

THE EFFECTS OF NEIGHBORHOOD SOCIAL AND MATERIAL DEPRIVATION CHANGE ON PSYCHOLOGICAL DISTRESS

METHODOLOGICAL CHALLENGES USING NPHS
DATA AND THE PAMPALON DEPRIVATION INDEX



Douglas
INSTITUT
UNIVERSITAIRE EN
SANTÉ MENTALE

MENTAL HEALTH
UNIVERSITY
INSTITUTE

DECEMBER 6TH 2013
7TH QICSS NEW RESEARCHER
CONFERENCE

ALEXANDRA BLAIR

1



NEIGHBORHOODS

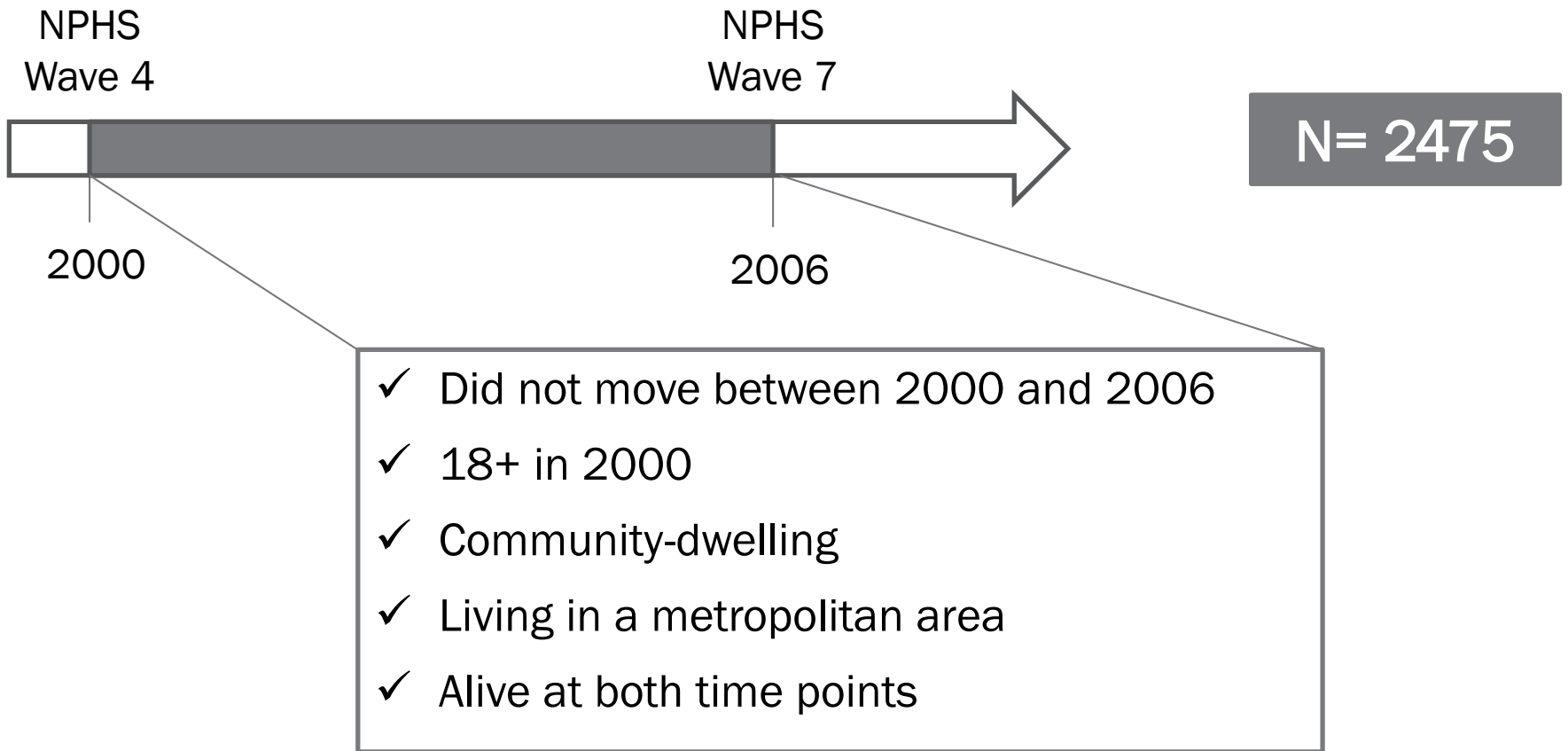
MENTAL HEALTH
OUTCOMES



RESEARCH GOALS

1. Describe trajectories of neighborhood deprivation change in Canada
2. Examine the effects of neighborhood deprivation change on psychological distress
3. Evaluate the roles of important covariates

SAMPLE



OUTCOME MEASURE

Kessler 6-item Psychological Distress Scale

The following questions are about how you have been feeling during the **past 30 days**.

1. About how often during the past 30 days did you feel nervous - would you say **all** of the time, **most** of the time, **some** of the time, **a little** of the time, or **none** of the time?

4. How often did you feel so depressed that nothing could cheer you up?
(IF NEC: **all**, **most**, **some**, **a little**, or **none** of the time?)

Scores between
0 and 24

INDEPENDENT MEASURE

Pampalon Social and Material Deprivation Index

Social deprivation

% persons living alone

% divorced, separated,
widowed

% single-parent families

Material deprivation

% persons without high
school diploma

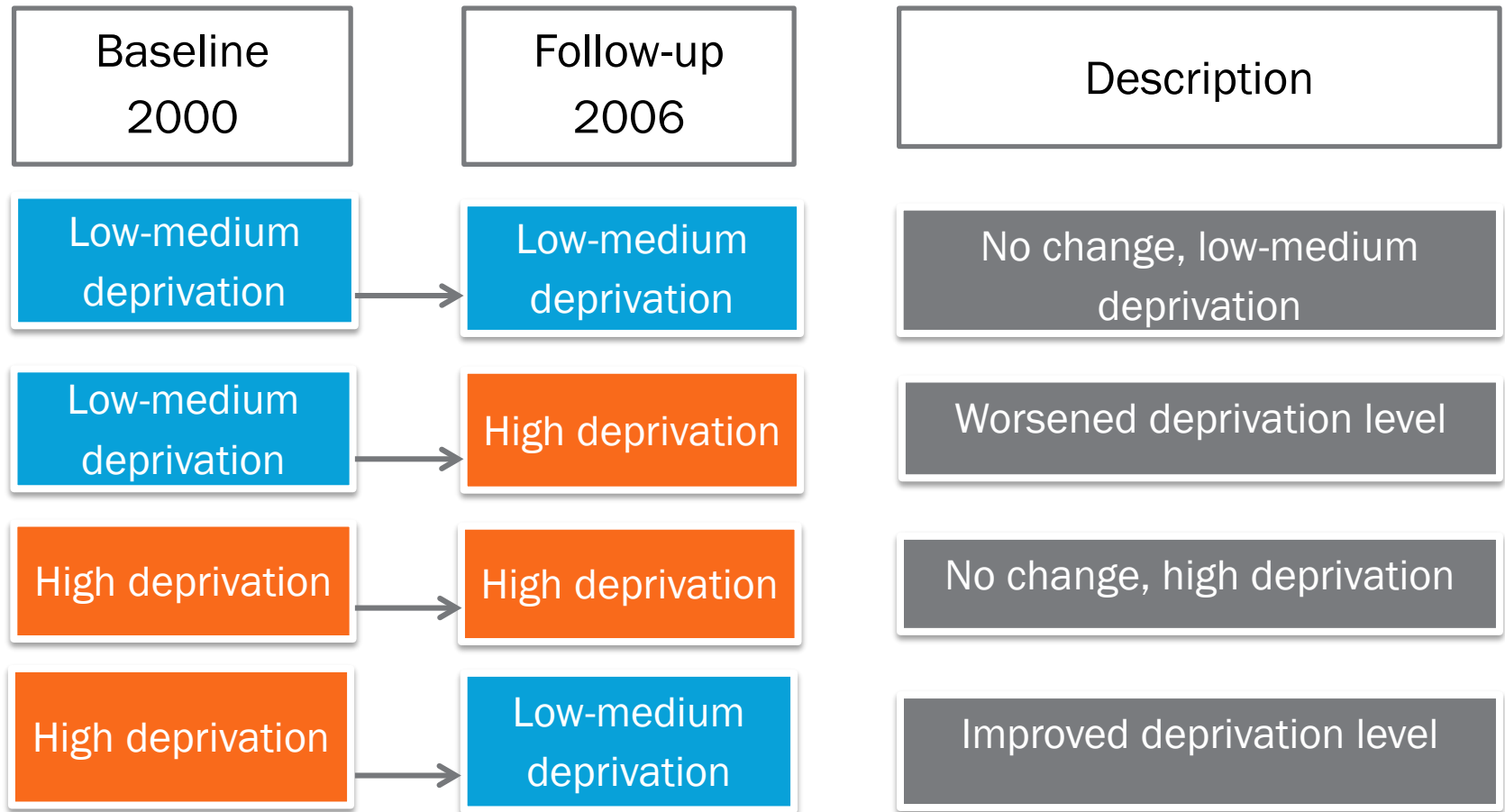
% unemployed

Average personal income

CLASSIFICATION

Q1	Q2	Q3	Q4	Q5
Low-medium deprivation			High deprivation	

DEPRIVATION CHANGE

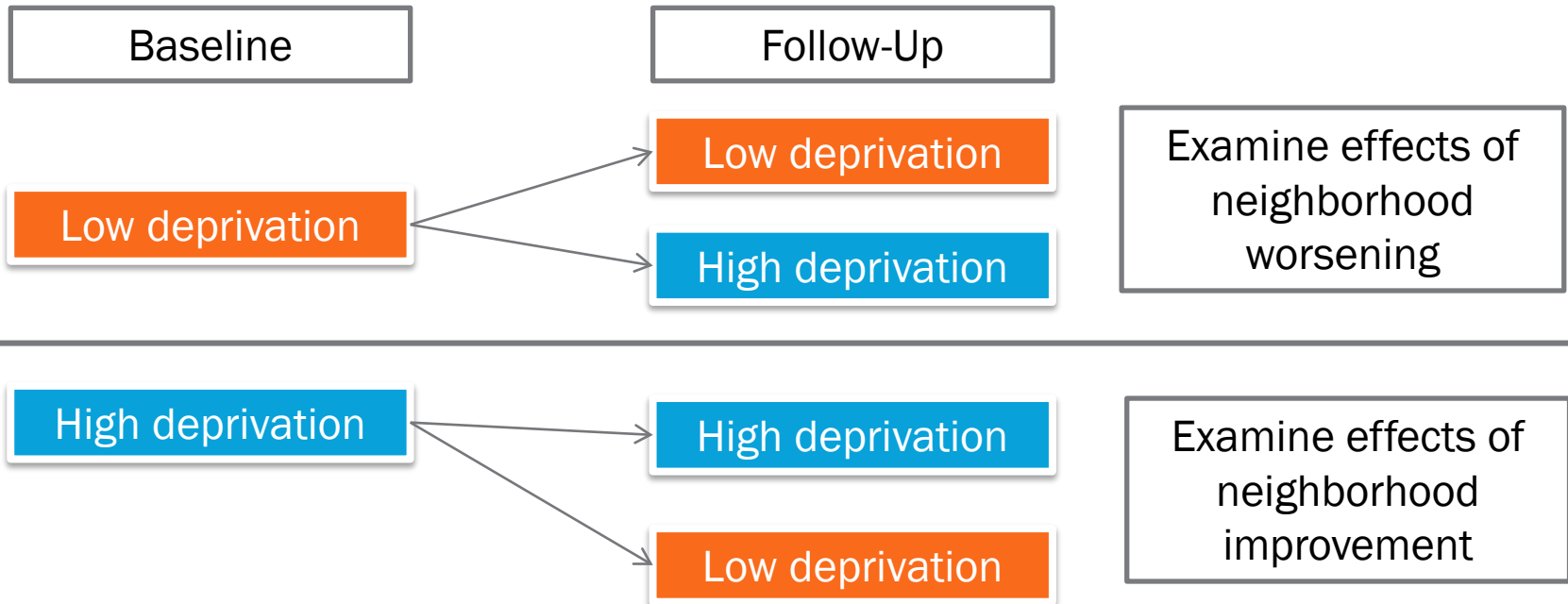



COVARIATES

- Age
- Sex
- Marital status
- Education
- Income adequacy

ANALYSIS

- ❑ Multiple linear regression models, stratified by baseline deprivation level.





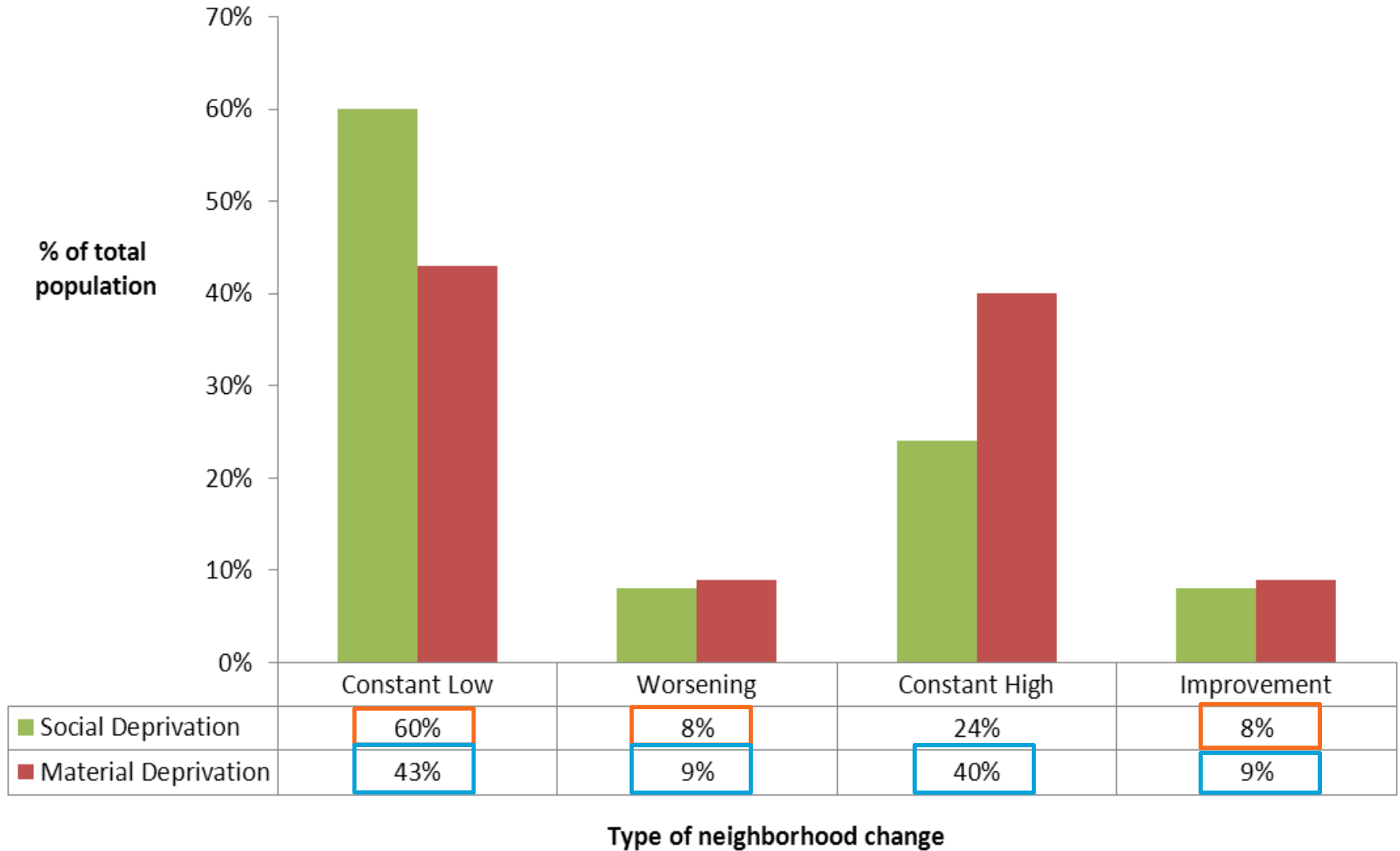
RESULTS

DESCRIPTIVE RESULTS

Measures	
Total population	N=2745
Males	44%
Females	56%
Age	52.79 (±13.96)
Marital status	
Single	9%
Married	74%
Widowed/divorced/ separated	17%
Race	
Caucasian	96%
Non-Caucasian	4%
Income adequacy	
Low	10%
High	90%

Measures	
Education attainment	
Less than high school	26%
High school graduate	38%
Post-secondary graduate	36%
Social deprivation	
Low-medium	68%
High	32%
Material deprivation	
Low-medium	52%
High	48%
Baseline distress	
Mean score	1.67 (± 2.55)

PATTERNS OF NEIGHBORHOOD CHANGE



EFFECTS OF SOCIAL DEPRIVATION CHANGE ON DISTRESS

Independent variables	Low social deprivation at baseline Worsening vs. Constant low-medium deprivation Coefficient (CI)*		High social deprivation at baseline Improvement vs. Constant high deprivation Coefficient (CI)	
Neighborhood change (ref. no change)	0.08 (-0.03-0.18)		0.13 (0.01-0.26) [†]	0.11 (-0.01-0.23)
Sex (ref. men)	0.1 (0.03-0.17) [‡]		0.19 (0.07-0.30) [†]	0.09 (-0.02-0.2)
Age (years)	-0.004 (-.007,- .001) [‡]		-0.007(-.011,-.003) [‡]	-0.003 (-.007-.001)
Race (ref. Caucasian)	-0.07 (-0.25-0.11)		0.17 (-0.13-0.47)	0.08 (-0.20-0.37)
Marital Status (ref. married)				
Single	0.06 (-0.08-0.19)		0.04 (-0.13-0.21)	0.05 (-0.10-0.21)
Widowed/ Separated/Divorced	-0.07 (-0.17-0.04)		0.11 (-0.03-0.27)	0.15 (0.01-0.29) [†]
Education (ref. post-sec.)				
High school	-0.02(-0.09-0.06)		0.07 (-0.05-0.20)	0.06 (-0.06-0.18)
Less than high-school	0.10 (0.01-0.19) [†]		0.11 (-0.04-0.27)	0.09 (-0.05-0.24)
Income adequacy (ref. High)	0.14 (0.01-0.28) [†]		0.08 (-0.1-0.27)	-0.05 (-0.22-0.13)
Baseline Distress	0.40 (0.35-0.44) [‡]			0.39 (0.32-0.46) [‡]

* ‡=p<0.01 †= p<0.05

EFFECTS OF MATERIAL DEPRIVATION CHANGE ON DISTRESS

Independent variables	Low material deprivation at baseline Worsening vs. Constant low-med deprivation Coefficient (CI)*		High material deprivation at baseline Improvement vs. Constant high deprivation Coefficient (CI)	
Neighborhood change (ref. no change)	0.05 (-0.06-0.15)		0.13 (0.01-0.26) [†]	0.11 (-0.01-0.23)
Sex (ref. men)	0.10 (0.2-0.18) [†]		0.19 (0.07-0.3) [‡]	0.09 (-0.01-0.19)
Age (years)	-0.005(-.008,-.002) [‡]		-0.008 (-0.01,-.003) ^{1‡}	-0.003 (-.007-.007)
Race (ref. Caucasian)	0.08 (-0.12-0.28)		0.17 (-0.13-0.47)	0.14 (-0.16-0.44)
Marital Status (ref. married)				
Single	-0.01 (-0.14-0.13)		0.04 (-0.13-0.47)	0.05 (-0.10-0.21)
Widowed/ Separated/Div.	0.04 (-0.07-0.15)		0.11 (-0.04-0.26)	0.15 (0.01-0.29) [†]
Education (ref. post-sec.)				
High school	0.02 (-0.07-0.10)		0.07 (-0.05-0.2)	0.06 (-0.06-0.17)
Less than high-school	0.17 (0.06-0.29) [‡]		0.11 (-0.04-0.27)	0.09 (-0.05-0.24)
Income adequacy (ref. High)	0.20 (0.04-0.36) [‡]		0.08 (-0.1-0.27)	-0.04 (-0.22-0.13)
Baseline Distress	0.40 (0.34-0.45) [‡]			0.39 (0.32-0.46) [‡]

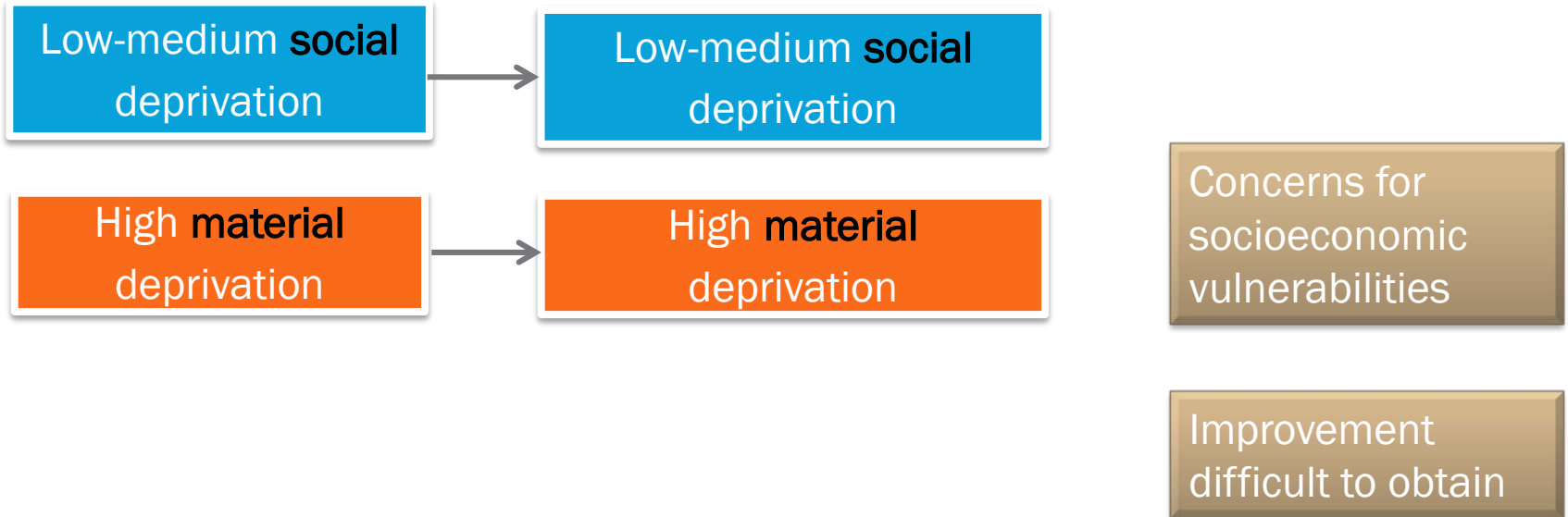
* ‡=p<0.01 †= p<0.05



DISCUSSION

WHAT DOES THIS STUDY ADD?

Description of trajectories of change



PREDICTORS OF DISTRESS

In fully adjusted models deprivation change is not associated with distress

Without baseline distress: neighborhood improvement significantly associated with distress.

Why?

Gentrification?
Social hierarchies
Social and material exclusion
Corroded networks of support

- **Low deprivation areas**

Women
Younger adults
Low income
Low education
Baseline distress

- **High deprivation areas**

Widowed, separated, divorced
Baseline distress

LIMITATIONS

- Generalizability of sample
- Classification of neighborhood change
- Timeframe of study
- Ecological data

STRENGTHS

- Longitudinal data
- Urban sample
- Clinically validated psychological distress measure

FUTURE DIRECTIONS

- What other ways can neighborhood change be measured?
- Planned vs. unplanned change?
- Examine 2008-2012 time period, post-recession
- Subjective vs. objective deprivation measures

PUBLIC HEALTH IMPLICATIONS

- Focus on socially and economically vulnerable groups
- Look at relationship in more detail
- Examine causes of deprivation

ACKNOWLEDGMENTS

Co-authors

Dr. Norbert Schmitz

Geneviève Gariépy, PhD candidate

Collaborators

Bonnie Au

Dr. Kimberley Smith

Cassandra Freitas

Carla Lipscombe

Affiliations



McGill
UNIVERSITY

Funding



Data Access



QUESTIONS OU
COMMENTAIRES?

Ö

QUESTIONS OR
COMMENTS?



ADDITIONAL SLIDES

STRENGTHS AND LIMITATION OF INDEX

Strengths

- Accessible, affordable
- Nation-wide
- Multiple time points
- Good measure of area SES

Limitations

- Poor proxy for social relationships
- Aggregate data
- Not place-specific
- Ecological

INCOME ADEQUACY

Low income adequacy:

1-2 persons with less than \$15,000

3-4 persons with less than \$20,000

5 or more persons with less than \$30,000

High income adequacy:

1-2 persons with more than \$15,000

3-4 persons with more than \$20,000

5 or more persons with more than \$30,000

Limitations:

- Very little variation in sample
- No gradation (low-medium-high)

URBAN AREAS

Census Metropolitan Areas (CMAs) =

- Defined by Statistics Canada
- Areas that consist of 1 or more neighboring municipalities which have a total population of at least 100,000
- At least 50,000 or more live in the core.

K6 DISTRESS SCALE

The following questions are about how you have been feeling during the **past 30 days**.

1. About how often during the past 30 days did you feel **nervous** - would you say **all** of the time, **most** of the time, **some** of the time, **a little** of the time, or **none** of the time?
2. During the past 30 days, about how often did you feel **hopeless** - **all** of the time, **most** of the time, **some** of the time, **a little** of the time, or **none** of the time?
3. During the past 30 days, about how often did you feel **restless or fidgety**?
(IF NEC: **all, most, some, a little, or none** of the time?)

4. How often did you feel **so depressed that nothing could cheer you up**?
(IF NEC: **all, most, some, a little, or none** of the time?)
5. During the past 30 days, about how often did you feel that **everything was an effort**?
(IF NEC: **all, most, some, a little, or none** of the time?)
6. During the past 30 days, about how often did you feel **worthless**?
(IF NEC: **all, most, some, a little, or none** of the time?)

RELEVANT SOURCES OF ATTRITION

- 3198 persons were movers between 2000-2006
- 2522 persons lived in rural areas
- 1376 persons did not complete questionnaire
- 910 persons died before or at follow-up
- 20 persons were institutionalized
- 342 persons were missing distress scores at baseline or follow-up