
The association between mortality following initial hospitalization for heart failure and SES in whites and blacks: The ARIC Study

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Associations of socio-economic status (SES) with short-term survival following a heart failure (HF) episode have been reported; however the influence of SES on long-term mortality following a hospitalization for HF is unknown. We examined the role of individual-level adulthood SES indicators on all-cause mortality among 1,162 ARIC participants aged 45-64 years at baseline who experienced an incident hospitalized HF event over a 12-year follow-up period. SES indicators included participants' total household income (< \$16,000 vs. ≥\$16,000) and education (<HS vs. ≥ HS) at baseline. Cases were ascertained via annual contacts, review of medical records, and death certificates. Initial hospitalized HF was defined as the first occurrence of either ICD-9-CM 428 or underlying cause of death of 428 or ICD-10-CM 150 for hospitalization without a previous record of 428. Participants with prevalent HF were identified via self-report and the Gothenburg criteria, and were excluded. The cumulative all-cause mortality for 2, 5, and 12-years was 25% (287/1162), 38% (443/1162), and 48% (558/1162), respectively. The short-term all-cause mortality for Blacks and Whites was similar, 26% (93/359) and 24% (194/803), respectively. The 5 and 12-year case-fatalities were significantly greater for Blacks than Whites: 43% (155/359) vs. 36% (288/803) and 55% (196/359) vs. 45% (362/803). Cox Proportional Hazards regression was used to estimate hazard rate ratios (HR) and 95% confidence intervals (CI) by ethnicity adjusted for age and gender. SES was not associated with short or long-term mortality after an initial hospitalization for HF in Whites. Both lower income and education were consistently, but not statistically significantly associated with higher mortality in Blacks. Adjustment for age, gender, study center and also BMI, diabetes, hypertension control, prevalent CHD, smoking, health insurance, and marital status at time of HF attenuated the associations.

Age and gender-adjusted HR [95% CI] for all-cause mortality following hospitalization due to HF

	2 years	5 years	12 years
Whites			
Income	1.06 (0.82, 1.37)	0.96 (0.69, 1.32)	0.81 (0.40, 1.64)
Education	0.99 (0.78, 1.24)	0.94 (0.71, 1.25)	0.88 (0.48, 1.61)
Blacks			
Income	1.15 (0.81, 1.63)	1.51 (0.98, 2.33)	2.37 (0.92, 6.14)
Education	1.23 (0.90, 1.68)	1.22 (0.85, 1.76)	1.22 (0.55, 2.71)