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Physical Education
and Recreation

Exercise and Sport Sciences

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B U L L E T I N   1 2 ,   2

This publication is the second issue of Bulletin 12. The bulletin represents microfiche published in October 1999. In the past, bulletins were published every 5 years, except for Bulletin 7, which covers two and a half years. Beginning with Bulletin 8, there are two issues (nos 1 and 2) per annual bulletin. Each issue includes a section of theses and dissertation titles and abstracts, as well as a section of keywords. Bulletin 13, 1 will be published in April 2000.

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**Key**

- **PE** Physical Education
- **PH** Physiology and Exercise Epidemiology
- **RC** Recreation and Leisure
- **HE** Health Education
- **PSY** Psychology

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PART I: TITLES AND ABSTRACTS

The abstracts are reproduced as provided by the authors in their dissertations. They were not edited for uniformity of style.

PHYSICAL EDUCATION ADMINISTRATION


The purpose of the study was to investigate if a gap exists between what is essential, according to experts in the field, to providing quality elementary physical education programs and what is actually occurring in schools today. Using a qualitative methodology, reasons for the gap were examined along with implications for the preparation of pre-service physical education teachers. Participants included 8 elementary physical education teachers, 8 principals, and 1 Director of Physical Education from a large city in New England. Sources of data were structured interviews, observations, and school documents. According to the participants, a gap exists between ideal and real physical education programs. Although participants agreed with professionals in the field of physical education about what constitutes a quality program, they also had first-hand knowledge about the reality of barriers in the schools today. Participants suggested the disparity existed because of negative perceptions about the importance of physical education held by decision makers, lack of instruction time, inadequate facilities and staffing, and deficiencies in teacher preparation programs. Recommendations for preparation of pre-service teachers included the opportunity for more observations and practical experience in a variety of settings and added instruction in behavior management.

Danna, Joseph G. Division I-A football recruiting violations reported by the National Collegiate Athletic Association from 1980 through 1996, 1998. Ed.D., University of Southern Mississippi (Dennis Phillips). (129pp $8.00) PE 3994

The purpose of this study was to investigate and quantify by descriptive analysis the number and type of football recruiting violations (FRV) that took place between 1980 and 1996 within the National Collegiate Athletic Association (NCAA) Division I-A institutions. Specifically, comparisons were made between the Pre-Dick Schulz Era (PSE) from 1980 to 1986 and the Dick Schulz Era (DSE) 1987 to 1994 to determine if widespread reform during the DSE had an effect on the number and type of violations (Richard “Dick” Schulz was the former Executive Director of the NCAA). During the DSE the Knight Commission (KCM) was founded, which led to numerous revisions in governance of the NCAA. The most significant issue of the KCM underscored the involvement of college presidents in the control and running of their specific programs. When the presidents became more involved in the issues of the NCAA, and more importantly, voted on these issues, current reform of the NCAA was in place. Within the parameters of this study, it was discovered that forty-five institutions committed a minimum of 369 FRV’s from 1980-1996. The study divided the violations into ten categories: Improper Recruiting Contacts (IRC), Improper Recruiting Inducements (IRI), Transportation (IRT), Entertainment (IRE), Lodging (IRL), Number of Visits (IRV), Tryouts (IPT), Improper Recruiting Publicity (IRP), Employment (IRM), and Unethical Conduct (UNC). Further analysis revealed that most violations were in the categories of IRI (94) and IRC (71). The least common violation was IRP(5). The years when the most institutions were found to have committed violations were 1980, 1982, 1986, and 1988, with six institutions being involved each year. The year in which the least violations occurred was 1995 when the NCAA did not report any institutions for FRV. The study showed the years with the most violations were 1980 (45), 1985 (40), and 1988 (42). The year with the least was 1995 (0). Finally, the study indicated reduction in the number of violations between the PSE ($n=241, mean=34.43$) as compared to the DSE ($n=118, mean=14.75$). Consequently the effects of the Knight Commission during the DSE has had an impact on the number and type of FRV in the sport of football.

DiPuma, Joseph J. Evaluation of collegiate coaches from the perspective of the student-athlete, 1999. M.S., Springfield College (Cathie Schweitzer). (122pp $8.00) PE 3959

The investigation was designed to determine whether perceived differences would exist between male and female collegiate student-athletes with respect to the evaluation of coaching performance of head coaches. The Coaches Evaluation Instrument (CEI) (Docheff, 1989) was used to measure the perceptions of 127 participants from four varsity teams. Also, the CEI (Docheff, 1989) was analyzed to determine whether relationships would exist among the six subscales and the global question of overall
coaching performance. Junior male student-athletes rated their coaches significantly ($p<.05$) higher than junior female student-athletes with respect to scores on the “Communications” and “Motivation” subscales. Female student-athletes rated their coaches significantly ($p<.05$) higher than male student-athletes with respect to scores on the “Knowledge of Sport” subscale. Using the Pearson product-moment correlation coefficient method, significant ($p<.001$) positive linear relationships were found among all of the six subscales of the CEI (Docheff, 1989). Significant ($p<.001$) positive linear relationships were found between the six subscales and the global question of the CEI (Docheff, 1989) using Spearman rank order correlation coefficients.

Durand, Jennings F. Comparative graduation rates and grade point averages among regular admit, non-competitive admit, and admissions exception student-athletes of the University of North Carolina at Chapel Hill, 1999. M.A., University of North Carolina, Chapel Hill (Ronald Hyatt). (159pp 2f $8.00$) PE 3952

The purpose of the study was to analyze the relationship between admissions standards and academic success for student-athletes at The University of North Carolina at Chapel Hill (UNC). Most importantly, the study’s design allowed the researcher to analyze directly the links between admissions category and grade point average (GPA) and graduation status. The researcher reviewed data on 1,001 student-athletes who matriculated between 1987 and 1991. Statistical analysis showed that student-athletes admitted as exceptions to University policy achieved lower levels of academic success than both the general student body and student-athletes who were not admissions exceptions. The graduation rate of admissions exceptions was significantly lower than that of regular admit student-athletes. In addition, admissions exceptions had significantly lower year one and cumulative GPAs than in-state regular admits, in-state non-competitive admits, out-of-state regular admits, out-of-state non-competitive admits, and the general student body. The researcher recommended that UNC eliminate special admissions for student-athletes and that it call upon other institutions and organizations to reassess the appropriateness of providing admissions exceptions.

Foels, Tracie L. The fundraising process for the McCaskill Soccer Center, 1999. M.A., University of North Carolina, Chapel Hill (John Billing). (87pp 1f $4.00$) PE 3953

The purpose of this study was to chronicle the process used by The Educational Foundation, Inc. at the University of North Carolina at Chapel Hill (UNC) for funding the new UNC soccer center located at Fetzer Field. The process was documented from beginning to end. Areas covered in this historical perspective included: 1) A brief history of both the men and women’s soccer programs; 2) Project initiation; 3) Overview of the construction and approval process; 4) Formation of the steering committee; 5) Initial project plan; 6) Marketing and promotions plan; 7) Analysis of the campaign; and 8) Summary and suggestions for future research. This project was completed with the hope that others may use it as a source or guide in future fundraising endeavors.

Goss, Benjamin D. Not as simple as black and white: an investigation of alleged stacking practices and the rise of the Latino population within major league baseball’s positional categories, 1993-1997. Ph.D., University of Southern Mississippi (Dennis Phillips). (149pp 2f $8.00$) PE 3975

Though most racial discriminating constructs have faded from baseball, debate continues over alleged subtle discriminatory practices. One concern involves stacking, or positional segregation by race. Though baseball stacking studies have been conducted since 1967, methodological inconsistencies make generalizing the studies difficult. Such differences involve pitcher inclusion or exclusion, racial classifications and categorizations, subject selection from offensive or defensive statistics, designated hitter inclusion or exclusion, and defensive positional categorizations. Another area regarding race and baseball involves Latinos as a minority group in the populations of the United States and Major League Baseball. Research indicates that baseball’s growing Latino representation may contradict current stacking theories and necessitate reconsideration. Despite growth and increased public attention, stacking literature has largely neglected Latinos. This study propagates stacking literature by examining Major League Baseball from 1993 through 1997 for evidence of stacking within positional categories and by addressing whites, blacks, and Latinos separately. Defensive positions were categorized by similar functions. Four positional categories were established: Pitcher (pitchers only), Central (catchers, second basemen, and shortstops only), Intermediate (first basemen and third basemen only), and Noncentral (left fielders, center fielders, and right fielders only). One general research question guided the study: does any evidence of stacking exist in Pitching, Central, Intermediate, and Noncentral categories in Major League Baseball from 1993 through 1997? From the general research question, eight specific research questions were posed. From those questions, seven hypotheses were drawn to present descriptive data relative to the study’s variables. Hypotheses were accepted or rejected based upon tests using the chi-square test of independence and an $\alpha =.05$ rejection level. After analysis of the data, no significant relationships were found between any ethnic class and year within any positional category, or between any positional category and year within any racial category. This lack of significance indicates that stacking still exists within Major League Baseball’s positional categories. However, several emerging trends were noted, including declining Black overrepresentation in Noncentral positions,
increasing Latino overrepresentation in Central positions, declining White overrepresentation in the Pitcher category, and increasing Latino representation in the Pitcher category. Such trends may signal future changes in positional populations.

Hehman, Eric D. *A survey of intercollegiate head football coaches’ programs for developing racial understanding*, 1999. M.A., Ball State University (Jerry Rushton). (72pp 1f $4.00) PE 3966

Across all levels of sports people attend games as a regular part of their life, and when people attend a game in person they often take it for granted that they will be able to watch the game in a safe environment. At the University of North Carolina at Chapel Hill, it is the responsibility of the Athletic Department to ensure the safety of those patrons watching a basketball game in the Dean Smith Center. The purpose of this study was to analyze the methods used by the Athletic Department to ensure spectator safety. Two surveys were administered to Smith Center ushers, and three interviews were conducted with faculty administrators. Results showed that the Athletic Department does a good job overall, yet some modifications to current procedures are needed. Recommendations were then made as to how the Athletic Department could go about better ensuring spectator safety.

Heeden, Matthew *An analysis of athletic department operations at the Dean Smith Center*, 1999. M.A., University of North Carolina-Chapel Hill (John Billing). (65pp 1f $4.00) PE 3949

The development of a design for a total evaluation system for professional baseball umpires. The present appraisal system is based solely on the expert judgment of raters. This singular approach to evaluation and the related data collection process fosters subjectivity and raises questions about the validity and reliability of the appraisal process. The major purpose of this study was to design and develop a comprehensive performance appraisal system to increase the reliability, validity, and usefulness of the professional umpire evaluation process. The design and development effort was developed based
on a triangulated measurement model which included expert evaluation, real-time precision measurement, and video-tape analysis. The research objectives were to (a) develop a comprehensive umpire performance model, (b) upgrade and refine the present umpire performance rating system to increase its reliability and validity, (c) to develop methods of deriving reliable metrics of umpire game performance from video tapes of professional games, and (d) evaluate candidate real-time precision measurement systems. The design approach utilized research sponsored by the United States Air Force as a theoretical and conceptual framework for the project. The United States Air Force research has produced a new theory of performance, training methods, and a prototype training system that are appropriate for high-demand professions, including the baseball umpire profession. This new theory, advanced training concepts, and related measures were evaluated in the process of conducting this study. The results were used to make recommendations for their adoption to improve the performance, training, and personnel management policies of professional umpires. The present project adapted United States Air Force advanced performance and training models to produce a comprehensive performance appraisal system for professional umpires. The development problem-solving methodology was used in this study. The project proceeded in four major phases which correspond to the major study objectives: Phase I formulated a comprehensive model of umpire performance, Phase II focused on the development of candidate expert performance rating systems, Phase III designed and implemented a field test and evaluation of the candidate performance rating system, and Phase IV finalized the most promising performance rating system based on the field test data and developed a triangulated approach to umpire performance evaluation that included the new rating system, video tape analysis, and precision measurement. Two research questions were central to this proposed research project: (1) what is the most appropriate performance model for defining the essence of professional umpire performance, including the relevant performance domains, and their constituent attribute, knowledge, and skill dimensions?; and (2) what are the essential design characteristics and measurement dimensions of a comprehensive, reliable performance appraisal system for professional umpires? The comprehensive performance assessment system produced by this research project will result in a more objective and precise evaluation of professional umpires. The research products included: (a) a new conceptual model of umpiring performance, (b) improved performance rating forms that were tested on an appropriate sample of professional umpires, (c) a systematic approach to quantifying performance from video tape analysis, and (d) a design for a real-time precision measurement system. These products will contribute to the enhancement of umpire education and performance, as well as improvement in management policies in the areas of umpire performance evaluation, selection, training, promotion, and personnel practices.

Jubenville, Colby B. Athletes’ perceptions of coaching performance among N.C.A.A. Division III and N.A.I.A. head football coaches in the State of Mississippi, 1999. Ph.D., University of Southern Mississippi (Dennis Phillips). (91pp 1f $4.00) PE 3962

The role of the college coach has reached a high level of prominence and influence. As sports have evolved, so have the roles of the coaches. The concept of the ideal coach continues to be debated by individuals surrounding the coaching profession. Research indicates that the ideal coach consists of a variety of characteristics that culminate in a positive and effective coach-athlete relationship. One instrument proven to help assess “ideals” of the coaching profession is the Coaching Evaluation Questionnaire (CEQ). The CEQ consists of a 36-item questionnaire indicating the desirable characteristics of a coach, and attempts to provide an objective evaluation of a coach’s performance from the point of view of the student-athlete. The goal of administering the CEQ is to identify coaching strengths and weaknesses in order to improve their performance and, ultimately, the coach-athlete relationship. This study was designed to examine athletes’ perceptions of coaching performance among NCAA Division III and NAIA head football coaches in the state of Mississippi, as well as to investigate the importance of player evaluation in improving coaching effectiveness. The Coach Evaluation Questionnaire (CEQ) was administered to 127 subjects under standardized conditions. Seven demographic variables were provided to determine the following player characteristics: academic grade level (freshman, sophomore, junior, or senior), playing status of subject (starter or non-starter), primary position played (offense or defense), if the head coach was the player’s position coach (or not), number of years of participation in the program (1, 2, 3, 4, or 5), number of years of eligibility used (1, 2, 3, 4, or 5), and member affiliation of the school (NCAA Division III or NAIA). Analysis of the data indicated that no significant differences existed between the variables of academic grade level, starting or non-starting status, and offensive or defensive positions regarding the athletes’ perceptions about the head coach. One item of interest involved a significant difference in the perception of the head coach by players grouped by years in the program. According to Tukey’s post-hoc test, the first year perceptions were more positive than the second year, which were more positive than the third year.

The purpose of this study was to investigate student perceptions of the University of North Carolina Intramural-Recreational Sports Program. The Quality and Importance of Recreational Services Survey was mailed to 250 University of North Carolina students enrolled in the fall 1995 semester. Eighty-two students completed the surveys representing a response rate of thirty-three percent. Frequencies and percentages were tabulated for all data and chi-square analysis was used to determine significant differences in gender responses. These surveys were then analyzed to determine student satisfaction with recreational opportunities and to provide recommendations for possible improvements in service. Results did not support significant differences between gender for the items tested. The major reasons cited for non-participation in recreational sports pursuits were lack of time due to coursework and lack of knowledge about programs. Subjects were most satisfied with indoor recreation facilities and hours of operation for recreation facilities. Subjects were most dissatisfied with the availability of information about recreation opportunities and the locker room facilities. The most important change desired in facilities was to add an indoor track, followed by more weight equipment and more ball fields/park space. The most important change desired in programs was more information in the Daily Tar Heel about upcoming events, followed by extended facility hours, more fitness classes, and more wellness programs. Results showed that most students were satisfied with their recreational experiences.

Leonard, Patrick J. *Locus of control, self-reported health risks, and biomedical measurements among public school personnel*, 1998. Ph.D., University of Southern Mississippi (Jan Drummond). (127pp $8.00) PE 3999

The purpose of this study was to compare the self-reported responses from the Personal Wellness Profile Questionnaire and the Locus of Control Survey with measured biomedical data among Lafayette Parish School Board’s administrators/management, support staff employees, and teachers. The methods included collection of self-reported wellness factors and health practices from a wellness questionnaire and the scoring of a locus of control survey and a clinical assessment of biomedical measurements. The results would then be used in the evolutionary phases of a more comprehensive wellness/health program for the employees of Lafayette Parish School Board. The subjects in this study consisted of 389 females and males, aged 22-67 years. This represents 11.2% of the total employee population. The wellness questionnaire was completed prior to the biomedical measurements followed by the delivery of the Locus of Control surveys to all screening sites no less than one week later. Pillai’s Trace multivariate test revealed a significant difference (p=.039) in the average mean scores of internal and external Locus of Control persons for health practices and wellness factors. The univariate analysis of health practices and wellness factors indicated a significant difference (p=.011) between internals and externals for wellness factors but not for health practices. A Chi-square test (p=.001) and analysis of variance (p=.001) showed a significant difference between the administrator/teacher groups and the support staff. The support staff was indicated to score significantly higher for externality, and the administrators and teachers showed an internal Locus of Control orientation. Pillai’s Trace multivariate test did not reveal a significant difference between the health risk assessment and absenteeism for locus of control orientation. However, when a univariate test of between-subjects effects was applied, a significant difference (p=.05) was revealed for BMI, systolic blood pressure, and coronary risk. Those subjects with an internal Locus of Control were significantly younger, as shown by a t-test (p=.014). Chi-square results (p=.001) revealed a significant difference in race with Blacks being significantly external. No significant difference between internal and external Locus of Control could be found between gender.

Lytle, Rebecca K. *Adapted physical education specialists’ perceptions and role in the consultation process*, 1999. Ph.D., Oregon State University (Douglas H. Collier). (167pp $8.00) PE 3972

The use of consultation as a means of delivering educational instruction to students with disabilities in the general physical education setting is becoming increasingly prevalent in the United States and is most frequently operationalized in a triadic model. In this model the adapted physical educator serves as the consultant, the general physical educator serves as the consultee, and the student serves as the target, or the one who receives the intervention. The purpose of this phenomenological study was to answer the following questions. What are adapted physical education specialists’ perceptions about consultation as a delivery model for individuals with disabilities? How do adapted physical education specialists define an effective consultation model for adapted physical education? How do adapted physical education specialists define their role in the consultation process? Six adapted physical education specialists participated in this study. Analysis included two in-depth individual interviews, a one-day field observation with each participant, researcher notes, and a final focus group, including definition, situational context factors, effectiveness, skills, training, consultation model preferences and roles. It was apparent from these participants that consultation interactions on behalf of students with disabilities varied greatly based on the multidimensional and dynamic nature of the educational environment. Results showed that the use of consultation was more prevalent with middle and high school students. It was also found that adapted physical education (APE) consultation could be presented on a continuum from proximal to distal, dependent on the degree of interaction between the APE specialist, the general education teacher.
and the student. The effectiveness of consultation was dependent upon the general education teacher’s attitude, the APE specialist’s skills, and the degree of administrative support. Finally, five roles of the APE consultant were delineated from the participants’ descriptions of their job-related interactions. These roles were: advocate, educator, courier, supporter/helper, and resource coordinator.

Sheppard, Derek L. Standardized test scores and Proposition 48: should the NCAA utilize standardized test scores to determine athletic eligibility?, 1999. M.A., Ball State University (John Reno). (53pp 1f $4.00) PE 3977

The purpose of this investigation was to determine if standardized tests are biased and if Academic Advisors would agree that the NCAA should not use standardized test scores as cutoff points for athletic eligibility. The subjects for this study were NCAA Division I Academic Advisors. One hundred sixty two Academic Advisors were randomly selected from the 1995 NCAA Blue Book. The selected sample represented approximately 58 percent of the total population. A survey consisting of 5 sections and 14 questions was utilized as the data gathering instrument. There were no independent or dependent variables involved with the survey instrument. The purpose of the survey was to obtain the opinions of academic advisors concerning Propositions 48 and 16’s effect on minorities, the NCAA’s use of standardized tests scores, whether social-economic factors impact on standardized test scores, and the educational system. The results indicate that academic advisors agree that standardized tests are biased and that Proposition 48/16 does have an adverse effect on minorities. Forty-nine percent of the polled population agreed that standardized tests are biased. Forty-three percent of the population felt that universities should place less emphasis on standardized tests during the admissions process; however, 84 percent of academic advisors believe that universities should not eliminate standardized test score requirements from the admissions process. It was concluded that standardized tests are biased and have an adverse effect on minorities.

Williams, Lisa G. Arkansas and Mississippi superintendents’ attitudes toward K-6 physical education in the public school, 1998. Ph.D., University of Southern Mississippi (Jan L. Drummond). (82pp 1f $4.00) PE 4016

One objective of Healthy People 2000 is to increase physical education class time by at least 50% to allow students to spend more time in physical activity. In addition, the Council on Physical Education for Children (1992) indicated that children should be provided recurrent and meaningful age-appropriate practice times to develop understanding of movement concepts. This study consisted of 97 Arkansas superintendents and 91 Mississippi superintendents who volunteered to participated and were given the Superintendents’ Attitudes Toward Physical Education questionnaire (SATPE) which asked about their attitudes toward K-6 physical education in the public school. Both Arkansas and Mississippi are considered to be rural states and were found to be similar in size according to the mean number of students enrolled in each school and a compatible match was assumed. This allowed for a comparison between Arkansas, which has state mandates requiring elementary physical education, and Mississippi which has no state mandates for the offering of elementary physical education programs. A Pearson’s correlation, t-test, regression, and factorial analysis were performed on the data. The factor structure of 28 questionnaire items yielded five factor components. These factor components were named implementation of programs, barriers to implementation, requirements for implementation, benefits of physical education programs, and physical education curriculum concerns. The results indicated that a greater number of Arkansas superintendents held bachelor’s degrees in physical education and a greater number of Mississippi superintendents held bachelor’s degrees in social studies. Although a greater number of Arkansas superintendents held degrees in physical education, it was revealed that they are less likely to support any aspect of elementary physical education. In addition, the longer Arkansas superintendents were in education the less likely they were to support K-6 physical education. On the other hand, Mississippi superintendents were more likely to support elementary physical education programs the longer they were in education, even though most did not have a physical education background. Mississippi superintendents were also more likely to purchase equipment, books, and workbooks for schools, teachers, and students. Mississippi superintendents were also interested in paying a certified physical education specialist from outside the district to train classroom teachers in physical education curriculum. The SATPE, Appendices, and references are included.

COACHING AND TRAINING

Burger, Troy Complex training compared to a combined weight training and plyometric training program, 1999. M.S., University of Idaho (Dennis Dolny). (80pp 1f $4.00) PE 4009

The purpose of this study was to compare the effectiveness of two different resistance-training programs combined with plyometric training on power and strength development in Division I-A football players. Seventy-eight football athletes were divided into two separate training groups: complex and combined. Each group performed the same seven-week training routine with one exception. The complex training group performed the plyometric exercises in a super-set with biomechanically similar core resistance exercises while the combined group performed
the plyometric exercises separately following the core resistance exercises. All subjects were pre and post-tested with the following strength and field tests: body fat, body weight, bench press, squat, power clean, medicine ball throw, broad jump, vertical jump, pro-agility (I-test), and Omnikinet testing. General Linear Model (SPSS) analysis revealed significant improvements on eight of these tests comparing pre-test scores to post-test scores. Those tests showing significant improvements were body fat (p=.000), bench press (p=.000), squat (p=.000), power clean (p=.005), medicine ball throw (p=.000), broad jump (p=.000), vertical jump (p=.050), and pro-agility (p=.027). Two measures indicated a significant difference between groups. The bench press improved significantly for the combined versus the complex group (p=.049) and the vertical jump approached significance (p=.057) in favor of the complex training program. The results of this study do not support complex training as a superior program compared to combined training but they do indicate that complex training is not at a disadvantage to a more traditional combined training program.

Simpson, Katherine A. Track and field throwers: evaluating the effectiveness of a strength and conditioning program on selected measures of upper and lower extremity power and sport performance, 1999. M.S., University of Idaho (Dennis Dolny). (83pp 1f $4.00) PE 3967

The purpose of this study was to evaluate the effectiveness of a strength, conditioning, and plyometric program on upper body, lower body power, and sport performance in collegiate male track and field throwers. Nine subjects from the University of Idaho Track and Field team participated in this study. Each subject was involved in the fall, winter, and spring training programs for track and field throwers. Testing occurred at four different time points evenly spaced throughout the conditioning program and consisted of a vertical jump test, seated shot put test, and a Vector leg power test, which measured crank power at resistances of 100, 120, 140, and 160% of the subject’s lean body mass. Competition scores were recorded for indoor and outdoor competition in the shot put, discus, hammer, and 35-pound weight throw. Repeated measures ANOVA and Pearson product moment correlation were conducted to compare across time and among the variables respectively. The results of the study determined the seated shot put throw correlated with indoor shot, indoor discus, and outdoor discus. The Vector crank power at 140% lean body mass and peak Vector crank power significantly correlated and predicted indoor discus, 35-pound weight throw, and outdoor discus. Significant difference was only found with Vector crank power at 100% lean body mass over time for the whole group although differences were found between subjects in terms of improvement or changes for virtually every variable. These results suggest that limited improve-

ments in testing performance may reflect either fairly stable performances during the majority of the training season, or improvements which were not detected by the variables measured.

Thomas, Milton B. The effects of visual-verbal modeling on the form and outcome of basketball shooting in beginners, 1998. M.S., University of North Carolina, Greensboro (Kathleen Williams). (65pp 1f $4.00) PE 4015

The purpose of this study was to examine the effects of a visual verbal model on both the form quality and performance outcome of the basketball foul shot in novices. The kinematic parameters investigated included 1) trunk angle at ready position, 2) height of release of the ball, 3) timing of extension of knee and elbow at release, and 4) right foot angle at release. The performance outcome was measured by a 4 point rating system. A score of 4, 3, or 2 was given for successful attempts and a score of 1 or 0 was given for unsuccessful attempts (Satern et al.,l990). The subjects were randomly assigned to one of three experimental conditions. In the first condition, subjects received a visual model of the task plus verbal cues. Subjects in the second condition received only a visual model of the task. Subjects in the two treatment groups viewed a gender appropriate videotaped expert model performing three foul shots. Subjects in the third condition (control) did not receive a visual model of the task or any verbal cues. All subjects were videotaped from the right side of the body. A total of 30 foul shots for each subject were videotaped. The testing took place in two phases, an acquisition phase, which consisted of 20 shooting trials, and a performance phase consisting of 10 trials. The 20 acquisition trials were broken up into four separate shooting blocks. Each subject took five shots in each block. The first, third, and fifth shots taken by the subjects were analyzed using a Peak Performance Analysis System (Peak Performance Technologies, Inc., Engelwood CO). Appropriate x+y coordinates were stored and the dependent measures derived. A 3x5 (Model Type x Trial Block) multivariate analysis of variance (MANOVA) was used to analyze the data. The results of the MANOVA revealed that none of the model types used in this experiment had any significant effect on the form quality or performance outcome of basketball foul shooting in beginners: Wilks’ Lambda=.63, F(10, 40), p>0.05. It was speculated that the subjects were not given enough practice trials at the skill and were not exposed to the videotaped model long enough. It was also speculated that the basketball foul shot was constrained by the interaction of several factors which hindered the subjects’ achievement of desired form and performance outcome.
HISTORY AND PHILOSOPHY

Craig, Peter S. *Organized Baseball: an industry study of $100 million spectator sport*, 1950. B.A., Oberlin College (Ben Lewis). (388pp 4f $16.00) PE 4004

All 500 clubs in O. B.—the trade name for Organized Baseball—are corporations under the law, but their stocks are not listed on any exchange. The business side of baseball is one of the most closely guarded secrets in our economy today [1950]. Partially because of this secrecy and partially because of the fashion of economists to overlook the service industries of which baseball and other recreational enterprises are a part, nobody has ever attempted an “industry study” of our so-called National Game. “Organized Baseball” is an anomalous industry. Where most corporations aspire to monopoly so they can wipe out competition, baseball has created a monopoly so that it can further competition. To maintain competition on the ball field, the club owner aspires to one thing: having a club which is just a little bit better than the other seven. The ideal would be to have all eight clubs in the thick of the pennant race, with his own club triumphant. To try to maintain at least the illusion of an equal chance for all clubs, Organized Baseball has constructed an elaborate framework of restrictions and special privileges, which mark it unique among the amusement industries. And, by protecting the week against the exploitation of the stronger, Organized Baseball also has benefited the strong by providing it with suitable competition. All corporations are militantly independent in their operations. They bid against each other for new talent in the market place; and they are constantly striving for the slight advantage over their competitors; yet they are also dependent on one another for their existence and united against the outsider who threatens to upset that confederation of businesses. Although baseball is a monopoly in which the rewards for success can be great, no one has ever purchased a ball club because he thought it represented the best opportunity to make money. Not only are the risks large and the chances of loss great, but he is buying a quasi-public institution. Every fan in that city considers that ball-club his own, and the real owner is but their steward. Dependent on the fans’ support for the success of his corporation, the owner must submit to their wishes—the development of a winning team—or else get out. Baseball is a queer mixture of monopoly and free enterprise, private gain and public service. It is the strange offspring of a democratic crowd and a private enterprise economy. “The two facts may be complementary, or they may be contradictory,” writes one commentator; “but whichever they are, they express, on a small scale, the basic character of the nation itself” (*Fortune* [August 1937], 116).

Hoyte, Thor A. . . . *And so we played: memory, place and the Brooklyn Dodgers*, 1998. M.A., Syracuse University (John Rennie Short). (89pp 1f $4.00) PE 4002

This thesis examines one possible way of analyzing the term “sense of place” to restore meaning to it without sacrificing its utility. This thesis uses personal interviews to illustrate aspects of Brooklyn during the Dodgers period (1930-1957). This paper argues that the traditional two large areas of “sense of place” study (physical landscapes and social landscapes) fall short of full explanations. This paper adopts a form of “frame analysis” (Goffman, 1974) as its research methodology. The adaptation of Goffman’s framework analysis to include two primary “skeletons” (physical landscape and emotive landscape) on which to “hang” the collected data is effective for two reasons; it provides an accepted “lens” for the research and suggests an inclusive use of the term “sense of place” in research design. The physical space is recognized as being the object of most “sense of place” studies. The emotive space is defined as the role of human agency and interpersonal relations in influencing the perception of “sense of place” as well as memories, both shared and personal. It is argued Blumer’s conception of “symbolic interactionism” is contained within this framework, but can be extracted on an “as-needed” basis. Examinations of the role of the scape of Brooklyn and the role of language added new windows into the perception of “sense of place” of Brooklyn. By using the personal interview technique, glimpses into the perceptions of those that made up “Brooklyn” provide an assessment of how they see themselves and the role of the various scapes around themselves. The conclusions that are made from this research are both general and specific. The general relates to the need to treat the term “sense of place” with more rigor. The specific relate to the subject area (Brooklyn) and the role the Dodgers played in the self-definition of “place” by Brooklynites and the players who played for the Dodgers.

Reaves, Joseph A. *A history of baseball in Asia: assimilating, rejecting, and remaking America’s game*, 1998. M. Phil., University of Hong Kong (Thomas Stanley, Norman G. Owen). (211pp 3f $12.00) PE 4008

A thesis presented on the evolution, devolution, and social impact of baseball in Asia from the mid-19th Century through the end of the 20th Century with particular emphasis on why this most-American of games was assimilated into certain cultures and shunned by others. It is the author’s contention that Japan so thoroughly assimilated the game and so influenced both its preservation and development in Asia that the Japanese have done to baseball what they did to McDonald’s hamburgers. The Japanese have taken something once wrongly thought to be “uniquely American” and made it “intensely Japanese.” No effort was made here to recap the already well documented history of baseball in Japan. Rather, the author concentrated on the often-ignored histories of baseball in China, the Philippines, Taiwan, and Korea, and considered those histories in economic, cultural, and political context. Evidence gathered in this paper showed baseball was
played in China far earlier than has been widely accepted, a full decade before it was played in Japan; that fiscal, spatial, and cultural considerations combined to stymie the game in the former U.S. colony of the Philippines; and that a new “motive of imitation” - directed toward Japan, not the United States - fueled the popularity of baseball in Korea and Taiwan in the late 20th Century at a time when China rehabilitated the game as a useful tool of diplomacy.

Sullivan, Dean A. *The growth of sport in a Southern city: a study of the organizational evolution of baseball in Louisville, Kentucky, as an urban phenomenon, 1860-1900*, 1989. M.A., George Mason University (Roy Rosenzweig). (163pp 2f $8.00) PE 4001

This thesis explores the development of baseball in Louisville in the late nineteenth century. The four types of team, which evolved during this period, from professional teams to children’s teams, were modeled on distinctively urban models like large businesses and voluntary associations. Each team represented a particular urban constituency, ranging in size from a single street to the entire city. The team officers, accordingly, had different motives for becoming involved with the sport. This thesis examines in detail the importance of the officer’s occupational and social status in the type of team ultimately formed or sponsored by each, while demonstrating that such teams could only have been formed in the unique environment of the commercial city.

Voigt, David Q. *Cash and glory: the commercialization of major league baseball as a sports spectacular, 1865-1892*, 1962. Ph.D., Syracuse University (Nelson Manfred Blake). (589pp 7f $28.00) PE 4005

After 1850 Americans began to experience some of the unanticipated byproducts of large-scale industrialization. Among these was the historically unique problem of increased leisure time that was becoming available for masses of people. Not only was this revolution in leisure a quantitative problem, but it had its qualitative aspects. What new outlets for leisure, for example, would be accepted by the masses of the emerging urban centers? Obviously, many of the old play participation models of leisure would not suit the collective life of the urban milieu. This dissertation traces the history of baseball from its early appearance as an amateur sport for gentlemanly participants to its transformation by 1890 into a highly commercialized sports spectacle, functioning as a significantly new leisure outlet for urbanites. Essentially a historical study of a relatively neglected institution of American social history, this dissertation uses as primary sources of data the correspondence, books, and records of nineteenth century baseball participants, including managers, club administrators, reporters, and players. Also the major sporting journals, guides, and manuals of the period are collated with the hometown newspaper descriptions of each pennant winning team. These data are supported by serious secondary studies of historians, economists, and students of leisure. Overall, a sociological frame of reference is employed for classifying and analyzing the data. Thus, the game is treated functionally and structurally as a new type of leisure outlet—a sports spectacular catering to the psychological needs of increasingly urbanized Americans. As a new leisure outlet, this emerging spectacle also mirrors the rapidly changing culture of the industrialized society. In its transformation to a commercialized spectacle during the 1880s, organized baseball reflects an ever more materialistic and secular America, which, although still individualistic, yet tends toward greater collectivism. The game also furnished its public with new models of heroes and villains, and in the colorful world of the professional player, a new kind of career dream for status-seeking youths. As demonstrated in this work, it was in the 1880s that baseball became a million dollar entertainment industry. Such an achievement was made possible by the rise of cities and the increase in time available for leisure. In promoting the game as a profitable exploitation of both trends, the innovators were obliged to seek ways of accommodating large crowds, of monopolizing the game’s promotion in the interests of efficiency and uniformity of operation, of curbing the individualistic demands of players for large shares of the profits, of advertising and promoting teams and leagues, and of adjusting to the rapidly changing values of the public. The evidence suggests that during the 1880s the innovators of major league baseball managed to improvise profitable solutions to each of the above problems, thereby making the game a pioneer in commercialized sports spectacles. As such, the game became not only an innovation in leisure, but also an inspirational model of its kind—one that would influence the structure and promotion of later sports spectacles such as football, basketball, and hockey.


The primary purpose of this study is to investigate the military innovation of the hoplite phalanx and its influence, if any, on the growth and change of the ancient Olympic games. In pursuit of this task, the researcher sought to discover the answers to the following questions: Why and when were military events added to the festival? Who participated in these events, and to what extent did socio-economic status determine participation in these events? What caused Homeric fighting skills to become embedded in the Olympic tradition? This paper investigated the possible influence of the intervention of the hoplite phalanx on the evolution of the Olympic festival by using normal historical measures. The writer cross-referenced the secondary source bibliographies and
attempted to locate the majority of the secondary and primary sources, particularly *The Iliad* and *The Odyssey*. This paper is divided into three sections, which provide insight into the reasoning behind the changes in the Olympic Games. The second chapter focuses on the Greek idea of honor, arete, and the desire to be “first among equals.” Chapter three covers the introduction of the hoplite phalanx military style into the Greek world. The fourth chapter centers on the changes in the Olympic games themselves. Chapter five offers conclusions based upon the findings of this study. The author believes that the Olympic festival changed from a single running event to a multitude of events because of a change in patterns of warfare. The introduction of the hoplite phalanx circa 700 B.C. caused the eradication of the old Homeric style of individual Greek combat. When the hoplite phalanx began to emerge as the dominant military form the Greek nobility had to find another place to display their Homeric fighting skills and prove that they were “first among equals.” The Olympics were the perfect choice because contests and funeral games had always been closely associated with combat. In looking at the possible connections between the hoplite phalanx and the development of the ancient Olympic games the author investigated Greek culture to try to provide a lens through which to view these two phenomena. The ancient Greeks were an innovative people always searching for better ideas and new ways to solve their problems. This writer began to look for a way in which their innovative nature might tie into the changes in the games. It was hypothesized that connection between the emergence of the hoplite phalanx and the disappearance of the individual fighting styles might just provide a possible explanation for the changes in the Olympic games. It seemed possible that the people who lived near Olympia, and who were looking for a place to showcase their now obsolete skills, may have found what they were looking for in the Olympics. Then, in the Greek tradition, something that worked well was borrowed by the rest of the Greek world, and the festival grew to become pan-Hellenic.

**MEASUREMENT AND EVALUATION**

Hrovatin, Lauri A. *The effect of different interval durations on measures of exercise intensity*, 1999. M.S., University of Wisconsin, La Crosse (Carl Foster). (36pp 1f $4.00) PE 3988

Monitoring training loads during continuous exercise has been validated; however, given the importance of interval training, this method (RPE x duration) has not been validated during interval training of different durations. Twelve well trained individuals (m=6, f=6) performed an incremental cycle ergometer test to failure and four randomly ordered 30 min tests on a lode cycle. The four tests were steady state, 30-sec, 1-min, and 2-min, with a work relief ratio of 1:1. Workloads were calculated according to the individual anaerobic threshold (IAT) and physiological variables (HR, RPE, BLa, and VO2) were measured every 10-min. RPE was also acquired 30-min after the exercise bout and multiplied by the duration to obtain a session RPE score. Heart rate data were collected from a Polar Heart Rate Monitor and a summed HR score was calculated. All of the physiological variables behaved similarly during interval training and steady state training by rising from rest to 10-min and then leveling off. The session RPE score and summed HR score were compared and found to be closely related suggesting that the summed HR score and session RPE are essentially the same. In conclusion, the session RPE x duration provides a reliable method to rate the intensity of interval training.

Martin, Kathleen A. *The development and validation of the Coaching Staff Cohesion Scale*, 1999. D.P.E., Springfield College (Mimi Murray). (194pp 2f $8.00) PE 3957

The study was designed to examine the factors associated with the development of coaching staff cohesion of competitive head and assistant coaches. In the content validity phase of the investigation, expert input was obtained to provide a theoretical base for the instrument. A three-factor structure was proposed and the Coaching Staff Cohesion Scale (CSCS) was developed. The construct validity of the CSCS was investigated using head and assistant coaches (N=484) of seven sports from colleges in the Eastern United States. The three-factor model was compared to a two-factor, one-factor, and secondary factor-analysis model. Confirmatory factor analyses and cross validation procedures provided support for the three-factor and one factor models. The reliability of the CSCS was supported through alpha reliability and composite reliability methods. A discussion of the theoretical significance and practical application of coaching staff cohesion is provided; however, continued research on the factor structure of coaching staff cohesion is recommended. In addition, the extension of the research to include the influence of coaching staff cohesion on team cohesion, success, and collective efficacy is suggested.

McHugh, Vicki L. *Intertester and intratester validity and reliability of the Wisconsin Wrestling Minimal Weight Project*, 1999. M.S., University of Wisconsin, La Crosse (Nancy Butts). (64pp 1f $4.00) PE 3989

The current study was designed as an independent assessment of the Wisconsin Wrestling Minimal Weight Project (WWMWP). 79 African American, Caucasian, Hispanic and Hmong high school wrestlers aged 14 to 18 years volunteered to be subjects. Triceps, subcapularis, abdominal, and sum of skinfolds, as well as predicted percentage body fat, predicted weight at 7% body fat, and predicted weight at 5% body fat were determined by the Wisconsin Interscholastic Athletic Association certified skinfold measurers according to WWMWP guidelines. Comparisons were made between trial 1 and trial 2 of
tester 1 (intra-tester) and testers 1-4 (inter-tester). A Pearson product moment correlation average was $r=.96$, with amount of explained variance being 90%. A paired, two-tailed t-test was used to assess the means of skinfold measurements of trial 1 and trial 2 to tester 1. A significant ($p>.05$) difference was found between trials for the triceps skinfold. Two one-way ANOVAs with repeated measures were used to examine differences between means of intra-tester and inter-tester variables. All variables with the exception of the triceps skinfold measurement displayed no significant ($p>.05$) difference for intra-tester variables. All variables with the exception of the subscapularis and abdominal skinfolds displayed significant ($p<.05$) differences for inter-tester variables. A Tukey’s post-hoc test identified significant ($p<.05$) differences for the triceps skinfold site between tester 4 and all other testers; for the sum of skinfolds between testers 1 and 4 and testers 2 and 4; for predicted percentage body fat between testers 1, 2, 4, 2, 3, and 2; and between testers 2 and 4 for predicted 7% body fat and predicted 5% body fat. A randomly selected 20% of the subjects (n=14) were hydrostatically weighed. A one-way ANOVA with repeated measures was used to assess actual percentage body fat (hydrostatic weighing) and predicted percentage body fat (skinfolds). No significant ($p>.05$) difference was found. A one-way ANOVA with repeated measures was used to compare the hydrostatically weighed group (n=14) using Brozek et al. (1963) and Lohman (1981) equations. There was a significant ($p<.05$) difference found between equations, with the Brozek equation predicting a higher percentage body fat.


The intent of this study was to determine a valid and reliable field test to assess back extension endurance, which has been correlated to maximal isometric strength of the back extensors. Subjects for this study included 51 healthy male and female volunteers ages 18 to 47. Back strength and back extension endurance was assessed in the following manner: The subjects were administered the endurance and strength tests in random order. To perform the functional endurance test, subjects lay in a prone position and on command they lifted legs and arms off the ground (Superman position). They held this position for as long as possible. The time was recorded when legs and arms dropped. The assessment of isometric back strength took place on a LIDO Active Dynamometer. The subjects were placed in a seated position in the LDO and secured by using thigh straps, shoulder harness, and knee and pelvic restraints. The LIDO was set at -5°; this placed the subjects in a comfortable position slightly extended more than normal sitting position (neutral spine). The subject was then asked to perform a Maximal Isometric Voluntary Contraction (MVC) of the back extension muscles. Each subject performed three five-second trials with a two-minute recovery period between trials. A Pearson Product Moment Correlation analysis found significant ($p=.01$) but low correlation ($r=.384$) between back extension time to fatigue and MVC of back strength. This data suggests that this is a valid test of back extensor endurance. Standard Error of Measurement ($r=.988$), at the significance level of $p<.01$, suggests that this functional endurance test is reliable.

**PEDAGOGY**

Bastasch, Joanne D. *The effects of integrating geometry into physical education*, 1999. M.S., University of Wisconsin, La Crosse (Jeff Steffen). (76pp 1f $4.00) PE 3987

This study investigated the effects integrating geometry into physical education had on learning geometry concepts. Two fifth grade classes (N=45) from an elementary school in La Crosse, Wisconsin were subjects in the study. Both classes received concurrent geometry instruction from their classroom teachers and gymnastics instruction from their physical education specialist. The physical education teacher taught a gymnastics unit integrated with geometry concepts to one class (n=21) and a gymnastics only unit to the other class (n=24). Each student took a 32-item geometry pre-test before receiving instruction and a 32-item geometry post-test following instruction. The integrated groups’ pre-test mean score was 12.38 and post-test mean score was 25.29. The control groups’ pre-test mean score was 13.50 and post-test mean score was 20.96. An independent t-test for equality of means was used to determine if the groups’ pre-test scores differed. This test indicated no significant difference between the groups in the pre-test ($p>.05$). An ANCOVA adjusted for the insignificant differences in pre-test means and was used to determine if the groups’ post-test scores were significantly different. It indicated that the groups’ post-test scores were significantly different ($p<.05$). The results of this study indicate that integrating geometry into physical education increases geometry test scores.

Brown, Seth E. *The effects of internet-based instructional lesson planning on teacher trainee performance*, 1999. M.S., Purdue University (Thomas Sharpe). (110pp 2f $8.00) PE 3968

Computer-based forms of instruction are reviewed, and the state of computer application research to educational concerns is presented. This study then investigated the effectiveness of one Internet-based instructional format on the improvement of teacher-trainee lesson planning skills and on related pupil practices in gym settings. Participants (N=11) included pre-service physical education students who had no prior experience in lesson planning or teaching. An across-group comparison design was used to measure the effects of the Internet-based instruction on
teacher-trainees exposed versus a similar teacher-trainee group not exposed. Analyses included (a) ALT-PE and C/T ratios of teacher-trainee pupils in practicum settings, (b) lesson plan grade differentials across groups, (c) comparisons of teacher-trainee time spent in lesson planning activities, and (d) social validation by teacher-trainees. Results showed that while PE Central was socially validated by teacher-trainees in a general way, there were no appreciable differences across groups on the measures of lesson planning time, lesson plan grades, and pupil-based ALT-PE and C/T ratios. Surprisingly, the PE Central treatment showed a moderately negative effect on the ALT-PE of those pupils taught by the experimental undergraduates. Recommendations for future research on computer applications in relationship to teacher training are last provided in the context of establishing greater treatment fidelity and in the context of increasing the specificity of computer-based information application.

Carr, W. David Observations and perceptions of the physical presence, cooperation, and communication between athletic training clinical and classroom instructors, 1999. Ph.D., University of Southern Mississippi (Jan Drummond). (104pp 2f $8.00) PE 3961

The education of a student athletic trainer involves a balance between theory and application. This can be stated as a balance between classroom and clinical education. The instructors working in these two settings must work together to promote the overall educational process. The purpose of this study was to determine if the working relationship between the clinical and classroom instructors has an effect upon the education of the student. The working relationship was defined as the physical presence, cooperation, and communication between the clinical and classroom instructors. A questionnaire was designed to measure the observations and perceptions of clinical instructors, classroom instructors, and student athletic trainers. Nineteen of the twenty-one (90%) athletic training educational programs solicited for involvement in this study responded. A total of 737 questionnaires were distributed and 547 were returned (74%). Data was coded and analyzed using SPSS 8.0. Results indicated that clinical and classroom instructors observed the frequency of cooperation differently, with the classroom instructors rating observations of cooperation at a higher frequency than clinical instructors. Additionally, it was shown that students observed the frequency of communication differently than did the clinical and classroom instructors, with the students rating observations of communication at a lower frequency from the clinical and classroom instructors. Finally, analysis indicated that all three groups agreed that the physical presence, cooperation, and communication between the clinical and classroom instructors has a large effect upon the first time passing percentage of students on the NATAPOC examination.

Cucina, Irene M. Specificity of feedback using alternative assessment techniques in a secondary physical education badminton class, 1999. D.P.E., Springfield College (Mary Ann Coughlin). (205pp 3f $12.00) PE 3951

Specificity of feedback using checklists in a high school badminton class was examined. Specific and general checklists and a badminton game assessment rubric were developed. Prior to examining the specificity of feedback, validity and reliability of the game assessment rubric were established. The criterion-related validity estimate for the game assessment rubric was .901. The rater x day generalizability estimates of the game assessment rubric were all above .905. The specificity of feedback was examined during a high school badminton class. Participants (N=180) were randomly assigned to specific feedback, general feedback, or control groups and were pre-tested, mid-tested, and post-tested using the game assessment rubric. A mixed 3x3 factorial analysis of variance (ANOVA) was computed. The interaction effect was significant (p<.05) and simple effects and pair wise comparisons were computed. The three groups were not significantly (p>.05) different at pre-test and mid-test. At post-test, the specific and general feedback groups scored significantly (p<.05) higher than the control group on the game assessment rubric; however, no significant (p>.05) difference was found between the scores of the specific and general feedback groups.

Jorgenson, Shane M. The cognitive, affective, and behavioral characteristics of students enrolled in physical education activity classes at Brigham Young University, 1998. M.S., Brigham Young University (James D. George). (77pp 1f $4.00) PE 4011

This study describes the cognitive, affective, and behavioral characteristics of students in physical education activity classes at Brigham Young University. Brief take-home fitness and wellness lessons were introduced into physical education activity classes to examine whether or not students could learn lifetime fitness concepts without taking away from class time. Participants (n=291) completed a fitness and wellness questionnaire at the beginning and end of the semester. In terms of affective and behavioral characteristics, students appear to have relatively positive attitudes about physical education and engage in physical activity about four days per week. On the cognitive portion of the questionnaire the experimental group (n=170) significantly improved their test scores from 71.1% to 80.7% (p<.001), while the control group (n=121) scores did not significantly change (70.8% to 70.1%; p=.35). The results of this study show that cognitive material can be introduced into physical education activity classes, fitness knowledge can improve, and this can be done with little time commitment from the students or their instructors. Additionally, most students preferred our infusion
Novak, Jeremy D. *Analysis of training protocols for challenge course instructors*, 1999. M.S., University of Wisconsin, La Crosse (Jeffrey Steffen). (49pp 1f $4.00) PE 3990

Challenge course (CC) instructors (N=29) were surveyed to determine time allotments for teaching 29 basic CC facilitator competencies. The primary purpose of the study was to identify teaching times of CC instructors. The secondary purpose was to identify a rank order presentation of adventure activities. A questionnaire was used to acquire data pertaining to CC facilitation. The questions asked instructors to record teaching times of 29 predefined competencies and total program training times. Results indicated a mean total teaching time of x=45.5 hours (±15.2). The mean time and standard deviation of the 29 competencies were generated. The top 10 competencies reported to take the greatest average amount of teaching time were identified. Questions were posed to determine the sequencing of adventure activities within a CC facilitator training program. It was reported that the presentation order of adventure activities in a program was consistent with research done in 1997.

Pusateri-Lane, Lori J. *Examining an educational program in gender equity*, 1999. M.S., University of Wyoming (Mark Byra). (75pp 1f $4.00) PE 3969

Educational programs in gender equity have focused primarily on the fields of math, science, and technology (Levin & Matthews, 1997). This study examines an educational program in gender equity that was presented to preservice teachers in the field of physical education. Quantitative and qualitative data are presented in the form of case studies that help to increase understanding of pre-service teacher behaviors, attitudes and beliefs. Results of the study support existing research that show gender bias toward boys in physical activity and sports in the areas of (a) interactive feedback, (b) use of helpers and/or demonstrators, and (c) use of language in addressing a class or group of learners. The results also support the argument that these inequitable behaviors can be modified through an educational program.

Stanish, Heidi I. *Participation of adults with mental retardation in a voluntary physical activity program*, 1999. Ph.D., Oregon State University (Jeffrey A. McCubbin). (98pp 2f $8.00) PE 3974

This study compared the effect of two sources of instruction and verbal encouragement on the participation of individuals with mental retardation (MR) in a 10 week physical activity program. Participants were 17 adult employees of a sheltered workshop (5 females, 12 males) ranging in age from 30 to 65 years. The program was offered at work 3 days per week and involved aerobic dance activities. Group engagement in moderate to vigorous intensity physical activity (MVPA) was systematically observed and was compared using a reversal design. Condition A involved an exercise leader plus an exercise video to deliver instructional cues and verbal promotion of participation. Condition B used an exercise video as the only source of instruction and verbal promotion. The exercise videos were designed specifically for the participant group to address the low fitness levels and limited ability to make activity transitions. Data indicated that, on average, a higher percentage of the group was engaged in MVPA when the leader-plus-video condition (A) was applied. However, the difference was not practically meaningful when the administrative ease and cost effectiveness of videos are considered. Further, a considerable overlap of data points in the graphical analyses indicated that withdrawing the leader did not control exercise behavior. Program attendance was variable but remained high over the course of the study. Group engagement levels were higher during the sessions with fewer participants, which suggested that a small group of highly compliant participants were more consistently on-task. Work performance was not negatively impacted when employees took time out of their workday to participate in physical activity. It is of importance that several participants continued to participate in the exercise program over the 4-week maintenance phase. This study provided a convenient, inexpensive method for adults with MR to independently participate in physical activity.

Stemmans, Catherine L. *An interactional analysis of experienced and inexperienced athletic trainers' behavior in clinical instruction settings*, 1998. Ph.D., University of Southern Mississippi (Sandra Gangstead). (83pp 1f $4.00) PE 3954

The triad of allied health clinical instruction includes the instructor, student and patient. The clinical instructor, the student athletic trainer, and the athlete create this dynamic learning environment in the education of athletic trainers. The goals of this study were to further develop and modify the *Clinical Instructor Analysis Tool—Athletic Training (CIAT-AT)* (Gardner, 1995), to observe and identify interactional behaviors in athletic training clinical instruction, and to compare these behaviors based on the experiential level of clinical instructors. Video and audio recordings of clinical instruction were made at five CAAHEP accredited or NATA approved athletic training education programs. A total of thirty clinical instructors were recorded. Ten clinical instructors from the novice, intermediate, and advanced experience groups were studied. An interval recording method was used to document behaviors with the CIAT-AT II. The data indicated that intermediate and advanced clinical instruction included three

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times more interactions initiated by the student athletic trainer. The second finding supported that increased clinical instructor experience allowed more screening and evaluative techniques accomplished by the student athletic trainer. Thirdly, this study revealed that the use of skill feedback for all clinical instructors is a small proportion of total interactions. Finally, direct teaching styles are more common than indirect teaching styles in athletic training clinical instruction. Conclusions can be made from this study that the experiential level does influence interactional behaviors in clinical instruction; specifically, those behaviors which lead to psychomotor refinement of evaluation skills by the student athletic trainer. The low proportion of skill feedback needs to be further addressed in professional preparation of clinical instructors. The direct nature of clinical instruction teaching style supports Gardner’s (1995) earlier work.


The purpose of this study was to extend Nolen & Nicholls’ (1994) research with classroom teachers by comparing and contrasting physical education teachers’ views on motivation to those of sport psychology researchers. Physical education teachers (n=99) and sport psychology researchers (n=17) completed an adapted version of Nolen & Nicholls’ Survey of Beliefs about the Effectiveness of Strategies for Influencing Motivation. A t-test was employed to compare the means of the physical education teachers’ answers to those of the sport psychology researchers’. Based on mean scores, motivational strategies were ranked from the most to least effective in promoting a positive motivational climate. Results suggest that physical educators and sport psychology researchers similarly agree about the effectiveness and detriment of specific strategies for enhancing motivation in students. Specifically, positive strategies such as giving feedback to students, and showing interest and giving responsibility to the student were ranked high among the teachers and researchers. Strategies ranked low and considered detrimental to motivation by both groups included emphasizing task-extrinsic rewards, attributing failure to low effort, and demanding completion of assignments. In addition to these concurrent findings between the researchers and the teachers, t-test analyses unveiled discrepant views as well. Researchers rated giving choice to students significantly higher than did teachers, while teachers rated knowing more about the student significantly higher than did researchers. Because of the vast difference in the ranking of these two motivational strategies, the results suggest that teachers may view different strategies more or less important due to the context in which they must be used.


The relationship formed between physical education teachers and their students can have an enormous life long impact on students’ attitudes towards physical activity. A positive experience can strengthen a person’s tendency to continue with physical activity. However, a negative experience, such as the inappropriate use of criticism or being ignored by the teacher, can turn students away from physical activity. The purpose of this study was to investigate the frequency of individualised instruction (dyadic interactions) occurring in physical education classes and to determine whether a student’s level of motor skill influenced the amount and type of interactions between teachers and students. Eight secondary school Physical Education teachers were videotaped teaching their physical education classes between July 1993 and May 1994. The subjects in the study were eight teachers, from six different schools, and 250 female students undertaking years eight and nine. All subjects were from the North/West Metropolitan Region of Melbourne, Victoria. Students performed a series of motor skill tests specific to the unit of instruction being taught by their physical education teachers. Based on motor skill test performance the top 33% of students were ranked as high motor skilled, and the bottom 33% of students were ranked as low motor skilled. Ten students from each class were selected to participate in the study, five from the top third and five from the bottom third for each motor skill category. The teachers were videotaped during three separate lessons instructing either basketball or volleyball. Each lesson was coded using the Dyadic Adaptation of Cheffers’ Adaptation of Flanders’ Interaction Analysis System (DAC). The results indicated that teachers spend very little time interacting with students individually. The results also showed no significant differences existed between the amount or type of dyadic interactions directed towards the high and low motor skilled students by teachers during physical education classes. The only DAC variable to display a large effect was teacher praise in favor of the high motor skilled students.

Temple, Viviene A. The integration of students with mild intellectual disabilities into regular physical education classes in Victoria [Australia], 1995. Ph.D., Royal Melbourne Institute of Technology (Jeff Walkley). (221pp 3f $12.00) PE 3998

In 1982, the Victorian government entered into a major review of educational provision for students with a disability. The review led to the implementation of the Integration Program in 1984. This program gave every child the right to be educated in a regular school, and the program expanded rapidly during the 1980s. The expan-
The purpose of this investigation was to determine if there were differences in perceived performance due to the level at which a subject coached and the age of athletes performing in video clips. The study consisted of three subject groups completing four phases of data collection. Three subject groups were formed representing Junior High, High School, and University level coaches. The phases consisted of: (a) A questionnaire on the subjects coaching history; (b) a computer program to rank video clips of player performances; (c) the same computer program to sort video clips of player performances; and (d) a semi structured interview where the subjects orally explained the sorting categories they generated in phase (c). The information gathered from the questionnaire and the descriptions of the sorting categories was used to help interpret the quantitative data generated though the ranking and sorting tasks. The results indicated that there were no strong differences between the subject groups. The distribution of the ranks assigned by the subjects clearly indicated that age and coaching level did not interact to affect the results of the ranking task. The group labels of all groups tended to focus on technical aspects of the performance that were viewed. The University coaches tended to use somewhat deeper cause and effect relationships than the High School and Junior High coaches in their explanations of their category labels. This trend was the major difference between the subject groups. This study concluded that there were no major differences in how University, High School, and Junior High level coaches rank and sort video clips of University, High School, and Junior High aged athletes. The results indicated that further study in the following areas of the domain of coaching volleyball is warranted: 1. Investigate the experiences that lead to the development of quality volleyball coaches. 2. Investigate the consistency of skill instruction across levels of coaches. 3. Investigate in more detail the diagnostic abilities of volleyball coaches at all levels.

Young, Ben An analysis of the diagnostic and prescriptive expertise of level II and examiner downhill ski instructors, 1999. Ph.D., Ohio State University (Debra Rose). (123pp 2f $8.00) PE 3973

For coaches to qualitatively analyze the performance of sport skills as executed by their students, they must possess an internal image of the desired skill against which to make comparisons (Hoffman, 1983; Pinheiro & Simon, 1992). Leas and Chi (1993) have indicated that there are differences between novice and expert swimming coaches in the internal image of the freestyle stroke. They further reported group differences in their ability to diagnose errors in movement form. Study 1 extended that investigation to include a beginning and advanced skill in downhill snow skiing. Two groups of downhill ski instructors (n=8) certified at Level II (n=4) and Examiner status (n=4) were compared on their knowledge of the prototypical versions of the program was not accompanied by a systematic evaluation of the educational outcomes of the program. By the early 1990s there was considerable criticism regarding the lack of data on program outcomes. Many people with interests in the integration process were advocating for research on the program to be undertaken. The aim of this study was to give an indication of the outcomes of physical education for students with a mild intellectual disability. Specifically, the purpose of the research was to describe how students with a mild intellectual disability and their non-disabled peers spent time in regular physical education lessons, and to identify factors associated with the motor appropriate behavior of the students. The factors examined were: teacher attitudes; perceived competence; qualifications; university courses on teaching students with disabilities; in-service education; teacher gender; years of teaching; experience teaching students with a disability; student gender; type of school; and group size. The study involved 24 students with a mild intellectual disability and 48 of their non-disabled peers from 19 government primary and secondary schools in the Eastern Metropolitan Region of Melbourne. Data on the behavior of students were gathered using the Academic Learning Time—Physical Education systematic observation instrument (ALT-PE). In each class one student with a mild intellectual disability and two of their non-disabled peers of the same gender were observed. Each class was observed on five separate occasions, with a total of 120 lessons observed. Fifteen percent of those classes were videotaped and analyzed for intra-observer and inter-observer reliability. Data on selected attributes of the students’ physical education teachers (n=24) were collected using a modified version of the Physical Educators’ Attitude Toward Teaching the Handicapped (PEATH-II) instrument and closed pre-coded questions. Results indicated that all students spent relatively little time successfully engaged in activities related to the lesson’s objectives, and that students with a mild intellectual disability were significantly less successfully engaged than their non-disabled peers. Results also indicated that students with a mild intellectual disability were more off-task and motor inappropriately engaged than their non-disabled peers. Path analytic techniques demonstrated that the proposed model was unstable; however, with re-specification, a stable model incorporating fewer variables was achieved. Paths within the model revealed that teacher attitudes, years of teaching the disabled, and teacher gender had direct positive effects on the extent of successful motor engagement by students with mild intellectual disabilities (relative to their non-disabled peers). Also, teacher-perceived competence in teaching students with mild intellectual disabilities did not directly affect the criterion, but rather had an indirect effect via teacher attitudes.

Yanofsky, Kirk Volleyball coaches’ perception of performance, 1998. M.S., Dalhousie University (John McCabe). (97pp 1f $4.00) PE 3964
of the wedge and open parallel turns. They were subsequently tested on their ability to diagnose errors in incorrectly performed videotape versions of those turns. Two Level II instructors internalized the skill similarly to the level of the Examiners on their knowledge of the prototypical skills, while the other two instructors did not appear to have constructed the same type of prototypical model. On the wedge turn diagnostic task, Level II instructors misdiagnosed 50% of the primary errors in student performance compared to a perfect performance by Examiners. On the open parallel diagnostic task, performance across groups was similar for the primary error. It was suggested that the open parallel level of skiing is similar to the skiing ability of Level II instructors, which may have enhanced their ability to better diagnose the errors associated with that skill compared to the wedge turn. In Study 2, participants prescribed exercises for the errors identified in Study 1. Results indicated that exercises primarily addressed errors in the same order as they were prioritized. The lesson plans of Level II participants, however, attempted to address 35% more errors than Examiners. The use of part-task teaching methods, used by seven of eight participants, was subsequently addressed and theoretical implications were discussed. A possible theory of expertise explaining group differences was described.

**SOCIOLGY AND CULTURAL ANTHROPOLOGY**

Berry, James R. *Foreign student-athletes and their motives for attending North Carolina NCAA Division I institutions*, 1999. M.A., University of North Carolina, Chapel Hill (John Billing). (77pp 1f $4.00) PE 4019

The purpose of this thesis was to survey foreign student-athletes in North Carolina Division I schools and from the data construct a profile of this unique segment of sports in the United States. Sixty-one usable subjects completed and returned the questionnaire, which contained eight demographic questions and 42 possible motivating variables for enrolling in and competing for an institution in North Carolina. The results of this research found that Athletic and Academic factors were most important to this sample of foreign student-athletes, ranking ahead of the Influence and Social/Environmental categories. The single most important variable was found to be “Level of Competition in the United States.” Although males and females were similar in their responses overall, slight differences appeared in some factors. The subjects were drawn from a variety of countries and several sports. Western Europe was the most represented region of the world, while a majority of the athletes played either golf or tennis. Noticeable differences were also found between these various groups. These results will be useful in developing a profile of foreign student athletes and in the international recruiting process.

Groth, Andrea W. *A study of the characteristics of participants at the FedEx Wellness Center, 1998*. M.S., University of Memphis (Michael Hamrick). (39pp 1f $4.00) PE 3965

This study examined the characteristics of participants in a worksite wellness program with regard to gender, age, job classification, levels of participation, and selected health characteristics such as blood pressure and cigarette usage. Data were gathered on 372 participants of the Wellness Center who were active members from June 1996 until May 1997. Descriptive statistics were used to report the demographic makeup of the participants with regard to gender, age, job classification and level of participation. Based on the data presented, the characteristics of participants at the Federal Express Wellness Center suggest the average participant is male, 39 years old, non-smoker, in a salaried, exempt position and has a blood pressure of 124/82. He visits the Wellness Center an average of 19 times per month, primarily at midday and after work. Future studies may want to examine participation in more detail by defining it more specifically and tracking physical activity in a more categorical manner to identify levels of physical activity such as intensity and time spent. It would be preferable to compare the participants at the Wellness Center with an equally representative population of non-participants. Comparison of health care costs with participation would also be a possibility if the data were available.

Israel, Paul K. *The relationship between physical fitness in university students and demographic, academic, and attitudinal factors*, 1999. M.A., University of North Carolina, Chapel Hill (Bonita L. Marks). (107pp 2f $8.00) PE 4018

The purpose of this study was to determine the relationship between health-related physical fitness in university students and demographic, academic, and attitudinal factors. The study included 120 subjects (42 males, 78 females) between 18 and 22 years of age. Subjects completed a questionnaire assessing demographic, academic, and attitudinal information. They performed 10 fitness tests evaluating body composition, cardiorespiratory endurance, muscular strength and endurance, and flexibility. A composite score was calculated for each subject based on performance on the fitness tests. Results indicated that Caucasians (n=107) had higher fitness scores (p=0.019) than African Americans (n=8), along with higher paternal educational levels (p=0.001) and higher parental income levels (p=0.03). Additionally, subjects who had higher fitness scores had fathers with higher education levels (p=0.01), had appropriate physical activity habits (exercise frequency: p=0.032, exercise duration: p=0.006), and had
more positive attitudes toward exercise (p=0.008). These results suggest that physical fitness level in university students may be influenced by race, socioeconomic status, exercise habits, and attitude toward exercise.

Ludwig, Martha M. The effects of a type and interest-based career exploration program on the career maturity and goal stability of collegiate student-athletes, 1993. Ph.D., Michigan State University (Yevonne Smith). (358pp 4f $16.00) PE 3944

This study was conducted to examine the effects of an educational career exploration program on Division I collegiate student-athletes' career maturity, goal instability, motivation to succeed, goal orientation, perception of abilities, decision-making, confidence, and study orientation. Various sport team members (N=50) of the varsity athletic program at a large Midwestern university voluntarily participated in the six-session career education program. All participants received the same intervention program, which consisted of transferrable skills, interest and self-exploration, and values clarification. A pre-test, career intervention, and post-test design was implemented. Follow-up data collection and assessment were conducted at the end of six weeks for some participants and six months for others. It was hypothesized that the Career Exploration Program (CEP) would improve career maturity and goal instability, and that there would be no differences in the maintenance of the effects of CEP between the six-week follow-up group and the six-month follow-up group. It was also hypothesized that CEP would improve each of the six subscale measurements of the Goal Instability Scale (motivation to succeed, goal orientation, perception of abilities, decision-making, confidence, and study orientation). In order to examine the effect of the Career Exploration Program for collegiate student-athletes, a repeated measures analysis of variance was conducted. Twelve directional hypotheses were tested. An alpha level of .01 was set for testing each of the hypotheses. There were significant differences on each of the repeated measures and no significant differences between the mean scores of the six-week and six-month follow-up groups. Seven exploratory questions about gender, age, team classification, athlete classification, academic major, and career goals were also examined. Significant differences (p=.05) were found between women and men, playing status groups, and choice of academic major groups on career maturity; choice of academic major groups also differed on goal instability; and significant differences were found on academic comfort between revenue and non-revenue-sport athletes, between team and individual-sport athletes, and between scholarship and non-scholarship athletes.

Olsen, Janette Religiosity and physical fitness: a study of middle-aged Mormon men, 1999. M.S., Brigham Young University (Connie L. Blakemore). (87pp 1f $4.00) PE 4012

Research has related both physical fitness and religiosity to health. This study combined these ideas and examined the relationship between religiosity and physical fitness among middle aged Mormon men (N=110). Mormons are an ideal population for study because of their strict health code. Fitness variables were grip strength, waist/hip ratio, body mass index (BMI) and estimated maximal oxygen uptake (VO2max). A questionnaire assessed level of religiosity and separated subjects into two groups: highly religious (N=35) and less religious (N=14). Moderately religious subjects (N=61) were omitted. A one way ANOVA (between group design) found no significant differences in fitness variables between groups. Results indicate that fitness and religiosity do not appear to be related among Mormon men. These factors had been found to be related among Mormon women (Blakemore, 1997:16). Therefore, an increase in religiosity may be associated with improved physical fitness for Mormon women; however, based on this study, no such association can be made for Mormon men.

Sabo, Tim An analysis of student-athletes' experiences since leaving the University of North Carolina, 1999. M.A., University of North Carolina-Chapel Hill (John Billing). (69pp 1f $4.00) PE 3946

The purpose of this study was to examine the educational, athletics, employment, and community experiences of former student-athletes since leaving the University of North Carolina. To achieve this, former student-athletes in all sports, who graduated or left the university in 1955, 1965, 1975, 1985, and 1995, were sent questionnaires. A total of 324 former student-athletes from the University of North Carolina responded to the questionnaire. Mean values were calculated for responses, such as the number of semesters to complete degree requirements and the number of community service projects currently participated in. Descriptive statistics were produced for responses about current employment and respondents' status with regard to graduate education. Overall, the results of this study seem to indicate that many former student-athletes have had positive experiences in the areas of education, athletics, employment, and community involvement. Indeed, former student-athletes from UNC seem to be successful in many areas of post-collegiate life.


The purpose of this study was to assess participation and motivation for sport, and level and types of physical activity in urban Mexican school youth across three socioeconomic levels. This study also considered current growth status (height and weight), to provide an estimate of nutritional status (under- and over nutrition), and to place the sample in a secular context. Approximately 1,100 Mexican school youth between the ages of 9 and 18 years
participated in a cross-sectional study involving sport preferences, motivation for sport, and level of physical activity. Heights and weights were measured and the BMI calculated for 1,085 subjects of the sample, and the females were asked their menarcheal status. Older primary school and high school youth (n=591) completed surveys on sport and activity participation. Males and females differ in sport preferences. Females appear to prefer individual lifetime activities, whereas males seem to prefer sport activities. Reasons for sport participation in urban Mexican youth are similar to those for United States youth, with “fun” the primary reason for sport participation in urban Mexican youth. Physical fitness and coaching issues also have an impact on sport motivation. However, among reasons for dropping out of sport, urban Mexican youth appear more concerned about their studies than United States youth. Urban Mexican males are more ego oriented in their sport motivation than females, while there is no difference in task orientation. Most males in this study are in the active category of the PAQ-A, while most females are in the inactive category. The very active category has the fewest representatives for both genders. Younger males and females (9-13 years) are consistently more active than their older counterparts (14-18 years). Urban Mexican male sport participants have higher activity scores and self-perceived physical condition than non-participants. Female sport participants have higher activity scores, self-perceived physical condition and self-perceived activity levels than non-participants. Socio-demographic and biological variables account for 1% to 14% of the variance in sport participation status and physical activity score. The BMI does not differ between sport participants and non-participants, or between inactive, active, and very active activity categories. The prevalence of males, 9-13 years, who are at risk of overweight is 38%, and that for females 9-13 is 29%. The prevalence decreases with age. A positive secular trend in size (stature and body weight) has occurred in Mexico City youth between 1926 and 1998. No secular change appears in age at menarche in urban Mexican females.

**SPORTS MARKETING**

Chang, Kyungro  *A systems view of quality in fitness services: development of a model and scales*, 1998. Ph.D., Ohio State University (P. Chelladurai). (177pp 2f $8.00) PE 3979

The primary purposes of this study were to (a) present a conceptual framework highlighting the elements generic to all services as well as those unique to fitness services, (b) propose a scheme of conceptually distinct dimensions of quality in fitness services, (c) develop scales to measure quality in fitness services, satisfaction, and intentions to renew membership, and (d) verify if the conceptual framework was empirically supported. Based on the system’s perspective of the production and consumption of services, it was postulated that any assessment of overall quality in fitness services must include customer perceptions and reactions to the input, throughput, and output stages of service delivery process. Thus, the conceptual framework for the study included nine dimensions of quality—Service Climate, Management Commitment to Service Quality, and Programs in the input stage; Interpersonal Interaction, Task Interaction, Contact with Physical Environment, Contact with Other Clients, and Service Failures and Recovery in the throughput stage; and Perceived Service Quality in the output stage. In addition, Customer Satisfaction divided into (a) satisfaction with services and (b) satisfaction with personal involvement, and their Renewal Intentions were also included in the model. Seventy-one items were generated to measure the nine dimensions of service quality, 12 items to measure the two facets of satisfaction, and 6 items to measure renewal intentions. The purification and confirmation of the above subscales were carried out with the data of two sets of respondents (178 members from three fitness clubs in the scale purification stage and 354 fitness club members from five different clubs in the confirmatory stage). Item analyses (including item-to-total correlations and internal consistency estimates—Cronbach’s alpha, and confirmatory factor analysis) involving the first data set resulted in a 45-item scale to measure the nine dimensions, 10 items to measure the two satisfaction facets and five items to measure renewal intentions. Confirmatory factor analyses (LISREL 8) with the second data set showed fair to good fit between the data and the subscale structure of the Scale of Quality in Fitness Services (SQFS). The overall fit of the measurement model (SQFS) showed fair fit, $\chi^2(909)=2570.62, p<.01$ ($\chi^2/df=2.83$), RMSEA=.07, GFI=.75, AGFI=.72, NFI=.82, CFI=.84. The scales of clients’ satisfaction and renewal intentions were also tested and confirmed using the same procedures as with SQFS. Two structural models specifying the relationships among clients’ perceptions of service quality, satisfaction, and renewal intentions—a) perceived quality—satisfaction—renewal intention, and (b) satisfaction—perceived quality—renewal intention—were subjected to empirical verification. Results showed that model with clients’ satisfaction as an intervening variable had slightly better fit ($\chi^2(53)=405.92, p<.01$, RMSEA=.13, GFI=.82, AGFI=.74, NFI=.88, CFI=.90) than model positing service quality as a mediating variable ($\chi^2(53)=515.66, p<.01$, RMSEA=.16, GFI=.77, AGFI=.66, NFI=.84, CFI=.86). Finally, multivariate and univariate analyses showed that males and females differed in their perception of quality of program ($F=7.138, p<.01$). Females perceived higher quality of program than males. Gender’s effect was also significant on both satisfaction with service ($F=3.87, p=.05$) and satisfaction with personal involvement ($F=3.99, p<.05$). Females relative to males were more satisfied with both the services and personal involvement.
The study was designed to determine the economic benefits a community receives when hosting a sporting event. The study was based on the 1998 Friendly’s Classic, an official tournament event of the Ladies Professional Golf Association (LPGA). Participants (N=589) were asked to complete a questionnaire in regards to spending as a result of attending the tournament. From these questions the researcher was able to determine the mean spending of females compared to the mean spending of males, as well as to determine the relationship of perceived importance of the event to residents and nonresidents and the amount of money spent by participants. The mean spending of females was significantly (p<.05) higher than the mean spending of males. There was no significant (p>.05) relationship between the participants’ perceived importance of the event to the area and the mean spending of total participants within Hampden County. Additionally, there was no significant (p>.05) relationship between the perceived importance of the event to the area and the mean spending of residents and nonresidents of Hampden County. The total economic benefit to the host community was $1,454,384.80.

Thorp, Sarah Corporate sponsorship of women’s sport, 1999. M.S., Springfield College (Betty Mann). (107pp 2f $8.00) PE 3963

The purpose of this paper was to clarify the terms imagery and visualization as they relate to teaching dance technique. The paper begins with a discussion of the importance of clarity in language use as it relates to teaching and the use of imagery and visualization as an effective teaching tool. Various definitions are examined in order to develop an understanding of how each applies to enhancing performance of movement. Implications for teaching dance technique, learning styles and the importance of utilizing a variety of teaching methods are discussed. The paper concludes with implications for utilizing imagery and visualization within the context of teaching dance technique.

Hoss, Haley A. Imagiration and visualization—solving the jumble: clarification of imagery and visualization and implications for teaching dance technique, 1997. M.F.A., Texas Woman’s University (Adrienne Fisk). (26pp 1f $4.00) PE 3982

This study was conducted to analyze the current judging methods used in competitive ballroom dancing (Dancesport). It also contains comparisons to competitive pairs figure skating and ice dancing judging systems. A questionnaire was sent to 216 National Dance Council of America qualified judges. Interviews of several judges were also conducted. The responses from the question-
naires and interviews were compiled and five main areas of concern were found: 1. Judging certification and qualification. 2. Judging panel selection. 3. Format requirements involving the media. 4. Format requirements affecting the judges. 5. Coach/judge conflicts of interest.

Nolan, V. Lynn Inspiring the dance teaching/learning process through motivation, 1997. M.F.A., Texas Woman’s University (Penelope Hanstein). (37pp 1f $4.00) PE 3983

The purpose of this paper was to examine ways that a dance educator can create an inspired technique classroom where students are motivated to learn with enthusiasm through a positive working process. By understanding that students are motivated in different ways, the dance educator can become more effective in the technique classroom. Greater growth and learning outcomes will result when dance educators make the effort to implement motivational activities. Students will then become more fully engaged and take the responsibility to further pursue their own dance learning. The paper begins with a definition of motivation within the context of dance teaching and then proceeds to a discussion of its importance in the technique classroom. Various factors, which encourage a positive learning environment and enhance the communication process between the dance educator and students then follows. The main focus of the paper is the specific motivational strategies and teaching activities, which are presented at the end of the paper. These teaching activities are based on improvisational and compositional elements, which can enhance dance teaching and learning in the technique classroom.

**BIOMECHANICS**

Ferry, Christopher Internal and external rotation strength values of female swimmers and water polo players, 1999. M.A., San Jose State University (Leamor Kahanov). (55pp 1f $4.00) PE 4010

Rehabilitation programs for swimmers and water polo players with shoulder injuries have historically been identical, yet there exist inherent biomechanical and training differences between the two sports. The purpose of this study was to determine if a shoulder strength difference exists between swimmers and water polo players. Twenty-five subjects (10 swimmers and water polo players) performed an isokinetic test on the Biodex, System 2. The subjects were tested in two different arm positions (45 and 90 degrees of shoulder abduction in the scapular plane) and three different speeds (60, 240, and 450 degrees/second). Mann-Whitney non-parametric tests were calculated on the tests in 90° of shoulder abduction at a speed of 450°/second speeds for peak torque and total work. No statistically significant differences between the two sports were found; however, the swimmers showed a higher mean on 22 of the 24 tests performed. Practically, 3 of the 4 tests indicated visible differences suggesting that individual rehabilitation programs for shoulder injuries need to be designed separately and specifically for swimmers and water polo players.

Kruger, Matthew J. Effects of thick-bar resistance training on strength measures in experienced weightlifters, 1999. M.S., University of Wisconsin, La Crosse (N. Travis-Triplett McBride). (57pp 1f $4.00) PE 3984

This investigation determined the efficacy of resistance training with thick-handled barbells and dumbbells. Twenty-two experienced male weightlifters were randomly assigned to groups that exercised either with increased grip circumferences or normal grip circumferences. Each group performed an identical 6 week resistance training program. Body weight, forearm circumference, hand dynamometer, chin-up repetition maximum, and standard 1 repetition maximum bench press and dead-lift tests were administered pre- and post-training. An alpha level of 0.1 was used after a power analysis of relevant literature. Results showed a significant increase (p<0.001) in all variables as a result of the training in both groups. There was a significant (p<0.1) interaction in left-hand dynamometer and body weight variables in favor of the experimental condition. The results indicate that thick-bar resistance training is effective in improving grip strength and upper-body functional strength.

Lee, Ki-Kwang The effect of running speed and turning direction on lower extremity joint moment, 1999. Ph.D., Oregon State University (Gerald A. Smith). (113pp 2f $8.00) PE 3976

Fast medio-lateral movements, frequent in a number of sports activities, are associated with lower extremity injuries. These injuries may occur as a result of excessive musculoskeletal stresses on the joints and their associate structures. The purpose of this study was to investigate the effect of running speed and turning movement on the three-dimensional moments at the ankle, knee, and hip joints. Data were collected using video cameras and force plate. Eight male recreational basketball players were tested during slow (1.5 m/s), moderate (3.0 m/s), and fast running (4.5 m/s) and when cutting to the right or left (+60, +30, 0, -30, and –60°). The inverse dynamics approach was used to integrate the body segment parameter, kinematic and force plate data, and to solve the resultant joint moments. At the ankle joint, inversion/eversion, dorsi/plantar flexion, and internal/external rotation moments of the ankle joint increased with running speed (p<.05). At the knee joint, flexion/extension and abduction/adduction moments increased with running speed except flexion moment that decreased with running speed (p<.05). At the hip joint, internal/external rotation, flexion/
extension, and abduction/adduction moments increased with running speed \(p<.05\). In medial cutting movements, greater abduction moments of the ankle, adduction moments of the knee and external rotation and adduction of the hip were found \(p<.05\). In lateral cutting movements, greater inversion and adduction moments of the ankle, abduction moments of the knee and hip were found \(p<.05\). These findings reinforce the intuitive notion that fast medio-lateral turning movements produce substantially greater musculoskeletal loading on the joint structures than does straight running and consequently have greater potential for inducing lower extremity injuries such as ankle sprain or anterior cruciate ligament injury.

Olson, Michael W. *Comparison of hard and soft surfaces during maximal vertical jumps in a depth jump plyometric exercise*, 1999. M.S., University of Wisconsin, La Crosse (Marilyn K. Miller). (77pp 1f $4.00) PE 3991

The purpose of this study was to examine how landing surfaces used in a depth jumping (DJ) plyometric exercise affected kinematic and kinetic variables. Sixteen male and female college students, who were involved in recreational activities, performed 5 DJ onto a force platform alone (hard landing surface) and a 2.35cm thick mat placed onto the force platform (soft landing surface). The maximum angular position and angular velocity measurements were recorded and analyzed for the trunk segment and knee joint at the greatest point of knee flexion during landing, using a video camera and an Ariel Performance Analysis System (APAS). Contact and flight times were established using data collected by a Bertec force platform. The vertical ground reaction forces and the rate at which these forces were generated were collected and analyzed between surface conditions. An alpha level of 0.05 was used in all statistical tests. A t-test was used for all statistical analyses. Results indicated no significant differences in the maximum angular positions of knee and trunk segments at landing \(p=0.424\) and 0.266, respectively). Angular velocities of the knee and trunk segment at landing were not significant \(p=0.153\) and 0.243, respectively). The contact and flight times were found to be non-significant \(p=0.263\) and 0.397, respectively). The time to peak vertical ground reaction force was also found to be non-significant \(p=0.224\). From the results, it can be concluded that a soft landing surface, 2.35cm thick, would be as effective at eliciting the desired traits (decreased joint flexion, decreased contact time, and increased flight time) of the DJ exercise as a hard landing surface.


The purpose of this study was to compare ankle stability measures of two static balance conditions (eyes open and eyes closed) and two dynamic conditions (landing and landing while catching a ball) to evaluate whether static measures are a true reflection of ankle function under dynamic conditions. Twenty-five healthy, young adult females performed five trials of the four different testing conditions with the dominant and non-dominant leg. Data was collected via a Kistler force plate, which recorded force measures in the X, Y and Z directions and center of pressure excursion measures. Data were analyzed using one way repeated measures ANOVA with a Newman-Keuls post-hoc test. Results showed no significant difference between the dominant and non-dominant leg for any of the test conditions. The two dynamic conditions varied significantly from the two static balance conditions with the eyes-closed condition showing a decreased postural control compared to the eyes-open condition. The dual task of landing while catching a ball is not significantly different to the single task of landing. The results demonstrate that ankle stability while balancing on one leg is no reflection of the dynamic stability of that leg. Dynamic stability activities are also considered an inaccurate reflection of proprioceptive demands.

Schiralli, Beth *The effects of sport specificity on the utilization of stored elastic energy during a drop jump*, 1998. M.S., Slippery Rock University (Nelson Ng). (55pp 1f $4.00) PE 3986

The subject group in this investigation was comprised of 19 males and 17 females. Undergraduate students who were competing for Slippery Rock University’s basketball and track and field teams, and non-athletes who had been out of sport for at least two years, voluntarily participated. The effect of sport specificity on the ability to utilize stored elastic energy as well as the optimal depth jump height for the greatest vertical jump were examined. The data were treated by two-way ANOVAs and dependent t-tests. The following conclusions appear warranted within the limitations of the study. The positive impulses observed during the depth jump trials were significantly greater than the impulse recorded for the reference jumps \(p<.05\). The subjects in the Basketball group jumped significantly higher than those in the Physical Education group and the Track group \(p<.05\).

Scibek, Jason S. *The effect of core stabilization training on function performance in swimming*, 1999. M.A., University of North Carolina-Chapel Hill (Kevin Guskiewicz). (70pp 1f $4.00) PE 3945

The purpose of this study was to assess the effects of core stabilization training on functional performance tasks and on swimming as it relates to time. Thirty-five male and female Division I collegiate swimmers were stratified by
event specialty (sprint vs. distance) and were randomly assigned to either the control group or training group. Each subject performed the pre-test, involving: 2 swimming time trials (100 yards), 3 vertical jump tests, 3 forward and 3 backward medicine ball throws from a supine position and a core stability test from a supine position with two unstable bases of support on the NeuroCom Smart Balance Master. The training group performed a six-week core stabilization training protocol consisting of six exercises. The control and training groups were post-tested following the six-week period. Repeated measures ANOVAs revealed significant group interactions (p < .05) for the following variables: Forward medicine ball throw (test x group) and core stability test (test x eyes x group). Significant group interactions were not found for vertical jump, backwards medicine ball throw, and the 100 yard swim trials (p > .05). These results indicate that core stability training had a positive effect on upper trunk strength and postural control when performing the forward throw and supine stability test, but did not have an effect on swimming performance, vertical jump, or the backward throw. It can be concluded that a six-week core stabilization training protocol does not result in improvements across all variables.

Simenz, Christopher J. *The effect of anterior cruciate ligament reconstruction on ground reaction forces during locomotion*, 1999. M.S., University of Wisconsin, La Crosse (Marilyn K. Miller). (58pp If $4.00) PE 3992

The purpose of this study was to examine the ground reaction forces of ACL reconstruction patients in both their affected and unaffected leg and to examine the ground reaction forces of non-pathological subjects in each leg. 28 adults aged 18-30 were placed into either the “healthy” or “ACL” group and then walked over a Bertec force platform approximately 20 times. Tekscan sensors were placed in the shoes of each participant as well. Peak force measurements in the vertical and anterior/posterior directions and temporal data were analyzed and tested for significance by a multi-factor ANOVA. Tekscan data were analyzed for center of pressure differences between legs and between groups. No statistical significance was found at alpha level p > .05 for the peak force variables or temporal variables, suggesting no difference in ground reaction forces of ACL subjects when compared to healthy subjects or when compared between legs. However, trends did develop in both force platform and Tekscan data that merit further research.

Yoon, Seokjoo *The relationship between muscle power and swing speed in low-handicapped golfers*, 1998. M.S., Brigham Young University (A. Garth Fisher). (68pp If $4.00) PE 4017

The distance a golf ball travels depends on club head speed. Club head speed is a result of skill, golf club dynamics, and muscle power. This study was designed to investigate the relationship between muscle power and swing speed. Forty golfers whose handicaps were below three were used as subjects. We measured the power of the legs and hips, trunk rotation, combined arm and trunk, and the strength of the hand grip to determine how they related to swing speed. We also measured height, body weight, arm length, and shoulder width to compare the relationships between body characteristics and swing speed. Height ($R^2 = .2565$) and arm length ($R^2 = .2036$) were less related to swing speed than power or strength factors; weight ($R^2 = .0476$) and shoulder width ($R^2 = .0413$) were not related to swing speed. However, leg and hip power ($R^2 = .3657$), hand grip strength ($R^2 = .2881$), trunk power ($R^2 = .6336$), and combined arm and trunk power ($R^2 = .3342$) were significantly related to the swing speed. Trunk power showed the highest relationship with swing speed ($p < .05$). When only three power factors (trunk power, hand grip strength, and normalized leg and hip power) were combined with each other for stepwise multiple regression analysis, they increased the swing speed variance to 76.16%. Only swing speed and trunk power showed significant differences among all statistics measured between the two groups of team players or teaching professionals and other low-handicapped golfers. We conclude that swing speed in skilled golfers is largely related to muscle power, especially rotation power of the trunk.

**SPORTS MEDICINE**


Magnetic therapy has been claimed to have immediate positive effects on muscular strength. The purpose of this study was to determine if therapeutic magnets, when applied both directly to and distal from a muscle group, can increase strength. Sixty normal healthy subjects were randomly assigned to a Control, Placebo, or Treatment Group. All subjects were pre-tested to measure quadriceps and bicep strength. Following the pre-tests the Placebo Group applied a placebo magnet, the Treatment Group applied active Nikken Inc. magnets, while the Control Group received no treatment. The subjects were then post-tested to determine if the treatment affected quadriceps or bicep strength. A post-hoc paired samples t-test analysis ($α = 0.017$) revealed a significant difference for the lower extremity test in the Treatment Group ($t = 2.847$ (19), $p = 0.10$), while no difference existed between pre-test and post-test scores for any upper extremity tests or the Control Group and Placebo Group. The results of this study indicate that the Nikken Inc. Elastomag Thigh sleeve decreased quadriceps strength. Despite statistically
significant findings, the decrease from the pre-test strength to post-test strength in the Treatment Group was not clinically significant.

Cohen, Jenna S. A case study of a multiple-joint resistance exercise for an individual with cerebral palsy, 1999. M.S., University of Memphis (Andrew C. Fry). (70pp 1f $4.00) PE 4000

Objective: To determine the effectiveness of a lower extremity resistance exercise (Tru-Squat) machine in improving strength, step length, stride length, walking speed, and functional capabilities (GMFM) in an individual with gait impairment resulting from spastic cerebral palsy.

Design: A one-month control period (no training) involving three test trials, given every other week, that examined free walking speed, stride and step length, gross motor function measurements, and 1 repetition maximum. After the control period the participant was involved in a seven-week strength-training program using a modified squat machine. A post-training test trial was administered upon completion of the exercise program. Setting: The exercise laboratory at The University of Memphis field house facility. Patient: A forty-two year old female with mild spastic cerebral palsy participated. Patient was ambulatory without assisting devices and mainly affected in the lower extremity. It appeared that her left side was more involved with CP compared to her right side. Results: She had an 18% strength gain in lRM strength. She had an increase in GMFM scores. Fast walking speed scores did not improve after the 7-week training program. There was a 5% improvement in step length after training. Discussion: This study reinforced the relationship of strength to motor function in cerebral palsy and further demonstrated the effectiveness of muscle strengthening in this population.


The health status of women with an intellectual disability has been shown to be substantially inferior to that of the non-disabled community. Women with an intellectual disability appear to have a strong susceptibility for many of the significant risk factors associated with the acquisition of osteoporosis. A group of thirty-seven women with an intellectual disability were tested for their bone mineral density levels at the lumbar spine and at three sites of the proximal femur. Dual energy X-ray absorptiometry (DEXA) was used to determine the bone mineral density (BMD) of the subjects. A significant difference in BMD, at all sites but the trochanter, was found when a Student’s t-test was used to compare the Z-scores of the subject group with zero. A comparison group of women were taken from the data-base at the Austin and Repatriation Medical Centre. The groups were matched for age and sex. Multivariate analysis of covariance revealed that the subject group had significantly lower bone mineral density levels at Ward’s triangle, and clinically lower levels at the lumbar spine, than the non-disabled comparisons. The research supported the hypothesis that these women with an intellectual disability had lower bone mineral density levels and were at a higher risk of developing osteoporosis. A questionnaire completed by the subject group provided some preliminary descriptive data relative to risk factors (activity levels, diet, medication and lifestyle variables) associated with the acquisition of osteoporosis. Activity was the only variable found to be significantly associated with the BMD of the women with an intellectual disability.


The purpose of this study was to determine the effects of modified proprioceptive neuromuscular facilitation trunk strengthening patterns on improvement of functional performance in female rowers. A second focus of this study was to compare multi-planar strength training patterns to traditional uni-planar strength training patterns. Finally, this study attempted to prove the importance of strength training with sport-specific movements. Thirty-seven subjects participated in either traditional strength training or the modified PNF trunk training over a seven-week period. All participants performed a 2000 meter pre-test and post-test on the Concept II Model C Ergometer (Morrisville, VT). It was determined that both types of trunk strengthening resulted in an increase in functional performance, as measured in average watts and total time. However, there was no significant difference in the total increase in performance between the two groups. Thus either method of strength training should result in an increase in functional performance as measured on the ergometer.

Garrett, Candi L. Heat distribution in the lower leg from pulsed short wave diathermy and ultrasound treatments, 1998. M.S., Brigham Young University (David O. Draper). (86pp 1f $4.00) PE 3995

This study measured tissue temperature rise and decay time following a 20-minute diathermy treatment and a 20-minute ultrasound treatment over the same size area. Sixteen college-age subjects volunteered to participate. Subjects were asked to lie prone on the table while measurements were taken on the posterior portion of their triceps surae complex. The widest portion was determined and a measuring caliper was used to measure medially 3cm deep. A pen was used to mark this location and a template with three holes spaced 5cm apart was used to help with measurements. The center hole on the template
The purpose of this study was to determine the effects of sports massage on subsequent muscular force output, power, and total work of the quadriceps muscles. This study evaluated 13 healthy male subjects from the Nesbannock High School varsity football team. The Kinetic Communicator (Kin-Com) was utilized to assess mean peak force, power, and total work. The application of the 10 minutes sports massage was performed by a licensed massage therapist. The experimental design of this study was a single group with repeated measures. The subjects participated in both the massage and no massage treatment conditions. All subjects performed 3 sets of 10 repetitions, maximally, with a three-minute rest between each set. Subjects then rested for 10 minutes (control condition) or received a 10-minute sports massage (experimental condition). Results of the paired t-tests revealed no significant differences in pre-post mean peak force, power, and total work within both the sports massage and no massage treatment conditions. Results also revealed no significant differences in mean pre-post changes in mean peak force, power, and total work between the no massage and massage treatment conditions.

Leaver, Roy. Osteoarthritis and ultra-distance marathon running, 1999. M. Phil., University of Cape Town (Martin Schwellnus). (128pp 2f $8.00) PE 4003

Osteoarthritis (OA) is the most common degenerative joint disease. The impact loading on the articular cartilage of the large weight-bearing joints (hip, knee, and ankle joints) during distance running might be a potential precipitating factor in OA. The aim of this case-control study was to investigate the relationship between total accumulated running volume and OA in the weight-bearing joints. In this study, OA was defined as pain and/or stiffness and/or swelling in the weight-bearing and non-weight-bearing joints (wrists and fingers). The subjects for this study were selected from previous and current runners of the Two Oceans Ultra-marathon (56km) in Cape Town (South Africa). The database (1356) consisted of all the runners who participated in this race between 1970 and 1983. From this data-base a random group of male runners (n=128) were divided into six 10-year age groups of runners (18 to 79 years). There were a random sample of 25 runners in five of these groups and three in the 70-79 year age group. Runners were age matched with a random sample of past pupils (n=204) of a school who were in their final year between 1923 and 1994. This was the control group. A questionnaire to diagnose OA was designed and validated with a sensitivity of 92% and a specificity of 71%. The questionnaire was posted to the runners and controls. Incentive prizes were offered to improve the response rate, which was 59%. Completed information was obtained from 76 ultra-distance marathon runners (response rate 59%) and 114 controls (response rate 56%). In the control group there was a group who participated in running. This group was combined with the runners who were then
divided into three groups according to their total running volume, which was calculated by the following formula: years involved in running x months/year running x 4x hours/week running. The subjects were thus divided into four groups: 1) controls (non-runners) (n=60); 2) low volume runners (n=43); 3) medium volume runners (n=43); and 4) high volume runners (n=44). Of these, 22 low volume runners, 7 medium runners, and 7 high volume runners stopped running. The prevalence (%) of OA in all groups was compared. The mean age of the control group was significantly higher than the three running groups. The mean height and weight of the medium volume group was significantly higher than the other groups. There was no significant difference in the BMI in each group. The frequency of professional and retired people was significantly higher in the control and each running group. A significantly greater percentage of controls had a history of admission to hospital. There were more controls on long-term medication, compared to runners. A significant number of injuries to the weight-bearing joints (specifically the knee joint) occurred in all groups, due to other sports (p=0.007). There were no significant differences in symptoms suggestive of OA in all groups when not adjusting for age and previous injuries. However, when assessing the odds ratio to determine the risk for OA in the weight-bearing joints, adjusting for age and previous injuries, the low volume group had the highest risk to develop OA (O.R.=3.2, 95% C.I.=1.0-10.3), the medium group had the second highest risk (O.R.=1.7, 95% C.I.=0.6-4.8), and the high volume group (O.R.=1.1, 95% C.I.=0.4-3.1) and control groups (O.R.=1.0) had equally the lowest risk to develop OA. This study confirmed that distance running is unlikely to be a predisposing factor in the development of OA in the weight-bearing joints, even at high running volumes commonly seen in ultra-distance running.

Maddalozzo, Gianni F. Effects of two resistance training protocols on insulin-like growth factors, muscle strength, and bone mass in older adults, 1999. Ph.D., Oregon State University (Christine M. Snow). (146pp $8.00) PE 3971

With age, there are marked declines in bone mineral density (BMD), lean mass (LM), muscular strength, and diminished anabolic hormones, specifically growth hormone (GH) and insulin-like growth factor-I (IGF-I). We compared the effects of a moderate intensity seated resistance training program, using machine weights, to a high-intensity training program using free-weight exercises on regional and total body BMD, LM, muscular strength and power, and serum levels of IGF-I and IGFBP-3 in healthy older men and women. Twenty-eight healthy men (54.58±3.20 yr.) and twenty-six healthy non-estrogen replaced women (52.83±3.26 yr.) served as their own control group for 12 weeks, then were randomly assigned to either a moderate (60% of 1 RM) or high (70-90% of 1 RM) intensity resistance training group. Training was conducted 3 days per week for 6-months under the supervision of a personal trainer. Prior to and after the control period, and at the conclusion of the 6-month intervention period, BMD at the hip, spine, and whole body, and body composition were assessed by dual-energy x-ray absorptiometry, muscle strength by isokinetic dynamometry, muscular power by Wingate Anaerobic Power Test, and IGF-I by radioimmunoassay. We report that high intensity but not moderate intensity resistance training produced regional changes in bone mass at the hip. Specifically, high intensity free weight training produced a significant increase in trochanteric BMD for women (2.0%) and for men (1.3%) and a significant decrease in femoral neck BMD for both men and women (1.8%). No changes were observed in total hip BMD. At the spine, high intensity training resulted in a significant (p<.05) gain in men (1.9%) but not women, whereas moderate intensity training produced no change at this site. Neither circulating IGF-I nor IGFBP3 were altered by either training regimen; however, both training programs resulted in improvements in peak force, anaerobic power and lean mass (p<.01-.05), were similar in both the high intensity (HIF) and moderate intensity (MIM) groups, and were independent of gender. Despite these increases, neither intensity protocol significantly increased serum levels of GF-I. Results demonstrate that high intensity training produced a shift in mineral at the hip for both men and women, increased spine BMD in men but not in women, and maintained whole body BMD in both genders. These improvements were not accompanied by changes in circulating levels of IGF-I, IGFBP3 or IGF-1/IGFBP3. Although resistance training of moderate to high intensity produced similar muscle changes in younger older adults, a higher magnitude is necessary to stimulate osteogenesis. The redistribution at the hip indicates a highly specific response to mechanical loads at this site. The long-term implication of this response is unclear, but it may confer some protection from trochanteric fractures.

Rough, Lynn Effects of a flexibility exercise program upon perceived lower back pain, 1999. M.S., Slippery Rock University (Gary Pechar). (43pp H $4.00) PE 3981

The purpose of the study was to assess the effects of a six-week flexibility exercise program upon perceived lower back pain. The control group consisted of six males and four females with a mean age of 71 years. The experimental group consisted of seven females and three males with a mean age of 68 years. The subjects were volunteers who were randomly placed in either the control group or the experimental group. Each subject had experienced low back pain at least three times in the two months prior to the study and on average participated in physical activity one time each week prior to the study. The McGill Pain Questionnaire was administered once a week to determine overall pain as well as the type of pain. A flexibility test was administered before and after the program. Several t-tests and analyses of variance determined that there were...
no significant differences in low back pain between the two groups. Both groups improved, with the experimental group improving more; however, the improvements were not statistically significant. There was a statistically significant improvement in flexibility in both groups.

Sherwood, Stephen M. Underwrap does not contribute to the loosening of ankle tape, 1998. M.S., Brigham Young University (Mark D. Ricard). (71pp 1f $4.00) PE 4013

Prophylactic ankle taping is commonly employed by athletic trainers to help prevent ankle ligament injuries. Many athletic trainers use pre-wrap as a base layer before taping to protect the skin from irritation. With exercise, the tape loosens. The purpose of this study was to determine if pre-wrap contributes to the loosening of ankle tape. Thirty subjects participated in the study. They were tested on an inversion platform that unexpectedly dropped their right ankle from a neutral position into 37° inversion and 15° plantar flexion during each of the three conditions (no tape, tape to skin, tape over pre-wrap). Means and standard deviations were calculated for the average rate of inversion, total inversion, maximum velocity of inversion, and the time to the maximum inversion. There are no significant differences between tape/skin and tape/pre-wrap before or after exercise for any of the variables listed above. The maximum inversion mean for the no tape condition after exercise was 38.2±6.3° while the mean for the tape/skin and tape/pre-wrap conditions was 28.3±4.6° and 29.1±4.7° respectively. There was a significant difference (p<.05) between pre-exercise and post-exercise for all of the above listed variables as well. The tape condition experienced a 1.0±2.8° loosening after exercise. We conclude that taping directly to the skin is no more effective than taping over pre-wrap as far as tape loosening is concerned. Also, despite a significant exercise effect, both taping methods still provide residual restriction.


A meta-analysis was done to determine what effect exercise has on the bone mineral density (BMD) of the lumbar spine, proximal femur, and distal radius in postmenopausal women, utilizing data from 18 studies. Treatment effects (TE) were calculated for each of the skeletal sites, aerobic and strength training, as well as methods of BMD measurement (dual energy x-ray absorptiometry and dual photon absorptiometry). The resulting TEs found exercise, in general, to significantly increase (p<0.05) the BMD of the lumbar spine (0.73%), and the proximal femur (0.35%); however, the distal radius showed a decrease (-0.91%) in BMD. When looking for the effect of aerobic versus strength training, significant (p<0.05) increases in BMD were found in the spine and femur. Since positive changes were not seen in all sites, the benefits of exercise may be specific to the skeletal sites, to which the working muscles are attached. When the percentage changes for exercise and control groups were analyzed separately, the exercise group increased 2.31% at the lumbar spine and 0.61% at the proximal femur. However, the exercise group decreased -2.21% at the radius. The control group decreased at the lumbar spine -1.09%, and at the femur -1.11%, but increased at the radius 0.36%. The BMD % changes were significantly larger for the spine and femur; therefore, vigorous exercise along with resistance training may help slow the decrease in BMD as one ages.

Stein, Tamara The effect of strengthening external hip rotators on abnormal pronation of the subtalar joint, 1999. M.A., University of North Carolina, Chapel Hill (Kevin Guskiewicz). (69pp 1f $4.00) PE 4021

The purpose of this study was to determine the effect of strengthening hip external rotators on the kinematic motion of the lower extremity during walking. Twenty normal subjects were pre-tested to measure isokinetic hip external rotator strength on the Lido Multi-Joint II Active Dynamometer, and kinematic motion on the Peak Performance Technologies motion analysis system. Following the pre-test, the exercise group underwent a six-week strengthening program for the posterior gluteals. It was determined there was no increase in strength at post-test for the exercise group. The varus angle increased at post-test for the exercise group. The maximum eversion angle was greater at post-test for both groups tested. The results of this study indicate that the exercises to strengthen the hip external rotators had no effect on the calcaneal eversion angle. Clinically, more research is needed to investigate the issue of closed chain strengthening exercises versus open chain assessment.

Styers, Anna The effect of estrogen status on muscle tissue damage in women following an eccentric exercise bout, 1999. M.A., University of North Carolina, Chapel Hill (A. C. Hackney). (71pp 1f $4.00) PE 4022

Fifteen oral contraceptive (OC) users and ten eumenorrheic (EU) subjects completed an eccentric, downhill running bout. The OC and EU groups completed the bout during the mid-luteal phase (day 23±1.8) and mid-follicular phase (day 9.6±4.4) of their menstrual cycle, respectively. Subjective soreness and creatine kinase (CK) activity were assessed pre-exercise, immediately post-, then 24, 48 and 72 hours post-exercise. An ANOVA indicated that there was a significant increase in CK activity in response to the downhill run (p<0.0001). The interaction of group x time was not significantly different for CK activity (p=0.059). The downhill exercise bout caused a significant increase in muscular soreness in both groups (p<0.001). However, the interaction effect was not significant for muscle soreness.
ratings between the two groups (p=0.996). The research findings of this study do not conclusively suggest that estrogen has a protective effect on muscle tissue damage. However, there is a strong trend in the findings to support this claim.

**PHYSIOLOGY AND EXERCISE EPIDEMIOLOGY**


The present study sought to determine the influence of acute ingestion of low versus high glycemic-index-carbohydrate breakfast foods on exercise performance and on fat metabolism. Seven endurance-trained subjects, ages 24 to 42, completed 3 endurance trials, one hour after consuming either rice Chex cereal (High GI, 89), all-bran cereal (Low GI, 38), or water. They ran on a treadmill for 90 minutes at 70% VO2max, followed by a run to exhaustion. Time to exhaustion, VO2, responses, and blood levels of cortisol and lactate did not differ between trials. FFA levels were higher in the control trials at rest, but were similar during exercise. RERs were higher in the high GI trials compared to the low GI and control trials. HR responses were lower in the high GI trials compared to the low GI and control trials. In conclusion, GI had minor effects on fat metabolism, with no influence on performance.

Capriotti, Paul V. *The effects of acute dietary creatine supplementation on power output indices and blood lactate concentrations during high-intensity intermittent cycling exercise*, 1998. M.A., Ohio State University (David R. Lamb). (103pp 2f $8.00) PH 1665

A double blind, randomized, pre-test-post-test, control-group design was used to determine the effects of dietary creatine (Cr) supplementation on power output indices and blood lactate concentrations during high-intensity intermittent cycling exercise. Twelve subjects (10 males and 2 females) were randomly assigned to an experimental (Cr) or control (placebo) group following four cycling performance trials on consecutive days (Days 1-4). Each trial consists of ten 7-s sprints interspersed with 30-s rest intervals. Following a 6-d supplementation protocol (Days 5-10), subjects performed two more cycling trials (day 11 and day 12). For each of the last three recorded seconds (4, 5, 6) of sprints 8, 9, and 10, average power output (AP) was calculated, i.e., AP4th, AP5th, AP6th. Peak power (PP) and the percent decline from PP (%PP) were also calculated. For days 1-4, no effects of trial were detected within the placebo group for PP, AP4th, AP5th, and %PP, but for AP6th, mean performance of the placebo group was significantly greater (P<0.05) on day 2 when compared to day 3. No effects of trial were detected during days 1-4 within the Cr-fed group for PP, AP4th, and %PP, but for AP5th and AP6th, performance was significantly greater (P<0.05) on day 4 and on days 3 and 4, respectively, when compared to day 1. When comparing means on day 4 with those on day 11 and 12, no significant treatment or interaction effects for PP were detected. There was a significant trial effect on PP, with scores for days 11 and 12 being significantly greater (P<0.01 and P<0.05, respectively) than those for the baseline trial on day 4. No significant treatment, trial, or interaction effects were detected for AP4th and AP5th. For AP6th, no significant treatment or interaction effects were detected, but AP6th scores on day 12 were greater (P<0.01) than those on the baseline and day 11 trials. For %PP, no significant treatment, trial, or interaction effects were detected. For the blood lactate analysis, blood samples were taken during both the baseline (day 4) and day 11 trials at rest and following sprints: 1, 5, 7, and 10 (S1, S5, S7, S10). Samples were also drawn 3, 5, 10, and 15 min after recovery (P3, P5, P10, P15). For the comparison of lactate means there were no significant treatment or interaction effects at baseline (day 4). As expected, lactate concentrations during exercise and recovery were greater than those at rest (P<0.001). On day 11, lactate concentrations for the placebo group were greater than those for Cr (P<0.05). Furthermore, the difference in blood lactate from day 4 to day 11 was positive from S7 through P10 for the placebo group and negative for the Cr group. The difference in scores was significant only at P3 (P<0.05). For the combined data during the exercise phase (S1, S5, S7), recovery phase (S10, P3, P5, P10, P15), and the exercise plus recovery phase (S1, S5, S7, S10, P3, P5, P10, P15), there were no significant treatment, trial, or interaction effects. Only trivial and non-significant changes in body mass occurred between baseline (day 4) and the day 11 and day 12 trials. The present results provide no systematic evidence that creatine supplementation will improve performance of a high-intensity intermittent exercise task similar to that tested.

Carney, Colleen M. *The effects of acute and chronic exercise on serum potassium in hemodialysis patients*, 1999. M.A., San Francisco State University (Frank Verducci). (109pp 2f $8.00) PH 1676

The purpose of this study was to investigate the effects of acute and chronic exercise on serum potassium (K+) levels in hemodialysis (HD) patients. The specific intent of this research was to test the following hypothesis: that an extended period of exercise training will have no effect on the rise in K+ during an acute exercise bout in HD patients. Forty-five patients were randomized into low and high hemoglobin groups and further randomized into control and exercise groups. The exercise groups were trained 3 times a week for 3 months. All groups of patients were tested on a cycle ergometer at increasing levels of diffi-
The Talk Test is a widely recommended form of prescribing exercise intensity; however, very few studies have specifically evaluated its physiological validity. This study evaluated the relationship between the Talk Test and physiologic changes occurring with exercise. We examined healthy volunteers during incremental exercise. Each subject (N=28) completed two maximal exercise tests. One test used gas analysis to identify ventilatory threshold (VT). The second was identical, except without respiratory measurements. During this test, subjects read a standard paragraph and reported whether or not they passed the Talk Test. Outcomes at VT and the last positive, positive/negative, and negative stages of the Talk Test were compared. There was a significant (p<.05) difference between VO\textsubscript{2}\% VO\textsubscript{peak}, HR, and % HRpeak at VT and the positive stage of the Talk Test. There was no significant difference between any of the variables at VT and the positive/negative stage. There was a significant difference between all the outcomes at VT and the negative stage of the Talk Test. We conclude that when subjects could either talk comfortably or were equivocal, they were at or below their VT. Subjects clearly failing the Talk Test were consistently beyond their VT. Thus, the Talk Test is a valid subjective measure to guide exercise prescription.

Florhaug, Jessica A. The effect of different interval magnitudes on measures of exercise intensity, 1999. M.S., University of Wisconsin, La Crosse (Carl Foster). (43pp 1f $4.00) PH 1668

The purpose of this study was to evaluate the effect of different interval training magnitudes on measures of training intensity. It was hypothesized that the session rating of perceived exertion (RPE) in relation to summated heart rate (HR), blood lactate (HLa), and oxygen consumption (VO\textsubscript{2}), would increase as the deviation from the mean power output of the interval was increased. Subjects consisted of n=6 female and n=6 male well trained individuals accustomed to cycling exercise. A VO\textsubscript{2}max test, as well as four additional tests, were performed on an electrically braked cycle ergometer. Blood lactate was collected during the VO\textsubscript{2}max test to determine the individual anaerobic threshold (IAT). A steady state (SS) ride at 90% IAT, as well as 1 min intervals at 10, 25, and 50% above and below 90% IAT, all 30 min in duration, were performed. Session RPE and summated HR were calculated for each exercise session and compared to each other. Steady state conditions were observed in all individual comparisons for HR, RPE, VO\textsubscript{2}, and HLa for each interval session. The relationship between session RPE score and summated HR score for each exercise session was similar. This relationship indicates that these two variables are essentially the same regardless of the type of exercise intervention, providing a means of quantifying the intensity of interval exercise.

Gray, John G. Effects of limited and expanded rest intervals on the Navy Physical Readiness Test, 1998. M.S., University of Wisconsin, La Crosse (Marilyn K. Miller). (77pp 1f $4.00) PH 1669

The purpose of this research was to examine the effects of variable rest intervals between events on the Navy Physical Readiness Test (PRT). The test consisted of push-ups (max 2m), curl-ups (max 2m) and a 1.5 mile run or 500 yd swim. In addition, Borg’s Rate of Perceived Exertion (RPE) was recorded after the 1.5 mile run/500 swim. Subjects included 117 volunteer male (n=102) and female (n=15) active duty and reserve Naval personnel stationed at the Naval Reserve Center, La Crosse, WI. Rest interval between events ranged between 2-4 m for treatment...
condition 1 and exactly 15 m for treatment condition 2. Subjects were divided into 42 subgroups to minimize the effects of age, gender, and past performance. There was a significant relationship between rest interval and run time (p=.004) and overall test score (p=.029), with treatment condition 2 recording the faster times/higher scores. There was no significant relationship between rest interval and curl-up, push-up, or Borg’s RPE scores (p>.05). The finding that there was a significant (p=.004) correlation between rest interval and run time on the PRT suggests that all energy systems act in concert with one another as a continuum.

Hagen, Heather L. A physiological comparison of chair aerobics and cycle ergometry in older females, 1999. M.S., University of Wisconsin, La Crosse (Carl Foster). (52pp 1f $4.00) PH 1670

Chair aerobics (CA), a form of low-intensity aerobics performed seated on a straight back chair, has been well received as an exercise modality for older populations. Few studies have assessed its effectiveness in cardiovascular (CV) fitness training. We tested 14 (5 with known cardiac disease, 9 without disease) older, physically active women (50-72 years, mean 62.3). Each volunteer completed one varying intensity submaximal arm-leg cycling (ALC) test on a Schwinn Airdyne cycle and one taped CA (e.g., “Fit over Fifty”) session while heart rate (HR) and oxygen consumption (VO2) were measured. During CA, subjects exercised at a mean of 9.7 ml·kg⁻¹·min⁻¹ (2.8 METs) and 99.5 bpm (58% and 42% of predicted VO2max and HRmax). Subjects reached a peak of 16.8 ml·kg⁻¹·min⁻¹ (4.8 METs) and 123.9 bpm (72% and 73% of predicted VO2max and HRmax). Linear regression was used to compare the HR-VO2 relationship for ALC and CA. There was no significant difference (p>.05) between the slopes for the modalities (ALC=61, CA=66 bpm·l⁻¹·min⁻¹). There was a small yet significant difference (p<.05) between the y intercepts (ALC=64, CA=60 bpm). The results of this study support the conclusion that CA is a moderate intensity exercise and may provide a sufficient stimulus to increase CV fitness in older women.

Hikoi, Hirotaka The effects of opioid receptor antagonism on plasma catecholamines and fat metabolism during prolonged exercise above or below lactate threshold in males, 1999. Ph.D., Oregon State University (Anthony Wilcox). (165pp 2f $8.00) PH 1663

The present study investigated the effects of an opioid antagonist, naltrexone (NALT), on plasma concentrations of catecholamines (norepinephrine and epinephrine), glycerol, and free fatty acids (FFA), and on fatty acid and carbohydrate oxidation (indirect calorimetry) during exercise at an intensity above or below lactate threshold (LT) in 20 trained males (age, 24.1±4.4 yr; VO2max, 62.7±6.0 ml·kg⁻¹·min⁻¹). The subjects were randomly assigned to one of two groups performing 30-minute cycling at an intensity either 10% above or below their individual LT. Each subject in each group performed two exercise tests on separate occasions with an injection of either NALT (1.2 mg) or saline placebo (PLC) in a double-blind, counterbalanced order. NALT or PLC was injected through a Teflon catheter located in a radial vein 15 minutes before exercise. Plasma levels of norepinephrine increased during exercise above and below LT and were significantly higher above LT than below LT (p<0.05). NALT administration did not significantly alter plasma levels of catecholamines during exercise either above or below LT. Plasma levels of glycerol and FFA during exercise did not differ between the two intensities. NALT failed to produce significant changes in plasma glycerol or FFA either above or below LT. Fatty acid oxidation during exercise was identical between the two intensities, whereas carbohydrate oxidation was significantly higher above LT than below LT (p<0.05). NALT did not significantly influence fatty acid and carbohydrate oxidation during exercise either above or below LT. In conclusion, during exercise at an intensity 10% above or 10% below LT, endogenous opioid may not play regulatory roles in catecholamine secretion and substrate metabolism. Enhanced carbohydrate oxidation contributed to elevated energy demands during exercise above LT.

Johnson, Charles C. A comparison of the submaximal and maximal responses to upright versus semi-recumbent cycling in males, 1999. M.S., University of Wisconsin, La Crosse (John Porcari). (41pp 1f $4.00) PH 1671

The purpose of this study was to compare the submaximal and maximal physiological responses of males using a StairMaster upright (UP) and a StairMaster semi-recumbent (SR) cycle. Fifteen male students (mean age=22±2.4 yrs) served as Ss. All Ss completed maximal tests on each modality during which the following physiological responses were evaluated: HR, VO2, BP, RER, RPE, and caloric expenditure (Kcal). The maximal physiological responses from the UP and SR tests were compared using paired t-tests. There were no significant (p>0.05) differences in VO2, BP, RER, and RPE. The results of this study indicate that when developing an exercise prescription, the workloads prescribed on the SR cycle would need to be higher than on an UP cycle in order to achieve the same intensity.
The goal of this study was to ascertain if changes in treadmill compliance during running would influence oxygen consumption. Thirty Western Washington University students, ages 18-34, agreed to participate in this study. The subjects completed two ten-minute running trials at 5 mph, with surface compliance randomized between “stiff” and “compliant” settings. Oxygen uptake was measured continuously. A dependent t-test was used to determine if significant differences in oxygen consumption existed between the two treatments. For the first three minutes of the trial, a significant difference ($p<0.05$) was found, with the “compliant” surface exhibiting the higher VO$_2$. For the last three minutes of the trial, no significant difference could be detected. The results of this study suggest that differences in treadmill compliance can influence oxygen uptake, but that physiological/biomechanical adjustments to differing compliance, perhaps through altered musculotendinous stiffness, may also occur to change oxygen consumption values.

Leung, Raymond W. M. *Effect of intradialytic exercise on urea kinetics*, 1999. D.P.E., Springfield College (Samuel A. Headley). (141pp 2f $8.00) PH 1656

Using model simulations, Smye, Lindley, and Will (1998) postulated that exercise late in hemodialysis would improve urea clearance and eliminate the postdialysis urea rebound. The present study was designed to examine this model. Urea clearance and rebound were evaluated when exercise was performed during the early 30 min (EARLY), the final 30 min (LATE), and no exercise (control) across three midweek hemodialysis sessions. Patients ($N=13$) pedaled a bicycle ergometer for 30 min, at a workload that elicited a rating of perceived exertion (RPE) of 3 (moderate), during EARLY and LATE exercise. Additional variables evaluated during exercise were: heart rate (HR), systolic (SBP) and diastolic (DBP) blood pressure, mean arterial pressure (MAP), and RPE. No significant ($p>.05$) differences were found among the three testing conditions for urea clearance and rebound. During EARLY exercise, HR, SBP, DBP, MAP, and RPE were adequately stable. During LATE exercise, MAP and DBP dropped, and RPE increased. Two patients could not complete the LATE exercise, and 6 other patients completed the LATE exercise with reduced workloads. In conclusion, urea clearance and rebound are similar among EARLY, LATE, and no exercise. The findings do not support the model. EARLY exercise appears to be safer than LATE exercise, with less cardiovascular instability.

Myhal, Mark *Skeletal muscle, age, overload, and oxandrolone*, 1999. Ph.D., Ohio State University (David Lamb, Jon Linderman). (105pp 2f $8.00) PH 1661

Aging is associated with decreased skeletal muscle mass and strength. These physical changes contribute to an increased incidence of falls, fractures, and premature morbidity and mortality in the elderly. Currently, the mechanisms for age-related changes in muscle mass are unclear, but they may involve decreased circulating concentrations of androgens and/or insulin-like growth factor I (IGF-I). In addition, little is known about the effects of exercise plus anabolic hormone therapy for the treatment of age-related muscle wasting. Therefore, the purpose of this research was: 1) to characterize the onset and magnitude of age-associated functional decrements in skeletal muscle; and 2) to determine the short-term effects of mechanical loading and oxandrolone on the biochemical properties of aged skeletal muscle. Male Fisher 344 x Brown Norway rats, ages 8, 18, 28, 31, and 34 mo., were obtained from the National Institute of Aging. All animals except those 18 months old were subjected to unilateral ablation of the gastrocnemius muscle. This resulted in compensatory growth of the remaining soleus and plantaris muscles. Following 8 weeks of overload, the plantaris muscles were removed. Muscle mass and functional characteristics that included specific tension ($P_s$), peak twitch ($P_t$), time to peak twitch (TPT) and one-half relaxation time (1/2 RT) were measured. In addition, a second group of 28 month-old animals were subjected to compensatory overload, and half of these animals received oxandrolone treatment. Following 2 weeks of overload only or overload and oxandrolone treatment, the soleus muscles were removed. Muscle mass and intramuscular concentrations of IGF-I, protein, and DNA were measured. Aging was associated with progressive decreases in the PL mass and in the hypertrophic response to overload, with a decreased $P_s$ and $P_t$, and with an increased TPT and 1/2 RT. Short-term oxandrolone treatment increased mass and protein concentration in both the control and overloaded soleus. In addition, overload, but not oxandrolone treatment, increased intramuscular concentrations of IGF-I and DNA in the soleus. In summary, aging was associated with progressive decrements in skeletal muscle function and mass and with an attenuated response to mechanical overload. In addition, treatment with oxandrolone seemed to attenuate age-related decreases in muscle mass.

Nagae, Sarah E. *The effects of pre-exercise consumption of low and high glycemic index carbohydrate foods on endurance running performance*, 1998. M.A., University of North Carolina, Chapel Hill (Robert G. McMurray). (70pp 1f $4.00) PH 1659

The purpose of this study was to determine the effects of pre-exercise consumption of low and high glycemic index (GI) carbohydrate breakfast foods on carbohydrate...
metabolism and endurance performance amongst highly-trained distance runners. Subjects (n=7) ate a meal containing either a low or high GI carbohydrate cereal, or drank water only one hour prior to a 90 minute treadmill run at 70% VO\textsubscript{2max}, followed by a graded run to exhaustion. There were no differences between trials in time to exhaustion or in blood glucose concentration. Consumption of the high GI meal resulted in a lower heart rate, higher respiratory exchange ratio (RER), and a higher insulin concentration than the low GI meal. The RER and insulin findings suggest an increased rate of carbohydrate oxidation during the high GI trial, which could have resulted from more rapid rates of digestion and absorption of the high GI carbohydrate than the low GI carbohydrate. The results indicate that neither high nor low GI foods fed one hour prior to exercise provide a significant benefit to exercise performance.

Pauly, Marsha A. *A comparison of the submaximal and maximal responses to upright versus semi-recumbent cycling in females*. 1999. M.S., University of Wisconsin, La Crosse (John Porcari). (43pp 1f $4.00) PH 1672

To compare the submaximal and maximal responses to StairMaster Upright (UP) and Semi-recumbent (SR) cycle ergometry, 15 female Ss (age 23.5±4.03 years) performed a maximal exercise test on each ergometer. A continuous, incremental protocol was performed on each modality. Testing sessions were randomized and performed 1 week apart. Data were analyzed using repeated measures ANOVA. Heart rate, VO\textsubscript{2}, BP, RPE, RER, and Kcal were measured at the end of each 2-min stage and at maximal exercise. At absolute submaximal workloads it was found that VO\textsubscript{2}, HR, SBP, RPE, RER, and Kcal were significantly (p<.05) higher during UP compared to SR cycling. No significant difference (p>.05) was reported in DBP between modalities. At maximal exertion it was found that subjects were able to attain higher Kcal, HR, and VO\textsubscript{2} values during UP compared to SR cycling. Although lower values were obtained during SR cycling, the workload was significantly higher (213 vs 179 watts) and the duration was significantly longer (11.8 vs 9.5 min). For exercise prescription the cardiorespiratory responses will be lower during SR cycling at any given workload, thus use of the SR cycle will result in lower VO\textsubscript{2}, HR, SBP, RPE, RER, and Kcal at the end of each 2-min stage and at maximal exercise. A comparison of the submaximal and maximal responses to StairMaster Upright (UP) and Semi-recumbent (SR) cycle ergometry.

Peterson, Andrew T. *The metabolic costs of activities associated with deer hunting*. 1999. M.S., University of Wisconsin, La Crosse (Jeffrey Steffen). (56pp 1f $4.00) PH 1673

Deer hunting is a popular recreational activity with serious implications involving cardiovascular events. Previous studies have demonstrated large heart rate (HR) responses during deer hunting activities. This study compared the HR and metabolic costs of maximal treadmill (TM) exercise to simulated hiking while deer hunting and to dragging a deer. Healthy male volunteers (n=16) performed a maximal TM exercise test, a 0.5 mile hiking test, and a 0.25 mile dragging test over lightly rolling terrain. VO\textsubscript{2} was measured by a portable spiroimeter and HR by radiotelemetry. Subjects averaged 74.0±7.0% and 89.1±4.5% of peak TM HR during the hike and drag, respectively. They also achieved a peak of 83.2±6.0% and 94.9±4.2% of peak TM HR, respectively. Subjects averaged 62.2±15.8% and achieved a peak of 77.2±19.0% of TM VO\textsubscript{2} while hiking. This corresponded to 86.8±17.3% and 108.1±22.3% of ventilatory threshold (VT), respectively. Subjects averaged 72.3±21.0% and achieved a peak of 91.2±21.4% of peak TM VO\textsubscript{2} while dragging the deer. This corresponded to 101.5±27.7% and 128.5±26.8% of VT, respectively. The VO\textsubscript{2}/HR relationship showed significant (p<.05) difference between the dragging test and the hiking and TM tests. The VO\textsubscript{2}/HR relationship between the hiking and TM tests was comparable. In part, the high rate of cardiovascular complications associated with deer hunting is attributable to the elevated metabolic costs of associated activities, specifically, dragging a deer.


This study was designed to explore the effect of a carbohydrate-electrolyte solution (CE) on time to exhaustion in treadmill running. After a 12-hr fast, competitive male runners from Springfield, Massachusetts (N=10), performed two run-to-exhaustion protocols, each a week apart, at 100% VO\textsubscript{2peak}. Prior to the run, subjects ingested either a CE or a placebo beverage. Variables of glucose, lactate, ammonia, R, and RPE were examined with a repeated measures 2x3 analysis of variance (ANOVA), computed separately for each variable. The interaction effect was not significant (p>.05) for any variable. The main effects for time were significant (p<.05) for lactate, R, and RPE. Lactate, R, and RPE scores were higher at the end of the run as compared to the baseline and post warm-up time periods. No differences were found for glucose and ammonia. A repeated measures t test was employed to compare the time to exhaustion scores. Time to exhaustion was not significantly (p>.05) longer during the CE trial. In conclusion, time to exhaustion at 100% VO\textsubscript{2peak} was not with the consumption of a CE beverage prior to the run.


The purpose of this study was to determine the effects of the modern football uniform on the athletes’ ability to thermoregulate. Subjects (n=7) attempted to exercise at 70% VO\textsubscript{2max} for 30 minutes on a treadmill in either shorts
(S) or a football uniform (U). Exercise duration was decreased by 3.73 minutes in the U trial. There were no differences in $VO_2$, RER, RPE, or rectal temperatures $[T_{re}]$ between trials ($p<0.05$). Weight loss was 1.09 kg greater in the U trial. Changes in mean skin temperature $[T_{sk}]$ and mean body temperature $[T_{b}]$ were greater in the U trial. During recovery, the declines in $T_{sk}$ and $T_{b}$ were slower in the U trial. The $T_{sk}$, $T_{re}$, and $T_{b}$ findings suggest that heat release was inhibited in the U trial due to the increased insulation and decreased evaporative surface area provided by the football uniform.

Starks, Michael A. A retrospective analysis of the effects of creatine monohydrate supplementation on baseline hormonal profiles of competitive athletes, 1999. M.S., University of Memphis (Andrew C. Fry). (75pp 1f $4.00$) PH 1677

This study analyzed the effects of creatine monohydrate supplementation on the baseline hormonal levels of competitive athletes. The hormones to be examined were growth hormone (GH), testosterone (T), cortisol (C), and the testosterone to cortisol ratio (T/C). Twenty-seven competitive male and female athletes were recruited from Appalachian State University for this study. The male subjects were ($\pm$SE) 24.67±2.21 years of age, weighed 90.54±4.13kg, and 177.42±1.80cm in height. The female subjects were ($\pm$SE) 23.89±0.03 years of age, weighed 62.28±2.18kg, and 166.93±1.52cm in height. Athletic areas represented included the following: Olympic weightlifting, American football, bodybuilding, track and field, field hockey, and general fitness. Subjects were divided into three group classifications according to the following guidelines: no creatine monohydrate supplementation (Control), one year or less supplementation with creatine monohydrate (0-1 year), and greater than one year supplementation with creatine monohydrate (>1 year). Each athlete donated a single blood sample of 6 ml between 7:00 a.m. and 8:00 a.m. for comparative analysis. Results of a two factor analysis of variance (ANOVA) indicated no significant differences in concentrations of GH, T, C, or T/C ratio by length of supplementation for females ($p=.831$, $.603$, $.502$, and .383 respectively), males ($p=.797$, .515, .948, and .421 respectively) or combined ($p=.817$, .558, .754, and .523 respectively). Significant gender differences were indicated between female and male GH concentrations ($p=.006$), T concentrations ($p=.001$) and T/C ratio ($p=.000$). The concentration variances were at expected levels between genders. Therefore, the hormonal differences observed between males and females in this study appear to be attributed to normal gender variances and not to creatine monohydrate. It was concluded from this study that creatine monohydrate supplementation does not appear to significantly affect resting levels of GH, T, C, or T/C ratio over time or between genders. Future research is needed to confirm these findings. Key words: testosterone, cortisol, growth hormone.

Tonkins, William P. Analysis of the relationship between exercise capacity and heart rate variability in trained and untrained individuals, 1999. M.S., University of Memphis (Richard Kreider). (36pp 1f $4.00$) PH 1675

Purpose: To examine the relationship between exercise capacity and measures of heart rate variability (HRV) in trained and untrained males and to determine whether different types of training affect HRV in a different manner. Thirty nine college-aged (21.2±3 yr.) male athletes and non-athletes participated in this study. Subjects completed a questionnaire describing their training history and then performed a graded maximal exercise test using the Bruce treadmill protocol. Following the test, an ambulatory Holter monitor was placed on the subjects for 24-h to record HRV. The relationship between time to exhaustion (exercise capacity) and measures of HRV were determined using correlation analysis. Additionally, HRV for endurance-trained, anaerobic-trained, or non-trained subjects was compared using one-way analysis of variance. Significant correlations were observed between time to exhaustion and the mean of the R-R intervals ($r=0.507$, $p=0.001$) and standard deviations of R-R intervals during 24-h ($r=0.380$, $p=0.017$). Additionally, exercise capacity tended to correlate with the square root of the mean for the sum of squares of differences between adjacent R-R intervals ($52.9\pm23.6$, $r=0.31$, $p=0.053$) and, in proportion to adjacent R-R intervals, tended to have differences of 750 milliseconds ($22.7\pm14$, $r=0.29$, $p=0.074$). No significant differences were observed between types of training or measures of HRV. Exercise training positively affects selected measures of HRV and may help decrease risk of arrhythmia or sudden death. However, type of training does not appear to influence this potential health benefit.

Wadley, Glenn Intramuscular determinants of the $VO_2$ slow component in trained cyclists, 1999. M.App.Sci., Deakin University (Peter Le Rossignol, Rod Snow). (124pp 2f $8.00$) PH 1664

The distribution of type I fibers has previously been found to inversely correlate with the size of the $VO_2$ slow component in untrained subjects. Purpose: The purposes of the present study were firstly, to determine if a relationship exists between the $VO_2$ slow component and the distribution of muscle fiber types and muscle oxidative capacity in endurance trained cyclists. And secondly, if these relationships were similar during heavy and severe intensity cycling. Resting muscle biopsy samples were taken from the vastus lateralis of fifteen endurance trained cyclists for the determination of muscle fiber type, citrate synthase (CS) activity, capillary density (CD·mm$^2$) and the number of capillaries per fiber (cap-fiber$^{-1}$). All participants (ages, 25±6 years; $VO_2$max, 4.66±0.48 L·min$^{-1}$) performed three different constant load cycle tests at intensities of 25%, 50% and 75% of the work rates between power output at lactate threshold (LT) and $VO_2$max. The results indicate the
The only mean final exercise values for TV and VE of variance, significant (p<.05) during the 25% test. During the 50% test the relative slow component negatively correlated with cap-fiber (r=-0.56, P<0.05) and CS activity (r=-0.66, P<0.01) during the 25% test. No relationships were found for the 75% test. Stepwise regression found that, for the 25% test, CS activity did not significantly improve the prediction of the relative slow component when compared with cap/fiber alone. Furthermore, for the 50% test, CS activity was found to be the most powerful predictor of the relative slow component, while cap-fiber was found not to significantly improve this prediction. The major conclusions of this study are that intramuscular variables that are related to oxidative capacity, such as cap-fiber and CS activity, are better able to explain the size of the relative slow component during high intensity submaximal cycling than muscle fiber type distribution. This infers that the higher the oxidative capacity of the contracting muscle, the lower the relative VO2 slow component. Furthermore, oxidative capacity does not significantly correlate with the relative slow component during severe cycling, which suggests that different factors may be contributing to the size of the VO2 slow component during heavy and severe exercise. Alternatively, perhaps the VO2 slow component cannot be properly measured during severe intensity exercise due to the VO2 reaching maximum at the end of exercise.


The purpose of this study was to examine whether smokers and non-smokers exhibited differences in the following variables: forced expiratory volume (FEV); forced vital capacity (FVC); and FEV/FVC; peak oxygen consumption (VOpeak); heart rate (HR); tidal volume (TV); ventilation (V); breathing frequency (f); systolic blood pressure (SBP); diastolic blood pressure (DBP); the ventilatory equivalent for oxygen (VE/VO2); percent O2 saturation; and time to complete a 22 mile exercise bout. Male smokers (n=5) and non-smokers (n=7) aged 18 to 30 years were tested for FEV, FVC, and FEV/FVC at rest and VOpeak using a bicycle ergometer. The other variables were measured every 10 min during the endurance test. As a result of analysis using independent groups t ratios, it was determined that the mean FEV, FVC, and FEV/FVC values, and the time to completion were not significantly (p>.05) different between the two groups. VOpeak was significantly (p<.05) higher in the non-smokers than in the smokers. The only mean final exercise values for TV and VE were significantly (p<.05) higher for the non-smokers than for the smokers. As a result of using a series of 2x6 analyses of variance, significant (p<.05) interaction effects were found for smoking status and HR, TV, and VE. Therefore, it was determined that the exercise responses of the smokers were impaired.

Zilonka, Elaine M. Effect of music programming on walking velocity, 1999. M.S., University of Wisconsin, La Crosse (Carl Foster). (32pp 1f $4.00) PH 1674

Commercially available musical tapes purport an ability to program walking velocity. One set of tapes was evaluated to examine if listeners walked at indicated velocities. Subjects (N=15) were healthy, female, university students (age 18-37), with a mean VOpeak of 37.7±5.0 ml·kg-1·min-1. Each performed 4 randomly ordered walking bouts of 30 min (3 with tapes, 1 without). Personal preference determined musical style (classical, Broadway, or march), and programmed velocities ranged from 3.64.0 mph. Average velocity was measured by videotaping sessions on a 200m indoor track. HR was measured by radiotelemetry. For programmed velocities of 3.6, 3.8, and 4.0 mph and unprogrammed trials, the observed average velocities were 3.85±0.33, 3.81±0.20, 3.69±0.35, and 3.89±0.30 mph respectively. Mean overall programmed vs. actual velocity was not significantly different. However, the correlation between programmed and observed velocity was r=0.22, and the regression line was nonparallel to the line of identity. An “enjoyment” index obtained after each bout indicated that walking was more enjoyable with tapes (3.0±1.0, 3.2±0.8, 3.1±0.9, and 3.7±1.0 for 3.6, 3.8, 4.0 mph, and unprogrammed respectively). It is concluded that programmed walking tapes do not elicit the indicated speed from listeners; however, they may make walking more enjoyable.

HEALTH EDUCATION

Birkholz, Corie L. Nutritional knowledge and eating behaviors of phase III cardiac rehabilitation program participants, 1999. M.S., University of Wisconsin, La Crosse (Richard Mikat). (54pp 1f $4.00) HE 641

Nutritional knowledge and eating behaviors were compared in Phase III cardiac rehabilitation (CR) participants (N=47, 38 males, 9 females) and adult fitness (AF) participants (N=38, 17 males, 11 females) of the La Crosse Exercise and Health Program. Subjects completed a personal background questionnaire, the Hawkes-Nowak (1998) nutrition questionnaire, and a 3-day food diary. A 2x2 ANOVA indicated no significant differences (p>.05) existed with nutrition knowledge in AF vs. CR participants and males vs. females. However, there were significant differences in eating behaviors between AF and CR participants (p<.01) and between males and females (p<.01). No significant interactions were found. CR females and AF males exhibited a significant correlation (r=.83 and
The purpose of the study was to explore the differences in percentage of fat intake in students majoring in selected academic majors, females and males, and in students who have completed varying numbers of health or nutrition courses. A fat-intake survey was mailed to 800 full-time upper class and graduate university students, of which 564 (70.5%) responded. The percent of calories from dietary fat was 30% to 34% for all groups. The median age of the respondents was 23 years. There were no significant differences in fat intake, F=1.6, df=6, 543, p=0.145 and F=1.71, df=3,560, p=0.164 for academic major and number of health or nutrition courses completed, respectively. For gender, T=-0.366, df=554, p=0.64.

Cox, Lori M. Comparison of television viewing, arcade game play, and resting metabolic rates in youth, 1999. M.A., University of North Carolina, Chapel Hill (Robert G. McMurray). (86pp 1f $4.00) HE 650

To compare metabolic rates obtained during rest, TV viewing, and arcade game play, 21 youths (11 male, 10 female, age 12.33±3.01 years) had their metabolic rate measured for 10 minutes while watching TV and playing arcade games, and for 15 minutes of rest during three separate testing sessions. A repeated-measures ANOVA revealed a significant difference between activities for energy expenditure (kcal/min, kcal/kg/min) and VO₂ (ml/min, ml/kg/min). Tukey Post Hoc tests revealed TV viewing and rest were not significantly different on any measured variables, while arcade game play elicited a significantly greater response. Energy expenditure (kcal/min) during the activities was: rest: 1.16; TV viewing: 1.31; and video game: 1.72. The low energy cost of TV viewing may be associated with increased risk for obesity. Although arcade game play EE was greater than rest or TV viewing, a protective effect against obesity may not exist; however, these issues require further exploration.

Kawamura, Takayuki Characteristics of current and past participants in the University of Wisconsin-La Crosse cardiac rehabilitation program with a historical review of cardiac rehabilitation, 1999. M.S., University of Wisconsin-La Crosse (P. Wilson). (80pp 1f $4.00) HE 642

Recent studies have confirmed that physical activity has an inverse relationship to body composition. There is a plethora of research that has examined the effects of physical activity on general health, but the new idea of moderate daily physical activity (MDPA) has received limited attention. This study will establish the relationship...
between daily activity and success of students. This relationship will be determined through a pre-test and post-test of body fat percentage and a classroom success survey. The classroom success survey is a self-report questionnaire and takes about 10-15 minutes to complete. Body fat percentage will be taken with an Omron body fat analyses machine. Subjects of both genders were chosen from Wawasee High School physical education classes. The study lasted an entire semester (18 weeks). During this time the subjects were involved in a daily physical education class. These classes consisted of daily rope jumping, crunches, push-ups and stretching, each for a minute long. A half-mile jog, along with playing a sport unit (e.g., Tennis, Volleyball, etc.), completed the 50-minute daily activities. Results of this study indicated that there was not a significant difference in body fat percentage or success in the classroom with those subjects that were involved in MDPA. The researcher believes that further analysis of both assessments is needed to determine if the null differences were due to chance or to lack of time and quantity of subjects.

Moris, William D. A comparison of heart rates among fourth grade students while jumping rope and hula hooping using heart rate monitors, 1999. M.S., University of Wisconsin, La Crosse (Jeffrey Steffen). (60pp 1f $4.00) HE 643

Heart rates were taken on a sample of 29 (12 males and 17 females) elementary school fourth grade students while participating in rope jumping and hula hooping lessons. Each subject completed the two units consisting of six sessions each. Wearing Polar Vantage XL heart rate monitors (HRM), the subject’s heart rate was recorded for 30 minutes at 60 second intervals. The 30 minutes consisted of 3 minutes for the subjects to find their HRMs, a 3 minute warm-up, and 15-25 minutes of lesson instruction and activity. A significant difference (p<.05) was found between jump rope unit mean heart rates (103.74 bpm) and hula hoop unit mean heart rates (97.41 bpm). Paired t-test determined a significant difference (p<.05) between day one, day three, and day six of the jump rope unit mean heart rates. The significant difference was found between day one and day three of the jump rope unit. Paired t-test determined no significant difference (p<.016) between day one, day three, and day six of the hula hoop unit mean heart rates. Differences between groups were from the type of activities presented. Differences within groups were from activities that challenged the subject’s skill level. No difference was found within the hula hoop unit, because the activities are not as challenging as the jump rope activities. These days were used to see if there was an increase in heart rate at the beginning, middle, or end of the units. Schools have the ability to teach their students the benefits of physical activity and how to keep their hearts healthy. Teaching lifetime activities will give the students some ideas of activities they can participate in as they age.


A 6 week leisure education program was designed, implemented, and evaluated for individuals with brain injuries (N=9) who were selected by a team of therapists from a pool of outpatients at a large medical center. The aim of the L.I.V.E. program (Leisure Is a Valuable Experience) was to increase the leisure satisfaction, leisure participation, and self-confidence of the male and female participants (28 to 61 years of age). Qualitative questions and standardized instruments were given to each participant in a one-to-one interview prior to the program and again upon its completion. Correlation results from the Leisure Satisfaction Measure were not found to be statistically significant. However, qualitative narrative and inductive analyses of the data, and weekly anecdotes, support the belief that enhanced leisure skills and knowledge increase leisure participation, and that self-confidence increases leisure satisfaction. Anecdotal evidence also supports the use of leisure education in conjunction with community outings for a more successful and satisfying transition into the community. Further investigation is needed to determine the relationship between community reintegration practices and leisure education, and the compatibility between leisure education and vocational rehabilitation goals toward community re-entry.

Robinson, Adrienne Evaluation of exercise videotapes performed by fitness experts and celebrities, 1998. M.A., San Jose State University (Susan Wilkinson). (83pp 1f $4.00) HE 649

The study evaluated resistance training exercise videotapes performed by fitness experts and celebrities to determine their accuracy, safety, and usefulness for the general public. An evaluation instrument was developed by the researcher to conduct a critique of each exercise videotape. The videotapes were selected from popular major video stores in a large metropolitan area. A total of eight videotapes were reviewed, five of celebrities and three of fitness experts. Using the Video Critique, the researcher analyzed the teaching ability of the instructor and the appropriateness of the exercises. Comparisons were made between the celebrity and fitness expert groups. The celebrities were shown to have a longer warm-up and cool down. Although the celebrities provided more comprehensive exercises in this area, the fitness experts were more technically skilled than the celebrities in their presentation of the exercises. Comparisons revealed that the fitness experts and the celebrities provided safe workouts in their exercise videotapes.
Inactivity is linked to many health problems, such as obesity, cardiovascular disease, some cancers, etc. The American subgroup who have the lowest participation in leisure-time physical activity are African-American females. Research shows that up to 82% of this group participate in little or no leisure-time physical activity. The purpose of this quasi-experimental study was to test the effectiveness of two types of interventions, based on social learning theory (SLT), in increasing moderate intensity physical activity in African American adult females, aged 25 and up. (1) The walking club intervention consisted of five weekly 1-1/2 hour classes, having a one-hour instructional period and a half hour activity component. (2) The self-directed intervention consisted of five one-hour instructional classes and had no activity component. The two main research questions were (1) To what extent does a walking club, based upon SLT constructs, increase physical activity among African American females? (2) To what extent does a self-directed program, based upon SLT constructs, increase physical activity among African-American females? Results showed that for the walking club the mean number of days increased from 1 on the pre-test to 5 on the post-test. The median for minutes per week of participation increased from 0 on the pre-test to 230 on the post-test. For the self-directed program, days of participation increased from 2 on the pre-test to 4 on the post-test. The median for minutes of participation increased from 0 per week on the pre-test to 130 on the post-test. It was concluded that both a walking club and a self-directed program were effective in increasing physical activity among the African-American females who participated in this study. For the walking club, perceived social support accounted for 28.9% of the variance in days of participation and 33.5% of the variance in minutes of participation in moderate intensity physical activity. There were no significant correlations observed between SLT variables and physical activity variables for the self-directed program.

Rogers, Tecora M. Effectiveness of a walking club and a self-directed physical activity program in increasing moderate intensity physical activity among African-American females, 1997. Ph.D., Ohio State University (Corey Bates). (318pp 4f $16.00) HE 645

Pre- and post-assessments were used to determine the impact of HPR 105, Creating a Healthy, Active Lifestyle, on college students’ (N=986) change in physical activity level over the course of the fall 1998 semester. The assessments consisted of demographic questions, decisional balance measurements, and a transtheoretical model of change instrument. Qualitative questions were asked on the post-assessment. Results indicated a slight decrease in physical activity level from pre- to post-assessment. However, compared to national standards, the sample was more physically active than the average person of the same age. Decisional balance measures were consistent with the literature, physically active individuals supported the Pros, and sedentary individuals supported the Cons. Qualitative
data provided information pertaining to how physically active the individuals were and the impact of HPR 105 on their activity level, but no pattern regarding ways to change the course emerged. This pilot study was conducted to establish a foundation for future research.

RECREATION AND LEISURE

Hayes, Jennifer M. Adolescent perceptions of mentoring: a phenomenological approach in recreation, 1999. M.S., University of Wisconsin, La Crosse (Nancy Navar). (63pp 1f $4.00) RC 535

National Youth Sports Program (NYSP) participants (N=8) were interviewed using a semi-structured interview approach concerning their perceptions of mentoring. Five male and 3 female participants ranging in age from 11 to 15 were interviewed. Questions were written using a phenomenological strategy and data were analyzed using content and comparative analyses. Results suggested the characteristics of a mentor, mentoring behaviors, and identified preferences for a mentor. Participants felt it most important that there was someone who was supportive, trustworthy, and willing to talk to them and spend time with them. Participants did not feel that mentors were important in a program such as NYSP, yet named several staff members who were possible mentors. Findings suggest that although mentoring may be a part of recreation programs, participants may not be expecting assigned mentors. A conclusion that can be drawn from this study is that mentoring does take place in recreation programs, many times without the mentor and protege realizing it is occurring.

PSYCHOLOGY

AGGRESSION


The purpose of this study was to examine attitudes of female and male Division I intercollegiate athletes toward aggression in collision, contact, and non-contact sports. Collision sports were defined as those that require heavy bodily contact, such as hockey, football, and rugby. Contact sports were defined as those that involve some bodily contact, such as basketball and soccer. Non-contact sports were defined as those that do not involve any type of physical contact, such as golf, tennis, and swimming. The sample consisted of N=162 intercollegiate athletes, equally divided between females (n=81) and males (n=81). The sample was further categorized into three types of sport: collision (n=28 females and n=27 males), contact (n=26 females and n=27 males), and non-contact (n=27 females and n=27 males). The participants completed a three-part questionnaire. Part I was a modified version of the Carolina Sport Behavior Inventory (CSBI), developed by Conroy, Silva, Newcomer, Walker, & Johnson (1996). This questionnaire consisted of 10 aggressive sport scenarios, and the score measured one’s legitimacy of aggression in sport. Part II consisted of three questions that measured the influence of social learning on one’s acceptance of aggression in sport. Part III consisted of demographics questions. A 3 (type of sport) x 2 (gender) analysis of variance revealed that there were significant main effects both for type of sport and for gender. A Tukey’s post hoc analysis determined that a significant difference existed between collision and contact sports. Furthermore, a significant interaction was found between type of sport and gender. The interaction occurred because the difference in scores between male and female non-contact sport participants was greater than the difference in the scores between male and female contact and collision sport participants. None of the six groups of participants had mean perceived legitimacy of aggression scores above 4.5, the threshold of legitimacy (Conroy et al., 1996). Thus, none of the groups could be considered accepting of aggression in sport.

ATTITUDES AND VALUES

Diacin, Michael Perceptions of male intercollegiate athletes on performance-enhancing substances in sport, 1999. M.Ed., Bowling Green State University (Janet Parks, Pamela Allison). (55pp 1f $4.00) PSY 2086

Little is known of the perceptions intercollegiate athletes hold regarding drug testing and performance-enhancing substance use in intercollegiate sport. What is known on this topic is inconsistent and limited in detail. Consequently, the purpose for this study was to gain insight into male intercollegiate athletes’ perceptions on drug testing and performance-enhancing substance use. Participants for this study consisted of eight male intercollegiate athletes: four Division I athletes and four Division III athletes. Of the four Division I athletes, one participated in football, one in track and field, and two in golf. The four Division III athletes consisted of two football players and two basketball players. Data were collected through in-depth, semi-structured interviews. Overall, participants supported drug testing. They believe athletes should be tested for all drugs, regardless of whether or not the substances are commonly perceived as performance enhancing. The privilege of participating in intercollegiate athletics and the fact that athletes act as institutional representatives were
additional reasons why participants supported testing. Any drawbacks associated with testing were outweighed by the need to ensure fair competition in athletics. The strong influence of peers and coaches upon the perceptions of athletes was revealed. Anticipated, vicarious, and differential reinforcements were indicated as factors that could influence athletes’ perceptions of testing and substance use.

Luif, Jennifer  The communication of genderization in sport: a content analysis of Women’s National Basketball Association and National Basketball Association media guides, 1999. M.A., Bowling Green State University (Jacquelyn Cuneen). (62pp 1f $4.00) PSY 2087

For professional sport organizations, a most useful phenomenon is the media’s penchant to print free publicity for teams and players in the form of news stories on the sports pages. In order to prompt sports reporters to write what the team wants them to write and highlight desirable aspects, sport organizations distribute thousands of media guides to the print and broadcast media. The purpose of this study was to investigate gender portrayals in Women’s National Basketball Association (WNBA) and National Basketball Association (NBA) media guides, which nearly always serve as the originator of press information and frequently function as the sole source of information regarding the sports organization and its players. It was important to investigate the implications of any gender differentiation communicated to the media through these guides, because they are produced by the sport organizations themselves and represent specifically what the organization wants the media to know, consider important, and communicate to the general public. A content analysis of WNBA and NBA media guides was conducted to investigate whether or not gender differentiation existed. Results indicate that the WNBA and NBA portray their athletes differently, both in text and in photographs. Language in the NBA guides portrayed the men as athletically powerful while the WNBA highlighted demure attributes of the female players. Photographs in the NBA guides usually consisted of color full-body shots of the athletes in action. Conversely, the WNBA used all black and white photos and usually portrayed the athletes in passive poses. It was concluded that it is not only the media who publicize female and male athletic accomplishments differently, but, in professional basketball, the teams themselves influence the media to portray the athletes differently.

**BEHAVIOR ANALYSIS**

Hudson, Scott B. The effect of athletic participation on school discipline, 1999. M.A., Ball State University (Rebecca Woodard). (33pp 1f $4.00) PSY 2090

Discipline and drug abuses were rated as the number one and two top problems facing schools in the last two decades and must be improved. There is serious doubt cognitive experiences alone will solve or decrease the rate at which these are causing the increased dropout rates. Interscholastic athletic programs, perceived in many instances as costly frills, could be, in fact, a large part of the solution to many of the problems that are invading schools today (Smith, 1994). Wes-Del High School is a rural, central Indiana school of 302 students in grades 9-12. The school was selected for the study of the effect of athletic participation on high school discipline for the 1998-99 school year. The goal of this study is to investigate if there is statistical data to support if athletic participation has an effect on high school discipline. Discipline referrals were coded and broken down according to non-athlete referrals compared to athlete referrals. The number of male athlete referrals and female athlete referrals was also evaluated. Records were kept of when most athletes’ referrals occurred and by what sport or specific teams. Based on data collected from this study, athletes were less likely to have received discipline referrals by a two-to-one ratio compared to non-athletes. The study also concluded that female athletes received significantly less of the total discipline referrals than male athletes. Females received 25% of the total discipline referrals compared to 75% of the total discipline referrals received by male athletes. In this study, there was evidence that female athletes received fewer discipline referrals in-season than out-of-season, but, that male athletes received more discipline referrals in-season than out-of-season. The results of the study provide evidence that schools should be encouraged to evaluate the benefits of athletic participation to school discipline.

Jefferson, Ceroy  Educational performance of athletes and nonathletes in two Mississippi rural high schools, 1999. Ph.D., University of Southern Mississippi (Mark Maneval). (97pp 1f $4.00) PSY 2089

The purpose of this study was to investigate the difference between athletes and nonathletes on academic achievement and discipline referrals. The study examined the relationship between these differences on grade level, socioeconomic status, gender, and type of sport. The investigation also examined the difference between athletes on academic achievement during season and out of season. This study utilized the academic and discipline records of 276 athletes and 276 nonathletes (n=552). All participants were enrolled in either the ninth (n=94), tenth (n=60), eleventh (n=56), or twelfth grades (n=66) during the 1996-1997 and 1997-1998 school years. The total by gender in the athlete group was 219 males and 57 females. The total by gender in the non-athlete group was 219 males and 57 females. Eleven hypotheses were presented and tested using a t-test, one way ANOVA, and two way ANOVA. Statistical analysis revealed no significant difference between the means of athletes and nonathletes on the
The effects of a six week, 11 hour ropes course unit on the attitudes towards physical activity of high school students with behavior disorders, 1999. M.S., University of Wisconsin, La Crosse (Patrick DiRocco). (50pp 1f $4.00) PSY 2098

Students with behavior disorders were recruited from an alternative education center in La Crosse, WI, to participate in a 6 week, 11 hour ropes course unit to study its effect on their attitudes towards physical activity. The instructional program contained adventure activities, indoor rock climbing, and high and low ropes course elements. Ten students were recruited, and of these, 3 dropped out, and 1 did not participate in any of the climbing portions of the unit and was not included in the final statistical analysis. Data were gathered using a modified survey originally designed to measure the attitudes of adults towards physical activity. Results showed a general trend of improvement in attitude towards physical activity was discovered. Further study indicated that the basketball/track group achieved higher GPAs than the other multiple sport groups used in the study. In conclusion, the study supports previous research with other groups of athletes and nonathletes from different socioeconomic backgrounds.

Lee, Jeff The effects of a six week, 11 hour ropes course unit on the attitudes towards physical activity of high school students with behavior disorders, 1999. M.S., University of Wisconsin, La Crosse (Patrick DiRocco). (50pp 1f $4.00) PSY 2098

The number of international student-athletes participating in intercollegiate athletics at American colleges and universities has been growing steadily (NCAA, 1996a). As the recruiting landscape for college coaches expands into international arenas, knowledge about international student-athletes is becoming increasingly pertinent. Research in this area, however, has been scant. This study was undertaken to determine how well international student-athletes were adjusting to college relative not only to their American teammates, but also to the general student body, which included both domestic and international students. In addition to comparing adjustment levels, this study investigated antecedents and outcomes of adjustment that were specific to student-athletes. The Student-Athlete Acculturation Model was developed to serve as a framework for examining relationships associated with the acculturation process faced by both international and domestic student-athletes. Data were collected from students and student-athletes enrolled at a large Midwestern university. The Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1989) was sent to international students (n=317), domestic students (n=379), international student-athletes (n=50), and domestic student-athletes (n=269). All student-athletes in the sample received an additional questionnaire entitled Factors Associated with Student-Athlete Adjustment to College (FASAAC). The SACQ comprised a Full Scale to measure overall adjustment to college as well as four subscales to measure components of college adjustment. These subscales included Academic Adjustment, Social Adjustment, Personal-Emotional Adjustment, and Institutional Attachment. Multivariate analyses of variance (MANOVA) were used to compare adjustment levels among the various subgroups. The results showed that, in general, international non-athletes were significantly less well-adjusted than all other subgroups. International student-athletes, on the other hand, had the highest overall adjustment scores and were significantly more academically well adjusted than their American student-athlete peers. SACQ scores were also examined in regard to a variety of demographic variables. Once again, MANOVA were used for the analyses. Female students and student-athletes were more well adjusted than their male counterparts. In regard to

Ridinger, Lynn L. Acculturation antecedents and outcomes associated with international and domestic student-athlete adjustment to college, 1998. Ph.D., Ohio State University (Donna Pastore). (271pp 3f $12.00) PSY 2085

The relationship between high school athletes’ cohesion and their perceptions of their parents’ purpose of sport was assessed in this study. At approximately mid-point of the competitive season, fall team sport athletes completed the Group Environment Questionnaire (GEQ) (Carron, Widmeyer, & Brawley, 1985) and the Purpose of Sport Questionnaire (Duda, 1989). The relationships between the subscale scores of the two questionnaires were evaluated using Pearson product moment correlation coefficients.

Parrow, Darlene M. Cohesion and perceived parental purposes of sport, 1999. M.S., Springfield College (Mimi Murray). (174pp 2f $8.00) PSY 2088

Significant, but low, positive (p<.01) relationships were identified between the “Mastery/Cooperation”, “Active Lifestyle”, and “Good Citizen” subscales scores of the PSQ and the “Group Integration-Task” (GI-T), “Attraction to Group-Social” (ATG-S), and “Attraction to Group-Task” (ATG-T) subscales of the GEQ. Methodological and substantive explanations were explored.

The effects of a six week, 11 hour ropes course unit on the attitudes towards physical activity of high school students with behavior disorders, 1999. M.S., University of Wisconsin, La Crosse (Patrick DiRocco). (50pp 1f $4.00) PSY 2098

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ethnictiy, Asians were the least well adjusted group. No significant effects were found for time spent at the institution. The FASAAC was designed to obtain measures for antecedent and outcome variables associated with adjustment to college for student-athletes. To determine if the antecedents and outcomes differed among in-state, out-of-state, and international student-athletes, a MANOVA was computed. Significant effects were found for two of the antecedents. Out-of-state student-athletes had the most realistic expectations about their college experience, and international student-athletes perceived greater cultural distance than either of the domestic groups. Simultaneous regressions were used to examine the relationships among the antecedents, the outcomes, and adjustment to college. There were significant relationships between the antecedents and adjustment to college, between the antecedents and both outcome variables, and between adjustment to college and satisfaction. However, the relationship between adjustment to college and athletic performance was not significant. Furthermore, the results indicated that adjustment to college was not a mediating variable between the antecedents and the outcomes. Implications of the results are discussed and recommendations for future research are suggested.

Zmudy, Mark  The effects of participant belaying on self efficacy of college students in indoor rock climbing, 1999. M.S., University of Wisconsin, La Crosse (Jeffrey Steffen). (59pp 1f $4.00) PSY 2100

This study was designed to determine if participating in the technical skill of belaying during the activity of indoor rock climbing could improve self-efficacy. The sample included 41 male and female subjects. Ss assigned themselves into one of two 8-week indoor rock climbing courses offered at the University of Wisconsin-La Crosse. Ss were randomly selected as either a control (n=20) or belaying (n=21) group via a random numbers table. Ss completed a pre- and post-test measuring their general and rock climbing self-efficacy. Belaying subjects participated in 28 hours of rock climbing instruction, during which time they were shown proper belay protocol and were assigned the responsibility for belaying climbers. Subjects in the control group received the same amount of climbing instruction but did not perform belaying. Results of a one-way ANCOVA indicated no significant (p>.05) difference between the two groups on the post-test scores. Also, the results indicated no difference between males and females in the belaying group on the post-test scores.

MOTOR LEARNING AND CONTROL

Larouere, Brian  Effects of incremental versus constant-load exercise upon selected visual parameters in college-aged males and females, 1998. M.S., Slippery Rock University (Cathryn R. Dooly). (63pp 1f $4.00) PSY 2097

The investigation included 30 male and female subjects from physical education core classes at Slippery Rock University. Selected visual parameters were examined between incremental work and constant-load work. The visual parameters studied were static visual acuity, dynamic visual acuity, peripheral vision, and reaction time. A pretest-post-test dependent t-test was utilized to examine the data. The following conclusions appear warranted within the limitations of the investigation. There was a significant difference in mean static visual acuity between the incremental versus constant-load exercise conditions. There was a significant difference in mean dynamic visual acuity between the incremental versus constant-load exercise conditions. Furthermore, there was not a significant difference in mean peripheral vision between the incremental versus constant-load exercise conditions. Finally, there was no significant difference in mean reaction time between the incremental versus constant-load exercise.

Łukasiewicz, William C. Effect of visual feedback and verbal encouragement on eccentric quadriceps and hamstrings peak torque of males and females., 1997. Ed.M., Temple University (Iris F. Kimura). (77pp 1f $4.00) PSY 2103

The purpose of this study was to investigate the effect of visual feedback, verbal encouragement, and combined visual feedback and verbal encouragement on eccentric peak torque production of the quadriceps and hamstrings muscles of males and females at 60 degrees/s. Testing was performed using the Biodyex B-2000 Isokinetic Dynamometer in six separate sessions. The first two sessions provided practice so that subjects became familiar with the isokinetic device. The following sessions were data collection sessions. Each session was separated by at least 7 days and not more than 14 days. Fifteen male and 15 female asymptomatic subjects were each tested in the following randomly ordered conditions: visual feedback; verbal encouragement; combined visual feedback and verbal encouragement; and the control, no visual feedback or verbal encouragement. Practice and data collection session testing consisted of a warm-up of four submaximal repetitions and one maximal repetition, a rest period of 60s, followed by five maximal eccentric repetitions at 60 degrees/s. One randomly ordered experimental condition was provided at each of the data collection sessions. Two separate 2 x 4 analyses of variance (ANOVA) were used to examine the difference among test conditions. Tukey post-hoc tests were performed when significant main effects were revealed to determine where significant differences occurred. Results indicated that males produced greater eccentric quadriceps and hamstrings peak torque than females. Results also indicated that there were significant increases in quadriceps and hamstrings peak torque data due to visual feedback and combined visual feedback and verbal encouragement.
Pointing to a series of targets requires an initial sensorimotor transformation that may specify parameters for each movement’s direction and length to take the hand to the specified targets in the sequence. It was hypothesized that a sensorimotor transformation is made such that each target-to-target movement in a series is programmed before the movement to the first target, but this transformation can be updated as the movement progresses. Subjects were instructed to accurately point to three targets, in the order they were presented, on a computer monitor equipped with a touch screen to record motion. Visual information available during the task was varied as a function of movement length and included conditions of full vision, no vision, and vision of only the hand. Errors to the first target were similar regardless of the amount of vision available to the subject. These data suggest that visual information after 50% of movement length had little influence on endpoint errors. Errors for movements to the second and third targets in a series were significantly dependent on the amount of visual information allowed during movement to the preceding targets (p<.05), and were related more to errors in direction than to errors in movement length. In the second set of experiments, subjects performed a similar task where the second target was displaced either radially or tangentially as a function of movement length. Subjects were able to make on-line corrections of their movement that were undetectable in the velocity profiles, and acquired the displaced target when the displacement occurred at 5% of movement length. They were unable to acquire the displaced target at movement lengths of 70% when the displacement occurred tangentially or in the opposite direction of the movement. However, when the displacement occurred in the direction of movement, subjects were able to extend their movement time and accurately acquire the target. The discussion focuses on length and direction errors associated with serial pointing. The data suggest that for accurate serial pointing the sensorimotor transformation for each inter-target movement must be updated before moving toward the next target.

Sundberg Jeffrey D. Timed vs. untimed initiation intervals and the effects of confidence on a golf putting task, 1999. M.S., University of North Texas (Scott B. Martin). (52pp 1f $4.00) PSY 2091

Low, moderate, and high handicap golfers, while wearing glasses with a blinder on the side, attempted 9 putts differing in length from 5 to 21 ft under timed (less than 3.5s from grounding of club to initiation of back swing) and untimed conditions in a counterbalanced design. Confidence ratings were taken prior to and following each putt. The results revealed a significant condition by handicap group interaction (p=.021). The lower handicap group had a more consistent and lower initiation interval duration than did the moderate and high handicap players. Post interviews determined that 33 of the 35 golfers felt more comfortable in the untimed condition. However, golfers’ confidence levels were not significantly different in the untimed condition as compared to the timed condition.

**MOTIVATION**


The purpose of this study was to compare the effects of different exercise promotion strategies and stage of exercise on reported physical activity, self-motivation, and stages of exercise in worksite employees. Participants were classified into one of five stages of exercise (i.e., precontemplation, contemplation, preparation, action, and maintenance) based on their pre-intervention Fit for Life Profile and randomly assigned to one of four interventions: Just Move Program, Lifestyle Exercise Program, Group Seminar, and No Exercise Intervention. Following a 4-week and an 8-week period, a modified Fit for Life Profile was mailed to all participants to assess physical activity (i.e., Seven-Day Recall Questionnaire), self-motivation (i.e., Self-Motivation Inventory), and stages of exercise (i.e., Stages of Exercise Scale) at mid- and post-interventions. Support was shown for the Transtheoretical Model of Behavior Change, with the findings that participants in the maintenance stage of exercise group were engaged in more exercise in comparison to participants in the contemplation, preparation, and action stages of exercise groups at pre-, mid-, and post-interventions. Participants in all groups were engaged in higher physical activity levels at post-intervention. However, no statistically significant differences were reported among the four groups. Participants in three of the four groups (i.e., Just Move Program, Lifestyle Exercise Program, and Group Seminar) demonstrated higher self-motivation scores at post intervention. However, no statistically significant differences were reported among the four groups. Participants in all groups improved in stage of exercise movement at post-intervention. However, no statistically significant differences were reported among the four groups.
The study was designed to explore the interdependence of the Goal Perspective Theory (Nicholls, 1989) and the Cognitive Evaluation Theory (Deci & Ryan, 1985) utilizing structural equation modeling analyses. The Sport Motivation Scale (SMS) (Pelletier, Fortier, Vallerand, Tuson, & Briere, 1995) and the Task and Ego Orientation in Sport Questionnaire (TEOSQ) (Duda & Nicholls, 1992) were administered to 979 male and 628 female adult golfers. The seven-factor structure of the SMS and the two-factor structure of the TEOSQ were confirmed. Partial invariance across gender groups was found for both the TEOSQ and SMS. Since the hypothesized structural model did not converge, two models were provided. In the More-Self-Determined Model, positive significant (p<.05) relationships were found between goal orientations and the four more self-determined variables of the SMS. In the Less-Self-Determined Model, positive significant (p<.05) relationships were found between goal orientations and two of the three less-self-determined variables of the SMS. No relationship was found between goal orientations and “Amotivation.” For the future, a broader definition of ego orientation is needed for congruence between the two theories.

PERCEPTION

Bojczyk, Kathryn E. G. Object retrieval and interlimb coordination in the first year of life, 1999. M.S., Purdue University (Daniela Corbetta). (60pp If $4.00) PSY 2094

This study was conducted to evaluate the effects of task exposure and box transparency on learning a task that required an infant to retrieve a toy from a closed box. By combining a longitudinal and cross-sectional design, we were able to tease out the effects of age versus experience. In order to explore the role of vision on solving an object retrieval task, infants in both groups were assigned randomly into one of two conditions: opaque box versus transparent box. Twelve infants were followed longitudinally once a week starting at 6 1/2 months of age. Four cross-sectional groups were tested only once to assess infants’ level of skill without prior task exposure. The ages of the cross-sectional groups were determined as the age at which a stable, bimanual complementary strategy with good timing emerged in their respective longitudinal groups. A mature strategy was defined as: using one or two hands to open the lid, holding the lid steadily with one hand while the opposite hand retrieved the toy from inside the box. These results strongly suggested the following: 1) Infants benefited from early task exposure because infants in the longitudinal groups outperformed age-matched infants in the cross-sectional groups. 2) Within the two longitudinal groups, improvement on the object retrieval task seemed to take place at 8-months-old for the transparent and 9-months-old for the opaque box group. 3) Vision of the toy through the lid facilitated the development of efficient solutions for the object retrieval task. Infants in the transparent box condition developed efficient solutions earlier than the infants in the opaque box condition. 4) Maturation alone cannot account for the development of bimanual coordination as assessed using an object retrieval task.

SELF-CONCEPT

Allor, Karin M. Perceived competence and attraction to physical activity in a diverse population of fifth graders, 1997. M.S., Michigan State University (Martha Ewing). (94pp If $4.00) PSY 2104

Little attention has been given to the relationship of perceived competence and both sport participation of minority youth and the broader view of physical activity. Children’s motivation to participate in physical activity, which may influence their health status, depends in part on their attraction to physical activity (Brustad, 1996). The purpose of this study was to determine if males, females, African American, or Caucasian youth differ in attraction to physical activity or perceived competence. Participants were 105 fifth grade boys and girls on a diverse, urban population. Students completed five subscales of the Children’s Attraction to Physical Activity (CAPA) scale (Brustad, 1993), three subscales of the Perceived Competence inventory (Harter, 1978), and five physical activity logs. Results from the CAPA revealed that males scored higher than females on three subscales, and there were no race differences. A significant race by sex interaction was revealed for social perceived competence: African American males scored higher than African American females. Also, African American females were found to be significantly less physically active than African American males in terms of both duration and intensity.

Butki, Brian D. The relationship between physical activity and multidimensional self-concept among adolescents, 1998. Ph.D., University of North Carolina, Greensboro (Diane Gill). (244pp 3f $12.00) PSY 2095

Research has supported the affective benefits of physical activity participation, but relatively little work has been done on the long-term personality benefits. Further, minimal research attention has been given to the portions of the populations in greatest need of psychotherapeutic benefits. This research was designed to examine the relationships between physical activity and multidimensional self-concept among adolescents with various levels of psychological and behavioral problems. Adolescents from public schools (n=114) and psychological treatment centers (n=112) completed the Multidimensional Self-Concept Scale (MSCS), which measures physical, affective,
social, competence, familial, academic, and global domains of self concept; the Seven-Day Physical Activity Recall (PAR); and inventories assessing perceptions about physical activity levels and potential benefits. Discriminant analyses and t-tests revealed that adolescents at treatment centers reported significantly lower levels of physical activity, lower perceptions of physical activity benefits, and lower scores on the majority of self-concept subdomains. Correlational analyses showed that, for both groups, physical activity participation levels were positively correlated with each of the self concept domains, and the majority of these correlations were of moderate strength. Finally, eighteen adolescents from treatment centers participated in interviews designed to assess perceptions and effects of physical activities relative to the key domains of development. Results suggest that the majority of the treatment center adolescents perceived positive effects, although a significant minority of adolescents perceived neutral or negative effects of physical activity, especially in relation to affective, competence, and social domains of development. These results suggest that physical activity may have important positive influences on mental health and that the positive mental health factors associated with physical activity may be possible for all adolescents. Although the results do not suggest causal relationships, they support the idea that the treatment center adolescents participated less frequently in physical activity and had lower self-concept scores. These findings lend further support for the research base supporting the psychotherapeutic benefits of physical activity participation and expand this concept to include adolescents with psychological and behavioral problems. The results are discussed relative to implications for practitioners and therapists, and future research directions are suggested.


Little research has studied the environments of highly competitive athletic teams. The present study investigated the relationship between motivational climate and perceptions of self and collective efficacy in four Division I college soccer teams. The Perceived Motivational Climate in Sport Questionnaire (PMCSQ) was administered to athletes along with a questionnaire developed by the principal investigator to measure self, collective, and coach efficacy perceptions. Perceptions of efficacy were evaluated across playing status, playing time, and gender in order to determine if efficacy perceptions varied across these measures. Significant differences were found between gender and self-efficacy, with males reporting higher perceptions of self-efficacy than females. Collective efficacy perceptions were found to be positively related to mastery orientations and negatively related to performance orientations. Meanwhile, there was no significant relationship between perceptions of self-efficacy and motivational climate. An examination of athletes’ perceptions of their teams’ motivational climate found that athletes perceived their teams’ to be significantly more mastery oriented. Perceptions of motivational climate did not differ across playing status, playing time, and gender. Implications of this research, and future considerations are discussed.

SOCIAL PSYCHOLOGY

Harder, Meghan The effects of stage-matched intervention on the stages of change and exercise self-efficacy, 1999. M.S., Eastern Washington University (Wendy Repovich). (60pp 1f $4.00) PSY 2102

The purpose of this study was to examine the influence stage-matched interventions had on stages of change, exercise self-efficacy and the transition from one stage to another in contemplators and preparers participating in lifestyle physical activity. Ten novice male (n=1) and female (n=9) exercisers completed lifestyle activity on their own time and attended biweekly one-hour stage-matched class sessions during a 10-week study. Participants were assessed for stages of change, exercise self-efficacy and cardiorespiratory endurance during the first and tenth week of the study. Cardiorespiratory endurance was measured by a one-mile walk test. Participants received stage-matched workbooks in addition to attending the class sessions. The Wilcoxon Matched-Pairs Signed-Ranks test showed significant difference for stages of change (p=.0017) but not for exercise self-efficacy (p=.0580). The Spearman Rank Order Correlation showed a relationship between stages of change and exercise self-efficacy (p=.0331). A paired t-test was used to analyze cardiorespiratory endurance and showed no significance (p=.7530). The results seem to indicate that stage-matched intervention is a valid tool for exercise behavior change.

Poisson, Craig F. A qualitative investigation of the contact theory/hypothesis and a middle school boys’ basketball team, 1999. D.P.E., Springfield College (Diane Lorenzo). (267pp 3f $12.00) PSY 2083

The investigation was conducted to determine the applicability of the contact hypothesis to an interracial middle school boys’ basketball team. A qualitative analysis was employed including a phenomenological three interview series, peripheral member observation, and participant written logs. The participants (N=15) were the coach and members of a public middle school boys’ basketball team in New England. Each participant was interviewed once at the beginning, middle, and end of the season. The 30-60 min interviews were recorded, transcribed, and analyzed using the Ethnograph Computer Program (Seidel, Kjolseth, & Seymour, 1988). Graphic matrices were constructed during the analysis using data from observations within
and away from the athletics context, participant written logs, and interviews. Four conditions of the contact hypothesis were examined: (a) equal status; (b) cooperative interdependence; (c) common goals; and (d) environmental support. Spheres of Connections/Disconnections models were used to depict the relationships among and between the participants. Only the common goal condition was present. The model of athletics investigated in this study did not provide evidence to foster positive inter-group relationships as presented in the contact hypothesis.

Schilling, Tammy A. An investigation of commitment among participants in an extended day physical activity program, 1999. Ph.D., University of North Carolina, Greensboro (Diane Gill, Thomas Martinek). (277pp 3f $12.00) PSY 2082

The primary purpose of this study was to examine how youth participants become and remain connected over a multi-year period to an extended day physical activity program. A secondary purpose was to examine youth participants’ perceptions of the notion of commitment to the program. Three ninth graders (two females, one male) and two seventh graders (one female, one male) participated in the study. They ranged in age from 12-15 years and were all African-American. The participants were “veterans” in that they joined Project Effort during the first year of operation, had been involved in the program for at least four years, and had all previously served as apprentice teachers for younger children in a summer basketball camp. Three methods for collecting participants’ data were used: personal interviews, one focus group interview, and a card sorting activity. Parents were interviewed and program leaders completed profiles for each participant to provide for data triangulation. The data were analyzed in two phases. Phase 1 included the development of individual background profiles describing participants’ perceptions of program involvement and personal development over the course of their participation. Phase 2 included an examination of participants’ perceptions of commitment. The results are presented as individual case studies followed by cross-case analyses. The cross-case analyses for Phase 1 supported two conclusions: (a) participants had positive experiences in the program because they had fun, liked the activities, valued the relationships formed and program goals, and felt empowered; and (b) the majority of the participants experienced positive changes in their program roles or behavior across the multi-year period of program involvement, while substantial evidence for positive changes in the home and school settings did not emerge. Regarding Phase 2, participants perceived that their program commitment was influenced by how the program is organized (e.g., type of activity selected), the development of relationships with staff members and other participants, and certain personal characteristics (e.g., lack of alternative activities for participation). Participants described the nature of commitment in terms of behavior during program participation (e.g., effort, persistence), emotional involvement (e.g., enjoyment, motivation), and history of program participation (e.g., reasons for attendance). While the type of activity served as a positive influence on program commitment, it was also evident that the specific activity could act as a barrier to program commitment. Finally, the participants perceived that their level of commitment was greater than the level of the general participant population and their commitment stayed the same or increased over the four month period of the investigation.

STRESS

Te Selle, Lori L. The influence of social support on athletic injury rehabilitation: the athletes’ point of view, 1999. M.S., Western Washington University (Ralph Vernacchia). (130pp 2f $8.00) PSY 2093

Research has shown that many athletes experience negative psychological reactions in response to an injury. Social support is one factor that is believed to decrease the trauma of injury for athletes. However, little research has been conducted on how social support may affect an athlete’s rehabilitation and recovery from injury. The purpose of this study was to determine which forms of social support injured athletes believed were important during the period of rehabilitation, and if the support they had received had been adequate. A secondary purpose of the study was to investigate whether the athletes’ perceptions of their social support networks influenced their satisfaction with their recovery from injury. To achieve these goals, this study utilized qualitative research methodologies in the form of an inductive content analysis of athlete case interviews. The in-depth interviews of 10 injured athletes, from a variety of collegiate sports, consisted of probing questions regarding the athletes’ perceptions about their social support networks during the period of injury rehabilitation, and if the support they had received had been adequate. Emotional support was cited most often by the athletes, with technical support a close second. Sixty percent of the athletes stated that they were happy with their overall recovery.

Wheeler, Courtney E. Perceived effects of T’ai Chi Chih on psychological measures of general well-being and physical symptoms of stress, 1999. M.S., University of Wisconsin, La Crosse (Richard Detert). (54pp 1f $4.00) PSY 2099

Twenty-seven education professionals completed a 15 hour T’ai Chi Chih instruction program where changes in general well being and physical symptoms of stress were
assessed. Ss completed the General Well Being Schedule (GWB) and the Taylor Manifest Anxiety Scale (TMAS) prior to the instruction and 4 weeks later. At post-test, Ss provided written summaries of practice logs that were coded and analyzed as qualitative data. T-tests between pre- and post-tests showed Ss moving from mild problem-indicative stress category to the moderately high mood state of well being. All 6 subscales showed significant change from pre- to post-test. There was a statistically significant decrease in manifested systems of stress from pre- to post-test on the TMAS. Qualitative data supported these results. This study demonstrated that learning and practicing T’ai Chi Chih for 4 weeks significantly changed the general well being and physical symptoms stress in this sample.
PART II

KEYWORDS INDEX

for

VOLUME 12, NO. 2

This index includes keywords for titles published in microfiche format by Microform Publications in Volume 12, No. 2 (October 1999).

Each title in Part I is indexed using keywords selected and assigned from the Sport Thesaurus, published by the Sport Information Resource Centre (SIRC), located in Gloucester, Canada. (Users should note that British spelling conventions [e.g., behaviour] occasionally appear.) In addition to keywords identifying the content of a study, the major research methods are identified by the statistical technique employed and appear in brackets immediately following the author’s name. Users may find these methodological and statistical descriptors helpful in identifying a particular design or statistical prototype for their own research investigations. A listing of statistical abbreviations used in this index is found on the following page.

The keywords appear in alphabetic order and are followed by the author names of the doctoral or master’s theses that they refer to. Because each thesis will have more than one keyword, author names appear several times under different keywords. The author names are followed by the research and statistical methods used in the study. These are contained in brackets—the letters in front of the dash refer to the research methods, those following the dash denote the statistical methods. The methods information is followed by the subject code and number for the study. The following example illustrates the elements of each entry.

**BIOMECHANICS**

Allen, D.M. [D,MA-DE,MAV] PE 3815

*Biomechanics* is one of the keywords of a study by D. M. Allen. The research methods used in the study include Descriptive and Mechanical Analysis techniques; statistics are Descriptive and Multivariate Analysis of Variance. The study’s subject code is PE 3815. To find the title of the study as listed in part I of the *Bulletin*, use the author index in the back of the book to find the page number on which the study by D. M. Allen is listed.

Criteria used to determine whether a study is experimental include the use of a control group and the manipulation of an independent variable or variables. Studies designed to examine correlations among selected variables in a particular population are classified as surveys.

Specific abbreviations for research methods and the statistical techniques that were used are listed alphabetically in the table on the following page.
## METHODS

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## STATISTICS

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Jubenville, C. B. [D, Q, J-DE, AV, T] PE 3962
Navarre, M. J. [D, Q, S, J-MAV, RC, RPM] PSY 2085
Ross, J. L. [D, A, IA-DE, AV, TU, MAV, G] PH 1678
Sabo, T. [D, Q-DE, %] PE 3946
Scibek, J. S. [D-AV, DE, G, RM] PE 3945
Styers, A. [D, Q, L-DE, AV, G] PE 4022
Te Selle, L. L. [D, C, I-DE, %] PSY 2093
Tucker, L. W. [D, Q-DE, AV, TU, RC, FA] PSY 2092

ATHLETIC TRAINER
Carr, W. D. [D, Q-DE, RC, AV, R] PE 3961
Stemmans, C. L. [D, J-DE, %] PE 3954

ATHLETIC TRAINING
Carr, W. D. [D, Q-DE, RC, AV, R] PE 3961
Stemmans, C. L. [D, J-DE, %] PE 3954

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ATTITUDE
Harder, M. [D, Q, I-DE, WI, RD] PSY 2102
Jorgenson, S. M. [D, Q, I-DE, %, T, AV, G] PE 4011

AUDIO-VISUAL AID
Robinson, A. [D, IA, JA, Q-DE, G] HE 649

AUSTRALIA
Foster, B. L. [D, A, Q-DE, T, MAV, Z, DisA, G] PE 3978
Telford, A. [D, AR-DE, T, RPM, MAV] PE 4023
Temple, V. A. [D, Q-DE, AV, TU, %, RPM, FA, G] PE 3998

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Hoyte, T. A. [D, I, C, H-DE] PE 4002
Reaves, J. A. [D, DA, H-DE] PE 4008
Sullivan, D. A. [D, DA, H-DE, %] PE 4001
Voigt, D. Q. [D, DA, H-DE] PE 4005

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Thomas, M. B. [D, AR-DE, MAV, G] PE 4015

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Cash, T. L. [D, Q-DE, RM, AV, TU] PSY 2101
Jefferson, C. [D, C, DA-DE, AV, T, %] PSY 2089
Jorgenson, S. M. [D, J-DE, %, T, AV, G] PE 4011
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Schilling, T. A. [D, I, CS-DE] PSY 2082
Stemmans, C. L. [D, J-DE, %] PE 3954
Vogler, D. R. [D, Q-DE, %, G] HE 644

BEHAVIOUR CHANGE
Vogler, D. R. [D, Q-DE, %, G] HE 644

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Vogler, D. R. [D, Q-DE, %, G] HE 644

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Cardiovascular System
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Hagen, H. L. [D, Q-DE, RE, T, N, %, G] PH 1670

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Wheeler, C. E. [D, Q-DE, RPM, T] PSY 2099

Child
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Zmudy, M. [D, Q-DE, T, AC] PSY 2100

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Carr, W. D. [D, Q-DE, RC, AV, R] PE 3961
Stemmons, C. L. [D, J-DE, %] PE 3954

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Ross, J. L. [D, A, IA-DE, AV, TU, MAV, G] PH 1678

Club
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Coach
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Jubenville, C. B. [D, Q, J-DE, AV, T] PE 3962
Martin, K. A. [D, DEL, Q-DE, AC, RC, FA] PE 3957
Yanofsky, K. [D, Q-DE, G, AV, R] PE 3964

Coaching
DiPuma, J. J. [D, Q-DE, AV, RD, RPM, G] PE 3959
Hehman, E. D. [D, Q-DE, %] PE 3966
Jubenville, C. B. [D, J-DE, AV, T] PE 3962
Martin, K. A. [D, DEL, Q-DE, AC, RC, FA] PE 3957
Thomas, M. B. [D, AR-DE, MAV, G] PE 4015
Yanofsky, K. [D, Q-DE, G, AV, R] PE 3964

Coaching Behaviour Assessment System
Martin, K. A. [D, DEL, Q-DE, AC, RC, FA] PE 3957

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Coordination
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Counseling
Hayes, J. M. [D, I-DE] RC 535
Lytle, R. K. [D, Q-DE] PE 3972

Counselor
Lytle, R. K. [D, Q-DE] PE 3972

Creatine
Capriotti, P. V. [D, A, L-DE, RM, AV, TU, SCH, G] PH 1665
Starks, M. A. [D, L-DE, AV, LSD] PH 1677

Cross-Cultural Study
Reaves, J. A. [D, DA, H-DE] PE 4008

Cycling
Capriotti, P. V. [D, A, L-DE, RM, AV, TU, SCH, G] PH 1665
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