

European Initiative for Exercise in Medicine (EIEIM) 4th Congress

18th - 19th September 2015 in Zagreb, Croatia



OPENING SPEECH

18TH SEP; 02:00-02:30 P.M.

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The European Perspective on Exercise is Medicine

1. GERMANY
2. NETHERLANDS
3. PORTUGAL
4. FRANCE
5. HUNGARY
6. SWITZERLAND
7. SWEDEN

- › **The obesity epidemic**, resulting from the combination of inactivity and an unhealthy life style, requires combined global efforts to investigate and implement intervention strategies. This requires new approaches to implement targeted primary and secondary prevention of obesity and promotion of an active healthy life style. In Europe, more than 50% of the adult population is physically inactive with huge variation between countries. Medical doctors play an important role in diagnosing inactivity in their patients and integrating physical activity in their therapeutic concepts. Currently, the practical application is lacking.
- › **The Exercise is Medicine (EIM) Health Initiative** was founded in 2007 by the American College of Sports Medicine (ACSM) to institutionalize the scientifically proven benefits of physical activity (PA) into the US healthcare system. The globalization of EIM now includes all continents and 42 national initiatives. The national initiative's board should include a representative of the country's national sports medicine association and stake holders such as primary health care providers, chamber of physicians, sports science and physiotherapy, public health care and politically responsible bodies. The EIM regional center for Europe is called the "European Initiative for Exercise in Medicine" (EIEIM). EIEIM is a non-profit organization of European task forces and supporting members. EIEIM is managed through a partnership with the German Association for Sports Medicine and Prevention and is based at Ulm University, Germany. In an initial meeting of 18 nations in Cascais, Portugal in 2011 a founding board was determined and eight members signed the founding statutes on June 27th 2013 in Barcelona. Other European countries involved with EIEIM include Austria, Czech Republic, Germany, Hungary, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.
- › **EIEIM is acknowledged by ECSS and HEPA.** Within Europe, researcher and physicians have longstanding achievements in preventive measures and sports medicine. There are 28 European countries within the European Union and Europe contains a total of 50 nations with developed, but also very different health care systems from public health care to private based health insurances. Sports are often organized as club sports in Europe, professional sports providers have grown but have different national importance. EIEIM respects the national autonomy and provides a continental framework for supporting its members. EIEIM is also addressing the European Commission with their Sports Unit in the Education and Culture / Consumer Protection and the European Parliament.
- › **EIEIM has organized** European EIM congresses 2012 in Berlin, 2013 in Frankfurt and 2014 in Budapest, Hungary. The 4th annual meeting is held in Zagreb, Croatia, September 18th-19th 2015. The conference is supported by ISCA and the with the main topic will be: "Cooperation between primary physicians and sports/health care providers". Planning is already underway for the 5th annual meeting which will be held in Copenhagen, Denmark September 6th-7th, 2016 with the topic "The ageing patient, the ageing athlete". There will be future conferences and activities to expand the message within the European countries, to form new collaborative efforts and initiatives, to attract and to link to other professional associations and societies and to generate a European network.

INTRODUCTION

18TH SEP; 02:30-03:00 P.M.

Vuori I¹

Physical Activity Counselling in Primary Health Care; the Challenge

1. FINLAND

- › **The evidence** for the multiple health benefits of physical activity (PA) is strong. However, practice of adequate physical activity is insufficient among the majority of most populations, especially among the clients of the primary health care (PHC). This system has several favourable conditions to advance health-enhancing PA by e.g. counselling those who could gain the most of it. However, counselling is quite seldom practiced. In order to increase and improve PA counselling in PHC we must know the barriers hindering PA counselling, to understand their root causes, and to develop and use effective strategies to lessen the obstacles at all levels.
- › **Obstacles and root causes of PA counselling in PHC:** The most often given reasons hindering PA counselling by individual PHC practitioners are lack of several prerequisites for it such as time, knowledge of PA, training for counselling, materials for learning, education and information, protocols for delivery of the service, system support, resources, and incentives and reimbursement, and the perception of PA counselling as a secondary task and that patients often ignore the advice (Vuori et al. 2013).
- › **These and other barriers** for the scarcity of PA counselling can be found at three levels: individual practitioner, PHC unit, and the PHC system. Some of the obstacles can be eliminated or lessened by individual practitioners e.g. by self-learning and allowing time for counselling, if the practitioner is sufficiently confident on the value of this service and motivated to invest time in doing it. However, the effects of these efforts take place in small scale and are often short-lived. The most important barriers such as lack of opportunities for the needed education and training, materials, fiscal and organizational resources, and incentives for systematically and professionally providing counselling services are on the remit of the functional units of the PHC or the whole PHC system.
- › **The common nominator** and root cause of most barriers for PA counselling is the low priority given to PA and its promotion in the PHC system. If the priority of PA counselling and PA promotion in general would increase, there would be more development of corresponding conditions for providing these services as there are for a variety of established clinical procedures and preventive services that have higher priority (Kottke et al. 1993).
- › **The Challenge:** The great challenge to increase PA promotion and counselling in the PHC is to rise the priority of this service by convincing all actors within the system from individual practitioners to the highest decision makers of the worthiness, feasibility, effectiveness and cost-efficiency of PA counselling in the PHC system in order to fulfil its responsibilities. This challenge can be fully met only by producing strong evidence of all aspects listed above, and by disseminating it systematically in multiple ways.
- › **References**
- › I. Kottke TE, Brekke ML, Solberg LI. Making "time" for preventive services. *Mayo Clin Proc.* 1993;68(8):785-791.
- › 2 Vuori IM, Lavie CJ, Blair SN. Physical Activity Promotion in the Health Care System. *Mayo Clin Proc.* 2013;88(12):1446-1461.

EXPERIENCES IN PRACTICE

18TH SEP; 03:30-04:00 P.M.Verweij LM^{1,2}, Proper KI^{1,2}, Van Mechelen W^{1,2}

Design of a RCT Evaluating the (Cost-) an Occupational Health Guideline to Improve Workers' Physical Activity and Dietary Behaviour in Order to Prevent Weight Gain: the Balance@Work Study

1. DEPARTMENT OF PUBLIC AND OCCUPATIONAL HEALTH, EMGO Institute, VU University Medical Centre, Amsterdam, The Netherlands.
2. BODY@WORK, Research Centre Physical Activity, Work and Health, TNO-VUmc, Amsterdam, The Netherlands

- **Introduction:** The prevalence of overweight and obesity has reached epidemic proportions, also in The Netherlands. Primary prevention lifestyle interventions are effective and feasible within the occupational health (OH) service setting but are hardly being implemented by occupational practitioners, if at all. The aims of this study are to 1) develop, 2) evaluate, and 3) implement a weight gain prevention guideline to be used by OH professionals, focusing on improvements in physical activity and dietary behaviour.
- **Methods:** The guideline is developed according to the template of the Netherlands Society of Occupational Medicine (NVAB) and the Intervention Mapping (IM) protocol and provides clear-cut recommendations to the OH professional how to improve the worker's physical activity and dietary behaviour. The guideline is now to be evaluated among 350 participants in a randomised controlled trial with two arms. OH professionals in the intervention group will apply the guideline at the eligible workers and OH professionals in the control group will perform their usual care. The intervention will last 6 months and will comprise of face-to-face (by means of motivational interviewing) and written information about a healthy lifestyle. Additionally, environmental cues will be used. At baseline, after 6, 12, and 18 months measurements will take place. Primary outcome variables are physical activity, dietary behaviour, waist circumference, and body weight. Secondary outcome variables include general health status, quality of life, and cardiovascular disease risk profile. Sick leave absence and cost-effectiveness will be assessed as well. Multilevel analysis will be performed to compare all outcome measures between the intervention group and the control group.
- **Discussion:** By improving lifestyle, weight gain prevention may be achieved, yielding benefits for both employee and employer. If proven effective, this lifestyle intervention will be implemented on a larger scale within the Occupational Health Services in the Netherlands.

EXPERIENCES IN PRACTICE

18TH SEP; 04:00-04:30 P.M.Bakovič Juričan A^{1,2}

National Policy on Physical Activity and Health Care Related Approaches. Physical Activity Policy and Health Approaches in Slovenia

1. NATIONAL INSTITUTE OF PUBLIC HEALTH, *Prevention and Promotion Programmes Management, Ljubljana, Slovenia*
2. EUROPEAN NETWORK FOR THE PROMOTION OF HEALTH ENHANCING PHYSICAL ACTIVITY, *HEPA Europe*

- **Problem:** Physical inactivity is one of the four leading behavioural risk factors for non-communicable disease (NCD) (1). Increasing levels of health enhancing physical activity (HEPA) requires a national policy framework providing directions and a clear set of actions (2). Development and implementation of any strong policy requires a multi-sectorial collaboration. Evidence-based strategies are needed also in health care related approaches.
- **Methods:** During 2009-2012 the European Network for the Promotion of HEPA executed a HEPA policy study involving seven European countries (Finland, Italy, Netherlands, Norway, Portugal, Slovenia and Switzerland) (2). Data collection was performed by using a HEPA policy audit toll (PAT), which is a standardised instrument to assess national policy approaches to PA and contains 27-items structured into four sections (2). The public health system in Slovenia allows medical doctors and other health workers to act throughout national prevention programs. The national Program for Primary Prevention of Cardiovascular Diseases (NPPPCVD) was implemented in 2002 and is targeting adults (3). It consists of screening, preventive medical exam, laboratory tests and threat assessment performed by general practitioners (GPs), followed by intervention (in the case of more than 20% risk assessment) (3). Non-medication structured intervention (Health Education Program) is performed by specially trained health workers (i.e. nurses, physiotherapists) at 61 Health Education Centres countrywide through individual counselling and workshops (including 2 km walk test and PA workshops) (3). In 2011 a concept of "module practice" was introduced on primary health care level, where specially trained nurses manage NCDs as a part of GP team.
- **Results:** Under HEPA PAT study five countries reported stand-alone HEPA policy and six reported national recommendations (2) (including Slovenia). Evaluation and use of scientific evidence were endorsed but described as weak in practice (2). Slovenia recently decided to develop a joint national strategy to combat NCDs more efficiently, so in August 2015 a National program on nutrition and physical activity for health 2015-2025 was adopted. The main purpose of it is to improve nutrition and PA habits of Slovenian population and to lower the incidence of NCDs (4). Today more than 50% GPs endorse the concept of module practice. 42 659 health education workshops and individual consultations for more than 390 000 adults were performed from 2002 till the end of 2013 (5). Individual workshops and consultations are shown in Figure 1.
- **Conclusions:** It is not easy to bring together successful key components within a national HEPA policy framework. The HEPA PAT study highlighted similarities and differences among participating countries and revealed new opportunities for involved countries and other countries to consider. Efficient health care related approaches towards prevention and management of NCDs should involve empowerment of individuals and communities for a healthy lifestyle. So collaboration and integration of health and other sectors (i.e. education and sports) and non-governmental organisations is urgent for any successful implementation.
- **Acknowledgements:** Special thanks to National Institute of Public Health in Slovenia and all contributors who participated in HEPA PAT study from HEPA Europe Network.
- **References**
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 3. Bakovič Juričan A. Involvement of primary health care physiotherapist in health enhancing physical activity promotion and chronic diseases prevention interventions. In: 16th International WCPT Congress, Amsterdam, 20-23 June 2011. (*Physiotherapy Journal* 2011; Vol. 97, Suppl 1). Amsterdam: WCPT: Elsevier: Physiotherapy Journal.
 4. 'Uradni list Republike Slovenije. Resolucija o nacionalnem programu o prehrani in telesni dejavnosti za zdravje 2015-2025. ULRS, št. 58/2015.
 5. Vrbošek S. Izvajanje Programa svetovanje za zdravje v zdravstvenovzgojnih centrih od leta 2002 do leta 2014. Nacionalni inštitut za javno zdravje, Ljubljana, 2015.

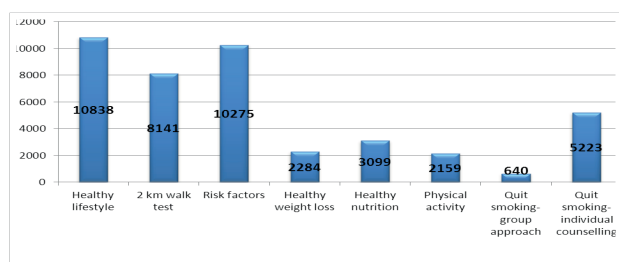


Figure 1

The total number of individual shorter and longer health education workshops and individual consultations in the period 2002-2013. Data source: National Health Insurance Company of Slovenia.

EXPERIENCES IN PRACTICE

18TH SEP; 04:30-05:00 P.M.

Kutnjak Kiš R¹, Uvodić-Đurić D¹, Payerl-Pal M¹, Heimer H², Jurakić D³

Exercise Is Medicine – Experience from Medimurje County Croatia

- 1. INSTITUTE OF PUBLIC HEALTH COUNTY OF MEĐIMURJE, Croatia
- 2. CROATIAN ASSOCIATION FOR FITNESS AND HEALTH, Croatia
- 3. FACULTY OF KINESIOLOGY UNIVERSITY OF ZAGREB, Croatia

- ▶ **Background:** Increasing physical activity has been one of five public health priorities of the Međimurje County Plan for Health since 2004, when as a part of Public Health Capacity Building Program a strategic framework of the county plan for health was made. Since then, many projects aimed at promoting physical activity¹. Five interventions led by the Institute of Public Health County of Međimurje from 2010 to 2015 are here presented.
- ▶ **Interventions for physical activity promotion:** 1) the information program "Together for Better Health!" focusing on physical activity and nutrition intervention in school settings²; 2) an individually adapted health behavioural change program with social support held in the Counselling Centre for Health Promotion, Prevention and Treatment of Overweight and Obese Adults³; 3) Healthy Lifestyle Program, a social support intervention in two rural communities promoting a healthy lifestyle to improve prevention, early detection and control of chronic non-communicable diseases among middle-aged and older adults⁴; 4) NowWeMOVE campaign and MOVE Week promoting sport and physical activity in the community; 5) a systematic approach for linking local healthcare systems (especially PHC) with Sport for All programs and fitness system in the community; the first step was PHC physicians' training (April, 2015), organized by the Institute and Fitness Academy Croatia.
- ▶ The first three interventions included assessment of participants' physical activity levels, exercise prescriptions and education in the form of leaflets and brochures. The second and third interventions also included exercise in organized programs led by professionals.
- ▶ European NowWeMOVE campaign was organized by ISCA in collaboration with European Cyclist Federation and partners from 38 European countries.
- ▶ The Institute has been county coordinator of the MOVE Week since its first edition in 2012, creating partnerships with different sectors to promote sport and physical activity.
- ▶ The fifth initiative aims to create the infrastructure to support the EIM initiative at community and healthcare level. Physical activity promotion is a necessary but underused medical service, since most physicians, nurses and other healthcare providers do not have formal university education on HEPA counselling and referring.
- ▶ **Conclusion:** Adopting the habit of regular physical activity is one of the most important steps that people of all ages can take to improve their health and well-being. The public health sector has a crucial role in the process. Effective evidence-based interventions that can increase the level of physical activity include initiatives based on successful partnerships of the health sector and other sectors and organizations⁵. The Institute has created partnerships with many community sectors but additional efforts are needed to make physical activity and exercise a standard part of disease prevention and treatment medical paradigms. If achieved, this will improve public health and reduce health care costs.
- ▶ **References:**
 - ▶ 1. Kutnjak Kiš R, Bijelić L, Najman Hižman E. Promoting physical activity and active living in the local community through project "Public Health Capacity Building Programme-Healthy Counties"-the example of Međimurje County (Croatia). Bled, Sport Citizens Forum, ISCA, 18-21 Nov 2010
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 - ▶ 4. Kutnjak Kiš R, Uvodić-Đurić D, Bacinger Klobučarić B, Payerl-Pal M, Najman Hižman E et al, 2013. The Strategic Plan for Tackling Health Inequalities in Međimurje County through Health Promotion 2014-2020 (Strateški plan za unapređenje zdravlja i smanjivanje nejednakosti u zdravlju u Međimurskoj županiji od 2014.-2020. godine). Institute of Public Health of Međimurje County.
 - ▶ 5. GW Heath and others. Evidence-based intervention in physical activity: lessons from around the world. The Lancet. Physical Activity, July, 2012.

EDUCATION OF PHC PHYSICIANS

18TH SEP; 05:30-06:00 P.M.

Rakovac M¹

What Primary Health Care Physicians Need to Know on Preparticipation Health Assessment and Risk Classification?

- 1. FACULTY OF KINESIOLOGY, University of Zagreb, Croatia

- ▶ **Physical activity** is associated with many health benefits. Its role in prevention, treatment, and rehabilitation of numerous diseases is well-recognized. Although recommended for all people, engagement in physical activity and exercise programs, especially in previously sedentary individuals, can pose some health risks. Primarily, these include cardiovascular incidents and musculoskeletal injuries. Preparticipation health assessment and risk classification is, therefore, necessary before starting with a physical activity/exercise program. Due to their professional authority and direct contact with patients/potential novice exercisers, the primary health care physicians could play a major role in physical activity promotion and counselling, which obviously should incorporate a preparticipation health risk assessment. According to the guidelines provided by the American College of Sports Medicine (ACSM), the assessment should include screening for the presence of risk factors, signs, symptoms and/or presence of several cardiovascular, pulmonary, and metabolic diseases. Other conditions and/or disorders - such as pregnancy or musculoskeletal injuries - that would require particular attention regarding exercise participation, should also be screened for. Such an assessment provides information needed for subsequent safe performance of exercise testing and safe and effective exercise programming. The physicians should collect information on the patient's health history, family history, their present medical conditions, signs, symptoms and risk factors, as well as current physical activity habits and medications. There are questionnaires available that can help the physicians in collecting the information needed for accurate risk assessment, such as the PAR-Q or the AHA/ACSM Health/Fitness Facility Preparticipation Screening Questionnaire. They can also be self-administered. The cardiovascular disease (CVD) risk factors that should be taken into account are: age, family history of cardiovascular diseases and sudden death, cigarette smoking, sedentary lifestyle, obesity (measured by body mass index or waist circumference), hypertension, dyslipidemia (evidenced by elevated low-density lipoprotein or total serum cholesterol, or low high-density lipoprotein (HDL)), prediabetes (impaired fasting glucose or impaired glucose tolerance). In the risk classification, a person is considered to be at low risk if asymptomatic and having one (or no) mentioned CVD risk factors. Persons at moderate risk are also asymptomatic, but have two (or more) CVD risk factors. It should, however, be noted that a high-serum HDL cholesterol is considered a negative (protective) risk factor and should, if present, be subtracted from the sum of positive risk factors in the risk classification. A person is immediately considered at high risk if he/she has one or more signs or symptoms of, or is diagnosed with relevant cardiovascular, pulmonary, or metabolic diseases. Based on the risk classification, a decision is made on whether: 1) the person should undergo a complete medical exam and obtain clearance before enrolling in an exercise program (depending also on the intensity of the program), 2) a graded exercise testing should be performed before starting with the exercise program, and 3) a medical doctor should supervise the maximal or submaximal exercise testing.
- ▶ **References:**
 - ▶ 1. American College of Sports Medicine: ACSM's Guidelines for Exercise Testing and Prescription, 9th ed. Lippincott Williams & Wilkins, Philadelphia, 2014.
 - ▶ 2. American College of Sports Medicine Position Stand and American Heart Association: Recommendations for cardiovascular screening, staffing, and emergency policies at health/fitness facilities. Med Sci Sports Exerc 1998; 30: 1009-1018.
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 - ▶ 5. Vuori IM, Lavie CJ, Blair SN: Physical Activity Promotion in the Health Care System. Mayo Clin Proc 2013; 88: 1446-1461.

EDUCATION OF PHC PHYSICIANS

18TH SEP; 06:00-06:30 P.M.Börjesson M¹

Recommendations for Exercise Programs and Referring Patients to FC (Green Receipt)

1. SWEDISH SCHOOL OF SPORTS AND HEALTH SCIENCES AND KAROLINSKA UNIVERSITY HOSPITAL, Stockholm, Sweden.

- ▶ **Research question:** Today, few question the evidence on the importance of physical activity (PA) to increase health (1). The great challenge that now remains for the health care-system is to translate this knowledge into clinical practice.
- ▶ Several barriers still exist for PA to be an integrated part of treatment options provided. For example, more evidence on the efficacy of different methods to increase the level of PA is needed. While, methods such as Exercise is Medicine in the US and Europe, Exercise on prescription, in Sweden (2) have emerged in recent years, these need further study. One of the biggest obstacles before was the lack of structural recommendations for exercise programs for different diseases. Furthermore, there was a need for recommendations on how, and when to refer patients to fitness centers and other training facilities.
- ▶ **Results:** When recommending an exercise programme and/or referring to fitness centres, as part of Exercise on prescription in health care (3), the physician should have knowledge of both the potential health effects of PA for a given health condition (4), but also on how any underlying conditions, may affect PA participation and/or influence effects of PA. Referring physicians should give patients advice on the proper (level of and type of) PA for their specific underlying condition, taking barriers and contraindications into consideration. This individual "risk-benefit" ratio of PA is the "core" of any exercise prescription process. In addition, knowledge of exercise testing and PA-assessment (5) is vital for the exercise prescription and its follow-up.
- ▶ Since a few years back, scientifically based recommendations on appropriate exercise programs for different diseases, have been collected in the Swedish handbook, FYSS (www.fyss.se). This book contains 39 chapters with exercise recommendations for hypertension, diabetes, osteoporosis, depression, among many other clinical entities. The book has now been translated into English, and is available for free, on the website. A new version of the FYSS (in Swedish) is now under construction.
- ▶ Overall, education on "Exercise is medicine", including the use of FYSS and on logistics of exercise prescription, will increase motivation and knowledge of health care professionals. Education should start at University level and continue in professional life. Full integration of lifestyle parameters into the medical records of the patients, is an important complement. Furthermore, highlighting scientifically proven methods for increasing PA in the population/patients in national and international recommendations will increase the pressure on the health care system to push implementation further. Many scientific and professional bodies (WHO, IOC, ECSS, EACPR, EFSA, HPH, EIM, ACSM, HEPA and FIMS etc) are now addressing the problem of non-communicable diseases (6). Subsequently, SEM specialists in a number of countries (for example UK, Australia) now are "exercise and sports medicine" specialists. It is important that these professionals will get access to appropriate exercise recommendations and gain knowledge of logistics of referral.
- ▶ **References:**
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 - ▶ 2. Sundberg CJ, Borjesson M. FYSS (Physical Activity Book for Prevention and Treatment)- behavioural change also for the physician? (editorial). *Br J Sports Med* 2013;47:937-8.
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EDUCATION OF PHC PHYSICIANS

18TH SEP; 06:30-07:00 P.M.Heimer S¹

Evaluation of Effectiveness of the EIM Referral System

1. UNIVERSITY OF ZAGREB, Croatia

- ▶ **Introduction:** The "Exercise is Medicine" (EIM) referral system is a relatively new and for health leaders and administration a bit strange approach. While most physicians and even the general population are today aware of the health benefits of physical activity, it is not or just superficially imbedded in the health system and the number of regularly active people in the overall population is not satisfactory. The introduction of the EIM referral system in the health care system is certainly a developmental process, which should be carefully prepared, developed and monitored.
- ▶ **Rationale:** According to the health system general commitment, it is not to expect that the EIM system could be implemented broadly, easily and in the near future. That is why it is important to inform and educate all potential stakeholders, in order to understand and realize the long-term cost-benefit ratio of such an approach. We are convinced that this is a win-win approach for all institutions involved, especially for citizens and patients to whom the prescribed physical activity is "medicine".
- ▶ **Two levels evaluation system:** For evaluation of EIM referral system intervention, it is of practical interest to differentiate two target levels, i.e. the basic level indicators and the higher, epidemiological level. The data from the PHC settings, PA centres and referred persons serve for an insight into the implementation status and successfulness of the basic operative level giving the information to the local health, sport and fitness professionals. Such data obtained from appropriate questionnaires should help them to upgrade their approach and cooperation with local PHC and PA settings. The second group collected and derived from basic data, should give information on the course and successfulness of the strategic approach among the primary health care settings and PA centres, enable a comprehensive analysis and continue managing of the project from higher level coordination boards.
- ▶ **References**
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 - ▶ 2. Pajunen Pia, Rüdiger Landgraf, Frederik Muylle, Anne Neumann, Jaana Lindström, Peter Schwarz, Markku Peltonen (2010). Quality and Outcome Indicators for Prevention of Type 2 Diabetes In Europe – IMAGE. National Institute for Health and Welfare, Helsinki.
 - ▶ 3. Center for Disease Control (2011). Introduction to Program Evaluation for Public Health Programs: A Self-Study Guide.
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POSSIBLE DIFFICULTIES IN PRACTICE

19TH SEP; 08:30-09:00 A.M.

Hartmann H

How to Obtain the Health System for Cooperation

- › **Why do we need common efforts?** According to numerous studies there is convincing evidence, that physical inactivity is a key risk factor for non-communicable diseases and for premature deaths worldwide. On the other hand extensive knowledge about the manifold health benefits of physical activity and sport has been accumulated. In spite of all efforts to promote health enhancing physical activities the level of activity remains unacceptably low.
- › As the health systems are aligned to treat, to cure but also to prevent diseases and the sport sector has a high potential to provide health enhancing physical activities, a close cooperation between the two appears meaningful. But this has failed until now to a large extent.
- › **How to overcome the mismatch between the health and the sport sector?** Different reasons for the mismatch will be identified in both sectors and a signpost for cross-sector cooperation will be outlined in the frame of the German <Health Sport Concept>. This concept is based on one hand on constant efforts of the sport sector to overcome the barriers to the health sector with quality assurance in regard to evidence based exercise programs and a health specific education of instructors. On the other hand it's obvious that the health system improved its consciousness and knowledge about the positive effects of physical activity and sport. Some common actions of the health and the sport sector are proof of a better mutual recognition, such as the quality mark for exercise programs and its recognition through the health insurance companies, the "Exercise Prescription", membership in the <Federal Association for Diseases, Prevention and Health Promotion> or the cooperation with the <German Centre of Health Education>. But even if the progress in recognition and cooperation is obvious, more efforts are needed particularly on the local level. Medical practitioners don't use their authority effectively enough to encourage clients for health enhancing physical activities and a direct cooperation with sport-clubs is rather underdeveloped. It seems to be also necessary to provide physicians and other health practitioners with better education, practical experience and more knowledge about why and how to use physical activity for health.
- › **References:**
- › 1. Academy of Medical Royal Colleges (2015). Exercise: The miracle cure and the role of the doctor in promoting it.
- › 2. Deutscher Turner-Bund (2010). Pluspunkt Gesundheit.DTB. Qualität im Gesundheitssport
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POSSIBLE DIFFICULTIES IN PRACTICE

19TH SEP; 09:00-09:30 A.M.

Jurakic D, Greblo Z

Determinants of Adherence to Physical Activity and Exercise: Brief Overview of Current Knowledge

1. UNIVERSITY OF ZAGREB, Faculty of Kinesiology, Zagreb, Croatia
2. UNIVERSITY OF ZAGREB, Department of Psychology at Centre for Croatian Studies, Zagreb, Croatia

- › **Undoubtedly**, physical activity is essential for maintaining and improving health in the general population. Further, exercise has become an inherent part of prevention and treatment of numerous chronic diseases such as cardiovascular diseases, diabetes, obesity, osteoporosis, etc. Nevertheless, a large portion of the world's population do not meet the physical activity recommendations and among those who join some kind of exercise program, approximately 50% drop out within a few months (4). In order to motivate people to be more persistent in physical activity and exercise programs, in the past three decades researchers have been vastly exploring determinants of adherence to such activities. In one of the first comprehensive reviews of scientific studies, Dishman et al (3) categorized determinants of physical activity and exercise in three groups: personal characteristics, environmental characteristics, and activity characteristics. In the following text, adherence determinants best supported by current scientific literature within each group will be presented.
- › **Among personal modifiable characteristics**, it seems that self-efficacy or belief in personal ability to perform this health behaviour has been one of most consistent determinants of adherence (2). Self-efficacy has been a proven determinant of adherence in population-based community samples, exercise groups as well as in clinical exercise programs. Since, self-efficacy can significantly be improved through proper training and feedback, adequate techniques and methods should be considered when creating physical activity intervention.
- › **Among environmental factors**, social support has been proven to be one of strongest determinants of adherence in both community samples and organized exercise groups. Social support refers to family, friends or spouse support among which the latter seems to be most influential especially in clinical settings (5).
- › With regards to activity characteristics, perceived discomfort based on high intensity of activity seems to be one of major reasons for drop out (1). Moderate intensity activities based on participants' enjoyment in activity may promote adherence to physical activity and exercise.
- › **Studies** of physical activity and exercise adherence are usually based on different behavioural theories among which mostly used are: Transtheoretical Model of Behavior Change, Social Cognitive Theory, Self-Determination Theory, and Theory of Planned Behavior.
- › **References:**
- › 1. Allen, K, Morey, MC: Adherence to physical activity, in: Bosworth H (ed.): Improving Patient Treatment Adherence: A Clinician's Guide. New York, NY: Springer Science+Business Media, LCC., New York, NY, 2010, 9-38.
- › 2. Biddle, SH., Mutrie, N Psychology of Physical Activity Determinants, well-being and interventions (2nd ed). Routledge, New York, NY, 2008.
- › 3. Dishman RK, Sallis JF, Orenstein DR. The determinants of physical activity and exercise. Public Health Rep. 1985; 100(2):158-171.
- › 4. Dishman RK. Overview, in: Dishman RK, (ed.) Exercise adherence: It's impact on public health. Human Kinetics, Champaign, IL, 1988.
- › 5. Woodard CM, Berry MJ. Enhancing adherence to prescribed exercise: structured behavioral interventions in clinical exercise programs. J Cardiopulm Rehabil. 2001; 21(4):201-209.

FROM THEORY TO PRACTICE

19TH SEP; 10:30-11:00 A.M.Steinacker JM¹, Zügel M¹, Wartha O¹, Wirt T¹**The Role of Information and Technology in Exercise is Medicine (EIM)**1. UNIVERSITY OF ULM, *Division of Sports and Rehabilitation Medicine, Ulm*

- › **The obesity epidemic**, resulting from the combination of inactivity and an unhealthy life style, requires combined global efforts to investigate and implement intervention strategies. For a successful health promotion it is important to choose an adequate strategy. EIM primarily focuses on primary care physicians who are responsible for diagnosing inactivity and integrating physical activity in their therapeutic concepts. For the medical doctor, health promotion for patients means to widen their traditional approach to the patient by implementing modern health communication techniques and patient-centered approaches. In this context a change in the social interaction with the patient is necessary, which includes empowering the patient, accepting the patient as an autonomous partner, including the patient in decision making-processes and increasing the patient's health literacy.
- › **Studies have shown** that "bottom-up"-approaches with counselling based on motivational stages and motivational interviewing techniques show more sustained effects than classical "top-down" approaches. The wide use of affordable and easy-to-use modern communication devices like smart phones, tablets and wearable technologies, such as fitness watches and sensors can promote the shift of expert knowledge from the medical doctor to the patient. By using wearables the patient is able to gather more information by accessing medical information easily on the internet. The patient is informed about many bodily functions, which were previously only assessed by medical doctors, such as heart rate, calories burned, activity, step counts, sleep and food intake. There is an increasing number of studies on such technologies, having an impact on patient's behavior, such as step count use on increasing diabetic control and decreasing sitting time (Qiu et al. *Medicine* 94: e1412, 2015). Many effects of new technologies have to be examined further, e.g. how long are the effects sustained for and how do patients deal with the information. However, there are also confounding negative effects like decreased need for walking and increased screen time and sitting, which have to be kept in mind and assessed in future studies.
- › **Nevertheless**, there is a whole new area for medical doctors as information managers, health counsellors to their patients and as distributors of information to other health and exercise specialists.

FROM THEORY TO PRACTICE

19TH SEP; 11:00-11:30 A.M.

Dunaj M

About Fitness Centers (FC) and Their Fffer – Fitness Index™ Project1. FITNESS ACADEMY, *Zagreb*

- › **According to the definition of the World Health Organization (WHO)**, health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Physical health is just one of many defining components of human health. A healthy body (physical health) is one that is not under the influence of pathological effects or diseases. For timely detection, and treatment of detected diseases, it is necessary to perform periodic annual systematic medical examinations. Systematic medical examinations should detect any potential disease and its stage, that shows us if patients are physically healthy or not.
- › **If a disease** or an indication of a future problematic condition is detected during the systematic examination, additional specialist examinations should be included. However, if the systematic examination shows that you are healthy, the question remains: how healthy are you? On what level is my physical health? Physical health level depends on physical readiness to oppose physical load, and can be directed to health fitness or to sport performance.
- › **FitnessIndex™** is a standardized testing protocol, developed by a team of experts from the Fitness Academy and Faculty of Kinesiology from Zagreb, and is assessing the true level of health fitness based on scientific proof. Using the FitnessIndex™ protocol we get the results through which it is possible to express the real health fitness level and determine exercise priorities. The standardized testing protocol is based on the assessment of basic fitness components, which have a direct effect on health and the quality of life. Those components are: body composition, locomotors system functionality, muscular and cardio fitness. After the standardized testing protocol is conducted, results for every component are attained which are then compared with normative data and are evaluated with ratings rated from 1 to 5. The arithmetic mean of results of all components represents the real health fitness level – FitnessIndex™.
- › **If fitness centres** want to offer fitness programs, which are reliable and safe they should be aware of the quality standards. These standards help to raise the client's trust in the services. In order to get the mark for quality standards, fitness centres should meet this criteria: offer programs that are health related, give information about health effects of these programs to there, the space conditions for exercise must be adequate, they must demand physical exam from people with high risks before including them in to their programs, they must recommend programs based on the clients initial state and perform questionnaires about the satisfaction of their clients. Also, the programs that are offered should be health-related, they must have a defined clear goal, programs should have health risk assessment and they need to periodically assess the health related fitness components. The instructors of these programs should be: formally educated with additional education in assessing health related fitness, have a written plan and program for exercise and written instructions for executing the program, be in contact with general practitioners.
- › **Standards** are comprised of: standards for fitness centres, standards for their programs and for their instructors.
- › **References:**
 - › 1. American College of Sports Medicine: ACSM's Guidelines for Exercise Testing and Prescription, 9th ed. Lippincott Williams & Wilkins, Philadelphia, 2014.
 - › 2. American College of Sports Medicine Position Stand and American Heart Association: Recommendations for cardiovascular screening, staffing, and emergency policies at health/fitness facilities. *Med Sci Sports Exerc* 1998;30: 1009-1018.
 - › 3. ACSM's Resource Manual for Guidelines for Exercise Testing and Prescription, Sixth edition, 2009.
 - › 4. ACSM's Health-Related Physical Fitness Assessment Manual, fourth edition.
 - › 5. ACSM's Resources for the Personal Trainer, fourth edition.
 - › 6. Astrand - Vivian H. Heyward, 2006. *Advanced Fitness Assessment and Exercise Prescription*, Fifth edition.
 - › 7. Stuart McGill. *Low Back Disorders: Evidence Based Prevention and Rehabilitation*. Champaign, IL: Human Kinetics, 2002

FROM THEORY TO PRACTICE

19TH SEP; 11:30-12:00 A.M.

Rieger T¹

Create a Supporting Framework in the Fitness Sector to Promote an Active Way of Living

1. EUROPEACTIVE

- › **The European Fitness Sector:** The European fitness sector is a remarkable job market that employs 400.000 people within 46.000 facilities all over the continent. The services provided in fitness gyms and health clubs are characterised by a high degree of intimacy and privacy. In this regard fitness services are quite similar to medical services. Client proximity based on trust is key for health and exercise professionals to achieve optimal results in terms of physical adaptation as well as client satisfaction. Hence, standardization in fitness education and training is relevant due to gain credibility among stakeholders in healthcare. It moreover helps to improve the recognition of industry professionals.
- › **The Sector Qualifications Framework:** The European Qualifications Framework is a common European reference framework, which links countries' qualifications systems together, acting as a translation device to make qualifications more understandable. The classification of the EQF primarily involves learning outcomes such as knowledge, skills and competencies. The European fitness sector, represented by the Standards Council of EuropeActive has already referenced its education on the EQF. Many other sectors have yet not realized, that the EQF is based on a common political decision of the European Union and that it will sustainably form the education in Europe. The current set of educational fitness standards encompasses the complete range of vocational levels (EQF 2-5). The purpose of applying the EQF is to help learners and workers, wishing to move between countries, or to change jobs, or to move between educational institutions in their home country. The procedure of standards development uses a holistic approach. Operators define the occupation (e.g., Personal Trainer EQF-level 4) by setting the title and creating the occupational roles, a separately appointed Technical Expert Group (TEG) composed of four to seven experts, who represent different educational institutions or sector organisations work on the competencies, skills and knowledge, that are needed for the defined occupation. The TEG submits a first draft of their standards framework followed by a thorough external consultation phase in which everyone can participate. The TEG assesses the outcomes of the external consultation. After that EuropeActive's Standards Council evaluates the final version of the standards set. In case of a positive outcome the new standards are published and training providers can then apply for accreditation. The aforementioned procedure is open, transparent and democratic. It leads to a common sector outcome. The label of being accredited by EuropeActive could be seen as a guide for people being interested in fitness education.
- › **References**
- › 1. Deloitte. European Health & Fitness Market. Report 2015. Düsseldorf: Deloitte; 2015.
- › 2. Rieger, T. Customer Service. In Santos-Rocha, R, Rieger, T, Jimenez, A eds. Europe Active's Essentials for Fitness Instructors. Champaign, IL: Human Kinetics; 2015: 1-7.
- › 3. European Qualifications Framework (EQF). EuropeActive Website <http://www.ehfa-standards.eu/?q=node/11> Accessed May 28, 2015.

FROM THEORY TO PRACTICE

19TH SEP; 12:00-12:30 A.M.

Ostojic SM^{1,2}

Exercise Prescription in Obesity: Evidence-Based Medicine and Practical Application

1. BIOMEDICAL SCIENCES DEPARTMENT, Faculty of Sport and PE, University of Novi Sad, Serbia
2. UNIVERSITY OF BELGRADE SCHOOL OF MEDICINE, Belgrade, Serbia

- › **Obesity and overweight: how to cope with a historical pandemic?** Obesity is a major global public health problem. The prevalence of obesity has more than doubled in the past 30 years [1]. Various medical procedures have been developed with the aim to prevent or manage obesity and overweight yet many are ineffective and short-term, particularly for those who are morbidly or recurrently obese [2]. Among others, physical activity might be an important factor for maintaining a healthy body weight, and an essential formula in the management of obesity in both children and adults. Clinically meaningful exercise prescription in the management of obesity should match individual characteristics of specific patients (such as age, gender, the degree of obesity or comorbidities) with continuous monitoring of physiological outcomes during exercise (e.g. heart rate response, rates of perceived exertion, oxygen uptake) rather than duration of exercise or mileage only [3]. Exercise intensity seems to be a key element in the long-term exercise prescription for obesity treatment and control.
- › **Effectiveness of exercise for weight management.** An effective exercise program for obesity management initially includes aerobic walking or non-weight bearing activities (e.g. cycling, swimming) for 10 to 20 minutes, at moderate intensity (40 to 59% of heart rate reserve) and slow progression in duration and intensity. In addition, resistance training might be advantageous when administered for 2 or 3 days per week, with an intensity of up to 15 repetitions per exercise set during 30 minutes, involving two sets per major muscle group with minimum of 1 min rest between sets [4]. Benefits of exercise in the treatment of obesity encompass maintaining of lean body mass during weight management program, a decrease in body weight (~ 2 kg for 6 months) when used as a single treatment, and additive effects of exercise when combined with a dietary intervention. It seems that exercise for obesity management prevents the weight regain yet minimal effects were seen when the program is shorter than 4 months. A higher exercise volume (> 300 min of exercise per week) augments program results [5]. Finally, beneficial effects are observed when one exercises at home as compared to a fitness club, with optimal effects being noted with several short exercise bouts per day (e.g. 3 x 10 min). There is a strong evidence available that individually tailored exercise program offered to obese individuals can help reduce body fat as well as protect against chronic diseases associated with obesity [4].
- › **References:**
- › 1 Ostojic S et al. J Health Popul Nutr. 2011;29(1):53-60.
- › 2. Barlow SE et al. Pediatrics. 1998;102(3):E29.
- › 3. Looney SM et al. Health Serv Insights. 2013;6:15-31.
- › 4. Pinet BM et al. Obesity (Silver Spring). 2008;16(9):2088-95.
- › 5. Laddu D et al. Nutr Clin Pract. 2011;26(5):512-25.