



# Efficacy of a Fitbit-Based Physical Activity Intervention on Preventing Perinatal Depression among Low Income Women



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## Abstract

Approximately 38% of women who are low income experience perinatal depression and access to prevention and treatment is particularly low among this population. Research indicates that physical activity is efficacious for preventing depression among adults; however, little is known regarding its efficacy for preventing depression among perinatal women. This study examined the efficacy of a Fitbit-based physical activity (PA) intervention on preventing perinatal depression among low income women. Women who were less than 20 weeks pregnant (n=111) and considered low income were randomly assigned to a 6-month home-based physical activity program or a wait-list control. Results indicated that participants randomly assigned to the intervention condition exhibited more minutes of very active PA minutes per day when compared to the control at 36 weeks gestation,  $f(1,80)=5.55, p < .05$ . Regarding depressive symptoms, there was no effect of the intervention on depressive symptoms. Based on the standard cut-point of 10, 11% of participants exhibited elevated depressive symptoms at 36 weeks gestation and 22% at three months. Overall, our findings suggest that PA may not prevent depressive symptoms among low-income women. Additional research is needed that adequately increases PA in order to determine the effect of PA on perinatal depression.

## Introduction

- Depression is a significant issue among low income perinatal women
- Limited access to psychosocial programs (only 10% seek treatment)
- Antidepressant medications are not ideal due to side effects and breastfeeding mothers reluctant to take medication
- Need for low cost, innovative interventions to prevent depression and improve weight gain/loss among low income perinatal women
- Physical activity (PA) is lower among low income women relative to women with higher income (intervention particularly relevant for this population)

## Methods and Materials

- Participants (n=111) were randomized to one of two conditions lasting from less than 20 weeks gestation to three months postpartum:
  - Exercise intervention: Telephone-based intervention based on Social Cognitive Theory and Self-Determination Theory; Fitbit
  - Usual care
- Delivered in both English and Spanish
- Primary dependent variable was scores on the Edinburgh Postnatal Depression Scale

## Demographics

- 51% were married
- 52% were employed
- 41% had a college education
- 66% of the participants identified as a racial or ethnic minority individual

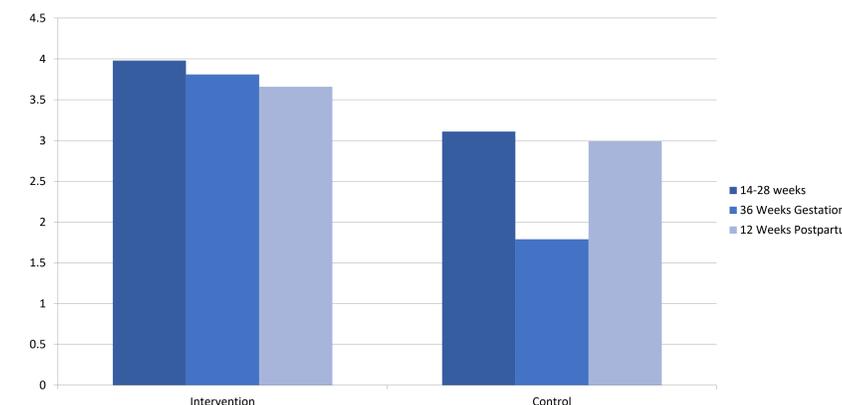


Table 1. Very Active Fitbit Minutes per Day by Group

## Results

- Participants randomly assigned to the intervention condition exhibited more minutes of very active PA minutes per day when compared to the control at 36 weeks gestation,  $f(1,80)=5.55, p < .05$ .
- There were no differences at 3 months postpartum for very active PA minutes.
- Regarding depressive symptoms, there was no effect of the intervention on depressive symptoms.
- Based on the standard cut-point of 10, 11% of participants exhibited elevated depressive symptoms at 36 weeks gestation and 22% at three months.

## Conclusions

- Physical activity may not prevent depressive symptoms among low-income women.
- It is important to note that even though there was an effect of the intervention on very active minutes, the number of PA per minutes per day was fairly low in both conditions (combined fairly active/very active was 10.59 minutes per day for the intervention group and 8.15 minutes for the control at 36 weeks gestation).
- Therefore, it is possible that larger increases in PA minutes per day are needed in order to impact depressive symptoms.
- Additional research is needed that adequately increases PA in order to determine the effect of exercise on perinatal depression.



**12%** Lifetime prevalence of depression during pregnancy.

**13-19%** Lifetime prevalence of postpartum depression.

**38%** of low income women experience postpartum depression.

Symptoms typically appear within the first six weeks, but can begin up to 6 months after delivery.

Almost half of women reporting postpartum symptoms early on continue to have symptoms during the first year.

