

Multimodal Stress-Management Intervention Improves Physiological, Psychological, and Productivity of Assembly-Line Workers

Auditya Purwandini Sutarto*

Department of Industrial Engineering, University of Qomaruddin Gresik, Jln Raya Bungah 01,
Gresik, Indonesia

Kamarulzaman Mahmad Khairai, Muhammad Nubli Abdul Wahab

Centre for Human Sciences, Universiti Malaysia Pahang, Lebu Raya Tun Razak, Gambang,
Kuantan, Malaysia

ABSTRACT

Stress-related problems experienced by blue collar workers have become one of the most prevalent health and safety risks and relate to loss of productivity or other poorer quality of work. Their inability to cope with the environmental demands leads to certain responses involving a complex interaction between physiological and psychological mechanism. This study aimed to evaluate the effect of multimodal stress management intervention at individual-level approach (biofeedback and work-life balance) on multiple outcome measures: physiological, physiological and productivity. A sample consisted of 18 female assembly-line operators who perceived extremely severe level of depression, anxiety, and stress, attended six-week heart rate variability (HRV) biofeedback and work-life balance training sessions. We found significantly improved physiological HRV physiological coherence, reduced negative emotional symptoms, and increased productivity (all $p < 0.01$). The repeated measures correlation analysis also showed medium to strong association between all outcome measures ($|r| > 0.53$). The possible mechanism of these parallel findings discussed as well as its practical implication. Nevertheless, our lack of sample and less rigorous research design limited us to infer generalizability and causality. Despite these drawbacks, our study demonstrates a potential use of combining HRV biofeedback and other stress management approach for improving worker's overall well-being and work performance.

KEYWORDS: Stress, Physiology, Biofeedback, Productivity, Assembly-Line, Ergonomics

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