1.a. Full Title:

A Descriptive Study of Socio-environmental Exposures across the Life Course in the ARIC Study

b. Abbreviated Title (Length 26 characters): SES Across the Life Course

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3. Timeline:

Analysis to begin during Fall 2003

4. Rationale:

As part of the Ancillary ARIC Study, Life Course SES, Social Context and Cardiovascular Disease (LCSES) (PI, G. Heiss), information on individual and neighborhood level socioeconomic status (SES) in childhood and early adulthood were collected from ARIC cohort survivors as part of ARIC annual telephone follow-up (Spring 2001 – Spring 2002). A major goal of the study is to identify and quantify explanatory mechanisms for the association of historical and contemporary socio-economic status (SES) with cardiovascular disease (CVD). While both studies of the impact of SES across the life course and the contribution of neighborhood context are becoming increasingly common in social epidemiologic in the literature there is little evidence that the two approaches have been incorporated in the same study. Thus, a unique aspect of the LCSES study is its attempt to jointly assess the impact of both on health.
Various conceptual models have been proposed that fit under the “umbrella” of life course SES and how it relates to health. Some models focus solely on the independent influence of early childhood circumstances on adult cardiovascular health (e.g., Smith, 1998; Kaplan, 1990; Glicksman, 1995), others on how early childhood SES influences health via setting pathways or trajectories across the life course impact risk of CVD (e.g., Brunner, 1999; Lawlor, 2002), and others on the impact of the cumulative exposure to low SES circumstances across the life course on CVD health (e.g., Davey Smith, 1997; Claussen, 2003) and still others on the health impact of patterns of inter- and intra-generational mobility across times (e.g., Faresio, 1994; Hart, 1998). To date, the literature attempting to assess these issues has been inconclusive. Until recently few studies included measures of SES that allowed an assessment of more than one conceptual model assessment within the same study/population. Thus, to date there is little evidence that allows for a comparison of the different conceptual models.

In the proposed manuscript we plan to examine the interrelation of different SES measures within specific epochs and across the life course as well as to describe, within birth cohorts and race-gender groups, different patterns of SES trajectories across the life course. We recognize this as an important descriptive step to take prior to engaging in hypothesis testing. At a practical level it will help us determine the adequacy of our data to test different conceptual models. Also, until quite recently the published studies have been based on mostly white European men, and have considered occupation as the primary life course SES exposure. We cannot assume that patterns noted in these studies will be similar to what we will find in our population that includes women and African-Americans who came of age at a time when occupational opportunities available to women and African-Americans were limited.

5. Study Questions /Aims:

• What is the association between childhood, early adulthood and midlife measures of individual SES? Does the association vary by race, gender, and birth cohort?

• What is the correlation between childhood, early adulthood and midlife measures of the neighborhood (census tract, county) social environment? Does the correlation vary by race, gender, and birth cohort?

• Within life epochs, what is the association of different individual and neighborhood measures of SES measures with each other? Do associations vary across epochs and by socio-demographic characteristics?

• Describe trajectories in educational attainment (Low, Medium, High) from childhood (based on parents’ education) to adulthood.
  o Does the distribution of educational trajectories vary by race, gender, and birth cohort?
  o Does the distribution of educational trajectories vary by the social context (county-level socio-economic characteristics) of the early childhood place of residence?

• Describe the inter- and intra-generational trajectories in occupational status across the life course (childhood (father), early adulthood, midlife)
  o Does the distribution occupational trajectories vary by race, gender, birth cohort, and educational attainment of parents?
  o Does the distribution of occupational trajectories by the social context (county-level socio-economic characteristics) of the early childhood place of residence?
• Describe the inter- and intra-generational trajectories from childhood, early adulthood, and midlife for selected neighborhood socio-environmental exposures (e.g., community-level % unemployment, % below poverty, education, income, and occupational structure).
  o Do the distributions of neighborhood trajectories vary by race, gender, and birth cohort?
  o Do the distributions vary by individual-level SES?

6. Data (variables, time window, source, inclusions/exclusions):

The proposed study will include the more than 11,700 ARIC participants who participated in the LCSES study. We will use SES-related data collected from the ARIC V1-V4, including participants’ education, occupation, and income, as well as mother and father’s education and the participants’ most common occupation between the ages of 25-44. We will also use SES data collected as part of the LCSES study including parental occupation, participants’ occupation at ages 30, 40, and 50 and county and state of residence during childhood. As we are interested in patterns of variation in SES profiles/trajectories by socio-demographic characteristics we will also include baseline ARIC data on age, race, center, gender, and year of birth. Childhood place of residence data was linked to county-level socio-economic data from the decennial census that corresponds most closely with the time period when the participant was a child (1930-1950). Similarly, earlier adulthood and current place of residence was linked with census tract level socio-environmental data from the decennial census occurring nearest to the time when he/she lived at a particular address. Variables available from these censuses (some of which are not available at the earliest censuses) include: % unemployment, % owner occupied houses, % below poverty level, average household size, % of adults with > high school or at least a high school education, % of adults in professional and managerial occupations, and mean family income.

As this is a descriptive paper, the analyses will be limited to cross-tabulations and the calculation of measures of association.

7.a. Will the data be used for non-CVD analysis in this manuscript?  ____ Yes  ____ No

This paper will be a descriptive profile of the socioeconomic profiles of participants across their life course. The work that we do as part of this paper will be the basis of measurements used in other planned manuscripts that focus on CVD-related outcomes.

b. If Yes, is the author aware that the file ICTDER02 must be used to exclude persons with a value RES_OTH = “CVD Research” for non-DNA analysis, and for DNA analysis RES_DNA = “CVD Research” would be used?  ____ Yes  ____ No

(This file ICTDER02 has been distributed to ARIC PIs, and contains the responses to consent updates related to stored sample use for research.)

8.a. Will the DNA data be used in this manuscript?  ____ Yes  ____ No

8.b. If yes, is the author aware that either DNA data distributed by the Coordinating Center must be used, or the file ICTDER02 must be used to exclude those with value RES_DNA = “No use/storage DNA”?  ____ Yes  ____ No
9. The lead author of this manuscript proposal has reviewed the list of existing ARIC Study manuscript proposals and has found no overlap between this proposal and previously approved manuscript proposals either published or still in active status. ARIC Investigators have access to the publications lists under the Study Members Area of the web site at: http://bios.unc.edu/units/cscc/ARIC/stdy/studymem.html

 ___X___ Yes   ______ No

10. What are the most related manuscript proposals in ARIC (authors are encouraged to contact lead authors of these proposals for comments on the new proposal or collaboration)?

Other LCSES ARIC MS proposals include: MS 880, 903, and 859.

11. Manuscript preparation is expected to be completed in one to three years. If a manuscript is not submitted for ARIC review at the end of the 3-years from the date of the approval, the manuscript proposal will expire.
References


Lawlor DA, Ebrahim S, Davey Smith G. Socioeconomic position in childhood and adulthood and insulin resistance: cross sectional survey using data from British women's heart and health study. BMJ 2002;325:805-.
