SUPPLEMENTARY DATA

Cost-Related Medication Nonadherence in Adults with Diabetes in the United States: The National Health Interview Survey 2013 - 2018

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Abbreviations: CRN, cost-related medication nonadherence

Supplemental Table 1.

Supplemental Table 1. Components of CRN among Non-Elderly Adults with Diabetes, from the National Health Interview Survey, 2013-18.

	(1) Skipped medication doses to save money	(2) Took less medicine to save money	(3) Delayed filling a prescription to save money	(1), (2) and/or (3) = Cost-related medication nonadherence
Sample (N)	1,297	1,347	1,618	1,898
Weighted sample, (weighted %)	1,628,269 (13.5)	1,671,979 (13.9)	1,977,493 (16.4)	2,338,902 (17.6)
Sex, n (weighted %)				
Male	11.8% (10.5, 13.0)	11.6% (10.4, 12.8)	14.1% (12.8, 15.3)	14.9% (13.7, 16.2)
Female	15.2% (13.9, 16.6)	16.1% (14.7, 17.5)	18.8% (17.3, 20.2)	20.3% (18.9, 21.8)
Race/Ethnicity, n (weighted %)				
Non-Hispanic White	13.6% (12.4, 14.9)	14.0% (12.8, 15.3)	16.6% (15.3, 17.9)	18.3% (17.0, 19.6)
Non-Hispanic Black	15.4% (13.3, 17.4)	16.2% (14.0, 18.3)	18.8% (16.6, 20.9)	19.9% (17.7, 22.2)
Non-Hispanic Asian	6.2% (3.2, 9.2) *	6.2% (3.3, 9.1) *	4.7% (2.2, 7.1) *	7.2% (4.2, 10.1) *
Hispanic	13.9% (11.6, 16.2)	13.8% (11.5, 16.1)	17.3% (14.9, 19.6)	17.1% (14.8, 19.3)
Education, n (weighted %)				
Some College or Higher	12.7% (11.4, 13.9)	12.9% (11.6, 14.1)	15.1% (13.8, 16.4)	16.5% (15.2, 17.8)
HS/GED or Less than HS	14.5% (13.2, 15.9)	15.1% (13.8, 16.4)	17.9% (16.4, 19.3)	18.8% (17.4, 20.1)
Insurance Status, n (weighted %)				
Public	13.4% (11.9, 14.9)	14.4% (12.9, 15.9)	16.8% (15.2, 18.4)	18.6% (17.0, 20.3)
Private	9.9% (8.8, 11.0)	9.9% (8.8, 11.0)	12.5% (11.4, 13.6)	13.8% (12.6, 14.9)
Uninsured	34.3% (30.2, 38.4)	34.5% (30.4, 38.5)	37.2% (33.2, 41.2)	32.2% (28.9, 35.6)
Family Income, n (weighted %)				
Middle/High-Income	10.0% (9.0, 11.1)	9.8% (8.7, 10.9)	12.3% (11.2, 13.4)	13.5% (12.4, 14.6)
Low-Income	19.0% (17.4, 20.7)	20.0% (18.4, 21.7)	23.1% (21.4, 24.8)	23.9% (22.2, 25.5)
Financial Hardship from Medical Bills, n (weighted %)				

No Financial Hardship from Medical Bills	5.8% (5.0, 6.6)	6.0% (5.2, 6.8)	6.7% (5.9, 7.6)	7.8% (7.0, 8.7)
Financial Hardship from Medical Bills	24.1% (22.3, 26.0)	24.7% (22.9, 26.5)	29.7% (27.8, 31.6)	31.5% (29.6, 33.4)
Region, n (weighted %)				
Northeast	10.0% (8.0, 12.1)	10.2% (8.1, 12.4)	12.6% (10.3, 14.9)	13.8% (11.5, 16.1)
Midwest	15.3% (13.4, 17.3)	15.3% (13.4, 17.3)	17.6% (15.8, 19.4)	20.0% (18.1, 21.9)
South	15.0% (13.5, 16.4)	15.7% (14.2, 17.2)	18.7% (17.1, 20.3)	19.4% (17.9, 21.0)
West	11.2% (9.1, 13.4)	11.4% (9.4, 13.4)	13.4% (11.5, 15.3)	14.2% (12.3, 16.1)
Years since Diabetes diagnosis, n (weighted %)				
< 10	12.7% (11.5, 14.0)	12.9% (11.6, 14.1)	14.8% (13.5, 16.0)	16.2% (14.9, 17.4)
≥ 10	14.5% (13.2, 15.9)	15.2% (13.8, 16.6)	18.5% (17.0, 20.0)	19.6% (18.1, 21.0)
Now taking insulin, n (weighted %)				
No	12.9% (11.8, 14.0)	13.3% (12.2, 14.4)	15.6% (14.4, 16.8)	16.6% (15.5, 17.8)
Yes	14.8% (13.1, 16.4)	15.0% (13.5, 16.6)	18.1% (16.4, 19.7)	19.7% (18.0, 21.4)
Comorbidities, n (weighted %)				
0	9.3% (8.1, 10.4)	8.9% (7.8, 10.1)	11.0% (9.7, 12.3)	11.5% (10.2, 12.7)
1	13.0% (11.4, 14.6)	13.4% (11.8, 15.0)	15.9% (14.3, 17.6)	17.8% (16.2, 19.5)
≥ 2	20.2% (18.1, 22.2)	21.6% (19.5, 23.6)	24.7% (22.6, 26.8)	27.1% (24.9, 29.2)
ASCVD Status, n (weighted %)				
No ASCVD	12.6% (11.6, 13.6)	13.1% (12.1, 14.1)	15.2% (14.2, 16.2)	16.3% (15.4, 17.3)
ASCVD	17.4% (15.2, 19.6)	17.3% (15.1, 19.5)	21.6% (19.2, 24.0)	23.3% (20.9, 25.7)
Smoking Status, n (weighted %)				
Never smoker	11.0% (9.9, 12.1)	11.0% (9.9, 12.0)	14.0% (12.8, 15.2)	14.8% (13.7, 16.0)
Former smoker	13.8% (11.9, 15.7)	14.3% (12.4, 16.3)	16.5% (14.5, 18.4)	18.7% (16.6, 20.7)
Current smoker	20.2% (17.8, 22.7)	21.5% (19.0, 23.9)	23.2% (20.7, 25.6)	24.1% (21.8, 26.5)
Obesity, n (weighted %)				
No Obesity	11.5% (10.2, 12.9)	12.2% (10.8, 13.5)	14.0% (12.5, 15.5)	15.6% (14.2, 17.0)
Obesity	14.7% (13.4, 15.9)	14.9% (13.7, 16.1)	17.8% (16.6, 19.1)	18.8% (17.6, 20.1)

Physical Activity, n (weighted %)				
Suff. Active	12.1% (10.6, 13.6)	11.8% (10.4, 13.3)	13.9% (12.4, 15.4)	15.8% (14.3, 17.4)
Insuff. Active	14.4% (13.2, 15.6)	15.0% (13.8, 16.2)	17.9% (16.6, 19.1)	18.7% (17.5, 19.9)
Hypertension, n (weighted %)				
No Hypertension	11.3% (9.7, 12.8)	11.7% (10.2, 13.3)	14.1% (12.5, 15.7)	14.7% (13.2, 16.3)
Hypertension	14.6% (13.4, 15.7)	14.9% (13.8, 16.0)	17.5% (16.3, 18.7)	19.1% (17.9, 20.3)
High Cholesterol, n (weighted %)				
No High Cholesterol	10.5% (9.2, 11.8)	11.3% (10.0, 12.6)	13.7% (12.3, 15.2)	14.2% (12.8, 15.6)
High Cholesterol	15.4% (14.1, 16.6)	15.5% (14.2, 16.7)	18.1% (16.9, 19.4)	19.9% (18.6, 21.2)

Abbreviations: CRN, cost-related medication nonadherence; HS, high school; GED, General Equivalency Diploma; ASCVD, atherosclerotic cardiovascular disease

* These observations are included for descriptive purposes, but are insufficient to contribute to national estimates.

Supplemental Table 2.

Supplemental Table 2. Components of CRN among Elderly Adults with Diabetes, from the National Health Interview Survey, 2013-18.

	(1) Skipped medication doses to save money	(2) Took less medicine to save money	(3) Delayed filling a prescription to save money	(1), (2) and/or (3) = Cost-related medication nonadherence
Sample (N)	423	477	560	715
Weighted sample, (weighted %)	387,871 (4.2)	436,036 (4.7)	536,047 (5.8)	673,568 (6.9)
Sex, n (weighted %)				
Male	3.6% (2.9, 4.3)	3.9% (3.1, 4.6)	4.6% (3.8, 5.4)	5.6% (4.7, 6.4)
Female	4.8% (4.0, 5.5)	5.6% (4.7, 6.4)	7.0% (6.0, 7.9)	8.2% (7.2, 9.2)
Race/Ethnicity, n (weighted %)				
Non-Hispanic White	3.9% (3.3, 4.5)	4.3% (3.7, 5.0)	5.4% (4.7, 6.1)	6.4% (5.6, 7.2)
Non-Hispanic Black	5.7% (4.2, 7.2)	6.5% (4.8, 8.1)	8.6% (6.6, 10.6)	9.4% (7.5, 11.3)
Non-Hispanic Asian	4.0% (1.8, 6.1) *	3.3% (1.7, 4.9) *	3.8% (1.9, 5.7) *	5.2% (2.8, 7.6) *
Hispanic	4.8% (3.3, 6.3)	5.5% (3.6, 7.4)	6.3% (4.5, 8.1)	7.5% (5.5, 9.5)
Education, n (weighted %)				
Some College or Higher	4.3% (3.5, 5.0)	4.8% (3.9, 5.6)	6.1% (5.2, 7.0)	7.1% (6.2, 8.1)
HS/GED or Less than HS	4.2% (3.5, 4.8)	4.6% (3.9, 5.4)	5.5% (4.7, 6.3)	6.6% (5.7, 7.5)
Insurance Status, n (weighted %)				
Public	4.1% (3.6, 4.6)	4.6% (4.1, 5.2)	5.8% (5.1, 6.4)	6.8% (6.1, 7.4)
Private	4.1% (1.0, 7.2) *	3.4% (0.6, 6.2) *	4.8% (1.5, 8.0) *	5.2% (1.8, 8.5) *
Uninsured	17.8% (5.5, 30.2) *	21.2% (5.0, 37.4) *	13.7% (2.6, 24.7) *	28.9% (13.5, 44.4) *
Family Income, n (weighted %)				
Middle/High-Income	2.8% (2.2, 3.4)	3.3% (2.6, 3.9)	4.2% (3.5, 4.9)	5.0% (4.2, 5.8)
Low-Income	6.7% (5.7, 7.7)	7.4% (6.2, 8.5)	8.9% (7.7, 10.1)	10.4% (9.1, 11.7)

Financial Hardship from Medical Bills, n (weighted %)				
No Financial Hardship from Medical Bills	2.2% (1.7, 2.6)	2.3% (1.9, 2.7)	2.8% (2.3, 3.3)	3.7% (3.1, 4.2)
Financial Hardship from Medical Bills	11.5% (9.8, 13.1)	13.4% (11.5, 15.4)	16.4% (14.2, 18.6)	18.5% (16.3, 20.6)
Region, n (weighted %)				
Northeast	3.2% (2.1, 4.2) *	4.3% (3.1, 5.5)	5.0% (3.7, 6.3)	6.0% (4.6, 7.4)
Midwest	4.2% (3.1, 5.3)	4.7% (3.4, 5.9)	6.0% (4.7, 7.4)	7.4% (5.8, 8.9)
South	4.8% (3.9, 5.7)	5.1% (4.2, 6.0)	6.2% (5.2, 7.1)	7.3% (6.3, 8.4)
West	3.9% (2.8, 4.9)	4.4% (3.1, 5.7)	5.6% (4.1, 7.0)	6.2% (4.8, 7.7)
Years since Diabetes diagnosis, n (weighted %)				
< 10	4.4% (3.4, 5.4)	5.1% (4.0, 6.3)	6.6% (5.3, 7.9)	7.6% (6.3, 8.9)
≥ 10	4.1% (3.5, 4.7)	4.5% (3.9, 5.2)	5.5% (4.8, 6.2)	6.6% (5.8, 7.4)
Now taking insulin, n (weighted %)				
No	3.5% (3.0, 4.1)	4.1% (3.5, 4.8)	5.0% (4.3, 5.7)	5.9% (5.2, 6.7)
Yes	5.8% (4.7, 6.9)	6.1% (5.0, 7.3)	7.7% (6.4, 9.0)	9.2% (7.8, 10.5)
Comorbidities, n (weighted %)				
0	2.4% (1.6, 3.2)	2.6% (1.8, 3.4)	3.2% (2.3, 4.1)	3.8% (2.9, 4.7)
1	3.5% (2.7, 4.3)	4.1% (3.2, 5.1)	5.2% (4.2, 6.1)	6.4% (5.3, 7.5)
≥ 2	5.9% (5.0, 6.8)	6.4% (5.5, 7.4)	7.9% (6.8, 9.0)	9.2% (8.0, 10.3)
ASCVD Status, n (weighted %)				
No ASCVD	3.6% (3.0, 4.2)	4.3% (3.6, 5.0)	5.3% (4.6, 6.1)	6.3% (5.5, 7.1)
ASCVD	5.2% (4.3, 6.1)	5.4% (4.5, 6.3)	6.6% (5.6, 7.7)	8.0% (6.9, 9.1)
Smoking Status, n (weighted %)				
Never smoker	3.9% (3.2, 4.6)	4.3% (3.5, 5.0)	5.5% (4.6, 6.4)	6.4% (5.5, 7.3)
Former smoker	4.0% (3.3, 4.8)	4.6% (3.8, 5.5)	5.5% (4.6, 6.3)	6.8% (5.8, 7.8)
Current smoker	6.9% (4.6, 9.2)	7.8% (5.1, 10.6)	9.3% (6.4, 12.3)	10.5% (7.6, 13.5)

Obesity, n (weighted %)				
No Obesity	3.4% (2.8, 4.0)	3.6% (3.0, 4.2)	4.4% (3.7, 5.1)	5.4% (4.6, 6.1)
Obesity	5.1% (4.3, 5.9)	6.0% (5.0, 7.0)	7.4% (6.4, 8.4)	8.6% (7.5, 9.6)
Physical Activity, n (weighted %)				
Suff. Active	3.4% (2.5, 4.2)	4.1% (3.1, 5.2)	5.6% (4.4, 6.8)	6.2% (5.0, 7.4)
Insuff. Active	4.5% (3.9, 5.2)	5.0% (4.3, 5.7)	6.0% (5.2, 6.7)	7.2% (6.4, 8.0)
Hypertension, n (weighted %)				
No Hypertension	3.8% (2.7, 4.8)	3.6% (2.5, 4.6)	5.0% (3.7, 6.3)	5.5% (4.3, 6.7)
Hypertension	4.3% (3.7, 4.9)	5.0% (4.3, 5.6)	6.0% (5.3, 6.7)	7.2% (6.4, 8.0)
High Cholesterol, n (weighted %)				
No High Cholesterol	3.6% (2.8, 4.4)	3.8% (3.0, 4.6)	4.6% (3.7, 5.5)	5.5% (4.5, 6.5)
High Cholesterol	4.5% (3.8, 5.2)	5.2% (4.4, 5.9)	6.4% (5.6, 7.2)	7.6% (6.7, 8.4)

Abbreviations: CRN, cost-related medication nonadherence; HS, high school; GED, General Equivalency Diploma; ASCVD, atherosclerotic cardiovascular disease

* These observations are included for descriptive purposes, but are insufficient to contribute to national estimates.

Figure S1.

CRN among Medicare beneficiaries elderly adults with diabetes