

# Maternal smoking cessation during pregnancy and infant growth trajectories: Associations and Mechanisms

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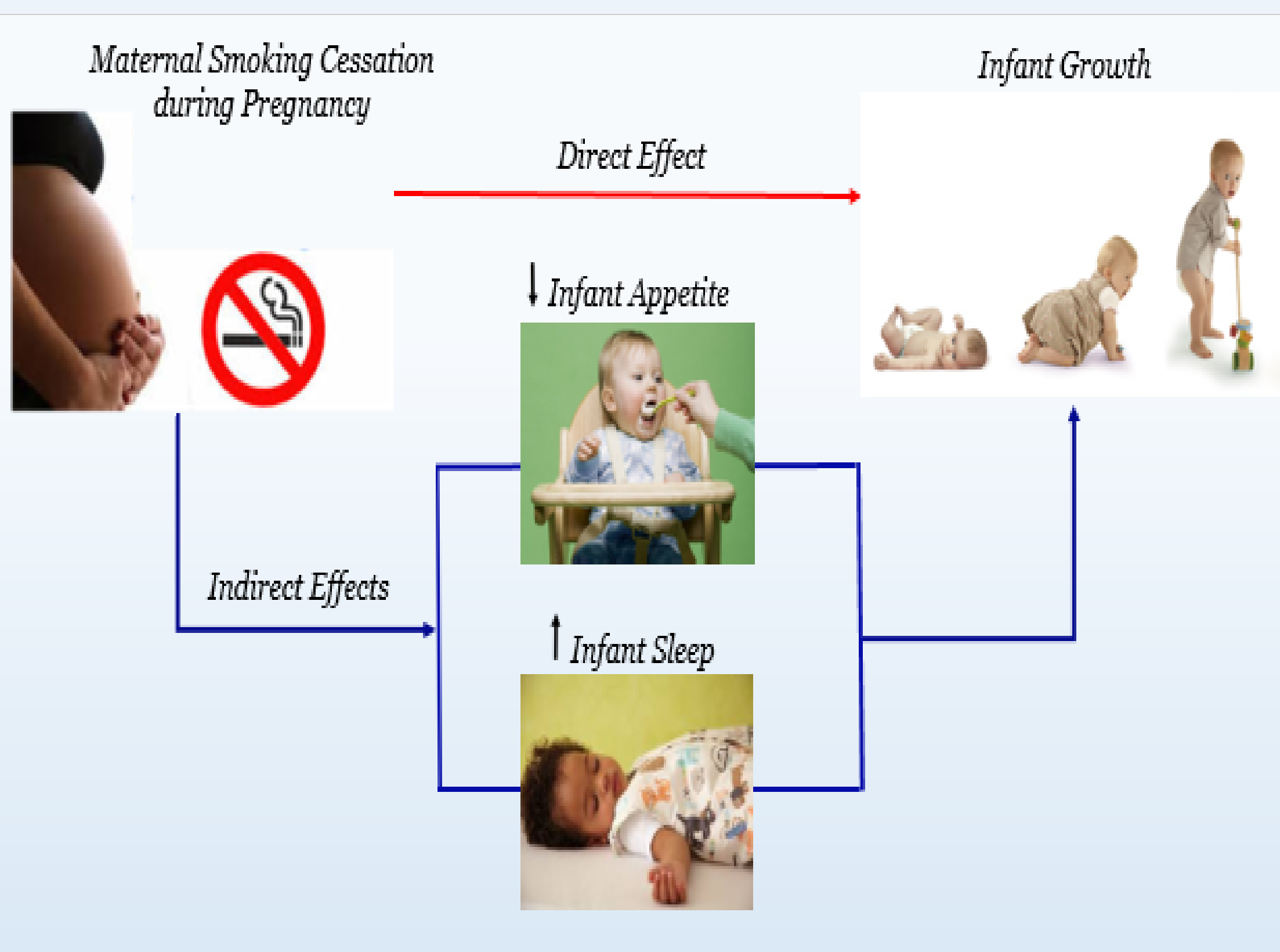
## Introduction

Childhood obesity has gradually become a public health concern, and one of the most important risk factors researchers have identified is maternal smoking during pregnancy.

### Study purposes:

- To examine the extent to which maternal **smoking cessation** affects **infant growth**;
- To explore the mechanisms through two potential mediators (infant appetite and sleep).

## Conceptual Framework /Hypothesis



## Methods

### Timeline (N=21)

#### Smoking Cessation

- Education, feedback, peer support, and financial incentives

#### Birth - 12 months

- Track mother's smoking status
- Obtain infant measurements monthly

#### 13-24 months

- Quarterly visits

PRENATAL

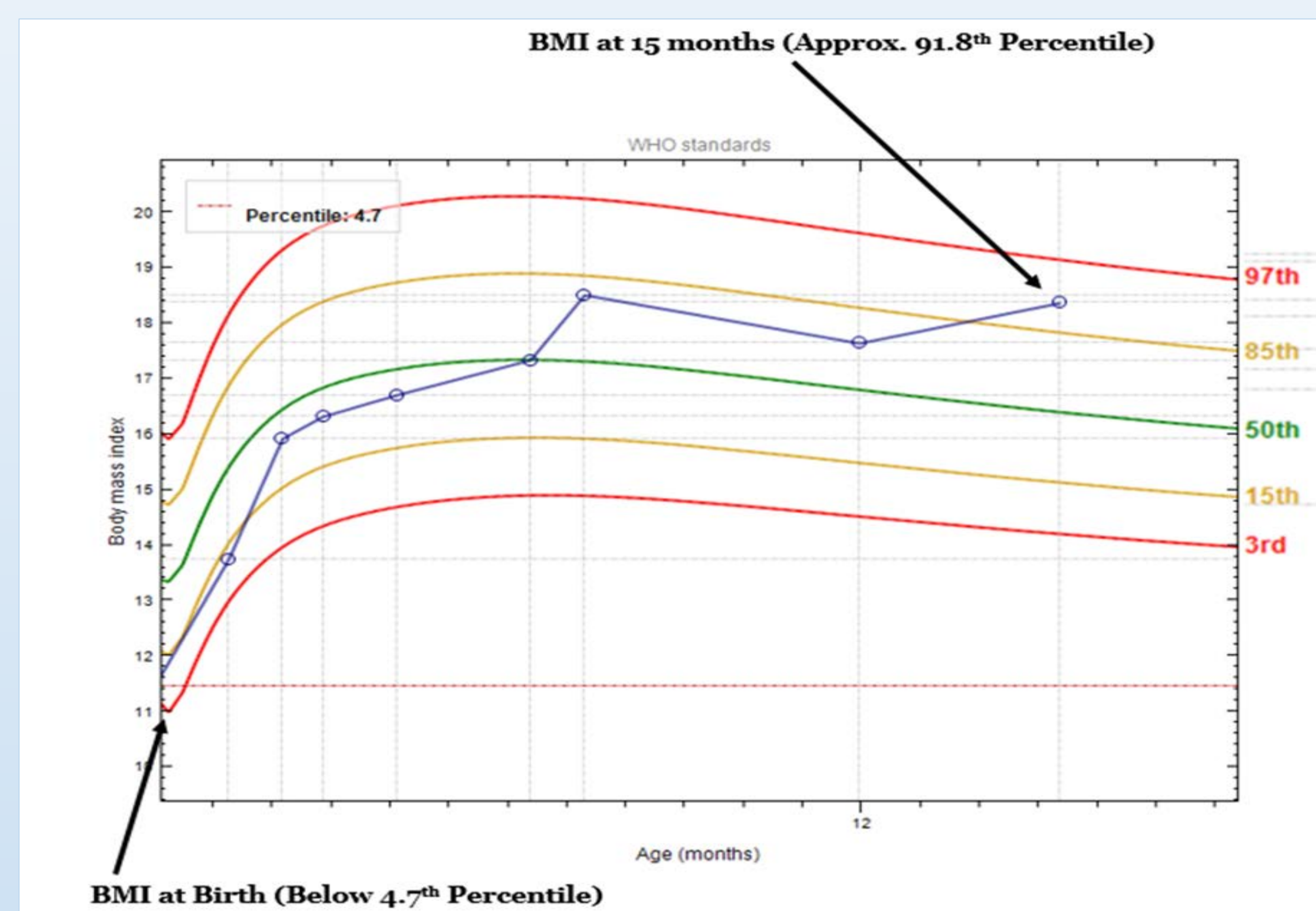
POSTPARTUM

## Measurements

- Exposure Variable:** Maternal smoke abstinence was verified by urine cotinine and breath carbon monoxide levels at each visit.
- Outcome Variable:** Infant weight, length, body mass index (BMI), and head circumference (HC) were measured each month from birth to 12 months
- Mediators:** **Infant appetite** was reported by the mothers using the Baby Eating Behavior Questionnaire (BEBQ), and **Infant sleep** by the Brief Infant Sleep Questionnaire (BISQ)

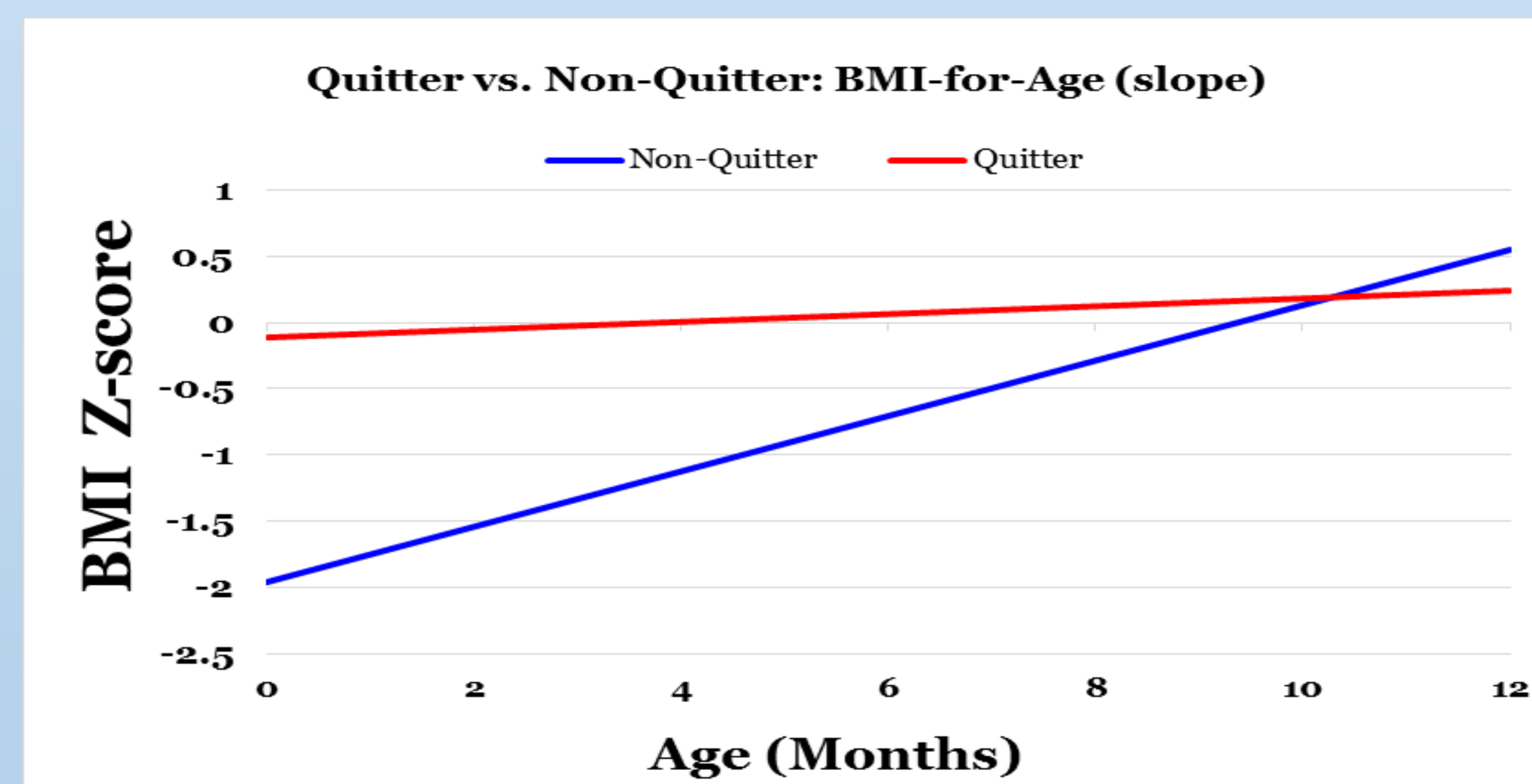
## Results

### Catch-up growth in BMI of a infant of non-quitter

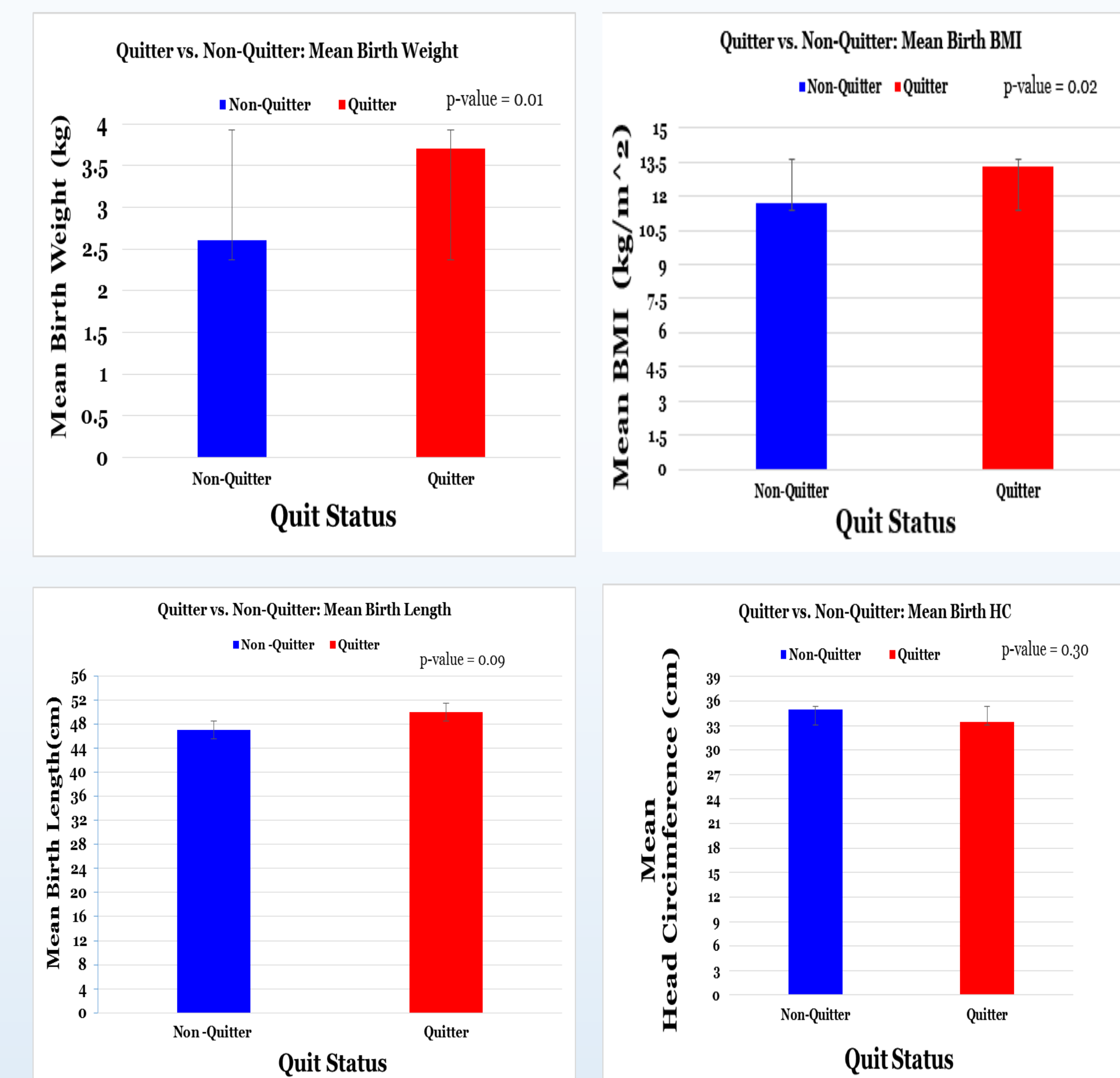


### Smoking cessation and infant growth

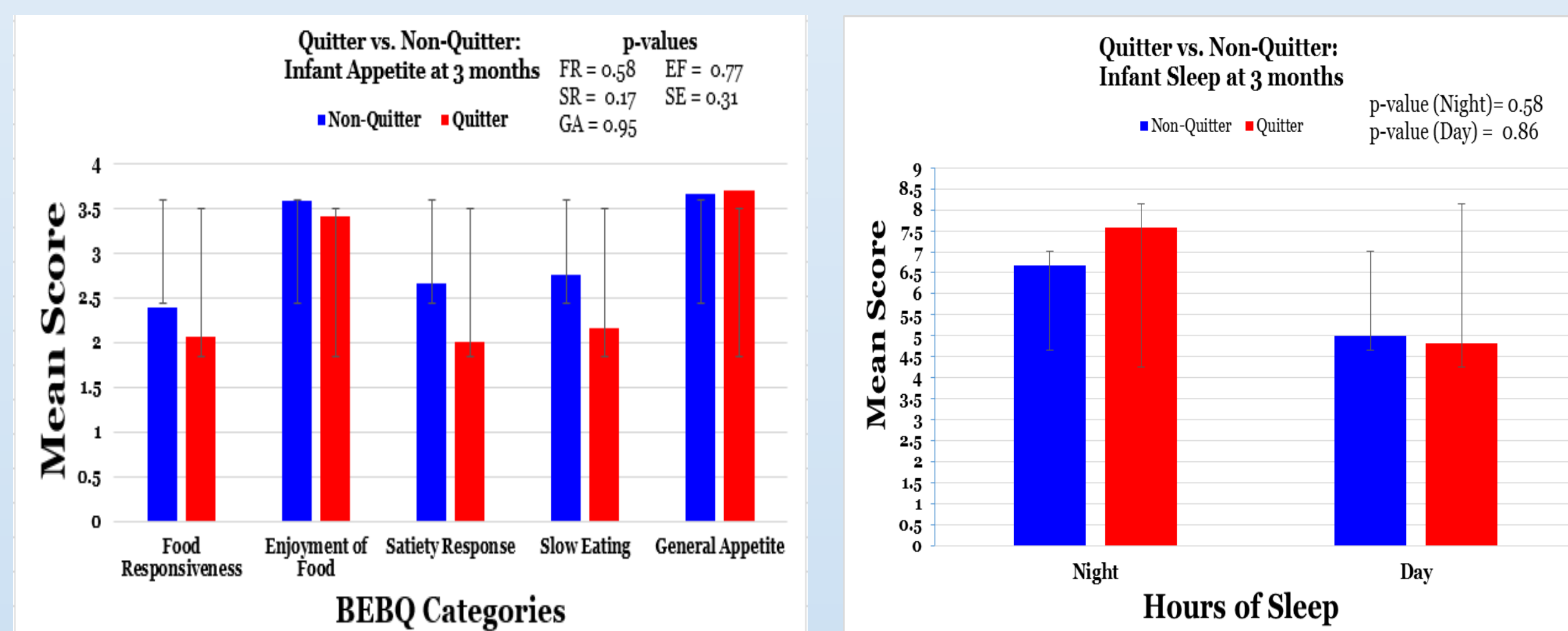
Infants of non-quitters had *catch-up growth* illustrated by a rapid increase (higher slope) in BMI or weight z-score from birth to 12 months. This finding **confirms our hypothesis**.



## Smoking cessation and newborn measurements



## Two mediators: Infant Appetite & Infant Sleep



## Conclusion

Maternal smoking cessation:

- Is associated with higher birth weight and normalized weight/BMI gain.
- Did not significantly affect infant appetite at 3 months postpartum.
- Is associated with longer infant night-time sleep duration, but did not significantly affect day-time sleep duration.

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