to be linked in our study, it may be helpful for those conducting school health promotion programs to consider a multi-dimensioned approach in educational programming endeavors. Selecting strategies that address stress management, nutritional intake and physical activity may impact the health of school employees by reducing absenteeism and health care costs while improving staff productivity. Employees may benefit from having healthier food choices at the worksite as they may be more likely to choose available healthier options. Providing more time for meals or other stress reducing strategies may promote more healthful behaviors. In addition, having onsite facilities and programs may increase the likelihood of employees participating in physical activity and stress management sessions while promoting their well-being. Finally, providing stress breaks and promoting skills to reduce perceived stress could result in happier, healthier employees and reduce health care costs for school systems.

References

School Employee Health Behavior


THE RULES & REVIEW PROCESS

A. Submission of Manuscripts

(a) Manuscripts must be submitted to ICHPER-SD headquarters at the following address: 1900 Association Drive, Reston, VA 20191-1598, USA (for hard copy submissions only); ichper@aahperd.org (for electronic submissions only).

(b) Each hard copy submission must consist of: i) 2 original hard copies of the manuscript; ii) 2 computer CD’s – (Microsoft Word®); and iii) A self-addressed and U.S. stamped envelope (9” by 12”) for manuscripts sent from the United States, but for manuscripts sent from outside the United States – only a self-addressed envelope (9” by 12”).

(c) Each electronic submission must consist of three files: i) cover page including senior author’s contact information (i.e., name of institution, email, phone number, and mailing address), ii) abstract and manuscript, and iii) tables, charts, and pictures, etc. In addition, one computer CD – (Microsoft Word®) consisting of all three files (i.e. i, ii & iii) must be mailed to ICHPER-SD headquarters.

B. Manuscript Guidelines for Authors

(a) Manuscripts should be typed, double-spaced, 12-point font, and include line numbers to facilitate the review process. Manuscripts should be saved as a WORD document.

(b) Papers should not exceed 28 pages of text, including abstract, references, tables, and figures.

(c) Author(s) should provide an abstract of no more than 200 words on a separate page and at the bottom include up to four key words from the manuscript that are not also part of the title, for indexing purposes.

(d) Manuscripts must conform to the Publication Manual of the American Psychological Association (APA), 5th edition. Manuscripts deviating from the recommended format will neither be reviewed nor returned.

(e) Manuscripts submitted to JR may not be concurrently submitted to another journal.

(f) Author(s) should consult and abide by the Guidelines for Contributors published in each issue of the journal and available on the ICHPER-SD Web site.

(g) For the purposes of blind review, author(s) should i) remove any author-identifying information from manuscript submissions, such as location of study, author notes, name of research program, etc., ii) a separate cover page should include title, first author’s correspondence information (i.e., name, institution, email, phone numbers, and mailing address), iii) abstract, iv) manuscript (i.e., pages must be numbered and line numbering included), v) reference section at the end of the manuscript, vi) tables, charts, and photos at the end of the manuscript, vii) use APA style Manual (latest edition) for proper formatting.

(h) When citing equipment or software used in the study, authors must include the manufacturer’s name, city, and state (or country) the first time the equipment is mentioned.

(i) In the Author’s Notes, authors must mention grant support and identify the source of any funding.

(j) Descriptive categories such as those used for gender, race, ethnicity, culture, special populations, etc., should be labeled with valid terms that can be documented as accepted, current, and professional. Publication in JR does not indicate editorial sanction of construct labels used by authors.

(k) The senior author must be a member of ICHPER-SD. When there are more than 3 authors of the submitted manuscript, the senior author plus one author (i.e. at least 2 authors) must be members.

C. ICHPER-SD Headquarters

(a) Responds with one of the actions below via e-mail to the senior author who must be a member of ICHPER-SD. When there are more than 3 authors of the submitted manuscript, the senior author plus one author (i.e. at least 2 authors) must be members.

•Sends an acknowledgment of receipt if he/she is a member within 5 working days.

•Sends a notice of membership requirement and membership application if he/she is not a member and retains the article without processing until the author(s) complies with the membership requirement within 30 days from the date of the notice. Headquarters discards the manuscript and material after 40 days from the date of notice if the membership requirement is not met.

•Sends a notice of noncompliance if the submitted material is not in compliance with the material guidelines for authors.

(b) Hard Copy Submission Processing Procedures: Sends the submitted material — one original hard copy of the manuscript and a computer CD, large self-addressed envelope (stamped, for US submitters) and accompanying senior author’s letter — to the JR Editor via regular 1st class mail only within 7 working days from the date of receipt, and keeps one original hard copy and one computer CD in the headquarters file.

(c) Electronic Submission Processing Procedures: Sends the submitted three files (i.e. cover page; abstract & manuscript; tables, charts, and pictures, etc.) to the JR Editor electronically within 7 working days. ICHPER-SD headquarters keeps one original CD – (Microsoft Word®) for its file.
D. Review Process under the Editor

After receiving the manuscripts and materials from ICHPER-SD headquarters, the Editor determines whether the manuscript warrants further review (meets APA Style Manual [latest edition]).

Review of Manuscripts

(a) *JR* is a peer-reviewed publication; all manuscripts undergo review prior to acceptance for publication. Three or more external reviewers and/or section editors, the Associate Editor and the Editor are part of the review process. The Editor makes the final decision on manuscript publication.

(b) Manuscript review follows a double-blind review process.

(c) Qualified reviewers in the appropriate sub-disciplines review manuscripts deemed suitable to the mission of *JR*. Submitted manuscripts will be referred to the most appropriate section for review, and those that blatantly do not fit any section will be rejected out-of-hand.

(d) Appropriate sub-disciplines include, but are not limited to:

- Biomechanics
- Dance
- Epidemiology
- History and Philosophy
- Martial Arts
- Measurement and Evaluation
- Motor Control and Learning
- Motor Development
- Pedagogy
- Psychology
- Recreation and Leisure Studies
- Recreation and Sport Therapy
- Sociology and Cultural Anthropology
- Sport Finance and Marketing
- Sport History
- Sport Law and Governance
- Sport Management
- Sport Medicine
- Sport Sociology

(e) Author(s) are usually advised of the decision on their manuscripts within 75-90 days.

(f) Normally no more than two and rarely three versions are permitted before a manuscript is accepted or rejected.

(g) Author(s) who are invited to revise and resubmit their manuscript for reconsideration will be permitted a maximum of 60 days to resubmit their manuscript.

E. Ethical Issues

(a) Guidelines for ethics in publishing conform to the *Publication Manual of the American Psychological Association* (APA), 6th edition. Authors submitting manuscripts for publication are expected to know and abide by these guidelines, including plagiarism, fragmented studies, dual publication, etc.

(b) Author(s) must disclose the potential for a conflict of interest in their research, which will appear in the journal.

(c) Author(s) indicate whether their manuscript is part of a larger study and how the current manuscript is distinct from other papers that are published, under review, or in press. Authors are encouraged to submit manuscripts that are part of a larger study for the editor’s evaluation.

(d) Author(s) should take appropriate steps to obtain the informed consent of human research participants, regardless of the country’s regulations under which the research was conducted.

(e) The ICHPER-SD *Journal of Research* Editorial Policy Board will review violations of ethical guidelines, and an appropriate penalty or sanction will be imposed.

F. Manuscripts Accepted for Publication

(a) The senior author will receive page proofs for correction about 4 weeks before publication from the Editor. The author(s) bear responsibility for proofreading the manuscript and should, therefore, be extremely thorough.

(b) Author(s) should return page proofs to the Editor within 7 days of the deadline stated in the cover letter provided with the page proofs.

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H. Subscriptions

(a) All ICHPER·SD constituent members (i.e., individual and Life, national and institutional organizations, affiliated international organizations and libraries) will have access to a copy of JR on a bi-annual basis (i.e., Spring & Summer issue and Fall & Winter issue) and any special JR issues whenever published, via the ICHPER•SD website.

(b) Non-ICHPER·SD members may subscribe to JR for an annual fee as established by the ICHPER·SD headquarters secretariat with the approval of the ICHPER·SD Executive Committee.

I. Publication Schedules and Glossary of Terms.

(a) The JR spring/summer issue will be published during the month of May/June and the fall/winter issue will be published during the month of November/December.

(b) The ICHPER·SD Journal of Research does not publish a glossary of terms.
International Council for Health, Physical Education, Recreation, Sport, and Dance (ICHPER-SD)

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64  Journal of Research