Higher Education and the Marriage Market: Educational Attainment, Educational Homogamy, and Inequality

Lesley Andres

Volume 52, Number 1, 2022

URI: https://id.erudit.org/iderudit/1089394ar

See table of contents

Publisher(s)
Canadian Society for the Study of Higher Education
ISSN
2293-6602 (digital)

Explore this journal

Cite this article

Article abstract
The purpose of this article is to examine if educational homogamy patterns are associated intergenerationally, the extent to which today’s couples are homogamous, and how this translates into levels of family income and financial and overall well-being. To examine these relationships, 28 years of longitudinal data from the British Columbia Paths on Life’s Way project are employed. First, changes in marital status, educational completion, and homogamy are examined with the goal of defining these constructs more precisely. Through descriptive statistics, the relationship between educational attainment and related homogamy levels of Paths respondents and their parents is established. Then, the technique of correspondence analysis is used to determine the relationship between assortative mating and the nature and extent of inequality experienced by Paths respondents. Findings reveal that educational homogamy and its intergenerational associations exist and the extent to which it exacerbates inequality in terms of family income levels, contributions to registered investment plans, and physical, mental, and financial well-being in the sample. The findings of this article highlight the value of a post-secondary education in relation to marriage strategies, and the reproduction of inequalities.
Abstract
The purpose of this article is to examine if educational homogamy patterns are associated intergenerationally, the extent to which today's couples are homogamous, and how this translates into levels of family income and financial and overall well-being. To examine these relationships, 28 years of longitudinal data from the British Columbia Paths on Life’s Way project are employed. First, changes in marital status, educational completion, and homogamy are examined with the goal of defining these constructs more precisely. Through descriptive statistics, the relationship between educational attainment and related homogamy levels of Paths respondents and their parents is established. Then, the technique of correspondence analysis is used to determine the relationship between assortative mating and the nature and extent of inequality experienced by Paths respondents. Findings reveal that educational homogamy and its intergenerational associations exist and the extent to which it exacerbates inequality in terms of family income levels, contributions to registered investment plans, and physical, mental, and financial well-being in the sample. The findings of this article highlight the value of a post-secondary education in relation to marriage strategies, and the reproduction of inequalities.

Keywords: educational homogamy, higher education, inequality, gender, assortative mating, correspondence analysis

Introduction
Considerable recent attention in the media, by policy makers, and in the research literature has been focused on inequality. One identified source of increasing inequality is that of assortative marriage and relationship patterns (Ciscato & Weber, 2020; Clark, 2014; Green et al., 2016; Milanovic, 2016; Organisation for Economic...
Co-operation and Development [OECD], 2017; Picketty, 2020). Historically in western countries, men were more likely to be more highly educated than their wives and, as such, households were more heterogamous in nature. Today, several studies demonstrate that there is a trend toward more educationally homogamous (similar) household formation, particularly among those with higher levels of education (Hou & Myles, 2008; Schwartz, 2013; Tuncay, 2019). Esping-Andersen (2009) asserts that “to the extent that higher education constitutes an important marriage market, it also becomes a strong social filter in terms of social background, world outlooks, and tastes” (p. 41). Homogamy among highly educated couples is believed to lead to more stable relationships, lower levels of unemployment, more commitment to dual careers, and more equal sharing of domestic labour. In addition, the cultural, social, and symbolic capital available in these households is more likely to be transferred to children in ways that ensure favourable educational and occupational outcomes. Conversely, it has been suggested that the opposite is the case for homogamy among couples with low levels of education. “The compelling research question,” assert Ciscato and Weber (2020), “is whether stronger assortativeness with respect to some crucial dimensions—notably, education—is associated with higher inequality” (p. 308).

The purpose of this article is to employ data from a 28-year longitudinal study from the British Columbia Paths on Life’s Way project to explore—from a life course perspective—if educational homogamy patterns are transmitted intergenerationally, the extent to which today’s couples are homogamous, and how this translates into levels of family income and financial and overall well-being. To do so, first I examine the relationship between educational attainment and related homogamy levels of Paths respondents and their parents. Then, I use the technique of correspondence analysis to determine the relationship between assortative mating and the nature and extent of inequality experienced by Paths respondents. In addition, because the same individuals have been followed over time, I am able to examine changes in marital status, educational completion, and homogamy with the goal of defining these constructs more precisely. Analyses of questionnaire data allow for a vivid account of not only the extent of inequality among homogamy groups, but also how such inequality is experienced. The findings of this article highlight the value of a post-secondary education in relation to marriage strategies and the reproduction of inequalities. Although analyses have been conducted in many countries (Blossfield & Timm, 2003), the nature and extent of educational homogamy in Canada remains underexplored (Hamplová & Le Bourdais, 2008; Hou & Myles, 2008).

**Homogamy and Inequality**

Assortative mating in the form of educational homogamy matters because “it organizes people into families” (Schwartz, 2013, p. 452) who are able to pool and share resources. Resources extend beyond financial means. The well-established reproduction theory by Bourdieu (1986; Bourdieu & Passeron, 1977) posits that parents bring cultural, social, and symbolic resources or capital to their union, which are then transmitted to their children in the form of habits, taste, and dispositions. These forms of capital are converted into educational capital, occupational status, and what could be called “marriage market capital.” According to Bourdieu (1976), the earliest learning experiences of children, reinforced as they [are] by all their social experiences, tend...to model their schemes of perception and appreciation, in a word, their tastes, which, since they play...as large a role in their selection of a sexual partner as in other areas, [to] avoid improper alliances…. Here as elsewhere, a happy love, that is, a socially approved and therefore success-bound love, [is] the same thing as that amor fati, love of one’s own social destiny, which brings together socially compatible partners by way of a free choice that is unpredictable and arbitrary in appearance only. (1976, p. 140)

Although this passage was written to describe the marriage strategies of the peasants of Béarn, France in the 1950s, by changing the tense of the text from past to the present, it provides a current theoretical explanation of the intergenerational associations in marriage market capital. Bourdieu (1977) goes on to explain the role of habitus; that is, actions or practices are neither mechanically determined nor the result of creative free will but are instead “determined by past conditions which have produced the principle of their production” (p. 73). Even when an action or practice (e.g., educational attainment, choice of marriage partner) appears as the realization
of the explicit, and explicitly stated, strategy—for example, choosing the most attractive mate (Birkelund & Heldal, 2003, p. 3), choosing a partner who is most similar to oneself (matching hypothesis), or one with more of a particular characteristic (competition hypothesis) (Schwartz, 2013, p. 453)—these strategies are, in reality, produced by the habitus, which is the strategy generating principle enabling agents to cope with unforeseen and ever-changing situations (Bourdieu, 1977). As such, marriage strategies should not be viewed as abstract and not related to others, as such as educational strategies. Rather, they must be seen as one element in the entire system of biological, cultural, and social reproduction by which every group endeavours to pass on to the next generation the full measure of power and privilege it has itself inherited. (Bourdieu, 1976, p. 141)

In terms of marriage market and educational homogamy, Bourdieu’s concept of field is a complementary heuristic. Bourdieu (1991) describes the social world as a multidimensional space comprised of intersecting fields. Individuals are “defined by their relative positions in this space” (p. 230), and each individual is confined to one and only one unique position. The social trajectory of a given individual is defined by and arises out of the intersection of the different fields (Robbins, 1991). Individuals occupying various positions in the field are oriented by networks of relations among the positions. Individuals use these networks to form strategies to either defend or ameliorate their positions. The extent to which an individual is successful in implementing these strategies depends on one’s original position (Bourdieu, 1993). Success—for example, making a wise marriage match—depends on (1) the volume and configuration of the various forms of capital available to the individual, and (2) the relative positions of individuals—that is, in the marriage market field. Each position is dependent on the other positions which constitute the field.

Much of the existing literature focuses on educational levels, geographic proximity, and preferences and tastes to explain recent increases in assortative mating, particularly among those with high levels of education. Educational institutions—universities in particular—are credited with two primary purposes: (1) serving as a “strong social filter” (Esping-Andersen, 2009, p. 40) by shaping preferences, lifestyles, word views, and tastes, and (2) serving as a physical marriage market by providing young people with opportunities to meet each other. However, as research based on the theories of social stratification and cultural and social reproduction has demonstrated, preferences, tastes, or in the language of Bourdieu—habitus—is shaped long before one attends a post-secondary institution. According to Schwartz (2013), assortative mating “determines the characteristics of parents” which in turn “influence the children’s characteristics” (p. 452). However, she acknowledges that while there is an extensive body of stratification literature on the transmission of social status from parents to children, “there is very little understanding of how or even whether assortative mating affects children’s success” (p. 461).

In addition, whether and what type of post-secondary institution one attends provides an additional dimension to the topic of assortative mating. Arum et al. (2008) comment that the relationship between the stratification of post-secondary institutions and mate selection has been neglected in educational homogamy scholarship. Yet, in the educational reproduction literature, the link between type of post-secondary education and life chances is clear.

**Purpose and Research Questions**

In this article, I employ detailed longitudinal questionnaire data to examine the relationships among educational attainment, educational homogamy, and inequality. The research questions are as follows: To what extent are today’s forty-something couples educationally homogamous? What is the relationship between educational homogamy levels of parents and their children? And, what is the association between educational homogamy—including its intergenerational associations—and family financial and overall well-being levels? To better understand the relationship between assortative mating and inequality, I use the statistical technique of correspondence analysis to examine the association between homogamy groups and various indicators of well-being. Most analyses are conducted by gender.

**Data and Research Design**

The *Paths on Life’s Way* project is the only longitudinal study of its kind in British Columbia and is one of the
few longitudinal studies of young adults in Canada (see Andres, 2017). This mixed methods research project, now spanning 28 years, provides a detailed account of individuals' lives, choices, and post-secondary education and work experiences across different points in time since high school graduation in relation to changing economic, social, and cultural conditions. The first phase of the study consisted of a 1989 pen and paper postal survey focusing on the educational choices made by a large systematic sample of the British Columbia high school graduating class of 1988 and two sets of face-to-face interviews conducted in 1989 and 1990 with students at three geographically disparate high schools in British Columbia (metropolitan, urban/rural, remote) who were attending their final (Grade 12) year of secondary school. The questionnaire component of the study was mailed to a large representative sample of post-secondary attendees at three geographically disparate high schools in British Columbia (metropolitan, urban/rural, remote) who were attending their final (Grade 12) year of secondary school. The questionnaire component of the study was mailed to a large representative sample of post-secondary participants and non-participants from all school districts in British Columbia (Andres, 2002, 2017; Andres & Wyn, 2010) for a detailed description of the sample including attrition. 

Questionnaire respondents were followed through mail questionnaires sent in 1989, 1993, 1998, 2003, 2010, and 2016. The Paths project also contains longitudinal interview data. Both the questionnaire and interview data bases contain detailed information including parental educational background information, educational and occupational attainment, marital status and family configuration, income, and measures of health and well-being, on a provincially representative sample of 516 questionnaire respondents. Although both closed- and open-ended responses to the mail out questionnaires exist, in this article only the closed-ended responses are employed. Analyses are conducted on the 406 individuals who indicated that they were in marriage or marriage-like relationships; those who were separated, divorced, or widowed in 2016 and provided educational attainment data on their former spouses; and those who also provided information on educational attainment of two parents.

Before proceeding to the main analyses, two measurement issues—how to determine educational status and how to define marital status—are addressed. A life course perspective is employed to examine both educational attainment and marriage and family formation over time in order to operationalize clear definitions for both concepts. In doing so, many of the assumptions present in many other studies are addressed and reduced.

### Defining Educational Attainment

Most studies examining the extent to which couples are educationally homogamous tend to assume that educational attainment (1) is a one-time achievement and hence static within a given cohort, and (2) is comparable across age cohorts. Although these assumptions may have been more tenable in older cohorts where opportunities to participate in higher levels of education were much more restricted, expansion and related massification and diversification of higher education (Trow, 1972) since the 1950s in Canada—and British Columbia—has resulted in much higher proportions of individuals who have earned one or more post-secondary credentials. As such, intradividual educational attainment is a moving target, depending on when it measured at a given point in time across the life course.

In Table 1, changes in educational completion for each wave of data collection in this study are demonstrated. Over time, there is a clear pattern away from non-participation or non-completion in the early years to either non-university or university completion. Also, highest level of educational attainment changes upward over time. For example, in 1993, 34.4% of Paths respondents had earned bachelor's degrees or higher. By 2016, that proportion increased to 66.6%. Those who had not participated or who had not completed their studies decreased from 44.1% in 1993 to only 8.1% in 2016.

Table 1 portrays how Paths respondents participated in formal post-secondary education over the life course. As we illustrate in considerable detail elsewhere (Andres, 2013; Andres & Offerhaus, 2012, 2013), for Paths respondents, leaving school is not simply one discrete event and can take many forms including leaving post-secondary studies and returning at a later date or re-entering the post-secondary system to earn additional credentials. Also, these data highlight how the vertically segregated articulated system of higher education post-secondary system in British Columbia and elsewhere promotes seamless mobility across the different levels of education (Andres & Pullman, 2018). As such, time to completion of advanced credentials may extend many years beyond high school graduation. Employing data at any one of the time periods specified in Table 1 would yield different results in terms of post-secondary attainment. In this article, the highest level of educational attainment earned by 2016 is employed.
Defining Marital Status

A wide variety of definitions of marriage are employed in the literature, including newly formed marriages, first marriages, recent marriages, or marriage stock (prevailing marriages). Age categories employed in existing research are often wide sweeping. For example, Smits (2003) included females aged 18–49 and males 18–52 in his multi-country analysis. Similarly, Tuncay (2019) employed two cohorts aged between 18 and 65. Hou and Myles (2008) divide their samples into young (15–35) an older (over 34) groupings, and Birkelund and Heldal (2003) construct multiple cohorts where marital status is defined as being married at the time of the census. Ciscato and Weber (2020) select couples where at least one partner is between ages 23 and 35 while adding the assumption that “sorting dynamics are relatively homogeneous for the age bracket 25-35” (p. 320). In some studies (e.g., Halpin, 2003), the age range is not specified. None of these studies employ a life course approach to account for the changing nature of marriage and relationship patterns over time.

Similar to educational attainment, marital and family formation status is a moving target and Paths data allow for an examination of these patterns over time. As demonstrated in Table 2, as the Paths cohort aged, their marital and family formation status changed. As with educational status as portrayed in Table 1, employing data from one data collection wave would yield different results from those employing data from one of the other waves. The information in Table 2 complicates the notion of a time gap between leaving school and the age of marriage (Mare, 1991) as both are fluid across the life course. Because today’s young people do not move directly from school to work in a strictly linear fashion, their exposure to potential romantic partners from similar or diverse educational backgrounds may occur in multiple educational, work, or social settings (Streib, 2015).

In 2016, over 95% were married or in marriage-like relationships and over 80% of the sample had children. Those who were single in 2016 are excluded from the analyses. The 3.4% of the sample who were separated, widowed, or divorced but who provided spousal educational attainment data are included in subsequent analyses. In recognition of the changing nature of family formation in the 21st century, those who identify as mar-
ried or in marriage-like relationships are categorized as a union, opposed to those who self-identify as single. Rather than assuming that different partner selection and dissolution mechanisms may be operating for cohabiting couples and that “cohabitation decisions are taken more lightly than marriage decisions” (Halpin, 2003, p. 492) or that cohabitation may be a “trial period” (Ciscato & Weber, 2020, p. 319), I support Esping-Andersen’s (2009, p. 5) claim that the conventional nuclear family as defined by marriage is “increasingly minoritarian” (p. 5), the view of Arum et al. (2008) that it is the union and not the legal state of marriage that is of interest,” and Schwartz’s (2013, p. 452) observation that resource sharing and distribution is a core issue in assortative mating. Also, in British Columbia, under the *Family Law Act* (2021), an individual is considered a spouse if they are (1) married, or (2) have “lived with another person in a marriage-like relationship, sometimes called common-law...for at least two years” (British Columbia, n.d.).

Table 2 demonstrates clearly how marriage and family formation has unfolded for the *Paths* sample and concurs with what Esping-Andersen (2009) calls the “new dynamics of family formation” (p. 28) entailing elongation of these life course events. For the majority of women (51.9%) and over 43.8% of men in this sample, marriage was delayed until after the age of 28, which would support the hypothesis advanced by Mare (1991) that *Paths* respondents may be more likely than their parents to form heterogamous relationships. By 2016 the age of 46, over 95% of the sample were in marriage or marriage-like relationships and had children, also supporting Esping-Andersen’s claim that “the desire for children has not changed” but rather there is an “emergence of new ways of making decisions” (2009, p. 28).

Most studies of assortative mating employ cross-sectional data to determine changes among various age cohorts. In this article, I begin with an intergenerational approach by examining the educational homogamy levels of *Paths* respondents’ parents and then extend this analysis to determine the relationship among educational homogamy levels of *Paths* respondents, their parents, and their partners. First, I revisit the theoretical perspectives addressed at the beginning of the article to redefine educational homogamy in relation to various levels of post-secondary attainment. I conclude this section by comparing parental and *Paths* respondents’ educational homogamy status.

**Defining Educational Homogamy**

How educational levels are aggregated into homogamy categories affect the results of analyses (Hou & Myles, 2008). In the literature, aggregation takes various forms. For example, in his multi-country comparative research, Smits (2003) uses a two-category classification: “higher education” and “lower education” with completed secondary education as the demarcation line. Hou and Myles (2008) employ a five-category classification, ranging

### Table 2

*Marital and Family Formation Status, 1989 to 2016*

<table>
<thead>
<tr>
<th>Year</th>
<th>Age</th>
<th>%</th>
<th>Married</th>
<th>%</th>
<th>Marriage-like</th>
<th>%</th>
<th>S/W/D</th>
<th>%</th>
<th>Children</th>
<th>%</th>
<th>Single</th>
<th>%</th>
<th>Married</th>
<th>%</th>
<th>Marriage-like</th>
<th>%</th>
<th>S/W/D</th>
<th>%</th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>(19)</td>
<td>94.6</td>
<td>2.1</td>
<td>3.3</td>
<td>0.0</td>
<td>2.1</td>
<td>96.4</td>
<td>1.2</td>
<td>0.0</td>
<td>1.2</td>
<td>4.1</td>
<td>80.1</td>
<td>12.4</td>
<td>3.4</td>
<td>78.4</td>
<td>3.7</td>
<td>84.7</td>
<td>8.6</td>
<td>31.0</td>
</tr>
<tr>
<td>1993</td>
<td>(23)</td>
<td>62.4</td>
<td>20.7</td>
<td>16.1</td>
<td>0.8</td>
<td>12.0</td>
<td>76.8</td>
<td>12.8</td>
<td>9.8</td>
<td>6.6</td>
<td>11.2</td>
<td>72.2</td>
<td>12.9</td>
<td>3.7</td>
<td>59.5</td>
<td>12.8</td>
<td>72.6</td>
<td>9.1</td>
<td>5.4</td>
</tr>
<tr>
<td>1998</td>
<td>(28)</td>
<td>27.8</td>
<td>51.9</td>
<td>19.1</td>
<td>1.2</td>
<td>28.1</td>
<td>40.7</td>
<td>43.8</td>
<td>14.8</td>
<td>6.6</td>
<td>11.2</td>
<td>72.2</td>
<td>12.9</td>
<td>3.7</td>
<td>59.5</td>
<td>12.8</td>
<td>72.6</td>
<td>9.1</td>
<td>5.4</td>
</tr>
<tr>
<td>2003</td>
<td>(33)</td>
<td>11.2</td>
<td>72.2</td>
<td>12.9</td>
<td>3.7</td>
<td>59.5</td>
<td>12.8</td>
<td>72.6</td>
<td>9.1</td>
<td>5.4</td>
<td>11.2</td>
<td>72.2</td>
<td>12.9</td>
<td>3.7</td>
<td>59.5</td>
<td>12.8</td>
<td>72.6</td>
<td>9.1</td>
<td>5.4</td>
</tr>
<tr>
<td>2010</td>
<td>(40)</td>
<td>4.1</td>
<td>80.1</td>
<td>12.4</td>
<td>3.4</td>
<td>78.4</td>
<td>3.7</td>
<td>84.7</td>
<td>8.6</td>
<td>31.0</td>
<td>4.1</td>
<td>80.1</td>
<td>15.3</td>
<td>2.9</td>
<td>82.6</td>
<td>0.0</td>
<td>87.8</td>
<td>7.9</td>
<td>4.2</td>
</tr>
<tr>
<td>2016</td>
<td>(46)</td>
<td>0.0</td>
<td>81.8</td>
<td>15.3</td>
<td>2.9</td>
<td>82.6</td>
<td>0.0</td>
<td>87.8</td>
<td>7.9</td>
<td>4.2</td>
<td>0.0</td>
<td>81.8</td>
<td>15.3</td>
<td>2.9</td>
<td>82.6</td>
<td>0.0</td>
<td>87.8</td>
<td>7.9</td>
<td>4.2</td>
</tr>
</tbody>
</table>
from less than nine to 16 or more years of education. Ciscato and Weber (2020) use four- and five-level categorical classifications from “less than high school” to “5+ years of college.” Different ways of aggregating educational categories, together with a variety of definitions of marriage and age categorizations, create an enormous amount of definitional slippage among studies and a considerable amount of noise within studies.

The purpose of this article is to examine not only assortative mating patterns, but also to tease out how this is translated into inequality both intergenerationally and within the confines of the current family constellations of Paths respondents. Hence, the goal of aggregation is to highlight the nature and extent of resources available to families. In this light, how should educational homogamy categories be specified? Unambiguous cells can be created for couples, who, on one end of the continuum, report that neither partner has earned any post-secondary credentials; on the other end of the curriculum, both partners have earned baccalaureate-level credentials or greater. But what about the other cells?

Arum et al. (2008) employ Bourdieu’s habitus lens to determine the relationship between attending elite universities in the United States and homogamy and were able to demonstrate that attendance at particular post-secondary institutions was related to subsequent marital selection. However, very little attention has been paid to the relationship among the different types of post-secondary completion and assortative mating. Here I argue that completion of baccalaureate-level credentials or greater confers a particular habitus on individuals; those who have not had similar experiences do not possess this habitus. The exact nature of the habitus may vary across disciplines and type of university attended. However, when both members of a couple have achieved this level of post-secondary attainment, the financial, cultural, and social capital at their disposal is more likely to surpass those available to other groups. In addition, they are more likely to have similar tastes, values, and preferences, and may be more committed to the promotion of dual career households. At the opposite end of the continuum, although couples with secondary graduation as their highest level of earned credentials may also share similar tastes, values, and preferences, their lower levels of human capital leave them more vulnerable in terms of precarious labour markets, as are couples with non-baccalaureate credentials. When only one partner has earned a baccalaureate-level credential, such couples benefit from the habitus of the more highly educated partner, but they are not likely to have the same earning power as do academic power couples.

Based on this line of reasoning, Table 3 specifies the educational homogamy typology employed in this article. Couples where neither partner has earned baccalaureate-level credentials are assigned to the homogamy low education category. This category includes one or both partners with non-university credentials. Heterogamous couples are those where one but not both partners have earned a baccalaureate degree. Finally, when both partners have earned baccalaureate degrees, they are categorized as homogamy high education. These categories are applied both to Paths respondents and their parents.

As demonstrated in Table 4, parents of Paths respondents demonstrated high levels of assortative mating. Over 70% of parents were in educational homogamous relationships with over half (55.7%) are in the

Table 3

<table>
<thead>
<tr>
<th>Homogamy Typology</th>
<th>Secondary grad or less</th>
<th>Post-secondary non-university</th>
<th>Bachelor’s degree or higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary grad or less</td>
<td>homogamy low education</td>
<td>homogamy low education</td>
<td>heterogamy</td>
</tr>
<tr>
<td>Post-secondary non-university</td>
<td>homogamy low education</td>
<td>homogamy low education</td>
<td>heterogamy</td>
</tr>
<tr>
<td>Bachelor’s degree or higher</td>
<td>heterogamy</td>
<td>heterogamy</td>
<td>homogamy high education</td>
</tr>
</tbody>
</table>
homogamy low education category. Just over a quarter of parents were in heterogamous relationships.

In Table 5, patterns of educational homogamy of Paths respondents are portrayed. Similar to their parents, around 70% of the children are in homogamous marriages or marriage-like relationships. However, the proportion in the homogamy low education category is much less at 28.8%, and the homogamy high education category is greatly increased at 40.4%. The proportion in educational heterogamous relationships is almost identical to their parents. For the younger generation, the nature of the homogamous partnerships has shifted upward from that of their parents. In concurrence with the findings of Hou and Myles (2008), for young people entering the post-secondary system in the late 1980s, transversing the barrier of educational intermarriage has shifted from non-university education or less to university graduation. Gender differences are worth noting here. Females are more likely than males to be in homogamy low education or educational heterogamous relationships, whereas males are more highly concentrated in homogamy high education relationships.

The extent of intergenerational educational homogamy is examined in Table 6. Clearly, for children from homogamy low education families, movement to higher assortative mating categories is evident. However, over 40% of women with homogamy low education parents remain in the same category. The proportion is somewhat less at 34.1% for males. A similar pattern is evident in the heterogamy category. Most striking is that 67.6% of females and 63.3% of males from homogamy high education families remain in this category and 10% or less form partnerships with those from homogamy low education families. Approximately one quarter of women and men from homogamy high education families have moved to the heterogamy category. More men (40.7%) than women (26.7%) homogamy low education families moved to the homogamy high education category.

At this point, it is important to note the dynamics in the form of assortative mating between parents and their children. As Hou and Myles (2008) point out, in 1970, when most of the Paths respondents were born, high school graduation was the highest level of educational attainment for most young adults. The opportunity to participate in post-secondary studies was limited for several reasons. In British Columbia in before the 1960s, the post-secondary system was much smaller and less diversified. Only one university—the University of British
Higher Education and the Marriage Market

L. Andres

Table 6

Parental Homogamy by Respondent Homogamy Status, 2016

<table>
<thead>
<tr>
<th></th>
<th>Homogamy low education</th>
<th>Heterogamy</th>
<th>Homogamy high education</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parents</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homogamy low education</td>
<td>40.7</td>
<td>32.6</td>
<td>26.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Heterogamy</td>
<td>22.9</td>
<td>40.0</td>
<td>37.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Homogamy high education</td>
<td>8.1</td>
<td>24.3</td>
<td>67.6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Columbia—existed along with a small number of vocational institutions. Also, expectations about the necessity of post-secondary attendance for labour market success and status attainment were not as prevalent.

By the time that Paths respondents graduated from high school, they were able to complete one or two years of university-equivalent courses or complete terminal technical/vocational/trade programs at one of 15 provincial community colleges or, with the appropriate grades and prerequisites, enter one of three public universities directly. Precisely at this time, the BC Provincial Access Committee produced a report entitled Access to Advanced Education and Job Training in British Columbia: Report of The Provincial Access Committee (1988). As a result, the “Access for All” initiative (1989)—a six-year $690 million fund targeted at expanding access to all types of education throughout the province, was established. Whereas in the early 1960s the MacDonald Report (1962) changed the face of post-secondary education in British Columbia, in the late 1980s, the “Access for All” initiative introduced wide sweeping structural changes, including the conversion of five community colleges into university colleges that would allow young people to earn entire degrees in or closer to their home communities. Also, the creation of the BC Council on Admissions and Transfer (BCCAT) ensured that the various post-secondary institutions worked together as an integrated and coordinated system (Andres & Dawson, 1998). The intent of these changes was to enhance equitable opportunities for successful degree completion either through direct entry to universities and university colleges or through transfer from non-university institutions. As the research literature on community colleges pointed out, overrepresentation of socio-economically disadvantaged youth at these institutions exacerbated the problem of less equitable outcomes that required structural redress.

Also, as demonstrated elsewhere (Andres, 2013; Andres & Offerhaus, 2012, 2013; Andres & Pullman, 2018), participation in a diverse, vertically segregated but highly articulated post-secondary system by a considerable proportion of Paths respondents spanned over the 28 years since they graduated from high school, which was not at all likely the case for their parents. Hence,
the meaning of educational credentials is not completely parallel for these two generations.

**Intergenerational Educational Homogamy and Financial and Overall Well-Being**

How does assortative mating translate into inequality? And to what extent is educational homogamy associated with family financial and overall well-being levels? In other words, why does educational homogamy matter? These questions are addressed in the remaining sections of the article.

In Table 7, several indicators of financial and overall well-being are portrayed.

The measure of household income adjusted for family size demonstrates that those in homogamy high education households have considerably more purchasing power than those in other types of households. Homogamy low education households fare the worst, with incomes the same for female and male *Paths* respondents. Incomes increase across the categories with the most notable gender differences between females and males in heterogamous and homogamy higher education relationships. A similar trend is evident in the possession of investment accounts. The majority in all categories have Registered Retirement Savings Plans.

<table>
<thead>
<tr>
<th>Table 7</th>
<th>Homogamy low ed</th>
<th>Heterogamy</th>
<th>Homogamy high ed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F %</td>
<td>M %</td>
<td>F %</td>
</tr>
<tr>
<td>Household income $ adjusted for family size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60,000</td>
<td>60.00</td>
<td>59.00</td>
<td>74.270</td>
</tr>
<tr>
<td>Investment Accounts (% yes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RRSP</td>
<td>85.1</td>
<td>81.4</td>
<td>89.3</td>
</tr>
<tr>
<td>TFSA</td>
<td>44.3</td>
<td>45.9</td>
<td>61.8</td>
</tr>
</tbody>
</table>

**Perceptions of Well-being**

**Financially Well Off**

<table>
<thead>
<tr>
<th></th>
<th>Better off</th>
<th>Same</th>
<th>Worse off</th>
</tr>
</thead>
<tbody>
<tr>
<td>F %</td>
<td>37.0</td>
<td>42.5</td>
<td>20.5</td>
</tr>
<tr>
<td>M %</td>
<td>47.6</td>
<td>38.1</td>
<td>14.3</td>
</tr>
</tbody>
</table>

**Health**

<table>
<thead>
<tr>
<th></th>
<th>Physically healthy</th>
<th>Mentally healthy</th>
</tr>
</thead>
<tbody>
<tr>
<td>F %</td>
<td>37.9</td>
<td>35.2</td>
</tr>
<tr>
<td>M %</td>
<td>51.2</td>
<td>65.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>51.9</th>
<th>53.0</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>52.3</td>
<td>59.2</td>
</tr>
<tr>
<td></td>
<td>57.4</td>
<td>52.8</td>
</tr>
<tr>
<td></td>
<td>59.8</td>
<td>61.1</td>
</tr>
</tbody>
</table>
(RRSPs) with a greater proportion of heterogamous and homogamy high education couples than homogamy low education couples possessing such accounts. A stronger trend across categories is evident in Tax Free Savings Accounts (TFSA) where the majority of heterogamous or homogamy high education couples, but less than 50% of homogamy low education couples hold such accounts.

Two subjective well-being questions are also presented. When asked, “Would you say you are better off, worse off, or just the same financially than you were a year ago?” again, the trend across categories is toward “worse off” for low education homogamy couples to “better off” for high education homogamy couples. In response to the question, “In the past few months, how have you felt (1) physically and (2) mentally?” a similar pattern is evident. The one exception is homogamy low education males who report the highest levels of feeling mentally healthy. For all of these measures, males tend to respond more positively than females.

**Correspondence Analysis**

The analyses presented above suggest that there is a relationship among intergenerational educational capital, intergenerational homogamy, inequality in terms of income, and measures of subjective well-being. Also, gender differences are apparent. To further explore these relationships, I employ the analytic technique of correspondence analysis (CA). This is a multivariate descriptive data technique that summarizes the information in two-way contingency tables and provides a visual representation of data distribution in a two-dimensional map (Greenacre, 1993, 2007). Because there is no dependent variable, CA does not address questions intending to determine the effect of one set of variables on another. CA was Pierre Bourdieu’s analytical technique of choice because “it ‘thinks’ in terms of relations” (Bourdieu & Wacquant, 1992) and hence focuses on “the global effects of a complex structure of interrelations, which is not reducible to the combination of the multiple ‘pure effects’ of independent variables” (Lebaron, 2009, p. 12). Data are organized into columns and related rows. Correspondence analysis is similar to factor analysis in that it is a method for decomposing the overall inertia along principal axes.

The columns in this analysis are the three assortative mating groups defined (see Table 3). Rows are comprised of 19 categorical levels of eight indicators. Household income adjusted for family size is measured as a three-level categorical variable (low, medium, high). Possession of RRSPs and TFSA is each a binary measure (yes/no). Financial well-being is measured as a three-level categorical variable (better off, same, worse). Two measures of well-being, each of which are three-level categorical variables measuring physical health and mental health (low, medium, high) are included. The final three-level categorical variable is parental educational homogamy (parental homogamy low education, heterogamy, parental homogamy high education). Appendix 1 provides a detailed description of the variables.

The data are displayed in a symmetric two-dimensional map which reveals the relative positions of row and column profiles. The goal of the analysis is to measure the correspondence between the columns and rows. The theoretical challenge is to interpret the principal axes by identifying the latent (hidden) variables that explain the amount of the total inertia along each axis. Chi-square distances separate the row and column profiles and are used to compute inertia (or variance), which measures the dispersion of these profiles in a multidimensional space. XLSTAT (Addinsoft, 2020) was used to compute the chi-square coordinates of profile points and the statistical tests of the analysis. Separate analyses are conducted for women and men, beginning with women.

The correspondence analysis map in Figure 1 positions the points corresponding to the three assortative mating columns profiles in relation to the 19 row profiles corresponding to variables described above. This map displays the projection of points in the subspace defined by two principal axes that account for the 100% of inertia. The test of independence reveals a significant dependency between the rows and columns ($\chi^2 = 92.341$, $d.f. = 36$, $p < 0.0001$).

The horizontal axis accounts for 92% of the average total inertia. This axis is defined by column profiles of homogamy high education to the right and the homogamy low education to the left side of the map. These two educational homogamy profiles account for 95% of the column axis inertia. Row indicators greater than the average of 0.0526 are considered to be major contributors to the inertia of the axis. These values are highlighted in Table 8. Indicators meeting this criterion and hence contributing significantly to the inertia of the horizontal axis are located within the ellipses on the map and are labelled in blue type: to the left, in order of contribution and associated with homogamy low education, are parental homogamy low education, low income, low physi-
cal health, low mental health, and no TFSA. To the right, in order of contribution and associated with homogamy high education are parental homogamy high education, high income, and possession of a TFSA. None of the other value indicators contribute significantly to the total row inertia (Table 8). However, there is a clear pattern of low levels of association positioned left and high levels to the right of the map.

By employing a factor-analytic approach, this axis can be interpreted as a financial and personal well-being dimension with the “more financial and well-being resilience” row profiles matching with the country column profiles to the right and “more financial and well-being vulnerability” row profiles matching well with the country column profiles to the left.

The vertical axis accounts for 8% of the total inertia and contrasts the column profiles that correspond to both homogamy high education and homogamy low education (up) in relation to the profile corresponding to heterogamy (down). Heterogamy accounts for 67% of the column axis inertia. As indicated in Table 8, contained with an ellipse on the map and labelled in green type, the following row profiles contribute significantly to this axis: in the upper half of the map parental homogamy high education and medium physical health. In the lower half of the map, the following contribute the most to the axis: parental educational heterogamy, financially the same, high mental health, and medium income. These findings suggest that the second axis is be associated to “medium well-being of homogamy high education couples” compared to “financial and well-being stability of heterogamous couples” dimension. In summary, this analysis demonstrates that the three assortative mating groupings are significantly associated with indicators of parental educational homogamy, and financial and personal well-being.

The correspondence analysis for male Paths respondents (Figure 2) is somewhat similar to the CA for females. The test of independence reveals a significant
dependency between the rows and columns ($\chi^2 = 50.096$, 
\(d.f. = 36\), \(p < 0.06\)).

The horizontal axis is defined at the extremes by the 
homogamy high education column profile the left and 
homogamy low education profile to the right, but only 
accounts for 80% of total inertia. The placement of row 
profiles contributing most to the inertia of the horizontal 
axis are as follows: to the left associated with homogamy 
high education are high income, parental homogamy 
high education, and possession of a TFSA. To the right 

<table>
<thead>
<tr>
<th></th>
<th>Females</th>
<th></th>
<th>Males</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F1</td>
<td>F2</td>
<td>F1</td>
<td>F2</td>
</tr>
<tr>
<td>income_lo</td>
<td>0.091</td>
<td>0.010</td>
<td>0.210</td>
<td>0.001</td>
</tr>
<tr>
<td>income_md</td>
<td>0.015</td>
<td>0.074</td>
<td>0.012</td>
<td>0.178</td>
</tr>
<tr>
<td>income_hi</td>
<td>0.164</td>
<td>0.006</td>
<td>0.104</td>
<td>0.280</td>
</tr>
<tr>
<td>RRSP_no</td>
<td>0.015</td>
<td>0.017</td>
<td>0.208</td>
<td>0.163</td>
</tr>
<tr>
<td>RRSP_yes</td>
<td>0.000</td>
<td>0.006</td>
<td>0.013</td>
<td>0.023</td>
</tr>
<tr>
<td>TFSA_no</td>
<td>0.055</td>
<td>0.010</td>
<td>0.124</td>
<td>0.014</td>
</tr>
<tr>
<td>TFSA_yes</td>
<td>0.077</td>
<td>0.003</td>
<td>0.097</td>
<td>0.002</td>
</tr>
<tr>
<td>betteroff</td>
<td>0.026</td>
<td>0.020</td>
<td>0.000</td>
<td>0.011</td>
</tr>
<tr>
<td>same</td>
<td>0.002</td>
<td>0.112</td>
<td>0.003</td>
<td>0.000</td>
</tr>
<tr>
<td>worse</td>
<td>0.046</td>
<td>0.039</td>
<td>0.012</td>
<td>0.005</td>
</tr>
<tr>
<td>physhealth_lo</td>
<td>0.079</td>
<td>0.046</td>
<td>0.009</td>
<td>0.055</td>
</tr>
<tr>
<td>physhealth_md</td>
<td>0.006</td>
<td>0.000</td>
<td>0.004</td>
<td>0.016</td>
</tr>
<tr>
<td>physhealth_hi</td>
<td>0.035</td>
<td>0.017</td>
<td>0.005</td>
<td>0.030</td>
</tr>
<tr>
<td>mentheath_lo</td>
<td>0.072</td>
<td>0.000</td>
<td>0.001</td>
<td>0.136</td>
</tr>
<tr>
<td>mentheath_md</td>
<td>0.003</td>
<td>0.091</td>
<td>0.003</td>
<td>0.010</td>
</tr>
<tr>
<td>mentheath_hi</td>
<td>0.030</td>
<td>0.112</td>
<td>0.003</td>
<td>0.003</td>
</tr>
<tr>
<td>par_homed_lo</td>
<td>0.095</td>
<td>0.000</td>
<td>0.075</td>
<td>0.006</td>
</tr>
<tr>
<td>par_heter</td>
<td>0.011</td>
<td>0.194</td>
<td>0.015</td>
<td>0.005</td>
</tr>
<tr>
<td>par_homed_hi</td>
<td>0.178</td>
<td>0.242</td>
<td>0.102</td>
<td>2.000</td>
</tr>
</tbody>
</table>

| Total Contribution | 1.000 | 1.000 | 1.000 | 1.000 |
| Number of Variables | 19 | 19 | 19 | 19 |
| Average Contribution | 0.053 | 0.053 | 0.053 | 0.053 |
Higher Education and the Marriage Market
L. Andres

and associated with homogamy low education includes low income, no RRSP, no TSFA, and parental homogamy low education (Table 8).

For males, the dimensions on this axis are better described as “more financial resilience” to the left and “more financial vulnerability” on the right.

For males, the vertical axis accounts for 22.0% of the total inertia, and unlike the female sample, mainly contrasts the column profile that corresponds to educational homogamy high (up) with the profile corresponding to heterogamy (down). These row profiles contribute most to the axis: high income, parental homogamy high, and no RRSP are associated with the upper portion of the map. Associated with the lower portion of the map are low income and low physical health (Table 8). The second axis could also be interpreted as “high financial security of homogamy high education” versus “mixed well-being for heterogamous couples” dimension.

In summary, this analysis demonstrates that the three assortative mating categories are strongly associated with parental levels of educational homogamy. On the horizontal axis, high educational homogamy status is most strongly associated with parental homogamy high education, high income levels, and the possession of a TSFA. On the same axis, low educational homogamy status is almost a mirror reflection associated with low income, parental homogamy low education, and no TSFA. For women, low physical and mental health and that they were financially worse off than one year ago also defined this end of the axis. The vertical axis opposes both the low and high homogamy column profiles and the heterogamy column profile. Here, indicators of physical and mental health contribute significantly to the axis.

Discussion

The majority of research on assortative mating in the form of educational homogamy has been conducted
from a demographic perspective and focuses on broad sweeping trends. By taking an intergenerational life course approach, the findings reported in this article are unique in that the data permit a direct comparison of parents and their children from an educational homogamy perspective. Not only do the findings support Smits’s (2003, p. 267) conclusion that “even in the most modern societies—there is a rather strong tendency among the higher educated to marry within their own group” (p. 267) but they also reveal that despite dramatic expansion of the post-secondary system in British Columbia and beyond, educational homogamy patterns continue to be transmitted intergenerationally. The correspondence analyses also reveal how educational homogamy and its intergenerational associations in this study exacerbate inequality in terms of family income levels, contributions to registered investment plans, and physical, mental, and financial well-being. These associations are stronger for women than they are for men, which concurs with the claim by Fortin et al. (2012) that “women with less education have been particularly affected by these changes, as their odds of women with lower levels of education marrying up have declined substantially. This phenomenon tends to increase family income inequality” (p. 19).

Not only does assortative mating affect family income levels but also how families in this study weather exogenous shocks such as the 2008 recession and the 2020 COVID-19 pandemic. Most recently, the COVID-19 pandemic has drawn back the curtain on the need to take a multifaceted approach to the topic of inequality. Lemieux et al. (2020) demonstrate that those in the two lowest earning quartiles were hardest hit at the beginning of the pandemic. Using Canadian Labour Force Survey data from February to April 2020, they demonstrate that almost half of the job losses in Canada in February 2020 and 73% of declines in hours worked were experienced by those in the bottom half of the weekly earnings distribution. Comparative figures for those in the top quartile were 4% for job losses and 10% for hours losses. They conclude that “the detrimental impact on work experience and human capital of being left behind can have long-run implications for career paths and earnings” (p. S64). Qian and Fuller (2020) add that “fewer economic resources and vulnerable labour market positions” (p. S96) experienced by less educated women with childcare responsibilities may lead to long-term negative consequences in terms of post-pandemic employment patterns. The results presented by Lemieux et al. (2020) and Qian and Fuller (2020) suggest that the findings presented here are likely to be compounded and elongated for families in the homogamy low education group.

The increasing lack of affordability of housing and childcare may lead to overt and covert choices, particularly by highly educated individuals and their families regarding marriage choices. The combination of the forces of cultural and social reproduction that compel families to pass on “the full measure of power and privilege it has itself inherited” (Bourdieu, 1976, p. 141) in combination with educational institutions that serve as both social filters and as opportunities for young people to meet others with similar lifestyles, word views, and tastes, has the potential to contribute to the increase in overall levels of inequality. The findings presented here concur with those of Arum et al. (2008) that marriage markets are “active features of social stratification processes, and mechanisms of their functioning thus have consequences for both intergenerational and intra-generational inequality” (p. 118). The role of higher education is intricably embroiled in these processes and mechanisms. However, attention by multiple facets of the modern welfare state—including labour market, childcare, and gender equity policies—is required to tackle the problem of more equitable opportunities and outcomes. Policy measures to deal with increasing inequalities, for example affordable childcare, particularly for low-income mothers, need to go hand in and with higher education policies to support the entry into and completion of low-income students into institutions of higher education.

Limitations

This study is constrained by several limitations and delimitations. First, the sample is comprised of high school graduates only and is hence a “best case scenario” of assortative mating in Canada. However, according to Statistics Canada (Tourism and the Centre for Education Statistics, 2020), 92% of the Canadian population aged 35–44 and 87% aged 45–64 have earned at least upper-secondary credentials. A second limitation that contributes to the “best case scenario” nature of the findings is attrition. With longitudinal research, attrition is inevitable, and the sample is slightly biased toward women and those with post-secondary credentials. The sample is also delimited to those who reported the educational levels of two parents. The Paths study is also limited to British Columbia. Although Canada is a vast country with
many regional differences, there is no compelling argument to suggest that the findings would be considerably different in other provinces. However, because income inequality in Canada has risen from 0.289 in 1990 to a high of 0.324 in 2004 and then slowly declining to 0.303 by 2018 (OECD, 2021), similar analyses with younger Canadian adults may reveal different results. Also, data sets with a larger sample size would permit more finely grained categorizations of educational homogamy, for example, gender-specific categories of hypergamous and hypogamous relationships.

Conclusion

The problem of educational homogamy and its role in contributing to inequality is a tough nut to crack. Who marries whom cannot be mandated. However, acknowledging the potential role that education—and higher education in particular—plays in aiding and abetting various forms of inequality, as demonstrated in this study, is a beginning point. The findings suggest that while individual attainment of higher levels of education is necessary, it may not be sufficient as a strategy to ensure and enhance financial and personal well-being. The mantra “more education is better” is only one strategy available to individuals, educators, and policy makers to enhance physical, mental, and financial well-being.

Acknowledgements

The author wishes to acknowledge the support of the Social Science and Humanities Research Council of Canada and the British Columbia Council on Admissions and Transfer for funding this longitudinal research project.

References

Addinsoft. (2020). XLSTAT statistical and data analysis solution. XLSTAT.


port_June2013.pdf


tomizedLives2013.pdf


---

**Notes**

1. The terms assortative mating and homogamy are used synonymously.

2. Analyses of attrition indicate that the sample is slightly biased toward females (57% in 1989; 61% in 2016), post-secondary participation directly out of high school (76% in 1989; 84% in 2016) and mothers with low levels of education (50% in 1989; 41% in 2016). Differences in other key indicators of attrition bias are 5% or less (for more detail, see Andres, 2017; Andres & Pullman, 2018) and the Paths website [http://blogs.ubc.ca/paths/](http://blogs.ubc.ca/paths/)

3. Even these categorizations contain some degree of messiness. For example, 11% of those who self-identify as single report the occupational status of their partners, with whom they do not live. In addition, 9.6% of single Paths respondents report having children. In all of these instances, the proportion is too small to include as separate categories. Approximately 2% of the sample report being in same sex relationships; they are included in the analyses if they indicate that they are in the data inclusion categories described above.

4. According to Heisz (2016) “it is common practice to adjust household incomes to make the incomes of different-sized families comparable” (p. 79). The Statistics Canada standard which uses “the square-root method” (Heisz, 2016, p. 100) is used here.

5. 1/19 = 0.0526 where 1 is total axis inertia and 19 is the total number of row indicators.

6. Indicators that contribute significantly to both the horizontal and vertical axis are labelled in blue and green type.

7. Labels used in the correspondence analysis maps are in parentheses.
Appendix 1: Study Variables

**Respondent and partner/spouse homogamy:** homogamy education low *(Homogamy Low Ed)* = both partners with earned non-bachelor’s degrees or less; heterogamy *(heterogamy)* = one partner with earned bachelor’s degree or greater, one partner with earned non-bachelor’s degree or less; homogamy education high *(Homogamy High Ed hi)* = both partners with earned bachelor’s degrees or greater.

**Parental homogamy:** parental homogamy low education *(par_homed_lo)* = both parents with earned non-bachelor’s degrees or less; parental heterogamy *(par_heter)* = one parent with earned bachelor’s degree or greater, one parent with earned non-bachelor’s degree or less; parental homogamy high education *(par_homed_hi)* = both parents with earned bachelor’s degrees or greater.

**2015 total income adjusted for square root of family size:** Income divided by square root of family size: *(incom_lo)* = lowest through $59320 = 1; *(incom_md)* = $59321 to $88388; *(incom_hi)* = $88389 through highest.

**Registered Retirement Savings Plan:** possession of—yes/no *(RRSP_yes; RRSP_no)*

**Tax Free Savings Plan:** possession of—yes/no *(TFSA_yes; TFSA_no)*

**Financial well-being:** Self-assessment, 1 = financially better off than last year *(betteroff)*; 2 = financially the same as last year *(same)*; 3 = financially worse than last year *(worse)*

**Physical health:** Self-assessment, measured on a scale of 1 to 10 from very unhealthy to very healthy: 1 = low; 2 = medium; 3 = high *(physhealth_hi; physhealth_md; physhealth_lo)*

**Mental health:** Self-assessment measured on a scale of 1 to 10 from very unhealthy to very healthy: 1 = low; 2 = medium; 3 = high *(menthealth_hi; mentshealth_md; menthealth_lo)*