DAILY PHYSICAL ACTIVITY IN WORKING AND NON-WORKING DAYS IN JAPANESE OFFICE WORKERS
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Background: Several studies have used pedometers to measure daily physical activity. Most of the pedometers are unable to measure the intensity of physical activities because of a mechanical limitation. The Lifecorder (Suzuken Co., Japan) can measure the total steps per day and a time spent for varying intensities. The intensity of physical activities during a working time is rather low in office workers. On the other hand, limited data is available about the amount of steps and the intensity of physical activities in non-working days. The purpose of this study was to compare a time spent in low and moderate intensities of physical activities between during working and non-working days.

Methods: Thirty five subjects (16 males and 19 females, aged 27-58 years) participated in this study. All subjects were asked their lifestyle using a questionnaire. The subjects worked mainly in an office for 5 days per week. Five subjects had an exercise habit, and the other subjects had not regularly. Daily physical activity was measured by the pedometer (Lifecorder) with a built-in acceleration sensor. Subjects wore the pedometer on the waist, except for sleeping and taking a bath or shower, for 14 days. Higuchi et al. (2003) have confirmed that the intensities estimated by the pedometer were correlative with the metabolic equivalent (MET) (r=0.958, P<0.001). The ranges of the intensities are 0 (lowest) to 9 (highest), 0 and 1 indicate non-moving activities and very low activities, respectively. In this study, the intensity (2-4) of activities was defined as low (2-4 METs) and the intensity (5-9) as moderate (over 4 METs). Data obtained by the pedometer were compared between during working and non-working days.

Results: The daily steps were 8,261+/−2,594 (mean+/−SD) steps per day in working days and 6,349+/−2374 steps per day in non-working days (P<0.001). The difference in daily steps between male and female was not found in both working and non-working days. The duration spent for the low intensity activities in working day was longer than that in non-working days (48+/−12 min vs. 32+/−14 min, P<0.05). However, the duration spent for moderate intensity was not significantly different.

Conclusion: We concluded that in non-working days the total steps per day were lower and the duration time spent for low intensity activities was shorter as compared with in working day. The difference in total steps per day between working and non-working days may, in part, be associated with a time spent for low intensity activities.

Keywords: Lifestyle, Health Promotion, Physical Activity and Health