

Comparison of Two Different Methodologies (Subjective & Objective) for Assessment of Physical Activity Level in Tunisian Obese Women

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Physical activity and sedentary behaviour are difficult to assess in overweight and obese women. However, the use of open-source, raw accelerometer data analysis could overcome this. This study compared raw accelerometer and questionnaire-assessed moderate-to-vigorous physical activity (MVPA), walking and sedentary behaviour in obese women, and determined the effect of using different methods to categorise obesity. Hence, the objective of this study was to provide information on the situation of obese Tunisian women, describing their physical activity habits using two measurement: the self-report the International Physical Activity Questionnaire-long form (IPAQ) and accelerometry. 54 women with booking BMI ≥ 30 kg/m² were consisted in a questionnaire on their food and physical activity habits and anthropometric measurements, and wore an accelerometer (ActiGraph) for seven days afterwards. The IPAQ and the ActiGraph were compared in terms of estimated Metabolic Equivalent Task minutes per week (MET-min/wk), minutes spent in activity of moderate or vigorous intensity (MVPA), and agreement in the classification of physical activity. Accelerometer thresholds of 100 counts/min, 1952 counts/min and 5725 counts/min were used to define light and moderate or vigorous physical activity respectively. 54 obese women (meanage: 42.72 ± 11.26 years; mean BMI: 38.82 ± 6.33 kg/m²) were recruited and completed the study whereas 46 were excluded (Incomplete data). In participants, serum uric acid concentrations correlated positively with body mass index ($r=0.598$) and body fat mass ($r=0.423$), and negatively with high-density lipoprotein cholesterol ($r= -0.226$). IPAQ and accelerometer were not significantly correlated on estimation of total ($r=0.138$; $p<0.0001$), light ($r=0.141$; $p<0.0001$), moderate ($r=0.173$; $p<0.05$) and MVPA ($r=0.149$; $p<0.05$) Metabolic Equivalent minutes /day (MET min⁻¹day⁻¹) showing poor absolute agreement. In comparison with the actigraph, the IPAQ under predicted daily total METs and over predicted vigorous METs. Relationship between accelerometer and questionnaire-assessed vigorous PA ($r= -0.48$; $p=0.496$) were stronger whilst sedentary behavior were modest ($r= 0.108$; $p<0.0001$). Compared with the accelerometer, the subjective IPAQ measure performed less accurately in estimating of PA in obese women. Future research measuring activity in obese women should optimally encompass objective measures of physical activity.

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