

A follow-up study to assess the determinants and consequences of physical activity in pregnant women of Cuenca, Spain

Poyatos-León R.

Sanabria-Martínez G.

García-Prieto J.C.

Álvarez-Bueno C.

Pozuelo-Carrascosa D.P.

Cavero-Redondo I.

García-Hermoso A.

Gómez-Cantarino S.

Garrido-Miguel M.

Martínez-Vizcaíno V.

Background: In recent years, the influence of physical exercise on pregnancy outcomes has been widely debated. Despite the numerous studies addressing the relationship between maternal physical activity and pregnancy outcomes, the evidence for consistent and significant impact of regular exercise during pregnancy on fetal growth remains lacking. The aims of this study were, first, to assess the level of physical activity performed throughout the pregnancy by objective (accelerometer) and self-reported (questionnaire) measurements, and, second, to ascertain pre-pregnancy physical activity levels, to estimate the relationship between levels of physical activity and some pregnancy and neonatal outcomes. **Methods/design:** This was a prospective cohort study. Participants were pregnant women ($n = 194$) aged 18 to 40 years who attended for three quarterly appointments for pregnancy ultrasound scans at the Virgen de la Luz Hospital in Cuenca, Spain. All participants provided written informed consents to participate in the study. Physical activity during the pregnancy follow-up was assessed by a self-reported Pregnancy Physical Activity Questionnaire and sleep log; also objectively by a GT3X accelerometer (ActiGraph). Furthermore, pregnancy symptoms inventory, nutritional behavioural assessment, socio-demographic characteristics, and

anthropometry and body composition were measured. At the end of the follow up, the following main outcomes were determined: pregnancy outcomes (incidence of gestational diabetes mellitus, pre-eclampsia, pregnancy-induced hypertension, weight gain during pregnancy, type of delivery, and neonatal outcomes (gestational age, birth weight, gender, Apgar score 1 min/5 min, type of resuscitation (I/II/III/IV), and pH of umbilical cord blood). Descriptive statistics for cross-sectional data, linear mixed regression models for absolute differences in changes baseline-final measurements were used as statistical analyses. Discussion: Although the effectiveness of physical activity programmes on improving maternal and neonatal outcomes has heretofore been studied, the impact of free time physical activity during pregnancy has not been assessed using objective measures. This paper reports the design of a prospective cohort study that aims to assess the physical activity levels of pregnant women, and to estimate the relationship between those physical activity levels with maternal and neonatal outcomes. This study could contribute to providing evidence for the formulation of recommendations for physical activity for pregnant women. © 2016

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Accelerometer

Neonatal outcomes

Physical activity

Pregnancy outcomes

accelerometry

adolescent

adult

birth weight

body composition

body weight gain

cross-sectional study

exercise

female

fetus development

gestational age

human

morphometry

pregnancy

pregnancy outcome

pregnant woman

prospective study

socioeconomics

Spain

young adult

Accelerometry

Adolescent

Adult

Birth Weight

Body Composition

Body Weights and Measures

Cross-Sectional Studies

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Weight Gain

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