

# Teenage pregnancy: The impact of maternal adolescent childbearing and older sister's teenage pregnancy on a younger sister

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CAHSPR Conference

May 10, 2016

\*This research was supported in part by a Western Regional Training Centre studentship funded by Canadian Institutes of Health Research (CIHR) and Manitoba Health, Healthy Living and Seniors.



# Background

Higher Neonatal Mortality  
Pre-Term  
Low Birth Weight  
Health and  
Developmental Problems



Post Partum Depression  
Breastfeeding Initiation  
High School Completion  
Poverty

# Background

## **Risk Factors for Teenage Pregnancy**

- Adversity during childhood and adolescence
- Conduct and Attention Problems
- Family Instability
- Low Educational Achievement
- Family History of Teenage pregnancy

# Background

## Family Influence

- Shared Social Risk
  - Poverty
  - Ethnicity
  - Lack of Opportunities
- Social Influence
  - Attitudes and Values

# Study Objective

Which is a **stronger** predictor of teenage pregnancy –

- Having an **older sister** who had a teenage pregnancy? or
- Having a **mother** who bore her first child before age 20?

# Methods

Setting – Manitoba, Canada

Teenage pregnancy rates (2010)

- Manitoba - 48.7 per 1,000
- Canada - 28.2 per 1,000
- England and Wales - 54.6 per 1,000
- United States - 57.4 per 1,000

# Methods

Data – Population Health Research Registry at the Manitoba Centre for Health Policy (MCHP)

## Cohort

- Women born in Manitoba between April 1, 1979 and March 31, 1994
- Stayed in the province until at least their 20<sup>th</sup> birthday
- Had at least one older sister
- No missing values on key variables
- One randomly selected younger sister per family

**N = 17,115**

# Methods

## **Analytic Approach**

Propensity Score matching (2:1) using greedy matching

Two conditional Logistic Regression Models on matched cohorts:

- 1) Relationship between mother's teenage motherhood status and younger daughter's teenage pregnancy odds
- 2) Relationship between older sister's teenage pregnancy status and younger sister's teenage pregnancy odds



# Methods

## Outcome

- Teenage Pregnancy: pregnancy between 14<sup>th</sup> and 20<sup>th</sup> birthday

## Confounders

- Socioeconomic Status and Location of Neighborhood at 14<sup>th</sup> Birthday
- Mother's marital status at time of birth
- Number of Older Sisters
- Mental Health Diagnoses before 14<sup>th</sup> Birthday
- Residential Mobility before 14<sup>th</sup> Birthday
- Family Structure Change before 14<sup>th</sup> Birthday

# Results

## **Impact of Mother's Teenage Childbearing**

Teenage pregnancy rates:

- 39.4% if mom was a teenage mother
- 13.1% if mom was not a teenage mother

After propensity score matching, sample consisted of 1,522 cases and 3,044 controls (1:2)

# Results

## Impact of Mother's Teenage Childbearing

**Odds Ratio: 1.57 (99% CI 1.30 - 1.89)**

- Intergenerational transmission of values regarding family
- Directly through the mother's role modeling
- Indirect impact of socioeconomic and family environment through educational deficits or low opportunity

# Results

## **Impact of Older Sister having a Teenage Pregnancy**

Teenage pregnancy rates:

- 40.4% if older sister had a teenage pregnancy
- 10.3% if older sister did not have teenage pregnancy

After propensity score matching, sample consisted of 1,873 cases and 3,746 controls (1:2)

# Results

**Impact of Older Sister having a Teenage Pregnancy**

**Odds Ratio: 3.38 (99% CI 2.77 – 4.13)**

Social learning theory

Shared parenting influences

Shared societal risk

# Conclusion

For both older sisters' teenage pregnancy and mother's teenage childbearing, the odds in this study are lower than those reported elsewhere

**Social modeling** may have a **bigger** impact on adolescent child bearing than growing up in an **adverse family environment**.

# Advantages and Limitations

## **Administrative Data**

### Advantages

- Higher levels of accuracy - does not depend on recall
- Well-suited for propensity scoring

### Limitations

- Certain covariates and mediating effects are unobservable due to lack of information
- The data is only able to capture variables that are recorded

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# Acknowledgements

The results and conclusions are those of the authors and no official endorsement by the Manitoba Centre for Health Policy, Manitoba Health, Active Living and Seniors, or other data providers is intended or should be inferred. Data used in this study are from the Population Health Research Data Repository housed at the Manitoba Centre for Health Policy, University of Manitoba and were derived from data provided by Manitoba Health, Active Living and Seniors and Manitoba Education and Advanced Learning under project #2013/2014-04. All data management, programming and analyses were performed using SAS® version 9.3. Aggregated Diagnosis Groups™(ADGs®) codes were created using The Johns Hopkins Adjusted Clinical Group® (ACG®) Case-Mix System” version 9.

