



Editorial

Second Joint Congress on Mechanical vibration and technological innovation in health (MEVITIH-2024): Health innovations for evidence-based clinical practice

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Introduction

In this second issue of volume 2 of the Brazilian Journal of Mechanical Vibrations in Biosciences (BJMVB) will be presented publications about technological innovations with different approaches to promote the prevention and treatment of diseases, using the concept of clinical practice based on evidence. In this context, the use of mechanical vibration and other technologies will be discussed as a modality of intervention to be used in the prevention, diagnostics, rehabilitation approaches, among other.

By harnessing the available science, technology, and innovation, the world can face challenges of different natures that can compromise people's health and the balance of the environment. Moreover, the world's population is aging, and people are living with an increasingly longer life expectancy. In consequence, the proper use of science, technologies and innovations will permit having high-quality health systems in the sustainable development goals era that will bring benefits to everyone (1,2,3).

Another consideration is related to the fact that new diseases have emerged in the last years worldwide and has been necessary the integration of various acknowledgments, such as molecular approaches, through the metabolomic, until the use of various technologies with different sources of physical agents and data-driven technologies. In this context, it is relevant to point out the importance of scientific meetings, that may highlight different technologies that can be used in Health Sciences, like the “The 2nd Joint Congress on Mechanical Vibration and Technological Innovations in Health” (MEVITIH-2024).

The correct use the science, technologies and innovations in health, the discussion about these applications and the sharing of this knowledge to promote better practices are important to face the challenges. Furthermore, the comprehensive view of the individual and the discussion on multidisciplinary care favor better practices and results. This will be the aim of “MEVITIH-2024” to promote the acquisition of knowledge and discussions related to best practices based on evidence and on the evidence that can favor best practices, with a comprehensive and multi-professional view. The MEVITIH-2024 will bring together the activities of "The 3rd Congress

Vibration in Biosciences" (VIBMECBIO-2024) and "The 3rd International Congress on Technological Innovations in Health (ICTIH-2024)". Researchers from several states in Brazil and around the world will participate in the activities in person and online. This year, the MEVITIH-2024 program will be broadcast live for the various states of Brazil, as *Universidade Federal de Viçosa, Universidade Federal de Uberlândia, Universidade Federal de Minas Gerais, Universidade Federal de Santa Maria, Universidade do Estado de Santa Catarina* and other countries, as Italy, Republic of Kazakhstan, Spain, Taiwan, and USA.

The topics covered in the MEVITIH-2024 round tables will involve technological innovations in osteoarticular alterations, oncology, neurology, tissue repair, metabolic alterations, diagnosis and therapy, health monitoring, health monitoring, rehabilitation, chronic disease care, sleep and performance disorders, recovery and assessment. Discussion forums on the importance of standardizing anthropometric measurements and on innovation and entrepreneurship in health (from the bench to Startup) will also be promoted at MEVITIH-2024.

The program of the MEVITIH-2024 will involve: A- workshops, (i) Practice involving systemic vibratory therapy, (ii) Practice on the use of transcranial stimulation, (iii) How to set up your Biobank and (iv) Check your motion as a functionality assessment tool; B- a Keynote Lecture entitled "Evolution of science in the Brazilian scenario", C- Round Tables such as:

Round table 1: Technological innovations in osteoarticular changes and oncology with the lectures - "Effects of systemic vibratory therapy in individuals with knee osteoarthritis", "Somatotype in spondyloarthritis and its clinical and social interactions", "Balance assessment with Techbalance in knee arthrosis" and "Robotic surgery in oncology".

Round table 2: Technological innovations in neurology with the lectures - "Transcranial direct current stimulation in stroke treatment", "Implantation of spinal devices with navigation", "Deep brain stimulation implant for Parkinson's" and "Subacute stroke and modular therapies".

Round table 3: Technological innovations in tissue repair with the lectures - "Introduction to scar acceleration methodology (MAC)", "Efficacy of systemic vibratory therapy in lymphedema", "Compression therapy in the treatment of lymphedema: how and why?" and "Effect of systemic vibratory therapy on tissue repair".

Round table 4: Technological innovations in metabolic changes with the lectures - "Analysis of intestinal microbiota as a health marker", "Systemic vibratory therapy in the management of obesity and metabolic syndrome", "Whole Body Vibration in diabetic patients: partial results" and "Metabolic semiological interpretation and the use of probiotics in Metabolic Syndrome".

Round table 5: Technological innovations in diagnosis and in therapy with the lectures - "Clinical thermography: criteria for use and applicability", "Metabolomics in precision medicine", and "Dental pre-screening system for profile analysis for undergraduate subjects".

Round table 6: Technological Innovations in health monitoring with the lectures - "Peripheral and cerebral muscle oxygenation: clinical applicability and research with near infrared spectroscopy", "Functional assessment of hospitalized patients", "Smart fabrics for monitoring the body's physical and medical conditions".

Round table 7: Technological Innovations in rehabilitation with the lectures - "Transcranial photobiomodulation in neurological disorders", "Wearable technologies for movement disorders", and "Orthopedic workshops: rehabilitation and care for people with disabilities".

Round table 8: Innovations in chronic diseases with the lectures - “Innovation in the management of COPD”, “Effects of systemic vibratory therapy on the symptoms of Parkinson’s disease” and Innovative approaches to patient care with metabolic changes.

Round table 9: Technological innovations in sleep disorders and performance with the lectures - “New technologies for sleep apnea diagnosis and therapy”, “High-performance sport: Is there a safe limit?”, “Precision medicine in the assessment of excessive daytime sleepiness” and “Technological innovations in the analysis of human movement”.

Round table 10: Approaches to recovery and evaluation with the lectures “Importance of the Enhanced Recovery After Surgery (ERAS) protocol in patient recovery”, “Applicability of the baropodometry test in the health sector”, “Diagnostic criteria for sarcopenic obesity” and “Child development assessment tools”.

In addition, a Satellite lecture - “Clinical applicability and viability for the use of canabidiol” and another one with “Presentation of researchers from Germany and Taiwan”, a “Discussion forum” “From Jury Panel to a Startup: Innovation and Entrepreneurship in Health”, and another one “Measurement of anthropometric measures: the importance of standardization” will be presented throughout the MEVITIH-2024.

Besides the workshops, round-tables, satellite lectures and discussion forum, several researches will present findings about studies that are ongoing in the “Poster presentation”

Conclusion

This issue of the BJMVB is about actual and important theme that are related to clinical practices based on evidence considering science, technology, and innovation. The discussion of multidisciplinary approaches involving the care of the patient and research about better techniques to improve assistance are desirable in health management to optimize the cost-effectiveness of the actions in health.

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