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Sport and Health
- A Review of German Speaking Publications in the years 2008 and 2009 -

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The review comprises German monographs and anthologies as well as articles published in professional journals between the years 2008 and 2009 and ties in with the reviews on 'Sport and Health' published in the 2nd issue of the 'International Journal of Physical Education' in the years 2000, 2002, 2004, 2006 and 2008¹.

1. Introduction: The basics
2. Health related sport: Diagnostic, parameters and characteristics
3. Effects of health related sport
4. Health related sport with children and youth
5. Health related sport with adults and seniors
6. Future perspectives

1 Introduction: The basics

"Sport and health" has become an established topic at sport science conferences and conventions. This can especially be seen with the annual conventions organized by the 'Health Committee'² of the German Union for Sport Sciences (dvs). This committee sets the scientific standards for German speaking sport sciences and represents the continuity as well as the variety in the development of this area of research. Within the time period of this review two annual conventions have been held: In 2008 an independent annual convention with the topic "Sport and Health over a Lifespan" in the city of Bad Schönborn (Knoll & Woll, 2008). Besides the overview presentation held by Willimczik, areas such as the problems, chances and future perspectives related to health promotion through physical activity were discussed in three main presentations and fifteen research group discussions. These discussions were conducted specific to age group (children and youth, adults and seniors) and kept intervention in various settings in mind. The year 2009 carried the motto "Sport and Movement in Health Education", a topic integrated into the program of the 19th dvs Sport Scientific Congress with the theme "Educational Potential in Sport" (Krüger et al., 2009). Aside from the introduction by Kolb on forms of intervention in health promotion, the following topics were debated in four different research groups: "Physical Activity and Physical Motor Performance Ability as a (physical) Health Resource", "Health Education in Rehabilitation Centres", "Health Promotion in Daycares and Schools" as well as "Health Education in Institutes for Adult Education". In addition, the publication to the 2006 convention with a focus on "Rehabilitation: Between Exercise therapy and Disabled Sport" was released during the time period of this review (Wegner, Pochstein & Pfeifer, 2008). That the topic of "health" finds itself time and again as the focus of various sport scientific disciplines is exemplified by the 2008 convention held by the research group "Sport Economy", who's motto was "Economic Perspectives of Sport and Health" (Kähler & Schröder, 2010).

Since a few years ago, several practical oriented professional congresses have taken place, which are especially directed towards kindergarten teachers, grade school teachers, instructors and trainers. Based on scientific evidence, these congresses illustrate the wide spectrum of movement, sport and health and present the corresponding concepts for practical implementation. Exemplary for the age group "children and youth", the congresses in Karlsruhe (recently 'Congress for Children's Exercise' 2009 – Baadte et al., 2009) and Osnabrück (recently the congress in 2009 "Educational Chances through Movement – from early childhood on!" – Hunger & Zimmer, 2010) are worth mentioning, which have built a certain tradition.

¹The following professional journals were examined systematically: 'Sportwissenschaft', 'Sportunterricht', 'Spectrum der Sportwissenschaften', 'Deutsche Zeitschrift für Sportmedizin', 'Psychologie und Sport', 'Sportpädagogik', 'Motorik', 'Prävention', 'Praxis der Psychomotorik' sowie 'Gesundheitssport und Sporttherapie'.

² See also www.dvs-gesundheit.de

The results of a lecture series on “Movement – Education – Health” at the University of Bremen are documented by Kolbert, Müller & Roscher (2009) and serve as a good example for how the topic of “health” can be integrated into a sport scientific education.

A fundamental publication for sport science related discussion within the review period is the professional encyclopedia Sport Medicine (Graf & Höher, 2009), which, in keyword form, comparably offers multidisciplinary general knowledge on movement, fitness and nutrition to doctors, therapists, physical education teachers and trainers

Motology is increasingly taking aspects of movement oriented health promotion into consideration. Späker (2008a) presents considerations on the implementation of the concept “GeWeBe” for health promotion in motology, a concept already developed by Becker in the 1980s. Viewing Motor-Geragogy as a branch of Motology, there are several publications available within this review period on health oriented approaches to health promotion in the setting “seniors home” (see ch. 6).

Dilger (2008) uses a sport-historical classification of the fitness movement and presents the roots, influences and development in Germany, as well presenting a comparison to the USA. The author brings an abundance of interesting historical resources together. However, she limits the representation exclusively to the commercial fitness movement and excludes the meaningful developments of the fitness and health areas in organized sport clubs and associations that have taken place in Germany since the 1970s. Contrary to the expectation, which the title of the band evokes, the analysis of this publication is also limited to the “old” German states and does not touch on the developments of so called ‘Recreation and Recovery Sport’, which unmistakably took place in the former DDR. This impressive work by Dilger is compromised by a few ‘technical mistakes’; for example, that the 6th edition Sport Sciences Encyclopedia from 1992 is used to define central sport related terms, but the 7th newly revised edition (Röthig & Prohl et al., 2003) has been available since 2003(!).

The publications mentioned up to this point address general topics in the area of “Sport and health”. The following chapters will present articles published within the review period, which discuss diagnostic, parameters and characteristics of health related sport (ch. 2), as well as publications discussing the effects of health (ch.3). Population specific publications include health related sport with children and youth (ch. 4), as well as with adults and seniors (ch.5). To close, the future perspectives for sport scientific research will be briefly outlined (ch. 6).

2 Health related sport: Diagnostic, Parameters and Characteristics

Within the review period, several articles were published that discuss questions of diagnostics, as well as determinants of physical activity, i.e. the influencing factors on the individual and collective levels. An overview on the meaning of health related individual development promotion through movement across the lifespan is presented; for example, by Röhr- Sendlmeier (2009). Considering the parameters and characteristics of sport and health, the focus of this review is prevention oriented health related sport. This review, however, also discusses connections to forms of therapeutic sports and therefore, several references are made to assessment processes in the area of neurological rehabilitation (Jobst, 2008; Schwed et al., 2009); for example, for stroke patients (Krewer, 2008).

Huy, Gomolinsky & Thiel (2008) present data on movement induced energy expenditure of adults between the ages of 50 and 70 (also see ch. 5). Based on a poll of 2002 people, 42.5% indicated to expend more than 2000 kcal per week through independent sportive recreation, such as walking or biking and therefore, from a health related physical activity view, exceed the key value: Individuals with an energetic expenditure higher than 2000 kcal/week have been shown to be healthier and demonstrate a more positive health related lifestyle as the individuals who do not expend at least 2000 kcal/week through physical activity. The authors, however, note that the results are subject to falsification, as answers given by the participants in the study could be influenced by social desirability.

Kaeding (2009) gives an overview on the epidemiology of „falls in seniors“ and the health related effects regarding gait disruptions, hip fractures and the loss of functional independence. The data shows that the annual average falling rate in adults over 65 is about 30%. As an individual reaches 80 years of age, this rate increases to 50%. “More than 90% of all falls occur in every day situations, mostly as a result of a mistake while in motion. All studies show a significant correlation between weak muscles and the occurrence of falls” (p.47). The summary of research results put together by Kaeding emphasizes the meaning of movement promotion, especially in maintaining coordination ability and strength of older adults. Based on the findings, Kaeding suggests vibration training as an alternative to the traditional strength training. According to Kaeding, vibration training requires less organizational time and reduces the risk of injury. In addition to Kaeding’s

review, the overview by Schott & Kurz (2008) on risk factors, assessment and prevention of falls in older adults is also mentionable.

In his review, Gerber (2008a) discusses the connection between physical activity and reactions to stress and shows that physical activity can lead to the activation of stress regulating physical functions. Admittedly, the fitness level does not influence the stress reactivity; people with a higher fitness level, however, recover faster from non-physical stressors (p.168).

When planning a health related sport program, it is important to consider if and under which conditions an individual would decide to participate in a health promotive physical activity. Krause (2009) discusses the decision process in health related sport and shows that, aside from the cognitive aspects of 'rational choice approaches' which has been the focus for years, the emotional and volitional components have become more important to scientific research (p.131). Krause addresses in particular the aspects of a free will and its determinancy ("A lot speaks for the fact that we want what we do – instead of doing what we want." p.132) and derives conclusions for the promotion of health behavior.

When it comes to the determinants of physical-sportive activity, endurance training, who's meaning for the physical and psycho-social factors of health has been proved (see e.g. Knoll, 1997; Knoll, Banzer, Bös, 2006) remains the most important training method in health related and rehabilitative sport. In this regard, the publication from Neumann & Frasch (2008) is worth mentioning, which provides an overview of the current research on the meaning of a run therapy in patients with dementia and depression.

Studies on the ability to influence the movement system have become increasing a central topic. Becker & Bös (2009) present results of a survey on stretching habits and injuries in runners. The results show that many runners still have "too little knowledge about the actual effects of stretching" (p.61). As has already been made clear in the previous reviews, articles have also been published within this review period on the meaning of strength training, especially in connection with back problems. In this regard, the overview by Huber (2008), addressing the current research on strengthening processes and back pain, and the study by Reuss-Borst, Hartmann & Wentroch (2008), on the effects of a light training on machines with patients who have chronic back pain, should be mentioned. The ability to influence another physical condition, metabolic syndrome, by using an appropriate strength training program, was researched by Brinkmann et al. (2009).

The journal 'Sportunterricht' dedicates a whole issue to the topic of health stressors in a selected occupational group, namely the 'physical educator' (issue 9/2008). Oesterrich (2008) and König (2008) give an overview on the working conditions and stressors that physical educators are faced with, while Schaarschmidt (2008) identifies stress patterns of teachers as indicators of psychological health. These stress patterns are derived through characteristics of one's work engagement (e.g. occupational ambition), physical resistance (e.g. ability to distance oneself) and emotions that accompany working demands (e.g. experiencing social support), as well as offer approaches for intervention programs (p. 276). The limiting factor of Schaarschmidt's publication is that the meaning of psychological health is not narrowly defined, which makes it difficult in interpreting the findings and discussion points. The article by Kastrup, Dornseifer & Kleindienst-Cachay (2008) goes in a similar direction, in which stress awareness of physical educators is examined in connection with the school form and the given number of physical education classes. In this regard, the authors were able to identify age and gender differences. The importance of the topic "stressors of physical educators" within this review period is also demonstrated in the Study by Miethling & Sohsmeyer (2009), presented in the Austrian journal 'Spectrum of Sport Sciences'. In a questionnaire of 1723 physical educators, the authors could also identify stress patterns by using a cluster-analytical approach and could therefore empirically back up the correlations regarding the socio-biographical variables of age, gender and school form presented by the already mentioned study by Kastrup et al. The four identified stress patterns correspond to the patterns already mentioned by Schaarschmidt.

Publications that exclusively address questions concerning secondary prevention through physical/sportive activity focus, as in the years before, on consequences of lack of movement, such as being overweight and the connected sicknesses of the cardiovascular system. Jüntgen et al. (2009) examined obese adults in regards to the extent of their body concept and were able to demonstrate that obese adults and those with a normal weight show significant differences concerning the evaluation of their outer appearance, as well as the percent body fat. The two groups are in agreement, however, when it comes to the self-evaluation regarding their health, i.e. obese adults perceive their excess weight quite strongly, but do not see it as being a threat to their health. A limiting factor, however, is that the findings are solely based on correlative results.

3 Effects of health related sport

The origin for the conception of health related sport programs is the relevance of physical activity as an affecting factor for state of health and subjective well-being. From this point of view, Bös & Sigmann (2009) examined and proved the acceptance and effect of a health related sport program with slightly overweight women in a sports club. The development of the program is based on a widely accepted model in the German speaking sport sciences, the Model of Qualities in Health Sport and its corresponding Key Goals (Brehm, Pahmeier & Tiemann, 2001), which especially strengthen coherence of the participants for long term health promotive participation in physical activity.

Publications that focus on the area of secondary prevention through physical activity are, as in the past year, concentrated on sickness regarding the cardiovascular system; for example Fautz et al. (2009) on weaknesses of the heart muscle, Edelmann & Pieske (2008) on diastolical heart insufficiency or various studies on metabolic syndrom (e.g. Brinkmann et al., 2009). In this regard, the study by Kemmler et al. (2008) will be looked at closer, which presents results from the "Seniors Fitness and Prevention Study" (SEFIP-Studie) on the influence of a six month physical training on cardiovascular risk factors in older women with metabolic syndrome. Seventy women over 65 years of age were examined in two randomized blind groups, one rehabilitation sport group (n = 33) and wellness control group (n = 37). The rehabilitation sport group received two one hour units of training with endurance, strength and flexibility exercises. In addition, two home training units consisting of 20 minutes were carried out, which were monitored with the use of training journals. The wellness control group received a 10 week wellness program with relaxation and functional exercises, both at a low level of intensity. In the intervention group, the average risk factors associated with metabolic syndrom could be reduced by 10% per person, however, in the wellness-control group the number of risk factors also declined by ca. 4%, even when just observed as a trend. Overall, this elaborately designed, evidence-criteria directed and therefore methodically demanding study shows that with the appropriate training programs, health improvement can take place and, contrary to expectation, demonstrates that also less comprehensive training programs at a lower intensity already lead to physiological adaptation reactions, at least concerning risk factors with a "lower adaptation threshold (e.g. blood pressure)". This is also applies to risk of fractures, as well as the risk of a coronary health sickness (Kemmler et al., 2009; von Stengel, Löffler & Kemmler, 2009). Practical oriented recommendations for the development of a cardiological sports therapy are summarized by Schwan (2009).

Aside from the leading cardiovascular illness observed in the morbidity statistics, other chosen medical conditions and the extent to which they can be influenced by movement and/or sports therapy have been taken into focus, such as von Waschbisch & Mäurer (2008), as well as Tallner & Pfeifer (2008), who discuss the influence of physical activity and exercise therapy in multiple sclerosis. The role of exercise therapy in the treatment of eating disorders is demonstrated by Probst (2008) and the meaning of sport and movement therapies in patients with chronic respiratory lung illness is discussed by Bastian (2009). Baumann (2008) and Graf (2008) present the possibilities of exercise therapy and physical activity in primary and tertiary prevention of tumor conditions, here in particular carcinoma of the mammary and prostate glands. A practical oriented guideline for exercise therapy and sport concerning cancer is presented in the publication by Baumann & Schüle (2008), which proves important tips not only for exercise therapy professionals, but also for doctors and medical personal.

Schwarz et al. (2009) gives an overview on the current research in regards to the effect of sports therapy on somatic forms of pain, i.e. multiple disorders with an unclear medical origin, as well as functional somatic syndromes, such as fibromyalgia syndrome, chronic fatigue or irritable bowel syndrom. Whereas for fibromyalgia syndrome and chronic fatigue several randomized-controlled studies are available and the influence of sports therapy, especially endurance training, is very strongly supported (p.126), there remains a lack of research on the effects of sports therapy concerning irritable bowel syndrome, as well as other multiple somatic forms of pain or discomfort. The review by Schwarz et al. serves as an exceptional overview of sport therapeutic interventions for medical conditions that have hardly been researched in sport sciences. Czepa et al. (2008) also discusses the less researched medical conditions and the extent to which they can be influenced by physical activity. The authors examined the effects of a two year sports therapy program on the joint status and quality of life of patients with a semi-acute to acute Hemophilia, however, they could not prove a significant improvement due to methodical problems in the study.

The roll of movement and sport in addiction therapy is taken into focus in various articles. Diemel et al. (2009) examined the psychomotor ability of young drug addicts at the beginning of therapy and was able to demonstrate that, compared to the control group of non-addicts, the drug addicts had poorer results in the total body coordination, as well as in the self-evaluation of physical and

self-concept. Roessler (2009) and Euskirchen, Kleinert & Walschek (2009) were able to show the effects of sport and exercise therapy in the detoxination process. Roessler's results show not only an improved physical fitness, but also a better body awareness, higher pain sensitivity and a reduced drug intake; whereas Euskirchen, Kleinert & Walschek were able to show short term positive effects on mental well-being. The limitation of both studies is that they are pilot studies and the results need to be tested and proved in a randomized trial-control-group design.

4 Health related sport with children and youth

To the question surrounding performance ability, physical activity and health status of children and youth, several articles have once again been released within this review period. Since the 'First Children Youth Sport Report' (Schmidt, Hartmann-Tews & Brettschneider, 2003) was published in 2003, the 'Second Children Youth Sport Report' (Schmidt, W., 2008) has set the focus on childhood. In this report, studies on the health status of children in Germany are discussed with consideration of social structure discrepancies and the opportunity to participate in sports. A separate chapter addresses the health and motor status of children and discusses in particular the results of the "Motoric Module", a part of the 'National Children and Youth Survey' (KiGGS) conducted by the University of Karlsruhe (Bös, Worth, Opper, Oberger & Woll, 2009). The data on the correlations between sportive physical activity and health are especially meaningful from the view of health oriented physical activity. This data demonstrates that "sportive (highly) active children...although somewhat more fit, are only insignificantly healthier as less active children" (Sygusch, et al., 2008, S. 175). Bös et al. (2008) shows that, since 1975, motor performance ability has decreased in children and youth by 5.5% and 12.5% respectively. Concerning the children's involvement in sport and sport motoric activities, Woll et al. (2008) show that "only 23.2% of boys and 18.2% of girls meet the internationally claimed recommendations for physical activity (60 minutes of activity daily at at least moderate intensity). However, considerable differences exist regarding extreme groups – the inactive children and the highly active children (Bös et al., 2009; Opper et al., 2008). In view of the extensive results reported by the Motoric Module, the article by (2008) is of particular interest. Based on an own set of data from the so called 'Mole-Study', Kretschmer & Wirsching received different results concerning the motor performance ability of children, however only from elementary aged children: These results indicate that "...the average level of motor performance ability of elementary aged children has not decreased in the last 15 years, but a larger dispersion is present at best and that the differences in performance between children is not a result of the movement world itself, rather depends of the way and to what extent children are engaged in physical activity." (Kretschmer & Wirsching, 2008, S. 325). The controversial conclusions from different studies show that concluding statements based on cross-sectional data have only a limited validity and that longitudinal studies are urgently needed, such as the continuation of the nation wide Motoric Module, which has already commenced in longitudinal form.

With their focus on diagnostical questions, Bader & Strüber (2009) present considerations on the development and examination of a motor test battery in the form of a movement story (MoTeBe) for four to six year old children. Although the data for the examination of the test control criteria are not convincing, the form of movement story serves as an interesting approach to integrating test items into a children's world picture and context" (p. 75) and therefore creates in particular for children with developmental delays or disorders an appropriate diagnostic situation.

Schott & Rhode (2009) examined ball skills in children with so called 'developmental coordination disorder' (DCD) and were able to show that they demonstrate a 'lower developmental status in comparison to normal developing children' and in the "...control and manipulation of a ball are at a disadvantage in comparison in younger and same aged peers" (p.25). Schott & Rhode derive recommendations directed towards specific intervention measures in the area of coordination for children with DCD.

Since a few years, there has been a focus in many sport scientific studies on the question of 'learning through movement', which concentrate especially on children and youth in school. In the integration of movement, game and sport in the concept of a 'School in Motion' in the regular school day, it is about considering how to rhythmize the school routine through a conscious exchange between lessons and recreation, phases of concentration and relaxation as a basis of a health promotive overall development of growing children. Within this review period, the publication by Fessler, Stibbe & Haberer (2008) and Haas, Vöth, Bappert & Bös (2009) are to be mentioned. Fessler, Stibbe & Haberer (2008) present the results of a replication study, in which the extent of an often quoted pilot study (Dordel & Breithecker, 2003) in the German sport sciences on improvement of learning and performance ability of children at the primary level could be

replicated and transferred to other school levels and forms. Fessler, Stibbe & Haberer's goal was not to only imitate the reference study by Dordel & Breithecker, rather also to expand the representative study by incorporating more grades (grade 6, 8 and 10). A total of 552 school students from 28 classes were tested (14 treatment classes and 14 control classes). In addition to the 'normal' physical education lessons, the treatment classes received movement breaks and forms of 'Learning in Motion'. Differences in concentration ability were tested and compared to the control classes, which only received the 'normal' physical education lesson. Contrary to the expectation, the results from Dordel & Breithecker could not be replicated and the expansion study also consisted of inconsistent findings regarding the individual grades. Fessler, Stibbe & Haberer note, among other things, the test diagnostical problems (through repetition high learning effect of the concentration test used), as well as the didactical-methodical aspects of the additional movement treatment which were chosen and come to the conclusion that the guaranteed effect of the 'School in Motion' is still unable to be convincingly proved (p.254). The study by Haas et al. (2009) goes in a similar direction, in which in a longitudinal study the effects of daily physical education on cognitive performance in elementary students over a period of four years were examined. The goal of the study was to analyse the correlations of physical activity and motor performance ability, concentration ability, intelligence and academic performance in a sample of 39 students at an elementary school in the German state of Rheinland-Pfalz over their entire elementary time. Whereas for the 21 students in the model class received physical education daily, the 18 students in the control class received the usual three hour physical education per week. With the methodical limitations in mind, i.e. sample size and the comparability of the treatment and control groups, the authors point out better overall results for the treatment group in comparison to the control group. In addition "...a better relation to sport, i.e. a constant and strengthened involvement in sport clubs" (p. 231), as well as a decreased susceptibility to sickness of the students in the model class could be observed. A comparable project, the pilot study "Daily Physical Education at Elementary Schools" is being currently carried out in the German state of Nordrhein-Westfalen, for which Seyda & Serwe (2009) give a preliminary report. Results of the study "School in Motion – Health School Children" carried out at an Austrian elementary school are presented by Greier (2008).

Moesch et al. (2009) present the results of a survey with 1664 Swiss youth aged 12 to 18. This study examined the correlation between engagement in sport and violent behavior mediated through one's state of well-being. However, only weak correlations could be observed. The results make clear that "...sport programs for youth must fulfill the needs of autonomy, competence and social connection in order to mediate and promote mental well-being, which in turn can act as a resource against deviant behavior." (Moesch et al., 2009, S. 55). Gerber (2008b) introduces results of a longitudinal study, which examined the question if physical-sportive resources could curtail negative effects of stress on health related well-being in secondary school aged children (p.252). Within the Swiss BASS-Study, 1183 students were questioned regarding their physical activity, perceived athleticism, stress and health factors, as well as health protective resources. From these students, 281 youth took part in a follow-up survey one year later. This methodically demanding study, which refers to a resource-theoretical approach of a stressful experience, consists of an abundance of interesting results. However, longitudinally "...no substantial influence of increased participation in sports on the experience of stress could be shown." (p. 434). There are indications that "...sportive resources could, especially in periods of less stress, encourage health promotive effects" (moderator effect), although "... only little evidence could be found for the plausibility of an intermediative function of sport between the experience of stress and subjective health" (mediator effect).

Within this review period, several articles were released which, in the context of secondary prevention, focus on various medical conditions in children and youth and the effect of physical activity. In the area of overweight and obesity, the articles by Körner (2008), from a sociological point of view, and by Graf & Starke (2009) and Gruber & Hüls (2009), from a sport medical view, are mentionable. In his article, Körner discusses the phenomenon of the social discussion surrounding the increase of the number of overweight children and shows from a system-theoretical perspective, the constructive character of society's picture of 'fat kids'. Graf & Starke on the other hand, give an overview on the prevention of overweight and obesity in children and youth.

The issue 6/2009 of the journal "Sportunterricht" is dedicated to the topic 'chronically sick children in physical education'. Whereas Hofmann & Schelleckes (2009) give an overview on various forms of chronic illness in school aged children and ministerial guidelines, Schelleckes (2009) shows physical educators the didactic-methodical fundamentals on the integration of these students in the regular physical education class. Becker (2009) outlines these guidelines more in depth by using the example of students with cancer. In contrast, Müller (2009) addresses this topic from the view of the student and, through his interview data of students with a chronic illness, makes quite clear the

importance of the participation in physical education class in regards to the students' self-confidence. Finally, Tiemann (2009) gives an overview on "inclusive" physical education as a form of dealing with heterogeneity, as well as addressing various forms of disability. The article by Ziert (2009) also addresses this topic, in which an orientation is provided for physical educators that face integrating children with type 1 diabetes into their lessons.

From the many articles within this review period offering practical oriented help for developing movement and sport programs, two publications will be mentioned: Firstly, the band by Klaes et al. (2008) on movement concepts for children and youth and secondly, the 'material band' by Graf, Koch & Dordel (2008), in which lesson plan material for health promotion in schools is presented in connection with the study, 'Children's Health Interventional Trial' (CHILT). The material, in the form of index cards, can be variably implemented according to topic (e.g. my body, nutrition, hygiene, health/sickness, recreation behavior) in the regular less plan.

5 Health related sport with adults and seniors

From a sport scientific view, physical activity, fitness and health are being increasingly addressed as central elements across one's lifespan. Hartmann-Tews & Tischer (2008), for example, focus on individual aspects of physical activity over a lifespan. In their qualitative study, the authors examined social interpretive patterns of older adults between the ages of 55 and 75 in regards to physical activity, as well as the subjective process of aging. Summarizing, Hartmann-Tews & Tischer come to the following conclusions: „Whereas positive affiliations predominate in the description of circumstances at a mature age, when dealing with one's own aging process, a focus is placed on decrease of performance and weight gain. Sport is described as healthy and a way to work against aging, level of fitness is evaluated as an action oriented ideal. In societal relationships sport is viewed, also among the older population, as the norm and to varying degrees seen as a social obligation." (p. 39). Thiel, Huy & Gomolinsky (2008) examined the physical activity of people over 50 years of age in Baden-Württemberg with a representative telephone survey of 2002 subjects. 59% of the people questioned indicated to participate in sport regularly and named 'prevention of illness' in particular as the motivation for personal involvement.

Practice oriented publications for health related sport were also released within this review period. In this regard, the band by Buskies & Boeckh-Behrens (2009) on 'Fitness-Health-Training' should be cited, which alongside general knowledge to fitness research, also offers practically relevant information and concrete exercise guidelines. Mentionable are also the previously cited practice oriented articles from the area of Motor-Geragogy (see ch. 1). Schneider (2008a, b) and Späker (2008b) present articles on the possibilities of psychomotoric based programs in senior's homes and Schmidt, D. (2008) describes a holistic form of brain training for seniors, in which several movement exercises are integrated. Tille & Tille (2008) present group games directed towards improving agility and memory in adults over 80 years of age.

6 Future perspectives

In summary, it can be stated that in the past two years sport scientific research in health related sport has been more strongly focused on determinants of health related sport, as well as on the development and examination of health related sport programs. A notable concentration is the area of diagnostic in various age groups. With that, the recommendation to put methodically proved test instruments into use was taken into account. In the future, it will become even more important as before, to secure the quality standards for health related sport programs through the appropriate quality management. With this background, secured health promotive sport programs are an essential building stone when organizing programs and other measures related to health promotion and prevention.

Literatur

- Baadte, S. et al. (Hrsg.) (2009). *Kinderturnkongress Karlsruhe, 26.-28. März 2009*. Landau: Empirische Pädagogik.
- Bader, S. & Strüber, K. (2009). Zauber der Motorik. *Motorik*, 32, 75-81.
- Bastian, K. (2009). Lungensport – eine Chance für Patienten mit chronischen Atemwegs- und Lungenerkrankungen. *Bewegungstherapie und Gesundheitssport*, 25, 6-13.
- Baumann, F.T. (2008). Bewegungstherapie und Sport bei Mamma- und Prostatakarzinom – ein Überblick. *Bewegungstherapie und Gesundheitssport*, 24, 182-185.
- Baumann, F.T. & Schüle, K. (2008). *Bewegungstherapie und Sport bei Krebs*. Köln: Deutscher Ärzte-Verlag.
- Becker, C. (2009). Krebserkrankungen von Schülerinnen und Schülern: Wie gehen Sportlehrerinnen und Sportlehrer damit um? *Sportunterricht*, 58, 203-207.
- Becker, C. & Bös, K. (2009). Dehnen im Laufsport. *Bewegungstherapie und Gesundheitssport*, 25, 58-61.
- Bös, K. et al. (2008). Motorische Leistungsfähigkeit von Kindern. In W. Schmidt (Hrsg.), *Zweiter Deutscher Kinder- und Jugendsportbericht* (S. 137-157). Schorndorf: Hofmann.

- Bös, K. & Sigmann, J. (2009). Akzeptanz und Wirkung von Gesundheitssport. *Bewegungstherapie und Gesundheitssport*, 25, 76-81.
- Bös, K., Worth, A., Opper, E., Oberger, J. & Woll, A. (2009). *Motorik-Modul: Eine Studie zur motorischen Leistungsfähigkeit und körperlich-sportlichen Aktivität von Kindern und Jugendlichen in Deutschland*. Baden-Baden: Nomos.
- Brehm, W., Pahmeier, I. & Tiemann, M. (2001). *Gesund und Fit: Gesundheitssportprogramme für Erwachsene*. Schorndorf: Hofmann.
- Brinkmann, C. et al. (2009). Einfluss von Krafttraining auf das metabolische Syndrom – Bedeutung einer veränderten Muskelmorphologie. *Deutsche Zeitschrift für Sportmedizin*, 60, 394-398.
- Buskies, W. & Boeckh-Behrens, W.-U. (2009). *Fitness-Gesundheits-Training*. Reinbek: rororo.
- Czepa, D. et al. (2008). Haemophilia and Exercise Project (HEP). *Deutsche Zeitschrift für Sportmedizin*, 59, 62-67.
- Deimel, H. et al. (2009). Mehrfachabhängigkeit bei jungen Drogenabhängigen – psychomotorische Ausgangslage bei Therapiebeginn. *Bewegungstherapie und Gesundheitssport*, 25, 240-247.
- Dilger, E. (2008). *Die Fitnessbewegung in Deutschland*. Schorndorf: Hofmann.
- Dordel, S. & Breithecker, D. (2003). Bewegte Schule als Chance einer Förderung der Lern- und Leistungsfähigkeit. *Haltung und Bewegung*, 23 (2), 5-15.
- Edelmann, F. & Pieske, B. (2008). Diastolische Herzinsuffizienz: Diagnose, Therapie und Stellenwert von körperlichem Training. *Deutsche Zeitschrift für Sportmedizin*, 59, 192-199.
- Euskirchen, J., Kleinert, J. & Walschek, R. (2009). Sport- und Bewegungstherapie im Drogenentzug – Auswirkungen auf die Befindlichkeit. *Bewegungstherapie und Gesundheitssport*, 25, 248-253.
- Fautz, G. et al. (2009). Modellprojekt: Körperliches Training und Disease-Management zur Rehabilitation bei Herzmuskelschwäche. *Bewegungstherapie und Gesundheitssport*, 25, 117-120.
- Fessler, N., Stibbe, G. & Haberer, E. (2008). Besser Lernen durch Bewegung? Ergebnisse einer empirischen Studie in Hauptschulen. *Sportunterricht*, 57, 250-255.
- Gerber, M. (2008a). Sportliche Aktivität und Stressreaktivität: Ein Review. *Deutsche Zeitschrift für Sportmedizin*, 59, 169-174.
- Gerber, M. (2008b). *Sport, Stress und Gesundheit bei Jugendlichen*. Schorndorf: Hofmann.
- Graf, C. (2008). Die Rolle der körperlichen Aktivität in der Primär- und Tertiärprävention von Brustkrebs. *Bewegungstherapie und Gesundheitssport*, 24, 186-189.
- Graf, C. & Höher, J. (2009). *Fachlexikon Sportmedizin*. Köln: Deutscher Ärzte-Verlag.
- Graf, C., Koch, B. & Dordel, S. (2008). *CHILT-G Gesundheitsförderung*. Dortmund: Verlag modernes lernen.
- Graf, C. & Starke, D. (2009). Prävention von Übergewicht und Adipositas im Kindes- und Jugendalter – vom Modell zur Anwendung. *Deutsche Zeitschrift für Sportmedizin*, 60, 108-111.
- Greier, K. (2008). Motorische Interventionsmaßnahmen in der Grundschule – eine kontrollierte Längsschnittstudie. *Bewegungstherapie und Gesundheitssport*, 24, 152-157.
- Gruber, W. & Hüls, G. (2009). Ambulante und stationäre Adipositas therapie im Kindes- und Jugendalter. *Deutsche Zeitschrift für Sportmedizin*, 60, 112-116.
- Haas, J., Väh, J., Bappert, S. & Bös, K. (2009). Auswirkungen einer täglichen Sportstunde auf kognitive Leistungen von Grundschulkindern. *Sportunterricht*, 58, 227-232.
- Hartmann-Tews, I. & Tischer, U. (2008). Alter(n) und sportliche Aktivität – auf den Spuren sozialer Deutungsmuster im höheren Lebensalter. *Spectrum der Sportwissenschaften*, 20 (2), 39-58.
- Hofmann, A. & Schelleckes, J. (2009). Chronisch kranke Schülerinnen und Schüler im Schulsport: Ein Überblick. *Sportunterricht*, 58, 176-181.
- Huber, G. (2008). Rückenschmerz und Kräftigungsansätze. *Bewegungstherapie und Gesundheitssport*, 24, 46-50.
- Hunger, I. & Zimmer, R. (Hrsg.) (2010). *Bildungschancen durch Bewegung – von früher Kindheit an!* Schorndorf: Hofmann.
- Huy, C., Gomolinsky, U. & Thiel, A. (2008). Bewegungsinduzierter Energieverbrauch im Zusammenhang mit Gesundheitszustand und -verhalten bei Menschen zwischen 50 und 70 Jahren. *Spectrum der Sportwissenschaften*, 20 (1), 29-44.
- Jobst, U. (2008). Assessment in der neurologischen Rehabilitation. *Bewegungstherapie und Gesundheitssport*, 24, 230-234.
- Jüntgen, L. et al. (2009). Unterschiede im physischen Selbstkonzept bei normalgewichtigen und adipösen Personen. *Zeitschrift für Sportpsychologie*, 16, 140-150.
- Kaeding, T.S. (2009). Stürze im Alter. *Sportwissenschaft*, 39, 45-51.
- Kähler, R. & Schröder, S. (Hrsg.) (2010). *Ökonomische Perspektiven von Sport und Gesundheit*. Schorndorf: Hofmann.
- Kastrup, V., Dornseifer, A. & Kleindienst-Cachay, C. (2008). Belastungswahrnehmung von Sportlehrkräften verschiedener Schulformen. *Sportunterricht*, 57, 307-313.
- Kemmler, W. et al. (2008). Einfluss körperlichen Trainings auf Herz-Kreislauf-Risikofaktoren bei älteren Frauen mit Metabolischem Syndrom. *Sportwissenschaft*, 38, 65-81.
- Kemmler, W. et al. (2009). Körperliches Training und Frakturparameter. 12-Monatsergebnisse der Senioren Fitness und Präventions-Studie (SEFIP). *Bewegungstherapie und Gesundheitssport*, 25, 162-168.
- Klaes, L. et al. (Hrsg.) (2008). *Fit sein macht Schule*. Köln: Deutscher Ärzte-Verlag.

- Knoll, M. (1997). *Sporttreiben und Gesundheit. Eine kritische Analyse vorliegender Befunde*. Schorndorf: Hofmann.
- Knoll, M., Banzer, W. & Bös, K. (2006). Körperliche Aktivität und physische Gesundheit. In K. Bös & W. Brehm (Hrsg.), *Handbuch Gesundheitssport* (S. 82-102). Schorndorf: Hofmann.
- Knoll, M. & Will, A. (Hrsg.). *Sport und Gesundheit in der Lebensspanne*. Hamburg: Czwalina.
- König, S. (2008). Unterrichtsbelastungen für Sportlehrerinnen und Sportlehrer. *Sportunterricht*, 57, 289-293.
- Körner, S. (2008). „Natürlich gibt es dicke Kinder...“ – Beobachtungen zur Konstruktion der Nichtkonstruiertheit juveniler Körperdefizite. *Spectrum der Sportwissenschaften*, 20 (2), 6-20.
- Kolbert, B., Müller, L. & Roscher, M. (Hrsg.). *Bewegung – Bildung – Gesundheit*. Hamburg: Czwalina.
- Krause, S. (2009). Entscheidungsverhalten im Gesundheitssport. *Sportwissenschaft*, 39, 129-136.
- Krewer, C. (2008). Assessment bei Schlaganfall. *Bewegungstherapie und Gesundheitssport*, 24, 235-240.
- Kretschmer, J. & Wirsching, D. (2008). Motorische Leistungsfähigkeit von Grundschulkindern – Fragen, Ergebnisse, Folgerungen. *Sportunterricht*, 57, 320-326.
- Krüger, M. et al. (Hrsg.). *Bildungspotenziale im Sport*. Hamburg: Czwalina.
- Miethling, W.-D. & Sohnmeyer, J. (2009). Belastungsmuster im Sportlehrerberuf. *Spectrum der Sportwissenschaften*, 21 (2), 43-61.
- Moesch, K. et al. (2009). Die Bedeutung von Wohlbefinden im Zusammenhang zwischen Sportengagement und Gewaltverhalten bei Jugendlichen. *Zeitschrift für Sportpsychologie*, 16, 55-64.
- Müller, C. (2009). Integration von chronisch kranken Kindern und Jugendlichen im Sportunterricht. *Sportunterricht*, 58, 168-172.
- Neumann, N.U. & Fräsch, K. (2008). Neue Aspekte zur Lauftherapie bei Demenz und Depression – klinische und neurowissenschaftliche Grundlagen. *Deutsche Zeitschrift für Sportmedizin*, 59, 28-33.
- Oesterreich, C. (2008). Arbeitsbedingungen von Sportlehrkräften. *Sportunterricht* 57, 282-288.
- Opper, E. et al. (2008). Wie motorisch leistungsfähig sind aktive Kinder und Jugendliche in Deutschland? *Motorik*, 31, 61-73.
- Probst, M. (2008). Körperliche Aktivitäten und Bewegung – ein bewegungstherapeutisches Annäherungsverfahren bei der Behandlung Essgestörter. *Bewegungstherapie und Gesundheitssport*, 24, 142-146.
- Reuss-Borst, M., Hartmann, U. & Wentrock, S. (2008). Wirkungen eines sanften Gerätetrainings während stationärer Rehabilitation bei Patienten mit chronischem Rückenschmerz. *Deutsche Zeitschrift für Sportmedizin*, 59, 263-267.
- Röhr-Sendlmeier, U.M. (2009). Entwicklungsförderung durch Bewegung: eine lebenslange Perspektive. *Motorik*, 32, 43-58.
- Roessler, K.K. (2009). „Sport macht mich high“. Die Bedeutung körperlicher Aktivität in der Behandlung von Drogenabhängigkeit. *Zeitschrift für Sportpsychologie*, 16, 151-155.
- Röthig, P., Prohl, R. et al. (Hrsg.) (2003). *Sportwissenschaftliches Lexikon*. 7., völlig neu bearbeitete Auflage. Schorndorf: Hofmann.
- Schaarschmidt, U. (2008). Beanspruchungsmuster als Indikatoren psychischer Gesundheit im Lehrerberuf. *Sportunterricht*, 57, 276-281.
- Schelleckes, J. (2009). Chronische Erkrankungen – aus der Sicht von Sportlehrkräften. *Sportunterricht*, 58, 164-167.
- Schmidt, D. (2008). Ganzheitliches Gehirntraining (GGT) für Senioren. *Praxis der Psychomotorik*, 33, 78-84.
- Schmidt, W. (Hrsg.) (2008). *Zweiter Kinder- und Jugendsportbericht. Schwerpunkt Kindheit*. Schorndorf: Hofmann.
- Schmidt, W., Hartmann-Tews, I. & Brettschneider, W.-D. (Hrsg.) (2003). *Erster Deutscher Kinder- und Jugendsportbericht*. Schorndorf: Hofmann.
- Schneider, H. (2008a). Psychomotorik in Altenpflegeheimen. *Praxis der Psychomotorik*, 33, 30-35.
- Schneider, H. (2008b). Psychomotorik mit dementen Altenpflegeheimbewohnern. *Praxis der Psychomotorik*, 33, 145-148.
- Schott, N. & Kurz, A.-K. (2008). Stürze bei älteren Erwachsenen: Risikofaktoren – Assessment – Prävention. *Zeitschrift für Sportpsychologie*, 15, 45-62.
- Schott, N. & Rhode, R. (2009). Ballfertigkeiten bei Kindern mit motorischer Ungeschicklichkeit. *Sportwissenschaft*, 39, 23-34.
- Schwan, U. (2009). Training mit Herzpatienten. Praxisorientierte Empfehlungen für die kardiologische Sporttherapie. *Bewegungstherapie und Gesundheitssport*, 25, 108-116.
- Schwarz, D. et al. (2009). Sporttherapie in der Behandlung somatoformer Beschwerden. Ein Literaturüberblick. *Zeitschrift für Sportpsychologie*, 16, 117-130.
- Schwed, M. et al. (2009). Assessment von neurologischen Gangstörungen. *Bewegungstherapie und Gesundheitssport*, 25, 14-23.
- Seyda, M. & Serwe, E. (2009). Das Pilotprojekt „Tägliche Sportstunde an Grundschulen in NRW“. *Sportunterricht*, 58, 8-13.
- Späker, T. (2008a). „GeWeBe“ – Ein Konzept zur Gesundheitsförderung für die Motologie und Psychomotorik? *Praxis der Psychomotorik*, 33, 23-29.
- Späker, T. (2008b). Begegnung – Das Herz der Psychomotorik im Altenpflegeheim. *Praxis der Psychomotorik*, 33, 220-225.

- Sygyusch, R. et al. (2008). Zusammenhänge zwischen körperlich-sportlicher Aktivität und Gesundheit von Kindern. In W. Schmidt (Hrsg.), *Zweiter Deutscher Kinder- und Jugendsportbericht* (S. 159-176). Schorndorf: Hofmann.
- Tallner, A. & Pfeifer, K. (2008). Bewegungstherapie bei Multipler Sklerose – Wirkungen von körperlicher Aktivität und Training. *Bewegungstherapie und Gesundheitssport*, 24, 102-108.
- Thiel, A., Huy, C. & Gomolinsky, U. (2008). Alterssport in Baden-Württemberg – Präferenzen, Motive und Settings für die Sportaktivität in der Generation 50+. *Deutsche Zeitschrift für Sportmedizin*, 59, 163-167.
- Tiemann, H. (2009). Inklusion – vom Umgang mit Vielfalt im Sportunterricht. *Sportunterricht*, 58, 173-175.
- Tille, H. & Tille, G. (2008). Sport ab 80: Training von Geschicklichkeit und Gedächtnis durch Gruppenspiele. *Praxis der Psychomotorik*, 33, 227-230.
- von Stengel, S., Löffler, V. & Kemmler, W. (2009). Körperliches Training und das 10-Jahres CHD-Risiko bei Frauen über 65 Jahren mit metabolischem Syndrom. *Deutsche Zeitschrift für Sportmedizin*, 60, 281-287.
- Waschbisch, A. & Mäurer, M. (2008). Multiple Sklerose und Sport – der Einfluss körperlicher Aktivität auf das Immunsystem. *Bewegungstherapie und Gesundheitssport*, 24, 98-101.
- Wegner, M., Pochstein, F. & Pfeifer, K. (Hrsg.) (2008). *Rehabilitation: Zwischen Bewegungstherapie und Behindertensport*. Hamburg: Czwalina.
- Woll, A. et al. (2008). Sportengagements und sportmotorische Aktivität von Kindern. In W. Schmidt (Hrsg.), *Zweiter Deutscher Kinder- und Jugendsportbericht* (S. 177-191). Schorndorf: Hofmann.
- Ziert, J. (2009). Jugendliche Typ-1-Diabetiker im Sportunterricht. *Sportunterricht*, 58, 73-78.