Income Disparity and Association with Patient-Reported Outcomes Among U.S. Adults with Atherosclerotic Cardiovascular Disease

in the Medical Expenditure Panel Survey (MEPS)

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BACKGROUND

- Income disparity is associated with atherosclerotic cardiovascular disease (ASCVD).
- Relationship between income & patient-reported outcomes (PROs) in populations with ASCVD is unclear.

METHODS

- Data source: nationally representative Medical Expenditure Panel Survey (MEPS), 2006-2015.
- Included adults with ASCVD (by ICD9 codes or self-reported data).
- Logistic & linear regression to compare healthcare experience, medication use, health resource utilization, perceived health status & health-related quality of life by income group.
- Adjusted for demographics, comorbidities & socioeconomic factors.

RESULTS

- Included 21,353 participants with ASCVD: 6,855 high income (32.1%, weighted), 6,235 middle income (29.2%), 3,651 low income (17.1%) & 4,612 poor/very low income (21.6%).
- Compared with high income, adults with poor/very low income were more likely to report poor patient-provider communication, patient satisfaction, health status, physical & mental quality of life, to visit the Emergency Department or *not* be treated with statins or aspirin.

CONCLUSION

- Poor/very low income adults with ASCVD reported worse healthcare experience, greater healthcare utilization & lower secondary prevention therapies than high income adults.
- Future work needed to improve healthcare experience, PROs and medication access in adults with ASCVD regardless of income.

Low income adults in the U.S. reported **worse healthcare experience** and **quality of life**, **greater healthcare utilization** and **lower secondary prevention** therapies than high income adults.

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FIGURE 1

Flow chart of participant inclusion process using data from MEPS, 2006 to 2015

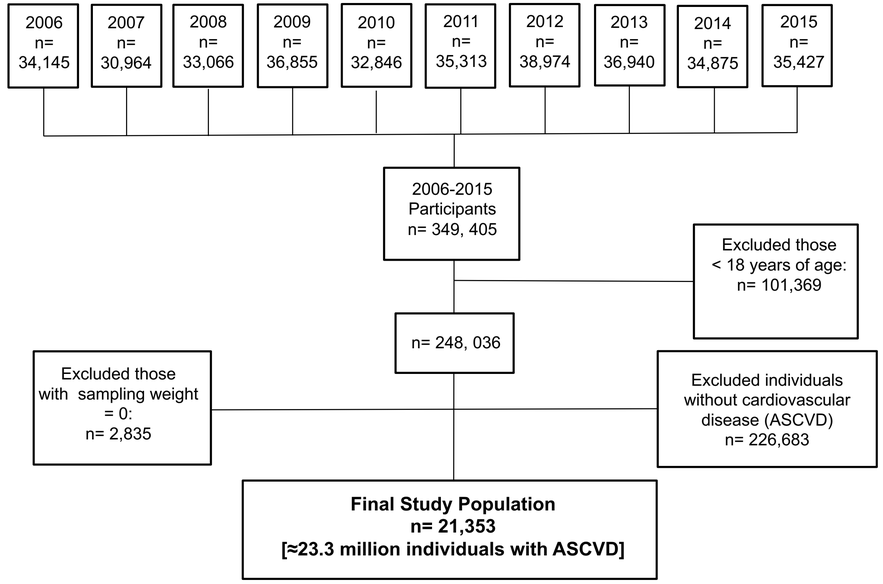

TABLE 1

Adjusted patient reported and surrogate clinical outcomes among MEPS participants with ASCVD between 2006 and 2015, stratified by level of income

Outcome	High income	Middle income[a] OR[b] (95% CI)	Low income[a] OR[b] (95% CI)	Poor/VL income[a] OR[b] (95% CI)
Patient Healthcare Experience				
Poor patient-provider communication	1 (Ref)	**1.30 (1.09-1.54)***	**1.54 (1.27-1.87)***	**1.58 (1.32-1.89)***
Poor patient satisfaction	1 (Ref)	**1.25 (1.08-1.43)***	**1.63 (1.39-1.90)***	**1.63 (1.39-1.91)***
Medication Usage				
Not on a statin	1 (Ref)	**1.26 (1.11-1.43)***	**1.23 (1.09-1.39)***	**1.33 (1.16-1.52)***
Not on aspirin	1 (Ref)	**1.23 (1.10-1.37)***	**1.32 (1.16-1.50)***	**1.35 (1.18-1.53)***
Health Resource Utilization				
2+ ED visits	1 (Ref)	1.08 (0.90 -1.29)	**1.26 (1.03-1.54)***	**1.23 (1.01-1.51)***
2+ hospitalizations	1 (Ref)	1.09 (0.89-1.33)	1.16 (0.93-1.44)	1.15 (0.95-1.39)
Patient Perception of General Health				
Poor perceived health status	1 (Ref)	**1.58 (1.39-1.79)***	**1.96 (1.69-2.28)***	**2.47 (2.15-2.84)***

Outcome	High income	Middle income[a] aMD[b,c] (95% CI)	Low income[a] aMD[b,c] (95% CI)	Poor/VL income[a] aMD[b,c] (95% CI)
Healthcare-Related Quality of Life (HRQoL)				
SF-12 PCS	0 (Ref)	**-2.08 (-2.66, -1.50)***	**-3.48 (-4.19, -2.76)***	**-4.46 (-5.21, -3.71)***
SF-12 MCS	0 (Ref)	**-1.63 (-2.16, -1.09)***	**-3.07 (-3.71, -2.43)***	**-4.19 (-4.79, -3.58)***

Abbreviations: MEPS, Medical Expenditure Panel Survey; ASCVD, atherosclerotic cardiovascular disease; VL income, very low; OR, odds ratio; CI, confidence interval; ED, Emergency Department; aMD, adjusted mean difference; SF-12, 12-item short form; PCS, physical component score; MCS, mental component score.
*Indicates statistically significant results, p<0.05.
[a]Income level is one's household income, given as proportion of federal poverty level (FPL): high income (≥400% FPL), middle income (200 to <400% FPL), low income (125 to <200% FPL), poor/very low income (<125% FPL).
[b]OR and aMD models adjust for age, race/ethnicity, sex, region, health insurance, educational status, modified Charlson Comorbidity Index (without cardiovascular component), cardiovascular risk factors; high income group serves as the reference group. OR models use logistic regression. aMD models use linear regression.
[c]aMD, adjusted mean difference in scores (results presented as beta coefficients and 95% CI).

DISCLOSURE INFORMATION

The authors have no disclosures.