

授与機関名 順天堂大学

学位記番号 甲第 65 号

座位行動・身体活動時間の置き換えと日本人勤労者のメンタルヘルスの関係：Isotemporal substitution モデルを用いた検討

(A model for isotemporal substitution of sedentary time with physical activity to be associated with the mental health of Japanese workers)

小野寺 由美子 (おのでら ゆみこ)

博士 (スポーツ健康科学)

Abstract

Using isotemporal substitution analyses, we examined associations of sedentary time and various physical activities with mental health in Japanese workers. Participants were 108 Japanese sedentary workers (mean age 46.4 ± 9.8 years; 64.8% women). Their sedentary behavior (SB; ≤ 1.5 METs), light-intensity physical activity (LPA; 1.6–2.9 METs), and moderate-to-vigorous-intensity physical activity (MVPA; ≥ 3 PA) were measured with a triaxial accelerometer. To evaluate mental health, scores on the Japanese version of the K6 and levels of work engagement (WE) were used. Multiple regression analysis utilizing an isotemporal substitution model was conducted to estimate the effects of replacing one activity with another for the same amount of time. Data were collected in 30-minute segments, and covariates were age, sex, BMI, economic status, and overtime hours. In this study, replacing 30 minutes/day of SB with MVPA resulted in a significant decrease in K6 scores ($B = -1.821$, $P = 0.007$) and tend to an increase in WE levels ($B = 0.360$, $P = 0.0501$). On the other hand, similar significant correlations between the K6 and WE were not observed when replacing SB with LPA or LPA with MVPA. These results suggest that substituting 30 minutes per day of sedentary time with an equal amount of time of MVPA may contributed to improving workers' mental health.