

# **Association between musculoskeletal pain and health-related quality of life among male stone quarry workers in Kaduwela Municipal area Colombo District, Sri Lanka**

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Musculoskeletal (MSK) pain is a common occupational health issue among stone quarry workers. These quarries, located in rocky areas, extract stone manually or mechanically to provide affordable construction materials, often supporting communities affected by poverty and unemployment. Typical job roles include blasters, drillers, excavators, manual labourers, and machine operators. This study aimed to examine the relationship between MSK pain severity and health-related quality of life (HR-QOL) among stone quarry workers in selected quarries within the Kaduwela Municipal area, Colombo District, Sri Lanka. A descriptive cross-sectional study was conducted among 180 male stone quarry workers with at least one year of experience. Participants were selected using a two-stage random sampling method. Data collection was done through interviewer-administered questionnaires. The Nordic Musculoskeletal Questionnaire assessed MSK pain, pain intensity was measured using the Numerical Pain Rating Scale, and HR-QOL was evaluated using the Short Form-36 (SF-36). Spearman's correlation test was used to analyze the association between MSK pain and HR-QOL. The majority of participants (60%,  $n = 108$ ) reported MSK pain in one or more body regions during the past 12 months. A significantly negative correlation was found between MSK pain and both the physical ( $p < 0.001$ ,  $\rho = -0.450$ ) and mental ( $p = 0.009$ ,  $\rho = -0.194$ ) component summaries, indicating reduced HR-QOL. MSK pain showed a weak but significant negative correlation with general health, physical functioning, emotional well-being, social functioning, and the mental component summary. A moderate but significant negative correlation was observed between MSK pain and role limitations due to physical health, role limitations due to emotional problems, bodily pain, total score, and the physical component summary. MSK pain adversely affects both physical and mental aspects of HR-QOL. Ergonomic modifications are essential to enhance worker health, efficiency, and satisfaction.

**Keywords:** *Musculoskeletal pain, Stone quarry workers, Health-related quality of life*