

Differences in Patient Characteristics and Outcomes by Medication Adherence among US Adults Treated for High Cholesterol

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Background

- About 86 million adults in the US have high cholesterol¹
- Medication non-adherence affects roughly 50% of patients, potentially increasing the risk of adverse events².
- Evidence gaps in the literature suggest that medication adherence enhancing interventions (MAEIs) underexplored patient-reported outcomes².

Objective

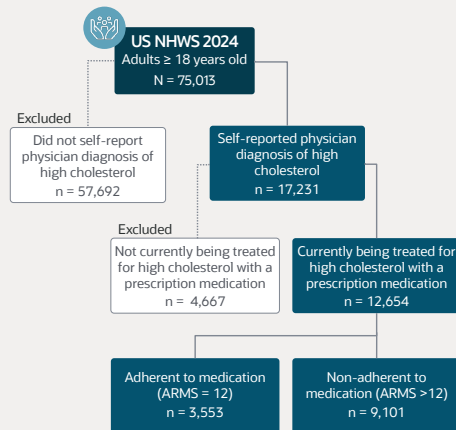
To evaluate differences in demographic and clinical characteristics, as well as patient-reported outcomes (PROs) among adherent and non-adherent US adults treated for high cholesterol.

Methods

Adults (≥18 years) diagnosed with hypercholesterolemia and treated with prescription medication (N=12,654) were identified in the 2024 US National Health and Wellness Survey, a cross-sectional, nationally representative online survey. Adherence was measured with the Adherence to Refills and Medications Scale (ARMS)³; respondents scoring 12 were classified as perfectly adherent and those scoring >12 as non-adherent.

Patient-reported outcomes included 6-month numbers of health care provider (HCP) visits, emergency room visits, and hospitalizations; cholesterol and triglyceride categories; years since diagnosis; and RAND Mental, Physical, and Global Health Composite scores⁴. Groups were compared using t-tests or chi-square tests, with standardized mean differences (SMDs) reported.

Figure 1 Flow diagram showing inclusion/exclusion criteria for the study cohorts



Results

Adherent patients were slightly older (62.3% vs 58.4% in the 65+ age category; SMD=0.104) and more often Medicare-insured (57.9% vs 54.1%; SMD=0.107) (Table 1).

Table 1 Demographic characteristics

	Adherent		Non-Adherent		P-value	SMD
	N	Mean	N	Mean		
Age Category	3553		9101			
18 to <25	4	0.1%	21	0.2%		
25 to <35	29	0.8%	110	1.2%		
35 to <45	110	3.1%	404	4.4%	<0.001	0.104
45 to <55	347	9.8%	965	10.6%		
55 to <65	849	23.9%	2282	25.1%		
65 and older	2214	62.3%	5319	58.4%		
Race	3553		9101			
White	3106	87.4%	7688	84.5%		
Black/African American	257	7.2%	881	9.7%	<0.001	0.098
Asian	112	3.2%	278	3.1%		
Some other race or origin/ multi-race	78	2.2%	254	2.8%		
Insurance Type	3553		9101			
Commercially insured	1164	32.8%	3091	34.0%		
Medicaid (MediCal for California residents)	176	5.0%	548	6.0%		
Medicare	2056	57.9%	4920	54.1%	<0.001	0.107
Other type of insurance (VA/CHAMPUS, TRICARE, Not sure)	117	3.3%	357	3.9%		
Not insured	40	1.1%	185	2.0%		
BMI Categories	3553		9101			
Underweight (<18.5)	22	0.6%	113	1.2%		
Normal weight (18.5 to <25)	814	22.9%	2009	22.1%	0.031	0.068
Overweight (25 to <30)	1254	35.3%	3174	34.9%		
Obese (30 or greater)	1411	39.7%	3678	40.4%		
Unknown	52	1.5%	127	1.4%		

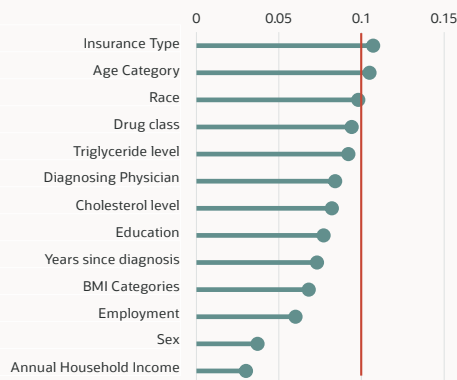
Adherent patients had more normal cholesterol (52.2% vs 49.4%), less elevated cholesterol (12.5% vs 14.7%), and more normal triglycerides (36.1% vs 32.6%) (Table 2).

Table 2 Clinical characteristics

	Adherent		Non-Adherent		P-value	SMD
	N	Mean	N	Mean		
Diagnosing Physician	3449		8825			
Primary Care Physician/GP/Internist	3002	87.0%	7477	84.7%		
Nurse Practitioner/Physician Assistant	162	4.7%	555	6.3%		
Cardiologist	196	5.7%	589	6.7%	0.002	0.084
Endocrinologist	45	1.3%	102	1.2%		
Gynecologist	0	0.0%	0	0.0%		
Other	44	1.3%	102	1.2%		
Triglyceride level	3553		9101			
Normal (Less than 150)	1281	36.1%	2964	32.6%		
Borderline high (150 to 199)	602	16.9%	1715	18.8%	<0.001	0.092
High (200 to 499)	420	11.8%	1118	12.3%		
Very high (500 or higher)	21	0.6%	95	1.0%		
Don't know	1229	34.6%	3209	35.3%		

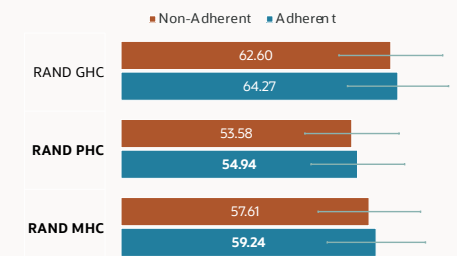
Figure 2 Group differences (SMD) across demographics and clinical characteristics

Average years since diagnosis was slightly higher for adherent patients: 15.4 vs 14.5 (p<0.001; SMD=0.073) (Figure 2).



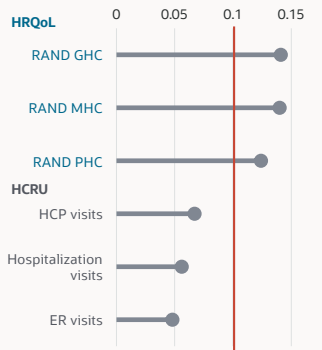
Health-related quality of life measures were significantly different among adherent vs. non-adherent US adults: RAND-MHC 59.2 vs 57.6 (p<0.001; SMD=0.140) and RAND-PHC 54.9 vs 53.6 (p<0.001; SMD=0.124) (Figure 3).

Figure 3 RAND-36 Scores by Medication Adherence



Non-adherent patients had higher 6-month healthcare resource utilization (HCRU): mean HCP visits 6.18 vs 5.73 (p=0.001; SMD=0.067), mean ER visits 0.283 vs 0.241 (p=0.022; SMD=0.048), and mean hospitalizations 0.177 vs 0.141 (p=0.008; SMD=0.056) (Figure 4).

Figure 4 Group differences (SMD) across HCRU and HRQoL



Conclusion

Among US adults treated for high cholesterol, patients adherent to medication reported better health-related quality of life and clinical outcomes compared to those who were non-adherent.

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