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The impact of early twentieth century illegitimacy across three generations. Longevity and intergenerational health correlates☆

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ABSTRACT

This study contributes to the understanding of how social mortality patterns are reproduced across generations by documenting associations of women's marital status at childbirth in the beginning of last century with selected health indicators across three subsequent generations of their offspring, and by highlighting a special set of plausible mechanisms linked to this particular event in history. We use the Multigenerational Uppsala Birth Cohort Study (UBCoS) database consisting of 12,168 individuals born at Uppsala University Hospital in 1915–1929 (UG1), their children (UG2) and grandchildren (UG3). Results showed that men and women born outside wedlock (BOW) in early twentieth century Sweden were at an increased risk of adult mortality compared to those who were born in wedlock (BIW), and the men were also significantly less likely to reach their 80th birthday. The question of childhood social disadvantage and its long-term consequences for health is then taken one step further by examining their offspring in two subsequent generations in terms of four specific anthropometric and psychological outcomes at the time of military conscription, all known to predict disease and mortality later in life. Results showed that sons of men BOW as well as sons and grandsons of women BOW had significantly lower psychological functioning and cognitive ability. Regarding body mass index and height, however, significant associations were found only among descendants of men BOW. The anthropometric and psychological disadvantages found among descendents of individuals BOW were partly mediated by their social class background. The four outcomes observed early in the lives of UG2s and UG3s do in fact constitute early health determinants, each potentially influencing longevity and mortality risk in these generations. We conclude that the social disadvantage imposed on those BOW in early twentieth century Sweden appears to be reproduced as a health disadvantage in their children and grandchildren, with likely consequences for mortality among these.

Introduction

This study takes its point of departure at the maternity ward of the Uppsala University Hospital (UUH) in 1915–1929 and the 14,193 babies who were born alive here during this period. Based on a single piece of information retrieved from the ledgers kept at the hospital, namely whether the mother (UG0) was married or not at the time of childbirth, this study prospectively explores the health-related implications of this specific circumstance across the lineage of three generations, i.e. for the males and females who were themselves born outside marriage (UG1) as well as for their respective sons (UG2) and grandsons (UG3). The norms surrounding the mothers who gave birth outside marriage at this time (UG0) differed substantially from the norms that prevailed by the time their children (UG1) and grandchildren (UG2) became parents (Ekerwald, 2002). Thus, rather than comparing the implications of being born out of wedlock for each successive generation descending from UG0, the focus of this study is on the long-term sequels of this single event in history.

From previous research carried out on this birth cohort we know that those born out of wedlock constituted a deprived group in many ways (Modin, 2002). Beside the fact that these children generally belonged to the lower social classes, they were also, on average, lighter, shorter and had a lower ponderal index compared to infants who were born inside marriage (Vågerö, Koupilová, Leon, & Lithell, 1999). However, men born outside marriage seem to have fared worse across the life-course than their female counterparts, at least in terms of marital career (Vågerö & Modin, 2002), reproductive

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success (Koupil et al., 2005) and ischemic heart disease mortality (Modin, 2003). A recent study also indicates that the sons and grandsons of these men ran a higher risk of being diagnosed with circulatory disease in young adulthood than the sons and grandsons of men born inside marriage, findings that did not exist in the corresponding offspring of women (Modin, Vågerö, Hallqvist, & Koupil, 2008). An overarching interest in the present study is therefore to establish what effects follow from being born out of wedlock regarding mortality risk and longevity in UG1, as well as regarding selected health determinants in the following two generations.

Fig. 1 illustrates the design of the study. The analyses extend along two separate pathways which divide the study into two parts. The first part poses the question of whether adult-aged Uppsala men and women (UG1) who were born outside wedlock stand a higher risk of dying between 41 and 87 years of age and a worse chance of surviving until 80 years of age than their legitimately born counterparts. Then the question of whether any such association can be understood in the light of known child- and adulthood social disadvantages among those born out of wedlock is investigated. In the second part of the study we explore whether the sons (UG2) and grandsons (UG3) of these men and women (UG1) are in a disadvantaged position vis-à-vis the descendants of legitimately born parents with regard to four health-related outcomes at the time of military conscription (height, body mass index, general ability and psychological functioning). Finally, the question of whether any such intergenerationally transmitted disadvantage can be explained by these sons and grandsons social class background is investigated. Based on previous findings indicating gender-specific intra- and intergenerational effects of being born out of wedlock in this cohort, male and female UG1s and their respective offspring will be analysed separately throughout the study.

The historical context

In Sweden, as in most European countries, the illegitimacy rate escalated during the nineteenth century. Thus, from a level of 6.2 percent in 1811–1820, the share of illegitimate births climbed to 9 percent by 1851–1860, to reach a level of 11 percent by the turn of the century (Brändström, 1996). During this time period illegitimacy was much more common in urban than in rural areas, often resulting in rates exceeding 20 percent in Swedish towns at the beginning of the twentieth century. Unmarried mothers belonged to the lowest stratum of the population, economically as well as socially (Högberg, 1983). Since unmarried women who became pregnant often left their home district in order to avoid the shame, their existing sources of social support were probably also limited (Högberg, 1983). In addition, children born out of wedlock were much more likely to be "abandoned" by their parent(s) and placed in foster homes than were children of married parents (Nyberg, 1995).

Intergenerational transmissions of health and mortality risk

Throughout life, but perhaps especially during upbringing, people acquire various types of resources (physical, psychological, cultural, material and social) which, through factors such as lifestyle, coping strategies, social networks and physique, affect their present and future health. The transmission (or lack of transmission) of such resources from one generation to the next is the process through which intergenerational effects arise. Intergenerational continuity is perhaps most obvious when it comes to genetic inheritance such as appearance, hereditary diseases and body height. However, as pointed out by Morton (2004),

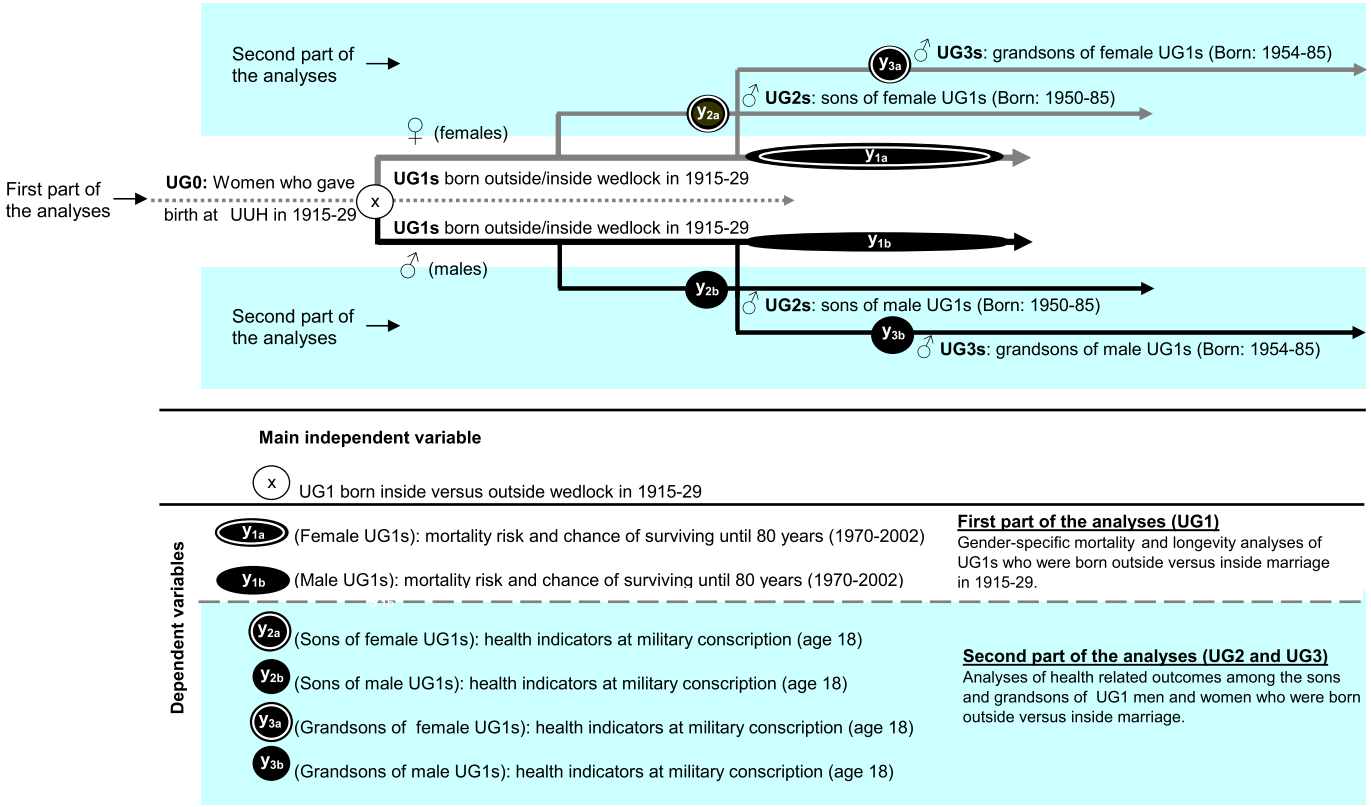

Fig. 1. The study explores the long-term implications of early twentieth century illegitimacy (x) from two analytically separate angles: (1) the long-term implications for adult mortality risk among men and women who were born out of wedlock (y_{1a} and y_{1b}) and (2) the intergenerational anthropometric and psychological correlates at military conscription for their respective sons (y_{2a} and y_{2b}) and grandsons (y_{3a} and y_{3b}).