

STROBE Statement—Checklist of Items for Cross-Sectional Studies

Manuscript Title: Cardiovascular Risk in Systemic Lupus Erythematosus: A Cross-Sectional Analysis of NHANES 2001–2023

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Item No.	Recommendation	Reported on Page / Section	Comments
Title and abstract			
1	(a) Indicate the study's design with a commonly used term in the title or the abstract	Title, Abstract (Background)	"Cross-Sectional Analysis" explicitly stated
	(b) Provide in the abstract an informative and balanced summary of what was done and what was found	Abstract	Structured abstract with Background, Methods, Results, Conclusions
Introduction			
2	Explain the scientific background and rationale for the investigation being reported	Introduction, paragraphs 1–3	Describes SLE epidemiology, cardiovascular burden, Manzi et al. findings, and limitations of existing studies
3	State specific objectives, including any prespecified hypotheses	Introduction, final paragraph	Primary objective: quantify adjusted odds of cardiovascular outcomes; Secondary:

			characterize risk profile and age-specific vulnerability windows
Methods			
4	Present key elements of study design early in the paper	Methods, "Study Design and Data Source"	Cross-sectional analysis of pooled NHANES cycles (2001–2023)
5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Methods, "Study Design and Data Source"	11 NHANES cycles listed with years; US non-institutionalized civilian population
6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	Methods, "Study Population and SLE Classification"	Age ≥ 18 years; complete data for MCQ191; self-reported physician diagnosis of SLE
	(b) For matched studies, give matching criteria and number of exposed and unexposed	Not applicable	Not a matched study design
7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Methods, "Outcome Variables," "Covariates"	Cardiovascular outcomes defined with NHANES variable codes (MCQ160E, MCQ160B, MCQ160F, MCQ160C); covariates listed

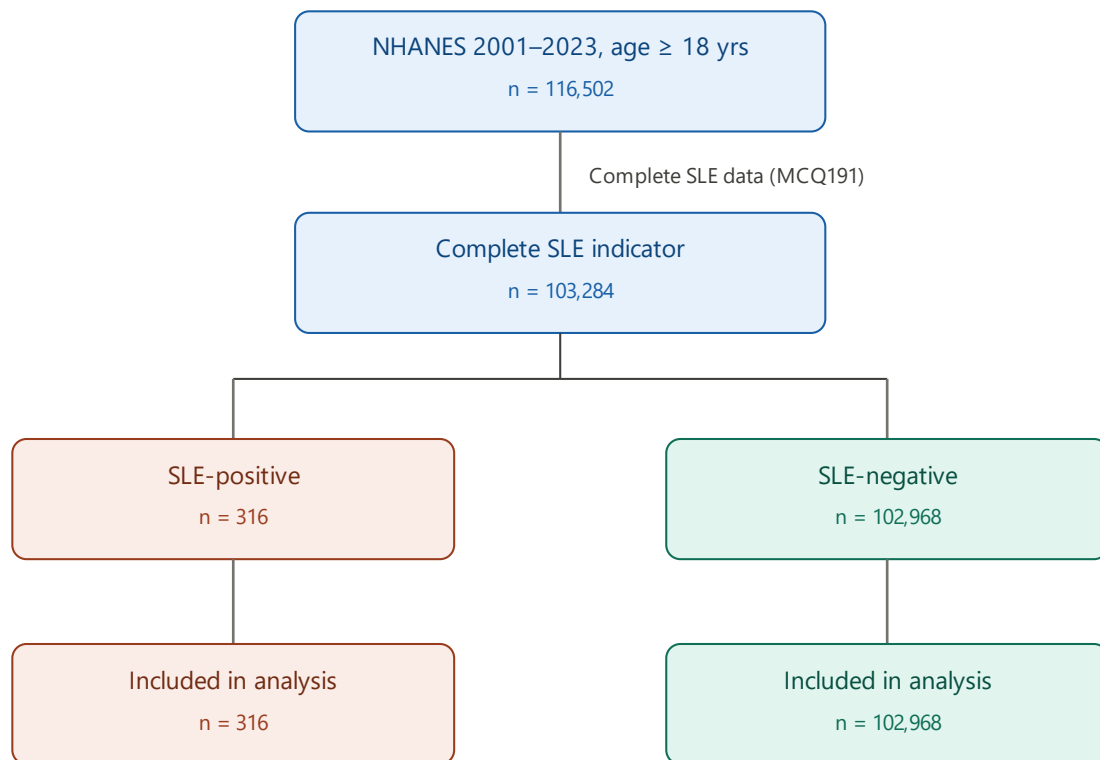
			(age, sex, race/ethnicity, BMI, smoking, BP, lipids)
8	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	Methods, "Outcome Variables"	Self-reported physician diagnosis for all outcomes; identical ascertainment for SLE and non-SLE groups
9	Describe any efforts to address potential sources of bias	Methods, "Statistical Analysis"	Complex survey weights used; multivariable adjustment for age, sex, race/ethnicity
10	Explain how the study size was arrived at	Methods, "Study Population and SLE Classification"	All eligible NHANES participants across 11 cycles; final N = 103,284 (316 SLE, 102,968 non-SLE)
11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Methods, "Statistical Analysis"	Age as continuous in adjusted models; age strata (<40, 40–59, ≥60 years) prespecified for stratified analysis

12	(a) Describe all statistical methods, including those used to control for confounding	Methods, "Statistical Analysis"	Survey-weighted logistic regression; adjustment for age, sex, race/ethnicity
	(b) Describe any methods used to examine subgroups and interactions	Methods, "Statistical Analysis"	Age-stratified relative risks computed across three prespecified age strata
	(c) Explain how missing data were addressed	Methods, "Study Population and SLE Classification"	Participants with missing SLE indicator (MCQ191 codes 3, 4, 7, 9) excluded
	(d) If applicable, describe analytical methods taking account of sampling strategy	Methods, "Statistical Analysis"	NHANES complex survey design incorporated using R <i>survey</i> package; weights adjusted per NCHS guidelines for pooled cycles
	(e) Describe any sensitivity analyses	Not reported	No sensitivity analyses conducted
Results			
13	(a) Report numbers of individuals at each stage of study—e.g., numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing	Methods, "Study Population and SLE Classification"; Results, "Baseline Characteristics"	Final analytic sample: 316 SLE, 102,968 non-SLE; exclusions: age <18, missing MCQ191, invalid response codes

	follow-up, and analyzed		
	(b) Give reasons for non-participation at each stage	Methods, "Study Population and SLE Classification"	Participants with response codes 3, 4, 7, 9 or missing data excluded
	(c) Consider use of a flow diagram	Not included	Flow diagram recommended for final submission
14	(a) Give characteristics of study participants (e.g., demographic, clinical, social) and information on exposures and potential confounders	Results, "Baseline Characteristics"; Table 1	Age, sex, race/ethnicity, BMI, smoking, systolic BP, LDL-cholesterol reported
	(b) Indicate number of participants with missing data for each variable of interest	Not explicitly reported	Recommend adding missing data summary for final submission
15	Report numbers of outcome events or summary measures	Results, "Prevalence of Cardiovascular Outcomes"; Table 2	Prevalence of MI (11.9% vs. 5.4%), HF (7.8% vs. 3.7%), stroke (9.1% vs. 5.2%), CHD (8.3% vs. 5.4%), composite (22.9% vs. 15.5%)
16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95%	Results, "Adjusted Odds Ratios"; Table 3	Crude and adjusted ORs presented; models adjusted for age, sex, race/ethnicity as

	confidence interval). Make clear which confounders were adjusted for and why they were included		stated in table footnote
	(b) Report category boundaries when continuous variables are categorized	Methods, "Statistical Analysis"	Age strata boundaries: <40, 40–59, ≥60 years
	(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	Not applicable	Cross-sectional design; prevalence and ORs reported
17	Report other analyses done—e.g., analyses of subgroups and interactions, and sensitivity analyses	Results, "Age-Stratified Cardiovascular Risk"; Table 4	Age-stratified relative risks computed and reported with interpretive caveats for ≥60 years stratum
Discussion			
18	Summarize key results with reference to study objectives	Discussion, "Principal Findings"	Principal findings enumerated; each objective addressed
19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Discussion, "Strengths and Limitations"	Cross-sectional design, self-reported SLE ascertainment, lack of disease activity/treatment data, modest SLE sample size, survival bias in ≥60

			years stratum explicitly discussed
20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Discussion, "Principal Findings," "Conclusion"	Findings contextualized with prior literature (Manzi et al., Joyce et al.); cautious causal language used; survival bias interpretation provided
21	Discuss the generalizability (external validity) of the study results	Discussion, "Strengths and Limitations"	Nationally representative sampling; generalizable to US non-institutionalized adult population
Other information			
22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Declarations, "Funding"	"No external funding was received for this study."



Total analytic sample: n = 103,284