**Title:** Physical Activity, Sitting Time, and Duration of Sleep During Pregnancy in Association With Pregnancy Outcomes

**Purpose:** Previous studies correlating physical activity and sedentary behavior during pregnancy to adverse pregnancy outcomes yielded inconsistent results. The objectives of the current study were to examine physical activity, sitting time, and duration of sleep during pregnancy and explore their associations with cesarean delivery, complications during birth process, and low birthweight (<2500 g).

**Methods:** This cohort study recruited 803 pregnant women at six hospitals in northern Taiwan during their second-trimester of pregnancy (14-27 weeks). The study participants were followed at third-trimester (28-40 weeks; n=623) and one month postpartum (n=574). Physical activity was measured by International Physical Activity Questionnaire-short form. Sitting time and duration of sleep were enquired by structured questions. Data analyses were performed using t-tests and chi-squared statistics.

**Results:** Majority of women sit for more than 4 hours per day (79% before pregnancy, 84% at second trimester, and 78% at third trimester). Women who had achieved recommended physical activity level (150 minutes of moderate physical activity/walking or 75 minutes of vigorous physical activity a week) were 67.9% before pregnancy, 56.5% at second-trimester, and 59.9% at third-trimester; mostly through walking. The percentage of women who did vigorous or moderate physical activity besides walking decreased significantly throughout pregnancy (vigorous: 35.5% at pre-pregnancy, 10.6% at second trimester, 8.3% at third trimester; moderate: 47.8% at pre-pregnancy, 32.6% at second trimester, 28.0% at third-trimester). Duration of sleep was significantly longer in the second (mean=8.18, SD=1.09) and third trimester (mean=8.12, SD=1.21) than before pregnancy (mean=7.9, SD=1.09). Nonetheless, achieving recommended physical activity level, sitting time, and duration of sleep were not significantly different by cesarean delivery, complications during birth process, or low birthweight (all p>0.05).

**Conclusion:** Many women had a sedentary lifestyle before and during pregnancy. Women who had vigorous or moderate physical activities before pregnancy tended to stop their physical activities and changed to lower level physical activity, such as walking. Walking is the most popular form of physical activity among pregnant women in Taiwan, however, the intensity of walking may not be enough to yield health benefits. Though physical activity and sedentary behavior were not related to pregnancy outcomes in the study, yet the sedentary lifestyle of women before and during pregnancy could increase the risk of obesity and chronic diseases. Programs target on promotion of physical activity and decreasing sitting time among pregnant women could be developed. Nurses could suggest that pregnant women who exercise maintain their pre-pregnancy physical activity, given activities requiring physical contact or causing falls are avoided.
Keywords: physical activity, pregnancy and sedentary behavior

References:


Abstract Summary:
This study examined physical activity, sitting time, and duration of sleep during pregnancy and explored their associations with cesarean delivery, birth complications, and low birthweight. Though physical activity and sedentary behavior were not related to pregnancy outcomes, yet many women had a sedentary lifestyle before and during pregnancy.

Content Outline:
I. Introduction

1. Previous studies correlating physical activity and sedentary behavior during pregnancy to adverse pregnancy outcomes yielded inconsistent results.

2. Few studies have applied a longitudinal design.

II. Body

1. Majority of the pregnant women had a long sitting time.

2. Duration of sleep increased in the second and third trimester when compared to before pregnancy.

3. Vigorous and moderate physical activities decreased in the second and third trimester when compared to before pregnancy.

4. Walking is the most popular form of physical activity among pregnant women in Taiwan.

5. Level of physical activity, sitting time, and duration of sleep were not significantly different by cesarean delivery, complications during birth process, or low birthweight.

III. Conclusions
1. Many women had a sedentary lifestyle before and during pregnancy.

2. Women who had vigorous or moderate physical activities before pregnancy tend to stop their physical activities and changed to lower level physical activity, such as walking. Walking is the most popular form of physical activity among pregnant women in Taiwan, however, the intensity of walking may not be enough to yield health benefits.

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