Editorial

The scientific interest about the whole-body vibrations exercise (WBVE) has grown along of the time worldwide. WBVE is generated in an individual that in contact with the base of a vibratory platform. In this way, mechanical vibration produced in the platform is transmitted to the body of the individual. This mechanical vibration is a physical agent that is characterized by an oscillatory, harmonic and deterministic motion; and biomechanical parameters, as frequency and peak-to-peak displacement must be well defined to the safety and feasible of the WBVE intervention.

Clinical and experimental studies have been performed to try to improve the comprehension of the effects of the WBVE. Publications have suggested that biological effects due to the would be associated with the tonic vibration reflex and/or to the neuroendocrine responses.

Several important clinical effects of the WBVE have been described, as the (i) increase of the trunk flexibility, strength and power muscle and bone density, (ii) improvement of the quality of life, of the balance and cognition, and (iii) decrease of the pain and the risk of falls. In consequence, WBVE can be used to the improvement of the fitness, treatment of diseases, in rehabilitation program, and, in general, to prevention and promotion of the health.

WBVE has been used as an intervention in various populations, as (a) trained and untrained, (b) healthy and unhealthy and (c) young, adult or elderly. In general, benefits have been reported. Moreover, animals (dog, horse) have been also submitted to the WBVE.

In sports, improvements in the fitness have been described in soccer players, divers, swimmers and combat athletes, athletic throwers, dancers and ice-hockey players.

Several publications have shown investigations with postmenopausal women evaluating the action of WBVE related to the frailty and in the improvement of the bone density and in reduction of the fall risks. Individuals with metabolic syndrome, knee osteoarthritis, chronic obstructive pulmonary disease, diabetes and obesity have had benefits due to WBVE intervention. The rehabilitation of subjects some disability related to diseases, such as cerebral palsy, osteogenesis imperfecta, spinal cord injury, multiple sclerosis, Parkinson disease, stroke using WBVE has revealed the relevance of this intervention. In addition, studies about the applicability of whole-body vibration therapy in intensive care patients have been also reported.

Putting together all the previous considerations, it is very important to highlight the importance of this special issue of the HUPE journal to all the professionals of the Health Sciences that have common interest in the treatment and prevention of diseases, as well as in the promotion of the health.

The readers of this special issue will have the opportunity to verify the possibility of applications of the WBVE in intensive care unit, such as to cardiac surgery postoperative care. In individuals with metabolic syndrome is shown the improvement of the flexibility and the reduction of the pain level. Considering the aging, a significant increase in the muscle strength of the hip adductors and the knee extensor muscles in elderly is also reported. Immediate effects of WBVE on thermal symmetry of the lower legs and ankles of healthy subjects are revealed.

The human cutaneous mechanoreceptive afferents response and the benefit to individuals with knee osteoarthritis of whole-body vibration intervention are reviewed.

In addition, the applicability of WBVE as a new tool in Veterinary Medicine is shown.

Besides all the utilizations of the WBVE, it is possible to point out that this clinical intervention is safe, feasible with relevant cost-effectiveness.

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