



“Knowledge Hub on the Euro-Mediterranean region”

REPORT from the workshop

EVENT: Applied science and technology supporting healthy and active lifestyles in the Euro-Mediterranean region

LOCATION and DATE: Grand hotel Bernardin, Portorož (Congress Centre),
7th – 8th October 2019

SCIENTIFIC COORDINATORS: Dr. Rado Pišot, Dr. Boštjan Šimunič, Dr. Saša Pišot

Brief info about the background and purpose of the workshop:

In 1998, the European Commission realized that there was scarcity of data about diet and physical activity in children and adolescents and their repercussion on health. Following that, the initiative for several programs calls in the 6th and 7th Framework, but even in the Erasmus (+) Comenius, national and other Programs, was created. Besides creating a scientific corpus that was missing, the aim of these initiatives was also to help establish the positive attitudes towards healthy and active lifestyle. In the frame of named initiatives, the need of review of the state of the art in some Euro-Mediterranean countries was taken into consideration with an emphasis of using applied science and technology in supporting healthy and active lifestyles in the Euro-Mediterranean region.

The MEDHUB designed the present workshop with the ambition of adjusting the EU ambition in the Euro-Mediterranean context with applicability beyond the EU member states. The workshop brought together an eminent group of scientists and experts with knowledge of most recent data from cross-sectional, longitudinal and intervention studies. It intended to provide a platform for a discussion on how the most up-to-date knowledge can be translated into the recommendation to teachers improving their curricula and those planning to develop new curricula. The purpose of the workshop was to create a knowledgeable community of scholars, teachers and other relevant stakeholders, and take advantage of school and other educational institutions to be used as best intervention environments for children, adolescents and educators.

Additionally, the purpose was also to suggest new ways of adopting and renewing academic curricula of Euro-Mediterranean studies, from the point of improved healthy and active lifestyle behaviour.

Description of the workshop:

The MEDHUB event was composed of 3 large (half-day) panels that provided the opportunity to engage with the state of art knowledge and a roundtable that sought to flesh out some concrete recommendations in a dynamic discussion among the experts. The MEDHUB events were integrated into the larger conference titled “Child in motion” to benefit from the concentration of the target audience. This was composed of researchers, physical education (PE) teachers, preschool teachers, classroom teachers, kinesiologists, physiotherapists and pre- and post-graduate students, coming from Slovenia, Italy, Croatia, Germany, Cech Republic and Serbia. Overall, the conference was attended by over 230 participants in 2 consecutive days.

The MEDHUB event benefitted from participation of 14 speakers and lecturers from 7 European countries / nationalities (Spanish, Portuguese, Egyptian, Italian, Slovene, Croat, German). These were:

- **dr. Irena Rogelj** (Faculty of Biotechnology, University of Ljubljana, Slovenia);
- **dr. Vincezo Marco Narici**, (Department of Biomedical Sciences, University of Padua, Italy and SRC Koper, Slovenia),
- **dr. Sanja Šalaj** (Faculty of Kinesiology, University of Zagreb, Croatia);
- **dr. Marcela González-Gross** (Faculty of Physical Activity and Sport Sciences-INEF, Technical University of Madrid, Spain);
- **dr. Anita Hökelmann** (Institute of Sport Science, University of Magdeburg, Germany),
- **dr. Maha Mahmoud Shafik Ebeid** (Faculty of Physical Education for girls, Alexandria University, Egypt);
- **dr. Sandra Pais** (Centre for Research and Development in Health, University of Algarve, Portugal);
- **dr. Vladimir Ivančev** (Faculty of Kinesiology Split, University of Split, Croatia),
- **dr. Elke Knisel** (Department of Sport Pedagogy and Sport Sociology, Faculty of Humanities, Otto von Guericke University Magdeburg, Germany),
- **dr. Jernej Završnik, MD, prim.** (Public Health Center Adolf Drolc Maribor, Slovenia),

- **dr. Primož Kotnik, MD** (Department of pediatrics, Faculty of medicine, University of Ljubljana, Slovenia).

The introductory lectures were chaired by **dr. Rado Pišot**, **dr. Boštjan Šimunič** and **dr. Uroš Marušič** (all from Science and Research Center Koper, Slovenia).

The expertise of the invited participants lies in various aspects of child's physical and motor development. The lectures and additional discussions of the MEDHUB project were attended by 181 participants from 11 different countries (Slovenia, Croatia, Serbia, Bosna and Herzegovina, Egypt, Russia, Spain, Germany, Italy, Slovakia, Portugal).

Summary of the workshop:

The aim of the panels was to present state-of-the-art projects, publications and findings, and emphasize the main problems and knowledge gaps related to the topic of Healthy lifestyle paradigm.

The first panel offered us a scientific view on importance of the multidisciplinary approach in early child physical development which started yet with the mother's health before and during pregnancy. The speakers presented novel approaches of the follow up study »My-Milk and »My-Milk-2 in the frame of early NUTRI-PROTECT research project (ARRS L3-8213). Early factors were defined by both maternal and infant parameters and new scientific approach to study microbiota to fully understand the impact of food and interaction between food with physical activity on child development on individual level. Project »My-Milk-2« gained new data on dietary habits, nutritional and health status of Slovenian children. The results will be an excellent basis for developing new dietary guidelines and suitable nutritional interventions for the population of children in order to prevent/treat certain chronic non-communicable diseases and their complications, including overweightness and obesity.

The second panel discussed the critical stage in child development, early childhood (2 to 6 years of age). Parents as well as educators should increase the quality of physical practice and teaching modalities in early childhood settings and provide opportunities, encouragement and support in motor skill development. To increase the quality and quantity of physical activity and exercise some propositions were discussed:

- School and kindergartens are the best intervention setting for children/adolescents; therefore, institutionalized programs need to be developed on national levels
- To start and reinforce the collaboration between PE teachers and pediatricians (in the level of PE as prescription and recommendation)

- Young people need a role model to be active (famous athletes, sports teams' initiatives as a promotion as a sports day, mass sports events);
- Create a school for parents to teach them about healthy lifestyles and parenting styles;
- Reinforce activities with families of medium-low socioeconomic-cultural background;
- More research is needed regarding Euro-Mediterranean physical activity and dietary habits and about the effectiveness of intervention protocols in this environment.

In the roundtable the speakers tried to synthesize and highlight the problems and gaps within and outside the Euro-Mediterranean region on the topic of health, physical activity and nutrition encompassing healthy lifestyles in the study programs and academic curricula. Again the most acute problems of rises of inactivity level of children and adolescent population, the insufficient and unadopted dietary standards for children and adolescents, the need of shifting the inactive habits we inherited, were exposed. The afternoon panel engaged with the problem of socio-economical as well environmental factors of physical activity/exercise and education in different Euro-Mediterranean regions where the inherited non-sports or non-active habits due to agricultural and demographic history of the Mediterranean region. Additionally, speakers exposed also the problems of early youth sports specialization and its impact on children' and adolescent's health. The risk of unhealthy diets in some sports (gymnastics, combat sport where weight is relevant) and over trained young athletes (risk of injury) was exposed together with the need of professional and ethical approach with the team of coaches, physicians, kinesiologists, physiotherapists and nutritionists when the young top-level athletes are involved.

Recommended *materials and resources* related to the themes of the workshop:

- WHO Global recommendations on Physical activity for health available on: https://apps.who.int/iris/bitstream/handle/10665/44399/9789241599979_eng.pdf;jsessionid=C64942000CF4C86FA73DBA42B7EB01DF?sequence=1
- A number of national recommendations, for example in Slovenia: Kako skrbimo za svoje zdravje? Publikacija NIJZ, dostopna na/ available on: https://www.nijz.si/sites/www.nijz.si/files/publikacije-datoteke/kako_skrbimo_za_zdravje_splet_3007_koncna.pdf
- Jonatan R. Ruiz, Francisco B. Ortega, David Martínez-Gómez, Idoia Labayen, Luis A. Moreno, Ilse De Bourdeaudhuij, Yannis Manios, Marcela Gonzalez-Gross, Beatrice Mauro, Denes Molnar, Kurt Widhalm, Ascensión Marcos, Laurent Beghin, Manuel J. Castillo, Michael Sjöström, on behalf of the HELENA Study Group, Objectively Measured Physical Activity and Sedentary Time in European Adolescents: The HELENA Study, American Journal of Epidemiology, Volume 174, Issue 2, 15 July 2011, Pages 173–184, <https://doi.org/10.1093/aje/kwr068>

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Recommended *teaching methods* for fostering the desired skills and attitudes:

Comprehensive, systematic, evidence-based health education should be used for behavioural change that emerged after IT revolution era that brought us new evidence, data as well as changed our habits and motivations. The proposed teaching methods are:

- To ensure the active participation of students to experience scientific concepts the **hands-on learning teaching method** is proposed. That mean active participation in real-world problem-based learning with the collaboration of local industry (learning skills to work with big data, development and test of IT technology in the field of health), local entities and society (active participation in initiative for promotion Healthy lifestyle such as: sport events, programs for deprivilege groups, etc.);
- In praxis the **Role Play** as innovative teaching method where students can be intellectually and physically involved through activities while learning can be used in vertically and horizontally collaboration with different professions working in the field of health;
- **Active participation** of students as openminded and collaborative approach at our work and decision-making process should be ensured;
- **Creative and innovative seminars of students and professors with health practitioners and industry** to develop real solutions in different fields (e.g. ergonomics, kinesiology and physiotherapy diagnostics, sport equipment, training methods, fitness and wellness, etc.)

The *recommendations for policy-makers* of workshop:

An EU regulation 282/2014 dictates that EU member states should empower people to take an active role in managing their health, increase their physical activity, and support innovation and new services that have an impact on health and reduce inequalities in health. This should be followed by national implementation plans for promoting healthy citizens and the healthy lifestyle paradigm, and the responsibilities of national institution and policy should be made clear.

Guidelines for healthy citizens in the healthy lifestyle paradigm could include concrete tasks and responsibilities for the national education system, local communities and other stakeholders in advocating and promoting social responsibility in the areas off: promoting healthy lifestyle and its characteristics (nutrition, physical activity/exercise and preventing risk for health habits).

The importance of physical activity for several health outcomes should be further promoted. This need was especially emphasized in July 2012, when The Lancet announced a pandemic of physical inactivity and a global call of action to prevent increasing youth overweight and obesity in the overall European countries. The prevalence and consequences of sitting is reflected in the fact that physical inactivity progressed from the 7th to the 2nd place among the factors of overall mortality, and thus become an important health care factor. This is strongly followed by increased number of overweight and obese adults as well as children in every EU country. Furthermore, the interaction of both, the obesity and high sitting time, is a syndrome leading towards serious health consequences.

The guidelines need to include possible actions to be active in a world that favours inactivity and sedentarism and not want to give up advantages of technology. Therefore, the challenge is also to create the guidelines on how to use technology for being active especially for youth population.

Existing practices on the level of preschools / kindergarten intervention on national level (“Healthy kindergartens”¹, “Active transport to school”², Healthy lifestyle model in primary school³(Slovenia) „Healthy Living“ and “Petica”⁴ (Croatia) supported by national level (government, ministry) show that the adoption of healthy life style education could start in the early age of a child and it can encompass all family members. This is a potential for full participation of all family members. As a good practice it could be promoted in a broader scope to all characteristics encompass healthy lifestyle paradigm through national programs. Other good practices involve national promotion of local food (olive oil, fruits...) and promotion of local natural possibilities for sports and physical activities (Mediterranean climate, sea, sport

¹ National program “Health in Kindergarten” a program for health promotion program in kindergartens of the Ljubljana Health Region started in 2006 which was later expanded and is now successfully implemented by the National Institute of Public Health together with kindergartens across Slovenia, more on <https://www.nijz.si/sl/zdravje-v-vrtcu>

² Project Aktivno v šolo / Active transport to school is a project for promoting an active path to school as a measure by which education of healthy lifestyles is made indifferent by connecting municipalities, primary schools, parents and children. The program is co-financed by the Ministry of Health of the Republic of Slovenia and is part of the Good Run Slovenia's efforts for more exercise and healthier eating, more on <http://www.aktivnovsolo.si/o-projektu/>

³ Model Zdrav življenjski slog v osnovni šoli (od 2007-2013) more on: http://www.zdravjevsoli.si/index.php?option=com_content&view=article&id=30&Itemid=27

⁴ “Petica” -igrom do zdravja (“FIVE” - with a play towards to health. The goal of the program is to prevent obesity in school-age children (second through fourth grade) and their parents, as well as to educate the public on proper eating habits and the importance of regular exercise. More <http://www.petica.hr/sto-je-petica/>

tourism). Additionally, national promotion campaigns can target the change of the people's mindset, for example active commuting to school and workplace. There is also another open space while Mediterranean climate offers all year outdoor activity, for (additional) funding of infrastructure to ensure and promote outdoor mass physical activity (playgrounds, activity parks, open fitness, running/walking paths and bike lines...)

The recommendations on development of new curricula at universities or of reforming existing curricula of workshop:

The exposed problems (increasing obesity, physical inactivity or sedentary habits) and gaps in the knowledge (unavailable and unreliable methods for assessing physical activity, fitness and nutritional status, lack of knowledge on microbiota, , lack of standardized reference values for children and adolescents, need to understand interaction between climate, specific diets and sport or physical exercise) within and outside the Euro-Mediterranean region on the topic of health, physical activity and nutrition encompassing the Healthy lifestyles at the panels and round table could be partly overcome through the following recommendations on the development of new or reforming existing study programs and academic curricula:

- There is the need for the re-development of the study programs for preschool, classroom and physical education teachers, titled healthy lifestyle. It is important to not only address fitness, motor abilities and sport goals, but also educational and health goals. Therefore, we propose to promote healthy lifestyle paradigm in the preschool, primary and secondary school curricula.
- The students of university physical education programs (the future physical education teachers at primary and secondary schools) must be provided with better knowledge of the positive outcomes of healthy lifestyle paradigm in early childhood and of the fact that healthy lifestyle becomes common family habit for quality of life.
- Universities in all study programs should integrate physically active learning. Not only physical education teachers, also teachers of other courses in primary and secondary schools should harvest benefits of physically active learning for the benefit of health and learning outcomes of their courses. It is widely accepted that our brain and cognition benefits from physically active learning. Therefore, it is a matter of teacher's innovative skills to promote it.

- The environment of the Mediterranean basin is diverse and must be integrated in the curricula. Environmental physiology, diving physiology, nutrition with hydration, protective clothing, ergonomics are state-of-the-art courses of modern university study programs and should be integrated in each study program that educates health practitioners of any kind.
- Diverse Mediterranean culture and physically active behavior promotion should be integrated as different topic in social/humanistic courses. Topics should encompass tradition, sport history and modern sport's paradigm that open new way of rethinking the position of physical activity in every day's life. Proposed topic could be provided in elective courses such as "Physical Activity in the Mediterranean way of life".
- The Mediterranean diet is widely recognized and accepted as a healthy diet, not only limiting to prescribed diet, but rather a general food-based eating pattern, which is marked by local and cultural differences throughout the Mediterranean region. However, nutrition guideline is not enough to change behavior if not connected with lifestyles. Mediterranean diet in combination with lifestyle is an effective strategy to prevent and control non-communicable diseases, which are currently the leading cause of premature death globally (under 65 years of age).
- In such an enriched environment as Mediterranean region, many disciplines prosper. Tourism (in general, but also sport and health tourism), competitive sport, health and sport technologies and engineering it is crucial to close the gap with a close collaboration between all stakeholders. Real-life problems must be dealt hand-in-hand within multidisciplinary teams of experts, educators, students for best solutions and benefits. Innovative technologies and solutions (hardware and/or applications) should be developed and linked to promote health and high quality of life.
- Universities can promote health-related disciplines and support knowledge sharing though establishing closer link with the healthy lifestyle practitioners, athletes and coaches, innovative technologies, researchers through conferences, workshops, study exchange:
 - Mediterranean region is also a popular sport destination for sport camps of athletes from all over the Europe. In parallel, many initiatives arose from assuring athletes dual career that universities should be flexible enough to enable their dual, academic career. Furthermore, athletes spend 2-4 hours per day in vigorous training regimes, the remaining daily time is usually spent sedentary,

putting them in the same risk of non-communicable diseases as in non-athletes. Therefore, we suggest that local universities promote athlete's inclusion in their study programs to allow them an opportunity for parallel development of sport and academic career. Furthermore, the compatibility between excellence in sport and academic career could be promoted among local students and others to promote physical and sport activity.