1. Record Nr. UNINA9910760290203321 Occupational and Environmental Safety and Health V / / Pedro M. **Titolo** Arezes [and nine others], editors Pubbl/distr/stampa Cham, Switzerland:,: Springer Nature Switzerland AG,, [2024] ©2024 3-031-38277-3 **ISBN** Edizione [First edition.] Descrizione fisica 1 online resource (826 pages) Studies in Systems, Decision and Control Series; Volume 492 Collana Disciplina 613.62 Soggetti Industrial hygiene Industrial safety Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references.

Nota di contenuto

Intro -- Preface -- List of Reviewers -- Contents -- Ergonomics and Biomechanics -- A Look at the Relationship Between Fatigue and Self-employed Truck Drivers -- 1 Introduction -- 2 Methodology -- 3 Results -- 4 Discussion -- 5 Conclusions -- References --Influence of Postural Intervention During the Sleep Period on Back Pain, Quality of Life and Sleep Quality in Young Adults -- 1 Introduction -- 2 Materials and Methods -- 2.1 The Subjects and Night Activities -- 2.2 Experimental Study -- 2.3 Procedures -- 3 Results -- 3.1 Postural Behavior -- 3.2 Back Pain -- 3.3 Sleep Quality -- 3.4 Quality of Life --4 Discussion -- 5 Conclusions -- References -- PostureMind-Postural Education in Back Pain and Postural Habits of Children and Teenagers -- 1 Introduction -- 2 Materials and Methods -- 2.1 Design -- 2.2 Procedures -- 3 Results -- 3.1 Research Question 1 -- 3.2 Research Question 2 -- 4 Discussion -- 4.1 Limitations -- 5 Conclusions --References -- Comparison Between Anthropometric Equipment and Scanners in Hand Measurement -- 1 Introduction -- 2 Materials and Methods -- 2.1 Sample -- 2.2 Data Collection -- 2.3 Measurement Error and Reliability -- 3 Results -- 3.1 Anthropometric and Time Measures -- 3.2 Technical Variability -- 4 Discussion -- 4.1 Precision and Reliability Factor -- 4.2 Time Factor -- 4.3 Cost Factor -- 4.4 Complexity Factor -- 4.5 Comparative Analysis -- 5 Conclusions --References -- Risk Assessment Associated with Nursing Staff

in an Operating Room -- 1 Introduction -- 1.1 Background -- 1.2 Objectives -- 2 Materials and Methods -- 3 Results -- 3.1 Manual Handling Operations (MHO) -- 3.2 Body Posture -- 4 Discussion -- 4.1 Manual Handling Operations (MHO) -- 4.2 Body Posture -- 5 Conclusions -- Annex 1: Nordic Musculoskeletal Questionnaire -- Annex 2: Niosh Equation -- Annex 3: Kim -- Annex 4: Rula Method -- References

References. The Importance of Ergonomics in Improving the Quality and Productivity Indicators of a Work Process in the Automotive Industry -- 1 Introduction -- 2 Materials and Methods -- 2.1 Step 1 --2.2 Step 2 -- 3 Step 3 -- 4 Results and Discussion -- 5 Proposal for Improvement, Validation, and Limitations -- 6 Proposal for Improvement -- 7 Results Validation -- 8 Limitations -- 9 Conclusions -- References -- Development of a Rapid Assessment Method of the Potentiality to Transform Manufacturing Workstations into an Assistive Collaborative System -- 1 Introduction -- 2 Materials and Methods -- 2.1 Proposed Method to Assess the Potentiality for an Assistive Collaborative Workstation -- 3 Results and Discussion -- 3.1 Results of the Characterization of the Furniture Assembly Workstation -- 3.2 Results of the Evaluation of the Potentiality for an Assistive Collaborative System -- 4 Conclusions -- References -- Ergo4workers: Usability Testing of the Second Prototype of an App for the Ergonomic Assessment of Healthcare Professionals -- 1 Introduction -- 1.1 E4W App: Second Prototype -- 2 E4W App: Second Prototype Usability Testing -- 3 Results and Discussion -- 4 Conclusions -- References -- Development of a Questionnaire to Understand Future Users' Preferences About Human-Centric Autonomous Car Interior -- 1 Introduction -- 2 Materials and Methods -- 2.1 Questionnaire Design -- 2.2 Pilot Test Procedure -- 3 Results and Discussion -- 4 Conclusions -- References -- Occupational and Individual Factors for Musculoskeletal Pain in the Automotive Industry -- 1 Introduction -- 2 Materials and Methods -- 2.1 Study Design -- 2.2 Participants -- 2.3 Outcome Variable -- 2.4 Determinant Variables -- 2.5 Statistical Analysis -- 3 Results -- 4 Discussion -- 4.1 Psychosocial Factors -- 4.2 Biomechanical Factors -- 4.3 Individual Factors -- 4.4 Limitations -- 5 Conclusions. References -- Human-Centered Design Approach to the Development of a Graphical User-Interface for Visual Inspection Task: A Use-Case in the Aircraft Manufacturing -- 1 Introduction -- 2 Materials and Methods -- 2.1 Research Design -- 2.2 Description of the Inspection Procedure -- 2.3 Requirements Definition -- 2.4 Prototype and Design of the Graphical User-Interface (GUI) -- 2.5 Participants and Usability Testing -- 3 Results and Discussion -- 4 Conclusions -- References -- Development and Implementation of a Management Model of Ergonomic Conditions Supported by Autonomous Teams -- 1 Introduction -- 2 Materials and Methods -- 2.1 Macroergonomic Analysis -- 2.2 Microergonomic Analysis -- 3 Results -- 3.1 Analysis of the Company's Ergonomic Conditions -- 3.2 Process for Improving the Ergonomic Conditions of Risk Activities --3.3 ErgoTeams Functioning -- 4 Conclusions -- References -- Lumbar Postural Responses During Gaming Activity: A Study with Semi-Professional and Amateur Gamers -- 1 Introduction -- 2 Materials and Methods -- 2.1 Study Design -- 2.2 Analysis of Gamers Community Behaviours -- 2.3 Experimental Procedure -- 2.4 Data Analysis -- 3 Results -- 3.1 Gamming Behaviours Analysis -- 3.2 Experimental Study -- 4 Discussion -- 5 Conclusions -- References --Musculoskeletal Disorders Risk Assessment in a Radiotherapy Service

-- 1 Introduction -- 2 Materials and Methods -- 3 Results -- 4

Discussion -- 5 Conclusions -- References -- Deep-Sea Port Crane Operators' Muscle Fatique on Low Back and Shoulder: A Primary Exploration for Occupational Health and Safety Purposes -- 1 Introduction -- 2 Materials and Methods -- 2.1 Subjects -- 2.2 Instrument -- 2.3 Research Protocol -- 2.4 Research Ethics -- 2.5 Statistical Analysis -- 3 Results -- 3.1 Low Back Fatigue Test -- 3.2 Shoulder (Upper Trapezius) Fatigue Test. 3.3 Differential Percentage of MVC Between Before and After a Routine Work Session -- 4 Discussion -- 5 Conclusion -- References -- Risk Factors for Lower Limb Work-Related Musculoskeletal Disorders -- 1 Introduction -- 2 Materials and Methods -- 2.1 Development of the Questionnaire -- 2.2 Preparation of the Interview -- 2.3 Application of the Questionnaire and the Interviews -- 2.4 Data Analysis -- 3 Results -- 3.1 Questionnaire's Results -- 3.2 Content Analysis of the Interviews -- 4 Discussion -- 5 Conclusions --References -- Evaluation of the Physical Activity Intensity in Primary School Children During the Lockdown -- 1 Introduction -- 2 Materials and Methods -- 2.1 Participants -- 2.2 Procedure -- 2.3 Instruments and Data Processing -- 2.4 Statistical Analysis -- 3 Results -- 4 Discussion -- 5 Conclusions -- References -- Circadian and Biological Rhythms in Shift Workers-A Firefighter's Study -- 1 Introduction -- 2 Materials and Methods -- 2.1 Participants -- 2.2 Study Design -- 2.3 Statistical Analysis -- 3 Results -- 4 Discussion -- 5 Conclusions --References -- Characterisation of the Portuguese Footwear Industry Relative to Occupational Health and Saefety -- 1 Introduction -- 2 Materials and Methods -- 3 Results and Discussion -- 4 Conclusions --References -- Occupational and Environmental Health -- Modelling Physical Fatigue Through Physiological Monitoring Within High-Risk Professions -- 1 Introduction -- 2 Materials and Methods -- 2.1 Participants -- 2.2 Experimental Design -- 2.3 Physical Fatigue Classification Model -- 3 Results and Discussion -- 4 Conclusions --References -- Cardiopulmonary, Metabolic and Perceived Exertion Characteristics Among Portuguese Firefighters -- 1 Introduction -- 2 Materials and Methods -- 2.1 Participants -- 2.2 Experimental Approach -- 2.3 Data Collection -- 2.4 Data Analysis. 2.5 Statistical Procedures -- 3 Results -- 4 Discussion -- 5 Conclusion -- References -- Towards an Integrated Approach on Occupational Health to Tackle COVID19 Pandemic -- 1 Introduction -- 2 Materials and Methods -- 2.1 Workers Population Assessed -- 2.2 Serologic Surveillance -- 2.3 Hematologic Surveillance -- 2.4 Environmental Assessment -- 3 Results -- 3.1 Serologic Surveillance -- 3.2 Hematologic Surveillance -- 3.3 Serologic and Hematologic Surveillance Correlation -- 3.4 Correlation Analyses Between Serologic and Hematologic Surveillance and Questionnaires Data -- 3.5 Environmental Assessment from SARS-CoV-2 -- 4 Discussion -- 5 Conclusions -- References -- Occupational Health and Safety Development Needs in the Home Care Sector in Finland -- 1 Introduction -- 2 Materials and Methods -- 3 Results -- 4 Discussion and Conclusions -- References -- Use of Urinary Creatinine to Assess Occupational Exposure as a Firefighter: A Preliminary Study -- 1 Introduction -- 2 Materials and Methods -- 2.1 Selection and Characterization of Participants -- 2.2 Sampling Campaigns -- 2.3 Determination of Creatinine Levels -- 2.4 Statistical Analysis -- 3 Results and Discussion -- 3.1 Characterization of Participants -- 3.2 Creatinine Levels -- 4 Conclusions -- References -- Characterization of Metal Content in the Saliva of Firefighters: A Preliminary Study -- 1 Introduction -- 2 Materials and Methods -- 2.1 Study Population and Sampling Campaigns -- 2.2 Determination of Metal Content

and Data Tretament -- 3 Results and Discussion -- 3.1 Characterization of Firefighters -- 3.2 Levels of Metals in Saliva -- 4 Conclusion -- References -- Cardiorespiratory Symptoms and Disease Among Firefighters -- 1 Introduction -- 2 Materials and Methods -- 3 Results and Discussion -- 3.1 Respiratory Outcomes -- 3.2 Cardiovascular Outcomes -- 4 Conclusions -- References. Indoor Air Quality in Fitness Centers with/without the Restrictions of COVID-19.

## Sommario/riassunto

This book gathers cutting-edge research and best practices relating to occupational risk and safety management, healthcare, and ergonomics. It covers strategies for different industries, such as construction, chemical and healthcare. It emphasizes challenges posed by automation, discusses solutions offered by technologies, and reports on case studies carried out in different countries. Chapters are based on selected contributions to the 20th International Symposium on Occupational Safety and Hygiene (SHO 2023), held on July 20-21, 2023, in Portugal, as a hybrid event. By reporting on different perspectives, such as the ones from managers, employees, and OSH professionals, and covering timely issues, such as implications of telework, issues related to gender inequality and applications of machine learning techniques in occupational health, this book offers extensive information and a source of inspiration to OSH researchers, practitioners and organizations operating in both local and global contexts.