

# Disparities In Blood Pressure, Glycemic and Cholesterol Control Among Adults with Prior Myocardial Infarction and Limited English Proficiency: A Nationwide Cross-Sectional Analysis

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## Introduction

- It is unclear if patients with prior MI and limited English proficiency (LEP) have suboptimal control of traditional risk factors compared to English-proficient patients
- We aim to identify if LEP leads to disparities in blood pressure, glycemic, and cholesterol control in this high-risk population.

## Methods

- Patients aged  $\geq 20$  years with prior MI were identified using combined data from National Health and Nutrition Examination Survey cycles conducted from 2015 to 2020 (pre-pandemic).
- LEP was defined as a participant receiving the survey in a non-English language or by interpreter
- Self-reported history of diabetes, hypertension, hyperlipidemia, and glycated hemoglobin (HbA1c %), blood pressure, and cholesterol-triglyceride levels were analyzed.
- Categorical variables were reported as proportions and continuous variables as mean  $\pm$  standard deviation (S.D).
- An independent sample t-test was used to compare means, and a chi-square test was used to compare proportions.

## Results

- A total of 16,831,852 (weighted) patients** met study criteria, amongst whom **4.9% had LEP**.
- Majority of patients with LEP were **Hispanic (78.3%)**.
- Compared to English proficient patients, **LEP patients had poorer glycemic ( $7.2 \pm 1.8\%$  vs.  $7.9 \pm 1.5\%$ ) and systolic blood pressure control ( $131.1 \pm 20.9$  vs.  $134.2 \pm 23.6$  mm Hg).**
- LDL-cholesterol level was suboptimal** regardless of self-reported hyperlipidemia status, and **worse among patients with LEP (Table 1)**.

**Table 1.** Characteristics of Prior Myocardial Infarction Patients stratified by English proficiency.

Variable	English Proficient (N=16,010,179)	Limited English Proficiency (N=821,673)	P value (weighted)
Age	65.4 $\pm$ 11.5	65.2 $\pm$ 11.9	<0.001
Female sex (%)	35.2	43.5	<0.001
Race (%)			
Non-Hispanic White	74.6	0	-
Non-Hispanic Black	10.6	0	-
Hispanic	5.3	78.3	<0.001
Other	9.5	21.7	<0.001
Diabetes (%)	39.7	38.2	<0.001
Hemoglobin A1c%	7.2 $\pm$ 1.8	7.9 $\pm$ 1.5	<0.001
Hypertension (%)	74.8	70.3	<0.001
Systolic Blood Pressure	131.1 $\pm$ 20.9	134.2 $\pm$ 23.6	<0.001
Diastolic Blood Pressure	70.5 $\pm$ 16.1	66.1 $\pm$ 16.6	<0.001
Hyperlipidemia (%)	69.5	66.6	<0.001
Total Cholesterol	175.7 $\pm$ 41.1	175.3 $\pm$ 42.4	<0.001
LDL-Cholesterol	96 $\pm$ 42.3	108 $\pm$ 41.4	<0.001
HDL-Cholesterol	48.9 $\pm$ 18.6	46.3 $\pm$ 11.9	<0.001
Triglyceride	130.5 $\pm$ 86.9	171.9 $\pm$ 194	<0.001
Non-Hyperlipidemic (%)	30.5	33.5	<0.001
Total Cholesterol	163.4 $\pm$ 38.3	158.1 $\pm$ 21.5	<0.001
LDL-Cholesterol	90.5 $\pm$ 32.9	90.5 $\pm$ 18.5	<0.001
HDL-Cholesterol	48.5 $\pm$ 14.3	46.7 $\pm$ 11.1	<0.001
Triglyceride	114.5 $\pm$ 54.1	94.8 $\pm$ 20.8	<0.001

## Conclusion

- In a nationally representative sample, prior MI patients with LEP had poorly controlled modifiable risk factors than those with adequate English proficiency.
- Beyond the LEP status, this high-risk cohort of patients had LDL-Cholesterol levels that were significantly greater than the recommended target level of  $< 70$  mg/dl for secondary prevention.
- Reducing language barriers by providing language-concordant care and improving interpreter services should be examined to achieve secondary prevention targets among high-risk patients with LEP.

## References

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