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Reconsidering inequalities in preventive health care: an application of cultural health capital theory and the life-course perspective to the take up of mammography screening

Abstract

Whilst there are abundant descriptions of socio-economic inequalities in preventive health care, knowledge about the true mechanisms is still lacking. Recently, the role of cultural health capital in preventive health care inequalities has been discussed theoretically. Given substantial analogies, we explore how our understanding of cultural health capital and preventive health care inequalities can be advanced by applying the theoretical principles and methodology of the life-course perspective. By means of event history analysis and retrospective data from the Survey of Health Ageing and Retirement (SHARELIFE), we examine the role of cultural capital and cultural health capital during childhood on the timely initiation of mammography screening in Belgium (N=1,348). In line with cumulative disadvantage theory, the results show that childhood cultural conditions are independently associated with mammography screening, even after childhood and adulthood SEP and health are controlled for. Lingering effects from childhood are suggested by the accumulation of cultural health capital that starts early in life. Inequalities in the take up of screening are manifested as a lower probability of ever having a mammogram, rather than in the late initiation of screening.

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1. Introduction

The World Health Organization (WHO) identified equality in preventive care as a public health priority three decades ago (WHO, 1978). Nevertheless, most epidemiological studies still describe enduring socio-economic inequalities in preventive health care, with more-deprived individuals being less likely to have preventive check-ups (Jusot et al., 2011; Lorant et al., 2002; Stirbu et al., 2007). However, the broader social mechanisms underlying this relationship are not well understood. In health sociology, there is a growing awareness that understanding the social causes of health and illness requires a more neo-structural perspective than is usually employed (Cockerham, 2007). Therefore, recent efforts at theory formation go back to sociology's "classics". They draw on Weber's notion of lifestyles being socially structured (Weber, 1978), and expand on Bourdieu's hypothesis of capital conversion (Bourdieu, 1986) to explain how economic and cultural capital can be converted into cultural health capital (Abel and Frohlich, 2012; Mirowsky and Ross, 2003; Shim, 2010). Individuals have a certain amount of health-relevant knowledge and skills to lead healthy lives, including engaging in preventive care (Abel, 2008; Abel and Frohlich, 2012; Phelan et al., 2004; Veenstra, 2007). It is argued that cultural health capital is socially distributed and is accumulated over time (Abel and Frohlich, 2012; Mirowsky and Ross, 2003; Shim, 2010). This accumulation is likely to start early in life, as childhood socio-economic conditions shape the development of health-related behaviours (Kuh et al., 2004) when parents transfer skills and knowledge to their children (Abel and Frohlich, 2012; Singh-Manoux and Marmot, 2005). A favourable position early in life can then generate systematic divergences across the life course through path dependence, as contended by cumulative advantage theory (Dannefer, 1987, 2003; Merton, 1968; O'Rand, 1996; for a review see DiPrete and Eirich, 2006). Recently, authors have shown that early disadvantage sets in motion a series of "cascading socio-economic and lifestyle events" that have negative consequences for mortality (Hayward and Gorman, 2004) and health (Willson et al., 2007). This idea, however, has not yet been applied to the field of preventive health care.

For prevention to be effective, the timely initiation of preventive behaviours is necessary. Studies show that early use of preventive care leads to better health outcomes, for example for breast cancer (Bloom, 1994; Ell et al., 2007), common eye diseases (Stirbu et al., 2007), cardiovascular risks (Broyles et al., 2000) and oral diseases (Riley and Gilbert, 2005). If cultural health capital includes and

entails knowledge about the beneficial effects of timely preventive care, it can be expected that socio-economic inequalities in preventive health care will also be manifested in the timeliness of its use. However, the cross-sectional study designs on which conclusions about socio-economic inequalities primarily continue to hinge, and the relevant question wordings contained in surveys, do not allow this timeliness to be taken into account.

The notions of accumulation and timeliness are central to the life-course perspective, a research field that has developed outside the domain of health care use (Elder et al., 2003). Life course researchers focus on how early life conditions can impact upon later life outcomes, and more specifically upon the timing of these outcomes (Elder et al., 2003; Turner and Schieman, 2008). It is somewhat surprising, given the substantial overlap between these two theoretical traditions, that the life-course perspective has not yet been applied to inequalities in preventive health care. Data meeting the special requirements of this approach has been lacking for a long time, but retrospective data from the Survey of Health, Ageing and Retirement (SHARE) fills this gap. The aim of this research paper is to elaborate on cultural health capital theory by applying the theoretical principles and methodology of the life-course perspective to preventive health care use. Specifically, the role of early life factors on commencing mammography screening is examined for a sample of women in Belgium. Mammography screening was chosen for several reasons. First, the link between cultural health capital and healthy lifestyles is clearer in the case of preventive health care, where ill health is to a lesser extent the driving force behind engagements with health care providers. Second, breast cancer constitutes a major public health issue, as it is the most frequently diagnosed cancer among women worldwide (WHO, 2012). Mammography screening is the only current option for detecting breast cancer at an early stage, (Palencia et al., 2010; Puddu et al., 2009). Therefore, the WHO (2012) and the European Union (OJ C 68E, 2004) recommend that countries develop early detection strategies as the cornerstone of breast cancer control. However, despite these recommendations not all women engage in mammography screening and socio-economic inequalities in screening seem to persist (Duport and Ancelle-Park, 2006; Lagerlund et al., 2002; Lorant et al., 2002; Jusot et al., 2011; Puddu et al., 2009; Zackrisson et al., 2007). Further, the underlying mechanisms driving these inequalities remain unclear (Wübker, 2012).

1.1. Traditional approaches to preventive health care inequalities

Inequalities in preventive health care are usually assessed in a similar way to curative health care inequalities. A need-adjusted approach based on Andersen's heuristic model of health service use (1995) is generally adopted. Most research focuses on horizontal equity (Lorant et al., 2002), which is commonly defined as the principle of equal access for equal need (Wagstaff and van Doorslaer, 2000; van Doorslaer et al., 2006; Hanratty et al., 2007). Horizontal equity is typically measured as the degree to which utilisation is still related to income after differences in needs across the income distribution have been standardised for (Wagstaff and van Doorslaer, 2000). Inequity then arises, for example, if individuals in higher socio-economic groups are more likely to use, or are using, a greater quantity of health services, after controlling for their level of ill-health compared to lower socio-economic groups (Wagstaff and van Doorslaer, 2000; van Doorslaer et al., 2006; Hanratty et al., 2007).

Traditionally, socio-economic differences in preventive health care use are explained by theoretical models of health behaviour, such as the widely-used health belief model (Becker and Maiman, 1975; Janz and Becker, 1984) and the theory of reasoned action (Fishbein and Ajzen, 1975). These models concentrate on divergent beliefs of perceived risks, perceived severity, perceived efficacy of personal action, and expected benefits and perceived costs (Rajaram and Rashidi, 1998). Importantly, these models highlight the role of beliefs in preventive health care use, and contend that use is not determined by financial access alone, as is often assumed when adopting a need-adjusted approach. However, these agency-oriented paradigms lack an understanding of how beliefs are socially and culturally structured (Blane, 2008; Frohlich et al., 2001; Jayanti and Burns, 1998; Rajaram and Rashidi, 1998) and how they are acquired. The standard approach in public health research still treats health behaviour as a matter of individual choice, thereby ignoring its collective characteristics (Frohlich et al., 2001; Cockerham, 2005).

1.2. Cultural health capital

In current post-industrial societies, it has been argued that stratification is not driven by social class alone (Clark and Lipset, 2001). Therefore, scholars have recently argued for the explicit inclusion of cultural capital in explanatory approaches to social inequality in health and health behaviour, rather than deducing it from general measurements of socio-economic status (SES), such as social class and income (Abel, 2008; Abel and Frohlich, 2012; Pampel, 2012; Shim, 2010). Bourdieu (1986) describes how inequality can be reproduced by the interplay of three different forms of capital: economic, social and cultural. He further identifies three different forms of cultural capital: objectivised (e.g. books, artefacts, paintings), institutionalised (e.g. education, job title) and the embodied state incorporating mind and body (e.g. values, skills, knowledge). When applying Bourdieu's (1986) notion of cultural capital to health and health care research, cultural health capital can be defined as "comprising all culture-based resources that are available to people for acting in favour of their health" (Abel, 2008, p.2). In its incorporated form, Shim (2010) conceptualises cultural health capital as "a specialised form of cultural capital that can be leveraged in health care contexts to effectively engage with medical providers" and posits that it "develops in and through the repeated enactment of health-related practices" (Shim, 2010, p.3). Examples are: knowledge of medical topics and vocabulary, instrumental attitude towards the body, self-discipline, orientation towards the future, etc. (Shim, 2010). This form of cultural capital becomes directly relevant to health through the adoption of healthy lifestyles, such as engaging in preventive care (Abel, 2008; Abel and Frohlich, 2012; Phelan et al., 2004; Shim, 2010; Veenstra 2007). Cultural health capital theory highlights that people's behavioural options and preferences are structurally constrained and unequally distributed between social groups (Abel 2008). As such, micro-level practices are linked to the broader macro-structural level of unequal distribution of resources (Abel 2008; Abel and Frohlich 2012; Cockerham 2007; Mirowsky and Ross 2003; Shim 2010). In line with Bourdieu's notion of habitus (1984), this entails that not every use of available resources is as conscious as traditional models on health behaviour assume (Abel and Frohlich, 2012; Shim, 2010).

The concept of cultural health capital is not entirely new. It has much in common with the concept of "health literacy" (for a discussion, see Nutbeam, 2008 and Sorensen et al., 2012). However, with regard to operationalisation, educational level is most often used as a proxy for health literacy. Education involves essential problem-solving skills and learned effectiveness, which enable people to control their lives, including health (Mirowsky and Ross, 2003, 2007). However, when educational level

alone is assessed, the way in which cultural health capital is acquired and accumulated over time remains unexplored (Shim, 2010). Pioneering empirical studies on cultural health capital are currently being conducted (Shim, 2010). We aim to add to these by exploring how the life-course perspective can help in understanding cultural health capital and preventive health care inequalities.

1.3. The life-course perspective in preventive health care use

Life-course researchers focus on how early life conditions can impact upon later life outcomes, and more specifically how they influence the timing of these outcomes (Elder et al., 2003; Turner and Schieman, 2008). Traditionally, the transitions and developmental trajectories of individuals are studied within various life domains, such as family, education and employment (Turner and Schieman, 2008). The life-course perspective has recently taken a central place in public health research (Due et al., 2011; Mayer, 2009) and has shown that early or midlife factors, such as childhood SES and health, exhibit long-term influences on adult health and mortality (Due et al., 2011; Hayward and Gorman, 2004; Margolis, 2010), and ageing (Brandt et al., 2011). In addition, an increasing number of studies show the relationship between early life factors and health-related behaviour in adulthood, mostly focusing on smoking, alcohol consumption, diet and physical activity (Lynch et al., 1997; Gilman et al., 2003; Power et al., 2005; Huurre et al., 2003).

In this paper, we apply three basic principles of the life-course perspective (see Elder et al., 2003) to examine the role of early-life factors (principle 1) on the timing of mammography screening (principle 2), allowing for changing historical factors and public policy (principle 3). Before proceeding to the empirical part of the paper, the analogies between life-course research and preventive health care research for these three principles are elaborated.

The principle of life-span development describes how patterns in later life are linked to childhood conditions (Elder et al., 2003). Accordingly, cultural health capital theorists have implicitly adopted a longitudinal view of an individual's life. When describing how cultural health capital develops, they stress that it is not a fixed reality, but develops and accumulates through repeated engagements with health care providers over the life course and lifelong socialisation (Abel and Frohlich, 2012; Mirowsky and Ross, 2003; Shim, 2010). Therefore, the question is which conditions at

what life stages contribute to the accumulation of cultural health capital. A fully path-dependent cumulative advantage process would imply that the effect of socio-economic conditions early in life has continuing influences on later life outcomes, even when a person's socio-economic position is accounted for (DiPrete and Eirich, 2006; Willson et al., 2007). Such long-term effects of childhood conditions have been documented for health outcomes (Ball and Mishra, 2006) and mortality (Hayward and Gorman, 2004), but still need to be assessed for preventive health care use.

The principle of timing refers to the fact that life transitions or events may affect individuals differently, depending on their timing within the life course (Elder et al., 2003). Similarly, the timely initiation of regular preventive care is of crucial importance to its effectiveness (Bloom, 1994; Ell et al., 2007; Stirbu et al., 2007; Broyles et al., 2000; Riley and Gilbert, 2005). The WHO (2012) recommends screening from the age of 50 onwards. Therefore, socio-economic inequalities can also be manifested in the timely use of preventive services, in addition to the probability of engaging in preventive care. However, the temporal dimension has received little attention in empirical research (Spadea et al., 2010). Rather, age is conceived as a control or confounding variable, or is used as a proxy for "need" for preventive health care, because "need" factors are not always apparent (e.g. Jusot et al., 2011; Or et al., 2010; Wübker, 2012).

The principle of time and place refers to the fact that the life of individuals is embedded in and shaped by historical context and place (Elder et al., 2003). For example, in 2001, a population-based screening programme was implemented by the Belgian government, in which all women aged between 50 and 69 were offered free mammography screening every two years (Vlaams agentschap Zorg en Gezondheid, 2010). This has led to an increase in mammography screening between 2001 and 2004, as reported by Puddu and colleagues (2009).

2. Methods

2.1. Data

Our analysis uses data from the Belgian sample of the Survey on Health, Ageing and Retirement (SHARE): a multidisciplinary and cross-national panel survey on health, SES and social and family

networks. Details about the sampling procedure can be found elsewhere (Börsch-Supan and Jürges 2005), but generally it consists of probability samples, drawn from population registers or multistage sampling. The third wave (SHARELIFE 2008-2009) was designed to complement existing data by adding retrospective life histories. All measurements are taken from the SHARELIFE, except for "wealth"[1] and education. To improve recall when collecting retrospective data, a Life History Calendar (LHC) was used (Schröder, 2011; see appendix for an example). This method relies on the hierarchical structure of autobiographical memory and uses salient events such as marriage or the birth of a child as anchors for recalling other events (Belli, 1998). Also, a list of prominent external events is incorporated in the LHC for every year (for example, the world exposition in 1958 or the dioxin affair in 1999), which can help to determine the date of personal events. In addition, special efforts have been made to reduce attrition and attain high retention rates (Blom and Schröder 2011). Except for the wealth measurement, missing data shows low rates (0.0-4.19%) for both independent and dependent variables and is deleted list-wise. Because of the focus on preventive mammography screening, women diagnosed with breast cancer during their lives are excluded from the sample (N=67). The final sample of 1,348 Belgian women provides longitudinal data on the commencement of breast cancer screening between 1975 and 2009. Women enter the risk set for screening initiation at age 40 and are censored at age 69.

2.2. Measurements

2.2.1. Mammography screening initiation

Our dependent variable, the timing of regular mammography screening, was retrieved from the question "In which year did you start having mammograms regularly?" given to all women who answered yes to the question "Have you ever had mammograms regularly over the course of several years?". Women who did not undergo screening were censored at the time of its collection during SHARELIFE.

2.2.2. Childhood conditions

The analysis incorporates four indicators on childhood conditions.

[1] The previous waves (1 and 2) were also used to add missing information for the year of birth and for the indicator of diagnosed breast cancer. The most recent available information was used.

Economic capital during childhood is assessed by the occupation of the main breadwinner of the household when the subject was 10 years old, employing the International Standard Classification of Occupations (ISCO-88). Following Dumont (2006), six categories are created: i) white collar high skilled (reference category); ii) white collar low skilled; iii) blue collar high skilled; iv) blue collar low skilled; v) armed forces; and vi) missing information or the absence of a main breadwinner when the interviewee was aged 10.

Number of books in the parental house, is used to capture objectivised cultural capital in childhood. Respondents with none or very few books (0) are contrasted with those who had at least enough books to fill one shelf (1).

Number of childhood illnesses[2] is used as a proxy for encounters with the health care system. Based on the univariate distribution, three categories are considered in the analysis: i) no diseases during childhood (reference category); ii) one disease; and iii) two or more diseases.

Childhood preventive health care use is assessed by including information on regular dental check-ups during childhood (0=no; 1=yes).

2.2.3. Adulthood conditions

Level of education (institutionalised cultural capital) is assessed using four categories based on the modified ISCED-97 (International Standard Classification of Education). The first category (reference category) includes respondents who did not complete primary education or completed primary education at most. The other categories are lower secondary, upper secondary, and higher education. The latter comprises individuals who completed the first or second stage of tertiary education.

Wealth refers to the situation at the interview in wave 1 or wave 2, and is used as a proxy for lifelong wealth, since no time-varying information on wealth or income is available. The information from wave 1 or wave 2 is very detailed and combines details on the value of the main residence (if owned and minus any mortgage), the value of other real estate, and any share of businesses and cars. The SHARE team imputed missing values for this measurement to recreate a distribution of the

[2] The questionnaire included the following diseases: infectious disease, polio, asthma, respiratory problems other than asthma, allergies (other than asthma), severe diarrhea, meningitis/encephalitis, chronic ear problems, speech impairment, difficulty seeing even with glasses, severe headaches or migraines, epilepsy, fits or seizures, emotional, nervous or psychiatric problems, broken bones, fractures, appendicitis, childhood diabetes or high blood sugar, heart problems, leukemia or lymphoma, and cancer or malignant tumour (excluding minor skin cancers).

missing value, rather than making a single guess about it (for details, see Christelis, 2011), which is used in the analyses.

2.2.4. Period and cohort effects

In addition to cohort effects, assessed by *year of birth*, three *historical periods* (1975-1988; 1989-2000; 2001-2009) reflect changes in Belgian policy concerning mammography screening. Finally, a time-varying dichotomy indicates whether a woman was *eligible for the population-based screening programme*. Specifically, women get a score of 1 for the time intervals when they were between 50 and 69 years old during the period in which the screening programme was administered (2001 to 2009).

2.3. Statistical methods

Event-history analysis is commonly used in life-course research, since the concept of transition is central both to the theoretical perspective and the statistical modelling of event histories (Wu, 2003). First, we use the Kaplan-Meier estimates to explore the data. This procedure uses the actual observed event times to describe the distribution of event occurrence. Second, discrete time hazard models are employed, since the timing for mammography screening is measured in years (Allison, 1984; Singer and Willett, 2003). The models use a complementary log-log link function. As a result, the exponentiated parameter estimates can be interpreted as hazard ratios, comparing the risk of commencing mammography screening in the group considered, to that of the reference category. The baseline hazard function combines a quadratic effect of time elapsed since age 40, with a categorical specification allowing increased hazards at ages 40, 45, 50, 55, 60 and 65, after visual inspection and likelihood ratio tests for model fit. To assess their unique contributions, childhood and adulthood conditions are first entered into the model separately (Model 1 and Model 2), before being estimated together (Model 3). To account for unobserved time-constant characteristics that might affect the commencement of mammography screening, a random-effects model is used, where person-years of observation are nested in individuals. All analyses use STATA 11.

3. Results

Table 1 shows the socio-demographic characteristics as well as preventive health care use of the women included in our sample. About 73% of the women reported in 2008-2009 to have commenced engaging in regular mammography screenings during their lives. Notably, 44% of respondents had none or only very few books at home during childhood and about 70% grew up in blue collar households. The dentist was visited regularly in childhood by about 60% of the women.

(Table 1 around here)

From the Kaplan-Meier graphs, it appears that a large share of women start screening around the recommended age of 50, but substantial differences in screening behaviour emerge, depending on childhood preventive behaviour (figure 1), education (figure 2) and wealth (figure 3). It seems that socio-economic status affects the likelihood of ever having a mammogram, rather than the age when screening commences.

(Figures 1-3 around here)

In line with previous research, crucial effects from education and wealth emerge, net of cohort and period effects. For example, the hazard of screening is respectively 1.68 times and about 1.35 times greater for tertiary-educated women and those with a household wealth above at least 80% of the median, compared to their less-privileged counterparts (Model 3, Table 2).

With regard to childhood, it is cultural capital that predicts mammography screening later in life. The hazard for screening is 1.25 times greater for women who had books at home during childhood than those who did not (Model 1). However, this childhood advantage does not persist after controlling for adulthood socio-economic position. More convincingly, childhood preventive health behaviour, the clearest indicator of cultural health capital, is associated with a hazard which is 1.45 times greater. There is almost no decrease in the parameter estimate when controlling for socio-economic status in adulthood (see model 1 and model 3). As suggested by the full-path dependence model, childhood conditions seem to play a substantial role in engagement in preventive health behaviour during later life and the accumulation of cultural health capital.

The example provided by childhood illnesses illustrates the relevance of a longitudinal design. In contrast to expectations, there appears to be no association with screening. Additional analyses (results not reported) reveal that the number of childhood illnesses also captured cohort effects, with younger cohorts reporting more illnesses. Since younger cohorts also engage more in screening, we would have incorrectly concluded that the number of childhood illnesses might be considered as a proxy for cultural health capital if cohort effects are not accounted for.

For every year a woman has been born earlier, the hazard for ever undergoing mammography screening regularly after age 40 is 1.04 times greater (model 3). In addition, longitudinal analyses reveal clear period effects, which is not surprising given the changes to knowledge and policy concerning breast cancer and screening. Compared to the period 1975-1988, the hazard is 1.98 times greater in the period 1989-2000, and 3.86 times greater in the period 2001-2009 (see model 3). Finally, being an appropriate age to qualify for the screening programme implemented by the Belgian government did not yield a significant association after controlling for period effects. However, this does not mean that the screening programme was not effective. Data limitations hinder us in discerning the motivations of women to commence screening. Therefore, it was not possible to disentangle fully the effects of the screening programme from the effects of periodical change.

(Table 2 around here)

4. Discussion and conclusion

We argued that there is substantial theoretical overlap between cultural health capital theory and the life-course paradigm. We evaluate this empirically by focussing on socio-economic inequalities in mammography screening, using retrospective longitudinal data from SHARE. The longitudinal design allows not only a long-term perspective, but also the correct time ordering of the conditions. Time ordering is often obscured in health care research, since need for health care is almost always defined by means of questions about prevailing health (at the time of the interview), while items on (preventive) health care employ the previous week, month or year as a time framework. This has hampered conclusions on health care inequalities until now, as research is predominantly based on cross-sectional designs.

Recent developments on cultural health capital theory seem promising. In line with the theory, the results suggest the presence of cultural health capital, which starts accumulating early in life, even after traditional measures of cultural capital and socio-economic position are controlled for. Women who visited the dentist regularly during childhood are as much as 1.38 times greater to undergo mammography screening later in life. This clearly shows that a healthy lifestyle cannot be perceived as the uncoordinated behaviours of disconnected individuals, and supports the need for a more structural approach (Cockerham, 2005). For policy makers, this implies that not only socio-economic barriers to mammography screening need to be tackled.

Some limitations are worth noting. First, retrospective data has been challenged for the possibility of recall error. However, multiple efforts have been taken by the SHARE team to minimise this form of bias (ex-ante approach) and to evaluate the quality of the data (ex-post approach) (Schröder, 2011). Concerning the first approach, the interview modules in the SHARELIFE are ordered according to what is most important to the respondent and thus recalled most accurately. Then, a life-grid computerised version of the LHC is used to minimise recall errors (Schröder, 2011). Although additional quality checks on the SHARELIFE data are still needed, strong consistency has already been found for personal events (Garrouste, 2011) and childhood conditions (Havari and Mazzonna, 2011). The second limitation concerns the question wordings regarding mammography screening. It is impossible to discern fully whether women started mammography screening for preventive purposes only or for other reasons. However, with the information on health history, we are able to exclude from the sample women diagnosed with breast cancer.

Much more research is needed and different indicators of cultural health capital should be considered, as well as different (preventive) health care outcomes. In this regard, the results show the importance of disentangling indicators from cohort and period effects, as exemplified by the indicator of childhood illnesses. In addition, effective engagements with health care providers are necessary for the development of cultural health capital. However, studies have repeatedly shown that even in health care interactions, socio-economic inequalities exist. For example, it has been reported that more-deprived individuals receive a lower quality of care (Hall and Dornan, 1990), spend less time with a doctor (Videau et al., 2010) and receive less information (Goddard and Smith, 2001; Waitzkin, 1985; Willems et al., 2005). Sociological explanations for these divergences are scarce (Waitzkin,

1985; Willems et al., 2005), but important insights could be derived from the observation that patients in a higher socio-economic position secure more information from doctors, through effective expressiveness and assertiveness (Street, 1991; Verlinde et al., 2011). This active stance precisely constitutes the underlying idea for Shim (2010) developing how cultural health capital may shape the content and tone of patient-provider interactions.

In line with previous studies (Stirbu et al., 2007; Puddu et al., 2009), the crucial role of education in influencing the likelihood of mammography screening has been highlighted. Higher-educated groups might be more future oriented and more willing to commit to a long-term goal, such as prevention (Mirowsky and Ross, 2003; Rosenstock, 1966; Wübker, 2012). In addition, engagement in preventive care requires a more proactive stance in information seeking and lower SES groups are more likely to seek information for their immediate needs only (Avitabile and Padula, 2008; Leydon et al., 2000; Lorant et al., 2002). The role of physicians is crucial (Wübker, 2012) and the aforementioned socio-economic inequalities in health care encounters are at the core of the discussion.

We also argued that the notion of timeliness should be included in the assessment of socio-economic inequalities in preventive health care. In line with what studies have traditionally assumed, socio-economic inequalities are manifested in Belgium as a lower probability of ever having a mammogram, rather than in the late commencement of screening. This finding should be interpreted in the light of the rather small age range for which screening is recommended. The discussion on timeliness should therefore not be closed. For example, for preventive services that begin far more early in life, such as dental check-ups, timeliness might reveal clearer socio-economic inequalities in preventive health care. In sum, our findings illustrate the potential of the life-course perspective and cultural health capital to further our understanding of preventive health care inequalities. A more longitudinal perspective that covers the whole life course is needed if we want to explain the inequalities that persist today.

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6. Tables & Figures

Figure 1: Cumulative hazard functions for mammography screening initiation by childhood dental check-ups (Nelson-Aalen estimates), Survey of Health, Ageing and Retirement

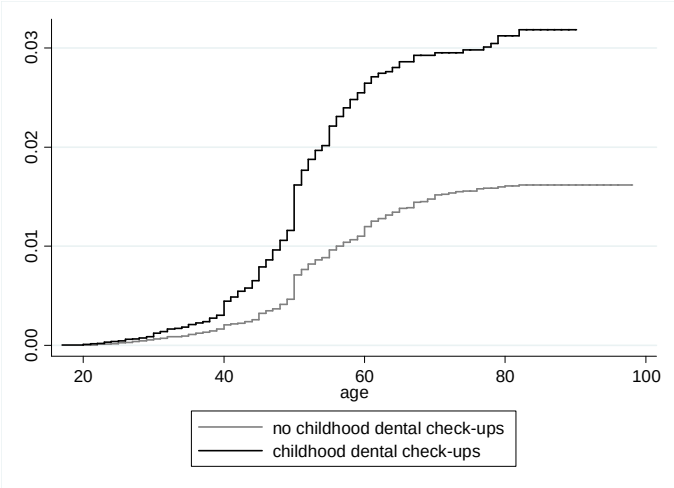

Figure 2: Cumulative hazard functions for mammography screening initiation by education (Nelson-Aalen estimates), Survey of Health, Ageing and Retirement

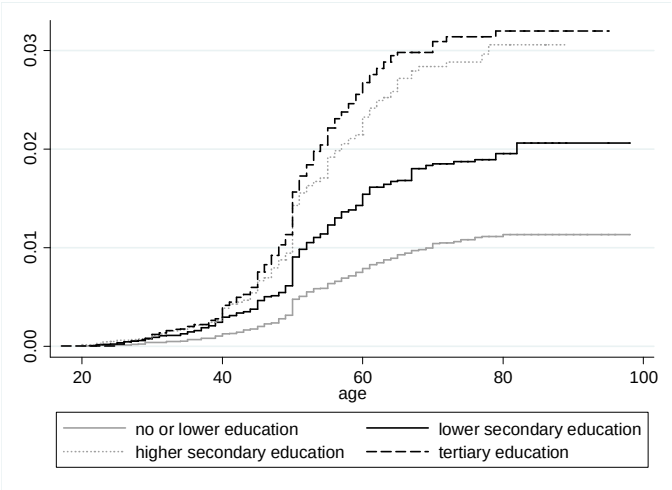

Figure 3: Cumulative hazard functions for mammography screening initiation by wealth (Nelson-Aalen estimates), Survey of Health, Ageing and Retirement

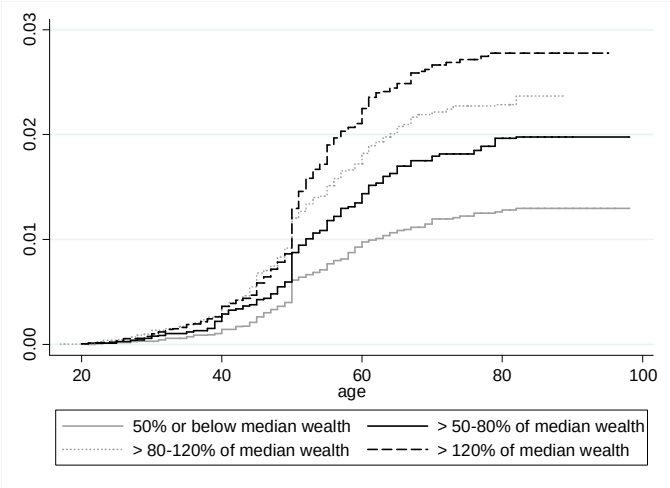
0.00
0.01
0.02
0.03
20
40
60
80
100
age
50% or below median wealth
> 50-80% of median wealth
> 80-120% of median wealth
> 120% of median wealth

Table 1: Characteristics of Belgian women, Survey of Health, Ageing and Retirement

	Women (N=1,348)
Regular mammography screening? *(N, %)*	
Yes	979 (72.6%)
No	369 (27.4%)
Childhood characteristics	
ISCO of male breadwinner when 10 (N, %)	
White collar high skilled	187 (13.9%)
White collar low skilled	167 (12.4%)
Blue collar high skilled	431 (32.0%)
Blue collar low skilled	477 (35.4%)
Armed forces	28 (2.1%)
Missing or no male bread winner	58 (4.3%)
Presence of books when 10 (N, %)	
None or very few	595 (44.1%)
At least one shelf	753 (55.9%)
Number of childhood illnesses (N, %)	
None	145 (10.8%)
One	780 (57.9%)
Two or more	423 (31.4%)
Regular dental check-ups when child (N, %)	
Yes	558 (41.4%)
No	790 (58.6%)
Adulthood characteristics	
Education (N, %)	
No or lower education	339 (25.1%)
Lower secondary	339 (25.1%)
Higher secondary	341 (25.3%)
Tertiary	329 (24.5%)
Wealth (N, %, multiple imputation)	
50% or less of median wealth	327 (24.2%)
>50-80% of median wealth	212 (15.7%)
>80-120% of median wealth	283 (21.0%)
More than 120% of median wealth	526 (39.0%)
Age at time interview (Mean, SD)	66.7 (10.7)

Table 2: Exponentiated coefficients (hazard ratios) of random-effects complementary log log model of mammography screening initiation in Belgium (imputed data)

	Model 1: childhood characteristics		**Model 2: adulthood characteristics**		**Model 3: childhood and adulthood**	
	Exp (B)	p	Exp (B)	p	Exp (B)	p
Age	2,09	***	2,02	***	2,09	***
Age square	0,99	***	0,99	***	0,99	***
Age 40	5,29	***	5,22	***	5,33	***
Age 45	2,17	***	2,18	***	2,17	***
Age 50	5,61	***	5,63	***	5,58	***
Age 55	2,00	***	2,00	***	2,01	***
Age 60	2,09	***	2,09	***	2,09	***
Period and cohort effects						
Year of birth	1,05	***	1,05	**	1,04	**
Period (ref cat 1975-1988)						
(1989-2000)	2,01	***	2,00	***	1,98	***
(2001-2009)	3,88	***	3,92	***	3,86	***
Eligible for screening	1,02		0,99		1,02	
Childhood conditions						
ISCO of male breadwinner (ref cat: white collar high skilled)						
White collar low skilled	1,41	*			1,44	*
Blue collar high skilled	1,16				1,25	
Blue collar low skilled	1,05				1,23	
Armed forces	1,44				1,54	
Missing or no male bread winner	0,76				0,86	
Presence of books when 10	1,25	*			1,13	
Cultural health capital						
Childhood illnesses (ref cat: none)						
One	1,14				1,11	
Two or more	1,35	+			1,34	+
Regular dental check-ups	1,45	***			1,38	***
Traditional adulthood SES measures						
Education (ref cat: no or lower education)						
Lower secondary			1,27	+	1,23	+
Higher secondary			1,53	**	1,36	*
Tertiary			1,93	***	1,68	***
Wealth (ref cat:50% or below median)						
>50-80% of median wealth			1,25		1,26	
>80-120% of median wealth			1,34	*	1,38	*
More than120% of median wealth			1,32	*	1,34	*

Source: Survey of Health, Ageing and Retirement. Own calculations
+ p<0,10, *p<0.05, **p<0.01, ***p<0.001

7. Appendix

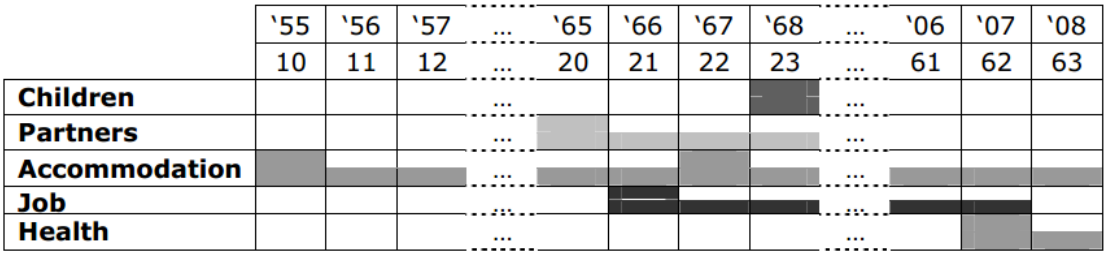

Figure 4: Example of a Life History Calendar. Reprinted with permission from MEA (2010).