SSM - Population Health 15 (2021) 100890

Contents lists available at ScienceDirect

SSM - Population Health

journal homepage: www.elsevier.com/locate/ssmph

Intergenerational social mobility and self-rated health in Canada

Gerry Veenstra *, Adam Vanzella-Yang

University of British Columbia, Canada

ARTICLE INFO

Keywords:
Canada
Socioeconomic resources
Intergenerational mobility
Self-rated health

ABSTRACT

A growing body of research seeks to reveal the health effects of 'falling from grace' or 'rising from rags,' i.e., experiencing downward or upward mobility relative to one's family socioeconomic background. In this study, we mobilized a unique dataset, the 2012 Longitudinal and International Study of Adults linked to historical income data from the Canada Revenue Agency, to investigate associations between both educational and income mobility and self-rated health in a national sample of approximately 2500 women and 2300 men aged 25 to 50. Compared to educational immobility, extreme downward educational mobility corresponded to elevated odds of reporting good/fair/poor health among women (OR = 3.053; 95% CI = 0.991 … 9.393). Compared to income immobility, downward income mobility in general (OR = 1.533; 95% CI = 1.115 … 2.106) and extreme downward income mobility in particular (OR = 2.389; 95% CI = 1.481 … 3.854) both corresponded to elevated odds of reporting good/fair/poor health among women. Among men, extreme upward income mobility (OR = 0.674; 95% CI = 0.463 … 0.984) corresponded to reduced odds of reporting good/fair/poor health and extreme downward income mobility (OR = 2.237; 95% CI = 1.157 … 4.323) corresponded to elevated odds of reporting good/fair/poor health, compared to men with immobile incomes. In summary, upward income mobility was beneficial for men's self-rated health, downward educational mobility was detrimental to the self-rated health of women, and downward income mobility was detrimental to the self-rated health of both women and men in this Canadian study.

1. Introduction

Research on the health effects of intergenerational social mobility has come thick and fast in recent years (Gugushvili & Präg, 2021; Präg & Gugushvili, 2020; Gugushvili, Zhao, & Bukodi, 2019; Gugushvili, McKee et al., 2019; Steiber, 2019; Iveson & Deary, 2017; Campos-Matos & Kawachi, 2015; Nikolaev & Burns, 2014; Houle & Martin, 2011). These studies seek to reveal the health effects of 'falling from grace' or 'rising from rags,' i.e., experiencing downward or upward mobility relative to one's family socioeconomic background. It is hypothesized that descending the socioeconomic hierarchy can have negative implications for health if the experience of downward mobility elevates stress or if downwardly mobile people embrace the dominant unhealthy lifestyle practices, such as smoking or poor dietary choices, in the destination environment (Gugushvili, McKee et al., 2019; Gugushvili, Zhao, & Bukodi, 2019). Ascending the socioeconomic hierarchy can have positive implications for health if upwardly mobile people embrace healthy lifestyle practices in the destination environment, such as engaging in regular physical activity or eating healthily, or if upward mobility fosters confidence and a personal sense of control (Gugushvili, McKee et al., 2019; Gugushvili, Zhao, & Bukodi, 2019). And, finally, mobility in either direction can negatively affect health if deeply internalized habits, attitudes and preferences acquired in the position of origin are inappropriate in the position of destination (Daenkindt 2017).

A review of previous research on intergenerational mobility that utilizes subjective health measures akin to the outcome utilized in our study, self-rated health, reveals the existence of associations between both downward and upward mobility and health across a variety of national contexts. Peck (1992) found that occupationally upwardly mobile men in Sweden were less likely than non-mobile men to perceive their health as poor. A Russian study found that, compared to non-mobile people, perceived upward social mobility corresponded to better self-assessed health and perceived downward social mobility corresponded to worse self-assessed health (Gugushvili & Präg, 2021). An American study found that, compared to non-mobile people, upward occupational, educational and income mobility all corresponded to better subjective health and each of downward occupational, educational and income mobility corresponded to worse subjective health

* Corresponding author. Department of Sociology, University of British Columbia, 6303 N. W. Marine Drive, Vancouver, V6T 1Z1, Canada.
E-mail address: gerry.veenstra@ubc.ca (G. Veenstra).

https://doi.org/10.1016/j.ssmph.2021.100890
Received 20 May 2021; Received in revised form 9 July 2021; Accepted 2 August 2021
Available online 3 August 2021

(Nikolaev & Burns, 2014). Nikolaev and Burns (2014) also found that the negative health effects of income mobility in particular were strongest among people aged 35–45 years. A German study found that upward educational mobility was conducive to health satisfaction and downward educational mobility was detrimental to health satisfaction, relative to non-mobile people, but only among adults less than 60 years of age (Steiber, 2019). In a comparison of the effects of educational mobility on self-rated health across different welfare regimes in Europe, Campos-Matos and Kawachi (2015) found that educationally upwardly mobile people typically had lower odds of reporting poor health than educationally immobile people, but that the associations were stronger in the former USSR countries and weaker in the Scandinavian countries. However, a recent study of occupational mobility in Europe found that neither upward or downward mobility was significantly associated with self-rated health in Europe, with the exception of four post-communist countries within which downward mobility corresponded to a higher likelihood of poor health and upward mobility corresponded to a lower likelihood of poor health (Präg & Gugushvili, 2020). Consistent with the latter findings, a study of older Scottish individuals found that mobility from parental occupational class was not significantly associated with self-rated heath (Iveson & Deary, 2017). This brief review indicates that, first, associations between different kinds of social mobility and subjective health have been identified in a wide range of countries, but that there may be somewhat more compelling evidence for such associations in post-communist countries than in social democratic countries. Second, upward mobility tends to correspond to better subjective health and downward mobility tends to correspond to worse subjective health. Third, the few studies that stratify by gender suggest that the health effects of mobility may be more pronounced for men than for women. And finally, the few studies that stratify by age suggest that the health effects of mobility may be stronger for younger working-aged people than for older people.

In this study, we mobilized a unique dataset, the Longitudinal and International Study of Adults (LISA) linked to current and historical income data from the Canada Revenue Agency (CRA), to investigate associations between intergenerational social mobility and self-rated health in a national sample of Canadian adults aged 25 to 50. Our study contributes to the abovementioned literature in the following ways. First, we describe associations between social mobility and self-rated health in an as yet unexamined context, Canada. The presence of associations between social mobility and self-rated health in a variety of other contexts, including Canada's near neighbour, the United States, leads us to anticipate that social mobility will be germane for self-rated health in this context as well. Second, we investigate the health effects of income mobility in particular. As far as we know, only one previous study (Nikolaev & Burns, 2014) has investigated the effects of income mobility for subjective health, and the measure of parental income utilized in that study was a rough measure derived from a survey respondent's subjective assessment of whether the income of their parents in childhood were above average, average or below average. The lacuna of valid measures of parental income in this literature presumably stems from a paucity of valid data on parental incomes during childhood which is typically only available in longstanding panel studies. The nature of our dataset, comprised of survey data linked by Statistics Canada to current and historical income data from the Canada Revenue Agency, allows us to investigate the health effects of income mobility utilizing income data for respondents and their parents that is exceptionally valid and precise. Third, we also investigate the health effects of educational mobility – only a few studies have compared the health effects of multiple measures of social mobility (e.g., Gugushvili & Präg, 2021; Nikolaev & Burns, 2014). Considering multiple kinds of intergenerational mobility in a single study can help to more fully uncover the health effects of mobility and adjudicate between the relative effects of experiencing different kinds of mobility. Fourth, we utilize family incomes rather than individual earnings which allows us to indirectly account for the role of assortative mating in intergenerational reproduction and mobility. Assortative mating refers to the phenomenon where women from wealthy families tend to marry high-earning men and can therefore choose to work fewer hours, ending up with lower earnings in the labour market (Black & Devereux, 2010). Accordingly, a focus on individual earnings can misrepresent the economic standing of many wealthy women. Fifth, we investigate gender differences in associations between intergenerational social mobility and self-rated health. In light of the abovementioned research, we hypothesize that intergenerational social mobility will be more strongly associated with self-rated health among men than among women, perhaps because socioeconomic standing is more closely tied to sense of self-worth (Schieman, 2002) or health-related practices (Mahalik et al., 2007) among men which may make the experience of downward mobility especially damaging for their health.

2. Methods

2.1. Survey data

The survey data came from the first wave of the LISA collected by Statistics Canada in 2012. The LISA was developed to provide longitudinal information on labour market, education and training, skills, health and family experiences. The target population for the first wave of the LISA was all residents of Canada's ten provinces aged 15 and older excluding individuals living on reserves and other Aboriginal settlements, official representatives of foreign countries living in Canada and their families, members of religious and other communal colonies, members of the Canadian Armed Forces stationed outside of Canada, persons living fulltime in institutions and persons living in other collective dwellings. 11,458 of 15,907 (72.0%) randomly selected households participated in the first wave of the study. Attempts were made to survey all members of each participating household who were aged 15 and older, with a person-level response rate of 89.0%. This led to a final survey sample of 23,926 respondents. We then restricted our sample to the approximately 19,000 respondents who were aged 25 or older to ensure that the majority of study participants had completed their educational training.

Survey respondents reported the highest educational attainment of their mother or female guardian and their father or male guardian. From these we created a single variable assessing highest parental education that distinguished between (i) high school diploma or less, (ii) certificate or diploma from a technical school, community college or university and (iii) bachelor degree or higher. Respondent education similarly distinguished between (i) high school diploma or less, (ii) certificate or diploma from a technical school, community college or university and (iii) bachelor degree or higher. We constructed six binary educational mobility variables from these variables. First, an "upward educational mobility" variable identified respondents with a higher level of education than their parents. Next, we decomposed this variable into two variables that distinguished between different degrees of upward mobility, namely, one educational category higher than their parents ("upward educational mobility – one step") and two educational categories higher than their parents ("upward educational mobility – two steps"). Last, we created three analogous variables for downward educational mobility.

The control variables, each of which has the potential to confound the association between mobility and self-rated health, are age in years and its square, marital status (distinguishing between married or common-law respondents and others) and immigrant status (distinguishing between immigrants to Canada and native-born Canadians).

To assess health, respondents were asked 'In general, would you say your health is excellent, very good, good, fair or poor?' which we dichotomized to distinguish between excellent or very good (coded 0) and good, fair or poor (coded 1).[1]

2.2. Linked income tax data

Statistics Canada used Social Insurance Numbers to link the LISA respondents to their T1 Family File (T1FF) income tax data from 2011. This databank of Canadian tax filers grouped into families includes income data, both personal and family, before and after taxation. A T1FF family is comprised of a married couple with or without children of either or both spouses, a common-law couple with or without children of either or both partners, a lone parent living with at least one child or a person living alone. We procured the 2011 before-tax family incomes of the survey respondents who filed for taxes in the 2011 tax year but were not designated as a 'filing child,' i.e., they were not an adult child in a parent's family in 2011. We created a tertiles version of this variable for use in our study. Statistics Canada also provided historical T1FF data for the respondents and their extended family members going back to 1982. We determined the year in which each respondent first filed a T1 income tax form with the CRA and further restricted our sample to the respondents who were designated as a filing child at the time of first filing, i.e., they were a member of a T1FF family containing at least one of their parents at the time of first filing. The majority of these respondents were between the ages of 15 and 21 at the time of first filing (about half of whom were 17 or 18 years old); we further restricted our sample to this group. We subtracted the respondent's own income that year from the family income at the time of first filing and then transformed the resultant variable into 2011 dollars to adjust for inflation. We created a tertiles version of this variable as well. We then constructed three binary income mobility variables from the two income tertiles variables: an "upward income mobility" variable identified respondents whose incomes were one or two tertiles higher than those of their parents, an "upward income mobility – one step" variable identified respondents whose incomes were one tertile higher than those of their parents and an "upward income mobility – two steps" variable identified respondents whose incomes were two tertiles higher than those of their parents. Three analogous variables for downward income mobility were also created.

2.3. Statistical methods

Identifying the health-related outcomes of intergenerational mobility requires parsing out the effects of positions of origin and destination from the effects of mobility per se. The common analytical strategy of regressing a categorical variable that distinguishes between stably high status, movement from high to low status, movement from low to high status and stably low status on health cannot empirically disentangle mobility effects from origin and destination effects (van der Waal et al., 2017). Distinguishing between upwardly mobile, downwardly mobile and immobile individuals while controlling for position of origin yields mobility coefficients that are independent of position of origin but are not independent of position of destination (van der Waal et al., 2017). A more sophisticated strategy is called for, namely, the application of diagonal reference models (DRMs). First developed by Sobel (1985) for the explicit purpose of investigating consequences of social mobility, DRMs are capable of identifying the health effects of mobility per se by comparing the health of mobile individuals to the health of non-mobile members of the origin and destination positions (Houle & Martin, 2011; Sobel, 1985; van der Waal et al., 2017). The baseline DRM can be specified as:

$$Y_{ijk} = w \times \mu_{ii} + (1 - w) \times \mu_{jj} + \Sigma\, \beta x_{ijkl} + e_{ijk}$$

Subscripts i and j represent the social positions of origin and destination, respectively. Y_{ijk} is the value of the dependent variable in cell ij of the mobility table which has k observations. μ_{ii} is the estimate of Y in the diagonal cell in the row denoting the position of origin while μ_{jj} is the estimate of Y for the diagonal cell in the column denoting the position of destination. w estimates the strength of the effect of the position of origin relative to the position of destination and falls between 0 and 1, inclusive. β_{xijkl} refers to the l covariates in the model. This model facilitates parsing out the effects of positions of origin and destination from the effects of upward or downward mobility. We calculated binary logit DRMs for good/fair/poor self-rated health using the Stata command *drm* (Kaiser, 2018). Executed separately for women and men and for educational and income mobility, the first model is the baseline model to which the mobility variables are added in subsequent models. The second model adds the upward and downward mobility variables to the first model and the third model adds the decomposed upward and downward mobility variables – the variables distinguishing between degrees of mobility – to the first model. We applied the responding person weights provided by Statistics Canada to all of these models.

After constructing the income variables, only 1.8% of the cases had missing data for one or more of the other variables utilized in our study. Listwise deletion produced a final sample comprised of approximately 2500 women and 2300 men aged 25 to 50. Tables 1 and 2 provide descriptive statistics for the variables utilized in our study to which we applied the analytic weights provided by Statistics Canada and then rounded to the nearest 10 as per Statistics Canada guidelines. Statistical analyses were conducted in Stata 15. The study was approved by the Behavioural Research Board at The University of British Columbia.

Table 1
Sample characteristics.

	Women	Men
	n (%)	*n (%)*
Highest parental education		
High school diploma or less	1000 (39)	1020 (44)
College or TS diploma	770 (31)	670 (29)
Bachelor degree and above	740 (30)	650 (28)
Respondent education		
High school diploma or less	470 (19)	700 (30)
College or TS diploma	990 (39)	970 (41)
Bachelor degree and above	1050 (42)	670 (29)
Parental family income tertile		
1 (lowest)	730 (29)	720 (31)
2 (middle)	800 (32)	790 (34)
3 (highest)	980 (39)	830 (35)
Respondent family income tertile		
1 (lowest)	920 (37)	830 (35)
2 (middle)	790 (31)	780 (33)
3 (highest)	800 (32)	730 (31)
Immigration status		
Born in Canada	2200 (88)	2050 (88)
Immigrated to Canada	310 (12)	290 (12)
Marital status		
Married or common-law	1290 (51)	1130 (48)
Not married or common-law	1220 (49)	1210 (52)
Self-rated health		
Poor	30 (1)	40 (2)
Fair	130 (5)	110 (5)
Good	530 (21)	600 (26)
Very good	1000 (40)	880 (38)
Excellent	820 (33)	710 (30)
Age in years	mean = 37.3 sd = 7.7	mean = 37.7 sd = 7.8
Total n (approximate)	2500	2300

[1] Another common way of dichotomizing self-rated health in the literature is to distinguish between excellent, very good or good (coded 0) and fair or poor (coded 1). Several of the intergenerational mobility models failed to converge using this coding scheme.

Table 2
Mobility characteristics of the sample.

	Women	Men
	n (%)	*n (%)*
Upward educational mobility		
Yes	1000 (40)	760 (32)
No	1510 (60)	1580 (68)
Upward educational mobility – one step		
Yes	750 (30)	570 (25)
No	1760 (70)	1760 (75)
Upward educational mobility – two steps		
Yes	250 (10)	180 (8)
No	2260 (90)	2160 (92)
Downward educational mobility		
Yes	370 (15)	490 (21)
No	2140 (85)	1850 (79)
Downward educational mobility – one step		
Yes	320 (13)	380 (16)
No	2190 (87)	1960 (84)
Downward educational mobility – two steps		
Yes	50 (2)	110 (5)
No	2460 (98)	2230 (95)
Upward income mobility		
Yes	630 (25)	620 (26)
No	1880 (75)	1720 (74)
Upward income mobility – one step		
Yes	480 (19)	480 (20)
No	2030 (81)	1860 (80)
Upward income mobility – two steps		
Yes	150 (6)	140 (6)
No	2360 (94)	2200 (94)
Downward income mobility		
Yes	860 (34)	740 (32)
No	1650 (66)	1600 (68)
Downward income mobility – one step		
Yes	580 (23)	520 (22)
No	1930 (77)	1810 (78)
Downward income mobility – two steps		
Yes	290 (11)	220 (9)
No	2220 (89)	2120 (91)
Total n (approximate)	2500	2300

3. Results

Table 1 indicates that, compared to men, the women in the sample had less educated parents, were better educated themselves, came from wealthier families and reported better self-rated health, on average. They were also more likely than men to have experienced upward educational mobility and less likely than men to have experienced downward educational mobility (Table 2). Notably, few women or men in the sample had experienced extreme downward educational mobility (2% and 5%, respectively) or extreme upward income mobility (6% and 6%, respectively) in particular.

Table 3 summarizes the results of DRMs executed on good/fair/poor self-rated health with a focus on educational mobility. The base model (Model 1 in Table 3) indicates that respondents who were stably low (they and their parents have/had high school diplomas or less) were relatively likely to report good/fair/poor health ($\mu_{11} = 0.332$ and 0.313 for women and men, respectively) and respondents who were stably high (they and their parents have/had bachelor degrees or higher) were relatively unlikely to report good/fair/poor health ($\mu_{33} = -0.355$ and -0.441 for women and men, respectively). Models 2 and 3 introduce the mobility variables to the base model. These models indicate that, compared to being educationally immobile, none of the upward or downward educational mobility variables was significantly associated with self-rated health among women or men. However, extreme downward educational mobility was close to being statistically significant (OR = 3.053; 95% CI = 0.991 … 9.393) among women, where experiencing this form of mobility corresponded to elevated odds of reporting good/fair/poor health.

Table 4 describes the results from a similar set of DRMs on good/fair/poor health but with a focus on income mobility instead of educational mobility. Model 1 indicates that respondents who were stably low (they and their parents were in the lowest third of incomes) were relatively likely to report good/fair/poor health ($\mu_{11} = 0.295$ and 0.357 for women and men, respectively) and respondents who were stably high (they and their parents were in the highest third of incomes) were relatively unlikely to report good/fair/poor health ($\mu_{33} = -0.403$ and -0.329 for women and men, respectively). Among women, downward income mobility in general (OR = 1.533; 95% CI = 1.115 … 2.106) and extreme downward income mobility in particular (OR = 2.389; 95% CI = 1.481 … 3.854) were both significantly associated with elevated odds of reporting good/fair/poor health, compared to women with immobile incomes. Among men, extreme upward income mobility (OR = 0.674; 95% CI = 0.463 … 0.984) corresponded to reduced odds of reporting good/fair/poor health and extreme downward income mobility (OR = 2.237; 95% CI = 1.157 … 4.323) corresponded to elevated odds of reporting good/fair/poor health, in comparison with men with immobile incomes.

Table 3
Diagonal Reference Models with logit link on good/fair/poor self-rated health – the case of educational mobility.

Women	Model 1	Model 2	Model 3
Diagonal intercepts			
μ_{11}: low	0.332 (0.152 … 0.512)	0.340 (0.134 … 1.545)	0.269 (0.049 … 0.489)
μ_{22}: medium	0.022 (−0.130 … 0.175)	0.011 (−0.144 … 0.167)	0.113 (−0.120 … 0.346)
μ_{33}: high	−0.355 (−0.516 … −0.193)	−0.351 (−0.529 … −1.174)	−0.382 (−0.601 … −0.162)
w: weight of origin	0.000	0.000	0.172
Upward educational mobility		1.077 (0.827 … 1.404)	
Downward educational mobility		1.104 (0.780 … 1.560)	
Upward educational mobility – one step			1.171 (0.540 … 2.724)
Upward educational mobility – two steps			0.921 (0.575 … 1.477)
Downward educational mobility – one step			0.969 (0.567 … 1.654)
Downward educational mobility – two steps			3.053 (0.991 … 9.393)
Men	**Model 1**	**Model 2**	**Model 3**
Diagonal intercepts			
μ_{11}: low	0.313 (0.117 … 0.509)	0.314 (0.097 … 0.531)	0.292 (0.087 … 0.496)
μ_{22}: medium	0.128 (−0.087 … 0.344)	0.127 (−0.158 … 0.412)	0.184 (−0.055 … 0.422)
μ_{33}: high	−0.441 (−0.668 … −0.215)	−0.441 (−0.690 … −0.192)	−0.475 (−0.718 … −0.232)
w: weight of origin	0.381	0.382	0.582
Upward educational mobility		1.011 (0.630 … 1.621)	
Downward educational mobility		1.014 (0.618 … 1.664)	
Upward educational mobility – one step			0.921 (0.446 … 1.904)
Upward educational mobility – two steps			0.936 (0.660 … 1.327)
Downward educational mobility – one step			1.012 (0.658 … 1.556)
Downward educational mobility – two steps			1.519 (0.725 … 3.180)

Notes: Each model adjusts for age in years, age squared, marital status and immigrant status. The diagonal intercepts are deviations from the overall odds of good/fair/poor health, the weight of origin values are proportions and the coefficients for the mobility variables are odds ratios. The reference group for the mobility variables is the educationally immobile group. The brackets contain 95% confidence intervals for the estimates.

Table 4
Diagonal Reference Models with logit link on good/fair/poor self-rated health – the case of income mobility.

Women	Model 1	Model 2	Model 3
Diagonal intercepts			
μ_{11}: low	0.295 (0.050 … 0.540)	0.205 (−0.033 … 0.443)	0.179 (−0.041 … 0.399)
μ_{22}: medium	0.108 (−0.307 … 0.523)	0.213 (0.015 … 0.410)	0.326 (0.081 … 0.571)
μ_{33}: high	−0.403 (−0.689 … −0.117)	−0.418 (−0.632 … −0.204)	−0.505 (−0.726 … −0.284)
w: weight of origin	0.297	0.727	0.821
Upward income mobility		1.042 (0.750 … 1.448)	
Downward income mobility		1.533 (1.115 … 2.106)	
Upward income mobility – one step			1.083 (0.583 … 2.012)
Upward income mobility – two steps			0.943 (0.682 … 1.303)
Downward income mobility – one step			1.313 (0.919 … 1.876)
Downward income mobility – two steps			2.389 (1.481 … 3.854)
Men	**Model 1**	**Model 2**	**Model 3**
Diagonal intercepts			
μ_{11}: low	0.357 (0.194 … 0.521)	0.313 (−0.421 … 1.047)	0.248 (0.024 … 0.473)
μ_{22}: medium	−0.028 (−0.185 … 0.129)	0.046 (−1.104 … 1.197)	0.180 (−0.068 … 0.429)
μ_{33}: high	−0.329 (−0.492 … −0.167)	−0.360 (−0.833 … 0.114)	−0.429 (−0.644 … −0.213)
w: weight of origin	0.000	0.472	0.860
Upward income mobility		0.848 (0.106 … 6.760)	
Downward income mobility		1.324 (0.184 … 9.526)	
Upward income mobility – one step			0.856 (0.395 … 1.857)
Upward income mobility – two steps			0.674 (0.463 … 0.984)
Downward income mobility – one step			1.317 (0.839 … 2.065)
Downward income mobility – two steps			2.237 (1.157 … 4.323)

Notes: Each model adjusts for age in years, age squared, marital status and immigrant status. The diagonal intercepts are deviations from the overall odds of good/fair/poor health, the weight of origin values are proportions and the coefficients for the mobility variables are odds ratios. The reference group for the mobility variables is the income immobile group. The brackets contain 95% confidence intervals for the estimates.

4. Discussion

Our analysis of intergenerational mobility and health in a sample of Canadians aged 25 to 50 found that downward educational mobility corresponded to greater odds of good/fair/poor self-rated health among women (albeit not quite significantly so), consistent with Steiber's (2019) finding that downward education mobility predicted lower levels of health satisfaction among middle-aged German women. Downward income mobility corresponded to elevated odds of reporting good/fair/poor health among both women and men in our study, consistent with Nikolaev and Burns's (2014) finding that downward income mobility was associated with lower health status in the US. We also found that upward income mobility corresponded to lower odds of good/fair/poor health among men, a finding that is consistent with Nikolaev and Burns (2014) who similarly identified positive subjective health effects of upward mobility. Unfortunately, we were unable to introduce potentially mediating factors to our models that might facilitate *explaining* these associations, leaving plausible explanations pertaining to stress, confidence and self-control, and health-related practices untested in this national context.

Returning to issues raised in the introduction, our findings are consistent with previous literature in that upward mobility corresponded to better subjective health and downward mobility corresponded to worse subjective health. This speaks against the notion that mobility *in general* is detrimental to wellbeing, suggesting that explanations that address the positive benefits of ascending the socioeconomic hierarchy and the negative consequences of descending it should be prioritized in future research in Canada. Second, we incorrectly anticipated that the health effects of mobility would be more pronounced for men than for women. Instead, we found reason to believe that educational mobility is germane for the self-rated health of the women in the sample but not the men, and found associations between downward income mobility and self-rated health that were of similar strength and direction among the women and men in the sample. Third, we claimed that considering multiple kinds of intergenerational mobility in a single study can help to adjudicate between the relative effects of experiencing different kinds of mobility. In our study, we found stronger and more conclusive evidence for the health effects of income mobility than for the health effects of educational mobility. This speaks to the value of complex data linkages of the kind that Statistics Canada and the Canada Revenue Agency have produced for the benefit of Canadian health researchers.

Our study has several characteristics that distinguish it from previous research. First, we considered the family incomes of parents and children as well as their levels of education, allowing us to compare and contrast the health effects of these different kinds of intergenerational social mobility. Second, we used family incomes rather than individual earnings which allowed us to indirectly account for the role of assortative mating in intergenerational reproduction and mobility (Black & Devereux, 2010). Third, we used parental and respondent income data that are exceptionally valid and precise. These characteristics of our study enabled us to produce a more comprehensive and reliable investigation of intergenerational mobility for self-rated health in adulthood in Canada than has previously been possible. However, our study also has notable limitations. Because poor health in childhood can lead to fewer educational credentials and/or lower incomes in adulthood, it is possible that associations between downward mobility and self-rated health reflect the effects of the latter on the former rather than the converse. The absence of data on childhood health renders us incapable of testing this plausible explanation for some of the results reported in our study. Another limitation comes from the process of linking LISA respondents to parental income data. Simard-Duplain and St-Denis (2018) investigated possible sample selection arising from the linking of LISA respondents to parental income data from the CRA. They found that respondents for whom they were able to establish a parental link were relatively likely to be Canadian born, male, employed, living in a single detached home and living in a rural area. They were also more likely to be living with two parents at age 15 and to have well-educated parents and were less likely to be a visible minority. These issues of representativeness likely apply to our analyses as well. And, finally, we were unable to investigate the health implications of occupational mobility, another kind of intergenerational social mobility that may also have important implications for health (Iveson & Deary, 2017; Nikolaev & Burns, 2014; Peck, 1992; Präg & Gugushvili, 2020) which are not captured by measures of educational and income mobility.

In conclusion, we found that downward educational and income mobility were both potentially detrimental to the self-rated health of women but that there was little to distinguish between them in regards to the strength of the associations. We also found that, among men, upward income mobility was beneficial to self-rated health and downward income was detrimental to self-rated health. Overall, we found more evidence for the health effects of income mobility than for the health effects of educational mobility. These findings indicate that researchers should consider indicators of socioeconomic status such as education and income as independent resources rather than as multiple

indicators of a singular status position given that different kinds of intergenerational mobility may be differently germane for health.

CRediT authorship contribution statement

Gerry Veenstra: Conceptualization, Methodology, Data curation, Formal analysis, Writing – original draft, Funding acquisition. **Adam Vanzella-Yang:** Conceptualization, Methodology, Data curation, Writing – review & editing, Funding acquisition.

Declaration of competing interest

The authors declare that they have no conflicts of interest to report.

Acknowledgements

Thanks go to the two anonymous reviewers for their thoughtful comments on an earlier version of this manuscript. This research was supported by an Insight Grant awarded to GV (grant number 435-2019-0003) and a Joseph-Armand Bombardier Canada Graduate Scholarship awarded to AVY (grant number 767-2019-2938) by the Social Sciences and Humanities Research Council of Canada. The analyses were conducted in the Research Data Centre at UBC-Vancouver.

References

Black, S. E., & Devereux, P. J. (2010). Recent developments in intergenerational mobility. In *NBER Working*. Paper No. 15889.

Campos-Matos, I., & Kawachi, I. (2015). Social mobility and health in European countries: Does welfare regime type matter? *Social Science & Medicine, 142*, 241–248.

Daenekindt, S. (2017). The experience of social mobility: Social isolation, utilitarian individualism, and social disorientation. *Social Indicators Research, 133*(1), 15–30.

Gugushvili, A., McKee, M., Murphy, M., Azarova, A., Irdam, D., Doniec, K., & King, L. (2019). Intergenerational mobility in relative educational attainment and health-related behaviours. *Social Indicators Research, 141*(1), 413–441.

Gugushvili, A., & Präg, P. (2021). Intergenerational social mobility and health in Russia: Mind over matter? *Advances in Life Course Research, 47*, 100390.

Gugushvili, A., Zhao, Y., & Bukodi, E. (2019). 'Falling from grace' and 'rising from rags': Intergenerational educational mobility and depressive symptoms. *Social Science & Medicine, 222*, 294–304.

Houle, J. N., & Martin, M. A. (2011). Does intergenerational mobility shape psychological distress? Sorokin revisited. *Research in Social Stratification and Mobility, 29*(2), 193–203.

Iveson, M. H., & Deary, I. J. (2017). Intergenerational social mobility and subjective wellbeing in later life. *Social Science & Medicine, 188*, 11–20.

Kaiser, C. (2018). *DRM diagonal reference model Stata*. Open Science Framework.

Mahalik, J. R., Burns, S. M., & Syzdek, M. (2007). Masculinity and perceived normative health behaviors as predictors of men's health behaviors. *Social Science & Medicine, 64*(11), 2201–2209.

Nikolaev, B., & Burns, A. (2014). Intergenerational mobility and subjective well-being-evidence from the general social survey. *Journal of Behavioral and Experimental Economics, 53*, 82–96.

Peck, N. A. M. (1992). Childhood environment, intergenerational mobility, and adult health – evidence from Swedish data. *Journal of Epidemiology & Community Health, 46*(1), 71–74.

Präg, P., & Gugushvili, A. (2020). Intergenerational social mobility and self-rated health in Europe. Preprint Retrieved from: https://osf.io/Preprints/Socarxiv/5tk4z/.

Schieman, S. (2002). Socioeconomic status, job conditions, and well-being: Self-concept explanations for gender-contingent effects. *The Sociological Quarterly, 43*(4), 627–646.

Simard-Duplain, G., & St-Denis, X. (2018). *An exploration of intergenerational income mobility using the longitudinal and international study of adults*. Copenhagen: IARIW General Conference.

Sobel, M. E. (1985). Social mobility and fertility revisited: Some new models for the analysis of the mobility effects hypothesis. *American Sociological Review, 50*(5), 699–712.

Steiber, N. (2019). Intergenerational educational mobility and health satisfaction across the life course: Does the long arm of childhood conditions only become visible later in life? *Social Science & Medicine, 242*, 112603.

van der Waal, J., Daenekindt, S., & de Koster, W. (2017). Statistical challenges in modelling the health consequences of social mobility: The need for diagonal reference models. *International Journal of Public Health, 62*(9), 1029–1037.