

A Longitudinal Study on the Relationship between Physical Activity and Gestational Weight Gain

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Abstract : Background: Appropriate gestation weight gain benefits pregnant women and their children; however, excessive weight gain could raise the risk of adverse health outcomes and chronic diseases. Nevertheless, there is currently limited evidence on the effect of physical activities on pregnant women's gestational weight gain. Purpose: This study aimed to explore the correlation between the level of physical activity and gestation weight gain during the second and third trimester of pregnancy. Methods: This longitudinal study enrolled 800 healthy pregnant women aged over 20 from six hospitals in northern Taiwan. Structured questionnaires were used to collect data twice for each participant during 14-27 and 28-40 weeks of gestation. Variables included demographic data, maternal health history, and lifestyle. The International Physical Activity Questionnaire-short form was used to measure the level of physical activity from walking and of moderate-intensity and vigorous-intensity before and during pregnancy. Weight recorded at prenatal checkups were used to calculate average weight gain in each trimester of pregnancy. T-tests, ANOVA, chi-squared tests, and multivariable logistic regression models were applied to determine the predicting factors for weight gain during the second and third trimester. Result: Participants who had achieved recommended physical activity level (150 minutes of moderate physical activity or 75 minutes of vigorous physical activity a week) before pregnancy (aOR=1.85, 95% CI=1.27-2.67) or who achieved recommended walking level (150 minutes a week) during the second trimester of pregnancy (aOR=1.43, 95% CI= 1.00-2.04) gained significantly more weight during the second trimester. Compared with those who did not reach recommended level of moderate-intensity physical activity (150 minutes a week), women who had reached that during the second trimester were more likely to be in the less than recommended weight gain group than in the recommended weight gain group (aOR=2.06, CI=1.06-4.00). However, there was no significant correlation between physical activity level and weight gain in the third trimester. Other predicting factors of excessive weight gain included education level which showed a negative correlation (aOR=0.38, CI=0.17-0.88), whereas overweight and obesity before pregnancy showed a positive correlation (OR=3.97, CI=1.23-12.78). Conclusions/implications for practice: Participants who had achieved recommended physical activity level before pregnancy significantly reduced exercise during pregnancy and gained excessive weight during the second trimester. However, women who engaged in the practice of physical activity as recommended could effectively control weight gain in the third trimester. Healthcare professionals could suggest that pregnant women who exercise maintain their pre-pregnancy level of physical activity, given activities requiring physical contact or causing falls are avoided. For those who do not exercise, health professionals should encourage them to gradually increase the level of physical activity. Health promotion strategies related to weight control and physical activity level achievement should be given to women before pregnancy.

Keywords : pregnant woman, physical activity, gestation weight gain, obesity, overweight

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