

Identifying typologies of residential mobility in childhood and associated factors: A prospective birth cohort study in New Zealand

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Rationale



The place where you live can influence your health and wellbeing

Spatial lifecourse epidemiology framework

utilizes advanced spatial technologies to investigate long-term effects of measurable environmental factors on individual disease risk

- ❖ Lack of individual data over lifecourse (location data & sociodemographic data)
- ❖ High quality and time-comparable environmental data over lifecourse are hard to obtain



Rationale

Residential mobility is an essential but often missing component in the spatial lifecourse epidemiology framework

- ❖ Can link lifecourse environmental exposures
- ❖ Might influence health
- ❖ Can help to exclude selective migration bias

Research into childhood residential mobility usually focus on a segment of childhood

Not all moves are harmful, which can depend on neighborhood socioeconomic environment



Research objectives



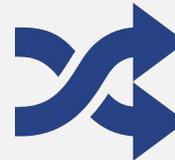
Investigate patterns of residential mobility and exposure to neighborhood deprivation across childhood



Identify distinct typologies of residential mobility based on number of moves and the level of neighborhood deprivation



Examine what socioeconomic characteristics may be associated with each typology of residential mobility in childhood

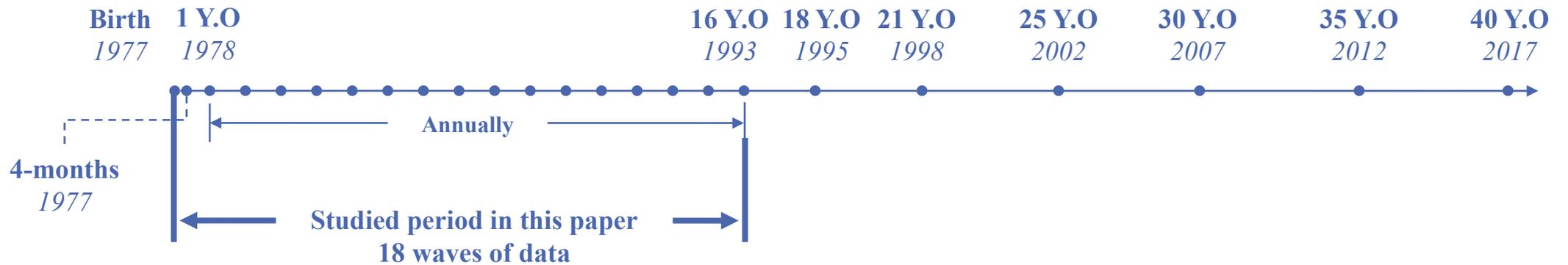


Examine whether the associations vary across different childhood age stages

Methods

Christchurch Health and Development Study (CHDS)

The CHDS is a prospective birth cohort study of 1,265 children (630 females) born in the Christchurch, New Zealand urban region over 4 months in 1977.



Examine patterns of residential mobility

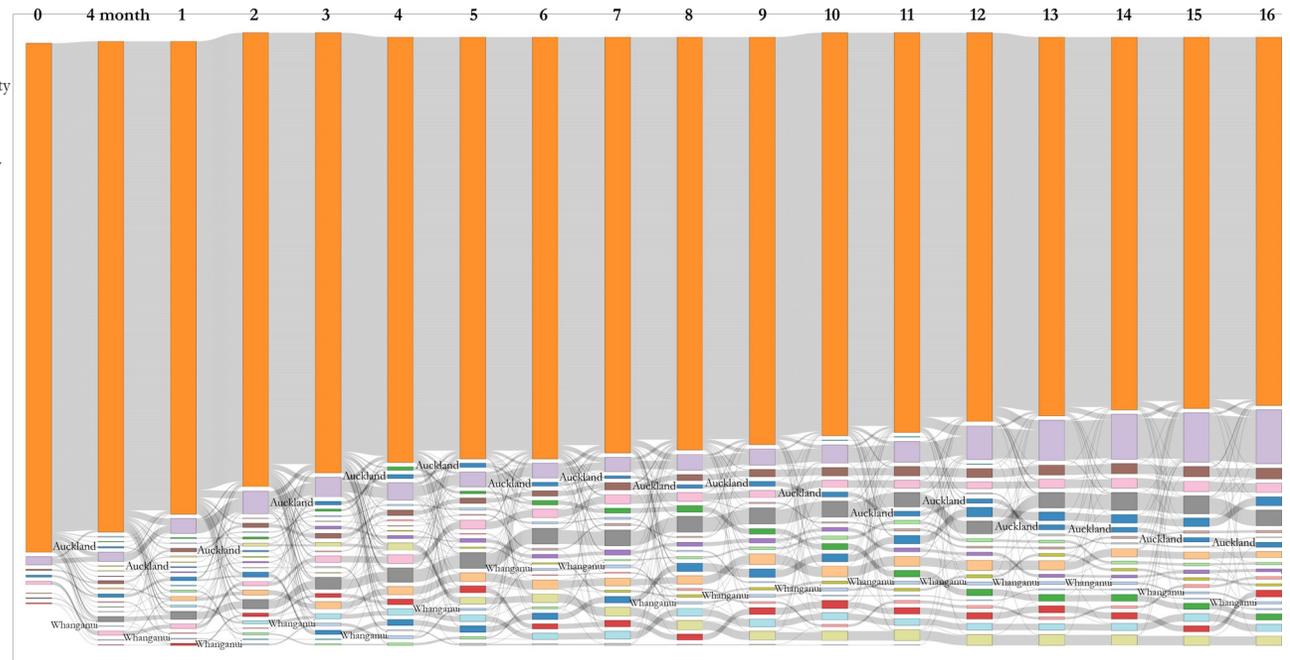
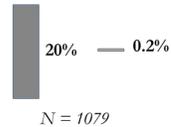
CHDS cohort members residential addresses were collected from original interview sheets

Geocoded in ArcGIS 10.5 to obtain accurate x and y coordinates

Legend

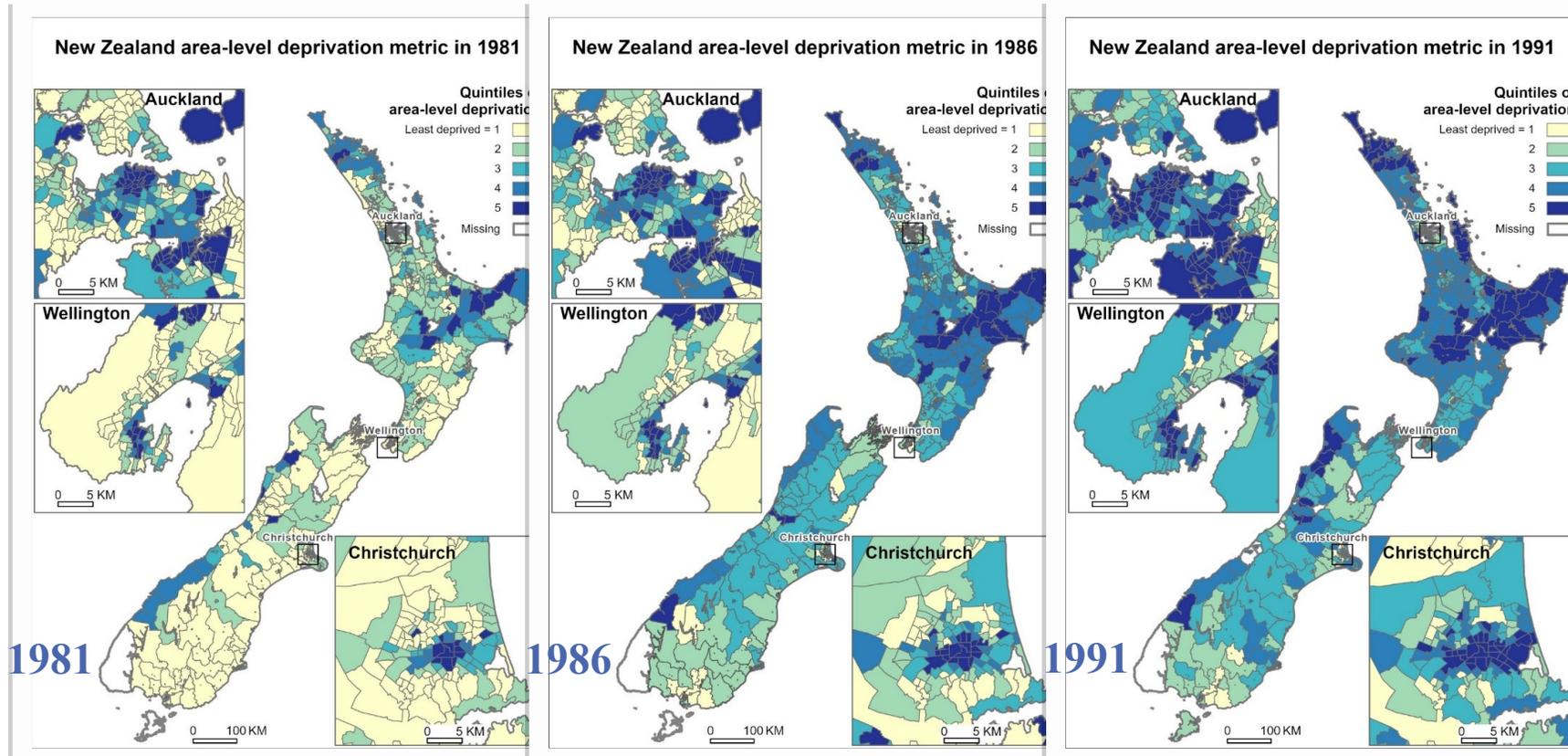


Scale



Examine patterns of exposure to neighborhood deprivation

A historical time-series area-level deprivation metric was constructed using Census data.



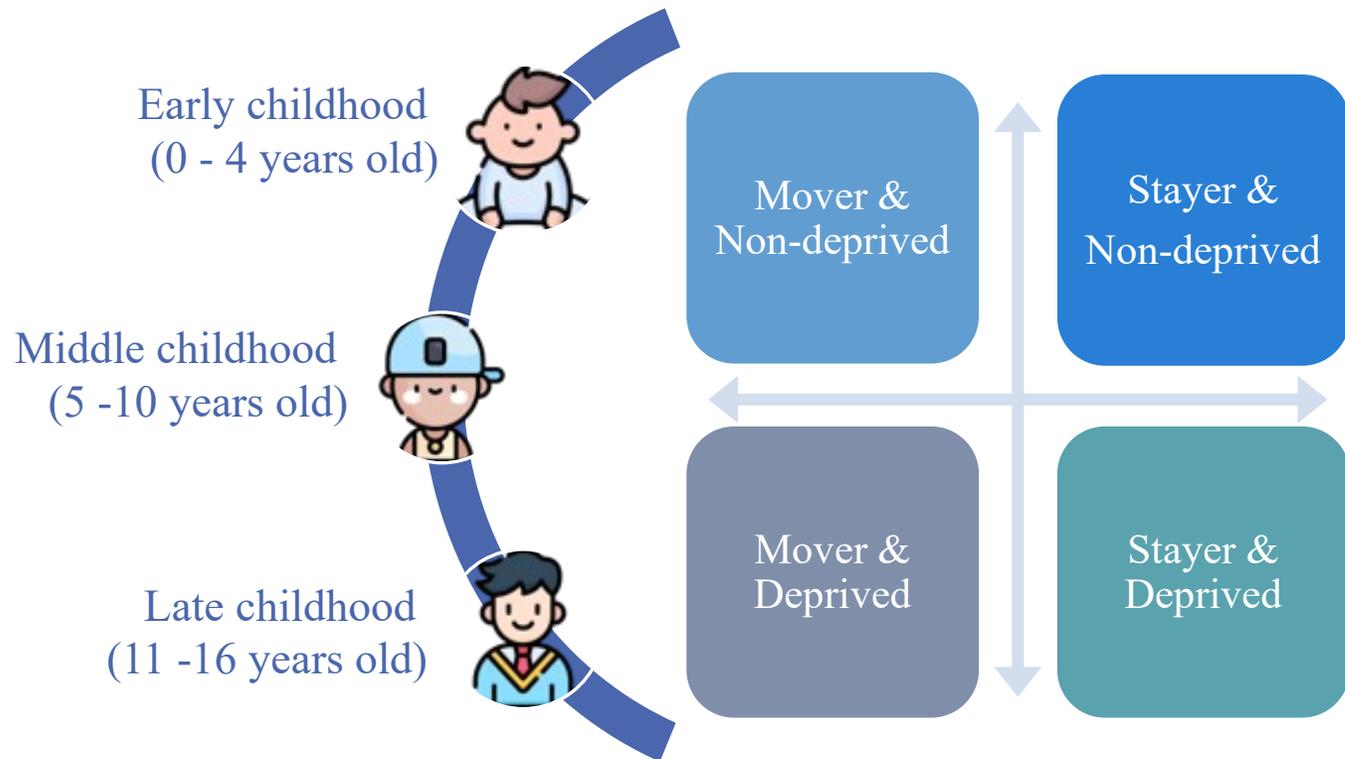
most in time.

Variables:
Unemployment and non-home ownership

Geography boundary:
Census Area Unit 1991

Comparable over time:
Same variables, geography boundary, and statistical methods

Typologies of residential mobility

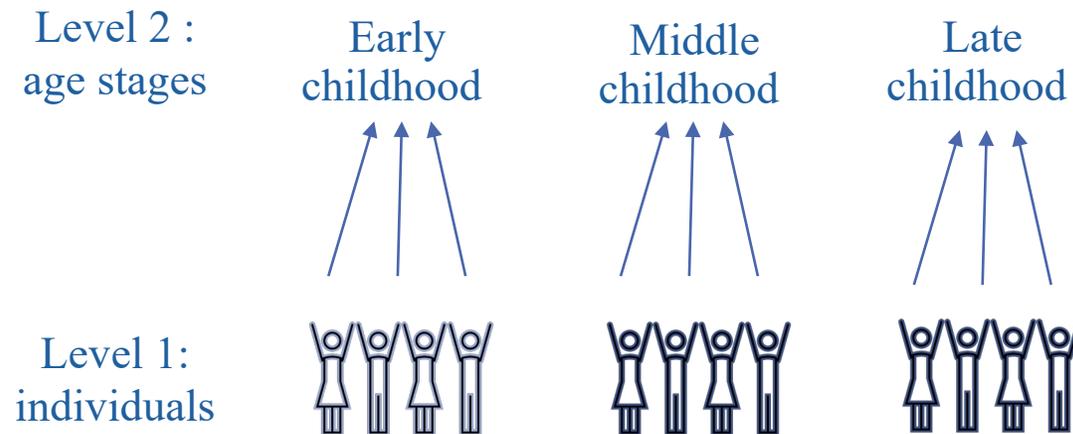


We divided the childhood into three age stages, with each stage has equal number of waves of data.

Within each age stage, we identified four types of residential mobility

Statistical methods

Two-level multinomial logistical regression model



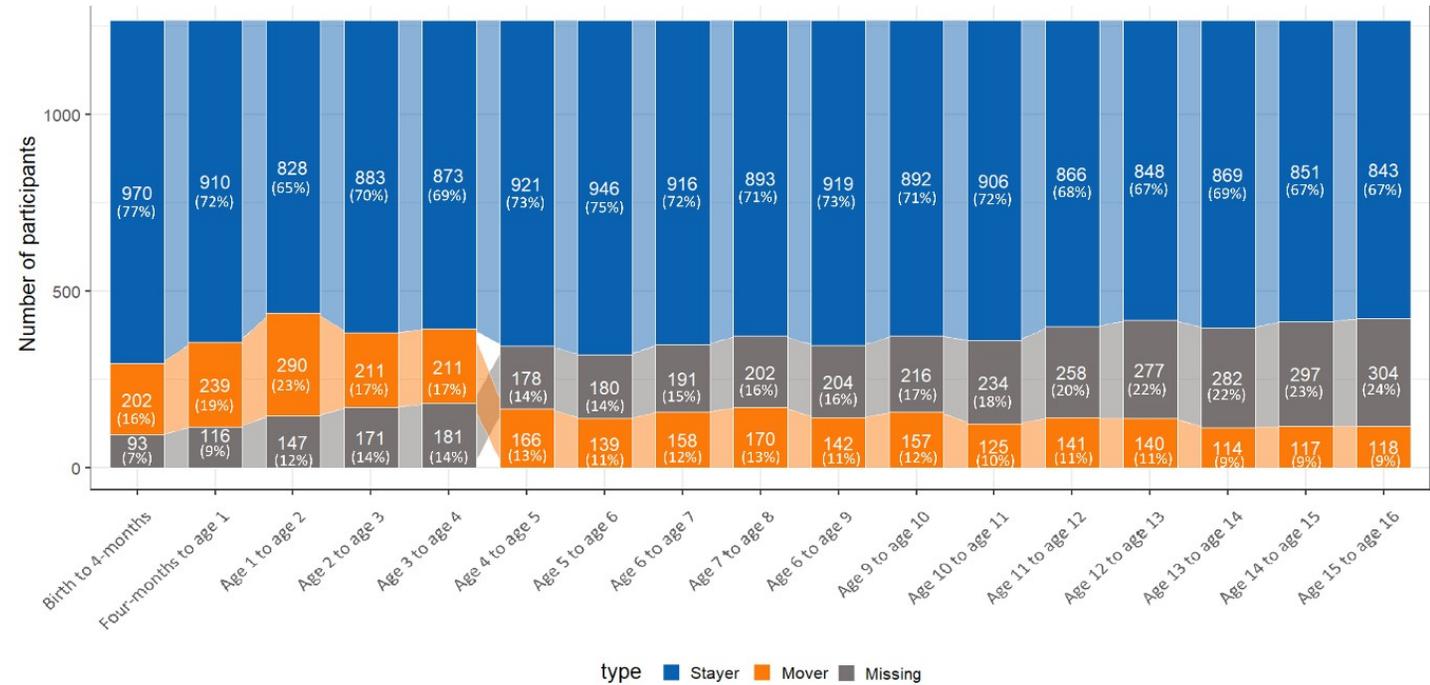
- Gender
- Ethnic
- Maternal age at birth
- Maternal education level at birth
- Family socioeconomic status at birth
- Family type at birth (single/intact family)
- Family stability in childhood (e.g., divorces)
- Childhood adversity (e.g., family violence)

Results

Patterns of residential mobility

Stayers were predominant throughout childhood

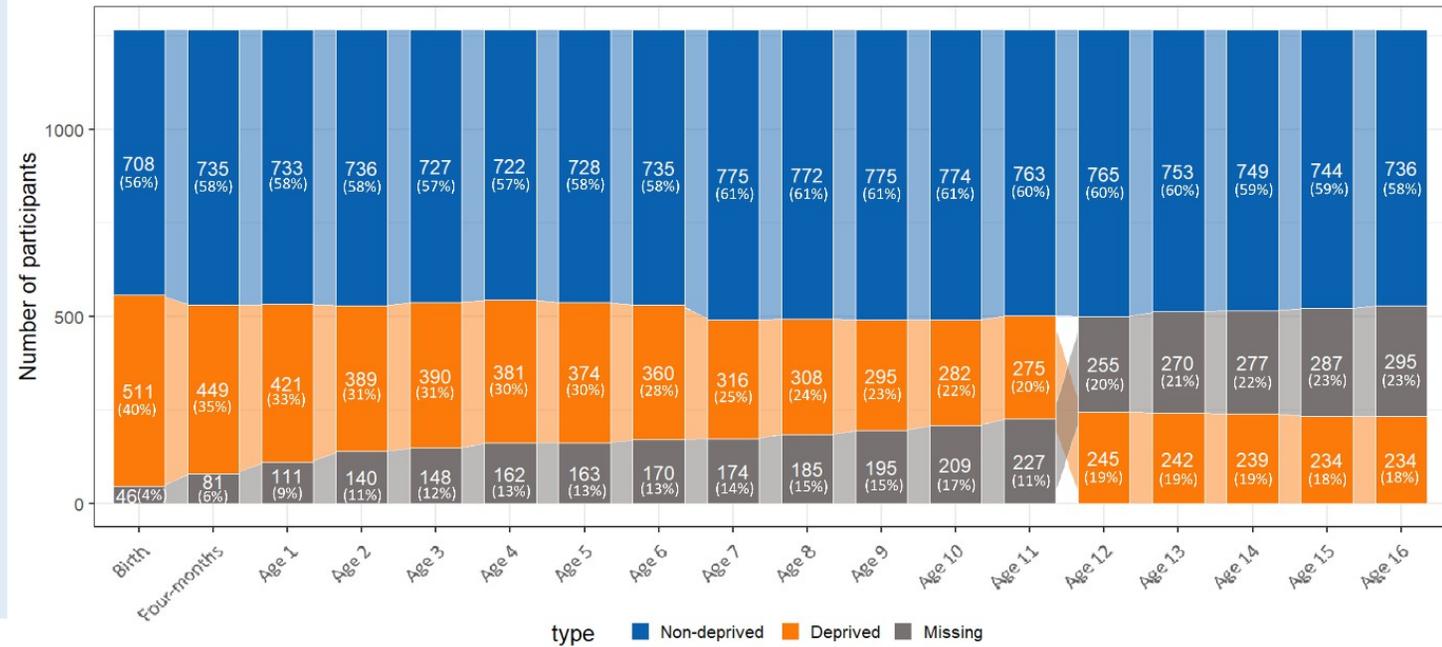
Movers increased from 16% to 23% between 0 and 2 years of age, declined thereafter, and accounted for 9% at age 16



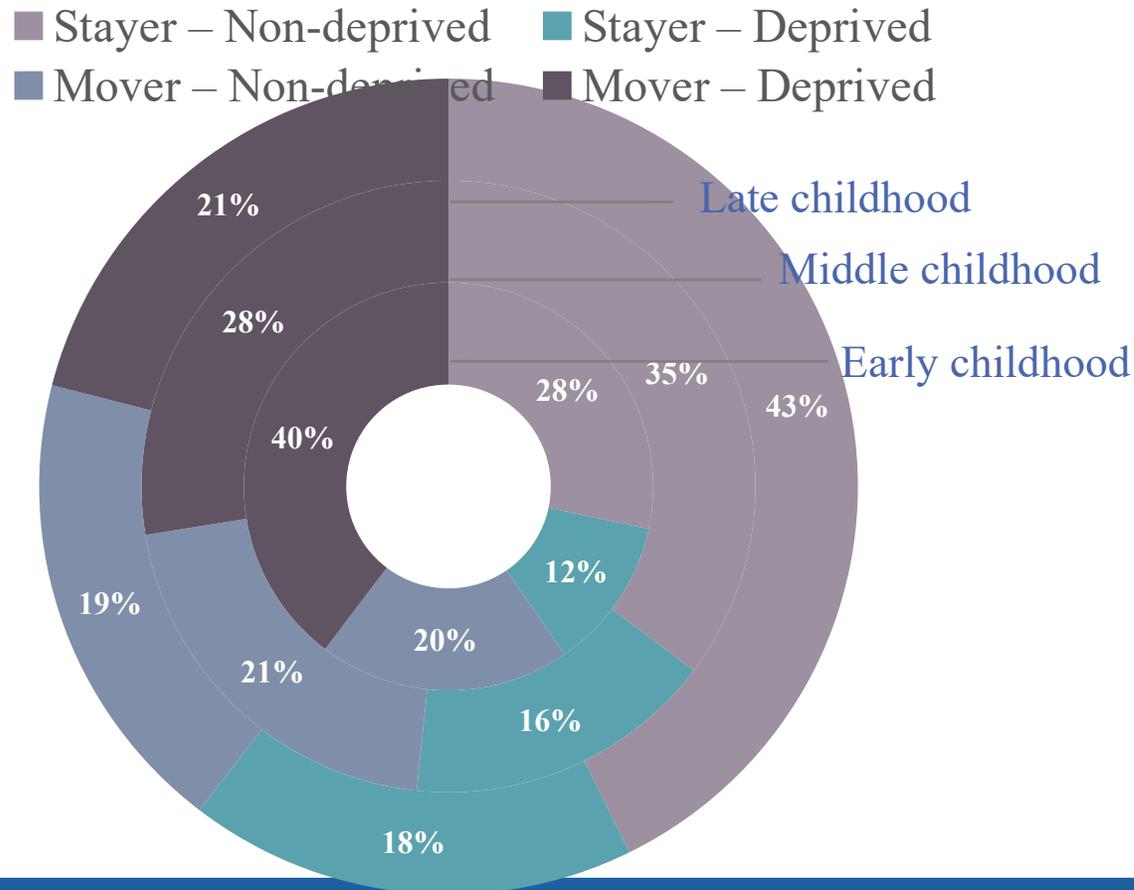
Patterns of exposure to neighborhood deprivation

The proportion in non-deprived areas remained stable, ranging from 56 to 61.

Cohort members in deprived areas declined throughout childhood from 40% at birth to 18% at age 16.



Distribution of typologies of residential mobility



As cohort members progressed in age, they were more likely to be stayers in non-deprived areas

Associated characteristics

<i>Reference to stayer & Non-deprived</i>	Māori/Pacific	Younger mothers	Unstable family relationship	Higher childhood adversity
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Mover & Non-deprived		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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These associations were not likely to change at different age stages in childhood

Discussion

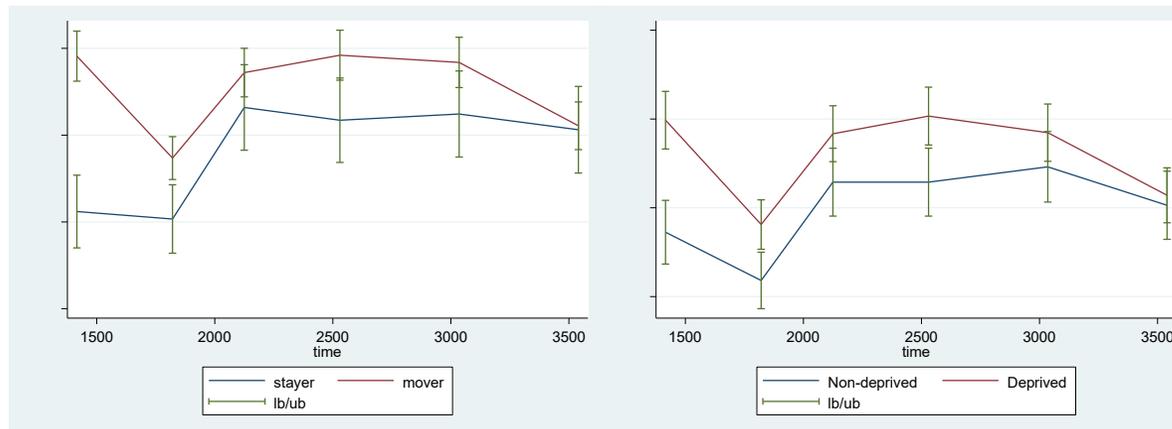
Strengths and limitations

- ✓ Detailed childhood residential history data at address level
- ✓ Connects mobility data with historic neighborhood socioeconomic measures
- ✓ Sets foundation for researching childhood environment's impact on later-life health within a spatial lifecourse epidemiology framework

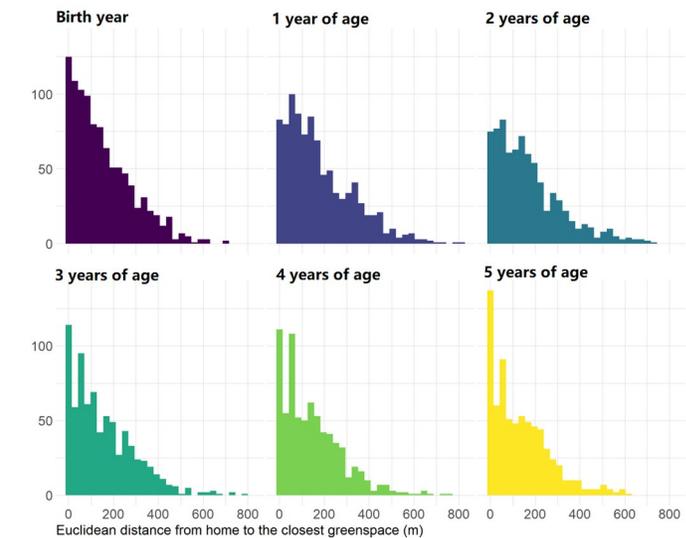
- Reported moves underestimated actual number of moves
- Sample attrition
- The sample size limited the ability to classify the cohort members into more detailed typologies of residential mobility

Future studies

Whether residential mobility and neighborhood deprivation in childhood affect mental health later in life



Whether exposure to greenspaces in childhood is beneficial to mental health later in life



Thanks for listening

Q & A

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