



# Impact of Prior Pregnancy Loss or Pre-term Delivery on Attitudes Toward Exercise in Pregnancy

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# Introduction

- Benefits of exercise in pregnancy:
  - Reduce the morbidity and mortality associated with:
    - Cardiovascular disease
    - Hypertension
    - Type 2 diabetes
  - Regulate appropriate maternal and fetal weight gain
  - Prevent/treat antenatal depression

# Background

- Despite the reported benefits of exercise in pregnancy, some patients are concerned about the possibility of adverse effects of exercise in pregnancy.
- There is strong evidence to support the utility of exercise during pregnancy and in the absence of any medical or obstetric contraindications most women can maintain a regular exercise regimen during pregnancy.

# Current Guidelines

- 2015 American College of Obstetricians and Gynecologists (ACOG) Recommendations
- *Physical activity in pregnancy has minimal risks and has been shown to benefit most women, although some modification to exercise routines may be necessary because of normal anatomic and physiologic changes and fetal requirements*

# Objective

- The primary aim of this study was to:
  - Determine whether or not prior pregnancy loss or pre-term delivery would increase an expectant mother's concern about exercise during pregnancy
- A secondary aim was to:
  - Evaluate possible factors influencing this concern including age, typical weekly pre-pregnancy exercise minutes, physical well-being among others

# Methods

- Prospective survey and clinical outcome study
- Study period: July 1, 2013 to June 30, 2015
- Participants: Adult women who scheduled a new (OB) appointment within the first trimester
- Location: Department of Obstetrics and Gynecology or Department of Family Medicine at Mayo Clinic Rochester, Minnesota, USA
- Surveyed during first new OB appointment with the First Trimester Survey (FTS) followed by Second and Third Trimester Surveys at subsequent visits

# Results (Univariate Analysis)

N=572	Prior pregnancy loss or pre-term delivery (PPLPT) (N= 173)	Control Group (NPL) (N=399)	P-value
Age (years): Mean (SD)	31.8 (4.6)	29.9 (4.3)	<0.001
Overall physical well-being: Mean (SD)	(N=167) 7.5 (1.6)	(N=392) 7.6 (1.7)	0.60
Overall emotional well-being: Mean (SD)	(N=167) 8.3 (1.4)	(N=392) 8.4 (1.4)	0.44
Pre-pregnancy exercise			
Non (0 minutes/week)	11 (6.4%)	22 (5.5%)	0.26
Infrequent (1-149 minutes/ wk)	38 (22.0%)	66 (16.5%)	
Exercisers ( <b>≥ 150 minutes/ wk</b> )	124 (71.7%)	311 (77.9%)	

# Results (univariate analysis)

N=572	Prior pregnancy loss or pre-term delivery (PPLPT) (N= 173)	Control Group (NPL) (N=399)	P-value
Is exercise safe during pregnancy?			
<b>Yes</b>	<b>171 (98.8%)</b>	<b>392 (98.2%)</b>	<b>0.76</b>
<b>No</b>	<b>1 (0.6%)</b>	<b>2 (0.5%)</b>	
<b>I am not sure</b>	<b>1 (0.6%)</b>	<b>5 (1.3%)</b>	
I am afraid of hurting the baby or having a miscarriage with exercise:	(N=167)	(N=381)	
<b>Not a barrier at all</b>	<b>88 (52.7%)</b>	<b>245 (64.3%)</b>	<b>0.003</b>
<b>A small barrier</b>	<b>37 (22.2%)</b>	<b>80 (21.0%)</b>	
<b>Somewhat of a barrier</b>	<b>24 (14.4%)</b>	<b>32 (8.4%)</b>	
<b>A barrier</b>	<b>7 (4.2%)</b>	<b>15 (3.9%)</b>	
<b>A huge barrier</b>	<b>11(6.6%)</b>	<b>9 (2.4%)</b>	

# Results (regression modeling)

Fear of hurting the baby or miscarriage is at least somewhat of a barrier to exercise

	Odds Ratio	95% Confidence Interval		P-value
Pregnancy loss history (yes vs no)	2.358	1.444	3.852	0.0006
Age, years (1-year increase)	0.896	0.849	0.946	<.0001
BMI, kg/m <sup>2</sup> (1-kg/m <sup>2</sup> increase)	1.009	0.969	1.051	0.6752
Pre-pregnancy exercise (30-min increase)	1.013	0.980	1.046	0.4461
Physical well-being (1-unit increase)	0.956	0.807	1.132	0.5990
Emotional well-being (1-unit increase)	0.809	0.669	0.979	0.0291

Those with history of pregnancy loss were more likely to have fear of hurting the baby or miscarriage be a barrier to exercise during the first trimester, adjusting for everything else in the model.

## Conclusion:

- Pregnant women who have experienced prior pregnancy loss or pre-term delivery were associated with a significantly higher endorsement of concern that exercise could harm their current pregnancy.
  - Despite their acknowledgement that exercise is considered safe and encouraged for pregnancies.

# Strengths and Limitations

## Strengths

- EMR access to allow clinical data to be directly related to survey results
- Survey encouraged women to answer honestly vs. questions being asked by an examiner

## Limitations

- Not widely generalizable
- Minimal diversity

# Considerations and Next steps

- Study a varied population from a wide range of racial, ethnic, educational, and socioeconomic backgrounds
- Explore the role of exercise on specific symptoms of depression during and after pregnancy

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## Contributors to this project:

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# Questions & Discussion