Social Science & Medicine 122 (2014) 148–156

Contents lists available at ScienceDirect

Social Science & Medicine

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

Adult children's socioeconomic positions and their parents' mortality: A comparison of education, occupational class, and income

Jenny Torssander

Swedish Institute for Social Research, Stockholm University, SE- 10691 Stockholm, Sweden

ARTICLE INFO

Article history:
Received 7 March 2014
Received in revised form
4 September 2014
Accepted 20 October 2014
Available online 22 October 2014

Keywords:
Socioeconomic factors
Mortality
Intergenerational
Child-parent
Cause of death
Education
Sweden

ABSTRACT

Recent research has shown that the parents of well-educated children live longer than do other parents and that this association is only partly confounded by the parent's own socioeconomic position. However, the relationships between other aspects of children's socioeconomic position (e.g., occupational class and economic resources) and parental mortality have not been examined.

Using the Swedish Multi-generation Register that connects parents to their children, this paper studies the associations of children's various socioeconomic resources (education, occupation, and income) and parents' mortality. The models are adjusted for a range of parental socioeconomic resources and include the resources of the parents' partners. In addition to all-cause mortality, five causes of death are analyzed separately (circulatory disease mortality, overall cancer, lung cancer, breast cancer, and prostate cancer).

The results show net associations between all included indicators of children's socioeconomic position and parents' mortality risk, with the clearest association for education. Children's education is significantly associated with all of the examined causes of death except prostate cancer. Breast cancer mortality is negatively related to offspring's education but not the mothers' own education.

To conclude, children's education seems to be a key factor compared with other dimensions of socioeconomic position in the offspring generation. This finding suggests that explanations linked to behavioral norms or knowledge are more plausible than those linked to access to material resources. However, it is possible that children's education – to a greater degree than class and income – captures unmeasured parental characteristics.

The cause-specific analyses imply that future research should investigate whether offspring's socioeconomic position is linked to the likelihood of developing diseases and/or the chances of treating them. A broader family perspective in the description and explanations of social inequalities in health that includes the younger generation may increase our understanding of why these inequalities persist across the life course.

1. Introduction

In health inequality research, family members' socioeconomic resources have primarily been defined as the resources in the family of origin or the overall resources within a household. The family as a producer of health refers primarily to how partners influence each other (e.g., Monden et al., 2003) or to early life circumstances and how the resources of the older generation influence the health of the younger generation (e.g., Davey Smith, 2003). However, a few studies have recently examined intergenerational transmissions in the opposite direction, i.e., from children to parents. These studies have shown that adult children's education is associated with their parents' survival in Taiwan (Zimmer et al., 2007), Sweden (Torssander, 2013), and the U.S. (Friedman and Mare, 2014).

The reason that parents of well-educated children live longer than do parents of less well-educated children is not yet established. However, suggested explanations include access to health-related advice, direct and indirect influences on health behaviors, and support in contact with health care professionals (Torssander, 2013). The association between adult children's education and their parents' mortality persisted after adjusting for the parents' own education and other socioeconomic resources in the household (Zimmer et al., 2007; Torssander, 2013; Friedman and Mare, 2014). Furthermore, in a fixed effects model in which the characteristics that were shared between siblings were held constant, this

E-mail address: jenny.torssander@sofi.su.se.
URL: http://www2.sofi.su.se/%7ejto/

http://dx.doi.org/10.1016/j.socscimed.2014.10.043
0277-9536/

association remained (Torssander, 2013). Nonetheless, the association between children's resources and parents' mortality may reflect unmeasured third variables that affect children's opportunities for higher education and the parents' health. If a causal effect from children's resources to parents' health is present, however, this effect may apply to specific aspects of the socioeconomic position because education, occupation and income reflect different health mechanisms.

Previous studies on the association between the socioeconomic position of the younger generation and the mortality of the older generation have only considered children's educational levels (Zimmer et al., 2007; Torssander, 2013; Friedman and Mare, 2014). The aim of the current study is to include a wider range of socioeconomic resources of the younger generation, i.e., educational level, occupational class, and disposable income. The association with parental survival may vary across the indicators because these indicators capture material and non-material mechanisms to various degrees. Although measures of education, occupation, and income are interrelated and show a similar social gradient in mortality, indicator-specific mechanisms have been suggested (e.g., Geyer et al., 2006). At the individual level, examples of these mechanisms include knowledge (education-specific), working conditions (occupation-specific), and material conditions (income-specific).

A 'spillover effect' of education between people has been suggested for partners (Monden et al., 2003) and relatives such as siblings (Kravdal, 2008). One hypothesis is that a spillover effect exerts an impact through lifestyle, the use of health care, and adherence to medical treatment. The active or passive imitation of behavior – which is more likely to be health-enhancing among well-educated individuals – is an additional possibility. It has also been shown that children's education is associated with smoking and physical activity in their parents' generation, regardless of the parents' own education and income levels (Friedman and Mare, 2014).

Children's income is the socioeconomic indicator that most directly reflects the younger generation's economic resources. Therefore, income may be the indicator with the closest link to material explanations and consumption potential. Because low income is also a consequence of ill-health, a relationship between children's income and parents' mortality risk might reflect family health problems. There may also be psychosocial reasons for the association between children's income and parents' health. For example, children's financial problems predict poorer parental well-being, whereas children's success is associated with greater parental well-being (Fingerman et al., 2012).

Social class – with roots in employment relationships – has been suggested to be associated with health and mortality because of differences in working conditions (Schrijvers et al., 1998), for example, physical workload (Lahelma et al., 2009). However, we may need to consider other explanations for the association between one person's occupational class and a second person's health. A stable and privileged labor market position might involve advantages that benefit others, particularly family members. Some occupational positions may provide access to knowledge and contacts that increase the health of kin. Connections with doctors and assistance in navigating the health care system may be examples of this, although such possibilities may be more related to the type of industry than the class position. However, the likelihood of knowing a person who knows how the system operates may be greater in the service class. It is also possible that flexibility in professional occupations, e.g., flexible work schedules (Golden, 2001), allows adult children to be present during their parents' contacts with health and elderly care services.

However, the above suggestions of indicator-specific mechanisms are not clear-cut, and some of the explanations are most likely linked to several socioeconomic dimensions. For example, lifestyles are social practices (Cockerham et al., 1997) that differ not only between individuals with different levels of education but also across income groups and occupational classes. In addition, "flexible resources" (Phelan et al., 2010), which influence the potential to avoid or prevent diseases regardless of the cause, may be connected to many socioeconomic indicators.

Because little is known about the causes of the relationship between children's socioeconomic position and their parents' chances of survival, an examination of cause-specific mortality is useful. Such analyses have been conducted on U.S. data mainly for causes of death that typically demonstrate large social inequalities, such as diabetes and lower respiratory diseases (Friedman and Mare, 2014). Following the comparison of the socioeconomic indicators, the second portion of the current paper analyzes cause-specific mortality. Some of the causes that typically demonstrate large social inequalities in mortality risk, such as lung cancer and circulatory diseases, and the diseases in which the risk of dying is more evenly distributed across socioeconomic groups, such as prostate and breast cancer, are distinguished. These analyses may indicate whether the association with offspring's socioeconomic position largely resembles the association with the parent's own position or whether the socioeconomic resources in the younger generation partly relates to other underlying explanations of differential mortality risks.

2. Data, variables and statistical analyses

2.1. Study population

The Multi-generation Register (Statistics Sweden, 2008), which connects parents to children throughout the Swedish population, was used as the basis for including individuals in the study sample. The initial population consisted of all mothers and fathers who were born between 1926 and 1940 and were alive and residing in Sweden in 2001 ($N = 978{,}434$). Parents who bore their first child in 1967 or later were excluded ($N = 124{,}077$; 12.7%) because their children were too young (<35 years old) to have reached a stable labor market position before the start of the mortality follow-up of the parents in 2002. Social class stability generally occurs between ages 30 and 40 in Sweden (Jonsson, 2001).

Thereafter, a few minor exclusions were made. If all children of a parent died before the start of the follow-up, the parent was excluded from the analyses ($N = 3621$; 0.4%). This primarily concerned parents with one child and was otherwise quite rare. In addition, the parents had to reside in Sweden in 1990, when their socioeconomic position was measured, excluding 3535 individuals (0.4%). Parents for whom there was no information about their own education or their children's education were also excluded from the analyses (1.7%). Otherwise, the variables included missing categories.

The final study sample consisted of 832,762 individuals. Those who emigrated before the age of 75 and during the follow-up period between 2002 and 2007 were included in the analyses up until the time that they moved abroad ($N = 1580$ or 0.2% were censored at time of emigration).

2.2. Socioeconomic position of parents

Parents' socioeconomic position was a key variable in the analyses because it influences parents' own health and survival and their children's socioeconomic positions. Parents' positions can either be measured in children's youth and adolescence (the