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Research Abstracts

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Determinants of Fan Attendance to Collegiate Sporting Events

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Introduction. Much has been written in both academic and popular periodicals about the value of college athletic programs. Revenues of collegiate sports rely not only on students, faculty, staff, and alumni, but the community as well. While some argue that the net outcome of college athletic programs is favorable in terms of benefits to the institution, detractors often view these programs as financially debilitating to the welfare of the institution (Weeth, 1994). Purpose. The purpose of this study was to examine the determinants of fan attendance at a small private Christian liberal arts school in West Texas. Data was collected on ninety non-athletic and non-first year students in a required university core course. Students were read the instructions for each instrument and then invited to participate. The students completed the survey which included demographics, Team Identification (Wann, 1997), Sport Fan (Zhang, 1996), attendance at games in the prior year, and Team Familiarity (Brokaw, 2011). Results. An ANOVA confirmed significance among the variables \( F(8, 82) = 26.33, p<.001 \). A logistic regression (\( p<.001 \)) was then conducted with demographic variables, team identification, sport fans, and team familiarity, as determinants for attendance in the prior year. The analysis indicated that if a student “was familiar” with the athletes on that team, they were 70% more likely to attend that sporting event. No other variable was significant. Conclusion. Team Familiarity was the most important influence on attendance in the model. Fan identification with players of a particular sports team is an area in which personal commitment and emotional involvement by the fan often occurs. It is not surprising for a smaller college that identification with players (Team Familiarity) results in being the most important factor. For current students, the chances of knowing a player are likely to be greater at smaller colleges. Based on this sample, encouraging connections to players (Team Familiarity) should be encouraged to increase sporting event attendance.

1. Lubbock Christian University
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∗Senior Research Thesis
Psychosocial Correlates of School Children’s Physical Activity and Health-related Quality of Life

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Background/Purpose: Promoting school children’s regular physical activity (PA) is a public health priority (USDHHS, 2010). Although significant physical and psychological health benefits of regular PA are well documented, nearly one third of American children are not vigorously active on a regular basis (USDHHS, 2008). Further, health-related quality of life (HRQOL) reflects a person’s or group’s perceived sense of physical and mental well-being over time (CDC, 2007), which includes physical and psychosocial functionings (Varni, Seid, & Kurtin, 2001). Although PA has been positively related to physical and psychosocial functions in both elderly populations with chronic conditions and general populations, little is known about the HRQOL among general school children, as well as the association among PA, HRQOL and psychosocial factors such as parents’ support, friends’ support and self-efficacy. This study attempted to fill this research gap. Method: Participants were 211 school children (M age = 12.44; 109 boys; 102 girls) enrolled in a suburban school. They completed previously validated surveys assessing their parents’ support, friends’ support, self-efficacy, self-reported PA, and HRQOL. Analysis/Results: Parents’ support, friends’ support and self-efficacy were positively related to PA, physical functioning, and psychosocial functioning, respectively. Physical functioning was positively associated with PA and psychosocial functioning, but psychosocial functioning was not related to PA. Three hierarchical regression analyses, entering self-efficacy in the first block, followed by parents’ support and friends’ support, indicated that self-efficacy, parents’ support and friends’ support were positive predictors of PA (R^2 = 31.8 %, β = .14, .26, .31; all p < .05). For physical functioning, self-efficacy and friends’ support emerged as positive predictors (R^2 = 8.6 %, β = .16, .20; all p < .05). No psychosocial factors predicted psychosocial functioning in this study. Conclusions: Children tend to participate in activities in which they believe they are competent and they get sufficient social support from their parents and friends. The results also indicated that children who have high levels of self-efficacy and social support from friends report higher levels of physical functioning. Findings provide empirical evidence on the role of psychosocial factors in predicting school children’s PA and HRQOL. Practitioners need to consider these psychosocial factors as they design interventions to promote children’s PA and HRQOL.
The Effect of Three Interventions on Postural Control in Pre-menopausal Women
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Statement of the Problem: Efficiency of improving posture control or balance appears critical to those considered at risk for falling (e.g., shorter training sessions, improved exercise compliance). When considering selection of training interventions to improve balance the intervention’s acute effect (e.g. how immediate) on functional performance is important. Traditional interventions have been used to improve balance through strength training (e.g., resistance machines) as well as non-traditional interventions (e.g., whole body vibration or WBV) (Torvinen et al., 2002; Mahieu et al., 2006). Selection of training intervention (traditional vs non-traditional) based on acute effects to the body should be studied. Selecting training interventions that have a greater acute effect on the body could help increase exercise training compliance, which could lead to improved performance. Purpose: The purpose of this pilot study was to determine the acute effect of WBV on postural control compared to two traditional interventions (i.e., leg extension resistance machine and isokinetic standing squats braced by a Swiss ball). Methods and Procedures: Three premenopausal females age 20-25 years were recruited for this study. A quasi-experimental design (AB single subject) was used to identify the acute effects of 3 different training interventions. The baseline phase (A) was one week (3 consecutive measures with minimal change) and the intervention phase (B) which included WBV, Leg Press, and a standing squat exercise. Interventions occurred 4 times per week for 4.5 weeks and were randomly drawn by the participants at each session (18 trials for each intervention). A Neurocom Balance Master was used to assess the acute effects of the interventions on postural control. The outcome measure of directional control (DCL) was selected; DCL is a parameter measured within the Limits of Stability (LOS) test from the Neurocom Balance Master. Visual analysis (i.e., line and bar graphs) and a one-way (balance x intervention) repeated measures ANOVA were used for each participant. Visual analysis included interpretation of mean, level, trend and latency of change for DCL. Results: The mean DCL score for all interventions was higher during phase B than phase A for all participants. Mean DCL score was higher for WBV in 2 of the 3 participants and recorded the greatest latency of change (i.e., quickness of performance change). No significant differences were identified for the DCL score between the three different interventions. Conclusion: Despite no significant difference, WBV appeared to have the most immediate effect on postural control when compared to traditional training interventions (i.e., leg press or standing squats). Future group design studies need to build from these findings in order to generalize results to other populations (e.g., older adults, rehabilitation clientele or persons with disabilities). Training mechanisms such as WBV, that offer greater acute effects and less exercise time, should impact exercise motivation and compliance.
The Relationship Between Motor Skill Proficiency, Athletic Identity, and Physical Activity Level Among Adolescents

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Statement of the Problem
Motor skill proficiency (MSP) and perception of identity as athletes (i.e. athletic identity, AI) among adolescents were investigated in light of decreasing participation in activity, particularly sport attrition among girls. The broader problem of obesity among children can perhaps be addressed by investigating motor development alongside psychological constructs that influence participation in exercise and activity. The association between AI and PA is sufficiently supported (Anderson et. al, 2009); however the relationship of MSP to both constructs has not been fully established among adolescents. In addition, the differences between genders have not been accounted for. This study tested the relationships between these factors. Specifically, does AI mediate the relationship between MSP and PA level? Will the relationships between MSP and PA levels (as mediated by AI), hold true for both genders? By understanding these relationships, strategies that motivate children and adolescents to be active and remain active across lifespan can be designed.

Method
Ninety students (aged 11-14 years; 45 boys, 45 girls) from J. T. Hutchinson Middle School (Lubbock, Texas) accomplished two questionnaires: Athletic Identity Measurement Scale (AIMS) and the Physical Activity Questionnaire (PAQ) to gauge AI and PA respectively. To assess MSP, the Movement Assessment Battery for Children - Second Edition (Henderson, Sugden, & Barnett, 2007) was administered. Analyses of data were conducted using the simple mediation model that employed bootstrapping by Preacher and Hayes (2004).

Analysis/Results
The results revealed that AI mediates the relationship between MSP and PA (indirect effect = .03, 95% CI [.01, .06]). However, separate analyses between genders reflected a clear dichotomy. With significant associations between variables ($p<.01$), data from boys showed a good fit with the model (indirect effect = .06, 95% CI [.01, .11]). Among girls, skill levels (MSP) had little to do with either PA ($B = .05, p = n.s$) or AI ($B = .34, p = n.s$). Data from females did not fit the model (indirect effect = .01, 95% CI [-.01, .05]), as the only significant association was between AI and PA ($B = .03, p<.05$).

Conclusions
This study aimed to determine the strength of relationships between MSP, AI, and PA while considering the differences between genders. Among boys, motor skillfulness influenced self-perception as an athlete, which then influenced one’s propensity to engage in an active lifestyle. For girls, neither athletic “sense”, nor involvement in activity appears to be influenced by motor skillfulness. The extant differences between genders suggest different strategies in promoting activity. However, the strong association between AI and PA for both genders highlights the important role of self-perceptions in attaining active lifestyle. Interventions should target shaping positive perceptions (AI) through skill improvement to encourage more girls or inactive adolescents (boys/girls) to participate in sport/activity.
Healthy Body – Healthy Mind: Determining the Correlation between Fitness and Academic Achievement in a Private School Setting

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Statement of the Problem
The purpose of the study was to determine the correlation between physical fitness and academic achievement in high school students enrolled in a private school setting.

Methods
Students (N=70) enrolled in a private Christian high school, grades 9-12, were selected to participate in the study. The FITNESSGRAM was administered to all subjects in January 2012 during a three-day period. Academic achievement was determined by the Standardized Achievement Test (SAT) scores administered to all students during April 2011. NOTE: As it related to fitness, this was the first time that the FITNESSGRAM had ever been utilized at this particular private school. As related to academics, all students (K-12) enrolled in this private school were required to participate in the SAT each academic year.

Procedures
The Spearman Rank Order Correlation test was utilized for data analysis with a level of significance set at p≤0.050. The fitness and academic data was analyzed according to gender, individual grade level (9-12), overall academic achievement, and achievement by academic subject (Reading, Language Arts, Mathematics, & Science).

Results
Of the 70 students tested, 51% were female and 49% were male. The individual grade level breakdown consisted of 20% in 9th grade, 47% in 10th grade, 24% in 11th grade, and 9% in 12th grade. For students who passed all six sections of the FITNESSGRAM (BMI, PACER, Sit and Reach, Curl Up, Trunk Lift, and Modified Pull Up), there was a significant correlation to academic achievement at the 70th percentile of the SAT (0.391 correlation coefficient, p=0.000). For Reading, the correlation was 0.245, p=0.042 while Language Arts had a lower correlation of 0.130, p=0.284. Scores in Mathematics and Science revealed a stronger correlation to fitness with Mathematics at 0.344, p=0.004 and Science at 0.363, p=0.002. Physical fitness was positively associated with increased academic achievement in all subjects, but more so with Mathematics and Science.

Summary
The results of the study revealed a positive correlation exists between physical fitness and academic achievement in Reading, Language Arts, Mathematics, and Science. As such, it is highly recommended that physical fitness should be a priority in private, as well as public, schools as it promotes improved health and increased academic performance. The results from this study should serve as evidence that Physical Education should be considered a ‘core’ class that is mandatory for all high school students.
Comparison of Engagement and Concentration between Exergaming with the Playstation 3 Move and a Standard Activity Game.

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Due to the cost of exergaming equipment, e.g. the Wii, it is difficult for many physical educators to buy enough equipment for an entire class to use at any given time. Therefore, a class that includes exergaming may be hybrid with other class activities, and the students rotate turns on the equipment. There were two purposes for this study 1) to examine the amount of concentration required when comparing exergaming to a standard activity game 2) to compare the feelings of engagement that the two methods might require of the participants. There were a total of 29 participants, ages 18-30, selected through a convenience sample from a Fitness Concepts course offered at the college level. Each participant was given an informed consent form approved by the university IRB. Researchers monitored the participants at all times. Participants were asked to perform a set of exergaming games of digital bocce ball on the Playstation 3 Move while other physical activities were going on around them inside a gymnasium. A few days later they were asked to return to the gym and perform a set of games of physical bocce ball while other physical activities were going on around them. At the end of each set, digital and physical, the participants were asked to fill out a brief questionnaire that contained several demographic questions in relation to their age, academic level, field of study, as well as their exergaming habits. They were also asked seven additional questions on the topics of concentration and engagement. A 2-tailed, dependent samples t test was used to analyze the data. No statistical significance was found on the 6 variables of external distractions, internal mental distraction, intensity of concentration, enjoyment of the activity, preference of activity, and activity level required. There was statistical significance on the variable of concentration for learning the activity. Participants believed more strongly that more concentration was required to learn the exergaming activity than the physical one.
Possible Cardiac Problems Associated with Long Term Training in Master Swimmers and Other Master Athletes.


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At recent sports medicine congresses there has been discussion of more incidences of Atrial Fibrillation (AF) among competitive master swimmers. The problem is whether AF in this population has pathological or physiological origins. The purpose of this review is to investigate the literature related to atrial fibrillation AF in competitive master swimmers (females and males) and possible relationships to training history, individual and family cardiac history, Asthma medications and the use of methyl xanthenes as ergogenic aids. Masters swimmers have been reporting AF at increasing rates. Another question examined was whether the use of methyl xanthenes could impact AF when used in combination with Beta-2 agonists. Creatine monohydrate (CM) has been shown to have a positive effect on recovery from coronary artery artificially induced occlusion and reduced fibrillation during and after the occlusion period. We also examined whether vitamins like B6, B12, Coenzyme Q10 and Hawthorn extract resulted in lower incidences of AF or cardiac problems reported by master swimmers. We want to determine if this group had a higher incidence of AF when compared to non-exercising age matched master swimmers as well as age matched individuals involved in other sport or exercise activity based on an extensive literature review. We conclude that there is no direct evidence that in the current body of literature that there are athletes with cardiac health issues that cause AF, there are otherwise healthy athletes that have lone atrial fibrillation and that none of the proposed aids provide prophylaxis to AF except Creatine Monohydrate and then only in an animal model. We propose that some case studies be done and later a survey to link AF in master swimmers to use of medications and or very long term training.

Key words: Atrial Fibrillation, Parasympathetic Tone, Master Swimmers
An Analysis of Assignments and Assessment Used in Conceptual Physical Education in Higher Education

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Abstract
Conceptual physical education (CPE) courses play a critical role in providing university students with the knowledge and skills needed for engaging in physical activity (PA) regularly. Assignments and assessment are an important component of such courses. To date, however, little research on the topic has been reported. The study aimed to investigate how assignments and assessment were employed in CPE courses in higher education. In total, CPE course syllabi (n = 86) were examined. Descriptive analyses were performed. Chi-square test was utilized to compare assignments and assessment differences between universities and colleges. The data from the study suggested that fitness assessment was the most commonly used assessment (53.5%), followed by keeping PA participation logs (45.3%). Nutrition assessment was the only assignment used for nutrition and the percentage was relatively low (i.e., 23.3%). PA prescription or planning was not a commonly employed assignment. No significant discrepancy of assignments and assessments between universities and colleges was found, even though the course credit difference between the two types of institutions was significant. In conclusion, PA, fitness, and nutrition assignments and assessments have not been widely employed in CPE courses. There is a need to increase the use of assessment on student fitness and nutrition simultaneously.
The Effects of Exergaming on Self-Efficacy and Enjoyment among At-Risk Hispanic Youth
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Statement of the Problem
Declining youth physical activity levels have had a hand in the obesity epidemic (Dietz, 2004). It is estimated that at least 70% of U.S. adults are overweight or obese, doubling what it was 40 years ago (USDHHS, 2010). Particularly, low socioeconomic status and minority individuals are most at risk for obesity and diabetes. Hispanic children exercise less than their non-Hispanic counterparts do, and those who live in obesogenic environments are at higher risk for obesity with the lack of opportunities for healthy foods and physical activity (Morales, et. al 2002; Nigro, 2009). Although video games in general have been partially to blame for inactivity levels and the rise of obesity, physically active video games, or exergames, are gaining popularity and may be a way to enhance physical activity among at-risk populations with limited opportunities. With self-efficacy (SE) being one of the most powerful determinants of behavior, fun exergaming activities may provide mastery-like, accessible experiences for this population (Bandera, 1997).

Methods
The purpose of this study was to investigate the impact of exergaming on high school youth with respect to physical activity SE and enjoyment. At-risk, Hispanic alternative-high school students (8 females, 8 males) enrolled in an Exergaming Activity Program in South-Central Texas participated in the study. Instrumentation for this study included the Physical Activity Self-Efficacy Questionnaire and the Physical Activity Enjoyment Scale (Dishman et al., 2005), as well as demographics and background questions.

Procedures
Participants were invited to participate in the Exergaming Activity Program one day per week for 45 minutes for 10 weeks. Exergaming activities included the following: Xbox 360 Kinect (b) PS3 - Exerbike, and (c) Nintendo Wii Dance Dance Revolution. Students were directed to rotate game stations every 15 minutes and were given the option of open choice of activities for 4 out of the 10 visits whereas the other 6 visits consisted of directed activities. The paper-based questionnaires were completed by participants on the first day and repeated on the last day of the Exergaming Activities Program.

Results
A paired-samples t-test was conducted to evaluate the impact of the intervention on students’ scores on SE and enjoyment for physical activity. There was not a statistically significant difference in SE scores from Time 1 (M = 3.66, SD = .90) to Time 2 (M = 3.88, SD = .63), t(15) = .932, p = .366 (two-tailed). There was not a statistically significant difference in enjoyment scores from Time 1 (M = 4.11, SD = 1.10) to Time 2 (M = 4.29, SD = .92), t(15) = -.490, p = .631 (two-tailed).

Summary of Findings
Students’ self-efficacy and enjoyment levels increased after completing an exergaming activity program, however, the increase was not significant. Exergaming may play a role in increasing physical activity among at-risk Hispanic youth if they are provided opportunities to enjoy and participate in this type of activity. More research is needed to investigate exergaming as a means to increasing physical activity among at-risk youth. Future studies should involve a larger sample size and investigate topics such as choice, frequency, and duration of exergaming.
Trend Analysis of Overweight and Obesity Levels of Middle School Students in a Southeast Texas School District

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The trend of overweight and obesity continues to grow and has reached epidemic proportions with dire health consequences for Americans, particularly among children (CDC Obesity Trends, 2012). Research has clearly established a strong link between non-communicable diseases such as diabetes, hypertension, stroke, ischemic heart disease, malignances and obesity (Sant'Angelo V.F. & Grech, V., 2011; Ogden, et al., 2012). Data from the National Health and Nutrition Examination Survey (NHANES, 2012) confirms more than one-third of U.S. adults (35.7%) are currently obese and nearly 17% (12.5 million) of children and adolescents aged 2-19 years are obese. Earlier death in adulthood has been connected to overweight and obesity in childhood. Furthermore, overweight children have a high likelihood of becoming overweight adults (Serdula, et al., 1993), increasing the risk for future adverse health outcomes. The CDC’s Behavioral Risk Factor Surveillance System identified the Southeast U.S. as having high rates of obesity (BMI≥ 30) with Texas as \( M=28.7 \). BRFSS also reported 31.7% of children in the U.S. were \( \geq 85 \)th percentile for BMI by age and 16.9% were \( \geq 95 \)th percentile. The purpose of this study was to determine levels of overweight/obesity among middle school students in a school district in southeast Texas by comparing the current statistics (school year 2011-12) to those in the previous year 2010-11. Using FITNESSGRAM teacher reported archival data, BMI of Middle School students \( (n=1991; 51.88\% \text{ boys, } 48.12\% \text{ girls}) \) reported between 2011-2012 was examined with cross-sectional analysis by grade, age, and gender and then compared to the previous year's data \( (n=2908; 52.5\% \text{ boys; } 47.5\% \text{ girls}) \) to determine the trend of obesity levels among students in the district. Results indicate a slight increase in overweight and obesity levels from the previous year, especially among female students ages 12-13 years \( (m=21.74 \text{ vs. } 24.56 \text{ & } m=22.57 \text{ vs. } 23.93) \) and among male students ages 14-15 years \( (m=22.6 \text{ vs. } 24.56 \text{ & } m=23.25 \text{ vs. } 25.21) \). The students’ BMI were percentile ranked using CDC’s >85th %ile rating and the comparison illustrates students ranked higher indicating they were overweight or obese. Based on these findings, the prevalence of obese children in the district (2011-2012) was 16.26% compared to the previous year (2010-2011) of 14.63%. The results demonstrate the prevalence of overweight and obesity and indicate an increasing trend for this age group. Physical educators should incorporate activities to motivate children of this age group and encourage them to become more physically active and reverse this current trend.
An Analysis of Courts Cases Since 1995 Wherein College and High School Coaches in the United States Were Sued for Negligence as a Result of a Player’s Injury.

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Abstract:

Athletic coaches are sometimes sued by their players. The fact that a coach in a secondary school or University who has been entrusted with the responsibility to train and prepare our young people could be charged with negligence is off-putting. Although some injuries are going to occur no matter the precaution, it seems incumbent upon the coach to do all he or she can to avoid putting athletes in harm’s way unnecessarily. In some cases coaches must weigh the risk in implementing and managing situations in conditioning, practice and games. By examining the features of litigation over the past 17 years it might be possible to find areas of concern that could be mitigated by following proper procedures. By examining all courts cases that went to the appellate level in which coaches were sued by a player who alleged negligence that led to injuries, it is possible to analyze each case based on the facts. Using the Lexus/Nexus database, all cases meeting those criteria since 1995 were obtained. The assessment of all the cases found lent credence to the importance of supervisory decisions by the coach. Decisions by the coach concerning management of activities as opposed to coaching technique and conditioning were more likely to result in lawsuits. In conclusion, it would behoove coaches to consider the ramifications of injury assessment and return to play decisions. Staying current on the latest research in care, prevention and treatment of athletic injuries can also provide some protection. Generally, the facts that are found here suggest that planning athletic programs with care and ensuring that policies are prescribed and followed can go a long way in avoiding problems.
Health and Safety Related Questionnaire Results from the 2011 Texas High School Coaches Association Annual Meeting

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Intro/Problem: The Toronto Charter for Physical Activity (2010) and several national physical activity plans advocate sports participation as an important part of population targeted physical activity for children and youth. However, regular participation by youth in sports can lead to adverse effects on the health and safety of individuals (Physical Activity Guidelines Advisory Committee Advisory Report, 2008), while proper attention by coaches and athletes to risk factors associated with sport injuries can significantly reduce the risk of adverse events. The Texas High School Coaches Association (THSCA) initiated the Professional Development Cooperative (PDC), in part, to help educate members/coaches (N>20,000) about health and safety issues to prevent adverse events for their athletes. Purpose: The purpose of this study was to analyze the 2011 THSCA continuing education questionnaire data for PDC sessions (N=10) conducted during the annual 3-day meeting. Topics covered by physician speakers in the PDC sessions included: emergency management, the athlete’s heart, concussions, leadership tips, ankle and foot injury management, heat illness, stress fractures, knee injuries, and general medical issues affecting athletes. Data collected were used to help evaluate how Texas coaches reacted to the emerging national need for providing physical activity professionals continuing education opportunities about health and safety issues to prevent adverse events.

Methods/Procedures: In August 2011, coaches attending the PDC sessions at the THSCA meeting were asked to complete a 16-item questionnaire/evaluation form following their last session attended, which allowed them to provide feedback about how they felt the sessions met their individual and school needs. Ten of the questions contained in the evaluation were closed formatted type (multiple choice) that allowed respondents to rate their responses on a 5 – point scale (from agree to disagree or from very poor to excellent). The other 6 questions were open-ended questions that required coaches to provide their input about the PDC programming. A total of N=177 questionnaires were collected following the PDC sessions and used in this study.

Results: Coaches were very satisfied overall with the PDC sessions provided (99.4% very satisfied or satisfied), the PDC materials provided (96.1 % very satisfied or satisfied), and the individual speakers (98% very satisfied or satisfied). When asked about future PDC topics and sessions, coaches overwhelming requested that they would like more “hands on” opportunities to learn about the 2011 PDC topics and expanded PDC programming about the prevention of other adverse events (like asthma, nutritional supplements, liability issues, and dealing with parents).

Conclusions: These preliminary results indicate that Texas High School coaches are positively receptive to continuing education opportunities that help them provide physical activity and exercise at high levels, while also seeking to reduce the risk of adverse events for participants. Texas coaches were also interested in learning more about emerging national health and safety issues (concussions, exercise and sudden death, etc.) that are presenting new health and safety challenges for physical activity and exercise professionals.
The purpose of this study was to develop and calculate a Grade Deviation Index (GDI) for an introductory-level undergraduate kinesiology course. The GDI is designed to quantitatively assess how similar course grades are to a student’s overall academic performance. Specifically, the GDI determines the typical deviation for a student’s course grade compared to his/her GPA. The GDI was calculated from the following equation: \( \frac{\sum \sqrt{\text{course grade} - \text{campus GPA}_{\text{res}}^2}}{N} \). Research procedures were approved by the university’s institutional review board for the protection of human subjects. There were 54 undergraduates who started the introductory kinesiology course and by the end of the semester 45 students received grades (A = 4.0, B = 3.0, C = 2.0, D = 1.0, or F = 0.0). Students who dropped or withdrew from the course were not included in the data analysis. The students (mean ± sd) grade for the course was 1.56 ± 1.3 and their campus GPA at the completion of the semester was 2.00 ± 1.1. There was a significant correlation \( r (43) = .694 \) between attendance and course grades and also between attendance and overall GPA \( r (43) = .712 \). One researcher (Nathan, 2005, p.119) published criteria for freshman attendance in classes where attendance is expected, but not required. These criteria included large classes, classes which are boring, tests are based on readings, grades come from papers rather than exams, classes are in the early morning class and lastly, the class meets on Friday. The class in this study met 3 of Nathan’s 6 criteria for poor attendance. Data analysis revealed a calculated GDI of 0.85 for this sample of students. Also, a paired t-test revealed mean course grades were statistically \( t (44) = -3.930, p < .001 \) lower than mean overall campus GPA. In conclusion, results of this study revealed a GDI of 0.85. Indicating the typical student course grade was 0.85 grade units from his/her remaining course GPA. The GDI provides students, faculty and administrators with a quantitative measurement to help evaluate grades being issued in college courses.
The HEALTHY Study Follow-up 2012: Questionnaire Results from the San Antonio, TX Intervention (2007-2009) with Physical Education Teachers

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Intro/Problem: HEALTHY was a National Institute of Diabetes and Digestive and Kidney Diseases funded, 3-year intervention conducted at 7 sites across the U.S. (including the University of Texas Health Science Center in San Antonio, TX) designed to reduce risk factors for type 2 diabetes (i.e., body mass index – BMI, fasting glucose, and fasting insulin) in a diverse sample of U.S. middle-school children. The HEALTHY primary prevention trial included four integrated components: (1) nutrition, (2) physical education (PE) classes, (3) behavioral activities, and (4) communications with social marketing (International Journal of Obesity, 2009). The comprehensive intervention was associated with greater improvements in indicators of adiposity, as well as in blood insulin levels, among racially and ethnically diverse youth. These decreases may result in a reduction in the risk of type 2-diabetes (New England Journal of Medicine, 2010).

Purpose: As part of the HEALTHY Study San Antonio site team, the authors conducted a follow-up survey with the PE teachers from the 2007-2009 intervention schools (N=3) to determine if they were still currently using the HEALTHY Study components in PE. The specific components included primarily lesson plans to increase moderate to vigorous physical activity (MVPA), generous amounts of class equipment, teaching assistants, and specific PE related messaging to students. The purpose of this study was to determine how effective the PE teachers felt that the various HEALTHY PE intervention components were for themselves and their school, and if they still utilized the program?

Methods/Procedures: In the spring of 2012, N=6 PE teachers (2 each from the HEALTHY intervention schools) were asked to complete an 18-item open-ended questionnaire/survey to evaluate their experiences with the HEALTHY Study intervention years, 2007-2009. The PE teachers included 4 males and 2 females with an average of 8.3 years teaching experience at their respective campuses, and 14.5 total years on average of coaching experience.

Results: Generally, teachers responded that they all use at least some parts (if not all) of the HEALTHY PE intervention components currently. Three teachers felt that the HEALTHY curriculum was the most effective part of the program while others cited that the equipment and the teacher assistant were the most useful. All 6 teachers felt that the most challenging factors, related to continuing the HEALTHY program after the study concluded, were the lack of having a teaching assistant and need to modify lesson plans for their specific school environmental challenges. All teachers reported that the majority of their students liked the program during the intervention and that their students, following the intervention, continue to enjoy the aspects of the program that still are in use (primarily lessons, equipment, and messaging). Finally, all teachers felt that the HEALTHY intervention was very successful at their schools and the majority wished that they could continue full implementation of the program presently.

Conclusions: The PE teacher survey follow-up results from the San Antonio site support the success of the implementation of HEALTHY, and show that many aspects of the PE intervention continue to be utilized (lesson plans, equipment, and messaging) even 3 years after conclusion of the study period. The teacher responses also indicated that the presence of PE assistants and lesson plan modifications were key challenges to the continued delivery of HEALTHY presently. This study supports other research findings regarding follow-up with PE interventions targeting increases in MVPA (British Medical Journal, 2008), which indicate that even effective PE programming is difficult to maintain without appropriate financial resources and continued in-service programming/administrative support for teachers.