

**The Welfare State, the Life Course, and Cross-National Variation in
Socioeconomic Disparities in Health and Aging**

Steven A. Haas
Population Research Institute
Pennsylvania State University

Introduction

There is a well-established research literature documenting large, persistent, and expanding socioeconomic disparities in health (Lynch and Kaplan 2000; Adler and Ostrove 1999; Preston and Elo 1995). Much effort over the past decade has focused on understanding the causal processes underlying these disparities (Link and Phelan 1995; Haas 2006). Two important and related, though rarely integrated, lines of research on the causes of health disparities are a) cross-national investigations of disparities and the impact of social welfare state structures and policies and b) life-course/developmental perspectives that have investigated the long-term impacts of childhood health and socioeconomic disadvantage. Each of these lines of research has provided important insights into the social and life course processes that generate socioeconomic disparities in health. However, researchers working in each of these areas have tended to pay scant attention to the other. The current project seeks to integrate these two approaches. Using cross-national data from the US Health and Retirement Study (HRS), the English Longitudinal Study of Aging (ELSA), and the Survey of Health, Aging, and Retirement in Europe (SHARE) I investigate cross-national differences in socioeconomic disparities in health among the older population in 17 countries. I then explore the extent to which the impact of poor childhood health and socioeconomic disadvantage vary across societies and how much variation on the lingering effects of childhood help explain cross-national differences in the magnitude of socioeconomic disparities in health.

Background

Cross-National Studies of Health Disparities

An important area of research on health disparities of late has been the increasing focus on international comparisons. The growing availability of high-quality and internationally comparable population-based data has made cross-national comparisons easier than ever before. Examination of such differences can provide important perspective on the social processes that generate disparities. Much of this research has focused on the European context, with occasional comparison made to the US (Banks et al. 2011; Avendano et al. 2009a-b; Mackenbach et al 2008; Avendano et al. 2005). However, studies have also looked across the Latin American/Caribbean context (Casas Dachs, and Bamas 2001) and conducted global comparisons (Subramanian et al. 2009; Witvliet et al. 2012).

This body of research has documented large and significant cross-national heterogeneity in within-country health disparities across various dimensions of SES and health. Comparisons with the US, England, and Europe have found that for many health outcomes socioeconomic disparities are larger in the US than they are in either England or Europe as a whole (Avendano et al. 2009a). Within the European context disparities are generally smallest in Northern Europe and the Nordic/Scandinavian countries, middling in Central and Western Europe and largest in Southern Europe/Mediterranean, Eastern Europe/the Baltics, and the UK and Ireland (Jürges 2009; Avendano et al. 2009b). There also is little evidence of trade-off between the overall level of population health and the equity as countries with the narrowest disparities also tend to be those with best health outcomes writ large (Jürges 2009).

In addition to documenting variation in socioeconomic disparities in health, research has begun to investigate the sources of this cross-national heterogeneity. This

has included studying the effects of compositional differences between populations in such characteristics as smoking, employment, income, wealth, age, sex, and marital status (Jürges 2009; Avendano et al. 2009a). As is the case with within-country disparities, cross-national differences cannot be attributed exclusively to differences in behavioral and lifestyle factors (Jürges 2009; Avendano et al. 2009b). However, Jürges (2009) decomposed the between-country variation in education-health gradients due to differences in the distribution of a number of individual-level covariates including age, sex, income, wealth, marital status, employment, immigration status, and smoking. Counterfactual analysis demonstrates that if other European countries and the US could achieve distributions in those variables similar to that of the country with the smallest education gradient (Switzerland) then they could achieve similarly narrow gradients (Jürges 2009).

In addition to looking at individual level covariates, others have looked at the differential impact of welfare state regimes. (Witvliet et al. 2012; Bambra 2011; Brennenstuhl et al. 2011; Avendano et al. 2009a-b; Bambra and Eikemo 2009; Eikemo et al. 2008a-b). Nation states vary widely in the degree to which they buffer populations from the vicissitudes of the market (decommodification, employment/income protection), provide public/social services, are active agents of economic opportunity and resource redistribution, are centralized/fragmented, and universal or exclusionary. In addition, there various typologies that attempt to distill the essential elements that differentiate welfare state regimes (Esping-Anderson 1990; Ferrera 1996; Wood and Gough 2006). While different studies employ different welfare state typologies making cross-study comparison difficult, prior research has shown that health disparities are larger in the

US with its less generous, more limited and fragmented liberal welfare state. Within the European context, those countries with what Ferrera describes as Bismarkian welfare states (Austria, Belgium, France, Germany, Luxembourg, Netherlands, Switzerland) have the narrowest health disparities, followed by the Scandinavian (Esping-Anderson's Social democratic) welfare states (Denmark, Finland, Norway, Sweden), and Anglo-Saxon (liberal) have the largest disparities (Ireland, UK) (Witvliet et al. 2012; Bambra 2011; Brennenstuhl et al. 2011; Avendano et al. 2009; Bambra and Eikemo 2009; Eikemo et al. 2008a-b).

Childhood/Developmental Influences on Adult Health

A second important thread of research seeks to integrate the study of health disparities within a developmental/life course perspective. This perspective begins with the premise that the health of individuals is not static, nor can it be divorced from the cumulative impacts of lived experience, which include exposures associated with individual placement within social and economic hierarchies. Social scientists are beginning to investigate how adult health and physical functioning are linked to early life exposures with the goal of assessing what Hayward and Gorman have called 'the long arm of childhood' (Hayward & Gorman 2004). This literature suggests that substantial gains in understanding adult health can be made from better knowledge of its determinants over the life course. It also suggests that the broad parameters of health trajectories and socioeconomic disparities therein may, in part, be forged very early in life, as unhealthy and socioeconomically disadvantaged children become unhealthy and socioeconomically disadvantaged adults.

Two general theoretical perspectives have been offered to describe how health unfolds over the life course. The *critical period* approach posits that negative events occurring during developmentally salient periods may permanently alter the trajectory of health over the life course (Ben-Shlomo & Kuh 2002). While health insults may occur at very early ages (even in- utero), it is not until much later that these effects manifest themselves in disease pathologies. The most well-known and controversial example of critical period effects are the fetal-origins of diabetes and cardiovascular disease proposed by Barker (1994). Barker hypothesizes that poor maternal nutrition at critical periods during gestation results in fetal growth retardation, which alters the structure and function of important tissues associated with insulin, blood pressure, and lipid regulation. In turn this increases the risk of adult chronic disease most notably cardiovascular disease and diabetes.

In his concept of “biological embedding” Hertzman (1999) provides a similar though much less reductionist perspective which posits that the conditions under which early cognitive, emotional, and psychosocial development occur are critical to health over the life course. If the early childhood environment is not conducive to healthy development this may lead to developmental delays, poor psychosocial adjustment, and higher lifetime levels of stress and poor health. As childhood and adolescence are vitally important periods of both physical maturation and social and cognitive development, the experience of poor childhood health and socioeconomic disadvantage may be especially detrimental to later life health trajectories regardless of subsequent adult health-related and socioeconomic factors.

Alternatively, the *cumulative insult* model suggests that exposures accumulate over the life course and that it is this lifetime accumulation that is important. The cumulative insults approach posits that there are social, environmental, and behavioral exposures over the life course which alters an individual's risk of disease in addition to any critical period effects (Ben-Shlomo & Kuh 2002). Under this conception, poor health and socioeconomic disadvantage in childhood represent two of many possible health-related insults over the life course, the effects of which may be either compounded by continued social, economic, and physical deprivation or partially or wholly ameliorated by upward social mobility and or healthy adult lifestyle.

Previous research has explored the connections between the socioeconomic characteristics of family of origin and adult health. Such studies have found that those from disadvantaged backgrounds have more health-related risk factors (Blane, Davey Smith, Gillis, Hole, & Hawthorne 1996) and increased risk of chronic diseases, including depression (Gilman, Kawachi, Fitzmaurice, & Buka 2002), cardiovascular disease (Notkola, Punsar, Karvonen, & Haapakoski 1985; Wannamethee, Whincup, Sharper, & Walker 1996), and stroke (Hart, Hole, & Davey Smith 2000). Those from disadvantaged social backgrounds also tend to have worse self-rated health (Rahkonen, Lahelma, & Huuhka 1997), higher mortality rates (Davey Smith, Hart, Blane, Gillis, & Hawthorne 1997; Peck 1994) low physical functioning at midlife (Guralnik, Butterworth, Wadsworth, & Kuh 2006 Lou and Waite 2005) and disability trajectories (Haas 2008).

There is also an extensive body of research linking childhood health status to adult health outcomes. Much of the early research in this area was based on the use of height as a proxy of early life health and nutrition (Floud, Wachter, & Gregory 1990).

Such studies typically found a negative association between achieved adult height and adult morbidity and mortality (Fogel & Costa 1997).

A few studies have directly investigated the relationship between childhood and adult health using various population-based surveys. Among these are a small number of prospective investigations using the British cohort studies (Colley, Douglas, & Reid 1973; Kuh & Wadsworth 1993; Kuh et al. 2002; Kuh et al. 2006). More recently studies have investigated this relationship using retrospective reports of childhood health in US-population-based studies finding significant associations between serious infectious disease in childhood and various adult chronic diseases including cardiovascular disease, cancer, and lung conditions (Blackwell, Hayward, and Crimmins 2001). Similarly, previous research has found that poor childhood health to be associated with poor self-rated health, work-limiting disability, and chronic disease (Haas 2007), functional health trajectories (Haas 2008), and physical performance (Haas et al. 2012), and helps explain socioeconomic and race-ethnic disparities in health (Haas 2008; Haas and Rohlfen 2010).

The Current Project

Though both of these recent strands of research have provided important insights into socioeconomic disparities in health, there has been essentially no work integrating them. This is somewhat puzzling given that much of the underlying logic and function modern welfare states involves the investment in health, human capital and other early childhood inputs as a means of ensuring high quality developmental outcomes from conception onward, increasing social and economic opportunity and mobility, and ameliorating the negative impacts of social and material disadvantage. It would therefore seem impossible to fully understand the role of poor childhood health and

socioeconomic disadvantage in generating health disparities without examining the larger welfare state policy context, which may actively or passively work to ameliorate such insults or conversely may magnify them. Similarly, integrating childhood and developmental inputs to later-life health into studies of the impact of welfare state regimes may provide specific insights in the particular policy mechanisms that matter most in regards to minimizing and eliminating disparities. Accordingly, the current study seeks to leverage and integrate these two lines of research by investigating cross-national disparities in health in the US, England, and Europe. Specifically, the study addresses two research questions.

1. To what extent does the impacts of poor childhood health and disadvantaged socioeconomic background on later-life health varies across countries and different welfare state regime? How do these effects compare to the impact of later adult socioeconomic circumstances?
2. To what extent do differences in the prevalence of poor childhood health, specific childhood conditions, and socioeconomic disadvantage explain cross-national heterogeneity in the magnitude of later-life socioeconomic disparities in health?

DATA

Data for the empirical analysis will come from three sources. For the US data will come from the Health and Retirement Study (HRS). The HRS is an ongoing panel study of Americans begun in 1992 and designed to investigate economic and health transitions associated with retirement (Juster & Suzman 1995). Follow-up takes place every second year. The original HRS cohort was composed of 12,652 individuals, of which 9,814 were born between 1931 and 1941 and the rest are spouses born before

1931 or after 1941. Beginning in 1998 HRS began collecting retrospective data on childhood health and socioeconomic circumstances. In 2008 an extensive childhood health histories was collected (Smith 2009).

Data for England come from the English Longitudinal Study of Aging (ELSA). Begun in 2002/2003, ELSA is a longitudinal, household-based, representative sample of 12,001 individuals aged 50 and over living in England. Follow up interviews were conducted in 2004/2005, 2006/2007, and 2008/2009. ELSA was modeled on the HRS and there is substantial overlap in the content and structure of the questionnaire. At wave 3 (2006/2007) a special Life-History module was administered that included complete childhood health histories.

Data for 15 European countries come from the Survey of Health Aging and Retirement in Europe (SHARE). Like HRS and ELSA, SHARE is a household-based longitudinal study of individuals aged 50 and over in 2004. The initial wave collected data on 31,115 individuals from 12 countries (Austria, Belgium, Denmark, France, Germany, Greece, Israel, Italy, Netherlands, Spain, Sweden, Switzerland). Wave 2 (2006/2007) added 2830 individuals from the Czech Republic, 1134 from Ireland, and 2467 from Poland.

REFERENCES

- Avendano, Mauricio, M. Maria Glymour, James Banks, and Johan Mackenbach. 2009a. "Health Disadvantage in US Adults Aged 50-74 Years: A Comparison of the Health of Rich and Poor Americans with that of Europeans." *American Journal of Public Health* 99(3): 540-48.
- Avendano, Mauricio, Hendrik Jürges, and Johan P. Mackenbach. 2009b. "Educational Level and Changes in Health Across Europe: Longitudinal Results from SHARE." *Journal of European Social Policy* 19(4): 301-16.
- Avendano, Mauricio, A.E. Kunst, F. van Lenthe, V. Bos, G. Costa, T. Valkonen, M. Cardano, S. Harding, J-K Borgan, M. Glickman, A. Reid, and J.P. Mackenbach.

2005. "Trends in Socioeconomic Disparities in Stroke Mortality in Six European Countries between 1981-1985 and 1991-1995." *American Journal of Epidemiology* 161(1): 52-61.
- Bambra, Clare. 2011. "Health Inequalities and Welfare State Regimes: Theoretical Insights on a Public Health 'Puzzle'." *Journal of Epidemiology and Community Health* 65:740-745.
- Bambra, C., and T. A. Eikemo. 2009. "Welfare State Regimes, Unemployment and Health: A Comparative Study of the Relationship between Unemployment and Self-rated Health in 23 European Countries." *Journal of Epidemiology and Community Health* 63:92-98.
- Banks, James, Zoe Oldfield, and James P. Smith. 2011. "Childhood Health and Differences in Late-Life Health Outcomes between England and the United States." Working Paper WR-860 RAND *Labor and Population Working Paper Series*.
- Barker, D. J. (1994). *Mothers, Babies and Health in Later Life*. Edinburgh: Churchill Livingstone.
- Ben-Schlomo, Y. and D. Kuh. 2002. "A Life Course Approach to Chronic Disease Epidemiology: Conceptual Models, Empirical Challenges and Interdisciplinary Perspectives." *International Journal of Epidemiology* 31:285-293.
- Blackwell, D. L., Hayward, M. D., & Crimmins, E. M. (2001). Does Childhood Health Affect Chronic Morbidity in Later Life? *Social Science and Medicine* 52(8):1269-84.
- Blane, D., Hart, C. L., Davey Smith, G., Gillis, C. R., Hole, D. J., & Hawthorne, V. M. (1996). Association of Cardiovascular Disease Risk Factors with Socioeconomic Position during Childhood and during Adulthood. *British Medical Journal* 313:1434-38.
- Brennenstuhl, Sarah, Amelie Quesnel-Vallee, and Peggy McDonough. 2012. "Welfare Regimes, Population Health and Health Inequalities: A Research Synthesis." *Journal of Epidemiology and Community Health* 66:397-409.
- Casas, Juan Antonio, J. Norberto W. Dachs, and Alexandra Bambas. 2001. "Health Disparities in Latin America and The Caribbean: The Role of Social and Economic Determinants." Pp.22-49 in *Equity & Health: Views from the Pan American Sanitary Bureau*. Pan American Health Organization Washington DC.
- Colley, J. R., Douglas, J. W., & Reid, D. D. (1973). Respiratory Disease in Young Adults; Influence of Early Childhood Lower Respiratory Tract Illness, Social Class, Air Pollution, and Smoking. *British Medical Journal* 2:195-198.
- Davey Smith, G., Hart, C., Blane, D., Gillis, C., & Hawthorne, V. (1997). Lifetime Socioeconomic Position and Mortality: Prospective Observational Study. *British Medical Journal* 314:547-552.
- Eikemo, T.A., C. Bambra, K. Joyce, and Espen Dahl. 2008. "Welfare State Regimes and Income-related Health Inequalities: A Comparison of 23 European Countries." *European Journal of Public Health* 18(6): 593-599.
- Eikemo, Terje A., Martijn Huisman, Clare Bambra, and Anton E. Kunst. 2008. "Health Inequalities According to Educational Level in Different Welfare Regimes: A Comparison of 23 European Countries." *Sociology of Health and Illness* 30(4): 565-582.

- Esping-Anderson, G. 1990. *The Three Worlds of Welfare Capitalism*. London: Polity Press.
- Ferrera, M. 1996. "The 'Southern' Model of Welfare in Social Europe." *Journal of European Social Policy* 6:17-37.
- Floud, R., Wachter, K. & Gregory, A. (1990). *Height, Health and History. Cambridge Studies in Population, Economy, and Society in Past Time. Nutritional Studies in the United Kingdom 1750-1980*. Cambridge: Cambridge University Press.
- Fogel, R. W., & Costa, D. L. (1997). A Theory of Technophysio Evolution, with Some Implications for Forecasting Population, Health Care Costs, and Pension Costs. *Demography* 34(1): 49-66.
- Gilman, S. E., Kawachi, I., Fitzmaurice, G. M. & Buka, S. L. (2002). Socioeconomic Status in Childhood and the Lifetime Risk of Major Depression. *International Journal of Epidemiology* 31:359-367.
- Guralnik, J., Butterworth, S., Wadsworth, M., & Kuh, D., Childhood Socioeconomic Status Predicts Physical Functioning a Half Century Later. *Journals of Gerontology (Medical Sciences)* 61A(7):694-701.
- Guralnik, J., Ferruci, L., Pieper, C., Leveille, S., Markides, K., Ostir, G., Studenski, S., Berkman, L., & Wallace, R. (2000). Lower Extremity Function and Subsequent Disability: Consistency Across Studies, Predictive Models, and Value of Gait Speed Alone Compared with the Short Physical Performance Battery. *Journals of Gerontology (Medical Sciences)* 55A:M221-M231.
- Hart, C. L., Hole, D. J. & Davey Smith, G. (2000). Influence of Socioeconomic Circumstances in Early and Later Life on Stroke Risk among Men in a Scottish Cohort Study. *Stroke* 31:2093-2097.
- Hayward, M. D., & Gorman, B. (2004). The Long Arm of Childhood: The Influence of Early Life Conditions on Men's Mortality. *Demography* 41(1):87-108.
- Haas, S.A. 2006. "Health Selection and the Process of Social Stratification: The Effect of Childhood Health on Socioeconomic Attainment." *Journal of Health and Social Behavior*. 47(4):339-354.
- Haas, S.A. 2007. "The Long-Term Effects of Poor Childhood Health: An Assessment and Application of Retrospective Reports." *Demography* 44(1):113-135.
- Haas, S.A. 2008. Trajectories of Functional Health: The 'Long Arm' of Childhood Health and Socioeconomic Factors." *Social Science & Medicine* 66(4): 849-861.
- Haas, S.A., P.M. Krueger, and L. Rohlfen. 2012. "Race/Ethnic and Nativity Disparities in Later Life Physical Performance: The Role of Health and Socioeconomic Status over the Life Course." *Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 67(2):238-48.
- Haas, S.A., & L. Rohlfen 2010. "Life Course Determinants of Racial and Ethnic Disparities in Functional Health Trajectories." *Social Science & Medicine* 70(2):240-250.
- Hart, C. L., Hole, D. J. & Davey Smith, G. (2000). Influence of Socioeconomic Circumstances in Early and Later Life on Stroke Risk among Men in a Scottish Cohort Study. *Stroke* 31:2093-2097.
- Hertzman, C. (1999). The Biological Embedding of Early Experience and its Effects on Health in Adulthood. In *Socioeconomic Status and Health in Industrial Nations: Social, Psychological, and Biological Pathways*. N. E. Adler, M. Marmot, B. S.

- McEwen, and J. Stewart (Eds.) *Annals of the New York Academy of Sciences*, 896: 85-95.
- Jürges, Hendrik. 2009. "Healthy Minds In Healthy Bodies: An International Comparison of Education-Related Inequality in Physical Health Among Older Adults." *Scottish Journal of Political Economy* 56(3): 296-320.
- Kuh, D., Bassey, J., Hardy, R., Aihie Sayer, A., Wadsworth, M., & Cooper, C. (2002). Birth Weight, Childhood Size, and Muscle Strength in Adult Life: Evidence from a Birth Cohort Study. *American Journal of Epidemiology* 156(7):627-633.
- Kuh, D., Hardy, R., Butterworth, S., Okell, L., Richards, M., Wadsworth, M., Cooper, C., & Aihie Sayer, A. (2006). Developmental Origins of Midlife Physical Performance: Evidence from a British Birth Cohort. *American Journal of Epidemiology* 164(2):110-121.
- Kuh, D., & Wadsworth, M., (1993). Physical Health Status at 36 Years in a British National Birth Cohort. *Social Science and Medicine* 37: 905-916.
- Link, B. and J. Phelan. 1995. "Social Conditions as Fundamental Causes of Disease." *Journal of Health and Social Behavior* 35:80-94.
- Luo, Y., & Waite, L. J. (2005). The Impact of Childhood and Adult SES on Physical, Mental, and Cognitive Well-Being in Later Life. *Journals of Gerontology (Social Sciences)* 60B(2):S93-S101.
- Lynch, J. and G. Kaplan. 2000. "Socioeconomic Position." In *Social Epidemiology* Edited by Lisa Berkman and Ichiro Kawachi. Oxford University Press, Pp. 13-35.
- Mackenbach, Johan P., Irina Stirbu, Albert-Jan R. Roskam, Maartje M. Schaap, Gwenn Menvielle, Mall Leinsalu, Anton E. Kunst for the European Union Working Group on Socioeconomic Inequalities in Health. 2008. "Socioeconomic Inequalities in Health in 22 European Countries." *New England Journal of Medicine* 358:2468-81.
- Notkola, V., Punsar, S., Karvonen, M. J., & Haapakoski, J. (1985). Socio-economic Conditions in Childhood and Mortality and Morbidity Caused by Coronary Heart Disease in Adult Rural Finland. *Social Science and Medicine* 21(5):517-523.
- Peck, M. N. (1994). The Importance of Childhood Socioeconomic Group for Adult Health. *Social Science and Medicine* 39(4):553-562.
- Preston, S.H. and I.T. Elo. 1995. "Are Educational Differentials in Mortality Increasing in the United States?" *Journal of Aging and Health* 74(4):476-496.
- Rahkonen, O., Lahalma, E., & Huuhka, M. (1997). Past or Present? Childhood Living Conditions and Current Socioeconomic Status as Determinants of Adult Health. *Social Science and Medicine* 44(3):327-336.
- Smith, James. 2009. "Re-constructing Childhood Health Histories," *Demography* 46(2): 387-403.
- Subramanian, SV., Tim Huijts, and Mauricio Avendano. 2010. "Self-reported Health Assessments in the 2002 World Health Survey: How Do They Correlate With Education." *Bulletin of the World Health Organization* 88:131-8.
- Wannamethee, G. S., Whincup, P. H., Sharper, G., & Walker, M. (1996). Influence of Fathers' Social Class on Cardiovascular Disease in Middle-aged Men. *The Lancet* 348(9037):1259-1263.
- Witvliet, Margot I., Anton E. Kunst, Karien Strnks, and Onyebuchi A. Arah. 2012. "Assessing Where Vulnerable Groups Fare Worst: A Global Multilevel Analysis

on the Impact of Welfare Regimes on Disability Across Different Socioeconomic Groups. *Journal of Epidemiology and Community Health* 66: 775-781.

Wood, G. and I. Gough. 2006. "A Comparative Welfare Regime Approach to Global Social Policy." *World Development* 34:1696-712.