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The Väinö Kannisto Fund Award for Merit in 1998-2004

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In 1997 Dr. Väinö Kannisto received the Prix de la Longevité- prize from the French IPSEN Foundation in recognition of his distinguished career in the field of demography. He donated the prize to the Population Research Institute of the Family Federation of Finland as the founding capital for the Väinö Kannisto Fund, which bears his name. The Fund bestows an annual award in recognition of merit for the best demographic thesis in the field of mortality and health research.

The Prize is awarded for a master´s, licenciate or doctoral thesis made in Finland in Finnish or some other major language, primarily English. The recipient of the award is chosen by the Fund´s Administrative Committee.

The award can be deferred in any given year if the Fund has received no applications of a sufficiently high standard that year in its field. The funds thus accruing can be used in a later year to award two prizes in full to applicants fulfilling the requirements.

In 2002 the Fund´s Administrative Committee decided that the winner of the award will be announced at the Postgraduate and Further Education Seminar arranged by the Finnish Demographic Society and the Department of Sociology, University of Helsinki. The decision has also been made that the announcement for applications for the award would state that the award is to be given for a doctoral dissertation.

The size of the award has varied from 1,330 to 2,000 Euros. All of the studies that have thus far been awarded the prize have been doctoral dissertations.

The first merit award was bestowed in 1998 on Pekka Jousilahti, M.D., for his study entitled The Role of Risk Factors and Risk Factor Changes in Coronary Heart Disease and in Coronary Heart Disease Trends in Eastern and Southwestern Finland. In 1999 the merit award was given to Kristiina Manderbacka, D. Soc. Sc., for her study Questions on Survey Questions on Health.

In 2000 the prize was awarded to Pia Mäkelä, D. Soc.Sc, for her research entitled Alcohol-Related Deaths. Prevalence and Relation to Gender and Socioeconomic Status and in 2001 the recipient of the award was Tiina Laatikainen, Lic.Med., for her study

Cardiovascular Risk in the Republic of Karelia, Russia: Comparison of Major Risk Factors with North Karelia, Finland.

In 2002 Leena Rask-Nissilä, M.D., was given the award for her study Neurological Development and Serum Lipids and Lipoproteins in an Coronary Heart Disease Prevention Trial in Childhood. The STRIP Project.

In 2003 the prize was awarded to Hannele Palosuo, D.Soc.Sc. for her research entitled Health and Well-Being in Moscow and Helsinki.

In 2004 Tiina Pensola, D.Soc.Sc. was given the award for her study From Past to Present: The Effect of Lifecourse on Mortality, and Social Class Differences in Mortality in Middle Adulthood.

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Abstract

From Past to Present: Effect of Lifecourse on Mortality, and Social Class Differences in Mortality in Middle Adulthood

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TIINA PENSOLA, Ph.D.

The Winner of the Väinö Kannisto Fund Award in 2004

Social class differences in mortality have been found in women and men in all phases of life. Although these differences are smaller in youth and towards the end of the life cycle, in middle adulthood they are greater than at any other time of life. A significant proportion of these differences may be attributed to prevailing circumstances and lifestyles, such as smoking, use of alcohol, medicine and drugs, diet, exercise and sleep. These factors impact on biological processes and through these on morbidity and mortality risk. Different explanations based on causation or selection, describe how health determinants and social processes interact in society and thereby produce health inequalities. However, none of these different models of explanations have fully accounted for health inequalities. Already in the 1970s, but even more so in the 1980s and in the late 1990s, the focus on current risk factors shifted to cover the whole adulthood and also youth and childhood, particularly the first three years of life, including the time in the uterus. The focus was in processes: how the development of disease or accumulation of exposures leading to the onset of disease is affected by subsequent biological and social processes, including behavioural and psychosocial factors, and their mutual interaction. The origin of these processes may be at the time of conception, or even at the time of the conception of the previous generation. Research studying the effects of longitudinal processes on the origin and progressing of non-infectious diseases is called lifecourse epidemiology. As a whole, this is not a new idea; for years different fields of science have been interested in social and biological factors affecting different phases of life and impacting on subsequent psychic and somatic diseases. Terminology in these studies may have been miscellaneous and they may have not been regarded as lifecourse studies. In principle, a customary social-medical study that concerns disentangling the association between social class and mortality must not only take into account the mechanisms that mediate the effects of factors related to current social class on mortality risk, but also the confounding factors in childhood and youth affecting both the adult class membership and mortality risk. The introduction of this thesis presents the different kinds of explanations to social

inequalities in health in a lifecourse perspective. Furthermore, it reviews how all the explanations introduced may be combined with the lifecourse approach and how this approach could be related to social class differences in mortality.

Although the lifecourse approach is used in morbidity and mortality studies, the focus in these studies has very seldom been in elucidating how circumstances over the lifecourse contribute to pervasive adult social class differences. In addition, it is only rarely that the lifecourse approach has been applied to mortality studies among persons in their middle adulthood. Mortality in young and middle adulthood may, in some respects, describe social inequalities even better than health measures. Mortality leaves very little room for speculation on the possible effects of different tendencies of people in different social classes or with different social backgrounds to react to and report health problems. In addition, health measures might be difficult to associate with external causes of death. Such causes in young and middle adulthood affect life expectancy and thus they contribute to social inequalities across the whole life span.

The empirical aim of this thesis was to disentangle the effects of the living conditions in the parental home and major transition in youth on social class differences in mortality from various causes of death among women and men aged 31-42 at death, and to evaluate whether the effect of past circumstances on mortality is through latency, accumulation or pathway mechanisms. The thesis (papers II-V) was based on 1990 census data for all Finnish persons born in 1956-60 linked with death records (4369 deaths) for 1991-98 and with information on lifecourse circumstances from the 1970, 1975, 1980 and 1985 censuses. These aggregated cross-tables were analysed by means of Poisson regression.

Social class differences in mortality in adulthood were considerable in both women and men, albeit there were differences in the patterning between the sexes. For women, the relative all-cause mortality rate for middle non-manual class was 1.44, for lower non-manual class 1.18, for manual class 1.96 and for employers and farmers 1.14 compared with the mortality of upper non-manual class. The figures for men were 1.51 for lower non-manual class, 2.94 for skilled manual and 4.08 for unskilled manual class and 1.92 for employers and farmers. Excess mortality was particularly high due to suicides and alcohol-related causes. Alcohol-related causes accounted for 21% of all deaths in women and 45% in men.

Overall, the parental home and youth paths explained more than 80% of the social class differences in all-causes, cardiovascular diseases, all external causes, and in alcohol-related causes among women and men. However, while characteristics of the parental home were clearly associated with alcohol-related mortality in men, even when adjusted for youth paths and adult class, the association of parental home with

alcohol-related mortality was modest in women. In suicide mortality, the parental home and youth paths accounted for 75% in men but 18% in women. While a single parent background was associated with an elevated risk in both sexes, coming from the upper non-manual class did not exhibit a lower risk for women; thus adjusting for parental home did not decrease adult differences in women. Adjusting for youth paths contributed to social class differences in suicide less than in other causes of death. After all adjustments possible, women in other social classes had approximately 150% higher mortality from suicide than women in the upper non-manual class.

Parental home had an association with disease mortality from the age of 20 onwards, indicating a latency effect. However, since the direct effect of the parental home on mortality was minor, the contribution of the latency model to differential mortality remained small. An indication for the accumulative effect of disadvantageous social class was found for cardiovascular diseases in both men and women and alcohol-related causes in men. The living conditions in the parental home, i.e. the manual class and one-parent family, had an effect on the transitions a person experienced in youth, and thus contributed to the effect youth paths exerted on adult social class differences in mortality from various causes of death. The effect of the parental home on youth paths was different for men and women. For women, of the effect of youth paths, approximately 17% for diseases but only 1% for external causes and 3% for alcohol-related causes was attributable to living conditions in the parental home. For men, the corresponding figures were 8%, 15% and 18%.

Youth paths had a substantial effect (about 60-90%) over and above the preceding effect of living conditions in the parental home on mortality. Higher mortality in the lower social classes was mainly attributable to a disadvantageous educational path. Moreover, both family formation, particularly early marriage for women and remaining single for men, and experience of unemployment in youth, had independent effects on class differences in mortality. These results strongly suggest that youth is a ‘sensitive period’ affecting social class differences in mortality in middle adulthood.

Cohort studies are essential in investigating the importance of different factors across the lifecourse. Ideally, a study on lifecourse effects on mortality would be a prospective cohort study, beginning before birth with information on pregnancy, and continuing through birth, infancy, childhood, youth and adulthood. This study was carried out on register-based longitudinal census data. The nature of this kind of data gives rise to both the strengths and the shortcomings of the study. These data allowed the retrospective collection of information on childhood and youth circumstances, and prospective information on mortality, but it was not possible to cover the whole lifecourse from birth onwards. The first census year available was 1970 and the last was 1990. Therefore, the mortality follow-up did not begin at birth: information on deaths before the year 1991

was not available. Paper I shows there to be a mortality variation in external causes at ages 5-29, but mortality variation in diseases by parental social class was very small. What may be a significant shortcoming in this study was the lack of information on social relationships in the family at the critical period of 0-3 years, and in the whole pre-school period in general. In future studies it is important to study conditions and experiences in early years that have long-lasting effects on both development and social processes, and subsequent health, and thus social inequalities in health.

Register-based data provide some clear advantages, for instance, there was no selection, all the factors studied were measured accurately, there was no recall bias, and there was a large number of deaths that were successfully linked to register data. Furthermore, the register based data provided a possibility to estimate the effect of selection by employment status on results, particularly in the case of accumulation. Moreover, extensive data made it possible to divide the exposures into several phases of life. If the lifetime exposure to a disadvantaged social class is constructed by summing up the times in that class over the lifecourse, the result of the cumulative exposure is likely to be reached as a consequence of the steep distribution of this indicator.

In summary, the analyses showed that in middle adulthood, factors related to parental home had a minor effect on social class differences in mortality, with the exception of cardiovascular diseases in both sexes and alcohol-related causes in men. The process leading to adult class seems to be important. In particular, the critical transitions in youth have a salient role. Socio-demographic variables are sufficient to identify the most sensitive age phases and vulnerable population groups. However, in future studies co-operation with other scientific fields is needed when the focus is on revealing the mechanisms that mediate the effects of social exposure at different phases of life on subsequent mortality. When the cohort grows older, it is interesting to study whether the effects of parental home and youth paths will change or endure.