

AN EXPLORATION OF THE SOCIOECONOMIC STATUS-HEALTH STATUS GRADIENT IN ONTARIO pdf

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An Exploration of the Socioeconomic Status-Health Status Gradient in Ontario: Results from the and Ontario Health Surveys Susan E. Schultz.

Abstract Background Individuals of low socioeconomic status experience a disproportionate burden of chronic conditions; however it is unclear whether chronic condition burden affects survival differently across socioeconomic strata. Chronic condition burden and unadjusted mortality were compared across neighborhood income quintiles. Multivariable Cox proportional hazards models were used to examine the effect of number of chronic conditions on two-year survival across income quintiles. Findings Prevalence of five or more chronic conditions was significantly higher among older adults in the poorest neighborhoods. There was also a socioeconomic gradient in unadjusted mortality over two years: In adjusted analyses, having more chronic conditions was associated with a statistically significant increase in hazard of death over two years, however the magnitude of this effect was comparable across income quintiles. Individuals in the poorest neighborhoods with four chronic conditions had 2. Interpretation Among older adults with universal access to health care, the deleterious effect of increasing chronic condition burden on two-year hazard of death was consistent across neighborhood income quintiles once baseline differences in condition burden were accounted for. This may be partly attributable to equal access to, and utilization of, health care. Alternate explanations for these findings, including study limitations, are also discussed. Chronic disease, Socioeconomic status, Comorbidity, Survival analysis

1. Introduction The burden of multiple chronic conditions is felt disproportionately among people living in low-socioeconomic status SES neighborhoods Freedman et al. This inverse relationship between SES and chronic condition burden is robust: According to the Inverse Care Law, the availability of good medical care tends to vary inversely with the need for it in the population served Hart, In countries where the Inverse Care Law has been demonstrated, people of lower SES are less likely to receive adequate health care, despite their greater need van Doorslaer et al. When health care is not universally accessible to young people, this disparity in health care access can establish SES gaps in early health that persist into old age, even if universal health care is available for senior citizens Currie and Rossin-Slater, Low-SES neighborhoods are less likely to have healthy built environments, including access to healthy food or safe spaces for physical recreation Yen et al. Low-SES individuals are also more likely to live in low-SES neighborhoods and their relatively high rates of smoking, physical inactivity, and obesity account for approximately a third of the increased cardiovascular mortality seen in these areas Jonker et al. In addition to their higher rates of unhealthy behaviors Jonker et al. Reduced mobility and increased vulnerability render older adults especially susceptible to the unhealthy effects of low-SES neighborhoods Yen et al. We hypothesized that these neighborhood effects would create a socioeconomic gradient in the burden of chronic conditions in older aged 65 to adults. We further hypothesized that low neighborhood SES would exacerbate the effects of increasing chronic condition burden on older adults and worsen their survival prognosis relative to those in high-SES neighborhoods, even with universal access to health care. To test these hypotheses, we described differences in chronic condition burden and health care utilization across neighborhood income quintiles in Ontario, Canada. Then we examined the impact of increasing number of chronic conditions on hazard of death over two years in the same sample, controlling for confounders and stratified by neighborhood income quintile. Setting This retrospective cohort study was conducted using linked provincial health administrative databases in Ontario, Canada. Data Sources The provincial health insurance claims database allows for identification of all individuals who use the health care system and retrieval of information about their medical conditions, utilization, and outcomes. The following datasets were linked using unique encoded identifiers and analyzed at ICES: Study Cohort All Ontario residents who met the following criteria were eligible for the study sample: We examined individuals 65 and over as representing a cohort particularly vulnerable to chronic disease burden and associated adverse health outcomes including death and also susceptible to neighborhood SES effects Yen et al. Of the 1,, eligible

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study participants, 0. Exposure The primary exposure was chronic condition burden, defined as the number of selected chronic conditions at the index date. Number of conditions was coded as one referent group, two, three, four, or five-plus. These definitions are based on diagnostic criteria of one inpatient or two outpatient diagnoses within two years of claims data. For the remaining 11 conditions where a derived ICES cohort did not exist, we adopted a similar approach to the derivation algorithms i. The full set of diagnostic codes used to define the conditions is listed in Supplementary Table A. Outcome The primary outcome was time to death measured in days from the index date. Neighborhood income quintile has been used extensively in health research as an indicator of neighborhood SES Yen et al. Whether or not individuals had a UPC “defined as being rostered or virtually rostered to a family physician” was also adjusted for, as were patient age, sex, and urban or non-urban location of dwelling. Frequency of specialist and primary care visits over the two-year follow-up period was also examined. Analyses Demographic characteristics of the study cohort, chronic condition burden, burden length as well as the presence of a UPC were evaluated at the index date within each neighborhood income quintile. Frequency of specialist and primary care visits each individual had over the two-year follow-up period were also examined. Due to the large sample size, standardized differences were calculated to quantify statistical significance of differences across quintiles, independent of sample size Mamdani et al. Continuous and categorical variables in the second to fifth income quintiles were all compared with those in the first lowest income quintile using the formulas detailed by Yang and Dalton Yang and Dalton, Univariate Cox proportional hazards models were developed to examine the crude association of each variable with two-year hazard of death. Chronic condition burden, burden length, age, sex, location of dwelling, and presence of a UPC were then simultaneously entered into Cox proportional hazards models stratified by neighborhood income quintile. We did not adjust for the number of physician visits in multivariable models because we hypothesized that they were in the causal pathway between chronic condition burden and survival. The proportionality assumption was verified within each stratum of neighborhood income quintile. Sensitivity Analyses We conducted a supplementary analysis across each income quintile stratum of the multivariable models, wherein the chronic condition burden variable was replaced by dummy-variables for the presence of each chronic condition. This sensitivity analysis tested whether findings attributed to number of conditions were actually due to differential effects of conditions across income quintiles. Sensitivity analyses that included measures of health care utilization or excluded the UPC variable were also done. A final sensitivity analysis substituted a measure of material deprivation quintiles “in the place of income quintile” as the neighborhood SES indicator Matheson et al. All analyses were done using SAS version 9. Role of the Funding Source The funding sources for this study had no role in study design, collection, analysis, or interpretation of data, or in the writing of the report. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication. Results A sample of 1, older adults was included in the analysis and is described in Table 1. Older adults living in lower income neighborhoods were significantly more likely to have high chronic condition burden: The prevalence of the 16 chronic conditions by income quintile is presented in Supplementary Figure A. Table 1 Baseline sample characteristics, according to neighborhood income quintile.

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2: Socioeconomic Status and Health: Why is the Relationship Stronger for Older Children?

An exploration of the socioeconomic status--health status gradient in Ontario, results from the and Ontario health surveys; Author: Schultz, Susan E.

Synopsis There are substantial disparities in health and longevity among different sectors of the US population. Who suffers from poorer health and greater premature mortality? How do these differences come about? What can be done to eliminate these disparities? Reaching for a Healthier Life answers these questions. There is no single pathway by which this occurs. Rather, resources associated with where people stand on the social ladder shape multiple aspects of their lives in ways that affect their health and well-being. They are not limited to the effects of poverty but occur at all levels. Premature death is more than twice as likely for middle income Americans as for those who are the best off, and more than three times as likely for those who live near or in poverty compared to the most privileged. The conditions we live in during childhood affect our health throughout our lives. More important are factors that determine if we fall ill in the first place. Jobs held by those lower on the ladder are more likely to involve shift work and physical hazards, low control over how and when tasks are done, job insecurity, and conflicts between family obligations and work requirements. Stressors that last a long time, like financial insecurity, interpersonal disputes, work-induced exhaustion, or chronic conflict are recorded in the body. The normal functioning of the cardiovascular, immune, metabolic and nervous systems is disrupted. This disruption is made worse by poor health habits molded by social and physical environments lacking health-promoting alternatives. What can be done? Two kinds of policies are required to reduce premature death and eliminate health disparities: Policies that impact income and wealth distribution, educational attainment and occupational mobility, and 2. Policies that buffer individuals from the damaging conditions of living below the top rungs. Supporting educational attainment, assuring a living wage, reducing crime, increasing opportunities for control at work, banning sale of soft drinks and junk food in schools are just a few policies with health consequences. Economic, education, labor and zoning policies are all health policies. The facts contained in this document support the case that policies to support healthy living conditions for all citizens are needed. The cost of implementing such policies would be offset by subsequent savings through increased productivity and lower health case costs. The initial investment would be money well spent. The one thing we cannot afford to do is nothing. Reaching for a Healthier Life is available electronically, or write the network office to request a hardcopy at Russell. The Biology of Disadvantage: Socioeconomic Status and Health Editors: The conference and the volume contributed to the upsurge in research into the mediators of the gradient relationship between socioeconomic status and health. In the intervening years the network has published numerous articles in academic journals and was influential in getting health disparities on the NIH agenda. In the final phase of the network, we are turning to the application of this knowledge for policy and practice. Is inequality making us sick? The compendium and the series bring the facts of socioeconomic status and health in the U. The volume Biology of Disadvantage: Socioeconomic Status and Health in the U. In addition it will illustrate the power of a multidisciplinary approach to complex social issues. It attempts to point the way towards applications of the accumulated knowledge for social interventions, and to raise pragmatic issues that are important when science is translated into policy and intervention. Adler and Judith Stewart 1. Health Disparities across the Lifespan: Meaning, Methods and Mechanisms Nancy E. Adler and Judith Stewart Concern about health disparities has increased markedly over the past two decades, fueled by exponential growth of empirical research. In this chapter we show the progression of research on SES and health through several eras. The first era reflected an implicit threshold model of the association of poverty and health. The second era produced evidence for a graded association between SES and health where each improvement in education, income, occupation, or wealth is associated with better health outcomes. Moving from description of the association to exploration of pathways, the third era focused on mechanisms linking SES and health, while the fourth era expanded on

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mechanisms to consider multi-level influences, and a fifth era added a focus on interactions among factors, not just their main effects or contributions as mediators. Questions from earlier eras remain active areas of research, while later eras add depth and complexity. Dow and David Rehkopf This chapter places current U. Section 1 will present comparisons of health outcome levels in countries at different stages of development over time and space. Section 1A will focus on the historical changes in key health indicators within the United States over the course of the 20th century, for example, discussing trends in mortality, including recent evidence of declining life expectancy in sub-populations. Section 1b will present historical health trends in international comparison. This includes life expectancy trends in the United States compared to other OECD countries, and the life expectancy catch-up among less developed countries. This section will also highlight outlier countries that have achieved high levels of population health even at low levels of economic development, such as China and Costa Rica. Section 2 will focus on SES gradients in health over time and space. Section 2A will discuss evidence of changing gradients in the U. Section 2B will discuss contemporaneous comparisons of U. The chapter will include discussion of the interpretation of international and historical comparative data, elucidating powerful lessons that might be drawn but also highlighting the inherent limitations of such comparisons. Barriers to further comparisons will be discussed such as data problems , as will suggestions for future comparisons that would be of particular interest. SES is usually measured by educational attainment, occupational prestige, or family income in mid- or late life. Another largely separate literature suggests that childhood SES is associated with later morbidity and mortality. Most of the latter work has been conducted in European populations using retrospective recall of parental occupation during childhood. Furthermore, many studies did not statistically adjust for adult SES, raising the possibility that childhood SES is related to adulthood SES because of the high association between the two. More recently, a small but growing literature merging these two literatures addresses whether SES across childhood and adulthood is related to later health risks. A number of models have been proposed to describe the role of SES in health over the life span. Accumulation models suggest that the duration of exposure to low SES is critical, regardless of life stage, because the effects of low SES aggregate over time. Change models suggest that increasing or decreasing SES over the life span can have effects independent of the average SES exposure, because of costs of adaptation to varying life circumstances. Timing models suggest that the impact of SES depends on timing of the exposure, with some data suggesting most recent SES is more important, e. The latter is based on the notion that early life circumstances may program biological and behavioral responses that have life long effects on health. This chapter will address the evidence for each type of model with emphasis on studies that provide sufficient evidence to compare models and more recent research that has not been discussed in earlier reviews. Money, Schooling, and Health: Adler and William Dow An association between higher educational attainment and better health status has been repeatedly reported in the literature. Similarly, thousands of studies have found a relationship between higher income and better health. However, whether these repeated observations amount to causality remains a challenge, not least because of the practical limitations of randomizing people to receive different amounts of money or schooling. In this essay, we review the potential causal mechanisms linking schooling and income to health, and discuss the twin challenges to causal inference in observational studies, viz. We provide a survey of the empirical attempts to identify the causal effects of schooling and income on health, including natural experiments. There is evidence to suggest that schooling is causally related to improvements in health outcomes. Evidence also suggests that raising the incomes of the poor leads to improvement in their health outcomes. Much remains unknown beyond these crude findings, however; for example, what type of education matters for health, or whether there is a difference between the health impacts of temporary income shocks versus changes in long term income. Patterns and Needed Research David R. Williams, Jacinta Leavell, Chiquita Collins This paper provides an overview of recent research on racial disparities in health and the complex ways in which race, ethnicity, and socioeconomic status SES combine to affect patterns of the distribution of disease. It begins by considering evidence of the magnitude of racial disparities in health and the striking pattern of earlier onset of

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illness and more severe disease for minorities compared to whites. It uses recent national data to illustrate the persistence of racial differences in SES and gives attention to the accumulating evidence that racial disparities in health persist at every level of SES. Migration history and status are important predictors of variation in health and the paper also explores the complex ways in which race, SES and immigration status combine to affect health. There has been polarizing discourse regarding the potential contribution of genetics and medical care to racial differences in disease. It argues that comprehensive approaches toward quantifying risks in the social environment are needed and research that will advance scientific understanding should seek to understand the ways in which risks and resources linked to race and SES cumulate over the life course and combine with innate and acquired biological factors to affect health. Clougherty, Kerry Souza, Mark R. Cullen

Adults with better jobs enjoy better health: What has been less well proved is whether this correlation is causal, and if so, through what mechanisms. During the past decade, much research has been directed at these issues. Best evidence in suggests that occupation does affect health. Most recent research on the relationship has been directed at disentangling the pathways through which lower status work leads to adverse health outcomes. This review focuses on five areas of recent progress: The study of neighborhood health effects has grown exponentially over the last 15 years. This chapter summarizes key work in this area with a particular focus on chronic disease outcomes specifically obesity and related risk factors and mental health specifically depression and depressive symptoms. Empirical work is classified into two main eras: Key conceptual and methodological challenges in studying neighborhood health effects are reviewed. Existing gaps in knowledge and promising new directions in the field are highlighted. Gallo and Shelley E. Taylor

The association between socioeconomic status SES and physical health is robust. Yet, the psychosocial mediators of SES-health association have been studied in relatively few investigations.

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3: PPT " Socioeconomic Status and Health PowerPoint presentation | free to view - id: 6eec8-ODc5N

Socioeconomic gradients in all-cause, premature and avoidable mortality among immigrants and long-term residents using linked death records in Ontario, Canada.

This article has been cited by other articles in PMC. Abstract Title An exploration of socioeconomic variation in lifestyle factors and adiposity in the Ontario Food Survey through structural equation models. Background Socioeconomic indicators have been inversely associated with overweight and obesity, with stronger associations observed among women. The objective of the present secondary analysis was to examine the relationships among socioeconomic measures and adiposity for men and women participating in the Ontario Food Survey OFS , and to explore lifestyle factors as potential mediators of these associations. Based on the Health Canada guidelines, waist circumference and BMI values were used to derive least risk, increased risk, and high risk adiposity groups. Structural equation modeling was conducted to examine increased risk and high risk adiposity in relation to education and income, with leisure time physical activity, fruit and vegetable intake, and smoking status included as potential mediators of these associations. Fruit and vegetable intake was a marginally significant mediator of the relationship between education and high risk adiposity for women. Increased risk adiposity was not associated with income or education for men or women. Conclusion The socioeconomic context of adiposity continues to differ greatly between men and women. For women only in the OFS, fruit and vegetable intake contributed to the inverse association between education and high risk adiposity; however, additional explanatory factors are yet to be determined. Background While it is popular to examine specific foods or sedentary activities as causes of rising obesity rates, it is likely that obesity is related to a complex set of sociodemographic and behaviourally based variables that influence overall lifestyle. Previous studies have found a lower prevalence of obesity among adults with higher levels of education [1 - 7], with stronger evidence of this association for women than men. The relationship between income level and obesity has also been found to vary by sex, and has been less consistent in its direction than education [1 , 5 , 8 , 9]. Lifestyle behaviours that have been associated with obesity include leisure time physical activity LTPA [10 - 13], fruit and vegetable intake [5 , 14], and smoking [10 , 12 , 15 - 17]. These factors have also demonstrated socioeconomic variation in several populations: Based on these studies, it is reasonable to suggest that some of the inverse association between socioeconomic indicators and adiposity may be occurring indirectly i. The contribution of smoking to the relationship between socioeconomic measures and adiposity is less clear. Higher levels of smoking have been observed among adults with lower income and education [1 , 2 , 19 , 20 , 29 , 30], however, evidence of lower BMI among current smokers suggests that this behaviour ought to reduce the likelihood of obesity rather than increase it [10 , 16 , 31]. Similarly, a previous history of smoking has been associated with increased adiposity, yet there is evidence to indicate that the socioeconomic groups most likely to have quit smoking are those with high income or high education [32 , 33]. A simultaneous examination of the indirect contributions of smoking, fruit and vegetable intake, and LTPA to the association between SES and adiposity could clarify some of the contradictory associations observed in the literature. Associations among socioeconomic indicators, lifestyle factors, and adiposity are often examined through multivariate regression analyses; this approach provides insight into independent associations among pairs of variables e. Structural equation modeling SEM , a regression-based technique that incorporates factor analysis for the creation of latent variables, enables the simultaneous estimation of direct and indirect pathways in models with multiple dependent variables [34]. Examples of previous SEM analyses include a study of fruit and vegetable intake in relation to personal, behavioural, and socio-economic factors [35], and an examination of stress as a mediator of the association between primary determinants of health socioeconomic and demographic factors and health status [36]. The objective of the present SEM analysis was to examine the direct and indirect associations among socioeconomic indicators, lifestyle factors, and adiposity for adults who participated in the Ontario Food Survey OFS. This data set was appropriate for such

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an exploration due to the breadth of measures included in the survey. Waist circumference measurements were included in the OFS in recognition of the health risks associated with central adiposity [37 - 39]. The adiposity categories for the present analysis were based on the Canadian Guidelines for Body Weight Classification [40], in accordance with the World Health Organization cut points [41]. The present analyses sought to evaluate whether associations of income and education with lifestyle factors and adiposity differed according to degree of adiposity. A full description of the survey method had been published previously [42]. Participants were drawn from the Ontario Health Insurance Program database using a stratified multistage probability design, and were contacted by letter and follow-up phone call. In-home interviews were conducted with adults between the ages of 18 and Completed surveys were obtained from women and men. Thirty-six percent of those who were contacted gave oral consent during the telephone recruitment; however, with a high number of participants not reached, the overall response rate was twenty-nine percent. Anthropometrics Participants were weighed to the nearest 0. Height and waist circumference WC were measured with a measuring tape to the nearest 0.

4: Absence of a Socioeconomic Gradient in Older Adults' Survival with Multiple Chronic Conditions

An exploration of socioeconomic variation in lifestyle factors and adiposity in the Ontario Food Survey through structural equation models. Background Socioeconomic indicators have been inversely associated with overweight and obesity, with stronger associations observed among women.

5: AMICOR: The Biology of Disadvantage: Socioeconomic Status and Health

An exploration of socioeconomic variation in lifestyle factors and adiposity in the Ontario Food Survey through structural equation models. Socioeconomic indicators have been inversely associated with overweight and obesity, with stronger associations observed among women.

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