

Physical Activity Promotion in Health Care Settings: the “Exercise is Medicine” Global Health Initiative Perspective

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Summary

Physical inactivity constitutes the fourth leading cause of death globally. Health systems are being called to respond to the epidemic of non-communicable diseases (NCDs) and help deliver on the promise of prevention approaches. Substantial evidence exists in support of multi-prong physical activity counseling, prescription and referral strategies, in particular those linking clinical and community-based resources, to help increase physical activity (PA) levels. In late 2007, the “Exercise is Medicine” (EIM) initiative was established by the American College of Sports Medicine to institutionalize PA promotion into the US healthcare system. Within two years, representatives from scientific, public health and medical associations of several countries suggested to begin a multinational collaboration to make EIM a global health initiative (EIM-GHI). As such EIM-GHI’s mission expanded to building a global awareness and infrastructure to drive the implementation of evidence-based strategies for PA promotion in healthcare settings. Between 2010 and 2013, EIM has developed a presence in 39 countries and seven EIM regional centers (RC) have been established in North America, Latin America, Europe, Africa, Southeast Asia, China, and Australasia, with each RC responsible for coordinating EIM-related activities in its region. The EIM-GHI has taken a multisectorial approach to establishing EIM National Task Forces (NTF) in each country, to coordinate activities in 5 EIM focus areas: education & training, policy & surveillance, clinical & community integration, sustainability & outreach, and research & evaluation. Each NTF is composed of representatives from a variety of stakeholders from health care and public health, with close collaboration with media and industry partners encouraged. Broad implementation of PA prescription and referral systems as a global standard of care, integrating health care and community PA services, has the potential to improve PA at the population level and to contribute to achieving global targets for the reduction of inactivity and NCD morbidity and mortality.

Keywords: Physical activity, healthcare, counselling, chronic disease, prevention and control

Zusammenfassung

Bewegungsmangel ist weltweit der viertwichtigste Risikofaktor für frühzeitige Todesfälle. Gesundheitssysteme sollten auf die Epidemie der nichtübertragbaren Krankheiten reagieren und Beiträge zu deren Prävention leisten. Es gibt gute Evidenz, dass Strategien der Bewegungsberatung oder -verschreibung helfen, das Bewegungsverhalten zu verbessern – insbesondere Ansätze, die klinische und gemeindebasierte Ressourcen verbinden. 2007 wurde «Exercise is Medicine» (EIM) durch das American College of Sports Medicine lanciert, um Bewegungsförderung im Gesundheitswesen der USA zu institutionalisieren. Nach zwei Jahren schlugen Vertreter von Wissenschaft, Public Health, medizinischen Gesellschaften und mehreren Ländern vor, international zusammenzuarbeiten, um EIM in eine globale Gesundheitsinitiative überzuführen. Die Mission dieser Initiative wurde somit, global Bewusstsein und Strukturen aufzubauen, um die evidenzbasierte Integration von Bewegungsförderung in der Gesundheitsversorgung voranzutreiben. Zwischen 2010 und 2013 wurde EIM in 39 Ländern eingeführt und 7 regionale Zentren wurden eingerichtet, in Nordamerika, Lateinamerika, Europa, Afrika, Südostasien, China und Australien/Ozeanien. Jedes regionale Zentrum ist verantwortlich für die Koordination der EIM-Aktivitäten in seiner Region. Die globale EIM-Gesundheitsinitiative richtete in jedem Land eine nationale EIM Task Force ein, welche die fünf EIM Schwerpunktaktivitäten koordiniert: Ausbildung, Policy und Monitoring, Integration klinischer und gemeindebasierter Ressourcen, Nachhaltigkeit und Reichweite, Forschung und Evaluation. Zu den nationalen Task Forces gehören Vertreter aus Klinik und Public Health, und eine enge Zusammenarbeit mit Medien und Partnern aus der Industrie ist empfohlen. Eine breite Umsetzung der Ansätze von EIM im Sinne eines globalen Standards in der Gesundheitsversorgung sowie die Integration von klinischen und gemeindebasierten Leistungen haben das Potential, das Bewegungsverhalten auf Bevölkerungsebene zu verbessern und damit global zur Reduktion der Last der nichtübertragbaren Krankheiten beizutragen.

Schlüsselwörter: Physical activity, healthcare, counselling, chronic disease, prevention and control

Introduction

Physical inactivity now constitutes the fourth leading cause of death worldwide (WHO 2009), responsible in 2010 for about 5 million deaths, or 9% of the total global premature mortality due to major non-communicable diseases (NCDs) (Lee et al, 2012). Given its high prevalence – a third of the global population does not meet current recommendations (Hallal et al, 2012) – as well as the health and economic burden (Pratt et al, 2012), promotion of physical activity (PA) has recently been selected by health and government authorities as one of the top priority strategies in the global fight against the NCD epidemic (WHO 2013a; WHO 2013b). In this context, health systems around the world are being called to respond and help deliver on the promise of prevention approaches (WHO 2004).

Primary care health systems should play a prominent role to help deliver NCD preventive strategies such as PA promotion (Heath et al, 2012, GAPA 2010, Patrick et al, 2009). Several different strategies have been used to implement PA promotion in the health care settings. Brief PA advice, initiated by the physician or another health care provider, in the context of the primary care setting, has been a commonly used strategy (Simons-Morton et al, 2001). Approaches deploying advice plus written PA prescriptions, behavioral change and follow-up tools, also known as “green prescriptions”, have also been used (Swinburn et al, 1998). As a response to commonly encountered barriers to effectively integrate PA counseling in routine clinical practice, more recent efforts have focused in establishing systems or PA referral schemes where clinicians screen inactive individuals (PA assessment), provide a brief PA counseling/prescription and then refer their patients to community-based PA resources (Murphy et al, 2012, Leijon et al, 2008, Malta et al, 2012).

There is substantial and growing evidence in support of each of these PA promotion approaches, in particular multi-prong PA counseling, prescription and referral strategies linking health care and community-based resources to help increase PA levels (Lin et al, 2010, Williams et al, 2007). For example, a review of 13 trials including brief PA advice and “green prescription” approaches (Pavey et al, 2011), saw small to medium positive intervention effects at 12 months (odds ratio 1.42, 95% confidence interval 1.17 to 1.73). The number needed to treat for one additional sedentary adult to meet internationally recommended levels of activity at 12 months was 12 (C.I. 7 to 33). PA referral schemes in primary care have also shown modest efficacy. In a recent review (Orrow et al, 2012), compared with usual care, follow-up data for exercise referral schemes showed an increased number of participants who achieved 90-150 minutes of physical activity of at least moderate intensity per week (pooled relative risk 1.16, 95% CI 1.03 to 1.30) and a reduced level of depression (pooled standardised mean difference -0.82, -1.28 to -0.35).

The “Exercise is Medicine” (EIM) initiative was introduced to help catalyze the broad implementation of evidence-based approaches to promote PA in health care settings (Sallis 2009, Sallis 2011). In this report, we describe the perspective of the EIM initiative to continued work in this area around the world.

The Launch and Globalization of the “Exercise is Medicine” Health Initiative

EIM (www.exerciseismedicine.org) was cofounded in late 2007 by Ronald Davis and Robert Sallis, presidents of the

American Medical Association (AMA) and the American College of Sports Medicine (ACSM) respectively. EIM’s original mission was to institutionalize the scientifically proven benefits of PA into the US healthcare system. However, within two years of EIM’s US launch and the establishment of an EIM Center (EIMC) at ACSM’s Indianapolis-based headquarters, representatives from scientific, public health and medical associations of several countries had requested that EIMC expand its initial scope beyond the USA and begin a multinational collaboration to make EIM a global effort. Thus, in 2010, the EIMC was renamed the EIM Global Center (EIMGC) and EIM’s mission expanded to one of building a global awareness and infrastructure to implement PA promotion in healthcare settings, with a particular focus on physicians and other health care providers (HCPs). In its initial three year globalization period (2010–2013), EIMGC’s primary strategy was to identify a key country in each of EIM’s designated “regions” in which to establish an EIM Regional Center (RC). The seven RCs are in North America, Latin America, Europe, Africa, Southeast Asia, China, and Australasia. The EIM initiative has also recently been launched in several Middle Eastern countries. Each RC is responsible for coordinating EIM-related activities in its region and, when feasible and appropriate, for supporting the establishment and continued growth of EIM in other countries in its region. The EIMGC and RCs then determined key countries within each region to initially target to launch EIM. Criteria considered included the likely receptivity of a targeted country’s healthcare system to the changes proposed by EIM, and the infrastructure and policies of a targeted country’s healthcare system. This approach has been highly successful in spreading the EIM initiative globally and, by September 2013, EIM has developed a presence in 39 countries.

The EIMGC has taken a multi-sectoral approach to establishing EIM National Task Forces (NTFs) in a country. Each NTF is composed of representatives from a combination of the country’s national primary care and other medical associations (Cardiology, Endocrinology, Sports Medicine, Nursing, Nutrition/Dietetics, Physical Therapy), Physical Education, academic institutions, and when possible, the Ministry of Health or National Public Health Institute. Close collaboration with media and industry partners and leveraging the expertise that they provide in key areas, such as public messaging, has also seen as critical and has been highly encouraged. The EIMGC identified and established a relationship with a key partner institution in each country where the RC and/or NTF was to be based. These institutions were a professional medical/science association, a university, or a prominent medical system.

Whilst the initial phase of the EIM Global Health Initiative (2010–2013) focused on raising awareness for the importance of integrated PA promotion in healthcare and the establishment of NTFs, the second phase of the EIM initiative will revolve around the implementation of the EIM “Solution”. The EIM Solution is, in essence, the integration of clinical healthcare provider services with community evidence-based PA programs. The aim of these two key activities is to embed a physical activity vital sign (PAVS) (Coleman et al, 2012) into electronic medical records (EMRs), to develop a national network of evidence-based community PA programs and resources, and to provide a clinical decision support system linking the two, so that HCPs can provide behavioral PA counseling and refer patients to fulfill their PA “prescription” in the community. It is, however, also essential, that the clinical and

community integration activities are augmented by carefully targeted activities in the areas of policy and surveillance, evaluation, HCP and fitness professional education (<http://certification.acsm.org/exercise-is-medicine-credential>), and media and industry support. Without these additional focus areas, most countries are unlikely to spark the necessary institutional and personal impetus for healthcare systems and HCPs to break the barriers that impede the integration of clinical-community linkages for PA promotion. But these systemic changes have the potential to bring about increases in PA at the population level. Although the EIM Solution will undoubtedly need to be customized to the individual needs of a country, it is likely to provide a useful model on which each NTF can build a platform.

“Exercise is Medicine” throughout the Globe

Africa

The African region faces a unique challenge. Because of its double burden of infectious and non-communicable disease, the EIMGC decided to adopt a different strategy for this region by seeking opportunistic (rather than targeted) partnerships with African countries that judged themselves ready to be part of EIM’s focus on NCDs.

EIM’s RC in Africa is located in Johannesburg, South Africa and managed through a strategic partnership with the South African Sports Medicine association. EIM currently has a presence in Ghana and Kenya. This region’s initial primary focus is on building awareness in, educating, and accrediting healthcare professionals (HCPs) and (health/fitness professionals (FPs), together with EIM-related public health promotion and research coordination.

Australasia

The Australasian RC is located in Brisbane, Australia and managed through a strategic partnership with Exercise and Sports Science Australia. Three key areas of this region’s strategy include PA in healthcare related policy and advocacy, education and training of HCPs and FPs, and PA-related research. The Australasian RC has also assumed a leadership role for PA in the Australian workplace and released “Physical Activity in the Workplace: A Guide” (www.exerciseismedicine.org.au/active-workplaces).

China

The Chinese RC is located in Beijing and managed through a strategic partnership with the International Life Sciences Institute Focal Point in China, based in the Chinese Center for Disease Control and Prevention. China’s initial strategy has centered on education. Physician training courses have been and continue to be conducted at major medical conferences in cooperation with the Chinese Society of Cardiology.

Europe

The RC for Europe based in Ulm, Germany has already formed the “European Initiative for Exercise in Medicine” (EIEIM) an non-profit organization of European task forces and supporting members. 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. European countries involved with EIEIM include Austria, Czech Republic, Germany, Hungary, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom. EIEIM is recognized by the European College of Sports Science and HEPA Europe (Martin-Diener et al, 2014). Within Europe, public health and clinical researchers have longstanding achievements incorporating PA counseling for the prevention and sports medicine fields. Europe has in total 53 nations with a variety health care systems from public to private-based health insurances. In Europe, sports are often organized in club systems and professional sports partners have grown but have different importance in each country. EIEIM respects these country differences and autonomy but provides a continental framework for supporting its members promote PA counseling in the health care settings. EIEIM is also approaching the European Commissions’ Sports Unit in the Directorate General for Education and Culture (DG EAC) and the European Parliament to help advance these goals. EIEIM has organized two European EIM congresses, 2012 in Berlin and 2013 in Frankfurt, in conjunction and with generous support of the German Association for Sports Medicine and Prevention.

Latin America and the Caribbean

The Latin American RC is located in Bogota, Colombia, managed through the EIMGC’s strategic partnership with the University of Los Andes. Other EIM countries within the region include Argentina, Aruba, Brazil, Chile, Costa Rica, Ecuador, Mexico, Paraguay, Uruguay, and Venezuela. This region’s primary focus is on educating and accrediting HCPs through a training course that is offered one weekend per month in Bogota, as well as in other Latin American countries, throughout the year. Special emphasis is being given to educating both primary care and sub-specialists in a “train the trainer” model, because these physicians are key influencers within the healthcare system and are well placed to training other primary care physicians within their geographical locale. The EIMGC and Latin American RC worked with the Aruban Minister of Health and Sports in 2013 to make Aruba the first country to officially adopt the EIM Global Health Initiative as part of a national collaboration (Duperly et al, 2014).

Middle East

Although there is not yet an EIM RC in the Middle East, EIM has been launched in several Middle Eastern countries, including Israel, Kuwait, Lebanon, Turkey and the United Arab Emirates. Initial efforts in these countries are focused on educating and training HCPs how to integrate PA assessment and counseling or referral into healthcare.

Southeast Asia

The RC for the Southeast Asian region is located in Singapore and managed through the EIMGC’s strategic partnership with Changi hospital. Other EIM countries within the region include Indonesia, Malaysia, the Philippines, and Thailand. Similar to the African region, this region’s primary focus is on educating and accrediting both HCPs and FPs, with alternating training courses being held for one or the other constituency every month.

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References

- Coleman K.J., Ngor E., Reynolds K., Quinn V.P., Koebnick C., Young D.R., Sternfeld B., Sallis R.E. (2012): Initial validation of an exercise “vital sign” in electronic medical records. *Med Sci Sports Exerc.* 44 (11): 2071–6.
- Duperly J., Collazos V., Paez C., Donado C., Pratt M., Lobelo F. (2004): Exercise is Medicine in Latin America: training health care professionals in physical activity prescription. *Schweiz. Z. Sportmed. Sporttraumatol.* 62 (2): 38–41.
- GAPA (2010): The Toronto Charter for Physical Activity: A Global Call to Action. Global Advocacy Council for Physical Activity GAPA, International Society for Physical Activity and Health ISPAH (www.globalpa.org.uk).
- Hallal P.C., Andersen L.B., Bull F.C., Guthold R., Haskell W., Ekelund U. and the Lancet Physical Activity Series Working Group. (2012): Global physical activity levels: surveillance progress, pitfalls, and prospects. *Lancet.* 380: 247–257.
- Heath G.W., Parra D.C., Sarmiento O.L., Andersen L.B., Owen N., Goenka S., Montes F., Brownson R.C. and the Lancet Physical Activity Series Working Group. (2012): Evidence-based intervention in physical activity: lessons from around the world. *Lancet.* 380 (9838): 272–81.
- Lee I.M., Shiroma E.J., Lobelo F., Puska P., Blair S.N., Katzmarzyk P.T. and the Lancet Physical Activity Series Working Group. (2012): Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *Lancet.* 380: 219–229.
- Leijon M.E., Bendtsen P., Nilsen P., Ekberg K., Ståhle A. (2008): Physical activity referrals in Swedish primary health care - prescriber and patient characteristics, reasons for prescriptions, and prescribed activities. *BMC Health Serv Res.* 8: 201.
- Lin JS, O’Connor E, Whitlock EP, Beil T.L., Zuber S.P., Perdue L.A., Plaut D., Lutz K. (2010): Behavioral Counseling to Promote Physical Activity and a Healthful Diet to Prevent Cardiovascular Disease in Adults: Update of the Evidence for the U.S. Preventive Services Task Force. 2010 Evidence Synthesis No. 79. AHRQ Publication No. 11-05149-EF-1. Agency for Healthcare Research and Quality, Rockville.
- Malta D.C., Barbosa da Silva J. (2012): Policies to promote physical activity in Brazil. *Lancet.* 380 (9838): 195–6.
- Martin-Diener E., Sonja S., Vuillemin A., van Mechelen W., Vasankari T., Racioppi F., Martin B. (2014): 10 years of HEPA Europe: what made it possible and what is the way into the future? *Schweiz. Z. Sportmed. Sporttraumatol.* 62 (2): 6–12.
- Murphy S.M., Edwards R.T., Williams N., Raisanen L., Moore G., Linck P., Hounsome N., Din N.U., Moore L. (2012): An evaluation of the effectiveness and cost effectiveness of the National Exercise Referral Scheme in Wales, UK: a randomised controlled trial of a public health policy initiative. *J Epidemiol Community Health.* 66 (8): 745–53.
- Orrow G., Kinmonth A.L., Sanderson S., Sutton S. (2012): Effectiveness of physical activity promotion based in primary care: systematic review and meta-analysis of randomised controlled trials. *BMJ.* 344: e1389.
- Patrick K., Pratt M., Sallis R.E. (2009): The healthcare sector’s role in the U.S. national physical activity plan. *J Phys Act Health.* 6 Suppl 2: S 211–9.
- Pavey T.G., Taylor A.H., Fox K.R., Hillsdon M., Anokye N., Campbell J.L., Foster C., Green C., Moxham T., Mutrie N., Searle J., Trueman P., Taylor R.S. (2011): Effect of exercise referral schemes in primary care on physical activity and improving health outcomes: systematic review and meta-analysis. *BMJ* 343:d6462.
- Pratt M., Norris J., Lobelo F. (2012): The cost of physical inactivity: moving into the 21st century. *Br J Sports Med* doi: 10.1136/bjsports-2012-091810
- Sallis R. (2011): Developing healthcare systems to support exercise: exercise as the fifth vital sign. *Br J Sports Med.* 45 (6): 473–4.
- Sallis R.E. (2009): Exercise is medicine and physicians need to prescribe it! *Br J Sports Med.* 43 (1): 3–4.
- Simons-Morton D. and the Writing Group for the Activity Counseling Trial Research Group. (2001): Effects of physical activity counseling in primary care: the Activity Counseling Trial: a randomized controlled trial. *JAMA;* 286 (6): 677–87.
- Swinburn B.A., Walter L.G., Arroll B., Tilyard M.W., Russell D.G. (1998): The green prescription study: a randomized controlled trial of written exercise advice provided by general practitioners. *Am J Pub Health;* 88 (2): 288–91.
- WHO (2004). Global Strategy on Diet, Physical Activity and Health. World Health Organization, Geneva.
- WHO (2013a): Draft comprehensive global monitoring framework and targets for the prevention and control of noncommunicable diseases. World Health Organization, Sixty-six World Health Assembly.
- WHO (2013b): Global Action plan for the prevention and control of Non-communicable diseases 2013–2020. World Health Organization, Geneva.
- WHO Global Health Risks (2009): Mortality and burden of disease attributable to selected major risks. World Health Organization, Geneva.
- Williams N.H., Hendry M., France B., Lewis R., Wilkinson C. (2007): Effectiveness of exercise-referral schemes to promote physical activity in adults: systematic review. *Br J Gen Prac.* 57 (545): 979–86.