

Physical Activity for Health: Evidence, Theory, and Practice

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Physical activity, including exercise, is widely recognized as one of the key health behaviors for maintaining health and enhancing quality of life for all age groups. The public health significance of physical activity has been well documented in comprehensive evidence-based reviews and recommendations [1,2]. Physical inactivity ranks fourth among the risk factors contributing to global mortality in high and middle income countries. Closely tied to physical inactivity are problems of overweight and obesity, once regarded as Western phenomena, but now becoming increasingly prevalent among Asian countries as well [3]. With rapid urbanization and the amenities of modern life, sedentary lifestyles have pervaded society.

Against this backdrop, it is timely that a scientific meeting entitled 2011 International Conference of Exercise for 3Q: Health Quotient, Emotion Quotient, and Intelligence Quotient, was held in Taipei, Taiwan on October 5-7, 2011. It was organized by National Yang-Ming University, National Taiwan Sport University, and Taiwan Health & Fitness Association. The Ministry of Education and Executive Yuan's Department of Health and Sports Affairs Council sponsored the event.

Several distinguished researchers from Germany, Finland, Japan, and the United States were invited to present their studies. At the end of the conference, the organizers and participants agreed that the presentations would be of interest to

a wider scientific audience. The Journal of Preventive Medicine and Public Health was asked to serve as a channel to disseminate the findings. The project took over a year, with the authors required to prepare and submit their work, followed by independent peer reviews and revisions. This process culminated in the following seven selected papers, covering a wide range of topics on exercise and health.

As the subtitle "3Q" of the conference suggests, exercise has multiple health benefits. Two papers present current evidence of the effects of exercise on physical and mental health. Miyashita et al. [4] addresses physiologic benefits of accumulating exercise, that is, multiple short bouts (lasting about 10 minutes in length) of exercise, in lowering postprandial lipaemia and potentially reducing the risk of cardiovascular diseases. As the authors suggest, this finding may be particularly relevant for people engaging in intermittent occupational activities and older adults who face difficulty participating in long bouts of physical activity. Zschucke et al. [5], through a systematic review of clinical trials, summarizes current evidence on the therapeutic effects of exercise interventions for patients with mental disorders, such as depression, anxiety, substance use, and cognitive impairment. With increasing public interest in maintaining cognitive health, Kawashima [6] reports on a timely clinical trial of daily cognitive training, involving reading and arithmetic tasks, among healthy older people living in the community and those institutionalized with dementia. Significant improvements in speed of processing and executive function were demonstrated in the study.

In practice, it is important to motivate people to participate in physical activity and exercise on a regular basis. Gill et al. [7] appropriately discuss the close relationship between physical activity and quality of life, with physical activity not only en-

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hancing quality of life but quality of life also acting as a key motivator of physical activity. Physical activity affects multiple dimensions in quality of life, not just the physical but also emotional and social aspects, which in turn are thought to motivate participation in physical activity. Williams [8] emphasizes theory that guides practice, and draws from the Sport Commitment and Investment Models to explain lifetime commitment to sport and exercise, mostly determined by enjoyment and personal investment. The environment for physical activity should naturally be fun to foster active participation in sport and exercise.

The last two papers focus on the meaning and practice of exercise in two different population groups, adolescents and older adults. Araki et al. [9] addresses the value of physical activity and participation in exercise for Asian adolescent girls from different ethnic and religious backgrounds. Sociocultural factors, such as conservatism and religious practice, directly affect their participation. Raising cultural competency among health professionals would thus be vital for increasing physical activity among Asian girls. Rantanen [10] explains the importance of promoting mobility among older people to prevent disability and enhance quality of life. With the aging of the population, it is becoming increasingly important to reduce environmental barriers and provide opportunities for older adults to stay active in the community.

Exercise contributes to physical, emotional, and cognitive health in both young and old. The importance of motivating people to participate in physical activity and to persist in it cannot be overemphasized. We hope that this supplemental issue to the journal will help stimulate discussion among researchers and professionals in public health to continue to build up knowledge of the benefits of physical activity and to create an environment and culture favorable to sustained physical activity.

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