Carework analysis by time study investigation for one minute and electromyogram monitoring - comparison among daycare & dayservice, nursing homes, and hospital-

Tatsunori Hanada a, Mitsuhisa Siokawa a, Yuji Tanada b, Yurimi Matsumoto b, Kenji Kawamura c, Mika Kunisada b, Yuki Sawada b & Hiroshi Sumii a

a Prefectural University of Hiroshima, Hiroshima, Japan
b Japan Kaigo Research, Hiroshima, Japan
c Kibi International University, Okavama, Japan

Purpose:
Carework analysis by time study investigation for one minute would clarify the relationship between the content of long-term careworks and the distribution of the needed carework time in the long-term care insurance system. In addition, the burden of long-term careworks was continuously detected by using the electromyogram (EMG) monitoring at the lumbar spine.

Methods:
Investigated staffs consisted of nine careworker (six full-time staff and three additional part) and the 18 careworked at the adult day service (average stage of long-term care needed=2.1). The investigation period is nine hours from AM8:30 to PM5:30 on March 26, 2010. Carework analysis by time study investigation for one minute was performed by the classification of the Careworks Code (Japanese governmental committee material:2006). The electromyogram monitoring (Multi channel telemeter system WEB-7000) was used for the muscle electrical discharge amount monitor. The electromyograph monitor measured the amount of an integrated electrical discharge voltage of six careworkers on the erector muscle of lumbar spine in the vicinity of the fourth lumbar vertebra. The electric wave from the electromyograph was received by the wireless into the personal computer, and the reception of the electric wave could be enforced only in Day or Rehabilitation Room.

Results:
1. Total result of time study
Average carework time in the adult day service and the day care staff: Careworks for BPSD was more verified with a significant difference of less than 1%, and the life independence support with a significant difference of less than 5% at the adult day service than day care.
Average carework time in the adult day care staff and the nursing home staff: Careworks for life or social independence support was more verified with a significant difference of less than 1%, and the indirect careworks with a significant difference of less than 5% at the adult day service than nursing homes.
Average carework time in the adult daycare staff and the hospital rehabilitation staff: Careworks for life or social independence support was more verified with a significant difference of less than 1%, and the indirect careworks with a significant difference of less than 5% at the adult day service than the nursing homes.

2. The stripe electrical discharge amount monitor result
A higher detective rate at the careworks of the meal, the social life support, and the BPSD in the adult day care than the hospital rehabilitation. The amounts of the average muscle electrical discharge was more detected with a difference less than 5% significant.

Contact information:
Tatsunori Hanada, Department of Human Welfare, Prefectural University of Hiroshima, Gakuen-cho 1-1, Mihara City, Hiroshima Prefecture, 723-0053 Japan
Tel & FAX: 0848-60-1211, e-mail: kaigo@pu-hiroshima.ac.jp