

Multimorbidity occurs 5 to 10 years earlier in highly deprived neighbourhoods

Introduction

- One in five adults (20%) is living with multimorbidity (the coexistence of multiple chronic illnesses) and the prevalence increases with ageing.⁽¹⁾
- The prevalence of multimorbidity increases in high deprived neighbourhoods^(1,2).
- The increase in multimorbidity with ageing occurs earlier in highly deprived neighborhoods⁽²⁾, but the estimation of the gap is unknown.

Objective

- To evaluate the effect of socioeconomic status on the occurrence of multimorbidity by quantifying how many years earlier multimorbidity is diagnosed in highly deprived neighborhoods compared to less deprived ones.

Methods

Study design, data and population

- Retrospective, population-based study of the adult population aged 25 and older in the province of Québec, Canada in 2016/2017.
- We extracted data from the Quebec Integrated Chronic Disease Surveillance System (QICDSS)⁽³⁾.

Multimorbidity measure

- Multimorbidity is defined as the occurrence of ≥ 2 medical conditions.
- We included 31 medical conditions listed in the Combined Comorbidity index, an index previously validated in our database.⁽⁴⁾
- Case definition for each medical condition:
 - At least 1 diagnosis code in one hospitalisation or at least 2 diagnosis codes in two physician claims between at least 30 days apart between April 1st, 2012 and March 31st, 2017.

Socioeconomic status

- We assessed socioeconomic status using the material deprivation index, a validated measure that assigns a deprivation quintile based on place of residence. Neighborhoods with the most deprived quintile have the lowest mean income, employment rate and education level.

Statistical analysis

- Prevalence of multimorbidity 2+ was measured by five year age groups (25-29 y.o., 30-34 y.o., ..., 90-94 y.o., 95+ y.o.) and by deprivation quintiles.
- We estimated graphically the width of the gap in age at which multimorbidity prevalence reached 5%, 10%, 30% and 50% respectively, between the most deprived and the less deprived neighborhoods.

Results

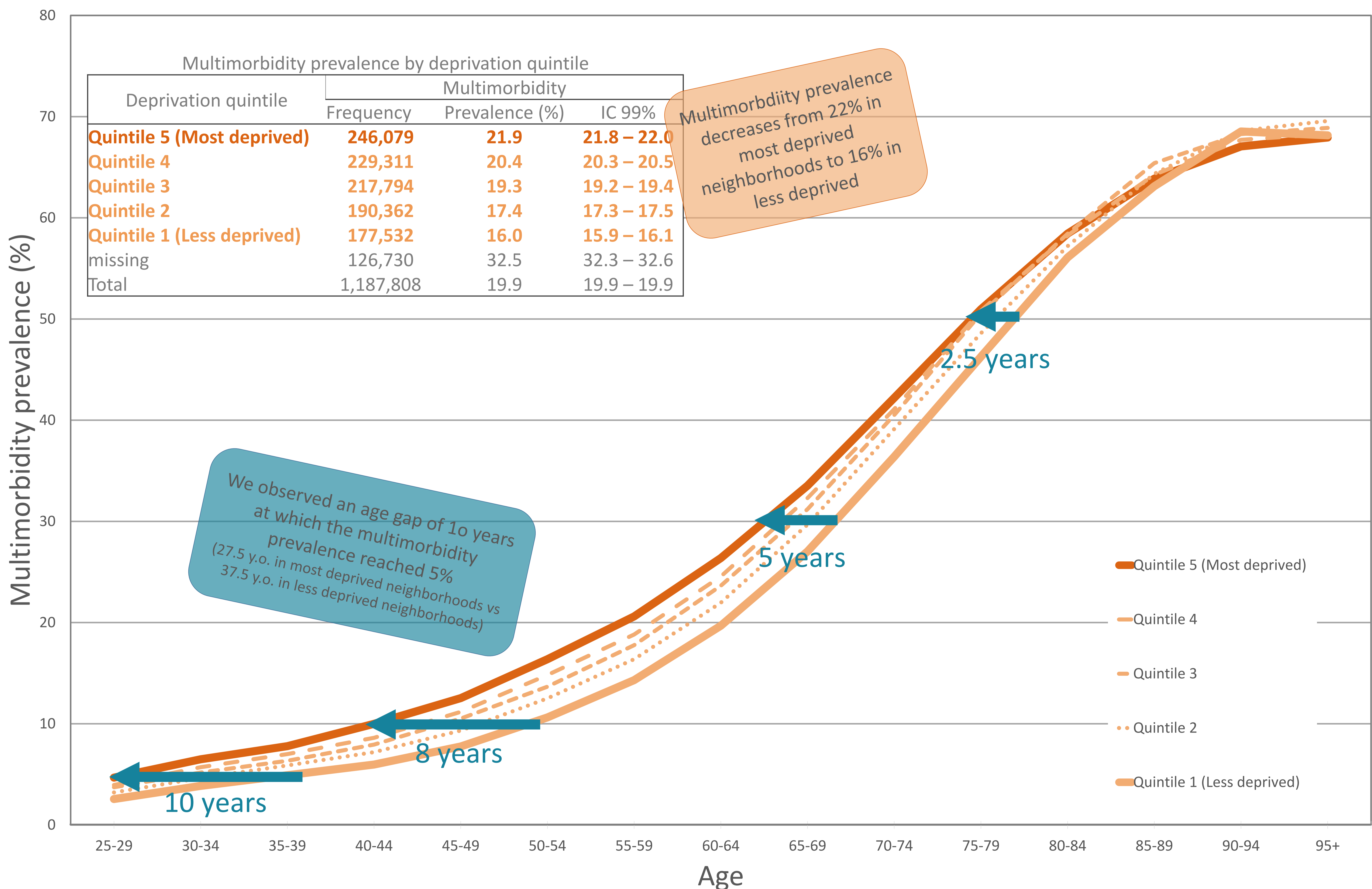


Figure 1: Prevalence of multimorbidity by age and deprivation quintile and the width of the gap in age at which multimorbidity prevalence reaches 5%, 10%, 30% and 50% respectively in the ≥ 25 year old (y.o.) Québec population, Canada, 2016/2017 (n = 5,968,173)

Discussion

- The prevalence of multimorbidity is higher in most deprived neighborhoods.
- Socioeconomic status may influence the age at which multimorbidity occurs, since multimorbidity can appear up to 10 years earlier in people living in most deprived neighborhoods.
- Actions to prevent chronic diseases and promote healthy lifestyles must be intensified in deprived areas.

Bibliography

- (1) Simard M, Dubé M, Gaulin M et al. La prévalence de la multimorbidité au Québec: portrait pour l'année 2016-2017. INSPQ, QC, Canada. 12 p. (2019)
- (2) Barnett K, Mercer SW, Norbury M et al. Epidemiology of multimorbidity and Implication for Health Care, Research, and Medical Study. Lancet, 38-(1474-547X):37-43 (2012)
- (3) Blais C, Jean S, Sirois C et al. Le système intégré de surveillance des maladies chroniques du Québec (SISMACQ), une approche novatrice. Maladies chroniques et blessures au Canada, 34(4):247-256 (2014)
- (4) Simard M, Sirois C, Bernard C. Validation of the Combined Comorbidity Index of Charlson and Elixhauser to Predict 30 day Mortality Across ICD-9 and ICD-10. Medical Care, 56(5):441-447 (2018)