



QUALITY OF LIFE, QUALITY OF CARE, AND PATIENT SAFETY

EVALUATION OF THE DERMATOLOGIC LIFE QUALITY AMONG CLEANROOM WORKERS IN A SECONDARY BATTERY FACTORY

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Background: Cleanroom air is extremely dry, as it is maintained within 1 % of relative humidity. Few studies have assessed the dermatologic life quality of workers in ultralow-humidity environments. Therefore, we aimed to evaluate the dermatologic life quality of cleanroom workers using the Skindex-29, compared to those of non-cleanroom workers.

Methods: Study participants were 501 cleanroom workers and 157 non-cleanroom workers from a secondary battery factory, who underwent an employee health examination at a single university hospital from September 2014 to September 2015. Results of the self-administered Skindex-29, and McMonnies questionnaire were analyzed. Other information and disease history were also collected during physician's medical examination. Descriptive and multivariate logistic regression analysis were performed.

Results: The Skindex-29 score was significantly higher in cleanroom workers than in non-cleanroom workers for all domains, Symptom (16.0 ± 15.9 vs. 6.3 ± 10.2 , $p < 0.001$), Emotion (11.3 ± 17.4 vs. 2.5 ± 7.4 , $p < 0.001$), Function (5.2 ± 11.1 vs. 1.6 ± 4.0 , $p < 0.001$), and Overall (10.8 ± 13.4 vs. 3.5 ± 6.2 , $p < 0.001$). The Skindex-29 score of cleanroom workers was similar to that of patients with skin diseases such as psoriasis, other dermatitis, corns, alopecia etc. Among the cleanroom workers, 37 workers had one or more skin diseases.

'Working at cleanroom' and 'possessing skin disease' had highest odds ratios with overall 14.0 (C.I.: 5.9–33.1) and 13.4 (C.I.: 4.5–29.2), and the lowest odds ratios with function domain 3.5(C.I.: 1.7–7.1) and 4.5(C.I.: 2.1–9.5), respectively. The McMonnies score had the highest odds ratio with overall, 6.9(C.I.: 4.5–10.8) and lowest odd ratio with emotion domain 4.2 (C.I.: 2.7–6.4).

Conclusions: Dermatologic life quality among cleanroom workers in the secondary battery factory is shown to be lower than that among non-cleanroom workers in this study. The study suggests that the Skindex-29 may provide helpful information on the dermatologic life quality of cleanroom workers.

