

## Maternal, Perinatal and Pediatric Nutrition

### Reliability and Validity of a Global Physical Activity Questionnaire Adapted for Use Among Pregnant Women in Nepal

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**Objectives:** Here we aimed to evaluate the reliability and validity of an adapted version of the Global Physical Activity Questionnaire (GPAQ) among a sample of pregnant women in Dhulikhel, Nepal.

**Methods:** A pilot cohort of singleton pregnant women ( $N = 101$ ; age  $25.9 \pm 4.1$  years) was recruited from a tertiary, periurban hospital in Nepal. An adapted Nepali version of the GPAQ was administered in this sample to gather information about sedentary behavior (SB) as well as levels of moderate and vigorous PA across work/domestic tasks, travel (walking/bicycling), and recreational activities, and was administered twice and a month apart in both the 2<sup>nd</sup> and 3<sup>rd</sup> trimesters. Responses on the GPAQ were used to determine SB (min/day) and total moderate to vigorous PA (MVPA; min/week) across all domains. GPAQ was validated against PA data collected by a triaxial accelerometer (Axivity AX3; UK) worn by a subset of the subjects ( $n = 21$ ) for seven consecutive days in the 2<sup>nd</sup> trimester. Intra-class correlation coefficients (ICC) and Spearman's rho were used to assess the reliability and validity of the GPAQ.

**Results:** Almost all of the PA in the sample was attributed to moderate activity during work/domestic tasks or travel. On average, total MVPA was higher by 50 minutes/week in the 2<sup>nd</sup> trimester as compared to the 3<sup>rd</sup> trimester. Based on the World Health Organization (WHO) guidelines, almost all of the participants were classified as having a low or moderate level of PA. PA scores for all domains showed moderate to good reliability across both the 2<sup>nd</sup> and 3<sup>rd</sup> trimesters, with ICCs ranging from 0.45 (95%CI: (0.17, 0.64)) for travel PA 2<sup>nd</sup> trimester to 0.69 (95%CI: (0.51, 0.80)) for travel PA 3<sup>rd</sup> trimester. Agreement for total MVPA was higher in the 3<sup>rd</sup> trimester compared to 2<sup>nd</sup> trimester [ICCs 0.62 (0.40, 0.75) vs. 0.55 (0.32, 0.70)], whereas the opposite was true for SB [ICCs 0.48 (0.19, 0.67) vs. 0.64 (0.46, 0.76)]. Criterion validity was assessed by comparing total MVPA and SB from the GPAQ to those derived from accelerometer counts. There was moderate agreement between the GPAQ and accelerometer for total MVPA [ICC = 0.55 (0.0, 0.8)] while the agreement between the two was poor for SB [ICC = 0.35 (0.0, 0.7)].

**Conclusions:** The modified GPAQ appears to be a reliable and valid tool for assessing moderate PA, but not SB, among pregnant women in Nepal.

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