

Book of Abstracts

Keynote Lectures

MENTAL STRESS AND PHYSICAL ACTIVITY

Peter Währborg

Swedish University of Agriculture Sciences and Sahlgrenska Academy, Sweden

Considering the present patterns of health problems and hazards, especially in the Western World, it is obvious that the global burden of disease in the near future more extensively will be related to our lifestyle (Murray C, Lopez A. The global burden of disease. Harvard University Press, 1996). Too much food and psychosocial strain and too little physical activity and recovery are crucial constituents in this lifestyle. The causes for lifestyle related diseases are obviously different from those found in the pre-industrial society. Stress related illness such as "burn out" but also cardiovascular and metabolic diseases are good examples on this modern and increasing morbidity. In Sweden the former state accounts for about 40 per cent of all long term sick leaves and disability pensions.

The ultimate challenge in future medicine and psychology is not to treat, but rather to prevent diseases. We must find another point in time to interfere with the development of illnesses.

The brain is the integrative centre for coordinating the behavioural and neuroendocrine responses (hormonal, autonomic) to challenges, some of which qualify as "stressful".

There are considerable individual differences in coping with challenges, based upon interacting genetic, developmental and experiential factors. These differences are time related and dependent of factors normally described in our social life situation. Education, problem solving skills and intellectual as well as emotional capacity are examples on such factors. Lack of such resources or coping strategies tend to end up in a number of behavioural as well as physiological reactions which at a certain point of time develops from a decreased well being to symptoms and diseases.

Two archetypes of physiological stress reactions have been extensively described; the fight or flight reaction (FFR) and the defeat reaction (DR). The FFR is primarily associated with an increased sympatho-adreno-medullary activity with release of catecholamines from sympathetic nerve endings as well as from the adrenal medulla.

The defeat reaction is related to an often increased activity in the parasympathetic nervous system. Alteration in neuroendocrine functions result in, among other things, an alteration in the HPA axis. Resulting physiological effects are storage of fat to central, visceral adipose tissue depots, decreased insulin sensitivity and responsiveness, decreased HDL cholesterol and increased triglycerides. The latter cluster of metabolic abnormalities is often referred to as "the metabolic syndrome". The behaviour associated with the physiological changes described above is often frustration/aggression, which later develops to self-destructive behaviour, tiredness and depression.

A strategy to handle the stressors, to improve the coping skills and to reduce the behavioural and physiological harm caused by stress is regular physical activity. In this lecture the evidence for these effects will be reviewed and tied to our present knowledge of stress as a risk factor for life style related disorders in modern time.

PHYSICAL ACTIVITY AND REASONS TO MOVE IN CHILDREN AND ADOLESCENTS WITH DISABILITIES

Pauli Rintala

University of Jyväskylä, Finland

Children and adolescents with disabilities should have an opportunity to be physically active - to participate - as anybody else in the forms of life offered by society. In this presentation disability is defined as a social construct: Inactivity among people with disabilities is viewed as the result of psychosocial dynamics (i.e., social minority model), which may cause physical activity to be undesirable, rather than an outcome of disability per se (i.e., medical model). Inactivity of children and youth is a world-wide problem, and those with disabilities are especially prone to inactivity. We know very little about the reasons behind this fact, and therefore, the purpose of this presentation is to overview several theoretical models that address the phenomenon of motivation toward physical activity participation, and to examine the reasons to move in children and adolescents with a disability.

Motivating individuals with disabilities to become physically active is one of major tasks among those who wish to promote good health through participation in sport and physical activity. Both physiological and psychological benefits can be obtained from regular physical activity involvement. Weight control, prevention of obesity, and other related health-conditions can all be reduced by physical activity. Psychological benefits such as decreased anxiety and depression may also be attained, with positive improvements in emotions, self-esteem, and self-confidence.

As an example, one Finnish study which used the data from a larger, WHO-coordinated cross-national survey of school children's health and life-style (Health Behaviour in School-Aged Children, the HBSC Study) will be presented. Nationally representative data were collected in 2006 using a standardized questionnaire. The sample consisted of pupils, approximately 13.5 and 15.5 years of age, in general education in Finnish schools (n=4037). Almost one fifth (18.8%) of the pupils had a long-term disability, illness or medical condition (e.g., allergy, asthma, diabetes, CP) diagnosed by a doctor. The reasons for partaking in exercise were investigated using the modified Reasons for Exercise Inventory (REI, 15 items). The three most common reasons for exercising were "I want to improve my health", "I want to get fit", and "I want to have fun" for both boys and girls, whether they had a disability or not. Girls (>70%) were more motivated for getting fit and improving their health than boys (<60%). The only statistically significant differences between boys with disability and those without were in two items: boys without disability considered the reasons "I want to get fit" and "I want to look good" more important than boys with disability. Among girls, the most important difference was that those with disability considered the reason "I want to lose weight" more important than those without disability.

The challenging task of professionals in the field of adapted physical activity is to heighten awareness about health benefits of physical activity by increasing choices and thus motivation towards participation. It seems that based on this survey health and social aspects are the most important reasons for being physically active among adolescents. These results are important because understanding motivation is essential when promoting physical activity among young people.

Kosma, M., Cardinal, B.J., & Rintala, P. (2002). Motivating individuals with disabilities to be physically active. *Quest*, 54, 116-132.

IS PARTICIPATION IN SPORTS GOOD OR BAD FOR THE JOINTS?

Harald Roos

Lund University and Swedish Sports Medicine Society, Sweden

Use and abuse of joints, as well as joint trauma can influence the development of osteoarthritis (OA). It is known from many studies, animal and human, that unloading of a joint is disadvantageous. On the other hand moderate physical activity has a favourable influence on articular cartilage, also indirectly, as it may prevent from overweight, which is a documented risk factor for OA. Weakness in the quadriceps muscle is a risk factor for OA, while muscular training and physical activity can act as a treatment for the same disease. Recent studies have shown that people with a low activity level have low content of glycos-amino-glycans (GAG) in cartilage matrix. Training of a population at risk for OA, interestingly, showed an increase in the GAG content. A low GAG content is associated with an increased risk for a later joint replacement.

Soccer is a sport that combines high joint loading and a considerable risk for injuries, especially knee injuries. Since soccer is the most popular sports activity in the world with about 40 million participants it is a useful model for studying OA. An increased risk of hip and knee OA has been shown in former top level soccer players regardless of injuries. There has been much focus on major knee injuries and the risk of posttraumatic knee OA and joint trauma is considered the most important cause of early knee OA. A major knee trauma is often associated with an anterior cruciate ligament (ACL) injury, and this injury has been studied both concerning the short and long term effects.

The incidence of ACL injury in western countries ranges from 0.3-1 per 10000 inhabitants a year and is highest between 15 to 25 years of age. The risk for an ACL injury in soccer is much higher than in the general population, but the risk may be even higher in team handball. It is clearly shown that female players in soccer, handball, basket ball have a 6-8 times higher risk to sustain an ACL injury than their male counterparts. The reason for this is not fully known.

Most studies report radiographic OA in approximately half of ACL injured patients regardless if they are surgically reconstructed or not. Isolated meniscal tear and the resulting surgery is also a well-recognized risk factor for OA of the knee.

In two recently reported studies on the long-term effects of an ACL injury the prevalence of OA after ACL injury is much lower. In one of these all patients were primarily non-operatively treated and followed for 15 years. The prevalence of in the whole group was 16%, but if ACL reconstructed patients and patients with associated meniscus injuries were excluded none had definite OA. The activity level and the quality of life was comparable to non-injured in the same age-group.

Different factors could be responsible for the development of OA after a knee injury. A low GAG content in the cartilage matrix is found in the ACL injured knee more than 12 months after the injury. It could be speculated that the cartilage thus is vulnerable to high loading as long as this change in the structure persists. A controlled rehabilitation and no return to high physical activity before both biomechanics and biochemistry are re-established may reduce the risk of OA.

In summary, joint loading from sports activities, except really excessive loading, seems to be positive for the joints. Negative effects of sports participation are mainly caused by injuries.

COPING IN SPORT AND EXERCISE: A STRATEGY OR AN EXPECTANCY?

Anne Marte Pensgaard

Norwegian School of Sport Sciences, Norway

Coping with stress in sport and exercise has become a growing area of interest during the past few years for athletes, exercisers, coaches and instructors. The concept itself has actually a rather brief history within general psychology research and it was first in the early 60's that research (originally related to work being conducted on defense mechanisms) started to appear (Parker & Endler, 1996). Coping has typically been defined as strategies (e.g. Lazarus & Folkman, 1984), and sub-dimensions of coping has often been divided into problem – or emotion focused coping, or approach- and avoidance coping (Roth & Cohen, 1986). Early approaches often viewed coping as stable person characteristics, while in the 1970s and early 1980s, more and more coping researchers regarded coping as a process where the interaction between the person and the environment was the main focus of interest. Within the domain of sport, researchers were interested in identifying adaptive –and maladaptive strategies used during sport competitions (e.g., Crocker, 1992; Holt, Hoar & Fraser, 2005). This has proven to be a challenge because no consistent pattern has emerged as to which strategies are “good” or “bad”. This has led some researchers to look for other determinants in order to study coping effectiveness and one such approach is the Cognitive Activation Theory of Stress (CATS) developed by Ursin (1988) and Ursin and Eriksen (2004).

CATS is a comprehensive model that explicitly defines coping as a positive response outcome expectancy (PROE). This could at first glance be classified as an agent-means control belief within Skinner's (1995) framework. However, Ursin and Eriksen state that PROE is a result of learning experiences and reflects a person's belief that he or she is able to obtain a positive outcome regardless of the particular strategies employed. Ursin (1988) argues that coping strategies in themselves do not predict differential outcomes, but rather suggests that the major determinant of positive outcomes is whether the person has a strong PROE. A high PROE, however, may be a result of the use of certain strategies (e.g., hard work, good training) that function as more probable antecedents for the development of a positive response outcome expectancy. Thus, it is clear that the concept of a PROE also can be categorized as an agent-end belief (Skinner, 1995). One attractive feature of the CATS is that coping is theoretically predicted to link to specific psychobiological responses, as is the use of defense mechanisms (see Ursin & Eriksen, 2004 for a detailed description and empirically support for the model). This feature separates the CATS from other models more commonly used within sport psychology research such as Lazarus's model of stress and coping (Lazarus & Folkman, 1984).

What can CATS contribute to stress research and applied work within the field of sport and exercise? First, the clarification of the stress concept is a major step forward in order to conduct comparative research. Secondly, the clear distinction between coping and defense with separate psychobiological pattern is of great interest within the sports domain. Værnes and Darragh (1982) for example found that there was a correlation between negative cognitive function and elevated use of defense mechanisms among divers, while positive response outcome expectancies (i.e. coping) is related to positive health (Eriksen & Ursin, 1999). Choosing CATS as a platform for studying coping in sport and exercise may prove to be an exciting and productive avenue in the future and recent studies (e.g. Pensgaard & Duda, 2003) seem to support this suggestion.

References

- Crocker, P.R.E. (1992). Managing stress by competitive athletes; Ways of coping. *International Journal of Sport Psychology*, 23, 161-175.
- Eriksen, H.R. & Ursin, H. (1999). Subjective health complaints: Is coping more important than control? *Work and Stress*, 13(3), 238-252.
- Holt, N.L., Hoar, S. & Fraser, S.N. (2005). How does coping change with development? A review of childhood and adolescence sport coping research. *European Journal of Sport Science*, 5(1): 25-39.
- Lazarus & Folkman (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company.
- Levine, S. & Ursin, H. (1991). What is stress? In: M.R. Brown, G.F. Koob & C. Rivier (eds) *Stress: Neurobiology and Neuroendocrinology*, (pp.1-21). New York: Marcel Dekker, Inc.
- Murison, R. & Overmier, J.B. (1993) Parallelism among stress effects on ulcer, immunosuppression and analgesia: Commonality of mechanisms? *Journal of Physiology* (Paris) 87, 253-260.
- Parker, J.D.A., & Endler, N.S. (1996). Coping and Defense: A historical overview. In M. Zeidner & N.S. Endler (eds), *Handbook of Coping*, (pp.3-24). New York: John Wiley & Sons, Inc.
- Pensgaard, A.M. & Duda, J.L. (2002). “If we work hard we can do it”; A tale from an Olympic (gold) medalist. *Journal of Applied Sport Psychology*, 14: 219–236.
- Roth, S., & Cohen, L. J. (1986). Approach, avoidance, and coping with stress. *American Psychologist*, 41, 813-819.
- Skinner, E. (1995). *Perceived control, motivation, and coping*. Thousand Oaks, CA: Sage.
- Ursin, H. (1988). Expectancy and activation: An attempt to systematize theory. In D. Hellhammer, I. Florin, & H. Weiner (Eds.), *Neurobiological approaches to human disease* (pp. 313–334), Toronto: Hans Huber.
- Ursin, H. & Eriksen, H.R., 2004. The cognitive activation theory of stress. *Psychoneuroendocrinology*, 29, 567–592.
- Værnes, R.J., & Darragh, A. (1982) Endocrine reactions and cognitive performance at 60 metres hyperbaric pressure. Correlations with perceptual defense reactions. *Scandinavian Journal of Psychology*, 23 (1), 193–199

Interdisciplinary Symposium

Interdisciplinary symposium 1: Health, Participation and Effects of Exercise

Moderators: Finn Rasmussen (Sweden) and Magnus Lindwall (Sweden).

Room: Malcus

Finn Rasmussen (Sweden): Physical activity, fitness and fatness: Long-term risks for cardiovascular diseases and type-2 diabetes.

Magnus Lindwall (Sweden): The relation between exercise and psychological health for older adults: Dose-response and gender differences.

Karen Sogaard (Denmark): Effects of physical exercise on musculoskeletal health from a biomechanical perspective.

Lars Kristén (Sweden): Adapted physical activity: Active healthy lifestyle for all.

PHYSICAL ACTIVITY, FITNESS AND FATNESS: LONG-TERM RISKS FOR CARDIOVASCULAR DISEASES AND TYPE 2-DIABETES

Finn Rasmussen

Child and Adolescent Public Health Epidemiology Unit, Department of Public Health Sciences,
Karolinska Institutet, Stockholm, Sweden

Physical activity from early life has been shown to decrease morbidity and mortality in major public health problems including cardiovascular diseases and type 2-diabetes. It is well established that obesity has serious long-term health consequences. In contrast good cardiorespiratory fitness is associated with health and decreased morbidity and mortality risks from cardiovascular diseases and type 2-diabetes. It has also been recognised that fat free mass (lean body mass) is related to long-term health. Recent studies using muscle strength in young adulthood as a proxy measure for lean body mass have reported strong positive associations with cardiovascular health. Insulin sensitivity is one possible mediating link between physical activity, cardiorespiratory fitness and lean body mass on the one side and cardiovascular health on the other. This presentation will review some novel aspects related to physical activity, cardiorespiratory fitness and lean body mass as predictors of cardiovascular diseases and type 2-diabetes.

THE RELATION BETWEEN EXERCISE AND PSYCHOLOGICAL HEALTH FOR OLDER ADULTS: DOSE-RESPONSE AND GENDER DIFFERENCES

Magnus Lindwall

Department of Psychology, University of Gothenburg, Sweden

The purpose of the presentation is to discuss: (a) a role of exercise in the prevention of violations in psychological health of older adults; (b) the dose-response relationship between exercise and mental health for elderly; (c) gender differences in the exercise-mental health relationship. Two epidemiological studies (Lindwall et al., 2007 and Lindwall et al., 2008) and one intervention study focusing on the relation between exercise and psychological health will be described. In the first study, the link between exercise and depression was examined in a large sample included in the Swedish National Study on Aging and Health (SNAC). The second study focused on the relation between exercise and cognition for the same sample. In both studies, the analyses were conducted separately for men and women. In the third study, the effects of an exercise intervention for older adults, using whole-body vibration training over eight weeks, on the three levels of their self-concept (global self-esteem, physical self-perceptions and falling self-efficacy) was investigated. To briefly sum up, the studies show that: (a) regular exercise activities contribute to more positive psychological health in older adults; (b) effects of the exercise intervention program are the most visible on the specific levels of self-concept, such as self-efficacy; (c) exercise of light-to-moderate levels of intensity have stronger effects than strenuous intensity exercise; and (d) there are some gender differences in the exercise-psychological health relationship.

EFFECTS OF PHYSICAL EXERCISE ON MUSCULOSKELETAL HEALTH FROM A BIOMECHANICAL PERSPECTIVE.

Karen Søgaard¹, Lars L Andersen², Pernille K Nielsen², Gisela Sjøgaard¹.

¹ Institute of Sports Science and Clinical Biomechanics, University of Southern Denmark

² National Research Centre for the Working Environment, Copenhagen, Denmark.

While the health enhancing effect of physical activity on cardiovascular and metabolic health has been documented in RCT studies, less evidence has been provided for an effect on musculoskeletal health parameters such as pain conditions, neuromuscular and biomechanical function. In a study on 42 female office workers with trapezius myalgia (TM) and 20 healthy matched controls. TM showed decreased static and isokinetic muscle strength as well as decreased activation, specifically of the painful trapezius muscle, but not for the pain free deltoid muscle. Muscle thickness was similar for the two groups, but maximal contractions to a larger degree provoked pain in TM. Thus, the biomechanical differences may be explained by a pain related suboptimal neuromuscular activation rather than lack of muscle mass. Subsequently, the TM were randomly assigned to either 10 weeks of specific strength training (SST), General fitness training (GFT) or a reference group. Only in SST were found significant biomechanical changes after the intervention e.g. both static and isokinetic force output improved. This could be explained by a larger activation of trapezius, while no change was found in deltoideus. However, trapezius muscle thickness also increased. SST in addition led to prolonged pain relief, and GFT to acute pain reduction. Also palpable tenderness decreased for the majority of subjects in both SST and GFT with the largest effect found in SST. SST increased the force generating capacity partly by an enhanced neuromuscular function and partly by an increase in muscle mass. Physical activity could play a role for musculoskeletal health both as a pain relieving treatment but also as a general means to increase capacity and thereby lower the relative load and wearing effect of many daily life activities.

ADAPTED PHYSICAL ACTIVITY (APA). ACTIVE HEALTHY LIFESTYLE FOR ALL

Lars Kristén

Centre for Sport and Health Research, Halmstad University, Sweden

Children and young people with disabilities do not have today the same opportunities to participate in sporting and health-promoting activities as other young people without such handicaps. Sporting activities for these children and teenagers can in many cases not be pursued in their leisure time and are not exploited to any great extent within rehabilitation. Within the curricular framework of the school, special needs teaching in Physical Education is available but as with amateur sports provision in general it is dependent on the expertise and methods of the teacher or trainer. Today, the concept of health is defined as more than merely the absence of disease, and there is an ongoing development towards a total health concept, a holistic concept. APA is well in line with WHO's new International Classification of Functioning, Disability and Health (ICF), where disability is replaced by activity and handicap by participation. The revised version supersedes the previous International Classification of Impairment, Disability and Handicap (ICIDH), whereby the sporting activity becomes a means of achieving both health and participation. Among others, findings shows that adapted physical activity can involve different health aspects for the child or adolescent with a disability e.g. strengthening one's physique and having a good time as well as facilitating their participation in society e.g. getting new friends and becoming someone. On the other hand, physical activity can have both a positive and a negative influence on the different dimensions of health, seen in terms of physical, mental, social and spiritual/existential well-being. It would be desirable to more clearly tie research and educational investment into the area which would reflect not only national and community aims but also favour the individual's opportunities and benefits in terms of sporting and health-promoting activities.

Interdisciplinary symposium 2: Health, participation and effects of competitive sports.
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Moderators: Mark B. Andersen (Australia) and Roland Thomeé (Sweden).

Room: Malcus

Roland Thomeé (Sweden): Return to sports – Is it a strength if the strength is recovered?

Mark B. Andersen (Australia): Health, participation and effects of competitive sport: A psychosocial perspective.

Marie Alricsson (Sweden): Self-related health, physical activity and musculoskeletal complains in Swedish high school students.

Kim Wickman (Sweden): Bending mainstream definitions of sport, gender and ability. Representations of wheelchair athletes.

RETURN TO SPORTS - IS IT A STRENGTH IF THE STRENGTH IS RECOVERED?

Roland Thomeé

Lundberg Laboratory of Orthopaedic Research, Sahlgrenska University Hospital, Gothenburg, Sweden

The literature is clear on that most athletes do not recover their muscle function within the first year after an ACL injury or reconstruction. Clinical experience and the literature agree on that athletes that do not recover muscle function render a higher risk for re-injury and to develop knee osteoarthritis. Despite this fact a majority do return to sports within the first year. A systematic literature review revealed that functional scores and muscle function test batteries can predict the outcome after an ACL injury. The main problem with muscle function tests is that they only reflect a small portion of the total muscle function. Therefore several tests for muscle function are recommended. Furthermore several injuries occur when the athlete is under muscle fatigue. Most of the muscular function tests, however, are performed in a well-prepared, non-fatigued situation, in many cases far from the sports-specific situation. The jumping ability of 20 well rehabilitated ACL injured athletes, that had returned to sports and that had maximal ability to jump on leg while non-fatigued, was evaluated after a controlled quadriceps muscle fatiguing protocol. It was found that the athletes ability to jump while fatigued on the injured leg was significantly decreased compared with the uninjured leg. After an ACL injury reliable, valid and responsive evaluation methods such as knee symptom scores, one leg hop tests, knee muscle strength tests, and knee control evaluations are recommended.

HEALTH, PARTICIPATION AND EFFECTS OF COMPETITIVE SPORT: A PSYCHOSOCIAL PERSPECTIVE

Mark B. Andersen

Victoria University, Australia

Many academics and practitioners in the sport and exercise disciplines (e.g., biomechanics, exercise physiology, sport psychology) often hold prejudices that participating in sport is a good thing that leads to health, fitness, good character, and even happiness. Such prejudices can lead to blind spots in thinking, perceptions, and actions. Athletes with tears of joy on the podium or the faces of grand final winning teammates look wonderful and reinforce our prejudices that sport is good. We believe that competitive sport teaches us many life lessons, and there is no doubt that we can learn much from sport. Along with the good lessons, we can learn that winning is everything; that good performance = good person; that love and attention are contingent; and that we deserve to be physically, psychologically, and even sexually abused. We can learn to overtrain, to develop eating disorders, and to ignore or suppress the information our bodies are sending to us that we are in danger. And what happens when the competitive sport phase of one's life is over? Many former athletes go on to lead wonderful, healthy, and productive lives, but as Stambulova has shown us, many athletes, when looking back on their careers, have profound feelings of regret and unhappiness. In this brief presentation I will examine the prejudices and blind spots we have surrounding sport and how we might uncover the dark and subterranean aspects of competitive participation in order to help make sport a safe, productive, healthy, and happy place.

SELF-RELATED HEALTH, PHYSICAL ACTIVITY AND MUSCULOSKELETAL COMPLAINTS IN SWEDISH HIGH SCHOOL STUDENTS

Marie Alricsson¹, Y. Kahlin Reichard², S. Werner³

¹Department of Health Sciences, Mid Sweden University, Östersund, Sweden,

²Department of Neurobiology, Care Sciences and Society, Division of Physiotherapy, Karolinska Institutet, Stockholm, Sweden, ³Capio Arthro Clinic, Stockholm Sports Trauma Research Center, Karolinska Institutet; Stockholm, Sweden.

There is a positive correlation between physical activity and health. The aim was to describe self-related health, sports, level of physical activity and possible musculoskeletal complaints among Swedish high school students and to study whether there were any differences in these aspects between gender and students from different high school programs. A questionnaire was answered by 1090 high school students (468 males, 622 females) aged 16-26 years. Students from theoretical programs reported better self-related health than students from practical programs. Females from practical programs reported poorer self-related health than other students. Physically active students reported better self-related health than less physically active students. Fifty-seven percent reported to be physically active in sport. Students from practical programs were less physically active than those from theoretical programs. Females from the practical programs were the least active ones. Fifty percent of the students reported complaints, more females than males. There was no difference between students from theoretical and practical programs in terms of reporting complaints. Back and knee complaints were the most common ones. In light of these results we suggest that adolescents should be stimulated to participate in physical activity in order to increase the possibility of a healthy life.

BENDING MAINSTREAM DEFINITIONS OF SPORT, GENDER AND ABILITY. REPRESENTATIONS OF WHEELCHAIR ATHLETES.

Kim Wickman

Department of Education, Umeå University, Sweden

Inspired by feminist post-structural thinking and with a discourse analytic approach, this study's main theme is gendered identity, disability and sport. It consists of four separate, but interrelated, empirical studies and focuses on two research questions. Firstly, how do female and male wheelchair racers construct and perform their identities? Secondly, how are female and male wheelchair racers represented in Swedish sports media? To answer the research questions, semistructured interviews with wheelchair racers, and a critical analysis of sports media texts from the Paralympics in Sydney, 2000 have been conducted. In this dissertation the composition of unwritten regulations produced by the media texts, that shaped the practice of wheelchair athletes was conceptualized as the discourse of able-ism. Findings indicate that the sports media texts constructed the subject of 'disabled sportsman/sportswoman', which indirectly reproduced the conception of a copy and not an original. The exclusion was, however, concealed and neutralized through the regulation and differentiation that the discourse of able-ism legitimated. Although sports media still seems to reinforce negative stereotypes of disabled athletes, the wheelchair racers themselves are challenging the gender, sport and disability discourses and establishing new ways of being physically powerful and excellent in and outside the sports arena. In fact, when the athletes got the opportunity to make their voices heard in media, they re-dressed the twisted picture of wheelchair racing as passive rehabilitation training into elite sport. Consequently, it seems that wheelchair racing and its high status in disability sports empowers both male and female racers which increases their possibility to be represented as 'real' sports men and women. Finally, although, the athletes have shown that wheelchair racing has a given place in modern sport, 'being able' as an athlete and being a gendered individual are still strongly connected to the appearance and performance of the un-impaired body.

Symposia

Sport Psychology Symposium 1: To what extent is there reciprocity between psychology and sport & exercise psychology?

Chair: Sally Akehurst (United Kingdom) Discussant: Mark B. Andersen (Australia) Room: Wigforss

Sally Akehurst (United Kingdom): The symposium introduction.

David Lavallee (United Kingdom): The labour pains of sport and exercise psychology: An examination of the relationship between sport and exercise psychology and psychology.

Sally Akehurst (United Kingdom): Exploring narcissism: Adoption, application, reciprocity and development from mainstream to sport psychology.

Joanne Thatcher (United Kingdom): Reversing the trend: Reversal theory and sport and exercise psychology

David Tod (United Kingdom): Is it my fault Daddy doesn't love me? Contributing to mainstream psychology training and development literature from a sport psychology perspective.

Mark B. Andersen (Australia): Who is your daddy?: Tension, acceptance, and coming home to sport psychology's grandparent discipline.

TO WHAT EXTENT IS THERE RECIPROCITY BETWEEN PSYCHOLOGY AND SPORT AND EXERCISE PSYCHOLOGY?

Sally Akehurst, David Tod, David Lavallee, Joanne Thatcher, & Mark Andersen²
Aberystwyth University, United Kingdom; ²Victoria University, Australia

This symposium will examine the extent to which sport and exercise psychology research and practice are recognised in other sub-disciplines of psychology. The early years of sport and exercise psychology tended to be characterised by the adoption, and subsequent application, of theories that had originated elsewhere in psychology. Researchers in the 1960s and 1970s drew substantially on these theories, but most often these models had been developed to address personal and social phenomena in specific contexts including educational, occupational and clinical settings, and the justification for generalising to other contexts, including sport and exercise, was not always obvious. Although such psychological theories served as valuable catalysts for research activity, it was not long before sport-specific theories and models began to emerge because of the difficulties associated with the wholesale 'borrowing' of theories became increasingly apparent. As a consequence, from the end of the 1970s an increasing number of theories emerged that were dedicated to understanding sport and exercise behaviour. This trend has continued up until the present day, but the consequences of how the field has evolved may have led to a somewhat blinkered view of the discipline, and its accumulated knowledge as a whole, along with a tendency to develop sophisticated levels of expertise but only within narrowly-defined domains. The trends may also have limited the potential for cross-fertilisation of ideas from other psychology subdisciplines. The participants in this symposium will reflect, based on their experiences, on the extent to which there is reciprocity between sport and exercise psychology and the mainstream within the areas of narcissism, reversal theory, and training and development. The discussant will review and critique the strengths and weaknesses of the presentations and arguments put forth by the symposium participants along with an overview of the tensions and developing convergences between sport and exercise psychology and its progenitors.

THE LABOUR PAINS OF SPORT AND EXERCISE PSYCHOLOGY: AN EXAMINATION OF THE RELATIONSHIP BETWEEN SPORT AND EXERCISE PSYCHOLOGY AND PSYCHOLOGY

David Lavallee
Aberystwyth University, United Kingdom

This opening presentation will examine the relationship between sport and exercise psychology and psychology. Data from a content analysis of sport and exercise psychology journals will initially be presented, and compared with trends within four other fields of applied psychology (health psychology, community psychology, counselling psychology, and applied developmental psychology). Results suggest sport and exercise psychology is relatively similar to other sub-disciplines of applied psychology in terms of the proportion of references made to published work within the sub-discipline, itself. In comparison to other fields of applied psychology, sport and exercise psychology is cited to a lesser extent within its own sub-disciplines and this trend has changed over time. Results from the presentation will be discussed, and also form the basis of subsequent presentations in the symposium on narcissism, reversal theory and training and development.

EXPLORING NARCISSISM: ADOPTION, APPLICATION, RECIPROCITY AND DEVELOPMENT FROM MAINSTREAM TO SPORT PSYCHOLOGY

Sally Akehurst

Aberystwyth University, United Kingdom

Recognition of narcissism dates back to the early 1900's with Freud's original psychoanalytic perspective. The term originated from the Greek myth of Narcissus – a Greek hero who fell in love with his own reflection - and has been used to illustrate a psychological state of self-love. The evolution of narcissism is grounded within personality and social psychology research with key contributions from psychoanalysis theory, phenomenology, and clinical treatment. Now recognised as a clinical personality disorder and as a sub-clinical personality trait with measurement tools, the extent to which narcissism is researched in different contexts has escalated in recent decades and more importantly advanced understanding of the narcissistic personality. Sport and exercise are contexts that have only very recently seen interest in the influence of the sub-clinical narcissistic personality from a psychological perspective. This presentation will draw upon this early work and my own research to explore how narcissism is proposed to exert its influence on sport performance in particular. The extent to which mainstream research has informed this line of inquiry and the potential for this research context to extend and inform further understanding of the narcissistic personality will be discussed. At this early stage it is of interest to consider sport psychology's reception to narcissistic research and the potential reluctance of mainstream psychology to research from the sport perspective.

REVERSING THE TREND: REVERSAL THEORY AND SPORT AND EXERCISE PSYCHOLOGY

Joanne Thatcher

Aberystwyth University, United Kingdom

Reversal Theory (RT: Apter & Smith, 1975) was developed in response to the preponderance of existing trait-based theories of motivation, personality and motivation. This presentation will discuss the reciprocal relationship that exists between Sport & Exercise Psychology and RT. Initially Sport & Exercise Psychology was reluctant to embrace RT and early applications focused exclusively on RT proposals concerning anxiety and arousal. This is possibly attributed to RT's somewhat unwieldy terminology and to Sport Psychology's apparent obsession with arousal and anxiety until relatively recently. However, the blinkers have been removed and Sport & Exercise Psychology is recognising RT's potential for understanding human experiences in sport and exercise, with RT framed research spanning a range of issues (e.g., injury, motivation and team relationships). Quite appropriately, in contrast with the other symposium topics the trend is reversed for RT based Sport & Exercise Psychology research. This research is afforded equal status to RT framed research in other domains (e.g., education and health). Sport & Exercise Psychology research underpinned by RT was published in non-Sport & Exercise Psychology outlets long before it was accepted by Sport & Exercise publications. Reversal theorists have fully embraced Sport & Exercise Psychology research; within this field sport and exercise research is seen as a legitimate and appropriate context in which to investigate and apply the principles of RT. One possible explanation for this is that RT postulates generic constructs and principles that underpin all human experience and endeavour, irrespective of the context in which they occur.

IS IT MY FAULT DADDY DOESN'T LOVE ME? CONTRIBUTING TO MAINSTREAM PSYCHOLOGY TRAINING AND DEVELOPMENT LITERATURE FROM A SPORT PSYCHOLOGY PERSPECTIVE

David Tod

Aberystwyth University, United Kingdom

Mainstream psychology researchers have a rich tradition in examining psychotherapist training and development. In contrast, sport psychology training, and practitioner development, evaluation has not received widespread attention. Information flow across the boundary between the two disciplines seems largely unidirectional with some sport psychology researchers drawing on mainstream theory and research to guide their studies and practices. Also, some sport psychology researchers have attempted to cross the divide and show the contribution sport psychology knowledge can make to psychology training. In this presentation I will reflect on how sport psychology researchers might make a useful contribution to the mainstream literature. I will draw on literature and my doctoral studies to suggest that researchers investigating sport psychology training and development may be having little influence on their mainstream counterparts for three reasons. First, mainstream psychologists may have negative perceptions of sport psychology and sport psychologists. Second, many current training models in sport psychology may be limited in the ways they prepare individuals for practice, and are seen as inadequate by mainstream psychologists. Third, training and development does not appear to be considered a worthy topic of investigation by the editors of major sport psychology journals. Ways sport psychology researchers might contribute meaningfully to mainstream literature will be offered such as the development of research programmes and active engagement with their mainstream counterparts.

WHO'S YOUR DADDY?: TENSION, ACCEPTANCE, AND COMING HOME TO SPORT PSYCHOLOGY'S GRANDPARENT DISCIPLINE

Mark B Andersen

Victoria University, Australia

Sport psychology gestated and was born in physical education departments, went through childhood and adolescence in evolving exercise science departments, and seems to have languished there in an uncomfortable early adulthood. Practitioners and researchers in the field of sport psychology borrowed, not so much from the original parent discipline (PE/exercise science) as they did from the grandparent discipline of psychology (most from behaviourism, and later cognitive-behavioural theory). But the borrowing was incomplete, and in many ways naive. As a discussant, I will explore the philosophical (e.g., ontological, axiological, deontological) and psychopathological (through cognitive-behavioral and psychodynamic lenses) roots that support, and in some cases, contradict the presentations on narcissism, reversal theory and training and development.

Sport Psychology Symposium 2: Perceived health and sport/exercise participation

Chair: Natalia Stambulova (Sweden)

Room: Halda

Natalia Stambulova (Sweden): The symposium introduction.

Natalia Stambulova (Sweden): Perceived health and sport/exercise participation: A summary of the 3-year Halmstad project.

Ingela Alvmeyren (Sweden): Athletes' perception of health and factors influencing their satisfaction with sport participation

Jenna Gestranus (Sweden): Factors influencing athletes' tendencies towards healthy vs. unhealthy sport participation.

Afshin Shakiba (Sweden): Exercisers' perceived health, goal orientation, physical self-perception and exercise satisfaction.

Ines Pfeffer & Cathleen Illig (Germany): Exercise and its effects on motor skills, cognitive functioning and mental health in the elderly.

Mattias Johansson & Peter Hassmén (Swe): Qigong exercise is associated with enhanced pleasant affect.

Ellinor Olander & Frank Eves (UK): The comparison of two stair climbing interventions: Less is more.

PERCEIVED HEALTH AND SPORT/EXERCISE PARTICIPATION: A SUMMARY FOR THE 3-YEAR HALMSTAD PROJECT

Natalia Stambulova

Centre for Sport and Health Research, Halmstad University, Sweden

Sport and exercise psychology literature (e.g., Fox, 2000; Picard, 1999; Steptoe & Butler, 1996; Szabo, 2000) showed that competitive athletes and exercisers can enhance their health but also can drain it during their sport/exercise participation. The project focusing on factors involved in healthy vs. unhealthy sport/exercise participation was initiated at Halmstad University in 2004 with application to the Swedish Council for Sport Research and received its funding in 2005-07. During the first stage of the project a working model had been developed and two qualitative studies were conducted (Alvmeyren, 2005; Shakiba, 2005). It allowed to modify the working model and to create two quantitative instruments, such as the Perceived Health and Sport Participation Profile (PHSPP) and the Perceived Health and Exercise Participation Profile (PHEPP). During the second stage these questionnaires were tested and also correlated to the relevant psychological phenomena, such as athletic identity, goal orientations, physical self-perceptions and self-esteem (Alvmeyren, 2006; Shakiba, 2006). This resulted in the second modification of the working model and prepared the third stage devoted to creating and testing concise versions of both questionnaires (Gestranus, 2006, 2008). The most recent version of the Perceived Health and Sport/Exercise Participation model (Stambulova, Johnson, Lindwall & Hinic, 2006) describes healthy-unhealthy sport/exercise participation as a continuum and outlines two sets of cognitive-behavioural factors related to healthy vs. unhealthy tendencies in sport/exercise participation. The model will be presented in the relation to the major results obtained in the project studies, and future directions/applied issues derived from the studies will be discussed.

ATHLETES' PERCEPTION OF HEALTH AND FACTORS INFLUENCING THEIR SATISFACTION WITH SPORT PARTICIPATION.

Ingela Alvmyren

Centre for Sport and Health Research, Halmstad University, Sweden

Two studies were conducted to investigate athletes' perceived health, factors influencing their health related behaviours in sport and their satisfaction with sport participation. Both studies were based on the Perceived Health and Sport/Exercise Participation model (Stambulova, Johnson, Lindwall & Hinic, 2005), and the intentions of the studies were to explore the model using qualitative and quantitative methodologies. In the qualitative study 36 competitive athletes were interviewed on the subjective importance of health, health enhancing and health-risks behaviours, health-related social influences, and their satisfaction with sport. The data treatment included deductive and inductive analyses. In the quantitative study the Perceived Health & Sport Participation Profile (PHSPP) questionnaire was developed and tested on 139 competitive athletes. The relationship between PHSPP and goal orientation, self-esteem, physical self perception and sport satisfaction was also examined using corresponding questionnaires. The data treatment included descriptive statistics, correlation-, factor- and regression-analyses. Results from both studies confirmed major parts of the PH&SP-model. For example the regression analysis showed that healthy sport participation contributed to satisfaction with sport. The qualitative analysis showed a double sided attitude toward health among the athletes. The majority of them considered health to be highly important in life but at the same time 69% of them put their health at risk in their athletic career (e.g. practicing or competing when ill or injured). Social influences were also contradictory as athletes are encouraged to engage in health enhancing behaviours by significant others, who then also often "push" athletes to put their health at risk in sport.

FACTORS INFLUENCING ATHLETES' TENDENCIES TOWARDS HEALTHY VS. UNHEALTHY SPORT PARTICIPATION

Jenna Gestranus

School of Social and Health Sciences, Halmstad University, Sweden

Both positive and negative effects of sport participation on health are shown in the literature (e.g., Fox, 2000; Kenttä & Hassmén, 1998). However, athletes' perceived health is still unexplored from this two-line influence perspective. The Perceived Health and Sport/Exercise Participation model (PH&S/EP, Stambulova, Johnson, Lindwall & Hinic, 2006) served as theoretical framework for the study that aimed at testing the Perceived Health & Sport Participation Profile (PHSPP) Questionnaire and examining the relationship between athletes' perceived health, sport satisfaction, goal orientation, athletic identity, self-esteem and physical self perception. A package of five instruments was completed by 136 competitive athletes representing different sports and levels. A test-re-test was conducted on the PHSPP (n=34). Factor analyses resulted in eight extracted factors explaining 55.92% of the total variance. Based on factor analyses and the model, eight transformed component variables were created: *health as a goal*, *health as a mean*, *accumulating health*, *health as a benefit of sport participation*, *perceived health*, *satisfaction with sport participation*, *social influences stimulating healthy sport participation* and *social influences stimulating unhealthy sport participation*. Test-re-test reliability (Pearson's r) for these ranged from .46 to .81. The results supported the PH&S/EP model in a way that having health as a goal, accumulating health and perceiving health as a benefit of sport participation showed a positive relationship to perceived health and satisfaction with sport participation. Self-esteem correlated positively with *accumulating health*, *health as a benefit of sport participation*, *perceived health* and *satisfaction with sport participation*. A negative correlation was found between self-esteem and having *health as a mean*.

EXERCISERS' PERCEIVED HEALTH, GOAL ORIENTATION, PHYSICAL SELF-PERCEPTION AND EXERCISE SATISFACTION.

Afshin Shakiba

School of Social and Health Sciences, Halmstad University, Sweden

The purpose of the study was two fold: a) to develop and to test the Perceived Health & Exercise Participation Profile (PH&EPP); b) to examine the relationship between exercisers' perceived health, goal orientation, physical self perception and exercise satisfaction. The sample consists of 126 exercisers (43 Male, 83 Female with mean age 35.6 ± 9). The study included a new questionnaire - the Perceived Health & Exercise Participation Profile (PH&EPP) and three other instruments: 1) Physical Self-Perception Profile (PSPP); 2) Task & Ego orientation in Sport Questionnaire (TEOSQ); and 3) Rosenberg's Self-Esteem (RSE) Scale. The data were analyzed through SPSS 13.0 using Alpha coefficient, test-retest reliability, bivariate correlation and analysis of variance (ANOVA). Cronbach's Alpha was satisfied (> .70) at 5 of 6 subscales. The test-retest reliability reached to significant level (ranging from .43 to .76) for all subscales. The majority of PH&EPP's subscales reached to significant correlations except Health and Exercise as Life Values. The Satisfaction with Health and Exercise Participation reached to significant correlations with all PSPP's subscales, Task goal orientation, and RSE except Ego goal orientation. The Perception of Exercisers obtained significant correlations at 3 of 5 PSPP's subscales. Exercisers indicated more task goal orientation than ego goal orientation. The results are discussed from the point of view of the Perceived Health and Sport/Exercise Participation model.

EXERCISE AND ITS EFFECTS ON MOTOR SKILLS, COGNITIVE FUNCTIONING AND MENTAL HEALTH IN THE ELDERLY

Ines Pfeffer & Cathleen Illig

Department of Exercise and Sport Psychology, University of Leipzig, Germany

Research on successful aging shows that physical training can have positive effects on cognitive and motor functioning as well as on mental health in the elderly. People engaging in physical and cognitive activities show less decline in cognitive and motor functioning than those who are inactive (Allmer, 2005; Kramer et al., 2006). Combining physical and mental training seems to have an additive effect on cognitive functioning (Oswald et al., 2006). Based on the seven-sequence intervention (Wagner et al., 2004) a 12-week mixed exercise program (endurance, strength, flexibility and relaxation) with 90 minutes exercising per week was established for older adults (60 years onwards). Cognitive training (e.g. attention, concentration, memory) as well as coordination (e.g. balance, reaction) was targeted in each exercise session. The exercise program will be evaluated according to its effects on motor and cognitive performance as well as on mental health within healthy and physically inactive older adults. In a randomised controlled trial with experimental (EG) and waiting-control group (CG) two points of measurement were conducted: one directly before the intervention (T1) and one at the end of the intervention (T2; occurs at the end of February). At T1 $N = 67$ participants could be tested ($n = 36$ EG and $n = 31$ CG). Participants (45 female) are in average 67 years old ($SD = 4.4$; range: 60-79). To assess motor and cognitive functioning as well as mental health different standardised tests were used: e.g. Senior Fitness Test Battery (Rikli & Jones, 2001), FAIR (Moosbrugger & Oehlschlägel, 1996), LPS 50+ (Sturm et al., 1993), physical self-concept (Stiller & Alfermann, 2004), HADS-D (Herrmann et al., 1995).

QIGONG EXERCISE IS ASSOCIATED WITH ENHANCED PLEASANT AFFECT

Mattias Johansson¹ & Peter Hassmén²

¹Örebro University, Sweden. ²Stockholm University, Sweden

Acute affective responses to qigong were studied by comparing assessments made before, twice during, and after a 30-minute exercise bout. Regular qigong exercisers (age 58.6, SD 9.7; 46 women & 5 men) filled out the Unpleasant – Pleasantness scale of the short version of the Swedish Core Affect Scale (Västfjäll & Gärling, 2007). In addition to mean averages, frequencies of inter-individual responses were of interest; these were grouped into Positive, No change, Negative, and Fluctuations. A repeated measures ANOVA proved significant, $F(1, 50) = 54.4$, $p < .0005$. Affect means increased during the exercise bout: Pre 6.3 (SD 1.3), In-1 6.5 (1.3), In-2 7.1 (1.1), and Post 7.9 (.9). All post-hoc comparisons were significant, except Pre vs. In-1. Individual responses displayed 59% Positive, 29% No change, 6% Negative, and 6% Fluctuations. The results show that Qigong exercise is associated with increased Pleasant affect. In addition, the majority of qigong exercisers report positive affective changes. Only 6% report negative affective changes, compared to 26% of individuals exercising at self-selected intensities (Rose & Parfitt, 2007). Qigong exercise thereby seem to yield positive affective benefits during the activity, possibly even greater than higher-intensity exercise. The latter suggestion, however, warrants additional research. Should our results be confirmed, this may boost exercise adherence, as it is important to feel good also while doing the activity and not “only” afterwards. Qigong exercise may thereby have advantages that prove beneficial from both a health and exercise adherence perspective.

THE COMPARISON OF TWO STAIR CLIMBING INTERVENTIONS: LESS IS MORE

Ellinor K Olander and Frank Eves

School of Sport and Exercise Sciences, University of Birmingham, United Kingdom

Different methods have successfully promoted stair climbing in the workplace. While it has been suggested these interventions are inexpensive, no study has compared the cost-effectiveness of different interventions. The current study compared a stall at an occupational health information day (Workplace Wellbeing Day) with point-of-choice prompts for a) stair climbing response and b) cost-effectiveness in four university buildings. After one week of baseline observations, the Workplace Wellbeing Day took place. A subsequent week of observations assessed the effectiveness of the stall. Following this, the effects of posters positioned at the point-of-choice between the stairs and the lift were assessed for a further week. Logistic regression ($n=4,279$) showed no significant difference between baseline (47.9% stair climbing) and the Workplace Wellbeing Day (48.8% stair climbing; $p=0.83$). Posters, however, increased stair climbing (52.6%; odds ratio = 1.20, confidence intervals = 1.06-1.37, $p<.01$). The Workplace Wellbeing Day's inability to increase stair climbing may reflect the low number of employees attending, i.e. 3.6% of the invited employees. In contrast, the posters were visible to all employees entering the four buildings. The poster intervention was also less expensive; the Workplace Wellbeing Day cost £492 (€660) in total compared to £13 (€17) for the posters. Consequently, a Workplace Wellbeing Day is not only more expensive than a point-of-choice prompt, but is also inferior in promoting stair climbing due to its inability to disseminate the stair climbing message to all employees.

Sport Psychology Symposium 3: Injury prevention and rehabilitation.

Chair: Urban Johnson (Sweden). Room: Q 318

Urban Johnson (Sweden): The symposium introduction.

Urban Johnson (Sweden): Content analysis of a connection between psychosocial antecedents and occurrence of sport injury among 16 athletes.

Ulrika Tranaeus & Urban Johnson (Sweden): A case study: An injured athlete's way back from board room to sports ground.

Andreas Ivarsson (Sweden): The relationship between psychological life stress and the occurrence of sport injuries – A study on soccer players.

Andreas Claesson & Urban Johnson (Sweden): Psychological risk factors on rehabilitation after major soccer injuries.

Leslie Podlog & Robert Eklund (USA): Elite athletes' perceptions of success in returning to sport following injury.

A CONTENT ANALYSIS OF A CONNECTION BETWEEN PSYCHOSOCIAL ANTECEDENTS AND THE OCCURRENCE OF SPORTS INJURY AMONG 16 ATHLETES.

Urban Johnson

Centre for Sport and Health Research, Halmstad University, Sweden

Over the last decades, a growing number of researchers have tried to determine which psychosocial variables influence injury vulnerability and resiliency. Researchers have found that individuals who have experienced many recent stressors and who did not have the personal resources and skills to cope with the stressors were most at risk for injuries. The purpose of this study is to highlight psychosocial risk factors related to the occurrence of sport injuries for athletes. Altogether 60 interviews were performed of former injured competitive athletes by sport students at Halmstad University. In 16 of the cases (26%) a connection was noticeable between psychosocial event and the occurrence of a sport injury averaging 1-14 days prior to accident. The mean age of the study group was 20.8 years, including 9 men and 7 women representing 13 team and 3 individual sports. Knee and foot injuries dominated and the average rehabilitation time was about 30 weeks. In total 25 different psychosocial antecedents were identified through a deductive and inductive content analysis. A majority of the antecedents (76%) were related to history of stressors such as work related worry, start of a new and demanding education and a recent change of sport club and/or trainers. The results reveal that surprisingly many athletes experience injury related problems just prior to psychosocial stressors. Most of the injuries seem to be connected to general stress and worry in life outside the sports world. In conclusion, it is vital for coaches and leaders to understand the close relationship between psychosocial stressors and the occurrence of injury and to give athletes in a potential vulnerable situation less external demands and responsibilities, especially in relation to important games.

A CASE STUDY: AN INJURED ATHLETE'S WAY BACK FROM BOARD ROOM TO SPORTS GROUND.

Ulrika Tranaeus & Urban Johnson

Centre for Sport and Health Research, Halmstad University, Sweden

This case is about an injured Swedish male elite floor ball player. The case study will not illustrate the athlete himself or the intervention but the team around him and the support he received in order to return to sport. The organization of the team consists of two coaches, a doctor and a physiotherapist. In normal cases they make all the decisions and are taking care of the teams training and physical wellbeing. At early spring one player was stricken with one, at first sight, simple muscle injury. A few days of rehabilitation showed a worse injury than expected and the player ended up with surgery at hospital. This sudden turn in the healing process at an important time during the season influenced the player bad. At this point the board took a quick decision to help him and gave the medical group independency to offer him any needed support. Contact with a sport psychology consultant was taken, as a new member in the medical team assisted the player through this period of time. This was the first time the medical team was extended with this type of service and the first time the board spontaneously gave this opportunity to collaboration. The result of collaboration served well and the medical team are now allowed to call for sport psychological assistance in those cases they decide it might be relevant. This is an important service during rehabilitation and hopefully this will be a permanent solution in many teams' supporting staff.

PSYCHOLOGICAL RISK FACTORS ON REHABILITATION ON POST-SURGERY AND CONSERVATIVE REHABILITATION AFTER SEVERE SPORT INJURY

Andreas Claeson & Urban Johnson

Centre for Sport and Health Research, Halmstad University, Sweden

During rehabilitation, some athletes experience a combination of physical and psychological problems that can delay or even prevent the return to active sport again. Some researcher claim that a number of athletes, despite nonpathological and adaptive physical responses to injury show certain maladaptive and sustained reactions that can lead to severe psychosocial problems. Other claim that serious problems during rehabilitation can result from such matters as a dependency on coping strategies that offer emotional relief (Johnson, 1997), the lack of a well-functioning social network (Podlog & Eklund, 2006), a tendency towards negative self-talk (Ievleva & Orlick, 1991), and mood disturbance (Adams et al., 2004). However, few studies have focused on differences between post-surgery and conservative rehabilitation. Thus, the aim of the study was to examine psychological risk factors effecting athletes during rehabilitation after severe injury. 119 post-surgery and 93 conservative patients (mean age 25, 4 years) were studied using the questionnaire "Psychosocial Risk factors and Sport Injury" (PRIS, Johnson, 1999). Athletes had received injuries leading to 13 weeks rehabilitation time, with about 2/3 classified as knee related problems. MANOVA revealed a significant overall group difference (surgery and conservative) on the dependent variables (mood level and coping strategies) ($F(5, 204) = 2,78, p < 0.019$). The two groups differed in terms of Hedonic tone ($p = ,032$), Wishful thinking ($p = ,006$), and Problem-solving ($p = ,030$). Clearly, conservative patients are in a vulnerable position during rehabilitation compared to surgery patients, characterized by low self-reliant and problem-focused coping behaviour. Medical personal and coaches should put effort on educating conservative athletes in goal-setting and problem-focused skills. Future studies will determine the effectiveness of PRIS for a different sample of injured athletes.

THE RELATIONSHIP BETWEEN PSYCHOLOGICAL PREDICTORS AND THE OCCURRENCE OF SPORT INJURIES – A STUDY ON SOCCER PLAYERS

Andreas Ivarsson,

Centre for Sport and Health Research, Halmstad University, Sweden

Between 65 – 91 % of elite soccer players have at least one injury / year (Hägglund, 2007). Several researches had models establish the relationship between life stress and the occurrence of sport injuries. Two examples are Rogers and Landers (2005) stress – coping model and Williams and Andersen's (1998) stress – injury model. Other studies have stressed other relationships between psychological factors and the occurrence of sport injuries. For example a high anxiety level (Dunn, 1999) and low self confidence (Kolt & Roberts, 1998; Johnson, 2006) could be two predictors to sport injuries. The main purpose of the study was to single out significant psychological factors that could lead to an increased injury risk among soccer players. The participants were 152 male and female soccer players ($m = 17,6$) studying at soccer high schools in southwest Sweden. Five questionnaires were used STAI, SAS, LESCA, ACSI – 28 and SSP. Continuously injury record was collected by athletic trainers at the school, during a period of six months. The result suggested that there are four significant predictors that in all could explain 23 % of the injuries. The main factors are life event stress, somatic trait anxiety, mistrust and negative coping. These findings are in unison with for example Williams and Andersen's (1998) stress – injury model and should be considered by coaches when it comes to preventing sport injuries among their athletes.

ELITE ATHLETES' PERCEPTIONS OF SUCCESS IN RETURNING TO SPORT FOLLOWING INJURY

Leslie Podlog¹ & Robert C. Eklund²,

¹Texas Tech University, Lubbock, Texas, USA; ²Florida State University, Tallahassee, FL, USA

For many injured athletes, a safe and successful return to sport following injury is the ultimate aim of injury recovery. Little consensus exists however, regarding the meaning of successful return-to-sport outcomes following injury recovery (Evans, Mitchell, & Jones, 2006). The purpose of this investigation was to obtain greater insight into this issue by examining athlete perceptions of a successful return-to-play following injury. Utilizing a prospective design, 12 elite athletes from Australia and Canada were interviewed on a total of 40 occasions over a six-eight month period. Six key themes comprising the meaning of a successful return from injury were articulated including: a return to pre-injury levels and attaining pre-injury goals; staying on the "right" path; creating realistic expectations of post-injury performance; a feeling of self-satisfaction; an absence of injury related concerns and remaining uninjured; and finally, overcoming adversity. Notions of competence, autonomy and relatedness articulated within self-determination theory (SDT) may figure prominently in athlete definitions of success in returning to sport from injury. Fostering perceptions of need fulfilment may increase the likelihood that athletes view themselves as successful in returning to sport following injury.

Sport Psychology Symposium 4: Talent development in sports.

Chair: Mette Christensen (Denmark) Room: Q 319

Mette Krogh Christensen (Denmark): The symposium introduction.

Mette Krogh Christensen (Denmark): Young football talents' way to the top – Evolutionary or strategic talent development?

Mette Krogh Christensen & Jan Sørensen (Denmark): Balancing the demands of education and training in young male football talents.

Malin Carlsson, Björn Ekmark, & Hansi Hinic (Sweden): Reasons of 18-19 year old male football players' drop out from sport.

Johan Wikman (Denmark): Development of an evidence-based sport psychological training program for young elite athletes.

Sverker Bengtsson (Sweden): Athlete's transition to high achievement sport (within a career program)

Kristoffer Henrikssen, Kaya Roessler & Natalia Stambulova (Denmark/Sweden): Athletic talent development environment: An explorative case study.

YOUNG FOOTBALL TALENTS' WAYS TO THE TOP – EVOLUTIONARY OR STRATEGIC TALENT DEVELOPMENT?

Mette Krogh Christensen,

Institute of Sports Science and Clinical Biomechanics, Denmark

Like many other countries, Denmark has chosen to use many resources on talent development in top-level sport expecting that the investment will strengthen the exposure and increase the knowledge of Denmark. For that reason, questions concerning how talent development is managed and which modes of thought form the basis of talent development in top-level sport are highly topical. This paper explores two modes of thought in Danish top-level football talent development: An evolutionary mode of thought about talent development, which is characterized by giving a high priority to broad groups of talents as long as possible, and a strategic mode of thought about talent development, which is concerned with thinning out the broad group of talent at a much earlier stage, i.e. selection carried out on the basis of distinct criteria with the purpose of narrowing down the number of talents to a strategically selected group. The data material comprise a retrospective, quantitative cohort study of 635 Danish youth football talents' appearances on the national teams from 1991-2006. The results show that few talents from U/16-17 national teams make their debut on the All-Denmark team, and a massive flow of talents on the U/17-18 national teams, which indicates an evolutionary mode of thought among the youth national team coaches. However, the relative age effect among the younger talents indicates a strategic mode of thought based on maturation as a performance determinant. On this background, the paper discusses the pivotal dilemma between evolutionary and strategic talent development in the investment in top-level sport.

BALANCING THE DEMANDS OF EDUCATION AND TRAINING IN YOUNG MALE FOOTBALL TALENTS

Mette Krogh Christensen & Jan Kahr Sørensen

Institute of Sports Science and Clinical Biomechanics, Denmark

The national football and sports elite unions in Denmark urge young football talents to complete upper secondary education while they are building football careers. The football culture has a magnetic attraction on young football players. Yet, attempting a professional career in football involves great mental and physical strains that profoundly affect the future lives of the young talents. The study aimed to examine young (aged 15-19) male football players' subjective experience and biographic memories of life as a football talent. An emphasis was placed on daily life experiences, especially the difficulties of submitting to the demands of both football training and education. The study was a qualitative inquiry into the young football players' subjective experiences of balancing football and education. The study used focus group interviews with 6-8 players from 4 different clubs and 8 in-depth interviews with 2 players from each of the 4 clubs. The interviews suggested that very few of the young football players felt they successfully balanced the requirement of school and football training. Most of them actually found it hard to maintain and finish education while training to become elite football players. Despite the football unions' good intentions, the study suggests that most young football players fail to adequately balance the demands of school and professional football. This may be due to the inbuilt logic and practices in professional football culture. One solution to these problems may be better individual counseling in regard to how to combine football training and education.

REASONS WHY 18-19 YEAR OLD MALE FOOTBALL PLAYERS IN THE ELITE PROGRAMME TIPSELIT DROP OUT AND THEIR VIEW OF THEIR TIME IN TIPSELIT

Malin Carlsson, Björn Ekmark & Hansi Hinic,
Centre for Sport and Health Research, Halmstad University, Sweden

Research has shown that the main reasons for dropout in youth sports are lack of enjoyment, lack of time, decrease of interest and disliking of coaches' behaviour (Butcher et al., 2002; Marquez, 2006; Riksidrottsförbundet, 2004; Ungdomsstyrelsen, 2005). For a sport talent to reach elite level there are several factors that play important parts in the talent development process. Coaches, peers, parents and the athletes' own interests and ambitions are examples of these factors (Ericsson, Krampe, & Tesch-Römer, 1993; Reilly, 2000; Starkes, 2000). The purpose of this study was to examine reasons why 18-19 year old football players in the elite programme tipselit drop out, and their view of their time in tipselit. Ten interviews with former players in tipselit from the south part of Sweden were conducted and analyzed. Five categories were presented: To live and be a part of tipselit, the coach, self picture, injuries, and termination of tipselit career. Together they form the theme: Reasons why 18-19 year old male football players in the elite programme tipselit drop out and their view of their time in tipselit. The two most common reasons for dropping out of tipselit were that being a part of tipselit took too much time, which had negative effects on social life and school work, and a decrease of interest for reaching elite level. Further, tipselit dropouts expressed a need for a coach, with whom they could have a more personal relationship. It was concluded that persons who dropped out from tipselit would have felt better if they would be able to spend more time and energy on school work and their social life outside of football. If that was to happen, there might be a decrease in the number of dropouts from tipselit.

DEVELOPMENT OF AN EVIDENCE-BASED SPORT PSYCHOLOGICAL TRAINING PROGRAM FOR YOUNG ELITE ATHLETES

Johan Wikman
University of Copenhagen, Denmark

Research has shown that psychological skills foster competitive success (Orlick & Partington, 1988), and that psychological skills discriminate between elite and sub-elite athletes (Durand-Bush, Salmela & Green-Demers, 2001). Taking a nurture standpoint in the discussion of talent, it can be argued that psychological skills can be trained just like the tactical, technical and physical aspects of any sport. The notion of deliberate practice (Ericsson, Krampe & Tesch-Römer, 1993) proposes that 10 years of deliberate practice are required to become an expert performer. This can be expected for psychological skills as well, and these should be trained during the youth years. The aim of this presentation is to elaborate on my PhD project, which purposes are to collect available information on, and establish an overview of, existing knowledge about psychological training for young elite athletes, design and conduct three individual studies that will assess and evaluate the effectiveness of a sport psychological training intervention for young elite athletes, and develop a useful and applicative program for sport psychological training in elite young athletes, with differentiation into gender, sport type and age groups. The presentation will give a first overview of the literature review as well as the design of the individual studies.

ATHLETE'S TRANSITION TO HIGH ACHIEVEMENT SPORT (WITHIN A CAREER PROGRAM)

Sverker Bengtsson
Department of Sports Sciences, Malmö University

This study constitutes a base line study in a longitudinal study over three years, examining the process of athlete's transition from junior to senior sports and to high achievement sport, especially on athletes in a "career program". The base-line study is the first measurement of three. Preliminary results from the baseline study suggest that career planning, goal setting, balancing life roles and style, stress/time/energy management skills, effective recovery, continuity in coaching and social support are important issues in the transition process, helping the athletes to develop internal resources to cope. The transition variables were measured by means of established and validated instruments as well as semi-structured interviews. Based on holistic developmental and ecological perspectives the overall study longitudinally examines athletes perceived demands in and outside sport, strategies the athletes use to cope with the demands in sport and other spheres of life, the transition environment (i.e., perceived external resources and barriers) and developmental outcomes and quality of the transition. Twenty-six athletes take part in the study. Theoretical frameworks in the study include the ecological model of human development, the developmental model of transitions faced by athletes and the athletic career transition model. The results of the base-line study are discussed as well as forthcoming expected results in the overall study, and its implications for optimising the transition environment.

ATHLETIC TALENT DEVELOPMENT ENVIRONMENTS: AN EXPLORATIVE CASE STUDY

Kristoffer Henriksen¹, Kirsten Kaya Roessler¹ and Natalia Stambulova²

¹University of Southern Denmark, ²Halmstad University, Sweden

This paper presents a holistic description of the psychosocial competencies and environmental conditions associated with successful talent development. Research into talent development has evolved from talent detection to talent development, both perspectives accepting an athlete centered approach. Recent research into athletic career transitions emphasizes the importance of context but often refers to context in a micro perspective (sport, education and family). This study expands the notion of context and emphasizes the embeddedness of an athlete into his or her context. The research strategy is a multiple case study. The study takes a current perspective investigating three actual athletic talent development environments in Scandinavia renowned for successful talent development. The members of the environment are young prospect athletes on the verge of making a transition to high level elite sports. Through an explorative integrative approach, the study aims to develop and refine hypotheses on optimal talent development environments. Methods of data collection include interviewing of club administrators, coaches, young prospect athletes, established elite athletes and also observations of daily life. This paper presents results from the first case, a Danish elite sailing environment, and preliminary results from the second case study, a Swedish track and Field club. On a descriptive level, the structure of the environment is outlined, and the roles and functions of components and relations in the environment are clarified. On an explanatory level, factors (preconditions, process and group culture) underpinning environmental success are identified and structured.

Doctoral students seminar: Entrepreneurship and Health

Chair: Nicholas Wickström (Sweden)

Room: Wigforss

Inger Flemme, Ulrika Hallberg & Anna Strömberg (Sweden): Striving to resume command of one's life – Voices from individuals living with an ICD.

Torbjörn Josefsson (Sweden): Theories of mindfulness.

Wagner Ourique de Moraes (Sweden): Promoting physical activity through intelligent and embedded systems

Anita Sant'Anna (Sweden): Gait unsteadiness analysis from motion primitives.

Eva Berggren & Åsa Lindholm-Dahlstrand (Sweden): Indirect effects of commercializing academic R&D in health-technology.

STRIVING TO RESUME COMMAND OF ONE'S LIFE – VOICES FROM INDIVIDUALS LIVING WITH AN ICD

Inger Flemme¹, Ulrika Hallberg² & Anna Strömberg³

¹ Department of Medicine and Health Sciences, Nursing Science, Linköping University, Sweden, School of Social and Health Sciences, Halmstad University, Sweden ² Nordic School of Public Health, Gothenburg, Sweden.

³ Department of Medicine and Health Sciences, Nursing Science, Linköping University, Sweden

The aim of this study was to gain a deeper understanding for the main concern of individuals living with an implantable cardioverter defibrillator (ICD) and what they did to handle it. The study group consisted of 16 patients, who had experienced a cardiac arrest or life-threatening arrhythmias, with a mean age of 56 years. In-depth interviews, conducted 6-24 months after ICD implant, were analysed using the grounded theory method. Four emergent categories were labelled *economizing resources*, *distracting oneself*, *submitting to one's fate* and *re-valuing life*. The core category, *striving to resume command of one's life*, describes the uncertain process of living with discomfort of not knowing. The participants economized with their limited resources by restricting and planning every day and distracted themselves by divert attention away from the problems at hand and engaged physically or mentally in something else. They felt omitted when they could not influence their situation and what happened to them. They had no or little control over the disease and the device and must accept physical and social changes. As time had passed, they were grateful for having survived, felt secure and accepted the ICD treatment. However, a subgroup that had experienced complications as ICD shocks had hard to accept the changed life situation.

THEORIES OF MINDFULNESS

Torbjörn Josefsson

Centre for Sport and Health Research, Halmstad University, Sweden

The buddhist concept of mindfulness, often described as the ability to attend to and be aware of present external and internal stimuli, has gained increasingly interest in western clinical psychology. Mindfulness based interventions have shown to reduce symptoms of several psychological problems such as depression and anxiety, and also generating an increase in self-reported wellbeing and quality of life in both clinical and non-clinical populations. Furthermore, mindfulness based interventions have also resulted in reduced cortisol levels and increased immune reactivity. In empirical and theoretical psychology mindfulness has just recently started to raise interest among western scientists. There are no consensus among researchers yet of how to define mindfulness, what it consists of, how and why it produces its' effects on mental and physical health. Theories about what mindfulness contains of and proposed mechanisms will be presented and evaluated.

PROMOTING PHYSICAL ACTIVITY THROUGH INTELLIGENT AND EMBEDDED SYSTEMS

Wagner Ourique de Morais

Centre for Research on Embedded Systems (CERES), Halmstad University, Sweden

The growth in the senior population will exert great pressure on the healthcare system to treat common geriatric problems. In particular, falls is one of the major problems that inhibit elderly persons to carry out the activities of daily living. Future approaches propose that diagnostics and treatments should not be concentrated in hospital based systems but be patient centred and home based. Furthermore, even better results would be achieved if preventive approaches were adopted e.g., by encouragement of physical exercises. One example of a physical activity which improves balance related parameters is Tai Chi. A common hypothesis is that Tai Chi is effective as a tool for preventing falls in the elderly population. This work proposes an infrastructure for embedded and intelligent systems for a user centric measurement environment and applications to encourage elderly people to perform physical activities. This infrastructure consists of sensors, which over wireless links communicate with mobile and stationary computers. This system could be configured to promote physical exercise through a "Virtual Tai Chi Instructor". This virtual instructor reproduces Tai Chi movements recorded from an expert. The user interacts with the instructor by wearable accelerometers (device that measures motions' acceleration) placed on the limbs and the movement of the user is super imposed on pre-recorded examples and visual feedback is provided.

GAIT UNSTEADINESS ANALYSIS FROM MOTION PRIMITIVES

Anita Sant'Anna

Intelligent Systems Lab, Halmstad University, Sweden

The development of intelligent monitoring systems is important when considering the aging of society and its implications. This work concerns the use of human motion analysis as a tool for supporting elderly life and suggests a new "motion language" approach to such task. More specifically, "motion primitives" are used to quantitatively analyze gait unsteadiness: variability of stride time, stance time, swing time and walk symmetry. It has been shown that these measurements are useful in assessing fall risk in the elderly. Accelerometers are chosen as motion sensors for they offer a number of desirable features in monitoring human movements. Traditionally, movement detection and classification depend on a large collection of training examples and manual labeling is labor-intensive and error-prone. A more effective technique is to automatically decompose human activity into building blocks which belong to an "alphabet" of elementary actions - motion primitives - which can then be organized into a motion language. Such language enables the description of innumerable concepts from different combinations of a limited number of primitives, and it enables a higher level analysis when compared to traditional techniques. This methodology supplies powerful monitoring tools. Not only for safety reasons, such as detecting the risk of an elderly falling, but also for medical purposes, such as follow-up of stroke patients' recovery. It provides a way of quantifying physical performance and tracking its long-term development. This representation of human movements largely facilitates the man-machine interface and catapults the development of enabling technologies for the impaired.

INDIRECT EFFECTS OF COMMERCIALIZING ACADEMIC R&D IN HEALTH-TECHNOLOGY

Eva Berggren & Åsa Lindholm-Dahlstrand
SET, Halmstad University

This paper reports on an empirical study of university research in the health-technology sector. It addresses the question about the direct and indirect effects of commercializing academic research in this knowledge field. There are many ways by which university research is made useful in society. Here the focus is on the spin-out of patents, licenses, and ideas, and on the spin-off of firms based on university research. We are tracing the effects of spin-outs and spin-offs at both the university and the regional level. This will include the direct effects these have had in terms of monetary income (royalties) and employment opportunities generated in the region and at the university, as well as indirect effects. The indirect effects are assumed to be more difficult to trace, and the data collection is based on personal interviews with university staff, with academic spin-off companies and with the acquirers of university-based research. The empirical data used for this analysis is collected from Chalmers University and the Gothenburg region. The outputs of Chalmers' academic research on health-technology will be traced over time with respect to changing ownership and commercialization. This work will result in a set of university-based innovations and the paper will elaborate on a) if and how they have been commercialized, b) by whom they have been commercialised (the inventor, the entrepreneur, the university, an acquirer of the innovation, in the region or outside the region), and c) the direct and, in particular, the indirect effects of this commercialisation.

Oral presentations

Physiology and Biomechanics Oral Session 1.

Chair: Marianne Magnusson (Sweden) Room: Q 318

Sofia Olandersson, Marita Hilliges, Christer Sollerman & Anna Nilsson (Sweden): Six-week hand exercise significantly improved the hand strength and function in rheumatoid arthritis patients.

Markus Ståhlbom (Sweden/New Zealand): Jump assessment for sports including sprint running.

Alan Pearce, Dawson Kidgell, J. Zois & J. Carlson (Australia): Effects of secondary warm-up following a bout of stretching.

Dawson Kidgell & Alan Pearce (Australia): Acute upper-body-vibration exercise enhances corticomotor excitability.

Hazem Hussein (Egypt): Enzymatic responses to anaerobic training in sprinter swimmers.

6-WEEKS HAND EXERCISE SIGNIFICANTLY IMPROVED THE HAND- STRENGTH AND -FUNCTION IN RHEUMATOID ARTHRITIS PATIENTS

Sofia Olandersson¹, Marita Hilliges¹, Christer Sollerman^{2,3}, Anna Nilsson⁴

¹*PRODEA research group, Halmstad University, Halmstad, Sweden*

²*Department of Handsurgery Sahlgrenska Academy, Gothenburg, Sweden*

³*R&D-centre Spenshults Hospital of Rheumatic Diseases, Halmstad, Sweden*

⁴*R&D Halmstad Central Hospital, Halmstad, Sweden*

Exercise has become an important part of rehabilitation during the last decades. However, limited research has evaluated the evidence for the benefits of hand exercise in RA. The aim of this study was to evaluate the effectiveness of a home hand- exercise program for RA patients compared to healthy controls. Method: 40 women, 20 patients with RA (1987 ACR criteria, mean disease duration 19.9 years) and 20 healthy age-matched controls performed a hand exercise program for 12-weeks. The training effects were evaluated with ultrasound, finger force measurements (extension- and flexion force), hand function tests (GAT) and patients relevant questionnaires, DASH and SF-36. After 6-weeks both groups had significantly improved their extension and flexion force ($p < 0.01$). The hand function also improved significantly ($p < 0.01$) in the two groups. The RA group showed a significant improvement in the DASH questionnaire (ADL disability section) ($p < 0.05$); no significant improvement was showed for the control group. The muscle cross- sectional area (CSA) had increased in the RA group ($p < 0.01$), significant improvement was shown in the control group after 12-weeks ($p < 0.05$). The results show that patients with RA significantly improved their hand strength and hand function after just 6-weeks. The results show both structural differences in the CSA, improved GAT and DASH as well as improved muscle force. Hand exercise is an effective intervention for RA patients and provides better strength and function.

JUMP ASSESSMENT FOR SPORTS INCLUDING SPRINT RUNNING

Markus Stålbom

Institute of Sport and Recreation Research and Auckland University of Technology, New Zealand

Sprinting speed is a critical factor for performance in many sports and should therefore be monitored and tested. There is a preoccupation in the literature to use vertical bilateral jumps as measures of leg power for the purpose of athlete assessment, performance monitoring, talent identification as well as to predict readiness for training or recovery from rehabilitation. However, most human movements (including sprinting) involve unilateral stretch-shortening cycle with force contributions in both vertical and horizontal directions. The single leg horizontal drop jump (SLDJ) fulfils these criteria. The jump was performed from a 20cm high step-up box from which the subject was asked to step down with the hands affixed to the hips, onto one leg and thereafter jump for horizontal displacement landing on two feet. The reliability of the SLDJ was evaluated for both the between-trial and test-retest reliability and showed equal and in many circumstances even better reliability than other similar tests reported in the literature. The magnitude of the correlations observed between sprint and SLDJ performance appeared to be greater than most of the bilateral vertical jumps reported in the literature. In comparison with horizontal jump literature, the correlations were relatively equal but due to the spread of testing techniques the comparison was difficult. The results from this jump and the vertical and horizontal jump literatures suggest that horizontal jumps may better predict sprinting ability than vertical jumps. On this basis, the astute strength and conditioning trainer may utilize more horizontal jumps in the training and testing of their athletes. acute bout of vibration enhances CNS excitability, suggesting modulation of intracortical synaptic activity and increased central drive that may contribute to previously published improved muscular performance.

ENZYMATIC RESPONSES TO ANAEROBIC TRAINING IN SPRINTER SWIMMERS

Hazem Hussein

Associate professor of sports physiology,
Department of Sports health sciences, Helwan University, Cairo, Egypt

Aim: To study the effect of anaerobic training load, lactate production training, on the activities of enzymes in sprinter swimmers. Eleven sprinter swimmers (18 ± 2 years) were tested in an anaerobic lactate production session (SP2), which consisted of 6X50 meter at maximum sprint effort off 5 minutes (Maglischo protocol). Blood samples had been taken before, immediately after, after 30 minutes, after 60 minutes and after 120 minutes for the determination of creatine phospho kinase (CPK), Aspartate amino transferase (AST), Muscle lactate dehydrogenase (M-LDH) activities and blood lactate concentration. Enzyme activity of creatine phospho kinase (CPK), Aspartate amino transferase (AST), Muscle lactate dehydrogenase (M-LDH) were significantly ($P < 0.05$) higher after anaerobic training test session and did not return to the baseline after 120 minutes. This was associated with blood lactate concentration shown by higher enzyme activities of the enzymes selected. The anaerobic training resulted in the transient elevation of a wide range of enzymes involved in different metabolic functions. This finding suggested that the selected enzymes could be used in standardizing anaerobic training load and could be also used in assessment of skeletal muscle metabolism with possible application in both anaerobic swimming coaching and sports medicine settings.

Adapted Physical Activity Oral Session 1

Chair: Marit Sørensen (Norway)

Room: Q 319

Tarja Javanainen-Levonen, Marita Poskiparta, & Pauli Rintala (Finland): Finnish public health nurses as physical activity promoters in child health clinics.

Kristian Jensen (Denmark): Reflections on thirteen years experiences with Handivid.

Anne-Merete Kissow (Denmark): Adapted physical activity in a municipality in Denmark.

Author: **Inge Moris**, (Norway). Presenter: **Cathrine Nøttingnes** (Norway): Activities at the Beitostølen Healthsports Centre (BHC) as represented by the "Local Environment Model" (LEM) program.

Merete Skadal (Norway): The benefits of a training assistant in the work with people with disabilities.

Kennet Fröjd, Anders Olsson, Sven Blomqvist (Sweden): Paralympic School Day

FINNISH PUBLIC HEALTH NURSES AS PHYSICAL ACTIVITY PROMOTERS IN CHILD HEALTH CLINICS

Tarja Javanainen-Levonen^{1,3}, Marita Poskiparta² and Pauli Rintala³

^{1,3}Satakunta University of Applied Sciences, Faculty of Social Services and Health Care, Pori, ²University of Jyväskylä, Department of Health Sciences, ³University of Jyväskylä, Department of Sport Sciences, Finland.

The aims of the current focus group research were to explore how public health nurses (PHNs) working in child health clinics (CHC) perceive physical activity, and to describe the content and means of physical activity promotion. The data were gathered by purposive sampling in five regional FGs with twenty-four PHNs. Frame analysis of transcripts revealed that PHNs approached physical activity multidimensionally from the environmental frame, the family frame, the natural frame, and the frame of well-being and health. After analyzing statements associated with physical activity promotion by qualitative content analyses and after computing the frequencies, both evaluative (n=106), or activating and supportive statements (n=117) could be noticed. Most of the statements (78%) were child-centred. Child-centred evaluation provided by PHNs dealt with age-appropriate motor development, basic sporting skills, and amount of outdoor activities, play, and exercising habits. Family-centred evaluation focused on physical activity level in general, and resources for physical activity. Furthermore, activation and support included the same issues brought into topics during check-ups, as a basis for counselling, or infrequently as an issue for reinforcement. Forcefulness of statements showed that assessment of physical abilities including motor development was the only topic applied with every child. Other topics seemed to be more selectively targeted for children with minor ailments [overweight, clumsiness, etc.] and for sedentary families. Findings from this explorative study reveal PHNs' options for physical activity promotion in CHC settings, but simultaneously call for more attention for physical activity of every child and the whole family.

13 YEARS WITH HANDIVID

Kristian Jensen

Danish Disability Sport Information Centre, Denmark

The Danish knowledge centre on disability sport and supported employment (the only of its kind in Scandinavia) may be heading for a closedown. What have we accomplished? What have we learned? Is there a road ahead, and where does it lead? It's time to study the scoreboard!

The presentation will touch on a number of key issues, such as: The practitioner's approach. Focus on ability, rather than inability. What we learn in school (and what we do not learn in school), and how it reflects on our possibilities as adults. How participation in sport can lead to inclusion in the labour market. The return of early retired persons - a challenge for the welfare state. Rehabilitation, health, and other related subjects.

APA IN A MUNICIPALITY IN DENMARK

Anne-Merete KISSOW

Handicapidrættens Videnscenter, Roskilde, Denmark

Municipalities in Denmark are responsible for health promotion and prevention of disease. It is therefore crucial that citizens have access to physical activity in their local community. For people with disabilities there are certain limitations for participation in physical activity, e.g. physical inaccessibility, lack of information of suitable activities. A municipality decided to make options for disabled people to participate in physical activity. To ensure that everybody, irrespective of functioning, can participate in physical activity in his local community and that the municipality can rely on these activities in health promotion and prevention of disease. A coordinator of APA was hired for one year. Her main task is to guide people into APA activities, assist in creating new activities and make information about APA accessible for everybody. A survey of organizations who provide APA was elaborated. Interviews were made with the instructors to reflect their competence in relation to health promotion and prevention of disease. Interviews were made with key-persons in the municipality administration to point out their expectations to the organizations in relation to health promotion and prevention of disease. Results: Results up till now point out that human and financial support to organizations providing APA is needed, bridging between private, voluntary and public organizations is needed, and education of instructors in APA is necessary. Many organizations want to provide APA to disabled people and contribute to health promotion and prevention of disease. This project will reveal what is needed to elaborate and qualify these options.

ACTIVITIES AT BEITOSTØLEN HEALTHSPORTS CENTRE(BHC) AS REPRESENTED BY THE "LOCAL ENVIRONMENT MODEL" (LEM) PROGRAM.

Inge Moris

Beitostølen Healthsports Centre, Norway

Beitostølen Healthsports Centre(BHC) is a rehabilitation centre with programs mainly consisting of Adapted Physical Activity (APA). An increased participation in activities in the community is the main objective for a stay at BHC. In LEM there is particular focus on cooperation with several resource persons in the community. An ambulatory team has the main responsibility for establishing contact and for the cooperation between the Centre and the community. The intervention program at BHC contains intensive and goal directed training, exploration of sports and leisure activities and learning of motor and social skills. Local service providers participate in a 3-days course at the centre to learn about APA and how it could be implemented locally. Canadian Occupational Performance Measure(COPM), Goal Attainment Scaling(GAS) and ICF modules are used to identify perception of activity performance and goal settings for everyday activities for the children. Up till now BHC, by means of LEM, have served about 40 communities and Rehab Units. Preliminary results show us the importance of making concrete individual goals for the children and their service providers, do careful planning of follow-up programs in the community and sharing of experiences to provide learning. This model and instruments seem to provide pertinent knowledge about factors that do influence activity participation and inclusion in local environments. Efforts will be made to further validate present and other instruments for measuring effects of the actual interventions.

PROJECT TRAINING ASSISTANT – HORDALAND

Merete Skadal,

The Norwegian Olympic and Paralympic Committee and Confederation of Sports (NIF), Norway

This project is a collaboration between the Norwegian Olympic and Paralympic Committee and Confederation of Sports in Hordaland, treatment institutions, municipalities and Hordaland County council among others.

What is a training assistant? A training assistant is a person who motivates and inspires you to be physically active and spends time with you exercising. The training assistant's main task is to enable you to participate in sport and physical activity by assisting you in any needs required because of the disability. The training assistant is hired and paid by the municipalities. *The goal of the project.* Not everyone finds it easy to join a sports club. People with disabilities are underrepresented in these organisations. There can be physical, mental and social barriers in starting with sport activities. A training assistant may contribute to reducing these obstacles to a minimum.

The goal of the project is to increase the level of physical activity after institutional and polyclinical treatment, as well as giving people with extensive need for assistance the opportunity to be more physically active.

Why this is a good project. The project started with a focus on psychiatric patients and people with drug addiction. For several years, physical activity has been used as therapy in psychiatric institutions and rehabilitation institutions. Good physical health results in strong psychological health. Among other things, physical activity gives the following positive results: Improved quality of life, improved self-image and self-confidence, increases the sense of mastering, improved social function, better sleep, less anxiety and depression and so on. We know that other groups also can benefit from this project, and in 2008 we wanted disabled people to be able to receive a training assistant. We hope that this will increase the number of people with disabilities in sports organisations.

PARALYMPIC SCHOOL DAY

Kennet Fröjd, Anders Olsson, Sven Blomqvist
Swedish Development Centre for Disability Sport

The Paralympic School Day (PSD) is an educational program initiated by the International Paralympic Committee (IPC). A resource kit for Paralympic School days has been developed by an international group of experts where the Swedish Development Centre for Disability Sport (SUH) has been one of the partners. Before the development of this resource kit and this concept Paralympic Education was something that exclusively was conducted in Paralympic Organizing countries. It was up to each country how to plan and conduct the education. There were no structure and no guidelines from the IPC. With this newly developed resource kit there exist a paralympic School Day concept that is well structured and also reflects the aims and goals of the Paralympic Movement. The Resource kit can be used in any European country and also in many other countries. It can easily be adapted also to other regions of the world. The PSD aims to educate youth about Paralympic Sport and disability issues, in a fun and playful environment. It also aims at creating respect for peoples differences and similarities and to give the participating kids an inclusive perspective. The ultimate goal of the PSD program is to foster positive attitudes and perceptions of persons with a disability. The objectives are accomplished through different types of activities, such as interacting with paralympic athletes and trying out Paralympic Sports. The PSD activities can be organized during a normal school day for a target audience of students between the ages of 6 and 15. A PSD can be conducted with any number of students, from one class to the entire school. In Sweden SUH has developed the international resource kit even more in a brand new Swedish version. PSD has shown to have a good effect on attitudes. That has been measured in many different countries using a revised version of CAIPE-R for attitude measurements. Who are the best persons to lead activities at a PSD? During the development process that SUH has been involved in we have tried out many different activity leaders. We have used our professional staff and that has worked out well, but is very limiting towards the possible numbers of PSDs in Sweden. We have also tried to use university students and high school students. Both have worked fairly well. We believe it is important to reach as many kids as possible with the PSD concept. What are the most effective ways of accomplishing that task?

Sport Psychology Oral Session 1

Chair: Chris Harwood (U.K.) Room: Wigforss

James Rumbold, David Fletcher & Kevin O'Connor (United Kingdom): Organizational stress in sport coaches: A comparative study of amateur and professional coaches' experiences.

David Fletcher, James Rumbold, Matthew Coombes, Robert Tester (United Kingdom): Practice what you preach: Reflecting on sport psychologists' experiences of occupational stress.

Markus Gerber & Tim Hartmann (Switzerland): Physical activity as a moderator of chronic stress, sleep disturbances and health in two at-risk populations.

David Tod, James Hardy, Ailsa Niven & David Lavallee (United Kingdom): Helping athletes talk the walk: Consultants' experiences in using self-talk with athletes.

Chris Harwood, David Fletcher, James Rumbold, & Tim Wild (United Kingdom): Revisiting psychological skills training in sport: The importance and implications of multidimensionality.

ORGANIZATIONAL STRESS IN SPORT COACHES: A COMPARATIVE STUDY OF AMATEUR AND PROFESSIONAL COACHES' EXPERIENCES.

James L. Rumbold¹, David Fletcher¹, & Kevin O'Connor²

¹Loughborough University, United Kingdom; ²University of Essex, United Kingdom

The purpose of this study was to investigate the organizational stress that sport coaches experience within their work conditions. More specifically, the content and quantity of organizational stressors were compared between amateur and professional coaches. Sixteen coaches (eight amateurs and eight professionals) from a range of sports were interviewed regarding potential organizational stressors. Inductive and deductive analyses were utilized to categorize the demands associated primarily and directly with the sport organization under one of the following dimensions: factors intrinsic to sport coaching; roles in the sport organization; sport relationships and interpersonal demands; career and performance development issues; and the organizational structure and climate of the job. The findings indicate that coaches perceive numerous organizational stressors across different work conditions. Frequency analysis revealed that amateur coaches cited more organizational stressors than professional coaches. Furthermore, amateurs mentioned more varied demands which related predominantly to factors intrinsic to sport coaching (e.g., finances, travel, competition). In contrast, professionals experienced more similar stressors which related predominantly to the range of demands (e.g., athlete conflict, managerial bureaucracy). These findings are important because they suggest that amateur coaches encounter more structurally-related stressors, whereas professional coaches encounter more interpersonal-related stressors. Hence, it may be judicious for psychologists and organisations to tailor stress management interventions to meet the specific needs of the coach, with amateur coaches requiring more managerial training and professional coaches needing more emotional intelligence training.

PRACTICE WHAT YOU PREACH: REFLECTING ON SPORT PSYCHOLOGISTS' EXPERIENCES OF OCCUPATIONAL STRESS.

David Fletcher¹, James L. Rumbold¹, Matthew J. Coombes², & Robert Tester²

¹Loughborough University, United Kingdom; ²University of Essex, United Kingdom

This study extends recent research investigating organizational stress in competitive sport. Whilst previous work has focussed on the stress experienced by elite sport performers, the current research sought to identify the stressors encountered by sport psychologists within their occupation. A secondary purpose of this study was to compare the occupational stressors experienced by sport psychology academics with practitioners. Twelve full-time sport psychologists (six academic and six practitioners) were interviewed regarding their experiences of occupational stress within their jobs. Inductive and deductive content analyses involved categorizing the demands associated primarily and directly with their occupation under one of the following dimensions: factors intrinsic to sport psychology; roles in the organization; sport relationships and interpersonal demands; career and performance development issues; and organizational structure and climate of the profession. Within these dimensions the specific stressors identified related to various aspects of the occupation including: teaching; research; consultancy; workload and hours; lack of social support; career advancement; and income and funding. The comparison revealed that academics experienced more stressors relating to teaching, research, inadequate communication channels, and responsibility within the job, whereas practitioners experienced more stressors relating to consultancy, presentation issues, and personalities within the job. These findings suggest that sport psychologists experience numerous occupational stressors, predominantly relating to factors inherent to their occupation. From a practical perspective, sport psychologists are encouraged to 'practice what they preach' and develop stress management strategies and interventions to deal with their own stress experiences.

PHYSICAL ACTIVITY AS A MODERATOR OF CHRONIC STRESS, SLEEP DISTURBANCES AND HEALTH IN TWO AT-RISK POPULATIONS

Markus Gerber, Tim Hartmann, & Uwe Pühse,

Institute of Exercise and Health Sciences, University of Basel (Switzerland)

Stress is associated with a variety of physical and psychological conditions. Since physical activity positively affects health, the main purpose of this investigation is to evaluate whether physical activity moderates the interplay between stress, sleep disturbances and perceived health among officers working in the police force (N≈1000) and rescue service (N≈250) in the district of Basel (Switzerland). Both groups are thought to be at-risk of high stress during their professional life. Indeed, the project was triggered by dramatic increases of cardiac infarctions within the police force during the last years. The main goal of this project is, therefore, to counterbalance this critical development. Concretely, a written questionnaire, which assesses the levels of chronic stress, the availability of resources to deal with professional strains, levels of physical activity, sleep disturbances and perceived health will be sent to all police and rescue officers. Subsequently, four compulsory workshops will be held to make the officers sensitive to the health risks of chronic stress and particular coping styles, inform about the health-enhancing potential of physical activity and suggest means to overcome behavioral barriers. One year later, the same questionnaire will be administered to evaluate the effectiveness of the intervention. In a preliminary opinion poll, 85% of the officers asserted that they welcome the planned intervention. Therefore, a high return rate is expected. The first measurement takes place in March 2008. Cross-sectional results will be available in summer 2008. Statistical analyses include structural equation modeling with multiple group comparisons.

HELPING ATHLETES TALK THE WALK: CONSULTANTS' EXPERIENCES IN USING SELF-TALK WITH ATHLETES

David Tod¹, James Hardy², Ailsa Niven³, & David Lavallee¹

¹Aberystwyth University, UK, ²Bangor University, UK, ³Heriot Watt University, UK

Accumulating evidence suggests athletes use self-talk and it enhances skill execution. There is little understanding, however, of how sport psychologists help athletes use the intervention. In this study we interviewed sport psychologists (11 males, 9 females), aged between 27-46 years, regarding their experiences of using self-talk with athletes. Consultants were accredited with the British Association of the Sport and Exercise Sciences, chartered with the British Psychological Society, or both, and had consulted for between 4-13 years. Interviews lasted 40-60 minutes, and questions focused on one positive and one negative consulting experience in which interviewees had used self-talk with athletes. Interviews were recorded (audiocassette tape) and transcribed verbatim. Transcripts were subject to a thematic content analysis guided by a process-oriented perspective of service delivery. Consultants perceived that several athlete characteristics had influenced the effectiveness of self-talk, including cognitive-processing style, desire for achievement, and self-esteem. Interviewees perceived that various aspects about themselves had influenced self-talk interventions, including their theoretical orientations, beliefs in self-talk, and experience with the sports in which they worked. Consultants also discussed various situational and process factors they believed had influenced self-talk interventions, including working alliances they formed with athletes, and the social environment in which service delivery occurred. These results may help investigators identify research avenues that may advance knowledge, such as athlete cognitive-processing style. Additionally, neophyte consultants may benefit from hearing experienced practitioners' stories, such as learning ways to develop working alliances.

REVISITING PSYCHOLOGICAL SKILLS TRAINING IN SPORT: THE IMPORTANCE AND IMPLICATIONS OF MULTIDIMENSIONALITY.

Chris G. Harwood¹, David Fletcher¹, James L. Rumbold¹, & Tim Wild²

¹Loughborough University, United Kingdom, ²University of Essex, United Kingdom

Previous research in sport psychology has examined the relationship between psychological skills and athletic performance, however only a small proportion of this work has explicated the personal and situational characteristics that underpin this relationship. The purpose of this study was, therefore, to identify the various dimensions of psychological skills training (PST) that are required to optimise the efficacy of practitioners' work in this area. Eleven elite golfers took part in semi-structured interviews, which were used to gain in-depth information regarding the participants' formal and informal experiences of PST together with outcomes of such programs. A combination of inductive and deductive content analyses were employed to distil quotes that represented meaningful points, which ultimately developed into eleven psychological skills dimensions. These were: adaptability; adherence; attention; automaticity; autonomy; development; effectiveness; optimism; quality; relevancy; and usage. The findings are presented in the form of quotes to provide examples of each of these dimensions and how they differ. A closer inspection of the data suggests that there may be a hierarchical relationship whereby specific dimensions are fundamental to overall efficacy in enhancing psychological skills in sport performers. For example, it appears important to optimise dimensions, such as usage and development, prior to enhancing other dimensions, such as adaptability and relevancy. In order to advance PST in sport, practitioners should develop educational programs that address the various dimensions in a structured and systematic manner. The development of such programs will enhance the value of psychological services in sport and better support athletes' performance aspirations.

Public Health Oral Session 1

Chair: Solgun Folke (Sweden) and Eja Pedersen (Sweden)

Room: Halda

Svetlana Khasnutdinova (Russia) & **Andrei Grjibovski** (Norway): Prevalence of overweight and obesity in adolescents in Northwest Russia: A cross-sectional study.**Maria Nyholm** (Sweden): Prevalence of overweight and obesity among preschool children in a Swedish rural area. The Skaraborg Evaluation Child Obesity Prevention Project (SECOPP).**Hansi Hinic, Kerstin Grönvall & Eivor Sjöholm** (Sweden): Relation between overweight, physical activity, perceived health and living with overweight among youth: A halftime study.**Mari Törne & Hanna Tuominen** (Finland): Health-enhancing physical activity – counselling protocol in public health sector.**Marie Alricsson, B.J. Landstad, U. Romild, & K.T. Gundersen** (Sweden): Physical activity, health, BMI, and body complains in high school students.**Lena Ljungkrona-Falk, Hilde Brekke & Maria Nyholm** (Sweden): Nurses' barriers when promoting healthy habits to parents.**PREVALENCE OF OVERWEIGHT AND OBESITY IN ADOLESCENTS IN NORTHWEST RUSSIA: A CROSS-SECTIONAL STUDY****Svetlana Khasnutdinova¹ & Andrei Grjibovski²**¹ Northern State Medical University, Arkhangelsk, Russia, ² Norway

While overweight and obesity in adolescents has been increasing around the world, its prevalence in Russia remained stable over the past 15 years: 11.5% in 1992 and 11.8% in 2007. However, the information from rural areas is scarce and may be different from the official data. Moreover, recent evidence indicates an alarming increase in the prevalence of obesity among Russian adults justifying a need for studies on overweight and obesity in adolescents, especially in the remote areas. This study aims to estimate the prevalence of overweight and obesity among adolescents in rural areas of Northern Russia. Students of 9th-11th grades from all schools in Velsk district in North-West Russia (located in the southern part of the Arkhangelsk region) were invited to participate. The final sample included 1032 (89% response rate) adolescents (428 boys and 604 girls). Overweight+obesity and obesity were defined as $\geq 85^{\text{th}}$ and $>95^{\text{th}}$ percentile, respectively, of age- and gender specific values from the CDC-2000 reference population. Mean Z-scores for BMI-for-age were also calculated. The prevalence of overweight+obesity was 9.6% (95%CI: 7.1-12.7) among boys and 7.5% (95%CI: 5.6-9.8) among girls. Obesity was registered in 3.3% (95%CI: 2.0-5.4) of boys and in 2.0% (95%CI: 1.1-3.4) of girls. Mean BMI-for-age Z-scores were -0.2 (95%CI: -0.3, -0.1) for boys and -0.1 (95%CI: -0.2, 0.0) for girls ($p=0.232$). The results suggest that the prevalence of overweight and obesity in rural areas of Northwest Russia is lower than in most European countries.

PREVALENCE OF OVERWEIGHT AND OBESITY AMONG PRESCHOOL CHILDREN IN A SWEDISH RURAL AREA. THE SKARABORG EVALUATION CHILD OBESITY PREVENTION PROJECT (SECOPP).**Maria Nyholm^{1,2} Henri Toivonen³ & Ulf Lindblad^{1,4}**¹ School of Social and Health Sciences, Halmstad University, ² Skaraborg Institute, Skövde, ³ Child Health Care, Skaraborg, ⁴ Department of Public Health and Community Medicine/Primary Health Care, The Sahlgrenska Academy at Gothenburg University, Sweden

Overweight and obesity among children are a major public health problem. The aim of this paper was to describe the mean body mass index (BMI), prevalence of overweight and obesity in four year old boys and girls in Skaraborg. BMI was calculated as body weight (kg) divided by the squared height (m) in 2 240 children living in Skaraborg, a rural area in South-western Sweden. Overweight and obesity were estimated by analysis of age- and gender-standardized BMI according to reference data of International Obesity Task Force (IOTF). The BMI cut-off values in overweight in boys were 17.69 kg m⁻² and in girls 17.40 kg m⁻², and for obesity in boys 19.57 kg m⁻² and in girls 19.15 kg m⁻². Mean BMI was 16.3 kg m⁻² (SD: 1.4) in boys, and 16.2 kg m⁻² (SD: 1.7) in girls. Correspondingly, the 90th BMI percentile in boys was 18.0 kg m⁻², and in girls 18.2 kg m⁻² and the 97th percentile in boys was 19.3 kg m⁻² and in girls 19.6 kg m⁻². The prevalence of overweight according to IOTF was 11.7 percent [95% CI: 9.8;13.6] in boys and 17.9 percent [15.6;20.2] in girls, while 3.1 percent [2.1;4.1] of the boys were obese and 4.2 percent [3.3;5.7] of the girls, respectively, were obese. In comparison, the prevalence of obesity in four years old children from Skaraborg seems to be higher than what was found in the second largest city of Sweden, Göteborg, situated in the same region as Skaraborg. In Göteborg 2 percent of the four year-olds children had a BMI above IOTF 30 kg m⁻², i.e. were obese. This study indicates that the rural and urban differences in overweight and obesity seen in adults may exist already in childhood. Public health strategies should consider that there might be special needs in different environment by degree of urbanisation and socio-economic characteristics..

RELATION BETWEEN OVERWEIGHT PHYSICAL ACTIVITY, PERCEIVED HEALTH AND LIVING WITH OVERWEIGHT AMONG YOUTH: A HALFTIME EVALUATION

Hansi Hinic¹, Kerstin Grönvall² & Eivor Sjöholm²

¹Centre for Sport and Health Research, Halmstad University. ²Youth consulting reception, Falkenberg, Sweden

The development of overweight and obesity among children and youth is an increasing problem in the western, as well as in the Swedish society. Contributing factors are especially sedentary lifestyle and unhealthy eating habits. The primary purpose was to examine how physical activity was related to perceived health, coping strategies, BMI, weight, waist- and bottom size halftime through an intervention program. In total 18 youth (mean age 15,38) participated in the study and were randomly assigned to an experimental and a control group. The experimental group (9 participants) received a traditional intervention program, based on supportive information about good eating- and exercise habits, plus a web based supporting program. The control group (9 participants) received no intervention. Health questionnaire, obesity related coping and distress as well as physical variables were included. Physical activity was measured by a pedometer and was transcribed into amount of steps every day for the experimental group. The result showed that the experimental group had a slightly higher loss on BMI, weight and bottom size than control group, not significant though. Furthermore, the experimental group expressed fewer worries about overweight and its effect on their mood. They also showed fewer problems in "every-day-activity" due to emotional distress. Although no statistical significant results were obtained half way through the intervention some conclusions can be drawn. Research demonstrates that good intervention program is of benefit in dealing with physiological as well as psychological parameters. With rather limited efforts, changes can be recorded, helping obese youth using physical activity.

HEALTH-ENHANCING PHYSICAL ACTIVITY - COUNSELLING PROTOCOL IN PUBLIC HEALTH SECTOR

Mari Törne & Hanna Tuominen

Satakunta University of Applied Sciences, Faculty of Social Services and Health Care, Pori, Finland

The moderate-to-vigorous leisure-time physical activity (LTPA) protects against metabolic syndrome and type 2 diabetes. The recent Finnish population-based physical activity study showed that only one third of adults are carrying out health-enhancing physical activity (HEPA) according to latest recommendations. Even though health professionals in Finnish public health sector have the opportunity to reach this inactive population, the use of physical activity counselling is rare. The aim of this pilot study was to investigate the effects of an intense physical activity counselling practice on the health of participants. Purposive sample of 12 participants from the occupational health care, age 20-65, were physically inactive, diagnosed with metabolic syndrome and high risk of type 2 diabetes. The exercise tests were performed thrice during the intervention. The measured variables were BMI, waist circumference, resting blood pressure, grip strength, one leg squat, modified push up and dynamic balance. Aerobic fitness was measured by 2 km walking test. The physical activity counselling concentrated on supporting the change-process for more physically active life style. Six participants finished the study. The waist circumference (2,5%) and blood pressure decreased (systolic 2,1% and diastolic 7,7%). The muscle strength increased (one leg squat 16,2% and modified push up 4,3%) and dynamic balance improved 11,4%. Aerobic fitness improved 7,3%. The intensity used in this study accomplished only minor changes in health-related fitness. However the intense counselling protocol managed to provoke participants' needs for a life style change.

PHYSICAL ACTIVITY, HEALTH, BMI AND BODY COMPLAINTS IN HIGH SCHOOL STUDENTS

Marie Alricsson¹, BJ Landstad^{1,2}, U Romild³, KT Gundersen²

¹Department of Health Sciences, Mid Sweden University, Östersund, Sweden; ²Faculty of Education, Engineering and Nursing, Nord-Trøndelag University College, Levanger, Norway; ³Department of Information Technology and Media, Mid Sweden University, Östersund, Sweden.

Children and adolescents in the industrial world are becoming less physically active and are adopting a sedentary life-style in front of computers and television screens. Aim: The aim of the present investigation was to determine self-related health, physical activity, prevalence of overweight and body complaints in high school students in Norway. Based on these aspects another aim was to compare students in academic programs with those in vocational programs. Methods: 702 high school students aged 16-19 years participated in the study. A questionnaire was completed at three high schools and included questions about weight and height, health, physical activity, type of physical activity/sport, intensity, possible injuries or complaints, during the last three months. Results: Twenty three percent of the students suffers from overweight/obesity or are at risk of being overweight. Males reported better health than females ($p < 0.02$). Sixty-six percent of the study group reported body complaints during the last three months, a higher number of females than males ($p = 0.0001$). Students in vocational programs reported poorer self-related health than those in academic programs and the males reported better self-related health generally than females. Furthermore, there were a higher level of prevalence of overweight students in vocational programs than academic programs ($p = 0.039$). Conclusions: It is important to make it easy for school children and adolescents to perform physical activity at school and during leisure-time in order to prevent overweight and obesity as well as chronic diseases later in life.

NURSES' BARRIERS WHEN PROMOTING HEALTHY HABITS TO PARENTS**Lena Ljungkrona-Falk¹, Hilde Brekke² & Maria Nyholm³**¹Children Health Care, Skaraborg, Sweden, ²Dept of Clinical Nutrition, Sahlgrenska Academy at Gothenburg University, ³School of Social and Health Sciences, Halmstad University and Skaraborg Institute, Skövde, Sweden

To describe nurses' perceived barriers in promoting healthy habits to parents of 1.5 and 3-year old children at the Child Health Centre in order to prevent child obesity. Three rounds of focus group interviews were conducted with 21 nurses working at the 29 Centres in Skaraborg. The focus groups were audio taped, transcribed and analysed using qualitative content analysis. Data were inductively coded and categorised into themes. Perceived barriers were identified among these themes. Four main barriers were identified; 1) *Pressure at work and in the working environment*. Working at the Centre was perceived as a lower valued job compared with working in primary health care. The work with children was considered fun but laborious. 2) *The nurse's own fear and uncertainty*. Fear and uncertainty were caused by inadequate knowledge of nutritional requirement and in using the definition of overweight/obesity according to isoBMI. 3) *The interaction with parents*. Barriers were experienced when parents defended their present habits, when working with already overweight/obese children/parents or families with psycho sociological problems. 4) *Competing influences on the family*. Barriers in the form of competing influences were messages from the media, stress and other problems in the family's daily life. This qualitative study increases the understanding of the difficulties in promoting healthy habits at the Child Health Centre. Based on the responders' insight, education and support are needed to enhance the promotion of healthy habits to parents as a prevention of child obesity.

Adapted Physical Activity Oral Session 2

Chair: Anne-Merete Kissow (Denmark) Room: Q121

Ylva Dalén (Sweden): Dynamic loading with vibration through playful activity seem to increase bone density in four children with severe cerebral palsy.**Tarja Javanainen-Levonen & Anne Kärki** (Finland): A case study from sport pedagogical perspective in bachelor level training of physiotherapists in Finland.**Aija Klavina** (Latvia): Reliability and validity of the computerized evaluation protocol of interaction in physical education.**Marit Sørensen & Anne Marie Lannem** (Norway): Psychological aspects of physical activity of individuals with spinal cord injury (SCI).**Anne Marie Lannem & Marit Sørensen** (Norway): Physical exercise as a stress coping resource for people with Spinal Cord Injury (SCI).**Martin Saebu** (Norway): Physical activity and motivation in young adults with a disability.**DYNAMIC LOADING WITH VIBRATION THROUGH PLAYFUL ACTIVITY SEEM TO INCREASE BONE DENSITY IN FOUR CHILDREN WITH SEVERE CEREBRAL PALSY****Ylva Dalén**

Karolinska institutet, Huddinge, Sweden

Children with severe cerebral palsy (CP) can not run and jump like other children. Thus the normal active, joyful, dynamic loading that is so important for bone density stimulation can not be obtained. Osteoporosis with increased fracture risk, especially in the legs, is therefore common in children with severe cerebral palsy. To obtain upright position, these children are prescribed standing shells, individually moulded plastic body casts. Static standing is not enough to stimulate bone density. With the intention to address this problem, Hoppolek[®], a platform where children in their standing shell could make movements; rotation 180 degrees, low magnitude vibration and raise and lower through touch buttons on a manoeuvre panel was used. The aim was to evaluate if dynamic loading through vibration on the child's own initiative could affect bone density while giving the child pleasure and to explore if side effects could be detected. Four boys with severe CP (Motor Function Classification System GMFCS V) 4-6 years of age participated in the study. Two boys used Hoppolek for 10 months and two were controls. After a year of no use, the former users became controls for another 10 months. Bone density was measured with Dual-Energy X-ray Absorptiometry (DXA) lumbar spine and whole body. Region of interest (ROI) in the legs, bone mineral content (BMC) mean value of the right and left leg was calculated. Films were taken of the children using Hoppolek[®] on 3-4 occasions. Parents and personnel saw the films and tried to analyse the feelings expressed by the children and they also reported observed side effects. Z-score (values compared to age-matched material) lumbar spine increased in exposed, but decreased in children not exposed to vibration. BMC ROI legs, increased in exposed, but decreased or increased less in children not exposed to vibration. Parents and personnel reported that they perceived that the children expressed positive feelings when using Hoppolek[®]. No negative side effect was reported.

A CASE STUDY FROM SPORT PEDAGOGICAL PERSPECTIVE IN BACHELOR-LEVEL TRAINING OF PHYSIOTHERAPISTS IN FINLAND

Tarja Javanainen-Levonen & Anne Kärki

Satakunta University of Applied Sciences, Faculty of Social Services and Health Care, Pori, Finland.

Physical activity promotion of different age groups, including particularly populations with special needs is one of the competencies required from Scandinavian physiotherapists. Consequently, sport sciences form a basis for curriculum in Satakunta University of Applied Sciences. The theme of physical activity comprises eleven credits, including courses in PE, Didactics of Physical Activity and Adapted Physical Activity. The extent of studies is 210 ECTS. However, training includes other courses substantially enhancing the specific competencies in physiotherapeutic problems, which are not on focus in this presentation. In the theme of physical activity, the ideology of contact theory is in use when collaborating with clients of different age groups: pre-school age or school-age children, working aged adults or the elderly with or without special needs. The community experience model is in use during contact teaching as well as during independent studies: students acquire information on service-delivery in physical activity and actively participate in it. Regional service-delivery in physical activity is enhanced by creating new service delivery in form of small-scale pedagogical projects, but also by students when they take stimulating ideas to clinical practice. The extent of clinical practice is 40 credits. In this presentation, the structure of curriculum is presented with detailed analysis of the theme of physical activity. Furthermore, practical examples are illustrated visually with specific focus on experiences with different age groups, especially with children. The presentation shares with the audience the lived experience and enlightens the opportunities of physiotherapy education to assist in and collaborate for physical activity promotion.

RELIABILITY AND VALIDITY OF THE COMPUTERIZED EVALUATION PROTOCOL OF INTERACTIONS IN PHYSICAL EDUCATION

Aija Klavina

Latvian academy of sport education, Riga, Latvia

Many students with disabilities are starting to be included in general physical education (GPE). However, the theory regarding the most effective methods of achieving successful and meaningful interactions between students with disabilities and their peers in inclusive GPE settings is still relatively undeveloped. This study addressed the development of the Computerized Evaluation Protocol of Interactions in Physical Education (CEPI-PE), a data collection program for multiple interaction behavior measures in inclusive physical education settings. The theoretical and empirical base for the CEPI-PE was described in four studies presenting properties of the new instrument: (1) face validity, (2) content validity, (3) reliability, and (4) concurrent validity. Results indicated a good to excellent reliability scores. The Kappa scores ranged from .46 to 1.00 and intraclass correlation coefficient ranged from .608 to 1.00. Also, the findings of validity studies provided strong evidence for instrument validity. The Pearson correlations between CEPI-PE and other interaction measures ranged from .988 to .996. In addition, the mean Kappa scores for validity measures ranged from .61 to 1.00. Overall, outcomes of multiple studies indicated that CEPI-PE demonstrates adequate content and concurrent validity, and provides unique information about interaction behaviors between students with and without disabilities in inclusive physical education settings.

PSYCHOLOGICAL ASPECTS OF PHYSICAL ACTIVITY OF INDIVIDUALS WITH SPINAL CORD INJURY (SCI)

Marit Sørensen¹ and Anne M. Lannem^{1,2}

¹ Norwegian School of Sport Sciences, Oslo, Norway and ² Sunnaas Rehabilitation Hospital, Nesodden, Norway

Individuals with Spinal Cord Injury live longer due to improved treatment and are subjected to similar health problems as the general population. Physical activity may therefore be as important for the health of this population as for others. However, the change in life situation due to a SCI injury often decreases the possibilities for participation in physical activity. Therefore there is a need for more knowledge about psychological aspects of participation in physical activity and sport for this population. This presentation will examine extant research that compare psychological aspects of members of the SCI population with others, and highlight psychological aspects that may be particular for individuals living with SCI.

PHYSICAL EXERCISE AS A STRESS COPING RESOURCE FOR PEOPLE WITH SPINAL CORD INJURY (SCI)**Anne M. Lannem^{1,2} and Marit Sørensen¹**¹ Norwegian School of Sport Sciences, Oslo, Norway and ² Sunnaas Rehabilitation Hospital, Nesodden, Norway

The group of persons living with the effects of a SCI increases. It is a need for more research on long term effects of physical exercise on physiological and psychological health in the population. As a framework for the research, the Cognitive Activation theory of stress (CATS) has been used. In this setting, it is not the injury itself, but the burden of living with a SCI that is the stressor. Persons with SCI may be empowered through physical exercise. The aim of the study is to explore long term effects of physical exercise on physiological and psychological health in persons with SCI. The aim is to build resources using an empowerment perspective. The resources are built on different levels, psychological, physiological and in a social context. The following phases in the research will be presented: 1) Explore whether participation in physical activity is associated with a positive outcome on psychological factors with individuals with incomplete SCI AIS-D. 2) Explore whether physical capacity is associated with psychological factors and outcome in individuals with SCI (AIS A-C, paraplegics and tetraplegics). 3) Exploration of the role of exercise in the Health-Stress model among individuals with incomplete SCI (AIS-D); a qualitative study. Are persons with incomplete SCI subjected to overtraining / burnout?

PHYSICAL ACTIVITY AND MOTIVATION IN YOUNG ADULTS WITH A DISABILITY**Martin Sæbu**

Norwegian School of Sport Sciences/Beitostølen Health Sport Centre

Studies indicate that young adults (age 18-30) with a disability are less physical active than their non-disabled peers. However, the reasons for this are not known. The aims of the study are; 1) To increase our knowledge about physical activity and participation among young adults with a disability. 2) To increase our knowledge about correlates and motives for participation in physical activity for young adults with a disability. 3) To describe possible factors which restrain or promotes participation in physical activity for this population. The study is mainly based on the theory of self determination and achievement goal theory. In addition, the social-cognitive theory of Self Efficacy is also an important base for our approach. The study focuses on factors which may restrain or promote participation, with the main parts of ICF (International Classification of Functioning, Disability and Health) as a framework for a cross-sectional survey, based on a self-report questionnaire. The population studied is young adults (age 18-30) with a disability who are members of interest organizations for disabled (approximately 1000 informants). Correlates and motives for participation in physical activity for young adults with a disability will be presented.

Workshops

Adapted Physical Activity Workshop 1: Good practice in adapted physical activity.

EVERYONE CAN PARTICIPATE!

Inger Johansson¹ & Lena Hammar²

¹Växjö University, ²The national agency for special needs, education and schools, Örebro, Sweden

Our experience from work with pupils with and without disabilities is that it's not only possible for all pupils to participate in PE, it is an opportunity to let all students become aware of, and get knowledge and values that is of great importance for each student but also for the school and society in general.

Our workshop will present the importance of movements for all, in a holistic perspective. We will also connect our theory in practical activities and show how adaptation and material can be used in a way that benefits all students and makes it easier for all to be involved and to succeed.

Adapted Physical Activity Workshop 2: Inclusion of children and adolescents with disabilities in physical activity.

INCLUSION OF CHILDREN AND ADOLESCENTS WITH DISABILITIES IN PHYSICAL ACTIVITY

Peter Pettersson, Ulla Thorstensson and Ronny Thorstensson

We are going to present a film that was recorded during a sports day in May 2008 with children with special needs from schools all around Halmstad. Students from Halmstad University helped organize this event, in co-operation with PE teachers for children with special needs.

The participants of this conference will have the opportunity to pursue some of the activities and games that were conducted during this sports day in May.

Sport Psychology Workshop 1: Health coaching as a community psychological intervention.

HEALTH COACHING AS A COMMUNITY PSYCHOLOGICAL INTERVENTION

Reinhard Stelter

Coaching Psychology Unit, University of Copenhagen, Department of Exercise and Sport Sciences,
University of Copenhagen, E-mail: RStelter@ifi.ku.dk

Coaching receives a growing interest not only in sport and business, but also in the field of health, lifestyle and exercise. Coaching shall be defined as the coach's active participation in and facilitation of the developmental and learning process of the person or group in focus. In this context health coaching shall be presented as a group intervention. The aim is to embed coaching in a community psychological discourse where the main intention is to develop social capital and empowerment. Bourdieu, 1983, has defined social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (p. 249). The development of social capital, here in form of health and exercise self-help groups and social networks, is seen as the most decisive factor for the development of healthy living. A theoretical framework shall be presented where coaching is conducted as a group intervention based on the following principles:

- It is the individual group member and the group as a whole who set the agenda.
- The health coach does not appear as an expert but as a facilitating participant of the group process.
- The group members have to find their own way of acting and speaking about their health challenges. Developing social capital through coaching is a process of co-creation of meaning.

Posters

Charlotte Ahlberg & Anna Mörstam (Sweden): Testing of a self-esteem program on young athletes.

Malin Boltorp (Sweden): Exercise dependence in relation to other psychological factors.

Johan Ericsson (Sweden): Physical education for students diagnosed with autism.

Eva Gåve (Sweden): Motivating physical exercises. Presented by **Anders Olsson**

Běla Hátlová, Radka Kulhánková & Tereza Louková (Czech Republic): Psychomotor therapy as support method in asthma.

Anders Henriksson & Mats Salo (Sweden): Adapted integration? A study about the integration of pupils with disabilities in the subject Physical Education and Health.

Joakim Ingrell (Sweden): Motivation and motivational climate in golf.

Urban Johnson & Fredrik Weibull (Sweden): Development of sport psychology in Europe: Through enhanced collaboration between FEPSAC and ENYSSP.

Maria Jönsson (Sweden): Perspectives of participation – A qualitative study concerning pupils' reasons for refraining from the education in the subject Physical Education and Health.

Jiří Kirchner (Czech Republic): The analysis of the present state in outdoor education in Czech Republic: New bachelor degree in outdoor activities and its use in special need youth education.

Jiří Kirchner, Tereza Louková, & Běla Hátlová (Czech Republic): Analysis of fragments in BSC/BA outdoor studies in St-Martin's College (UK) and the Czech setting with a focus on psychosocial aspects.

Camilla Lindholm (Sweden): Sport psychological factors' importance for peak performance in adventure racing.

Lina Lundgren, Sofia Olandersson, Marita Hilliges, & Anna-Lisa Osvalder (Sweden): Pilot study: Injuries and body stress within kite surfing.

Kaivo Thomson, J. Liukkonen, E. Hiltunen, P. Leinonen, L. Pälvimäki, H. Suomi (all -Finland), **A. Aidla, M. Aidla, K. Soonberg** (all - Estonia): Gender differences of 11-12 year-old pupils in cognitive style as measured by the group embedded figures test.

Rasmus Wallin-Tornberg (Sweden): Swimmers' emotions before a competition race – relation to goal orientation and opponents.

Linn Eriksson (Sweden): Ambition of a perfect body – a risk factor of body dissatisfaction

TESTING OF A SELF-ESTEEM PROGRAM ON YOUNG ATHLETES

Charlotte Ahlberg and Anna Mörstam

Centre for Sport and Health Research, Halmstad University, Sweden

This study is built on the idea that an athlete can enhance their self-confidence by increasing the inner self-esteem and that this can be made through changes in the criterias in which he/she values himself/herself.

The purpose with this qualitative research was to evaluate if the inner self-esteem was affected by a specific self-esteem program with a group of voluntary students N=10 at a sport athletic high school in a mid size town in southern Sweden. The students answered a questionnaire (Basic Self-esteem Scale, Forsman & Johnson, 1996; Johnson, 2005). Subsequently they went through a four week program in which they were to write down thoughts and reflections about their feelings, thoughts and opinions following a certain model. After the program was finished the students were interviewed and answered the same questionnaire once again. In spite of the short time available for the program the interviews showed that the program had a positive effect on the inner self-esteem which is also confirmed by the questionnaire results showing higher means at the second measurement. The majority of the students were also positive to continue writing down their thoughts and reflections after the program was finalized. Twelve weeks afterwards a follow-up interview was done with the students where it showed that half of the participants had continued writing although not in the same extend as before. All of them were still positive towards the program. The result of this study shows that work on enhancing the inner self-esteem with a group of athletes was neither complicated nor difficult, and gave good results.

EXERCISE DEPENDENCE IN RELATION TO OTHER PSYCHOLOGICAL FACTORS

Malin Boltorp

Centre for Sport and Health Research, Halmstad University, Sweden

The aim of the study was to examine if there existed exercise dependence in a gym. The aim was also to examine if exercise dependence and global self-esteem, identity, perfectionism and motivation would relate to each other. Four hypotheses were constructed: 1) Exercise dependence will have a negative relationship with global self-esteem; 2) Exercise dependence will have a positive relationship with identity; 3) Exercise dependence will have a positive relationship with negative perfectionism; 4) Exercise dependence will have a positive relationship with ego-oriented motivation. Five different instruments have been used: (EDS; Hausenblas & Symons Downs, 2002b); Positive and Negative Perfectionism Scale-20 (PANPS; Terry-Short, Owens, Slade, & Dewey, 1995); Rosenberg's (1965) Self-Esteem Scale, The Athletic Identity Measurement Scale (AIMS; Brewer, Van Raalte & Linder, 1993) and Task and Ego orientation in Sport (TEOSQ; Duda & Nicholls, 1989; 1992). The survey was administered in a gym and 143 questionnaires were handed out and 83 of them were completed. The age of the persons ranged between 17 and 55 years. The data was analyzed in SPSS and calculations were made with ANOVA and regression analyses. To make an overview of the variables, Pearson's test of correlation was used. The result showed that there existed exercise dependence and two of the hypotheses were verified, this because there was a significant relationship between exercise dependence and identity and also a significant relationship between exercise dependence and ego-oriented motivation. The discussion treats the result in relation with the previous research.

PHYSICAL EDUCATION FOR STUDENTS DIAGNOSED WITH AUTISM

Johan Eriksson,

Teachers education, Halmstad University, Sweden

Physical education for students diagnosed with autism is an environment that requires special educational measures. A fundamental part in the education of these students is structure. This examination paper discusses this part. By interviews and observations this examination has resulted in different methods and teaching strategies for children and young adults in terms of mobility, conditional mood, ball games, collaboration, compulsory patterns and to catch the students interest. This paper could be used like a foundation or support for physical education teachers who work with autistic students. You should have in mind that this paper and its result don't work with every child or young adult with autism and it is important that the education is individualized for each individual.

MOTIVATING PHYSICAL TRAINING: AN INSTRUCTIONAL FILM ABOUT PHYSICAL TRAINING FOR CHILDREN WITH NEUROPSYCHIATRIC DISABILITIES

Eva Gåve

Folke Bernadotte Regional Rehabilitation Centre (FBH), Uppsala University Hospital, Sweden

Neuropsychiatric disabilities often involve inactivity, passivity and isolation in these children and many of them have negative experiences of physical exercise. From our view there is a lack of knowledge about carrying out physical training in a playful manner and to serve its purposes at the same time. Parents and staff members at school often ask for guidance and education in this field. They want to know how to support the children to develop motor accuracy and skilfulness. Physical training in children with neuropsychiatric disabilities has since long been carried out under the guidance of physiotherapists at the FBH in Uppsala. The training is performed in a playful manner with an overall purpose to motivate the children to develop skilfulness in motor abilities. The aim was to make an instructional film for guidance and education in physical training in children with neuropsychiatric disabilities. An overall goal is that knowledge about physical training in children with neuropsychiatric disabilities is spread within the social networks of these children. A group of six children, aged 8-11 years, were filmed under three different conditions: in the gymnasium, in baths and in breaks at school. The physical training was adjusted to the children's level of motor performance and based on their special need to practice certain motor proficiencies, for example balance, coordination, muscle strength and endurance. The film presents appropriate games and structured activities to be performed in a playful way. The instructional film lasts 15 minutes. It is now used for information and guidance by parent's associations and for education by local schools and the Uppsala University.

PSYCHOMOTOR THERAPY AS SUPPORT METHOD IN ASTHMA.

Běla Hátlová, Radka, Kulhánková, & Tereza Louková
J.E. Purkyně University in Ústí nad Labem, Czech Republic

Main goal of this study is verifying the suitability of activating, concentrating and communication psychomotortherapeutical programs as support methods to standard treatment of patients diagnosed with Asthma . Character of the study is randomised controlled experiment with double blind evaluation before and after intervention by movement programs. The exercise creates a part of treatment programme 5 times a week during summer holidays. Exercise unit length is 60 minutes on the began to 90 minutes latest. Psychic state of patients is evaluated using standardized POMS and CMAS,. 43 patients (22 boys and 21 girls) diagnosed with asthma. Result: Participation of patients in each program showed significant improvement of their psychic state: lowering global problems (global score: p 0,001), lowering problems in anxiety-depression syndrome (ANDP: p 0,001) and in hostility-suspiciousness syndrome (HOST: p 0,001). Changes in thought disturbance are not significant. There is quite high attendance, activity and acceptance of programs by majority of patients.

ADAPTED INTEGRATION? A STUDY ABOUT THE INTEGRATION OF PUPILS WITH DISABILITIES IN THE SUBJECT PHYSICAL EDUCATION AND HEALTH.

Anders Henriksson & Maths Salo
Teachers education, Halmstad University

School of today should have their aims to be a school for all students. It's up to date to include students with functional disabilities with students without disabilities within the subject, physical education. Physical education is a subject where it's difficult to be anonymous if you have a disability .This can be even harder if you are included with students without functional disabilities. The purpose of our work is to investigate how inclusions of students with functional disabilities are seen by both teachers and students within the subject physical education. This essay is made with qualitative interviews on 4 physical education teachers. The interviews were made on 2 male teachers and 2 female teachers. 3 students with functional disabilities were also interviewed and with the distribution of 2 boys and 1 girl. Our result shows that it is not always positive to include students with functional disabilities. As physical education teacher you must listen and have knowledge about what the student wants and his or hers situation and not just include without afterthoughts. Out in the schools, inclusion can be so different from one place to another, and that's why it's so hard to decide which actions that are done during an inclusion-process. The most recurrently word in the inclusion discussion and in our essay was adjustment. The physical education teachers were agreed that every student needs physical education today and to achieve that you have to adjust some activities so everyone can participate. The students that were interviewed in our essay didn't feel like they didn't belong to the class when they had inclusive education or when they had special physical education with a special physical education teacher.

MOTIVATION AND MOTIVATIONAL CLIMATE IN GOLF

Joakim Ingrell
Department of Sport Sciences, Malmö University

The purpose of this study was to examine how a positive motivational climate could be developed in golf clubs based on the members' perspective of their existing club. Fifteen golfers, (9 men and 6 women) between the ages of 15-76 years, from three different clubs in Sweden participated. From each club five golfers were interviewed. The golfers were categorized into elite players, not elite players and veterans. Based on research, from e.g., Vazou, Ntoumanis and Duda (2005) on motivational climate, a semi-structured interview guide was developed. Raw data from the interviews was examined through a qualitative content analysis. The result was presented in five different categories: motivation, environment, environment and motivation, vision, and finally developing the vision. The results showed that the three main areas in previous research in motivational climate; coach, parents and peers, also played a big role in motivational climate in golf. Another important factor that affected the motivational climate in golf, and came out of this study, was the quality of the facilities. The results are discussed in relation to existing research (e.g., Duda & Treasure, 2006) and a model over motivational climate in golf was developed. This model can be used to understand the motivational climates effect on development and feel-good factors in golf.

DEVELOPMENT OF SPORT PSYCHOLOGY IN EUROPE: THROUGH ENHANCED COLLABORATION BETWEEN FEPSAC AND ENYSSP

Urban Johnson Secretary-General, FEPSAC and Fredrik Weibull Secretary-General, ENYSSP

The formal birth of FEPSAC (Fédération Européenne de Psychologie des Sports et des Activités Corporelles) took place 1969 in Vittel, France. Altogether 86 Managing council (MC) meetings and conferences have been held since then, including 49 different MC members from 25 different countries. Eight FEPSAC Position statements and several books have been published, as well as the creation of the European Master in Exercise and Sport Psychology program and the European journal Psychology of Sport and Exercise. The aims of FEPSAC are: a) to promote scientific, educational and professional work in sport psychology in Europe, b) to promote information dissemination and co-operation in sport psychology in Europe, c) to maintain social and scientific relations between persons and groups working in sport psychology, mainly in Europe, and, d) to encourage young European scientists in sport psychology. One important step towards facilitating the development is to support young specialists. The idea of ENYSSP (European Network for Young Specialists in Sport Psychology) was first discussed by 12 international students during the first intensive course of the European Masters in 1997. The ENYSSP MC was formed during the FEPSAC Congress in Copenhagen, 2003 and includes three different departments in research, application and education. The main goal of ENYSSP is the promotion and dissemination of knowledge and the support of young specialists in sport and exercise psychology. The area of sport and exercise psychology is constantly developing and a key issue is to have an open communication between governing bodies in order to secure a positive development of the field. Therefore FEPSAC and ENYSSP have started increased collaboration. One suggestion is to organize joint teaching-training weeks and/or summer schools.

TO NOT PARTICIPATE – A QUALITATIVE STUDY CONCERNING PUPILS' REASONS FOR REFRAINING FROM THE EDUCATION IN THE SUBJECT PHYSICAL EDUCATION AND HEALTH

Maria Jönsson

Teachers education, Halmstad University, Sweden

The subject Physical Education and Health is often emphasized as an important factor for developing a healthy lifestyle. Scientists often give prominence to Physical activity as being the most important factor for health. In the latest evaluation of the subject Physical Education and Health it turned out that 16 % of the pupils did not find the subject interesting. The evaluation also showed that a few percent of the pupils did not take part in the Physical Education and Health education at all. The aim of this study was to research into what reasons pupils in school year 7-9 have for not taking part in the Physical Education and Health education. The reasons they convey to their teachers as well as their reasons they do not convey to their teachers have been studied. Other questions have been: what changes the pupils wish for, for them to take part and how pupils are affected by the predominant discourse of society, that more and more young people are physical inactive and/or overweight. Three interviews with a total of five pupils were conducted and analysed by a hermeneutic approach. The results show that the reasons the pupils convey to their teachers are not the same as the real ones. The interviewed pupils have a negative attitude towards the subject Physical Education and Health. They also feel that they do not learn anything and that they are afraid of making fools of themselves and fail. Some of the pupils do not get along with their teachers and some are not of the opinion that they live up to the fixation with the human body that is mediated by mass media. None of the interviewed pupils shower in the assigned shower rooms. The changes the pupils ask for are separate shower rooms, opportunities to choose activities and less of the traditional ball sports.

THE ANALYSIS OF THE PRESENT STATE IN OUTDOOR EDUCATION IN CZECH REP. WITH FOCUS ON NEW BACHELOR DEGREE IN OUTDOOR ACTIVITIES AND IT'S USING IN SPECIAL NEED YOUTH EDUCATION

Jiří Kirchner

University of J. E. Purkyně in Ústí nad Labem, Czech Rep.

The outdoor activities problematics and its relation to the duality of life have been gaining ground recently and also adventure tourism is at its peak. Further education of pedagogical experts in this field is therefore needed. Outdoor activities department, pedagogical faculty, University of J. E. Purkyně, Ústí nad Labem, has elaborated compact conceptions of outdoor and adventure activities for the experts and the public. Specific outputs of Outdoor activities department are as followed. *Bachelor degree Outdoor Activities (the only one in the Czech republic)*. New study Bachelor degree Outdoor activities was accredited in Pedagogical faculty in University of J.E.Purkyně in Ústí nad Labem. Study is framed on the basis analysis of similar studies in EU and in the world. We came out from the typical Czech conception of Outdoor activities and the evropean conception at once. The dominant part of Outdoor studies are theoretical and practical preparations in the field of kinanthropology, geography and environmentalism. The environmentalism frame the base of scientific province, witch is aplyed to the field of outdoor

activities. *Adventure therapy as a part of education.* Adventure therapy is important part of the study programme. Students are apprised with improvement of outdoor activities for the therapeutical purposes. Adventure therapy is used to physical and mental handicaps. Theirs direction is to the prevention undesirable psychopathological phenomenons connected with risk groups of youth. *Next activities:* Courses for instructor licence; Holding of conferences, seminars; EEOSSS – international Experiential Education and Outdoor Studies Summer School of more than 15 european universities; Outward bound courses; "Journal of Outdoor Activities" periodical. The aim of this article is to bring forward the more detailed survey of the outdoor activities conception focus on using in youth education.

ANALYSIS OF FRAGMENTS IN BSC/BA OUTDOOR STUDIES IN ST.MARTIN'S COLLEGE (UK) TO THE CZECH SETTING WITH FOCUS ON PSYCHSOCIAL SUBJECTS

Jiří Kirchner, Tereza Louková, Běla Hátlová

Univerzity of J. E. Purkyně in Ústí nad Labem, Faculty of Education, Czech Republic

This paper is an analysis of temporary structure of the bachelor degree study programme „Outdoor Studies“ at St. Martin's College, Ambelside, UK. It results from the survey analysis of accredital materials provided by the partner. The outcome is the establishment of proportional particular modules distribution in Outdoor Studies programme. The practical part focuses on the analysis of „Outdoor Studies“ Bc. degree which has been accredited at St. Martin's College, Ambelside, Lancasted University, UK, and its application to the czech enviroment. *Scheduention of psychosocial disciplines in Bachelor degree in Outdoor activities.* Study of psychosocial disciplines and disciplines with humanitarian purpose are important for working with clients or some groups. Therefore we show their summary and proportional allocating regarding to others study parts. We indicate the concrete subjects and their proportionality concerning to the others compulsory subjects. Conception of new study programme is on the basis of graduality. The students get bases of psychosocial and humanitarian disciplines. Subsequently they get summary of general disciplines above all in the fields of psychology and pedagogy, particular and concrete competences witch are use in Outdoor activities concerning to the working with client or concrete group . year – winter semester: General Psychology, Introduction to the philosophy, Philosophical and historical base of Outdoor Activities - 27%, year – summer semester: Sport pedagogy and psychology, Experiential Education - 22%, year – winter semester: Psychology of resistance - 12,5%, year – summer semester: Facilitation skills and group dynamic - 15%, year – winter semester: Therapeutical applications of adventure activities - 15%. If we add together every psychosocial subject during studies we can see that psychosocial subject have 18% space in the all curriculum. Because in this branch students have to study more areas (like a theory of kinanthropology, practical outdoor sports, geography and environmental subjects) we consider that 18% for psychosocial disciplines is optimal for absolvent profile.

SPORTS PSYCHOLOGICAL FACTORS IMPORTANCE FOR PEAK PERFORMANCE IN ADVENTURE RACING

Camilla Lindholm

Department of Sport Sciences, Malmö University, Sweden

Adventure Racing (AR) is an extreme and young team sport, there racers are exposed to enormous physiological and psychological demands. The sport is relatively unexplored especially with in the area of sport psychology. The purpose of the study was to determine Swedish elite adventure racers' view on peak performance and to explore which sports psychological factors are required to reach peak performance in AR. A semi-structured interview was used. Twelve elite active adventure racers, two women and ten men, in the age of 27-47 years old participated in the study. Two definitions of peak performance were found, one considered unattainable ideal performance and one considered more achievable. All participants considered sports psychological factors important, especially in the latter part of the race when fatigue was evident. Furthermore, peak performance was associated with a sense of pleasure or flow. Important sports psychological factors were motivation, confidence, positive thoughts, accepted and clarified goals, coping strategies, focus and attention, team composition, co-operation, previous experiences, and preparation. The sports psychological factors interact variously at different occasions, which indicate that all factors influence the ability to achieve peak performance. The results are illustrated in a peak performance model for AR, based on Hardy, Jones and Goulds model of psychological preparation for peak performance. The peak performance model for AR can be the foundation for psychological interventions aiming to increase the ability to reach peak performance in AR.

BIOMECHANICS OF EXTREME SPORTS – A KITE SURFING SCENARIO

Lina Lundgren¹, Sofia Olandersson¹, Marita Hilliges¹, Anna-Lisa Osvalder²

¹Product Development in Healthcare, PRODEA research group, Halmstad University, Sweden

²Department of Product- and Production Development, Division of Design
Chalmers University of Technology, Gothenburg, Sweden

Extreme sports are becoming more and more popular. Since extreme sport activities often are associated with higher risks than other sports, it is possible that the biomechanical stress is higher and contributes to more injuries than other sports. One of the upcoming extreme sports is kite surfing. The purpose of the sport is to jump high, go fast or do acrobatic tricks in the air. To this date, it is found that it is mainly trauma injuries that are caused by kite surfing, and these injuries often occur due to problems with the safety systems. But because of lack of more recent studies in the area, it is hard to say what the situation looks like today. The purpose of this project is to prevent or minimize injuries in the sport, by examine the mechanical forces that act on the body while kite surfing and by investigating further development of equipment used in the sport. The first focus is to outline which injuries that is most common, by mapping injuries through a questionnaire about kite surfing, equipment used and sustained injuries. The results will hopefully give an overview of the most common injuries in kite surfing and will be used as a foundation for deciding which parts of the body that are exposed to the highest mechanical stresses. The importance for this is for future biomechanical measurements and development of products and specific training guidelines.

GENDER DIFFERENCES OF 11-12 YEAR-OLD PUPILS IN COGNITIVE STYLE AS MEASURED BY THE GROUP EMBEDDED FIGURES TEST

**K. Thomson, J. Liukkonen, E. Hiltunen, P. Leinonen, L. Pälvimäki, H. Suomi (Finland)
A. Aidla, M. Aidla, K. Soonberg (Estonia)**

In physical education it was found that pupils's field-dependence--independence (FD/FI) cognitive style status were significantly related to their physical activity levels and involvement in organized sports, with field-independent children demonstrated significantly higher physical activity levels and more participation in organized sports than did field-dependent children (Liu, & Chepyator-Thomson 2008). For testing the hypothesis (an analytic teaching approach matches with field-independence (FI) perceptual cognitive style and a holistic teaching approach matches with field-dependence (FD) perceptual cognitive style) the first task of the project "New Approaches in Physical Education for Teaching Motor Skills in Ballgames: How to Take into Consideration the Cognitive Style of the Pupils" was to determine the possible effect of gender on the cognitive style of the pupils at the age of 11-12 years by means of Group Embedded Figures Test. The participants (n = 199) were 11-12 year-old pupils from Finland and Estonia (94 male and 105 female). The Group Embedded Figures Test (GEFT) was used to classify subjects according to their dominance of field-dependent (FD) or field-independent (FI) cognitive style. Logistic regression was used to examine field dependent/independent cognitive style between genders. In spite of the tendency for male participants to demonstrate twice the probability to have a higher field-dependent cognitive style there was no statistically significant interaction between field-dependent/independent cognitive styles and gender ($p < 0.05$).

SWIMMERS' EMOTIONS BEFORE A COMPETITION RACE- RELATION TO GOAL ORIENTATION AND OPPONENTS

Rasmus Wallin-Tornberg

Centre for Sport and Health Research, Halmstad University, Sweden

It is desirable for athletes to find their optimal zone in different situations during training and competition where they feel and perform at their best. Research has shown that emotions often arise as reactions to the results of individual goals. In addition, it has been argued that individuals with different kind of goal orientations prefer different kind of achievement situations. The purpose of this study was to examine differences in swimmer's emotions prior to a competition race related to goal orientations and opponents. The data was obtained using an instrument based on modified versions of the Task and Ego Orientation in Sport Questionnaire and the PNE-28R, which is a part of Hanin's (2000) method Individualized Emotion Profiling. Two hundred and seven swimmers between the ages of 13 and 29 participated. Multivariate analyses of variance showed significant differences in swimmers' emotions related to goal orientation. In addition, the study showed significant differences in the swimmers' emotions depending on the conception of their capacity in comparison to their opponents. The study provides a base for future research and suggests practical implications in areas associated with athletes' emotions related to goal orientations and opponents.

AMBITION OF A PERFECT BODY - A RISK FACTOR OF BODY DISSATISFACTION**Linn Eriksson¹, A Baigi², & E-C Lindgren^{1,2}**¹ School of Social & Health Sciences, Halmstad University, Sweden, and ² Primary Health Care Research and Development, Council Halland, Falkenberg, Sweden

Introduction: A well-shaped body is an opportunity to become socially accepted. Some people use exercise to develop a fitter and a more attractive physique as well as decrease their social physique anxiety. One of the greatest sources of body dissatisfaction is sociocultural, since some individuals feel a pressure to achieve a body image that conforms to the norm in society. An ideal of thinness can be a causal risk factor for body image disturbance and eating disturbances. The aim of the study was to investigate how exercise frequency and duration relate to sociocultural attitudes towards appearance and social physique anxiety in female fitness participants. **Objectives:** Female fitness participants (n=166) aged 17-76 were consecutively selected from five fitness centers in a city of southwest Sweden. **Method:** The participants completed a questionnaire based on exercise frequency and duration, the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ) and Social Physique Anxiety Scale (SPAS). Student T-test was used in the analyses. **Results:** The participants who exercised more frequently with a longer duration were significantly more aware of the western norm of the slim ideal and exhibit higher degree of social physique anxiety than females who exercise less frequently with a shorter duration. **Discussion/conclusion:** It is possible that the fitness center environment emphasizes a body ideal that increases the likelihood of social physique anxiety among female participants in fitness activities. On the other hand it might be females who are aware of the body ideal and with social physique anxiety who prefer fitness centers activities.

Young Investigators Award, sponsored by Movement

Sally Akehurst, Tim Woodman & Lew Hardy (United Kingdom): Two studies investigating the interactive effects of narcissism and trait self-consciousness upon dispositional choking, and the role of confidence.

Markus Gerber (Switzerland): Development and validation of an inventory to assess chronic stress in physical education classes.

Jenna Gestranus (Sweden): Factors influencing exercisers' tendencies towards healthy versus unhealthy exercise participation.

Henrik Gustafsson, Helena Ragnarsson, Peter Hassmén, & Nathalie Hassmén (Sweden): Perfectionism, goal orientation and the risk of athlete burnout.

Kajsa Jerlinder (Sweden): Swedish physical educators' attitudes toward teaching pupils with physical disabilities in inclusive settings.

Daniel Jorlén (Sweden): Career transitions for Swedish golf juniors - from regional to national junior elite competitions.

Karin Josefsson (Sweden): Motivation to exercise and perceived barriers - Men and women's exercise habits.

Magnus Kraft, Anna Brännberg, Peter Kriborg and Pierre Mathisson (Sweden): Effects of whole body vibration on strength development, and self-efficacy in strength performance.

Erik Lundkvist, Sören Hjälms, Henrik Gustafsson, Peter Hassmén (Sweden): Perceived causes of burnout among elite soccer coaches.

Tobias Richard (Sweden): Personal identity in adolescent football players: An explorative study.

Fredrik Weibull (Sweden): Idiosyncratic imagery experiences in tennis: Using imagery patterns as an analytic framework.

Johan Wikman (Denmark): Development of the volitional components questionnaire-exercise.

TWO STUDIES INVESTIGATING THE INTERACTIVE EFFECTS OF NARCISSISM AND TRAIT SELF-CONSCIOUSNESS UPON DISPOSITIONAL CHOKING, AND THE ROLE OF CONFIDENCE

Sally Akehurst¹, Tim Woodman² and Lew Hardy²

¹Aberystwyth University, ²Bangor University, United Kingdom

Introduction

Choking under pressure is the metaphorical term used to describe a decrement in performance in any situation where the performer is required to produce a superior performance, and strives to do so (Baumeister, 1984). Research has tended to imply a measure of choking through negative performance discrepancy between practice and competition. Attempts to explain the occurrence of these performance decrements have identified the significance of individual differences within the processes of choking and recommended that further research is required to understand how they exert their influence (e.g., Mullen & Hardy, 2000). Previous research has indicated reinvestment (Masters et al., 1993), Trait Self-consciousness (Baumeister, 1984; Fenigstein et al., 1975), and Narcissism (Wallace & Baumeister, 2002), as key constructs worthy of further investigation with regard to their influences upon performance under pressure and the potential for dispositional choking.

Objectives

A key objective of these studies was to design a dispositional measure of choking. Dissatisfaction with the previous reinvestment scale (Masters et al., 1993) stimulated design of the dispositional choking scale, and also the potential role of trait self-consciousness in performance under pressure. The findings of Baumeister (1984) presented an argument for high trait self-consciousness being beneficial for individuals performing under pressure; however, further research was limited. Secondly, the narcissistic personality had received recent interest with regard to performing under pressure and presented evidence for narcissism benefiting an individual's performance when under pressure. On this basis a second objective of the studies was to initiate examination of the personality constructs narcissism and trait self-consciousness, and their interaction upon a predisposition to choke. Thirdly, confidence has been presented as a mechanism that can protect against debilitating anxiety (Hardy & Mullen, 2001), and findings of Campbell et al. (2004) suggested a close link between confidence and narcissism so this warranted examination, forming a third objective.

Method

Participants were of mixed gender, competitive performers of team and individual sports; with samples of 90 and 272 in studies one and two respectively. Participation was voluntary and required the completion of the *Narcissistic Personality Inventory* (NPI; Raskin & Hall, 1979) and the *Self-Consciousness Scale* (SCS; Fenigstein et al., 1975) in both studies. The *Trait Sport Confidence Inventory* (TSCI; Vealey, 1986) was completed by participants in Study Two only. The new *Dispositional Choking Scale* was completed as an informant's measure (DCS-I) in Study One by the participant's coach, and as a self-report measure (DCS-SR) by the participant's themselves in Study Two.

Results

The Dispositional Choking Scale (DCS) demonstrated high internal consistency as an informant's measure in Study One with a scale alpha coefficient of .9545 retaining all 8 items. The DCS as a self-report measure in Study Two also demonstrated very high internal consistency with a scale alpha coefficient of .9105 retaining all 8 items. Both studies reported gender differences for narcissism and social anxiety and in Study Two also for public self-consciousness, dispositional choking and trait sport confidence. These effects supported expectations and were controlled for in the main analyses. The regression analyses performed to test for the moderation hypothesis of narcissism, trait self-consciousness and dispositional choking revealed no significant findings. Correlation analysis revealed significant relationships between narcissism and social anxiety, private and public self-consciousness, and public self-consciousness and social anxiety. These supported previous research however revealed no findings in relation to the dispositional choking measure. Correlation analysis in Study Two supported Study One and reported additional significant correlations in expected directions, with the DCS-SR measure significantly relating to narcissism, social anxiety and trait sport confidence. The moderation hypothesis as tested in Study Two revealed no significant findings when the sample was tested as a whole. However the diverse subject sample enabled comparison of team and individual sports. For the individual sample (N=80) narcissism was a significant moderator of the relationship between public self-consciousness and dispositional choking. High narcissism was associated with low choking regardless of public self-consciousness, but for low narcissists high public self-consciousness was associated with lower levels of choking. The nature of the interaction supported the theoretically based hypothesis. The team sport sample (N=192) did not yield an interaction between narcissism and trait self-consciousness; however, narcissism and public self-consciousness were both significant predictors of dispositional choking. The potential mediating role of confidence was not supported; however, confidence was found to be a significant predictor of dispositional choking over and above narcissism, supporting the argument that narcissism effects cannot be explained entirely by confidence.

Discussion

Findings are discussed in light of previous research, theoretical implications and future directions. The DCS designed for the studies demonstrated internal consistency as both an informant's measure and a self-report scale. It is highlighted that as a self-report measure more significant relationships were reported in Study Two, and upon discussion of this issue it is suggested the DCS-SR might be a more worthy measure for future research. The significant relationships reported between the variables of narcissism, trait self-consciousness, trait sport confidence and dispositional choking in the studies all supported expectations based on respective previous research (Baumeister, 1984; Campbell et al., 2004; Wallace & Baumeister, 2002) and extended this knowledge. The significant moderation effect in Study Two supported the hypothesis that narcissism would moderate the relationship between trait self-consciousness and dispositional choking based on the work of Baumeister (1984) and Wallace and Baumeister (2002). Interestingly, this finding was only significant for the individual sport sample suggesting that sport type might be an influencing factor requiring future examination. The confidence findings provide evidence that narcissism effects are more than just confidence so warrant further study. Limitations regarding measurement and participants are heeded and considered with regard to future directions; however the novel research questions and measurement design for dispositional choking are key strengths of this research.

References

- Baumeister, R. F. (1984). Choking under pressure: Self-consciousness and paradoxical effects of incentives on skillful performance. *Journal of Personality and Social Psychology*, **46**, 610-620.
- Campbell, W. K., Goodie, A. S., & Foster, J. A. (2004b). Narcissism, confidence, and risk attitude. *Journal of Behavioural Decision Making*, **17**, 297-311.
- Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology*, **43**, 522-527.
- Hardy, L., & Mullen, R. (2001). Performance under pressure: A little knowledge is a dangerous thing? In P. R. Thomas. (Ed.), *Optimising golf performance*. Brisbane Australia, Australian Academic Press Pty, Ltd.
- Masters, R. S. W., Polman, R. C. J., & Hammond, N. V. (1993). 'Reinvestment': A dimension of personality implicated in skill breakdown under pressure. *Personality and Individual Differences*, **14**, 655-666.
- Mullen, R., & Hardy, L. (2000). State anxiety and motor performance: Testing the conscious processing hypothesis. *Journal of Sport Sciences*, **18**, 785-799.
- Raskin, R., & Hall, C. S. (1979). A narcissistic personality inventory. *Psychological Reports*, **45**, 590.
- Vealey, R. S. (1986). Conceptualization of sport-confidence and competitive orientation: Preliminary investigation and instrument development. *Journal of Sport Psychology*, **8**, 221-246.
- Wallace, H. M., & Baumeister, R. F. (2002). The performance of narcissists rises and falls with perceived opportunity for glory. *Journal of Personality and Social Psychology*, **82**, 819-834.

DEVELOPMENT AND VALIDATION OF AN INVENTORY TO ASSESS CHRONIC STRESS IN PHYSICAL EDUCATION CLASSES

Markus Gerber

Institute of Exercise and Health Sciences, University of Basel, Switzerland

Introduction

In most western countries, students report diminishing levels of school enjoyment during adolescence (Flammer & Alsaker, 2002). This reduction may have various causes. For instance, students indicate that the lessons are less interesting as desired. At the same time, students do not anticipate ways to actively change this situation. Studies also show that a considerable portion of students exhibits teacher- and performance-related anxieties. Moreover, mobbing was found to be a wide spread phenomenon in European schools (Olweus, 2004). Similarly, enjoyment of physical education (PE) decreases during the course of elementary school (Nitsch & Singer, 2001). This finding, however, is somewhat paradoxical because many students rank physical education as the most popular subject (Pühse & Gerber, 2005). Again, many reasons may contribute to this situation. For example, studies show that the perceived motivational climate significantly influences students satisfaction with PE (Papaioannou & Goudas, 1999; Treasure & Roberts, 2001). More generally, reduced enjoyment can be associated with increased stress in PE. Until now, however, no analyses have been conducted to find out, which experiences students tax stressful.

Objectives

The main objective of this study was to develop a reliable and valid instrument to assess chronic stress in PE classes. Since the knowledge of stressful experiences in PE is limited, a major concern was to consider students' opinions in order to guarantee the face validity of the instrument.

Method

The development of the inventory comprised several consecutive steps. First, a sample of 6th to 9th grade students (N=302; 19 classes; M=13.36±1.42 years) completed an open-ended questionnaire in which students were asked to indicate three minor and major stressful events that they have experienced in PE during the preceding three months (cp. Compas, Davis, Forsythe & Wagner, 1987). Second, the generated responses were grouped into 17 different stressor categories by means of a content analysis (see Table 1). According to the goals

and principals of the TICS (Schulz, Schlotz & Becker, 2003), for each scale four items were developed. That is, the items were formulated in order to include the stressfulness of each experience (e.g. "The PE teacher is too strict"). Furthermore, all items were formulated as unspecific as possible in order to enclose a wide range of different situations and experiences (e.g. "The PE teacher does not respect the students enough"). Accordingly, certain sports the students disliked were not included in the original version of the inventory (e.g. "I had to dance/play soccer"). It was expected that this procedure would result in an acceptable internal consistency of the subscales. Third, the 68-item inventory was administered to the same sample of students. In addition, to examine the validity of the stress inventory, the questionnaire comprised several other constructs (satisfaction with PE, class climate in PE, self-determined motivation, goal orientation, social physique anxiety, physical self-concept). Forth, confirmatory factor analysis was conducted using principal components analysis and structural equation modeling. Fifth, three weeks after the completion of the questionnaire, a subsample (5 classes) filled in the stress inventory again to get information about the test-retest-reliability, whereas another subsample (5 classes) rated the stressfulness of the items. Finally, to examine the longitudinal outcomes of chronic stress in PE, all students will fill in the whole questionnaire again after eight months.

Results

Principal components analysis provided a 14-factor solution (Eigenvalues > 1), from which four factors had to be excluded since less than three items loaded on the scales ($\geq .40$). Table 1 provides an overview over the remaining ten dimensions.

Table 1: Variance and internal consistency (Cronbach's Alpha) of the ten extracted factors

Factor	Label	Composed by items from these original subscales	Expl. var.	Int. consist.
1	Problems with the teacher	Unfair, unfriendly, autocratic teacher, arguments with the teacher	26.83%	.95
2	Problems with class mates	Low effort, aggressive behavior, poor class cohesion	9.64%	.93
3	Organization of PE lessons	Poor organization, boredom	5.75%	.85
4	Psychological violence	Psychological violence, stressful experiences in the changing room	4.51%	.79
5	Pain during/after PE	Pain during/after PE	3.11%	.81
6	Set-up of PE	Poor set-up	2.87%	.82
7	Physical violence	Physical violence	2.58%	.76
8	Low ability	Low ability	2.23%	.70
9	Obligation to participate	Feeling forced to participate in PE	2.10%	.81
10	Failure/frustration	Unachievable expectancies, low ability	2.03%	.69

Correlational analyses provide evidence that all subscales of the stress inventory are interrelated ($r=.12$ to $.69$, $p<.01$). Furthermore, correlational analyses support the criterion and concurrent validity of the subscales. For instance, nine of ten subscales (except physical violence) were negatively associated with PE satisfaction ($r=-.17$ to $-.59$, $p<.01$).

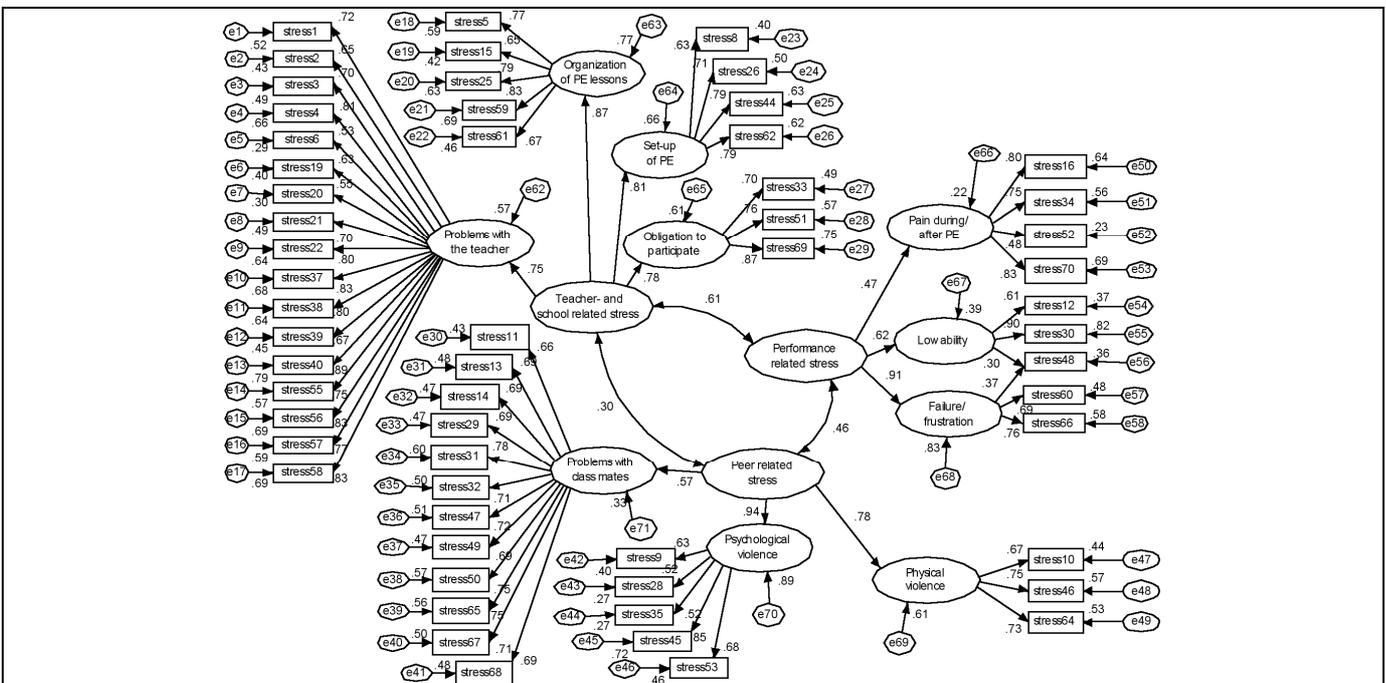


Figure 1: 2nd-order-factor model with standardized coefficients

Figure 1 shows the results of the second-order confirmatory factor analysis. As hypothesized, three second-order factors were distinguished representing teacher- and school-related, peer-related and performance-oriented stressors. A causal structure is not posited in the model. However, the model indicates that all second-order factors are correlated and that they are sufficiently explained by the first-order constructs. The fit indices show that the model works well ($\chi^2/df=2.19$; $RMSEA=.06$; $P_{close}=.00$; $CFI=.82$), particularly if the residual correlations are taken into account ($\chi^2/df=1.64$; $RMSEA=.05$; $P_{close}=.97$; $CFI=.91$).

Discussion/Conclusion

This study's findings highlight that a multitude of different sources cause stressful PE experiences. Confirmatory factor analyses further document that stressors are related to the teacher, the school, peers and performance. The findings also show that students do not differentiate less between different aspects of teacher- and peer-related problems than expected. Accordingly, some subdimensions were condensed into more general factors. In sum, the present inventory has high face validity and indicates good internal consistency. Furthermore, correlational analyses confirm its construct validity. Finally, longitudinal analyses will provide information about the predictive value of the inventory and its usefulness as a tool to improve the quality of PE.

References

- Compas, B. E., Davis, G. E., Forsythe, C. J. & Wagner, B. M. (1987). Assessment of Major and Daily Stressful Events during Adolescence - the Adolescent Perceived Events Scale. *Journal of Consulting and Clinical Psychology*, 55(4), 534-541.
- Flammer, A. & Alsaker, F. (2002). *Entwicklungspsychologie der Adoleszenz. Die Erschließung innerer und äußerer Welten im Jugendalter*. Bern: Huber.
- Nitsch, J. R. & Singer, R. (2001). Psychologische Aspekte des Schulsports. In H. Gabler, J. R. Nitsch & R. Singer (Hrsg.), *Einführung in die Sportpsychologie* (S. 109-152). Schorndorf: Hofmann.
- Olweus, D. (2004). *Gewalt in der Schule. Was Lehrer und Eltern wissen sollten – und tun können*. Bern: Hans Huber.
- Papaioannou, A. & Goudas, M. (1999). Motivational climate of the physical education class. In Y. Vanden Auweele, F. Bakker, S. Biddle, M. Durand & R. Seiler (Hrsg.), *Psychology for physical educators* (S. 51-68). Champaign: Human Kinetics.
- Pühse, U. & Gerber, M. (2005). *International comparison of physical education. Concepts, problems, prospects*. Aachen: Meyer & Meyer.
- Schulz, P., Schlotz, W. & Becker, P. (2003). *TICS. Trierer Inventar zum chronischen Stress*. Göttingen: Hogrefe.
- Treasure, D. C. & Roberts, G. C. (2001). Students' perceptions of the motivational climate, achievement beliefs, and satisfaction in physical education. *Research Quarterly for Exercise and Sport*, 72(2), 165-175.

FACTORS INFLUENCING EXERCISERS' TENDENCIES TOWARDS HEALTHY VERSUS UNHEALTHY EXERCISE PARTICIPATION

Jenna Gestranus

School of Social and Health Sciences, Halmstad University, Sweden

Introduction

Today both the physiological and psychological health benefits of exercise are acknowledged (e.g. Biddle, Fox, Boutcher & Faulkner, 2000; US Department of Health and Human Services, 1996). The exercise movement carries a potential to relieve some health problems accentuated by sedentary lifestyles and is therefore of significance to study. But literature concerned with for example exercise dependence and eating disorders indicates that exercise is not always healthy (e.g. Hausenblas & Symons Downs, 2002; Thome and Espelage, 2007). Exercise seems to have a double sided effect on health and the important question to ask is under what conditions exercise participation contributes positively versus negatively to perceived health. A theoretical framework that demonstrates the two line influence of exercise on perceived health is provided by Stambulova, Johnson, Lindwall and Hinic in the Perceived Health and Sport/Exercise Participation model (PHS/EP, 2004, 2005, 2006). The model suggests two health related tendencies in sport/exercise which together develop a continuum. One pole is *healthy sport/exercise participation*, which includes having health as a goal, using health enhancing strategies and perception of health as a benefit of sport/exercise participation. The opposite pole is *unhealthy sport/exercise participation*, involving perception of health as a mean, draining health through sport/exercise participation and perception of health as a cost of sport/exercise participation. The model predicts that the healthy and unhealthy tendencies of sport/exercise participation influence perceived health and satisfaction with exercise participation.

Objectives

The objectives of the study were to test the Perceived Health and Exercise Participation Profile (PHEPP) Questionnaire and to examine factors involved in exercisers' tendencies towards healthy versus unhealthy exercise participation and their association with perceived health, exercise satisfaction, goal orientation, self-esteem and physical self-perception.

Method

Participants were regular exercisers (N=148) exercising at least three times a week or more, recruited in exercise related University courses, in exercise groups, at gyms and exercise facilities. Participants completed a test package consisting of four instruments. The PHEPP was created by the author and an expert in the field with reference to the PHS/EP model and previous work regarding the model (e.g. Gestranius 2006, Shakiba 2006). The questionnaire consists of background information and 30 statements concerned with exercisers' perception of health in relation to exercise participation. Statements are rated on a 6-point Likert scale (1 = strongly disagree, 6 = strongly agree). The other instruments were The Task and Ego Orientation in Sport Questionnaire, Rosenberg's Self-Esteem Scale and The Physical Self-Perception Profile.

Results

An examination of the 30 items in the PHEPP showed that six items demonstrated unacceptable values of univariate skewness ($> \pm 2$) and kurtosis ($> \pm 7$), indicating a non-normal distribution. Because of this a factor analysis was not performed. The following PHEPP variables: *healthy exercise participation* (Cronbach $\alpha = .67$, $M=5.01$, $SD=0.55$) *unhealthy exercise participation* (Cronbach $\alpha = .69$, $M=2.04$, $SD=0.61$) *perceived health* (Cronbach $\alpha = .65$, $M=4.80$, $SD=0.84$) and *satisfaction with exercise participation* (Cronbach $\alpha = .44$, $M=4.92$, $SD=0.60$) showed good test-retest reliability ($n=38$) with Pearson's r ranging from 0.66 to 0.77. Six multiple regression analyses using backwards elimination were performed. Significant results were: healthy exercise participation contributed positively to perceived health, (unhealthy exercise participation showed a tendency towards a significant negative contribution to perceived health); healthy exercise participation and perceived health contributed positively to satisfaction with exercise participation; task orientation and self-esteem contributed positively to healthy exercise participation; task orientation contributed positively and self-esteem negatively to unhealthy exercise participation. Various aspects of physical self-perception also showed some significant associations to unhealthy and healthy exercise participation.

Discussion

The significant non-normal distribution of some items and mean values for the PHEPP variables indicated that data is unevenly distributed towards the healthy exercise participation pole in the PHS/EP model. The mean value of perceived health (4.80) was also quite high. These findings are in line with research linking exercise to enhanced health and well-being (e.g. Fox, Boutcher & Faulkner, 2000). The question is whether this uneven distribution is a result of sampling bias or if these results are representative of the whole exercise population. Those volunteering to participate in a study concerned with health and exercise show an interest in the topic. It is possible that those people value their health more than those choosing not to participate, which might lead to biased results. In the future efforts should be made to reach more heterogeneous samples. The somewhat low alpha values for the PHEPP variables also suggest that the questionnaire still needs some improvement. The regression analyses confirmed what was hypothesized with regard to the PHS/EP model, that healthy sport participation contributes to perceived health, and healthy sport participation and perceived health contribute to satisfaction with exercise participation. Unhealthy sport participation showed a tendency towards a significant negative contribution to perceived health but did not contribute negatively to satisfaction with exercise participation, as hypothesized. It is possible that the unhealthy line of the PHS/EP model was not confirmed due to the uneven distribution of data. Based on previous research (e.g. Fox, 2000, Kaplan and Maehr, 1999) it was hypothesized that task orientation and self-esteem would contribute positively to healthy exercise participation. These links were confirmed in the present study. It was also hypothesized that ego orientation and self-esteem would contribute to unhealthy exercise participation. In line with the hypothesis and previous research, self-esteem contributed negatively to unhealthy exercise participation, indicating that the higher self-esteem the less likely one would engage in health damaging behaviors in exercise. Contradictory to what was hypothesized ego orientation did not contribute significantly to unhealthy exercise participation, whereas task orientation did. In other words, task orientation contributed significantly to both healthy and unhealthy exercise participation. To summarize, the healthy tendency of exercise participation represented in the PHS/EP model is supported by the results obtained, whereas the unhealthy tendency needs further investigation and some related changes in the PHEPP questionnaire. The results also confirm some links between the PHS/EP model and established concepts such as goal orientation, self-esteem and physical self-perception dimensions.

References

- Biddle, S.J.H., Fox, K.R., & Boutcher, S.H. (2000). *Physical activity and psychological well-being*. London: Routledge.
- Hausenblas, H.A. & Symons Downs, D. (2002). Exercise dependence: A systematic review. *Psychology of Sport and Exercise*, 3, 23-80.
- Stambulova, N., Johnson, U., Lindwall, M. & Hinic, H. (2006). *Upplagd hälsa ur ett motions/träningsperspektiv: Avslutande studie av arbetsmodellen och validering av mätinstrument*. Research grant proposal for CIF.

PERFECTIONISM, GOAL ORIENTATION AND THE RISK OF ATHLETE BURNOUT

Henrik Gustafsson^{1,2}, **Helena Ragnarsson**¹, **Peter Hassmén**³, **Nathalie Hassmén**³

¹ Örebro University, Sweden

² Swedish Winter Sports Research Center, Mid Sweden University, Sweden

³ Stockholm University, Sweden

Introduction

It has been argued that the striving for perfection is the driving force behind elite athletes' accomplishments (Gould et al., 2002; Hall, 2006). Perfectionism has, however, also been associated with negative affective responses (Gould et al., 1996; Koivula et al., 2002). Even though setting up high goals and standards for oneself is the foundation for all human achievements, it may become problematic when combined with too much self-criticism and cognitive rumination (Frost et al., 1990) and can lead to the development of a negative self-concept and a fear-of-failure (Williams & Leffingwell, 2002).

Task goal orientation is, according to Achievement Goal Theory (Nicholls, 1984), characterized by self-referenced beliefs that trying hard and learning will lead to higher performance, and is positively correlated to enjoyment, interest, and satisfaction. In contrast, ego goal orientation entails norm-referenced beliefs that ability is demonstrated by outperforming others, or performing as well as others with less effort. Individuals high in ego orientation seem to evaluate their self-worth on the basis of comparative judgments of their ability (Newton & Duda, 1999).

Burnout among athletes has been conceptualized as a multidimensional syndrome consisting of three dimensions (Raedeke & Smith, 2001). Burnout may develop as a consequence of athletes trying to validate their self-worth through sport and maladaptive achievement strivings (Gustafsson et al., in press).

Objective

When the pursuit of goals is underpinned with fear of failure and rumination about judgments of actions, the individual may experience greater levels of psychological distress (Flett & Hewitt, 2002). Maladaptive motivational patterns of perfectionism and achievement goals have also been associated with both compulsive exercise behaviour (Hall et al., 2007) and burnout (Gould et al., 1996; Lemyre et al., 2007). Previous research highlights the need to increase our knowledge about the relationships between dimensions of perfectionism, goal-orientation and different burnout dimensions, which is the aim of this study.

Method

In total, 102 male and 53 female athletes active in 26 different sports (17.3 years, SD 1.0) participated. Perfectionism was measured with the Multidimensional Perfectionism Scale with six subscales (Frost et al., 1990), goal orientation with the Task and Ego Orientation in Sport Questionnaire (Duda et al., 1995), and burnout with the Athlete Burnout Questionnaire (Raedeke & Smith, 2001).

Results

A regression analysis showed that 35% of the burnout dimension Reduced sense of accomplishment could be explained by a combination of Task orientation ($b=-.41$), Concern over mistakes ($b=.27$), Personal standards ($b=-.40$), and Doubts about action ($b=-.19$). A second regression analysis revealed that 29% of Devaluation of sport participation could be explained by a combination of Task orientation ($b=-.37$), Parental criticism ($b=.26$), Personal standards ($b=-.23$), Concern over mistakes ($b=.25$), and Doubts about action ($b=.17$). A third regression analysis indicated that 9% of Emotional and physical exhaustion was explained by a combination of Task orientation ($b=-.28$) and Doubts about action ($b=.16$).

Discussion/Conclusions

Scores on the different burnout dimensions seem to result from different combinations of scores on task orientation and the perfectionism dimensions. This is in line with earlier research that has suggested that the endorsement of task goals and high personal standards usually is associated with adaptive achievement striving behaviour and related cognitive and affective responses (Duda & Hall, 2001), and that having low personal standards in combination with doubts about actions and concern about mistakes is correlated to low sport related confidence and cognitive anxiety as well as with low basic self-esteem and a high need for others approval and evaluation (Koivula et al., 2002). Contrary to expectations, ego orientation was not related to burnout. However, this could be a result of whether high ego orientation is combined with a high, moderate or low task orientation, resulting in different affective responses. Having both ego and task goals may result in higher levels of competence and enjoyment, and more adaptive beliefs toward sport, whereas having a low task and a high ego orientation instead may be related to experiences of cognitive anxiety and low levels of self-confidence. The effects of ego goals on burnout could also be dependent on the individual's perceived ability and success where feelings of insufficient possibilities to demonstrate ability, can lead to intensified, maladaptive sport behaviour in order to gain positive judgments. More research is certainly needed to further elucidate these associations.

References

- Duda, J., Chi, L., Newton, M. L., Walling, M. D., & Cately, D. (1995). Task and ego orientation and intrinsic motivation in sport. *International Journal of Sport Psychology*, 26, 40-63.
- Duda, J. L., & Hall, H. (2001). Achievement goal theory in sport – Recent extension and future directions. In R. N. Singer, H. A. Hausenblas & C. M. Janelle (Eds.), *Handbook of Sport Psychology* (2nd ed., pp. 417-443). New York: John Wiley & Sons.
- Flett, G. L., & Hewitt, P. L. (2002). Perfectionism and maladjustment: An overview of theoretical, definitional, and treatment issues. In G. L. Flett, & L. P. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 5-31). Washington, DC: American Psychological Association.
- Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). Dimensions of perfectionism. *Cognitive Therapy and Research*, 14, 195-205.
- Gould, D., Dieffenbach, K., & Moffatt, A. (2002). Psychological characteristics and their development in Olympic champions. *Journal of Applied Sport Psychology*, 14, 172-204.
- Gould, D., Udry, E., Tuffey, S., & Loehr, J. (1996). Burnout in competitive junior tennis players: I. A quantitative psychological assessment. *Sport Psychologist*, 10, 322-340.
- Gustafsson, H., Hassmén, P., Kenttä, G., & Johansson, M. (in press). A qualitative analysis of burnout in elite Swedish athletes. *Psychology of Sport & Exercise*.
- Hall, H. K. (2006). Perfectionism: A hallmark quality of world class performers, or a psychological impediment to athletic development? In D. Hackfort & G. Tenenbaum (Eds.), *Essential processes for attaining peak performance* (pp.178-211). Oxford, UK: Meyer & Meyer Sport.
- Hall, H. K., Kerr, A. W., Kozub, S. A., & Finnie, S. B. (2007). Motivational antecedents of obligatory exercise: The influence of achievement goals and multidimensional perfectionism. *Psychology of Sport and Exercise*, 8, 297-316.
- Koivula, N., Hassmén, P., & Fallby, J. (2002). Self-esteem and perfectionism in elite athletes: Effects on competitive anxiety and self-confidence. *Personality and Individual Differences*, 32, 865-875.
- Lemyre, P-N., Hall, H. K., & Roberts, G. C. (2007). A social cognitive approach to burnout in elite athletes. *Scandinavian Journal of Medicine and Science in Sports*, doi: 10.1111/j.1600-0838.2007.00671.x
- Newton, M. L., & Duda, J. L. (1999). The interaction of motivational climate, dispositional goal orientation and perceived ability in predicting indices of motivation. *International Journal of Sport Psychology*, 30, 63-82.
- Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, 91, 328-346.
- Raedeke, T. D., & Smith, A. L. (2001). Development and preliminary validation of an athlete burnout measure. *Journal of Sport and Exercise Psychology*, 23, 281-306.
- Williams, J. M., & Leffingwell, T. R. (2002). Cognitive strategies in sport and exercise psychology. In J. L. Van Raalte & B. W. Brewer (Eds.), *Exploring sport and exercise psychology* (pp.75-98). Washington, DC: American Psychological Association.

SWEDISH PHYSICAL EDUCATORS' ATTITUDES TOWARD TEACHING PUPILS WITH PHYSICAL DISABILITIES IN INCLUSIVE SETTINGS

Kajsa Jerlinder

Swedish Institute for Disability Research, Örebro University and
Department of Education and Psychology, University of Gävle, Sweden.

Introduction

Morley, Bailey, Tan and Cooke (2005) have stated that the role of a teacher as facilitator of inclusion and manager of inclusive educational environments is crucial. While research on teachers' attitudes in general is plentiful and evidence on teachers' attitudes towards inclusion in PE is beginning to grow, larger scale surveys of teachers' perceptions of teaching pupils with disabilities in the context of Physical Education (PE), especially in Sweden, are limited. Using data collection tools such as web and online surveys ought to be able to contribute widening the scope of information on teachers' attitudes, as well as perhaps indicating new perspectives their thoughts concerning inclusion in PE for pupils with physical disabilities.

Objectives

This study set out to investigate Swedish PE teachers' attitudes and experiences of including pupils with disabilities in mainstream Physical Education classes. It also attempts to explore possible emerging issues within this area of curriculum development and implementation. The study also sought to explore possible differences in attitudes that might be attributable to teachers having or not having practical experience of teaching disabled pupils.

Method

The study was planned as a national survey of Swedish PE teachers teaching at Compulsory School. The study sought to investigate teachers' attitude to teaching pupils with disabilities. The survey was designed so that teachers with experiences of dealing with pupils with disabilities could be compared with teachers who had not taught pupils with disabilities. An online questionnaire was designed to pose questions about subjects' attitudes towards inclusive education within the general PE curriculum at compulsory school.

A population of Swedish PE teachers located through the national union of teachers in Sweden. This population was restricted by whether union members had submitted a current e-mail address or not.

An invitation to complete a web survey was sent by e-mail to 560 of union members who had registries themselves as PE teachers within the compulsory school together with an e-mail address. This sample of PE teachers was taken as being representative for the whole specific population of professional PE teachers in Sweden. Rural and urban teachers from all over the country as well equal numbers of females and males teachers were sampled by this procedure. A total 221 teachers responded to the survey (respond rate 39 %). This represents a high response rate for online surveying, almost twice as many as had been expected on the basis of available web surveying data. More than half of respondents were 34 years of age or younger. This probably represents a bias toward younger PE teachers, as might be expected when using online surveying. Slightly more female than male PE teachers responded which approximately matches the gender breakdown of PE teachers in Sweden.

Results

Among the responding PE teachers ($n = 221$) about 45 % had experience of teaching pupils with disabilities. The remaining participants were asked to respond to the questionnaire from the perspective of how they would imagine teaching and dealing with PE classes where pupils with disabilities were included.

Preliminary results indicate that Swedish PE teachers in mainstream education consider the goal of inclusion as a positive aspiration, while at the same time experiencing various practical barriers in being able to fulfil this goal. The most common indicated hindrance portrayed was their more stressful teaching situation (real or assumed) as professionals where adaption of an inclusive approach meant (or would mean) having less time to fulfil normal obligation of good teaching practice. The surveyed teachers also responded that where they did have experience of teaching pupils with physical disabilities, and notwithstanding their aspiration for inclusion, only managed to partly include and adapt their teaching practice to the needs of pupils with physical disabilities. At the same time the teachers in the study agreed on the importance of inclusion and were of the general opinion that inclusion of pupils with disabilities should be normal practice for the delivery of the Physical Education curriculum in the compulsory schooling system. The results indicate that while teachers harbour a communicated positive attitude to inclusion, due to reasons outside of their control they find it difficult to fulfil the goal of inclusion in the subject of PE on their own. Noting the particular demands of PE teaching, they argue for extra support and counselling within the specific, for example, for PE-trained special needs assistance. This extra help is required in order for them to be able to offer inclusive PE education for all children. Previous research has suggested gender might affect PE teachers' attitudes, with more positive attitudes to inclusion being attributable to female professionals (Hutzler, 2003). In this material no clear differences gender have emerged in this regard.

Discussion

The issues raised in this paper are argued as being of relevance not only for those teachers with the specific task of teaching PE to compulsory school pupils, but also for other teachers within the compulsory system charged with implementing the general education goals of inclusive education (see similar discussion in Smith & Thomas, 2006). It is argued that the specific challenges of inclusion in PE for pupils with physical disabilities throws light on the general issue. Arguments are also made from general theoretical and sociological approaches to social justice. These are seen as having an important bearing on how the educational challenge of inclusion is perceived.

Sweden has a long tradition of integration and an inclusive approach to schooling. Nevertheless, the data gathered in this study point to the fact that many PE teachers find meeting the goals of inclusive education stressful and that pupil with disabilities may not always be offered them classroom experiences and practice in PE that have been adapted to their capacities and special needs. The importance of special support for PE teachers in achieving true inclusive education in the subject area of PE was highlighted.

The possible bias in the response rate to this survey, where proportionately younger teachers responded, is judged to be a strength in the results and conclusions. It is important that younger PE teachers' attitudes towards teaching pupils with disabilities are investigated. It is this group, within the general body of compulsory school teachers, on whom the responsibility for implementing inclusive education will rest. A constructive future for disabled pupils in the school of tomorrow is a challenge facing educational systems around the globe. Knowing how teachers, especially younger teachers, think about the needs and demands placed on them is vital to implementing inclusive pedagogies. The data collection tool of web surveying, with its possibilities for immediate feedback, as in this case in regard to teachers' attitudes, is seen as an especially interesting tool implementing professional practice.

References

- Hutzler, Y. (2003). Attitudes toward the participation of individuals with disabilities in physical activity: a review. *Quest*, 55, 347-373.
- Morley, D., Bailey, R., Tan, J., & Cooke, B. (2005). Inclusive Physical Education: teacher's views of including pupils with Special Educational Needs and/or pupils with disabilities in Physical Education. *European Physical Education Review*, 11 (1), 84-107.
- Smith, A. & Thomas, N. (2006). Including pupils with special education needs and disabilities in National Curriculum Physical Education: a brief review. *European Journal of Special Needs Education*. 21 (1), 69-83.

CAREER TRANSITIONS FOR SWEDISH GOLF JUNIORS - FROM REGIONAL TO NATIONAL JUNIOR ELITE COMPETITIONS

Daniel Jorlén

School of Social and Health Sciences, Halmstad University, Sweden

Introduction

Sweden has many successful golfplayers that belong to the world's golf elite. But now, when the Swedish crown jewel within golf, Annika Sörenstam, doesn't "spark" as clear as she used to, maybe it is time for Swedish golf to ask questions about what the future looks like and how Swedish golf should continue to produce good junior golfplayers and harvest international successes in the future. The transition from junior to senior level within sport is a critical step within an athlete's career and many athletes fail to handle this transition successfully (Stambulova, in press). Bearing in mind that Sweden is a relatively small golf nation and that only 17% of the junior elite can handle the transition to perform at senior sport (Vanden Auweele, De Martelaer, Rzewnicki, De Knop & Wylleman, 2004), it becomes obvious that it is important to give as many juniors as possible the chance to make a successful transition. If a larger share successful juniors would make the transition in a good way it would increase the chances for Swedish golf to bring up new stars.

Research on transitions from one stage to another within sport is a relatively new, but increasing, interest and problem area for the sport psychologists. The two major theoretical frameworks in sport career transition today are athletic career stage descriptive models and career transition explanatory models. The athletic career descriptive models try to predict what normative transitions athletes might experience. They usually describe the athletic career as a "miniature life span course" and describe the changes in athletes and in their social environment across different stages. The career transition explanatory models focus on reasons, demands, coping, outcomes and consequences of a transition. In all the career transition models, coping processes are seen as central and include all approaches the athletes use in order to adjust to the transition demands (Alfermann & Stambulova, 2007)

Objectives

The objective of this study was to retrospective investigate perceived demands and barriers for golf juniors in their transition from regional to national junior elite competitions, and to find out what resources and coping strategies the juniors used to succeed with the transition.

Method

The study was conducted on nine junior golf players, four male and five female, at the age of 18 to 20 years old. All participants were selected in collaboration with the two captains of the Swedish junior golf team for boys and girls. The criteria to be in the study was that the players should be in the Swedish golf junior elite and that they were going to USA to play college golf with start in autumn 2008. The study was carried out with interviews. A semi-structured interview guide was used consisting of five main themes: background information, changes/ demands experienced in the transition, resources that helped the golf juniors to adjust to the new level, strategies the golf juniors used to adjust to the new level and an evaluation of the transition.

Results

The result showed that the players perceived the practice as more serious with an overall higher quality when they started to compete in national competitions. The players increased their training time and started to use a variation of exercises that were similar to the different parts of a competition. The competitions were also perceived as more challenging with stronger opponents and increased rivalry between the players. Confidence and self-esteem, the will to practice and win are characteristics that many players consider to be important internal resources in order to adapt to the national junior level. Many players changed their golf coaches around the same time as they started to compete at national junior level. The coaches and parents were seen as the most important external resources in order to adapt to the national junior level. Many players experienced that it would have been hard to play and compete in golf without their parents' support and financial help. During the time of the transition, outside golf, the players learned how to take responsibility and to take care of themselves through traveling alone, meeting new people and living by themselves. The players experienced that the school didn't have any understanding for their need to be free from school.

Discussion/Conclusions

To become a good golf junior today it seems to be an almost necessary condition to have a family that introduces you to golf and supports you economically and practically. This fact might lead to two problems. Children might not come in contact with golf at all and in that way golf might lose children to other sports, and good golf juniors might not be given the chance to make a successful transition because they lack the necessary support from their families. These problems are hard to solve, but I think that it is important for the federation to think about ways to make golf accessible and adaptable for children and teenagers. One solution could be that the golf federation developed regional networks, where one trainer is responsible for the talented golf juniors in a certain area and visit them in their clubs so that they and their families don't have to travel long distances for good training. The Swedish golf federation could also try to supply good exercises and advices to their golf juniors and trainers on internet and by brochures or arrange training camps that every body is welcome to.

Many of the golf juniors felt nervous and afraid when they entered the higher-level competition and mentioned lack of mental and psychological skills as an important barrier during the transition. I believe that problems with barriers like anxiety and low self-esteem to a great extent can be solved with the help of sport psychologist or by support groups with others. In that way promising juniors that can't cope with the transition demands, could hopefully make a positive, but delayed transition instead of dropping out of sport.

Another problem that the golf juniors experienced was a lack of support from school. This is an important issue to work on. For the 83% of the golf juniors that doesn't succeed with their golf careers it is crucial to have a good education to lean on. The Swedish golf federation should take responsibility for their juniors in this aspect for example by harder rules concerning the school results or by establishing contact persons on the schools that the juniors attend to.

It is important that the golf federation and leaders are aware of the problems that comes with the transitions, so that as many golf juniors as possible are given the best chances to succeed.

Key references

- Wylleman, P., Lavallee, D. (2004). A developmental perspective on transitions faced by athletes. In M.Weiss (Ed.), *Developmental sport and exercise psychology: A life span perspective* (pp. 507-527). Morgantown, WV: Fitness Information Technology.
- Wylleman, P. & Theboom, M. (2004). Successful athletic careers. In C . Spielberg (Ed.) *Encyclopedia of Applied Psychology (Vol.3, pp. 511-517)*. New York: Elsevier.
- Stambulova, N. (1994). Developmental sports career investigations in Russia: A postperestroika analysis. *The Sport Psychologist*, 8, 221-237.
- Stambulova, N. (in press). Talent development in sport: Career transitions perspective. In E. Tsung-Min Hung & R. Lider, (Eds.) *Psychology of Sport Excellence* ISSP publication

MOTIVATION TO EXERCISE AND PERCEIVED BARRIERS - MEN AND WOMEN'S EXERCISE HABITS

Karin A. Josefsson,

Centre for Sport and Health Research, Halmstad University, Sweden

Introduction

Regular exercise habits are hard for many people both regarding establishment and adherence, which in many cases is caused by lack of motivation. Since the human body needs a certain amount of physical activity to function properly it is important to help people to motivate themselves in order to promote physical and mental health in society (Lindwall & Faskunger, 2003). The interest in motivation related research is, according to Roberts (2001) huge and holds as much as one third of all psychological research. A comparatively small part of this research treats perceived barriers to exercise and how individuals overcome these obstacles to adhere to their exercise habits over time. Such knowledge could be useful to challenge the drop-out rates by helping those who recently have initiated new exercise habits to maintain them, e.g. by providing useful strategies to overcome these barriers. These strategies could consist of predetermined coping strategies and alternatives to use when facing obstacles towards planned activities. The theoretical framework used was Achievement Goal Theory (Dweck, 1986; Dweck & Elliot, 1983; Maer & Nicholls, 1980; Nicholls, 1981; 1984; 1989 ref. ur Roberts, 2001), Expectancy-Value Theory (Eccles et. al 1983, 1984 ref. in Eccles & Whigfield, 2002), Relapse Prevention Theory (Brownell, Marlatt, Lichtenstein & Wilson, 1986), Self-Efficacy Theory (Bandura, 1977 ref. in Bandura, 2001) and Social Exchange Theory (Thibaut och Kelley, 1959).

Objective

The purpose was to study individuals' exercise motives and experiences, which factors that cause breaks in an exercise programme, perceived barriers to exercising, which strategies those who maintain their exercise habits use to overcome these barriers and whether exercise goal setting is used.

Method

After a pilot study to test the instrument a quantitative questionnaire was constructed and distributed at different training establishments and working sites. The questionnaire contained 99 items of which eight were background variables; gender, age, exercise history, exercise activities, exercise frequency and exercise in childhood. The items were categorized in Reasons to drop out; Motivation; Exercise experience and Identity, Perceived barriers to exercise; Strategies to overcome barriers; and Goal setting. Each of these categories also had an open alternative. The questions were answered on a five graded Likert scale.

Results

The most frequent motive to exercise was to enhance physical condition and the most frequent experience was that exercise was a tool to stay in shape. The most common cause for the breaking of an exercise programme was injury and the most common barrier against exercise was stress/lack of time. To overcome barriers the most common strategy was thoughts of the feelings afterwards and the commonest goal setting strategy were easy goals which can be reached through low effort. Middle Aged and Elder Adults ranked psychological well-being higher than Young Adults and Experienced exercisers ranked psychological well-being higher than Beginners. Women tended to prioritize intrinsic values regarding exercise whilst men had a propensity to view exercise as achievement and goal oriented.

Discussion/Conclusion

There are clear parallels between the present study, previous research and the theoretical framework at hand. The study also provides support to the application value of the theories on the exercise area and support previous results. The results indicate that in prospective interventions which aim to help people overcome exercise barriers, background variables such as age, gender, exercise experience and exercise frequency should be considered. It is also a plausible assumption that adherence to exercise habits could be enhanced by interventions which aim to enhance the exercise related self-efficacy since this over time could be expected to raise individuals positive emotions towards exercise.

References

- Bandura, A. (2001). Social Cognitive Theory: An Agentic Perspective. *Annual Reviews Psychology*, 52, 1-26.
- Brownell, K. D., Marlatt, G. A., Lichtenstein, E., & Wilson, G. T. (1986). Understanding and preventing relapse. *American Psychologist*, 41, 765-782.
- Eccles, J. S., & Whigfield, A. (2002). Motivational Beliefs, Values and Goals. *Annual Reviews Psychology*, 53, 109-132.
- Lindwall, M., & Faskunger, J. (2003). Bortom nyårslöften och skrämselfgifter: Fysisk aktivitet, motion och mental hälsa ur ett motivationsperspektiv. In P. Hassmén (Ed.), *Svensk Idrottspsykologisk Förenings Årsbok 2003* (pp. 69-85). Örebro: Repro, Örebro Universitet.
- Roberts, G. C. (2001). Understanding the Dynamics of Motivation in Physical Activity: The Influence of Achievement Goals on Motivational Processes. In G. C. Roberts, (Ed.). *Advances in Motivation in Sport and Exercise* (s.1-50). Champaign, IL: Human Kinetics.
- Thibaut, J. W., and Kelley, H. H. (1959). *The Social Psychology of Groups*. New York: John Wiley & Sons.

EFFECTS OF WHOLE BODY VIBRATION ON STRENGTH DEVELOPMENT, AND SELF-EFFICACY IN STRENGTH PERFORMANCE

Magnus Kraft, Anna Brännberg, Peter Kriborg and Pierre Mathisson

Biomedicine and Physical Training, Halmstad University

Introduction

Whole body vibration (WBV) has been shown to influence the human body in several ways. Research (Cardinale & Bosco, 2003) has shown that WBV can have a positive effect on the intramuscular coordination as a result of a neurological regulation of the voluntary muscle contraction and a neuromuscular adoption. Furthermore, WBV positively affect the endocrine system (Mester et al., 2006). This specifically occurs in the beginning of a training period and can explain why people often initially feel stronger. Underlying physiological processes that occur in the muscle when vibration stimuli is adapted seems to be that previously inactive muscle cells can contract as a result of the vibration stimuli's influence on the sensory neuron endplates in the muscle. This further influence the afferent sensory neurons to recruit more motor units (Luo et al., 2005).

Self-efficacy has been adapted to explain behaviour in several disciplines of psychology, and it has formed the theoretical basis for most performance oriented research in self-confidence and sport. Self-efficacy has been viewed as a common cognitive mechanism for mediating motivation and behaviour, and it has frequently been used in sport settings to understand achievement behaviour because self-efficacy affect an athlete's choice of activity, level of effort and persistence (Weinberg & Gould, 2003).

One's feelings of self-efficacy are derived from four principle sources of information: performance accomplishment, vicarious experience (modelling), verbal persuasion and physiological- and emotional states. Performance accomplishments provide the most dependable formation for self-efficacy judgement because they are based on one's mastery experience. If someone has the requisite skills and sufficient motivation, then the major determinant of the individual's performance is self-efficacy. Research has supported a consistent and positive relationship between self-efficacy and performance (Bandura, 1986, 1997).

Objectives

A twelve weeks long intervention was designed to investigate to what extent WBV influence training results, specifically power output and maximal neuromuscular activity in upper extremities. By using two intervention groups undergoing identical training programs with or without vibration stimuli, a result clearly showing positive or negative effect of WBV in power training was expected. The purpose was also to examine what roll self-efficacy plays in strength performance.

Method

Participants consisted of 35 male and 9 female cadets ($m = 23$, 1 years). Based on initial maximal strength (1RM) in bench press the participants were divided into two intervention groups ($n = 15$, $n = 15$) and one control group ($n = 14$). All participants were free from contra indications for WBV (Rolands et al., 2004). Intervention groups performed a specifically designed progressive push up program on a vibrating platform and a step board, respectively, 2 times per week during the intervention period. All intervention training sessions were supervised by the same test leaders. Training diaries were used to monitor all participants' total training volume and intensity.

An initial test was performed at the onset of the study. Physiological measures consisted of submaximal test of estimated 1RM and power output in bench press. In addition, maximal neuromuscular activity was measured during maximal voluntary isometric contraction in a standard position (90° angle in the elbow joint and 75° angle abduction in the shoulder joint) using sEMG electrodes places over m. pectoralis major. Power output was measured with a load corresponding to 60 % of 1RM using Muscle Lab (Ergotest Technology). From a static position (90° angle in the elbow joint and 75° angle abduction in the shoulder joint), participants performed a standard lift with maximal intensity and velocity. Identical tests were then performed every four weeks. All tests were controlled by the same test leader.

At the initial test occasion participants also answered questionnaires concerning background and motives for sports participation (Carlsson & Hinic, 2001). Moreover, at the third test occasion participants answered questionnaires measuring efficacy sources and self-efficacy for push up with a pat as well as estimated increase of 1RM in bench press.

Results

The attendance rate at the four test occasions were 98 %. Extreme values of both sides of the results spectrum were excluded to avoid that excessively high or low values would influence the mean value.

Average (all participants included) initial 1RM in bench press was 77 kg. All participants showed an average increase of 13 kg after 12 weeks. Initial value for power output showed a mean of 265 watt, which also showed an increase with an average of 7 watt (with a load equivalent of 60 % of 1 RM at the current test occasion), respectively an increase of 41 watt (with the load used during the first test occasion). A positive relationship existed between the load at 60 % of 1 RM and achieved power output. No significant differences between groups were exposed concerning estimated maximum strength or power output in bench press. Concerning neuromuscular activity, the vibration- and reference training group showed an increase (34 % and 26 % respectively) in the magnitude of recruited motor units, while the controls showed a slight decrease (-11 %). Gender differences showed that men lifted significantly heavier loads at 60 % of 1RM compared to women.

No significant differences could be seen between the groups concerning self efficacy. Gender differences were exposed concerning self-efficacy to push ups with a pat. The efficacy sources "performance accomplishments" was valuated to be the most influential to form self-efficacy expectations. A strong positive relationship between "performance accomplishments" and achieved self-efficacy to push ups with pats were shown. Self-efficacy to push ups with a pat also correlated positively with power output and performed 60 % of 1 RM in bench press.

Discussion

All participants showed an increase in strength development, indicating that vibration stimuli could be compared to traditional push ups training without vibrations. Vibrations seem to have more effects on the magnitude of recruited motor units, thus vibrations training could be a good complement to established strength training. Participants relatively high self-efficacy to strength tasks in this study is probably a result of performance accomplishments in there own strength straining rather than the intervention training. Positive relationships between self-efficacy and power output as well as performed 60 % of 1 RM in bench press were found, indicating that high self-efficacy have a positive influence on strength performance.

References

- Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, N.J., Prentice-Hall.
- Bandura, A. (1997). *Self-efficacy: The Exercise of Control*. W. H. Freeman and Company, USA.
- Cardinale, M, Bosco, C. (2003). The use of vibration as an exercise intervention. *Exercise and Sport Science Review* 31 (1), 3-7.
- Carlsson, B.A. & Hinic, H. (2001). *Motiv Till Idrottsdeltagande (MTI)*. Sektionen för Hälsa och Samhälle, Högskolan i Halmstad.
- Luo, J., McNamara, B., Morani, K. (2005). The Use of Vibration Training to Enhance Muscle Strength and Power. *Sports Med.* 35 (1), 23-41.
- Mester, J., Kleino, H., Yue, Z. (2006). Vibration training: benefits and risks. *Journal of Biomechanics* 39, 1056-1065
- Weinberg, R S. & Gould, D. (2003). *Foundations of Sport & Exercise Psychology 3rd Edition*. Human Kinetics, USA.
- Muscle Lab*, Ergotest Technology, AS, Langesund, Norge.

PERCEIVED CAUSES OF BURNOUT AMONG ELITE SOCCER COACHES

Erik Lundkvist¹, Sören Hjälml¹, Henrik Gustafsson¹, Peter Hassmén²
¹Örebro University, Sweden, ²Stockholm University, Sweden

Introduction

Burnout has emerged as an important health concern reducing the quality of life, not only of the individual concerned but also the immediate family, friends, and other people surrounding that person (Maslach, Schaufeli, & Leiter, 2001). Whilst attention for a long time focused on burnout afflicting human service providers and teachers, recent attention has been given to burnout in the world of sport. Strain and exhaustion associated with the coaching role in particular has drawn interest, not the least because of the significant number of persons leaving the coaching ranks each year (Kelley, Eklund, & Ritter-Taylor, 1999; Raedeke, 2004).

Some elite coaches combine their coaching role with paid work in another area, thereby increasing their burden and vulnerability to stress induced burnout. Even if the coach is fully paid as such, fame and living up to earlier success can lead to perceived stress and impaired recovery, which consequently can contribute to burnout (Kelley, Eklund, & Ritter-Taylor, 1999). Frequently, coaches come directly from their own active career in sports, having focused more on their own sports career than on education, which later in life can imply fewer career alternatives. This may create a feeling of entrapment, which has been associated with burnout (Kelley, Eklund, & Ritter-Taylor, 1999; Raedeke, Granzkyk, & Warren, 2000).

Because being able to cope with stress is fundamental when working as an elite coach, it seems relevant to study elite coaches' descriptions of how they felt when exposed to high levels of stress. In a qualitative study of American elite college coaches, contextual/conditional factors that played a role in their experience with stress were investigated (Frey, 2007). Sources of stress described were for example task-related, being the head coach, or putting pressure on oneself.

The purpose of this study is to increase the knowledge about how elite soccer coaches, that in an earlier study showed high levels of burnout, describe their experienced causes to the high levels of burnout. The main question is: what are the causes to high levels of burnout explained by the coaches?

Method

From a quantitative study involving burned out elite soccer coaches (Hjälml, Kenttä, Hassmén, & Gustafsson, 2007), the eight coaches with the highest scores on the Maslach Burnout Inventory (MBI: Maslach, Jackson, & Leiter, 1996) was purposefully sampled. The coaches were interviewed about their burnout experiences three years after the initial data collection.

Since the aim of this study was to describe the individual's subjective experiences, we decided on a qualitative approach. Interpretative Phenomenological Analysis (IPA) was used because this is a method especially suitable for discovering how people make sense of their personal and social world (Smith & Osborn, 2003). The interviewees were between 37 and 49 years old, with experience of coaching Swedish elite soccer teams. The interviews were semi-structured and 80-160 minutes long. All interviews were tape-recorded and transcribed verbatim. In order to increase reliability and validity, analyst triangulation was used, meaning that the first and second author analysed the whole material independently to increase trustworthiness (Patton, 2002). Further, a "critical friend" procedure was implemented. This involved the third author asking questions in order to promote reflections and to propose alternate explanations of data (Marshall & Rossman, 2006).

Results and Conclusion

When the coaches described what they perceived as the main causes responsible for their high levels of burnout, five themes emerged: *cognitive problems*, *life problems*, *contextual factors*, *organizational factors*, and *factors inside the team*.

The *cognitive problems* described by the coaches were linked to their feelings of lack of control, both in controlling other persons in the leadership staff and also controlling the decisions made in the leadership staff. The causes of *life problems* included two categories: not finding a life partner and grief in the family. *Contextual factors* included eight categories: problems handling the performance environment in sports, negative coach culture, the identity of being an elite soccer coach, handling the media, double labour work when the salary from the coaching job was not enough, long commuting trips, economic problems, and making the wrong career choices because of not having any other options. *The organizational factors* had six subcategories: feelings of never providing enough, feelings of entrapment, lack of time, organizational scarcity, being unjustly treated by the board, and feelings of non-existing support from the board. There were also three categories described by the coaches that were *factors inside the team*. This included lack of support from the leadership staff, conflicts with players in the team, and conflicts with other leaders in the team.

It seems that the coaches perceived organizational problems and problems linked to the contextual aspects of elite sport itself as the most important contributors to their burnout and made minor accentuation to personal problems or traits. The contextual factors related to the limited labour market have similarities with the fewer career alternatives experienced by elite coaches with low levels of education (Kelley, Eklund, & Ritter-Taylor, 1999).

Results in this study show similarities with research on job burnout where situational and contextual factors are considered the most important ones for developing burnout (Maslach et al., 2001). This includes the performance environment in sports and organizational factors including lack of time, time demands and low support. But we have in this study also identified some new themes in the organizational and contextual factors as well as the themes, cognitive problems, life problems and factors inside the team that may help in understanding burnout and thereby preventing some coaches from becoming burned out in the line of duty.

References

- Frey, M. (2007). College coaches' experiences with stress: "problem solvers" have problems too. *The Sport Psychologist, 21*, 38-57
- Hjälms, S, Kenttä, G, Hassmén, P., & Gustafsson, H. (2007). Burnout among elite soccer coaches. *Journal of Sport Behavior, 30*, 415-427.
- Kelley, B. C., Eklund, R.C., & Ritter-Taylor, M. (1999). Stress and burnout among collegiate tennis coaches. *Journal of Sport and Exercise Psychology, 21*, 113-130.
- Marshall, C., & Rossman, G. B. (2006). *Designing qualitative research* (4th ed.). Thousand Oakes, CA: Sage.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P (2001). Job burnout. *Annual Review of Psychology, 52*, 397-422.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Raedeke, T. D. (2004). Coach commitment and burnout: A one-year follow-up. *Journal of Applied Sport Psychology, 16*, 333-349.
- Raedeke, T. D., Granzky, T. L., & Warren, A. (2000). Why coaches experience burnout: A commitment perspective. *Journal of Sport & Exercise Psychology, 22*, 85-105.
- Smith, J. A. & Osborn, M. (2003). Interpretative phenomenological analysis. In: Smith, J. A., *Qualitative psychology: A practical guide to research methods* (pp. 52-80) London: Sage.

PERSONAL IDENTITY IN ADOLESCENT FOOTBALL PLAYERS: AN EXPLORATIVE STUDY

Tobias Richard

School of Social and Health Sciences: Halmstad University, Sweden

Introduction

In Sport Psychology the athletic identity concept is particularly interesting due to the problems of career transitions and career termination (Alferman & Stambulova, 2007; Lally, 2007). The problems of career termination are prevalent problems in the world of sport. Athletes can become so depressed, due to the career termination, that they want to commit suicide. This is a known phenomenon called a crisis transition (Alferman & Stambulova, 2007).

A person experiences identity foreclosure when he/she engages in only one dimension of life, without first exploring other dimensions. For instance, an athlete that neglects other spheres of life to be completely dedicated to sports can be seen as an athletic identity foreclosure (Brewer, 1993). Since being an elite athlete brings public recognition and fame, a perception of a glorified self may emerge in athletes. This might be why these people seem to be more prone to become identity foreclosed (Sparkes, 1998).

The identity foreclosure becomes obvious when the person cannot perform the identity congruent behaviour, as in the case of career termination. The person then might have to experience various costs like depression, abusive behaviour or might even become suicidal (Alferman & Stambulova, 2007).

To avoid these tragic events and to facilitate the career termination it has been proposed that athletes should invest in the other dimensions of their self-concept (Brewer, Van Raalte & Petitpas, 2000; Lally, 2007). However, there is no, to the authors knowledge, research that has thoroughly examined the dimensions and the structure of the dimensions in adolescent athletes' identity. To be able to do accurate psychological interventions for young athletes in the future in terms of facilitating their career termination, such study is wanted.

Objectives

Objectives for the study were:

- a) To investigate dimensions and a structure of a personal identity in adolescent football players.
- b) To investigate a link between the players' athletic identity as a part of the personal identity and their self-esteem.

Method

Seven football players (3 males and 4 females) born in 1989-1990, were interviewed qualitatively. They were all active football players on an elite level, thus, playing for elite clubs and the Swedish national team for their age groups. All of the participants went to high schools of football.

An interview guide was composed to meet the objectives of the study. To explore the dimensions of the athletes' personal identity the participants were asked to describe and tell about the social roles they experience as a part of who they are. In order to explore the structure of the personal identity dimensions the participants were asked to rank order their role identities by using a pie chart method. This made the result visual and easy to interpret.

During the interviews the conversations were not strictly regulated by the interview guide. The interviewees all got the opportunity to think free and associate to what ever they wanted. The analyses of the transcriptions were made according to an ad hoc strategy. Interesting parts were noticed no matter the number of times it was mentioned. The answers were then summarized and illustrative quotations in addition to the pie charts were used to present the results.

Results

Twelve identity dimensions were found. These were athletic-, family-, friend-, private-, romance-, student-, religious-, extra work-, public-, dream-, internet- and relative-identity. Every identity had a special pattern of behaviours attached to it. However, in some identities the significant behaviours could be difficult to distinguish, define and describe.

The athletes found family, football (athletic) and friends to be important dimensions of their lives, in different amount, however. They did sacrifice some of their identity dimensions to become more successful in others. For instance, student, family and friends could be reduced. Football and student were the only two identities being prioritized at the cost of some other identity.

The athletic identity did, according to the athletes, contribute to and affect the athletes' self-esteem. Athletic success gave them more attention and social recognition which in turn made them feel more valuable. On the other hand, according to them athletic failure did also affect their self-esteem. They did feel bad when they could not perform. However, the negative feelings were not as persistent as in younger age.

Discussion

From the perspective of Stets and Burke (2000), who define the core of the identity to be the categorization of the self as an occupant of a role and incorporating into the self the meanings and expectations associated with the role and its execution, the dimensions found in the study ought to be seen as identities.

It was difficult to see a unified picture of how the identity dimensions were structured. The dimensions could be superior and inferior to each other by turn. This concludes that the structures of identities are more complex than prior research has shown. Because of the ambiguity of the identity structure, prior research that states that the structure is determined by the commitment to other people should be reconsidered.

Although every identity had its own pattern of behaviours, some of the behaviours connected to the identities were overlapping each other. For instance, the football identity became influenced and in somehow depending on the friend identity, and vice versa, since the friends to a big extent were the same as the football team mates. No existing theory covers the interweavement and relation between the different identities. Now we know what dimensions we can work with when doing psychological interventions in career terminations. Following research should focus on straighten out the complex relation between the identities.

References

- Alfermann, D. & Stambulova, N. (2007). Career transitions and career termination. In G. Tenenbaum & R. Eklund (Eds), *Handbook of sport psychology* (Third edition) (pp 712-733). New York: John Wiley and Sons Ltd.
- Brewer, B., Van Raalte, J., & Linder, D., (1993). Athletic identity: Hercules' muscles or Achilles heel?. *International journal of sport psychology*, Vol 24(2).
- Brewer, B., Van Raalte, J., & Petitpas, A., (2000). Self-identity issues in sport career transitions. In D. Lavallee & P. Wylleman (Eds.) *Career transitions in sport: International perspectives* (pp 29-49). Fitness information technology, Inc: Morgantown.
- Lally, P. (2007). Identity and athletic retirement: A prospective study. *Psychology of Sport and Exercise*, 8.
- Sparkes, A. (1998). Athletic Identity: An Achilles' Heel to the Survival of Self. *Qualitative Health Research*, 8(5).
- Stets, J. & Burke, P. (2000). Identity theory and social identity theory. *Social psychology Quarterly*, 63, 224-237.

IDIOSYNCRATIC IMAGERY EXPERIENCES IN TENNIS: USING IMAGERY PATTERNS AS AN ANALYTIC FRAMEWORK

Fredrik Weibull

Centre for Sport and Health Research, Halmstad University, Sweden

Introduction

The most common analytical framework in today's imagery research is the one originally developed by Pavio (1985) and further developed by Hall, Mack, Pavio and Hausenblas (1998). The athletes' imagery use is divided into five types of imagery which serves certain functions e.g., Cognitive Specific imagery (CS; imagery of specific sport skills), and Motivation General Arousal imagery (MG-A; imagery dealing with e.g., arousal and anxiety). Based on this framework Hall et al., (1998) formed the imagery use measure the Sport Imagery Questionnaire (SIQ). The SIQ, the framework of different imagery types and the Applied Model of Imagery Use (Martin, Moritz & Hall, 1999) has received criticism (e.g., Short, Monsma and Short, 2006) as follows: a) the term motivation in the SIQ is a concern since the content of the motivational images also reflect e.g., confidence and arousal b) additional functions of imagery have been proposed that do not "fit" into the framework of the different imagery types c) the Applied Model of Imagery Use states that the use of different imagery types lead to certain outcomes, this is misleading according to Short et al (2006) and it is important to differentiate between imagery content and functions. However, there is a lack of alternatives to examine imagery use in today's imagery research and there is a need to find a way to identify and structure individual imagery experiences and to classify the imagery experiences in sport in general and in sport events in particular.

Objectives

To examine how professional and young elite tennis players experience/use imagery in terms of contexts, purposes, content, modalities, perspectives, emotions, frequency and effects and to identify idiosyncratic imagery patterns with shared characteristics.

Method

The sample consisted of 15 Swedish tennis players. Four participants were male professionals (mean age 27; sd. = 5.47) and they all had been ranked among the top 40 in the world in singles. The remaining eleven participants were 8 males and 3 females (mean age of 18.8; sd. = 0.67). Two of them were ranked top 100 in Sweden and 9 players ranked between twelve and one in their age classes in Sweden. The Individual Profile of Imagery Experiences (IPIET; Weibull, 2005, 2006, 2007) is an instrument used to assess tennis players' imagery experiences. It is based on e.g., the Conceptual Framework for Athletes' Use of Imagery (Munroe, Giacobbi, Hall, & Wienberg, 2000). It is in the form of a survey and administered as an interview. It is divided into four parts. Part 1 includes background questions (e.g., age, ranking). Part 2 includes the players' understandings of the imagery concept. Part 3 includes the players' idiosyncratic imagery experiences, which is divided into players' voluntary (3A) and involuntary use/experiences (3B). Part 4 includes the players' imagery ability (e.g., imagery control) and their perceived needs to develop imagery ability/experiences. All participants were informed of the purpose of the study and all relevant ethical issues (e.g., confidentiality). The data was structured in imagery patterns. An imagery pattern is a concrete idiosyncratic imagery experience, which is multidimensional in terms of content, functions, modalities, perspectives, emotions, frequency and effect, related to a certain context and it is dynamic over time. An imagery pattern may be experienced either voluntary or involuntary.

Results

Imagery patterns were experienced in all the main contexts (i.e., before, during, after and outside practice/competition). The imagery patterns experienced were idiosyncratic, however they had shared characteristics e.g., the main content and the functions for using the imagery patterns. The imagery patterns were coded based on their content. The imagery patterns used the most were: *good serve*; *good shots*; *playing well and contrasting things* (i.e., successful and poor performances). Other patterns used were *good return of serve*, *contrasting shots* (similar to *contrasting things* but only shots), *winning the match* and *things done well*. Patterns used solely by single players were e.g., *playing aggressively* and *emotional control*. The imagery patterns were used for a wide variety and multiple functions. The most common functions for using imagery were: optimization of technique and strategy, and improving concentration and self-confidence. Other functions were e.g., emotional control and analyzing. The following example demonstrates when and how two players experienced the imagery pattern *good serve*: Player A used the pattern *good serve* before all serves during practices and competitions with a perceived effect of 10 on a scale from 1-10 (1 = no effect, 10 = very high facilitating effect) to optimize strategy and technique, and improving concentration. He used visual and kinesthetic imagery from an internal perspective and included emotions. Player B used the pattern *good serve* before 4 out of 10 serves during practices with a perceived effect of 4/10 and before 5/10 serves during competitions with an effect of 7/10 for to optimize technique and improve concentration. She used visual, kinesthetic and sometimes auditory imagery from an internal perspective and included emotions. A majority of the players also experienced involuntary imagery patterns with debilitating effects (e.g., *hitting bad shots*, *hitting double faults* and *loosing points*).

Discussion

The imagery patterns were used for a wide variety of functions and often for multiple functions by the participants in this study. The results support the critique towards the Applied Model of Imagery Use, i.e., that certain images serve certain functions and several functions do not fit into the different imagery types (e.g., MG-M). An alternative way to identify and structure athletes' imagery use is the analytic framework of imagery patterns. An imagery pattern is an idiosyncratic and multidimensional structure that can be experienced in different contexts. The potential implications in both research and applied work can be as follows: to analyze and structure an athlete's idiosyncratic imagery profile b) to measure the effects of imagery interventions and c) to classify the imagery experiences in sport in general, and in various sport events, in particular.

References

- Hall, C., Mack, D., Pavo, A., & Hausenblas, H. (1998). Imagery use by athletes: Development of the sport imagery questionnaire. *International Journal of Sport Psychology*, 29, 73-89.
- Short, S.E., Ross-Stewart, L., & Monsma, E.V. (2006). "Onwards with the Evolution of Imagery Research in Sport Psychology." *Athletic Insight* 8, 3. Available online at: <http://www.athleticinsight.com/Vol8Iss3/ImageryResearch.htm>.
- Weibull, F. G. W. (2005). *Imagery experiences in tennis: A comparison of professional and promising players* (C-level dissertation in Sport Psychology, 41-60 p). School of Social and Health Science: Halmstad University
- Weibull, F.G.W. (2007). The individual profile of imagery experiences in tennis: Guidelines for users. In P. Hassmén (Ed.). *Svensk Idrottspsykologisk Förenings Årsbok*, 92-111. Laholm: Trydells Tryckeri AB.

DEVELOPMENT OF THE VOLITIONAL COMPONENTS QUESTIONNAIRE – EXERCISE

Johan Wikman

University of Copenhagen, Denmark

Introduction

It is widely known that participating in exercise is associated with a wide variety of benefits (Crews & Landers, 1987; Martin & Lichtenberger, 2002; Motl, Birnbaum, Kubik, & Dishman, 2004; Spence, McGannon & Poon, 2005). However, research indicates that many people have difficulties initiating or adhering to regular physical activity. One possible explanation for this can lie in insufficient motivational and/or volitional skills. Common motivation theories and research have shown to have difficulty in predicting and affecting adherence and/or dropout, especially when it comes to lasting behaviour changes (Bandura, 1997; Lox, Martin Ginnis & Petruzello, 2006; Symons Downs & Hausenblas, 2005). The concept of volition adopts a different approach to the behaviour area, as it focuses on the individual's capabilities to initiate and persist in behaviour (Kuhl, 1992, 2000; Kuhl & Fuhrmann, 1998; Kuhl, Kazén & Koole, 2006).

Objectives

The purpose of the study was to design, construct and test the Volitional Components Questionnaire – exercise (VCQ-exercise), a Danish questionnaire measuring volitional traits in conjunction with exercise. The volitional paradigm shows promising results in the exercise area (Kuhl & Fuhrmann, 1998), and can provide another approach to predict exercise behaviour. Furthermore, the VCQ-exercise taps volitional traits in the specific context of exercise, which provides higher validity than general volitional questionnaires (Kuhl & Fuhrmann, 1998) or competitive sport-specific questionnaires (Elbe & Wenhold, 2006). Additionally, the target group of the VCQ-exercise is a Danish population, a sample that is not easily accessed due to the lack of psychological questionnaires in Danish.

Method

The theoretical framework underpinning the VCQ-exercise was the Personality Systems Interaction Theory (Kuhl, 1992, 2000; Kuhl & Fuhrmann, 1998). In the PSI-theory, four cognitive macrosystems, influenced by the presence or lack of negative or positive emotions, interact with each other in certain ways according to produce behaviour traits. The VCQ-exercise was created with 14 sub-scales, each consisting of between 2 and 4 items, for a total of 44 items operationalizing the four cognitive macrosystems in an exercise setting. Prior to statistical testing, the VCQ-exercise was pre-tested by distributing it to a small sample with a varying demographic background, to ensure that it was understandable for all respondents. Items were changed accordingly. For statistical testing, the VCQ-exercise was distributed to sport and exercise science students at the University of Copenhagen and players in local football clubs (N=173).

The inter-subscale reliability was secured by using a Cronbach's alpha test and altering, removing and adding items accordingly. Test-retest reliability was secured using a Spearman correlation test for the subscales with an interval of between four and seven weeks. Validity was secured through four studies. In study 1, a factor analysis of the questionnaire was used, using four components and an equamax rotation. In study 2, an evaluation of peers' view on respondents' volitional skills in the exercise context was used. In study 3, correlation with demographic and miscellaneous variables of the respondents was used. In study 4, correlation with the Achievement Motives Scale – Sport (Elbe & Wenhold, 2005) was used.

Results

Inter-subscale reliability was found to be between .60 and .83, with an average of .70 for the subscales. Test-retest reliability was found to be highly significant (below .01) for 10 of 14 subscales, with 2 subscales having low significance and 2 failing to reach significance. For the 10 highly significant subscales, test-retest reliability was found to be between .63 and .87, with an average of .71 for the subscales. In study 1, Factor analysis confirmed the VCQ-exercise subscales, and created four components to which all subscales could be clustered. In study 2, peer evaluation of the respondent's volitional skills showed only two significant correlations, indicating that peer evaluation is not the best way to validate the questionnaire. This confirms the notion that volitional functioning is highly internal, and not easily assessed by others. In study 3, Spearman correlation test confirmed hypotheses that experience and satisfaction with exercise is positively correlated with volitional skills in general. In study 4, Spearman correlation test confirmed the hypothesis that high volitional skills correlate positively with hope for success and negatively with fear of failure.

Discussion

The VCQ-exercise provides researchers in a Danish context with a tool for assessing volitional skills in conjunction with exercise. This may help to uncover the variables at work when predicting behaviour and intervening on it. The testing of the VCQ-exercise shows satisfactory reliability and validity. For future investigations, the VCQ-exercise should be used to investigate whether volitional skills affect training benefits, be it physiological or sport-specific, and if the VCQ-exercise can predict exercise adherence over an extended period of time. Furthermore, intervention possibilities should be considered for research in the field.

References

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: WH Freeman.
- Crews, D.J., & Landers, D.M. (1987). A meta-analytic review of aerobic fitness and reactivity to psychosocial stressors. *Medicine & Science in Sports and Exercise*, 19, 114-120.
- Elbe, A.-M. & Wenhold, F. (2005). Cross-Cultural Test-Control Criteria for the Achievement Motives Scale-Sport. *International Journal of Sport and Exercise Psychology*, 3, 163-178.
- Elbe, A.-M. & Wenhold, F. (2006). Volitional Components Questionnaire – Sport. Potsdam: Unpublished manuscript.
- Kuhl, J. (1992). Motivation and Volition. In d'Ydewall, G., Eelen, P., & Bertelson, P. (Eds), *International Perspectives on Psychological Science*, vol 2. (311-340). Hove: Lawrence Erlbaum Associates.
- Kuhl, J. (2000). The volitional basis of Personality Systems Interaction Theory: application in learning and treatment contexts. *International Journal of Educational Research*, 33, 665-703.
- Kuhl, J., & Fuhrmann, A., (1998). Decomposing Self-Regulation and Self- Control: The volitional components Inventory. In Heckhausen, J., & Dweck, C. S. (Eds), *Motivation and self-regulation across the life span*. Cambridge: Cambridge University Press.
- Kuhl, J., Kazén, M., & Koole, S. L. (2006). Putting Self-Regulation Theory into Practice: A User's Manual. *Applied psychology: An international review*, 55, 408-418.
- Lox, C.L., Martin Ginnis, K.A. & Petruzello, S.J. (2006). *The Psychology of Exercise – integrating theory and practice*. Scottsdale: Holcomb Hathaway.
- Martin, K.A., & Lichtenber, C.M. (2002). Fitness enhancement and body image. In Cash, T.F. and Pruzinsky, T. (Eds). *Body images: A handbook of theory, research, and clinical practice* (pp. 414-421). New York: Guilford Press.
- Motl, R.W., Birnbaum, A.S., Kubik, M.Y., & Dishman, R.K. (2004). Naturally occurring changes in physical activity are inversely related to depressive symptoms during adolescence. *Psychosomatic medicine*, 66, 336-342.
- Spence, J.C., McGannon, K.R. & Poon, P. (2005). The effects of exercise on global self-esteem: A quantitative review. *Journal of Sport and Exercise Psychology*, 27, 311-334.
- Symons Downs, D. & Hausenblas, H.A. (2005). The theories of reasoned action and planned behaviour applied to exercise: A meta-analytic update. *Journal of Physical Activity and Health*, 2, 76-97.

Author Index

Ahlberg	Charlotte	42	Leinonen	P.	47
Aidla	A.	47	Lindblad	Ulf	36
Aidla	M.	47	Lindgren	Eva-Carin	48
Akehurst	Sally	18, 19, 49	Lindholm	Camilla	46
Alricsson	Marie	17	Lindholm-Dahlstrand	Åsa	29
Alricsson	Marie	37	Lindwall	Magnus	14
Alvmyren	Ingela	21	Liukkonen	Jarmo	47
Andersen	Lars L	15	Ljungkrona-Falk	Lena	38
Andersen	Mark	16, 18, 20	Louková	Tereza	44, 46
Baigi	A.	48	Lundgren	Lina	47
Bengtsson	Sverker	26	Lundkvist	Erik	61
Berggren	Eva	29	Mathisson	Pierre	59
Blomqvist	Sven	33	Moris	Inge	32
Boltorp	Malin	43	Mörstam	Anna	42
Brekke	Hilde	38	Nielsen	Pernille K	15
Brännberg	Anna	59	Nilsdotter	Anna	29
Carlsson	Malin	26	Niven	Ailsa	35
Claeson	Andreas	24	Nyholm	Maria	36, 38
Coombes	Matthew J.	34	O'Connor	Kevin	33
Dalén	Ylva	38	Olander	Ellinor K	22
Eklund	Robert C.	24	Olandersson	Sofia	29, 47
Ekmark	Björn	26	Olsson	Anders	33
Eriksson	Johan	43	Osvalder	Anna-Lisa	47
Eriksson	Linn	48	Ourique de Morais	Wagner	28
Eves	Frank	22	Pensgaard	Anne Marte	13
Flemme	Inger	27	Pettersson	Peter	41
Fletcher	David	33, 34, 35	Pfeffer	Ines	22
Fröjd	Kennet	33	Podlog	Leslie	24
Gerber	Markus	34, 50	Poskiparta	Marita	31
Gestranius	Jenna	21, 52	Pühse	Uwe	34
Grjibovski	Andrei	36	Pälvimäki	L.	47
Grönvall	Kerstin	37	Ragnarsson	Helena	54
Gundersen	KT	37	Rasmussen	Finn	14
Gustafsson	Henrik	54, 61	Richard	Tobias	62
Gåve	Eva	43	Rintala	Pauli	11, 31
Hallberg	Ulrika	27	Romild	U.	37
Hammar	Lena	41	Roos	Harald	12
Hardy	James	35	Rumbold	James L.	33, 34, 35
Hardy	Lew	49	Sæbu	Martin	40
Hartmann	Tim	34	Salo	Maths	44
Harwood	Chris G.	35	Sant'Anna	Anita	28
Hassmén	Nathalie	54	Shakiba	Afshin	21
Hassmén	Peter	22, 54, 61	Sjøgaard	Gisela	15
Hátlová	Béla	44, 46	Sjöholm	Eivor	37
Henriksen	Kristoffer	27	Skadal	Merete	32
Henriksson	Anders	44	Sollerman	Christer	29
Hilliges	Marita	29, 47	Soonberg	K.	47
Hiltunen	E.	47	Stambulova	Natalia	20, 25, 27
Hinic	Hansi	26, 37	Stelter	Reinhard	41
Hjäl	Sören	61	Strömberg	Anna	27
Hussein	Hazem	30	Stålbom	Markus	30
Illig	Cathleen	22	Suomi	H.	47
Ingrell	Joakim	44	Søgaard	Karen	15
Ivarsson	Andreas	24	Sørensen	Jan Kahr	25
Javanainen-Levonen	Tarja	31, 39	Sørensen	Marit	39, 40
Jensen	Kristian	31	Tester	Robert	34
Jerlinder	Kajsa	55	Thatcher	Joanne	18,19
Johansson	Inger	41	Thomeé	Roland	16
Johansson	Mattias	22	Thomson	Kaivo	47
Johnson	Urban	23, 23, 24, 45	Thorstensson	Ronny	41
Jorlén	Daniel	57	Thorstensson	Ulla	41
Josefsson	Karin A.	58	Tod	David	18,19, 35
Josefsson	Torbjörn	27	Toivonen	Henri	36
Jönsson	Maria	45	Tranaeus	Ulrika	23
Kahlin Reichard	Y.	17	Tuominen	Hanna	37
Kaya Roessler	Kirsten	27	Törne	Mari	37
Khasnutdinova	Svetlana	36	Wallin-Tornberg	Rasmus	47
Kirchner	Jiří	45, 46	Weibull	Fredrik	45, 64
Kissow	Anne-Merete	32	Werner	S.	17
Klavina	Aija	39	Wickman	Kim	17
Kraft	Magnus	59	Wikman	Johan	26, 65
Kriborg	Peter	59	Wild	Tim	35
Kristén	Lars	15	Woodman	Tim	49
Krogh Christensen	Mette	25	Währborg	Peter	11
Kulhánková	Radka,	44			
Kärki	Anne	39			
Landstad	BJ	37			
Lannem	Anne M.	39,40			
Lavallee	David	18,18, 35			



Thank you for
participating!

Have a safe
trip home!

Urban, Natalia, Karin
and Colleagues

Centre for Sport and
Health research
Halmstad University
Sweden

