

Trends in dietary supplement use among US adults between 2009 and 2018

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Introduction

- A previous study reported overall use of dietary supplements among United States (U.S.) adults remained stable from 1999 to 2012 [1].
- Little is known about trends among U.S. adults over the last ten years [2-3].
- We reported trends in dietary supplement use in recent cycles of the National Health and Nutrition Examination Survey (NHANES) [4].

Methods

Population

- The NHANES is a serial cross-sectional study of noninstitutionalized adults and children residing in the U.S..
- We included adults aged over 19 y from 2009 to 2018 (five continuous 2-year cycles).

Dietary supplements assessments

Information about dietary supplement use was collected in an in-home interview by asking the participants whether they used any dietary supplements in the preceding 30 days.

Statistical analyses

- Survey-weighted prevalence was calculated to be nationally representative of the U.S. population.
- Survey-weighted logistic regression was used to calculate a P value for trend across cycles.
- Subgroup analyses were conducted by age, sex, race/ethnicity, education status, body mass index, and self-reported health status.

The overall use of any dietary supplements among U.S. adults increased during the last ten years. The trend was robust among different population groups.

Results

Table 1. Overall Supplement Use in Prior 30 Days Among US Adults (≥ 19 years) by Population Characteristics, 2009-2018

	Total No. of participants, n	Any Supplement Use (Yes)	
		No. of Participants, n	Weighted Percentage, %(95%CI)
Overall	28415	14298	53.6 (52.3, 54.8)
Age group, y			
19-39	9965	3655	40.1 (38.4, 41.7)
40-59	9153	4548	54.3 (52.6, 56.1)
≥ 60	9297	6095	71.6 (69.9, 73.4)
Sex			
Men	13740	6052	46.9 (45.6, 48.3)
Women	14675	8246	59.8 (58.3, 61.3)
Race			
Non-Hispanic white	11045	6324	58.7 (57.3, 60.1)
Hispanic	7127	3027	39.5 (38.0, 41.0)
Non-Hispanic black	6235	2770	42.4 (40.6, 44.2)
Other/mixed race	4008	2177	54.4 (52.1, 56.7)
Education			
< High school	6703	2592	37.8 (36.4, 39.2)
High school	6467	2945	47.6 (45.3, 50.0)
Some college	8619	4570	54.9 (53.3, 56.5)
Above college	6590	4175	64.8 (63.3, 66.3)
Body Mass Index			
< 25.0	8226	4198	55.0 (53.1, 56.9)
25.0-30	9035	4611	55.1 (53.3, 57.0)
≥ 30	10756	5276	51.1 (49.8, 52.5)
Self-reported health status			
Excellent	3569	1861	57.8 (55.3, 60.2)
Very good	7335	4052	58.0 (56.1, 59.9)
Good	10549	5075	49.8 (48.1, 51.4)
Fair or poor	6940	3301	49.8 (48.1, 51.4)

Table 2. Trends in Overall Supplement Use Among US Adults (≥19 years), 2009-2018

	30-d Prevalence of Use, Weighted Percentage, %(95%CI)					2017-18 vs 2009-10	
	2009-2010	2011-2012	2013-2014	2015-2016	2017-2018	Ratio	Difference
Any supplement product	2885 49.5 (47.1, 51.8)	2642 51.4 (48.9, 53.9)	2860 53.5 (50.8, 56.3)	2914 55.8 (52.7, 58.9)	2997 57.4 (54.4, 60.4)	1.38	7.9
≥ 4 supplements	422 7.8 (6.7, 8.8)	442 9.7 (8.3, 11.1)	533 10.7 (9.2, 12.2)	581 14.2 (11.0, 17.3)	605 14.1 (11.8, 16.4)	1.94	6.3

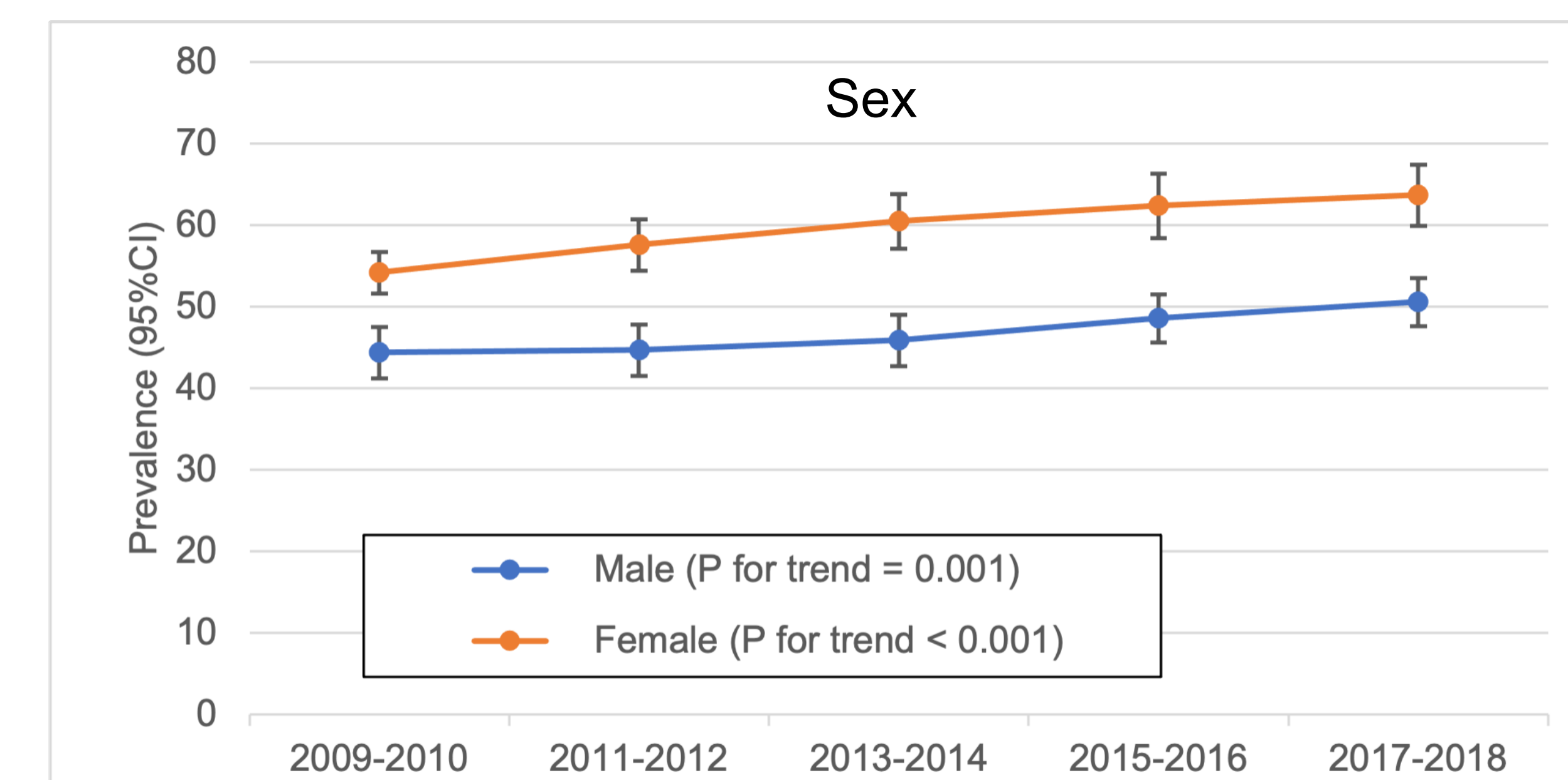
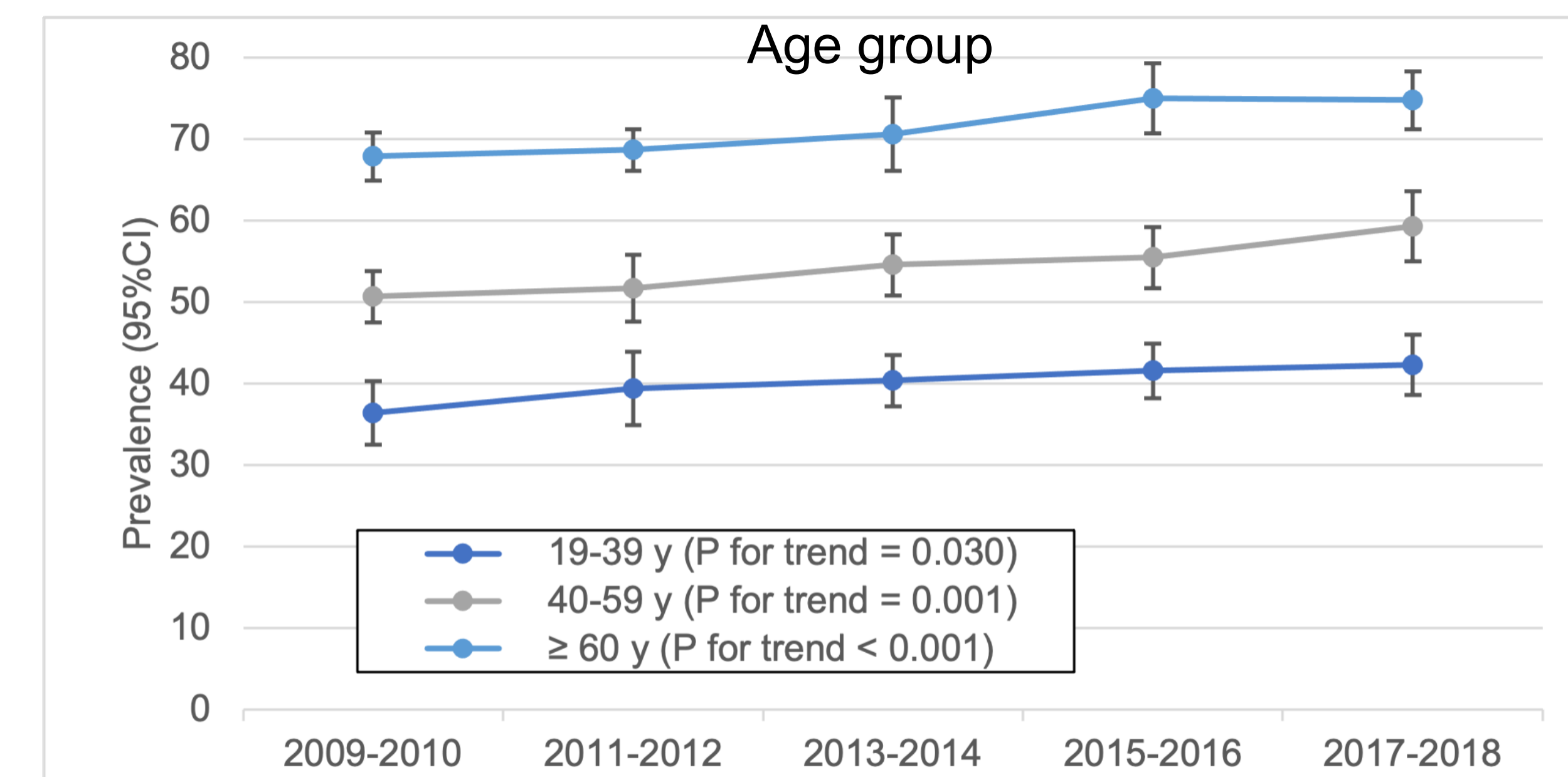


Figure. Trends in Any Supplement Use by Age Group and Sex.

Discussion

Summarized results

- The overall use of any dietary supplements increased between 2009 and 2018.
- Use of four or more supplement products also increased from 7.8% to 14.1% between 2009-2010 and 2017-2018 cycles.
- The increasing trend was consistent across different age and sex groups, and more pronounced among participants with higher education, higher body mass index, and fair or poor self-reported health status (data not shown).

Reference

1. Elizabeth D. Kantor, et. al. JAMA. 2016;316(14):1464-1474.
2. Bryan Stierman, et. al. MMWR. 2020; 69(43):1557-1562.
3. Fan Chen, et. al. Ann Intern Med. 2019;170:604-613
4. NHANES. <https://wwwn.cdc.gov/nchs/nhanes/Default.aspx>