

## EDITORIAL

### PRESCRIBING PHYSICAL ACTIVITY AS MEDICINE- THE NEED TO LOOK AHEAD & BEYOND

Culture of physical fitness has been considered important in primitive civilizations; even being imbibed as religious rituals based on dancing<sup>1</sup>. Earliest records from ancient China; 2500 BC reveal recognition of organized exercise, as a formal means of health promotion. Chinese surgeons also suggested exercises modelled on the movement of animals; especially the Tiger, as a means to stay healthy and agile. Kung Fu; the common violent combat connotation is also a form of medical gymnastics like yoga.

The philosophy and ethos of modern medicine mimic many of the principles of Hippocrates<sup>2</sup> and the Greek school emphasizing importance of psychological background to illness, understanding the patient within their own environment and integrating the science and art of medicine. The Greeks also emphasized the importance of physical well-being, fitness and an active lifestyle. Plato defined the Greek ideal of physical and mental health as 'Mens Sana in Corpore Sano'. In Greece, physical activity had always been an integral part of education. Physical health and gymnastic activities were important not only for the youth but had a wider application in healthcare services where exercise was seen as a means of treating disease and disability. Medical treatment included diet, daily exercise, and temperate behavior. Galen (C 200-129 BC) wrote on medicine, philosophy and gymnastic exercises in a major work on health (*De Sanitate Tuenda*). He recognized the considerable benefits of moderate exercise for both body and intellectual health.

During the Roman Empire (up until 500 AD) the health benefits of exercise continued to be recognized. Physical fitness was an essential military skill but was also seen in a more general context. Fitness and health were seen as part of dietetics, a branch of medicine that included regulation of food and drink, exercise and bathing. Roman inhabitants had 159 days of public

holiday annually and much of this leisure time was spent at the baths and stadia<sup>3</sup>. The ruins of the baths of Caracalla (AD 211-17) in Rome contained baths for hot, cold and tepid immersion and two large rooms for exercising.

After the downfall of the Roman Empire and the beginning of the Dark Ages, the Church became a dominant influence. 'Body culture' fell into disrepute and scholarly, monastic aestheticism became more important<sup>4</sup>. Later, the role of sports in British society continued to be dictated by affairs of religion and state, disagreeing with Puritanism.

Sport became more acceptable with the decline of Puritanism in early 17<sup>th</sup> century. The emergence of the public school as a cornerstone of English education once again highlighted the benefits of sports, particularly in education, where sports were seen as a stabilizing influence which offered discipline. With these changing attitudes, sports were not only encouraged for their physical benefits but also for the benefit of the soul, a form of Christian-Judaic morality. Samuel Black, of Newry, County Down (who first described angina in 1794), also noted the beneficial influence of physical activity (PA) and suggested walking as preferable to every other mode of sport, exercise, work activity, and the amateur ethos. During the later part of the nine-teenth century sports became more widely practiced and in the Victorian era there were increasing provisions of open spaces for parks and recreation. Leisure activity became more organized with the development of rules for cricket, rowing and rugby. Early on in 20<sup>th</sup> century when severe exertion was considered harmful, James Mackenzie (1853-1925), a pioneer general practitioner, first described the polygraph and defended intense physical activity in sport and at work.

It is common knowledge that in adults, as little as 10 minutes of moderate PA three times a

day can help to prolong life expectancy, prevent type 2 diabetes, cardiovascular disease, colon and breast cancer, depression, and dementia<sup>5,6</sup> but still around 31.1% of adults worldwide are considered to be physically inactive<sup>7</sup> - along with the related increase in non-communicable diseases and economic costs to health systems<sup>8</sup>. According to the US 2016 National Health Interview Survey, U.S. adolescents and adults spend almost eight hours a day in sedentary behaviors. Approximately 36% of adults engage in NO leisure-time physical activity at all.

There are many ways in which exercise is proven to heal and protect the human body. A lot of these benefits focus on using exercise for depression and other psychological problems and there is research proving that exercise can help many people recover from surgery and serious illnesses. Exercise enhances learning speed by improving concentration and focus. This in turn relieves stress, promotes happiness, heals wounds, clears skin and makes it healthy, and enhances fat metabolism

The **Exercise is Medicine** (EIM) movement aims to make exercise a frequent health prescription and is aimed at changing the way we think about staying healthy and fighting disease.

**Exercise is Medicine® On Campus** (EIM-OC) calls upon universities and colleges to promote physical activity as a vital sign and determinant of health. EIM-OC encourages faculty, staff and students to work together toward improving the health and well-being of the campus community by:

- Making this movement a part of the daily campus culture
- Assessing physical activity at every student health visit
- Providing students with the tools necessary to strengthen and form healthy physical activity habits that can last a lifetime
- Connecting university health care providers with university health fitness specialists to

provide a referral system for exercise prescription.

Physical activity (PA) has long been considered a “best buy” for public health policy<sup>9</sup>. Policy makers have to address the challenge of increasing PA at the population level by integral and intersectoral plans. The plans would include city planning, transport, education, culture, leisure, environmental sustainability, and health system interventions to build societies in which being active is enjoyable, safe, affordable, and valued<sup>10</sup>. Evaluating implementation is important in order to gather evidence on how to best implement large-scale, universal, and sustainable PA-promoting interventions<sup>11</sup>.

The RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, Maintenance) has been designed to assess the health impact of health promotion interventions and programs, in an effort to translate research into practice<sup>12</sup>.

An interesting recent evidence based research being translated into public health practice and integrated into universal health System is Physical Activity, Sports, and Health Plan initiative (PAFES) implemented in Catalan; (Spain; 2005-2015). PAFES’s main goal is to increase the proportion of adults complying with PA recommendations (especially those with cardiovascular risk factors). At primary health care (PHC) level, this included following a clinical guideline for increasing PA, based on a motivational approach<sup>13</sup>, and Prochaska’s model of health behaviour change<sup>14</sup> adapted to physical activity behaviour<sup>15</sup>. This required inclusion of training strategy besides identification of local resources like “healthy routes” and PA programs used as assets to support PA advice given by the PHC team.

Evaluation of scaled-up PA interventions is important in order to increase practice-based evidence on effective PA promotion and tackle the global pandemic of population inactivity. Changes in priority and investment in health promotion programs affect reach, adoption, and effectiveness by strongly embedding Physical

Activity promotion as a Bonafide prescription in the healthcare delivery system.

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