Social inequalities in all cause and cause specific mortality in a country of the African region

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Background

- In high income countries, low SES consistently predicts higher adult mortality for most causes of death
- Issue largely unexplored in LMICs

→limited availability of reliable mortality data

- Among the few existing studies, some found higher mortality in the low SES groups, some observed a positive SES gradient in mortality

Background

- Existing studies in LMICs only examined total mortality → virtually no study on SES differences in cause-specific mortality
- In HIC, SES differences in lifestyle factors explain a large proportion of SES inequalities in mortality

→ No study in LMICs on contributing factors

Objectives

1. To examine socioeconomic differences in all-cause and cause-specific mortality in the Republic of Seychelles.

2. To explore the extent to which the SES-mortality association is explained by lifestyle-related risk factors.

Data & Methods

Data

Population

- → 3 independent population-based surveys of lifestyle-related risk factors conducted **1989**, **1994** and **2004**
- → Age- and sex-stratified random sample of the total population aged 25-64 years
- → In total, 1585 men and 1818 women participated to the three surveys
- → Analyses based on **3246** participants with complete data on all risk factors considered

Measures

Mortality

→Vital status ascertained by linkage to mortality statistics for the period 1989-2012 (mean follow-up 15 years)

→All-causes, cancer, CVD, non-cancer/non-CVD

Socioeconomic status

→Participant's current occupation or past occupation if not currently employed

→Categorized as high/middle/low

Cardiovascular risk factors

- Smoking, alcohol consumption, BMI, blood pressure, diabetes, total cholesterol
- Categorized as high risk/low risk

Statistical analysis

Methodology: Cox regression with age as time scale

- **Model 1** → SES indicators adjusted for sex and year of birth
- **Model 2:** model 1 + risk factors entered one by one
- **Model 3:** model 1 + all risk factors

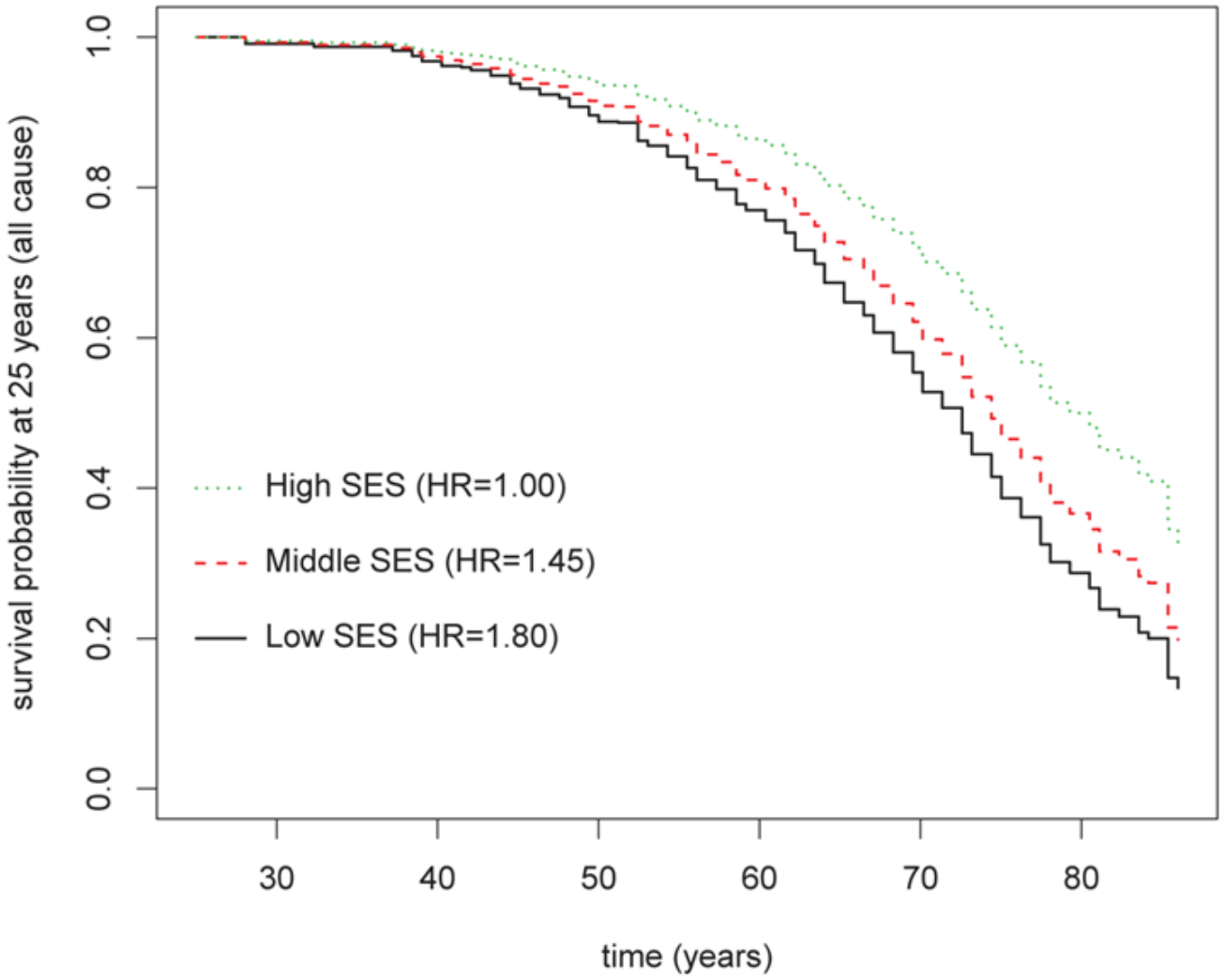
Estimation of the % attenuation of the coefficient associated to SES in the Cox regressions after the inclusion of the risk factors

Results

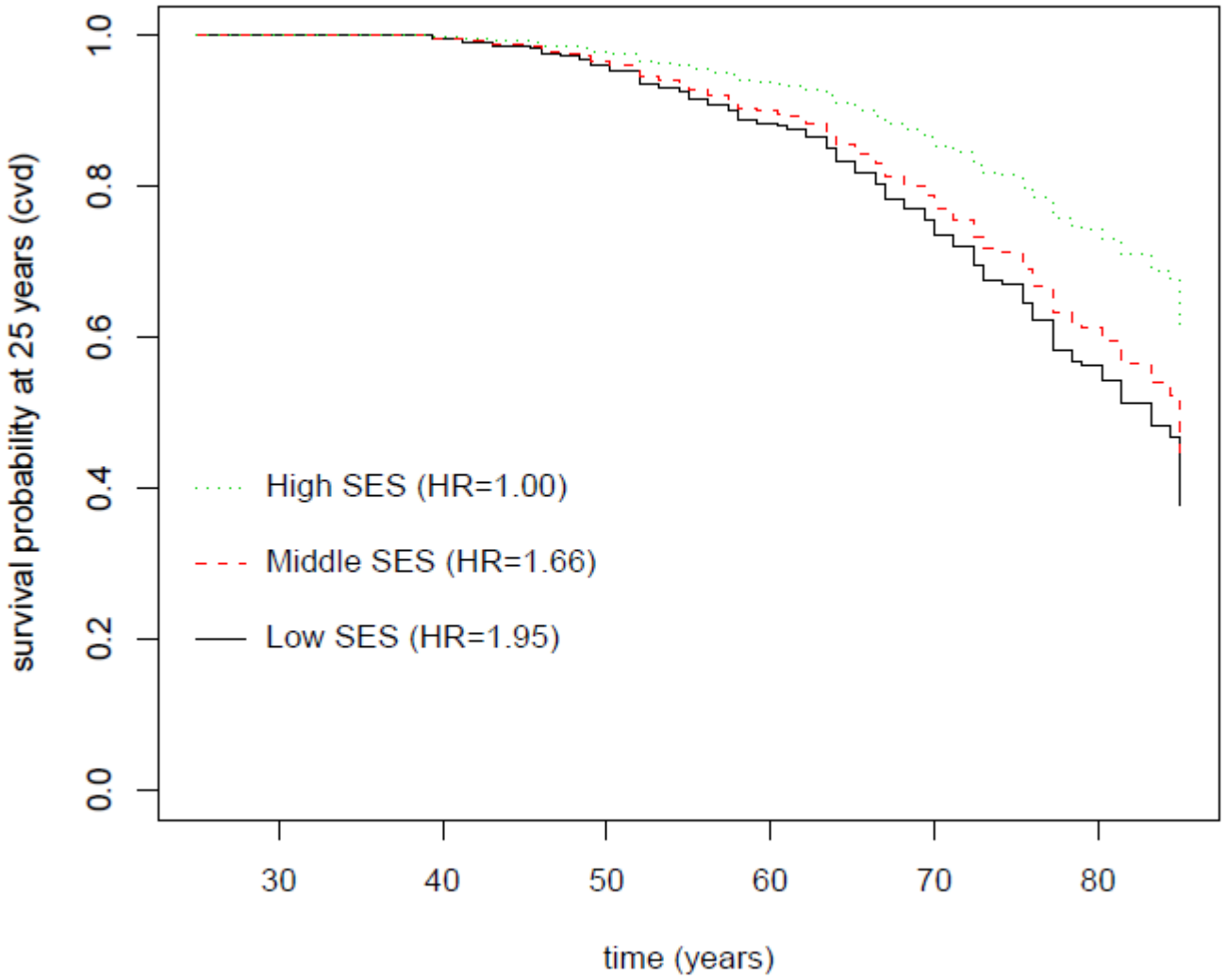
Characteristics of the participants included in the study

	Socioeconomic status				
	High	**Middle**	**Low**	***P*[a]**	**Overall**
N (%)	474 (14.6)	1481 (45.6)	1292 (39.8)		**3246**
Mortality, N (Rate)	32 (7.1)	221 (10.1)	270 (12.9)	=0.046	**523 (10.8)**
Cardiovascular, N (Rate)	11 (2.4)	91 (4.3)	117 (5.3)	=0.324	**219 (4.5)**
Cancer, N (Rate)	11 (2.8)	57 (2.5)	74 (3.6)	=0.218	**142 (2.9)**
Non-cancer/Non-CVD, N (Rate)	10 (1.9)	77 (3.4)	84 (4.2)	=0.013	**171 (3.5)**
Smoking, N (%[b])	55 (17.7)	360 (21.9)	329 (26.0)	<0.001	**744 (22.9)**
Heavy drinking, N (%[b])	21 (7.3)	182 (11.1)	190 (15.0)	<0.001	**393 (12.1)**
Obesity, N (%[b])	79 (16.3)	276 (19.9)	319 (23.4)	=0.001	**674 (20.8)**
Diabetes, N (%[b])	22 (7.9)	133 (8.9)	144 (10.0)	=0.159	**299 (9.2)**
Hypertension, N (%[b])	178 (46.5)	663 (45.8)	642 (45.2)	=0.560	**1483 (45.7)**
High cholesterol, N (%[b])	125 (28.4)	367 (26.4)	351 (24.5)	=0.048	**843 (26.0)**

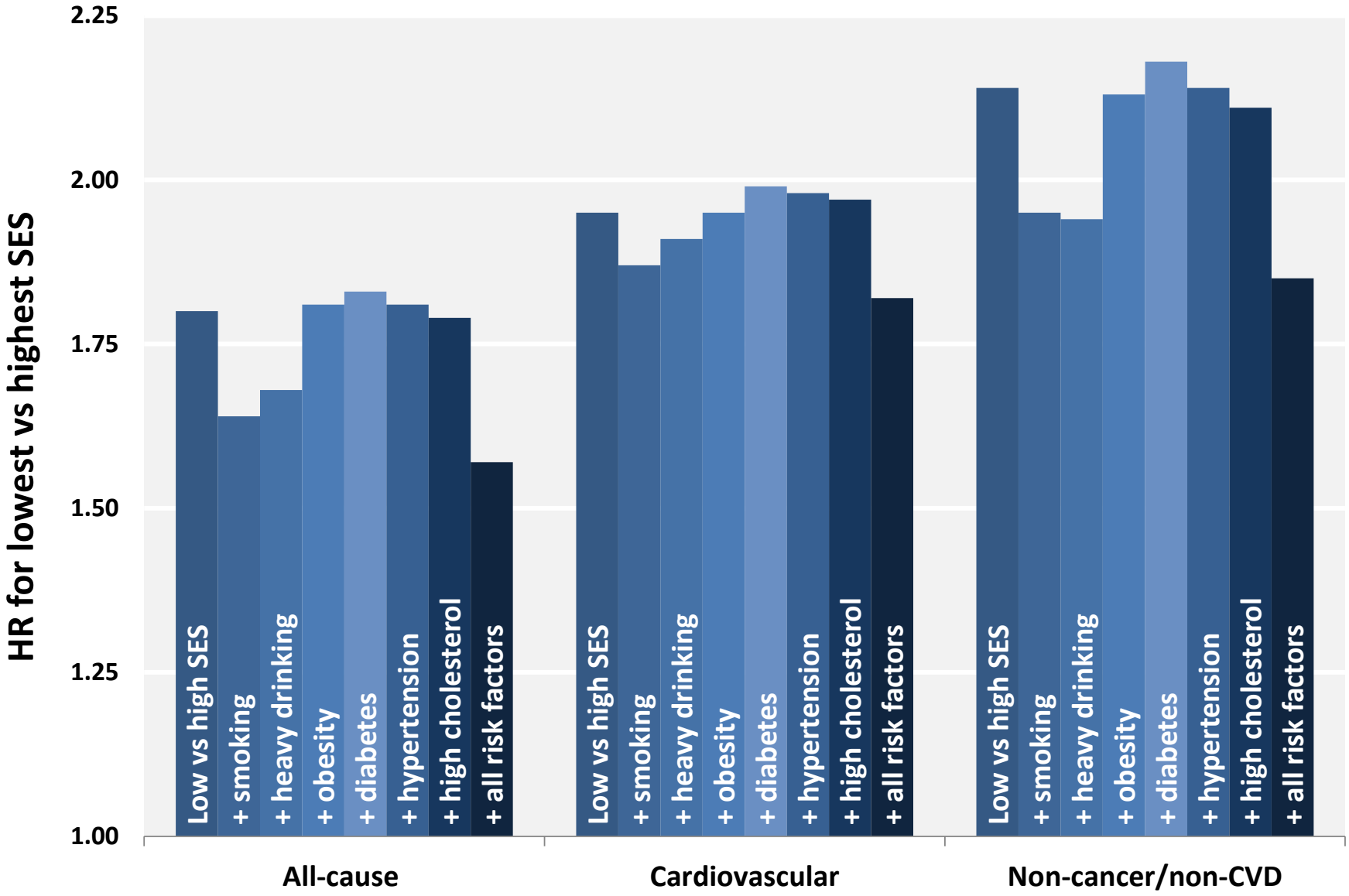
SES and all-cause mortality



SES and CVD mortality



SES and mortality, role of risk factors



Discussion

Discussion

- SES strong predictor of all-cause, cardiovascular, and non-cancer/non-CVD mortality in a population-based sample of the Republic of Seychelles
- Cancer mortality also patterned by SES although association non significant at conventional levels
- Common lifestyle-related risk factors explain between 10% and 20% of the SES-mortality association

Discussion

- Important disparities in mortality for chronic diseases such as cardiovascular disease and cancer

→Debate on whether NCDs also affect the poor in LMICs, this study supports this hypothesis

- Common risk factors for chronic diseases contribute to only a small proportion of SES differences in mortality

→ Other factors such as psychosocial factors or living/working condition may play a role

Strengths & limitations

Strengths

- First study in Africa, and one of few in other LMICs, to use population-based data for examining SES differences in all-cause and cause-specific mortality
- First study to examine contribution of risk factors

Limitations

- Risk factors measured at a single point in time; diet and physical activity not available
- Not enough power to analyze specific cancer sites or non-cancer/non-CVD mortality under specific causes
- Seychelles might not be representative of other middle income countries in the region (higher socioeconomic development)

Thank you for your attention