COMPARISON OF ENERGY EXPENDITURE FOR SELECTED PHYSICAL ACTIVITIES OF FEMALE OLDER PERSONS USING THE INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE, FACTORIAL METHOD, AND DOUBLY LABELED WATER TECHNIQUE

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**Background:** Moderate physical activity (PA) is beneficial to the health of the population. However, the complex nature of PA and the various tools and methods to quantify PA, makes it difficult to compare between individuals. It is important to quantify the amount of energy expended in various activities or tasks to provide information for physical activity recommendations in health promotion, weight management, or rehabilitation programs for people with chronic diseases, among others. As a part of a larger study on the energy expenditure (EE) of selected older persons, the long form of the International Physical Activity Questionnaire (IPAQ) was used. The doubly labeled water (DLW) technique is considered as gold standard for estimating total energy expenditure. **Objective:** To assess and compare the energy expenditure for moderate- and vigorous-intensity PA (EEPA) of female older persons derived from the IPAQ, factorial method and the doubly labeled water (DLW) estimates. **Materials and Methods:** Fourteen female older persons were monitored and their physical activities recorded for three weekdays and two weekend. For the factorial method, the estimated EEPA was calculated by multiplying the time spent (minute) in each activity with moderate or vigorous intensity, by the predicted metabolic cost of that activity. The researchers administered the IPAQ at the end of the observation period then, the EEPA was computed from the metabolic equivalent (MET)-minutes per week by multiplying the MET level of an activity by the time spent/day (minutes) and the number of days/week the activity was done. The Total MET-minutes/day was then converted into kilocalories, for comparison with other methods, using the equation: MET-minutes x (weight in kg/60 kg). The energy expenditure using DLW was measured for 14 days and the EEPA was estimated by subtracting the sum of the predicted basal metabolic rate (BMR) and thermic effect of feeding from the total energy expenditure. Data from the three methods were translated to daily expenditure in kcal and compared using Friedman’s ANOVA and the 95% confidence limits. **Results:** The subjects’ mean age was 64.5 ± 2.38 years (range 61-68). More than half of the participants had body mass index (BMI) within normal range with a mean of 22.93 ± 3.26 kg/m2. The estimated mean (± 95% C.I.) and median EEPA derived from DLW was 762.83 ± 404.26 (529.42 – 996.24) kcal/day and 744.01 kcal/day, respectively. Using the factorial method, the mean was 863.68 ± 312.42 (683.29 – 1044.06) and a median of 741.23 kcal/day while from the IPAQ, the mean was 727.05 ± 492.18 (442.87–1011.22) and median was 631.22 kcal/day. The p-value for Friedman’s test was less than α =0.05, but the 95% confidence interval of the three methods tend to overlap. Thus, no sufficient statistical evidence of difference between these methods was observed.
**Conclusion and Recommendation:** The findings suggest that the EEPA from the three methods were comparable. The IPAQ can be a potential tool in assessing activity-related energy expenditure of female older persons. However, there is a need to modify or improve the current questionnaire by inclusion of activities that are commonly engaged in by Filipino older persons.