Prospective Cohort Study of Thai Children

EFFECT OF PASSIVE SMOKING DURING PREGNANCY ON TOOTH ERUPTION IN INFANTS

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CONTENTS

ABBREVIATION

- BW Birth Weight
- DTE Delayed first Tooth Eruption
- GA Gestational Age
- PCTC Prospective Cohort study of Thai Children
- PS Passive Smoking

INTRODUCTION

- DTE: problems / dental development
  - hold space
  - align into correct position
  - chew and speak
- Influence factors

INTRODUCTION

- Passive smoking
- Negative effect
- Common in Thai males
- High prevalence (29.8%) of PS

OBJECTIVE

To examine the association between passive smoking during pregnancy and the time of first tooth eruption in Thai infants

METHODS – Study Design

- Part of PCTC
- Large birth cohort study: > 4,000 infants, 5 sites in Thailand
- October 15, 2000 and September 14, 2002

METHODS – Study Design

Inclusion criteria:

- accessible year-round
- 800 to 900 newborns on average each year
- intend to live 5 years
- long-term commitment with the project

METHODS – Study Design

- Informed consent
- The National Ethics Committee of the Ministry of Public Health of Thailand
- Khon Kaen University Ethics Committee for Human Research

METHODS – Independent variables and outcomes

- Family members
- In-person interview, diary records, medical records
- Secondary data – community and demographic variables

METHODS – Independent variables and outcomes

Independent variables

- PS pregnancy: Yes/No

Outcomes

- Time to eruption of the first tooth

METHODS – Potential bias & confounders

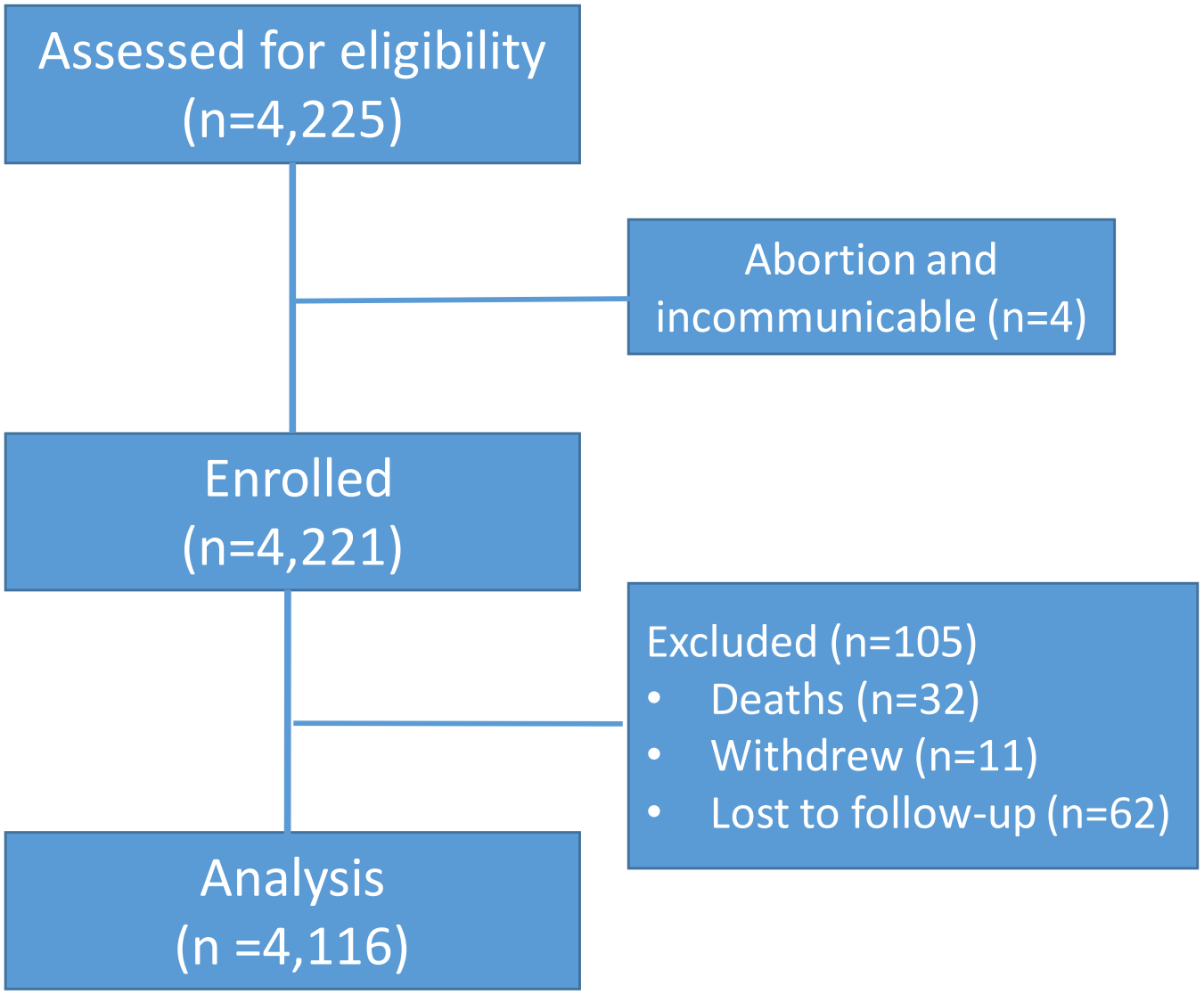
- Mother's age, education level, income
- Alcohol consumption
- Child's gender
- BW, GA
- Study site
- Missing values

METHODS – Statistical Analysis

- Description analysis
- Cox proportional regression
- Stata SE 12.0

p-value < .05

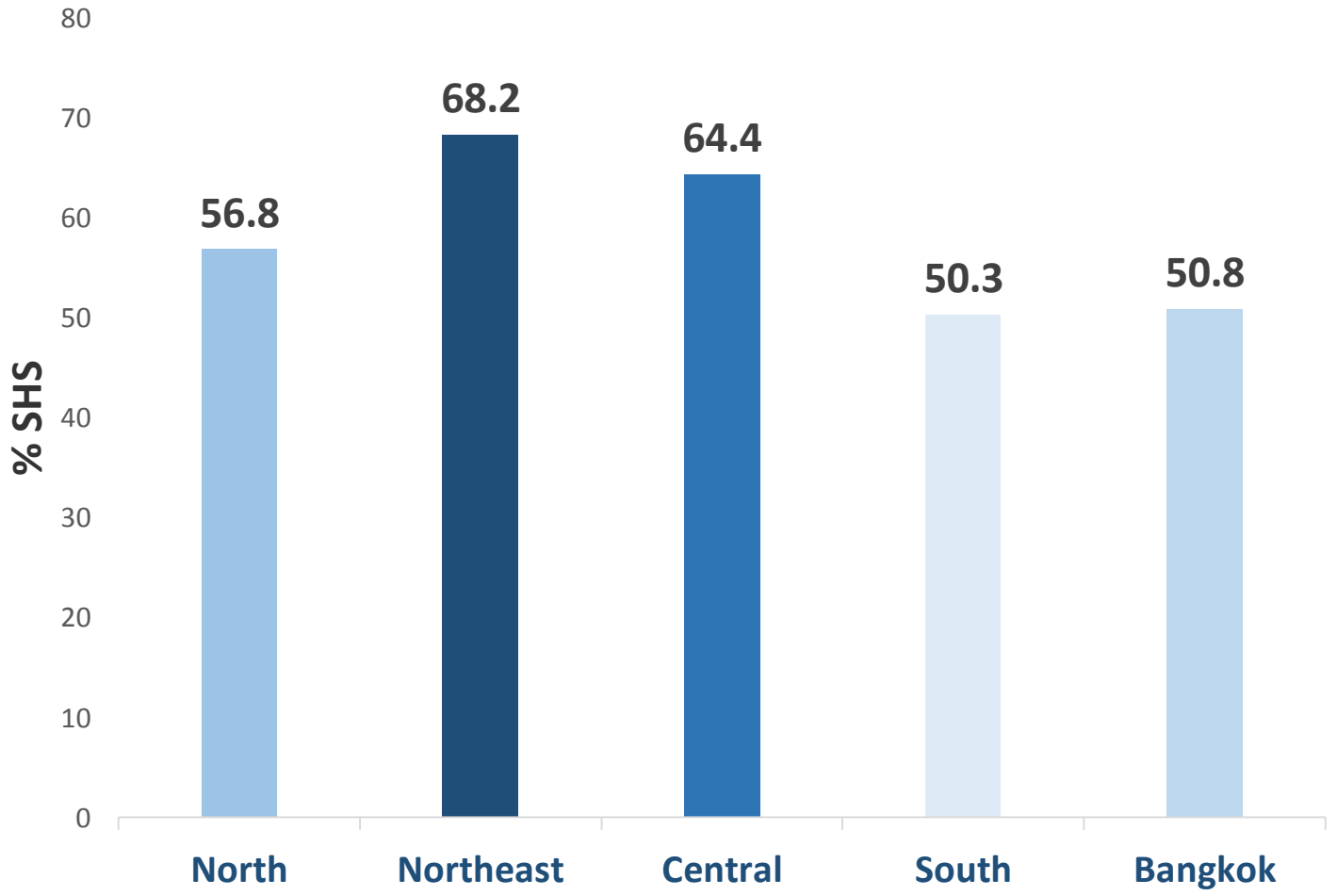
RESULTS – Inclusion flow chart



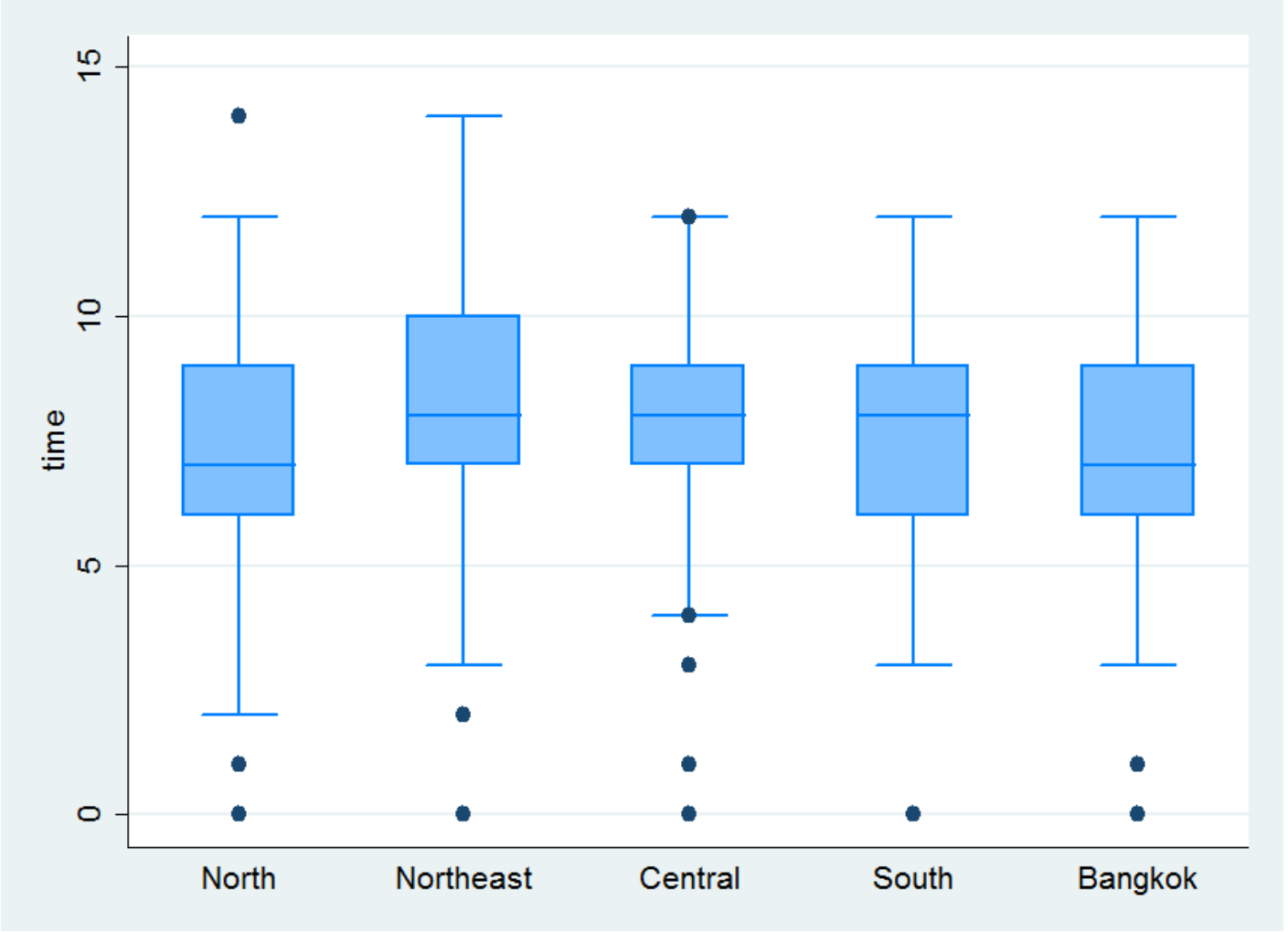
RESULTS – Demographic Characteristics

Characteristics	Total	Sites (%)				
	n (%)	North (n=xxx)	Northeast (n=xxx)	Central (n=xxx)	South (n=xxx)	Bangkok (n=xxx)
Mother's age (mean ± SD)	27.0 ± 6.2	26.3 ± 6.1	27.5 ± 6.5	24.9 ± 5.5	27.4 ± 6.3	29.3 ± 5.9
Education (Primary School)	1,925	60.7	59.8	59.9	28.1	15.2
Alcohol drinking	152	3.0	1.1	3.5	2.3	10.4
Females (Infants)	2,040	52.3	47.5	51.1	49.4	49.6
Low BW	515	8.2	19.8	12.2	14.3	4.3
Preterm birth	558	10.0	17.5	20.8	9.6	6.7

RESULTS – Percentage of PS in pregnant women



RESULTS – Median time of first tooth eruption

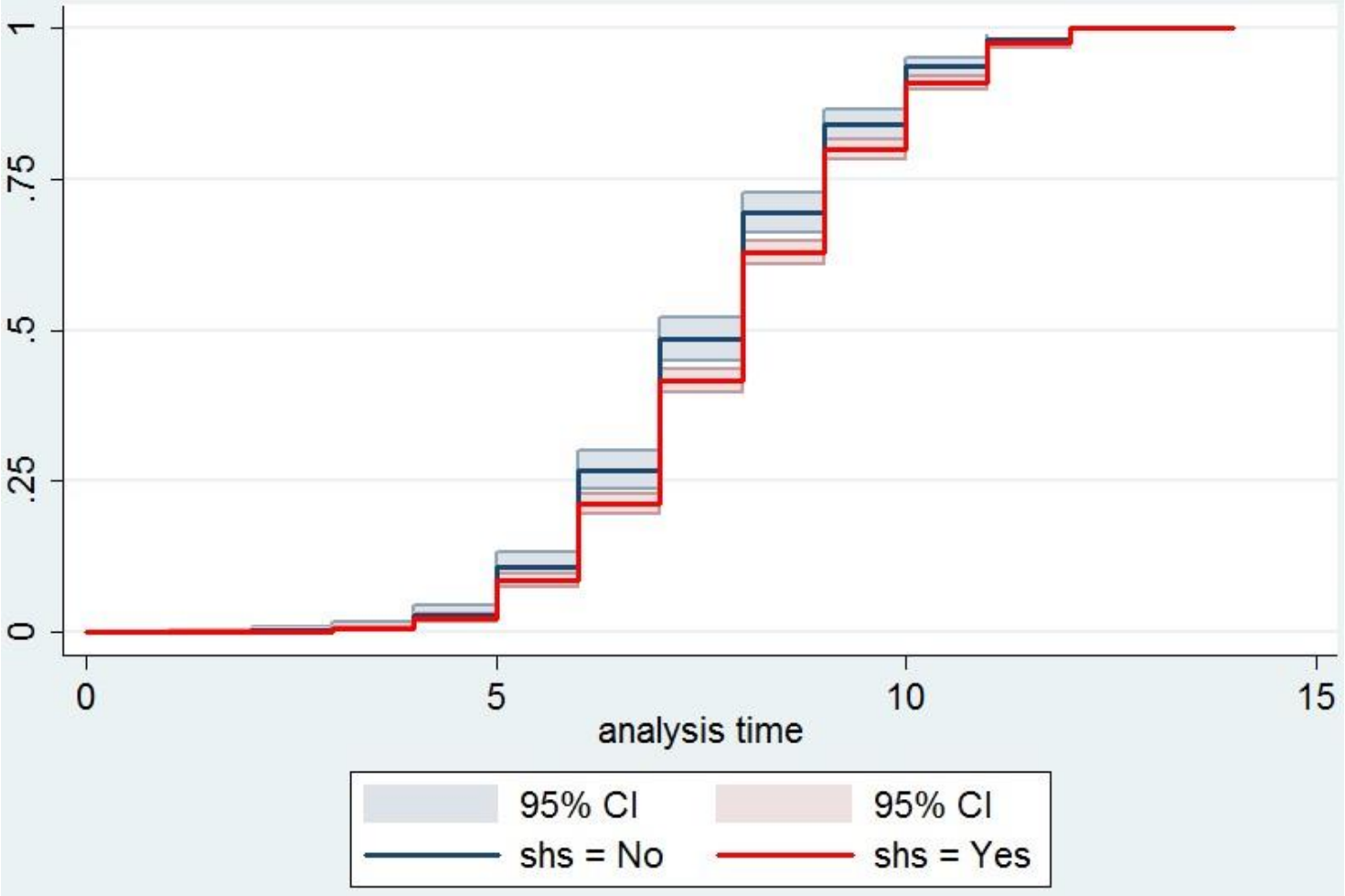


RESULTS – HR of having first tooth eruption

Factors	Crude HR (95% CI)	P-value	Adjusted HR* (95% CI)	P-value
Passive smoking		0.090		0.120
No	1.00		1.00	
Yes	0.93 (0.86 to 1.01)		0.94 (0.86 to 1.02)	
Child's gender		< 0.001		< 0.001
Female	1.00		1.00	
Male	1.14 (1.07 to 1.22)		1.16 (1.08 to 1.25)	
Birth weight		< 0.001		0.002
Normal BW	1.00		1.00	
Low BW	0.83 (0.75 to 0.92)		0.84 (0.75 to 0.94)	

**HR adjusted for child's gender, maternal age, mothers' education level, income, BW, GA, and alcohol drinking during pregnancy, and stratifying by study site.*

RESULTS – Hazard rate curve



Difference in the probability of having erupted tooth between PS group and non-PS group

DISCUSSION

- The time of first tooth eruption of was delayed in infants of SHS women
- Consistent with other previous studies

DISCUSSION

Birth weight → lack of vitamin D absorption

Gender →
- differences in sexual maturity
- embryologic timing

DISCUSSION – Strength

- Strongest observational design
- Multiple risk factors
- Large birth cohort study
- National representative
- Minimal loss to follow-up

DISCUSSION – Limitation

- Information bias – trained and calibrated the interviewers
- Potential confounding factors – adjusting
- Residual confounders (e.g. breast feeding, parental systematic diseases)
- Causal inferences – suspect

CONCLUSION

- SHS in Thai pregnant women was associated with delayed time of the first tooth eruption in infants
- Many problems in the dental and nutritional development of infants
- Further studies

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