



Evidence in the Field of Sport and Development

An overview

Biel/Bienne, June 2008

Contents

Introduction	4
The concept of Sport and Development	4
Health.....	5
Obesity	5
Sport and HIV/AIDS.....	7
Personality Development.....	8
Sport and education.....	8
Sport and self-esteem	9
Sport and violence	9
Sport and racism	10
Sport and trauma.....	11
Social Development	12
Sport and gender	12
Sport and the homeless	12
Sport and peace building	13
Conclusion.....	14

Evidence in the Field of Sport and Development

Introduction

Man is a *homo ludens* – a playing being. Sport and play are part of humanity. It was not only the Ancient Greeks (as 19th century historian Burkhardt assumed) but other ancient cultures too that had a propensity to practice sport and compete with others. Sport does not need a *raison d'être*; it is part of human nature, and with it comes both positive and negative connotations.

In the 18th century sport became very popular among the elite. Hunting was a symbol of manhood, and heavy drinking was a serious problem; which is why women were often more successful marksmen than the men. In the 19th century sport was integrated into elite schools in England (Eton, Cambridge) as a means of personality development. To strengthen specific elements of existing sports, new ones were purposefully and rapidly inventedⁱ.

Colonialism brought modern sport to the most remote areas of the world. For the first time, sport was intentionally used to contribute to the development of societies. Where many other imported ideas of colonialism failed, sport prevailed as one of the most successful inventions. Argentina and Brazil, not England, now lead the football world ranking charts. In cricket, the founding countries find stiff competition against the likes of Samoa and Sri Lanka.

The concept of Sport and Development

In spite of the popularity of sports, there is not a lot of scientific evidence supporting the relationship between sport and development. There is a natural reluctance to use sport for some other purpose as one interviewee illustrates (Sport England, 2003):

At the end of the day we are a competitive swimming club. We are not a community or social group. We are not here to look after [the disadvantaged], although we will help where we can, we are not in a position to arrange transport; we are not in a position to reduce their fees. We will train people that want to train, but we cannot be used as a social service organisation.

In addition to the mental barrier that prevents evaluation of the impact of sport, there is a serious methodological challenge: in many instances it is almost impossible to isolate specific sport effects from non-sporting ones. For instance, a simple correlation between physical activity and smoking does not explain the causality. It could be that people stop smoking because of their level of sporting activity (causality) or that heavy smokers simply avoid sport (reverse causality). In fact it is also possible that a third factor (e.g. risk-taking behavior) explains the relationship (spurious correlation).

More and more governmental and funding institutions are driven by accountability and have to prove the impact in order to continue funding. With this policy shift was a shift from the rhetorical question “is

sport good or bad?” to the more pragmatic question of “what are the preconditions that sport needs to deploy positive outcomes?” and “how do programs have to be designed to be effective?”

Sport can have an impact on development in different ways. First, the traditional focus of sports development can be enlarged by clearly defined development goals, arguing that the promotion of sport has a direct effect on raising self-esteem, increasing resilience, building character, and teaching team building among participants (“sport plus”). Second, there is an increasing number of development organizations that use sport as a vehicle through which messages are communicated (plus sport). Although in reality there is a continuum between both poles, there are differences in evaluating the outcomes. Third, the popularity of sport can be used as a platform to promote a development cause (sport as a platform for development). In this manner professional athletes can make a contribution by raising awareness and sensitizing people on critical issues such as racism (e.g. stand up – speak up campaign), homophobia, HIV/AIDS, and many more. All three of these approaches are contained within the “Sport and Development” movement.

Health

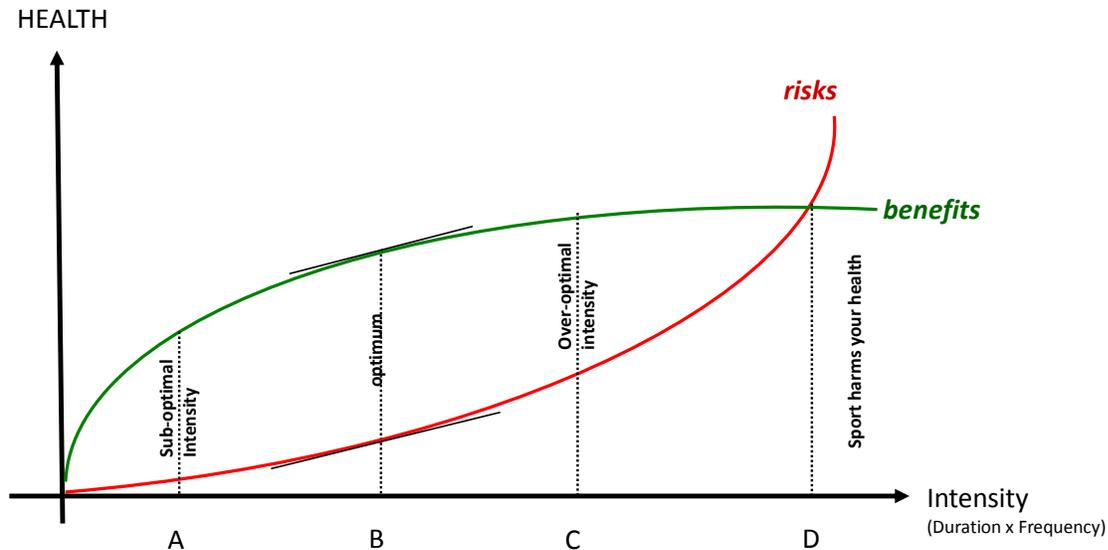
Obesity

One of the most uncontested areas is the positive impact of regular physical activity on health. More than 300 million people worldwide are obese. It has been projected that by 2015, approximately 2.3 billion adults will be overweight and more than 700 million will be obese.ⁱⁱ In England already two-thirds of the male and half of the female population are overweight. However, overweight and obesity is not only a problem of the developed world: one-third of overweight people live in developing or transition countries.

There is a clear proven relationship between regular physical activity and cardio-vascular diseases, type II diabetes, and various types of cancer. The International Obesity Taskforce (IOTF) assumes that 30-40% of cancers could be prevented by healthy diet and regular physical activity. In addition, there is also a negative correlation between back pains, osteoporosis, amyotrophy, arthritis and other diseases.

Based on scientific evidence, the World Health Organization (WHO) advises regular physical activity for at least 60 minutes per day. For adults this target can be reduced to 30 minutes.ⁱⁱⁱ

Fig. 1: Relationship between physical activity and health



It is important to note that Figure 1 shows that the relationship between sport and health is not linear. With increased intensity comes an increased risk of injury. If practiced at an extremely high level the risk of injury often out numbers the health benefits.

Another of sport's negative connotations is the issue of doping at the elite level of competition. Doping is the Achilles heel of sport. The use of banned substances to increase performance has been linked with sport since its antique origins. But the continual development of medical techniques that make these substances difficult to trace cause many to fear that the whole spirit of sport is being undermined. Competitive sport can only survive if all of the stakeholders involved fight to eradicate doping in sport.

Sport and HIV/AIDS

Sport can also be used as a platform to raise awareness about health issues. There are various programs that harness the power of sport to raise awareness about HIV/AIDS. Grassroots Soccer is an American based NGO that has developed a curriculum to teach important lessons about HIV/AIDS. The impact can be measured by the participation level of the program as well as the learning that takes place throughout the program.

Interviews that took place during the launch of the Life and Peace program in Southern Sudan in 2007 showed that the great majority of the participants joined the program because of the attractiveness of the sports component. Some 25% of participants surveyed in the pre-test said they would not have participated if there were no sport activities and 33% did not even realize that an educational focus on HIV/AIDS existed!

Pre- and post-surveys show that these projects are effective in teaching the main lessons about the killer virus. In southern Sudan and Liberia, Mercy Corps conducted evaluations on changes in youth knowledge and attitudes following two similar HIV/AIDS plus sport programs. In southern Sudan, the *Sport for Peace and Life* program put nearly 6,000 youth through a six-week curriculum and in the *Yes to Soccer* program in Liberia more than 1,600 youth went through an eight-week program. An overall increase of 27% from pre- to post-test was recorded in Liberia and 12% in southern Sudan. Considerable changes were also noted at the question level: 'I can tell if someone has HIV/AIDS by looking at him/her' had a 24% increase in both countries; 'A woman how has HIV/AIDS can give birth to a baby that does NOT have HIV' had a 36% increase in Liberia and a 20% increase in southern Sudan; and 'HIV is the same as AIDS' had a 41% increase in correct answers in Liberia and 35% in southern Sudan.

To strengthen international efforts the Kicking AIDS Out (KAO) network was established in 2001. Sport and physical activities are used to build awareness about HIV/AIDS through educational games and activities that encourage peers to discuss issues that affect their lives and their communities.

An evaluation of the network came to the conclusion that, "strong beliefs seem to be based on an intuitive certainty and experience that there is a positive link between sport and development", but that "the compelling evidence was missing". A survey was conducted between a group of 40 children (20 boys and 20 girls) who had been exposed to the KAO program and another group sharing the same characteristics that hadn't been exposed to the program. Although the findings reported no significant differences in knowledge and information of HIV/AIDS per se, "there was a notable difference in the ability to make independent decisions and say no in matters of sex and also on the level of self-confidence."^{iv} The KAO group was more able than the non-exposed group. It is suggested that these attributes are fundamental in preventing HIV/AIDS.

Personality Development

Sport and education

On the one hand parents often assume that sport and education is a zero-sum game and goes at the cost of academic performance. On the other, sport clubs pretend to have a positive impact on education, referring to the Latin saying that was originally said by roman poet Juvenal (c. 60 – 130 B.C.): “In mens sana in corpore sano”,^v What is myth and what is reality here?

A study from Shephard (1997) illustrates that physically active students have an unequivocal academic advantage over their sedentary peers. Again here, the causality remains unclear: Does physical activity enhance academic performance or does intelligence increase the propensity to do sport? Also a third factor - genetics - could explain the academic performance and preference for physical activity.

Similar studies have been conducted in many different countries with most agreeing on the same principle.^{vi} Combined results of 44 studies show that there is a significant positive association between physical activity and the cognitive development of children.^{vii} Based on convincing evidence that physical education plays a significant role for child development, UNESCO and the International Council of Sport and Physical Education (ICSSPE) have set a target to introduce 2-3 hours of PE per week in school.

Sport can also be used as a pedagogical tool: Bola pra Frente is a professional educational institution working in a disadvantaged district of Rio de Janeiro. It developed an innovative curriculum to teach different subjects such as math, literature and geography with the help of sport. 95% of the kids state that the school is the safest place for them. They live their motto “It is more than a social project – it is a project of life”. It provides an outstanding example of how sport can effectively transmit educational messages to disadvantaged people. The educational performance of the children in school, their job perspectives after completion and the increasing demand from parents indicate positive outcomes.

The relationship to schools is key for the success of sport for development projects. If the programs are not coordinated with educational authorities it can undermine the whole project. A lot of qualitative data is therefore collected based on interviews with parents and teachers. Nike supported the Moving Forward program in Chincha, Peru, with the aim to offer psychosocial support to the children after the terrible earthquake on August 15, 2007. Many interviews conducted with parents indicated that the school performance of the project participants either improved or remained at the same level. A mother stated: “At the beginning of the program my husband was against the idea of our son participating because he feared that it would negatively affect the boy’s schooling. But later when he saw how much our boy’s marks had improved he changed his opinion.” Teachers also confirmed a positive relationship between the program and the school marks of the participants.

The ultimate proof of the positive impact of sport on educational performance is missing because of the complexity of the topic and because of ethical considerations, which do not allow researchers to establish an adequate control group of children willing to be excluded from the program. Nevertheless we can state with a probability close to certainty that sport has a positive impact on educational performance. Therefore reservations that some parents have about sport and education being a zero-sum game can be countered with strong empirical facts. However, what remains unclear is exactly how sport works: is it the effects of increased fitness, the growth of self-esteem, the improved concentration or the relaxing environment that promotes this impact? More research is needed to show this.

Sport and self-esteem

One of the key arguments for sport is the assumption that sport can increase self-esteem. There are different studies measuring the relationship between sport activity and self-esteem. Some studies show that active participation has a significant positive impact on self-esteem, while others show that there is only a positive, non-significant, trend and that self-esteem is difficult to increase if it is already at a high level.^{viii}

The ambiguous scientific results underline that the design of the project and the environment (coaches, coordinators) play a key role in the extent of the impact. Indicative of this conclusion is a study that shows that perceived fitness is even more relevant to explain increased self-esteem than real physical fitness.^{ix} A key indicator for success is if the participants include their coach or mentor in their circle of trust. Good practice of sport for development projects shows that 70-80% of the participants agree with the statement that they usually share their problems with the coach, whereas for boys the percentage is slightly lower than for girls.^x

Sport and violence

The relationship between sports participation and violence is mainly dealing with two aspects, the rehabilitation of offenders and the use of sport as a tool to prevent deviant and delinquent behavior.

Measuring the relationship between sport and violence faces substantial methodological challenges mainly linked with gathering crime statistics. One of the most popular statements that sport clubs like to give is that they bring children from the streets, prevent anti-social behavior and have a negative impact on juvenile delinquency. Existing studies draw a contradicting picture: Hastad et al (1984) found that there is little relationship between sport participation and deviancy. A more embracing study was conducted in Germany and the results were reported to the European Commission.^{xi} It concluded that young members of sport clubs have - irrespective of their sex – “a lower and less increasing quota of delinquent behavior“ and that sport activity can explain 9% of the variance. The same study shows that campaigns of sport clubs against drug abuse and alcohol consumption do not seem to produce any

lasting outcomes. Club members – especially football – seem to consume even more alcohol on average than non-members.

The most recent and complex study was conducted in Switzerland.^{xii} But the study could not prove that violent youth practice sport more or less often than non-violent youth. Interestingly enough, a group known collectively as “mobbers”, defined by their high propensity to violence, spent more time in sport than all other groups. However, the study showed that youth had the highest propensity to violence if they had a negative self-image and if they had lesser-developed stress management skills. This means that sport has an indirect impact on reducing violence when it creates a positive self-image.

The midnight basketball programs launched in different countries represent a success story. Qualitative and quantitative data was collected in different countries and revealed a significant reduction in the juvenile offender crime rate. An evaluation of a midnight basketball program for boys and girls residing in public housing showed that before the program 92 % of the youths surveyed expected to get into some kind of trouble in the next 3 months and 66 percent of the youths thought they would be victims of violent acts during that same period. Following implementation of the program 20 % of the youths surveyed stated they expected to get into some kind of trouble and only 5 percent of the youths expected to be crime victims. It revealed a 78 percent reduction in the juvenile offender crime rate among youths 16 to 20 years old in the precinct where the public housing development is located^{xiii}

There is only very limited data on the relationship of sport and violence in less developed countries. A representative study in Iran showed that there is a negative tendency between sport activity and deviant behavior of boys and girls, but that it is only significant for girls.

Studies show that the children and youth with a higher tendency to violence more often prefer to participate in body contact sports. Enderson and Olwens (2005) examined the relationship between participation in power sports and self-reported violent and anti-social behavior. They observed a strong positive relationship between boxing and self-reported violence. For martial arts the correlation was weaker (because of their philosophy of non-violence).^{xiv} Their findings stand in contrast with many other longitudinal studies showing that especially martial arts such as Karate and Jujitsu had a tendency to reduce violence (Daniels/Thornton, 1990; Binder, 1999).

The scientific community agrees that a general participation in sport cannot be expected to have a major impact on reducing anti-social behavior and violence. The environment transmitting non-violent values is key for reaching a positive outcome.

Sport and racism

Sport - especially football - events are quite often misused by radical groups to spread racist messages and use the platform for a fight as some German neo-Nazis did during the European Football Championship in Switzerland and Austria recently. Of course sport can also be used as a platform to

fight violence and racism. European football's governing body, UEFA, invited a network of organizations (FARE) to promote the fight against racism in football at the Championship. Thanks to their clear efforts to fight racism and hooliganism the problem has nearly been solved in many of Europe's major leagues, but the problem still remains in the lower leagues and especially in Eastern Europe the fight against racism in football has just begun.

Sport and trauma

Sport is increasingly being used to help alleviate psychosocial trauma in children and equip them with better coping and resiliency mechanisms for life. When delivered under the correct conditions, programs that use sport, games and activities to teach children lessons that will help them deal with personal anguish in their lives - such as conflict management skills, coping and resiliency skills, leadership and team-building skills - have demonstrated positive results.

As one can observe from the many organizations that are active in this area of sport and development, one key element to a successful program is selection of the right mentors and coaches. Local staff that have similar backgrounds to the participants and an understanding of the way in which sport and play activities can be used to help children to recover from trauma are invaluable. They offer children hope by showing them that they can make choices to influence the path their lives take.

One project has been successful in the Balkan region of South Eastern Europe where volunteerism is not highly rated. In 2007, the Open Fun Football Schools project worked with 89 schools and 289 municipalities to use football as a means of stimulating the process of democracy, peace, stability and social cohesion in otherwise antagonistic population groups. In 2007, it amassed a total of nearly 300,000 hours of volunteer time by taking care of its volunteers and understanding the issues that are important to them: personal development, importance, network and recognition. The organization provides each coach with 60 hours of training that can provide them with internationally recognized coaching badges.

Of course, it is difficult to qualify changes in participants' opinions as a direct result of the program but interviews with the children can bring some valuable insights. Here is an extract of an interview with a Serbian girl living in Foca, Bosnia-Herzegovina: "Not only because we are playing matches and each time attempt to win for us to be happy. I have learnt that the most important thing is to be with your friends and have a fun time. We do not hate somebody because they have a different skin colour or religion. We are all equals."

Social Development

Sport and gender

Sport is a valuable asset in the fight against gender discrimination that is prevalent across the world. In some instances it is used as a tool to break down stereotypes that girls cannot perform as well as boys in sports by demonstrating that in fact they can. In others, it is used in communities where girls are not given the opportunity to participate in sport because of some cultural or religious issues by empowering them and leading them towards leadership development and personal growth.

The Nike Foundation has made a strategic choice to focus on supporting adolescent girls in the developing world on the premise that if you “invest in them...you will unleash a powerful ripple effect.” It indicates that to support a girl in realizing her own potential you benefit the lives of many others – her brothers, sisters, parents and beyond, since as an educated individual she alone can break the cycle of poverty.

Working on the same theme is an organization in Kalifi, Kenya called Moving the Goalposts. Its programs aim to promote football excellence, youth leadership, reproductive health rights and economic empowerment to help girls and young women escape the cycle of poverty that most of them live in. Another project called GOAL that began in Delhi, India uses netball as a way of addressing empowerment for young women in marginalized communities. Most of the participants have never practiced sport in their lives. The project uses netball to take them out of their normal environments and comfort zones and challenges them both mentally and physically.

Sport and the homeless

Homelessness is a consequence of a wide variety of different personal issues but its effects are often shared by many: lack of self-esteem and loss of hope. In the US, each homeless person costs society around \$60,000. Organizations like Street Soccer 945 in the US, Street League in the UK and Stichting Meer dan Voetbal in the Netherlands have understood the positive psychological effect that involvement in sport can have on homeless people. Street League combines football with education to build confidence, improve health, extend social networks, and develop skills towards long-term education, employment and independence. Its website features numerous interviews with previous participants explaining how they have changed their lives as a direct result of the experience.

These three organizations and many others compete on an annual basis at the Homeless World Cup. The competition started in Austria in 2003 and uses football as a trigger to inspire and empower people to change their lives. It boasts an impressive statistic that 77% of people participating in this event go on to find a home, come off drugs and alcohol, get in to education, jobs, training and repair relationships with

friends and family.^{xv} Measurements like these have prompted sponsors and donors to get involved, which in turn has given the organizers the ambition and potential to reach out and touch 100,000 people by 2010.

Sport and peace building

Sport brings people together, breaks down social, cultural and religious barriers and can be a valuable educational tool. Peace-building through the medium of sport is a natural progression of this theme and has been acknowledged for some time. Some five months after the outbreak of World War I in 1914, there was a much celebrated Christmas truce where, in defiance of official orders, English and German soldiers on the front line came out of their trenches on Christmas Eve, shook hands on no man's land, and agreed to suspend the fighting whilst they played football matches and enjoyed the camaraderie. Although this was war, there was no need trace of enmity between the soldiers.

Today, organizations involved with using sport as a peace-building tool among youth are present in many of the world's hotspots. In Cyprus, PeacePlayers International has established a program that uses basketball to facilitate positive dialogue and interaction between Turkish Cypriot and Greek Cypriot youth, with the ultimate goal being improved relations between the Greek and Turkish communities in Cyprus. The project uses coaches as role models for thousands of 10-12 year old boys and girls from both sides of the divide. It aims to develop young leaders and foster trust and relationships using the sport as a vehicle. PeacePlayers International was founded on the premise that "children who play together can learn to live together." Over the last six years the organization has worked with 45,000 children in five different locations.

Conclusion

Since its ancient roots sport has gone hand-in-hand with development. Sport is a mirror and a motor of development. But only during the last 2-3 decades has sport been purposefully used to reach development goals. Therefore the field of sport and development is a quite new and innovative topic of research; evidence is mainly anecdotal and dominated by studies conducted in the most developed countries of the world.

Evaluation endeavors in innovative fields are often linked with disappointments because the projects do not have adequate funds to do theory-based evaluations and if they have, they often fail to prove that they reached predefined objectives. Nevertheless they reach other outcomes which can be even more valuable than the objectives set at the beginning. This is why it is wise to carefully monitor unintended outcomes. For instance, the evaluation of the Life and Peace project in southern Sudan revealed a huge, but unintended, impact on the empowerment of the municipality, coordinators and coaches from handling sport materials. Another project in Iran launched after the terrible earthquake 2003 showed that sport projects can have an enormous impact on religious leaders changing their mind about sport and the image of girls.

Sport is not a-priori good or bad. But sport is a powerful and cost-effective tool for development if it is carefully designed (project design, needs assessment); professionally managed with cautiously selected and trained coaches; holds clear policies against racism, homophobia and sexual harassment; and uses relevant monitoring and evaluation procedures. Respecting these conditions sport *can* make the difference.

ⁱ Volleyball was invented by William G. Morgan as a game for young business men that wished to play a game with less body contact than basketball.

ⁱⁱ WHO, <http://www.who.int>

ⁱⁱⁱ Ibid.

^{iv} Kruse, S.-E. (2006). Review of Kicking AIDS out: Is sport an effective tool in the fight against HIV/AIDS? Unpublished evaluation report.

^v Juvenal never made this statement; he only expressed the hope that in a healthy mind is in a healthy body.

^{vi} Themane et al (2006) tried to prove the positive relationship between sport and educational performance with children in South Africa and failed (because of the low number of participants surveyed (n = 212) and because of other interfering educational problems). Themane, M.J. et al. (2006). The Relationship between Physical Activity, Fitness and Educational Achievement of Rural South African Children. *Journal of physical education & recreation* 12/1: 48-54

^{vii} Sibley, B.A. and Etnier, J.L. (2003). The relationship between physical activity and cognition in children: A meta-analysis. *Pediatric Exercise Science* 15: 243-56.

^{viii} Walters, S. T., & Martin, J. E. (2000). Does aerobic exercise really enhance self-esteem in children? *Journal of Sport and Behavior*, 23, 51-60. Liu, Jillian, H. (2008). The effect of a college exercise class on the self-esteem of female college students. Missouri Western State University.

^{ix} Plante et al (2000)

^x Kunz, V. (2006). Sport for traumatized children and youth. An assessment of a pilot project in Bam, Iran. Swiss Academy for Development.

^{xi} Children between 12 and 16 years in 40 schools of Northrhine Westphalia (Germany) were interviewed. Brettschneider, W.-D.; Naul, R. (2004). Study on young people's lifestyles and sedentariness and the role of sport in the context of education as a means of restoring balance. Final report. European Commission.

^{xii} 2434 young people at the age of 12-18 were interviewed in Switzerland. Moesch, K; Birrer, D.; Schmid, J.; Seiler, R. (2007). Do violent and non-violent adolescents have the same sport background? 12th European Congress of Sport Psychology.

^{xiii} Hartmann, D. and Depro B. (2006). Rethinking sport-based community crime prevention: A preliminary analysis of the relationship between midnight basketball and urban crime rates. *Journal of Sport and Social Issues* 30/2, 180-96.

^{xiv} Endersen and Olwens (2005). Longitudinal study of 500 boys between 11-13 years in 37 schools in Bergen, Norway.

^{xv} www.homelessworldcup.org

Literature

- Binder, Brad (1999). Psychosocial benefits of the martial arts: Myth or reality? A literature review. Unpublished paper.
- Brettschneider, W.-D.; Naul, R. (2004). Study on young people's lifestyles and sedentariness and the role of sport in the context of education as a means of restoring balance. Final report. European Commission.
- Coalter, F. (2007). A wider social role for sport. Who's keeping the score? London: Routledge.
- Daniels, K. ; Thornton E. (1990). An analysis of the relationship between hostility and training in the martial arts. *Journal of Sports Sciences*, 8, 95–101.
- Endersen, L.M. and Olwens, D. (2005). Participation in power sports and antisocial involvement in preadolescent and adolescent boys. *Journal of Child Psychology and Psychiatry* 46(5): 468-78.
- Hartmann, D. and Depro B. (2006). Rethinking sport-based community crime prevention: A preliminary analysis of the relationship between midnight basketball and urban crime rates. *Journal of Sport and Social Issues* 30/2, 180-96.
- Hastad, et al. (1984). Youth sport participation and deviant behavior. *Sociology of Sport Journal* 1, 366-73.
- Liu, Jillian, H. (2008). The effect of a college exercise class on the self-esteem of female college students. Missouri Western State University.
- Kruse, S.-E. (2006). Review of Kicking AIDS out: Is sport an effective tool in the fight against HIV/AIDS? Unpublished evaluation report.
- Moesch, K; Birrer, D.; Schmid, J.; Seiler, R. (2007). Do violent and non-violent adolescents have the same sport background? 12th European Congress of Sport Psychology.
- Plante (2000)
- Sibley, B.A. and Etnier, J.L. (2003). The relationship between physical activity and cognition in children: A meta-analysis. *Pediatric Exercise Science* 15, 243-56.
- Shepard, R.J. (1997). Lessons Learned from the Trois-Rivieres Physical Education Study. A retrospective. *Pediatric Exercise Science* 17, 113-26.
- Themane, M.J. et al. (2006). The Relationship between Physical Activity, Fitness and Educational Achievement of Rural South African Children. *Journal of physical education & recreation* 12/1, 48-54.
- Walters, S. T., & Martin, J. E. (2000). Does aerobic exercise really enhance self-esteem in children? *Journal of Sport and Behavior*, 23, 51-60.



Gueterstrasse 13 - CH - 2502 Biel/Bienne - Switzerland
T +41-32-325 80 80 - F +41-32-325 80 81
www.schwery.com - rolf@schwery.ch