

Occupational Health and Safety Issues among Workers in Stone Industries in North Karnataka

M. Manzoor Hussain

Department of Mechanical Engineering
Jawaharlal Nehru Technological University
Hyderabad – 500085, Telangana State, INDIA
manzoorjntu@gmail.com

Katuru Phani Raja Kumar

Project Manager, Tech Mahindra Americas, USA.
phani.katuru@gmail.com

Qutubuddin S.M.

Industrial and Production Engineering Department
P.D.A.College of Engineering
Gulbarga, Karnataka State, INDIA
syedqutub16@gmail.com

Hebbal S.S.

Principal, P.D.A.College of Engineering
Gulbarga, Karnataka State, INDIA
shivahebbal@gmail.com

Abstract

Work-related musculoskeletal disorders have posed a concern on both the individual's health and industries. In India majority of workforce are in the informal economy, also known as unorganised sector in the country. Among the unorganised sector, stone quarry, cutting and polishing units are where a large number of workers are involved and prone to various occupational injuries and health hazards. The present study focuses on occupational health and safety deficiencies in the stone quarry, cutting and polishing industry in North Karnataka. The study was conducted using Nordic Questionnaire, Postural analysis using REBA method and on use of PPEs and other welfare activities. The collected data was analysed statistically. The results indicated prevalence of WRMSDs in both stone quarry workers and stone cutting and polishing workers. The REBA scores showed a significant high risk among majority of workers. Physical work environment factors like noise and heat were also measured, and found to be above the acceptable levels. It is concluded that the working conditions in stone quarries, cutting and polishing units' needs to be improved. The postures adopted by workers are mostly in higher risk categories and need to be changed urgently. The noise levels are above the permissible limits and the use of PPEs should be encouraged. Overall the productivity of these industries can be improved by incorporating the ergonomics and OHS recommendations.

Key words

Stone quarry, MSDs, REBA, Posture

Biographies

Dr. M. Manzoor Hussain, Professor in Mechanical Engineering Department, JNTUH College of Engineering Hyderabad and Director of Admissions, Jawaharlal Nehru Technological University Hyderabad, India. He was the founder principal and established one of constituent colleges of JNTUH at Sultanpur, Sangareddy District. He is

chairman of Board of Studies of JNTU in Mechatronics Engineering and Automobile Engineering. He has guided over 50 post graduate thesis and supervised 10 PhD scholars. Currently 6 research scholars are working under him in composite materials, numerical analysis and additive manufacturing. He has over 26 years of experience in teaching and administration in various capacities as officer-in-charge, special officer and member of various committees including AICTE. He has conducted various workshops, short term programs and conferences in his department. He also worked in Ethiopia for two years in Defence Engineering College. He has published over 60 papers in peer reviewed journals and National and International conferences, and has visited countries like Kuwait, Thailand, Germany and Australia. He was awarded the best teacher award by Telangana State Government in the year 2016.

Dr. Qutubuddin S.M. is presently working as Associate Professor, Industrial and Production Engineering Department, P.D.A.College of Engineering, Gulbarga. He has more than 26 years experience in teaching and research and has published more than 25 papers in International and National journals and Conferences. He has introduced the course Human Factors and Ergonomics in the curriculum in under graduate engineering and has developed laboratories such as Industrial Engineering Laboratory and Ergonomics Laboratory. He is a life member of four societies including ISTE, IPE, IAENG, and ISE. Research interest include Industrial Ergonomics; Human Factors; Occupational Health and Safety; Productivity Improvement Studies; Production/Operations Management; Environmental Ergonomics.

Dr. KaturuPhani Raja Kumar is presently working as a Project Manager in Supply Chain Management & Digital Transformation in Information Technology sector since 2008 in USA. He was working in Ordnance Factory Medak, Ministry of Defence, India for 11+ years in the area of Mechanical/Manufacturing Engineering. He has guided few post graduate students. He worked in China on Industrial Automation projects. He is highly experienced in Mechanical/Industrial Engineering and Information Technology of Automobile, Semiconductor, Manufacturing and Telecom sectors. He is also experienced in new age Digital Technologies and Business Products Transformation.

Dr. Hebbal S.S. is presently working as Principal, P.D.A.College of Engineering, Kalaburagi, Karnataka. A 60 year old Government Aided Autonomous institution. He has over 31 years of experience in teaching and research. He has held various positions as Head of Department, Industrial & Production Engineering, Dean, and Principal. He also served as member of Senate, Visveswariah Technological University, Belgaum. He obtained PhD from IIT, Roorkee. He has guided several MTech thesis and supervised 14 scholars for PhD. Currently 6 research scholars are working under his guidance. He has attended a number of International and National Conferences. He has over 100 publications in peer reviewed journals and conferences.