

Virtual Ergonomic Workplace Analysis Tools

Faculty:

Ravikumar Modali

Deepak Sharan

Vivek Narayan

Anurag Kumar

Intended Audience

Individuals interested in Healthcare Innovation who want to understand how to envision and develop novel digital solutions in healthcare. Ergonomists and occupational health physicians who undertake a risk assessment in the industry.

- 1. Comparing ErgoCheck Ergonomic Workplace Analysis in Virtual and In-Person Settings** Deepak Sharan
- 2. Building a virtual ergonomic workplace analysis tool: A Multidisciplinary Approach** Ravikumar Modali, Vivek Narayan
- 3. Assessment of risk factors in work-from-home IT professionals using a virtual EWA tool** Anurag Kumar

Comparing ErgoCheck Ergonomic Workplace Analysis in Virtual and In-Person Settings

ErgoCheck is a comprehensive simple tool for bringing together various potential risk factors to undertake a preliminary mapping of discomfort/risk in the workplace and to assess consequent priorities for prevention. This study aims to compare the effectiveness of ErgoCheck ergonomic workplace analysis (EWA) in virtual and in-person settings in a confectionery manufacturing plant in India. This application study involved analysing data from both types of EWA by the same ergonomist to determine if virtual settings can provide the same level of accuracy and effectiveness as in-person settings. The use of ErgoCheck in a virtual setting has not been reported earlier. The results of this study will provide valuable insights into the potential benefits of virtual EWA and could help inform decision-making on whether to use virtual settings for future workplace assessments.

Building a Digital Ergonomic Work Assessment Tool: A Multidisciplinary Approach

Learning Objective

This session aims to provide an in-depth understanding of the development process of a virtual, digital EWA tool. The principles of this process can be broadly applied to create healthcare solutions. We will explore the intersection of product, design, and clinical expertise, demonstrating how these fields can collaborate to create a user-friendly and clinically effective tool. The session is intended to be highly interactive.

Topics covered

- The Need for a Virtual, Digital EWA Tool
- Product Perspective: Deep dive into the product development process, including user experience design, functionality, and technical considerations. Explore framing references that allow for iterative approaches to building better solutions.
- Clinical Perspective: Explains clinical aspects of EWA and advice as an integral part of annual workplace health checks, health progress checks and musculoskeletal disorder-related prognostic checks.

Key Takeaways

Attendees will gain insights into developing a digital tool from both a product and clinical perspective. They will understand the importance of a multidisciplinary approach in creating a technically sound and clinically effective tool. They will also learn about the common challenges when working in an asynchronous, multi-geography environment.

Assessment of risk factors in work-from-home IT professionals using a virtual EWA tool

This study aims to evaluate and assess the risk factor associated with a work-from-home environment using a virtual Ergonomic workplace analysis (EWA) tool. The study covered 1000 IT professionals (aged 20-50 years, 70% male and 30% female). The employees were assessed using a remote EWA Tool which includes questionnaires consisting of demographic data, job details, and working hours. The tool evaluates workstation setup, sitting posture, lighting, monitor placement, keyboard and mouse ergonomics. Nordic Musculoskeletal Pain Questionnaire was used to assess symptoms. 75% of the employees were laptop users, 16% were desktop users and 9% used both. 64% of the employees worked at least 5-9 hours daily. Most of the male workers complained of low back and radiating pain in upper or lower limbs, compared to female workers who complained predominantly of neck and shoulder pain. Some of the common ergonomic risk factors were flexed neck, elbow making acute angle while typing, hunched shoulders due to high work surface, forearms and wrists resting on the hard edge of the table, unsupported arms, and non-adjustable chair. On the other hand, regular exercises with stretching, taking short breaks in between work, and formal ergonomics training were negatively correlated with the symptoms. The findings from this study will contribute to developing

effective strategies to enhance the well-being and productivity of work-from-home clients, ensuring a sustainable and safe remote working environment.

About Our Speakers:

1. Dr. Ravikumar Modali

Dr. Ravikumar Modali is the Vice President, Clinical Services & Corporate Health Programs at Recoup Health Inc. Prior to this, he held office as Exec Committee & Board Advisory Member @ Indian Society of Lifestyle Medicine; Lead trainer @ Telemedicine Society of India and also as Director – Clinical Strategy, Knowwulture Health Solutions and several health and wellness companies.

He is alumnus of the prestigious KEM hospital @ Mumbai, BITS, Pilani, Board certified in lifestyle medicine from IBLM, USA & certified physician coach from CCA, USA.

Apart from his hands-on expertise in the field of lifestyle medicine, he comes with a rich experience in medical analytics, medical treatment programs, disease remission plans, emergency response services, corporate/residential health benefit programs & health insurance benefit plan design. He was invited to review the Indian government's NPCDCS program for chronic disease management & has written 2 chapters in India's first academic book in health insurance. His prior experience involved Medical protocols for EMRI's 108 emergency response services, Medical networking for Health Insurance at TTK, Wellness benefits for Vidal healthcare and several digital health start-ups like CallHealth, Connect-n-Heal among several others. His thought leadership is well recognised in the national think tank body of FICCI, QCI, TSI and ISLM.

His current interest areas include Health benefit programs, Lifestyle & Behavioural medicine, Digital therapeutics & Tele-Medicine. Dr. Ravi also mentors physicians & healthcare teams on adopting these new-age approaches in their medical practice.

2. Deepak Sharan

Dr. Deepak Sharan is a highly accomplished consultant specializing in orthopedic surgery, rehabilitation, ergonomics, occupational health, and functional and lifestyle medicine. Based in Bengaluru, India, he is associated with RECOUP Health and holds prominent positions in various prestigious organizations. Dr. Sharan serves as the Chairperson of the Scientific Committee on Musculoskeletal Disorders at the International Commission on Occupational Health and as the President of the International Myopain Society. He is also the Founder Director of the EPM International Ergonomics School in Italy and the Founder President of both the Indian Ergonomics School and the Indian Myopain Society. With an impressive portfolio of over

600 international scientific publications and conference presentations, Dr. Sharan has conducted extensive research on office and industrial ergonomics, healthcare ergonomics, cognitive ergonomics, and work-related musculoskeletal disorders (WRMSD). Notably, he co-developed the Time-based Assessment Computerized Strategy (TACOs) for assessing the risk of WRMSD among physiotherapists. Dr. Sharan has received numerous awards and research grants, including the National Disability Award from the Government of India and prestigious international research awards in the field of orthopedics and pediatric orthopedics. As an internationally recognized expert in WRMSD, he has developed his own validated assessment and treatment approach known as the SHARAN's Protocol, which has successfully treated over a million patients from 45 different countries. Dr. Sharan also works as an ergonomics and occupational health consultant for several Fortune 500 companies and is an authorized trainer for various methodologies and tools related to ergonomics and occupational health, including the Revised NIOSH Lifting Equation, ERGOcheck Risk Mapping, TACOs Tool, OCRA methods, and Push-Pull-Carry techniques.

3. Vivek Narayan

Dr. Vivek Narayan is a technology-healthcare strategist and loves venture development.

Narayan's interests lie at the intersection of medicine, preventative healthcare, and technology. He excels at bringing inter-disciplinary groups together behind a patient-centric paradigm and aims to create well-positioned healthcare solutions that continuously drive value for patients and providers. When not thinking about healthcare or technology, he is usually found spending time with his young family helping out with homework, cooking or even the occasional game of squash. Currently he is the Director of Products for Recoup Health.

4. Anurag Kumar

Dr Anurag is a dedicated lifestyle medicine physician currently working at Recoup Health. With a passion for an integrated approach to healthcare, he firmly believes prevention is better than cure. Having completed a fellowship in diabetology and gained valuable experience in diabetes management research, Dr Anurag possesses extensive knowledge in this field. His knowledge extends to lifestyle and functional medicine, allowing him to understand the crucial role of nutrition, exercise, and lifestyle in overall well-being. At Recoup Health, Dr Anurag combines his expertise to provide comprehensive and personalised care to his patients, empowering them to make sustainable lifestyle changes and improve their well-being through a holistic approach.