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Dietary Supplement Use in the United States: National Health and Nutrition Examination Survey, 2017–March 2020

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Abstract

Background—Dietary supplement (DS) use can contribute substantially to nutrient intake as well as increase the risk of excessive intake of certain micronutrients. Therefore, monitoring usage is important. This report presents prevalence estimates for DS use, number of DSs used, and frequency of use for the most commonly used DSs in the United States.

Methods—Data from the 2017–March 2020 prepandemic National Health and Nutrition Examination Survey (NHANES) were used to provide the most recent estimates of DS use among children and adolescents aged 0–19 years ($n = 6,324$) and adults aged 20 and over ($n = 9,924$) by sex, age, race and Hispanic origin, family income, and education. Prevalence of use of the two most used DSs, multivitamin-mineral (MVM) and vitamin D, was also assessed. Statistical significance of trends and pairwise differences were assessed.

Results—During 2017–March 2020, 34.8% of children and adolescents and 58.5% of adults used at least one DS in the past 30 days. Use was higher among females than males except among children aged 12–24 months. DS use increased with income and education among adults. Non-Hispanic Asian and non-Hispanic White adults reported higher DS use than Hispanic and non-Hispanic Black adults. Use of multiple DSs increased with age among adults. Use of an MVM was reported by 23.5% and 31.5% of youth and adults, respectively. For youth, 3.0% reported vitamin D use, while 18.5% of adults reported vitamin D use. Among adults using an MVM or vitamin D, most reported using an MVM and vitamin D daily.

Conclusion—DS intake is common in the United States. During 2017–March 2020, just over one in three youth and nearly three in five adults used DSs. Use of multiple DSs increased with increasing age, income, and education and varied by race and Hispanic origin.

Keywords: multiple dietary supplements • multivitamin-mineral • vitamin D • National Health and Nutrition Examination Survey (NHANES)

Introduction

The Dietary Supplement Health and Education Act defines a dietary supplement (DS) as a product (other than tobacco): intended to supplement the diet; containing one or more dietary ingredients (including vitamins, minerals, herbs or other botanicals, amino acids, and other substances) or their components; intended to be taken by mouth as a pill, capsule, tablet, or liquid; and identified on the front label of the product as being a dietary supplement (1). DS sales are a large and growing part of the consumer healthcare market, with an estimated \$55.7 billion in sales in 2020, of which \$21.2 billion was for supplements containing vitamins, minerals, or both (2). DSs can provide large amounts of micronutrients to the diet and have the potential to increase intake of some nutrients above the Tolerable Upper Intake Level, one of the Dietary Reference Intakes measures (3,4).

DS use is common among U.S. children, adolescents, and adults (5) and has increased over the past decade to nearly 60% of adults (6,7). Use of multiple DSs has also increased among children and adolescents (8). In 2011–2014, about one-quarter of adults aged 60 and over reported taking four or



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more DSs (9). Given the widespread use of DSs among the U.S. population and the significant contribution DSs make to total nutrient intake, monitoring patterns of use is important.

The objective of this analysis is to describe the prevalence of DS use in the U.S. population using the most recent data available from the National Health and Nutrition Examination Survey (NHANES) 2017–March 2020 pre-pandemic files. The prevalence of DS use and number of DSs used were examined by age, sex, race and Hispanic origin, family income, and education. Frequency of use of the top two most used DSs (multivitamin-mineral [MVM] and vitamin D) (7,8) was also examined.

Methods

NHANES is a series of cross-sectional surveys designed to provide nationally representative estimates of the U.S. civilian noninstitutionalized population and is conducted by the National Center for Health Statistics (10). NHANES uses a complex sampling design with oversampling to improve the reliability of estimates among several subgroups, including Hispanic, non-Hispanic Asian (subsequently, Asian), and non-Hispanic Black (subsequently, Black) people. The survey consists of interviews at participants' homes followed by standardized health examinations in a mobile examination center.

NHANES was approved by the National Center for Health Statistics Ethics Review Board. Signed informed consent was obtained from all participants aged 18 and over. Written parental consent was obtained for all participants under 18, and children and adolescents aged 7–17 years also provided their written assent.

The unweighted NHANES interview response rate during 2017–March 2020 was 51.0% (57.2% for children and adolescents aged 0–19 years and 47.5% for adults aged 20 and over) (11,12).

DS use

DS use information was obtained during the in-home interview. NHANES participants showed their prescription and

nonprescription DSs and nonprescription antacid containers to interviewers. The interviewers recorded the DS name, manufacturer, and address from the container label and collected information on DS use duration, frequency of use in the past 30 days, and amount usually taken on those days. Detailed information on the NHANES DS collection protocol is published elsewhere (13). MVMs were classified as DS products containing three or more vitamins and one or more minerals. Vitamin D products were classified as standalone single nutrient DSs containing vitamin D as the only nutrient. Frequency of DS use in the past 30 days was categorized as 1–7, 8–29, or 30 days. Based on the differences in sample size, the number of DSs reported was categorized as none, one, or two or more for youth and none, one, two, three, or four or more for adults.

Covariates

Prevalence estimates were calculated by sex, age (under 12 months, 12 to under 24 months, and 2–5, 6–11, 12–19, 20–39, 40–59, and 60 years and over including total youth under 20 years and all adults aged 20 and over), race and Hispanic-origin groups for which data were reliable (Asian, Black, Hispanic, and non-Hispanic White [subsequently, White]), family income (14) (less than 130% of the federal poverty level, 130% to less than 350%, and 350% or more), and education level of adults aged 20 and over (less than high school, high school diploma or GED, some college, and college degree or higher) based on self-reported information collected as part of the household interview. Participants who reported their race as other, including those reporting multiple races, were included in the overall estimates but are not shown separately. Information on household reference person's education level for those aged 0–19 years was not provided for the 2017–March 2020 pre-pandemic public-use data due to possible disclosure risks, so estimates by education level were not calculated for children and adolescents.

Statistical analysis

Estimates of the prevalence of any DS use, number of DSs, and use of MVMs and vitamin D in the United States were calculated by demographic characteristics. Pairwise differences between groups were tested using a univariate *t* statistic, and tests for linear and quadratic trends were evaluated using orthogonal polynomials for ordered covariates. All differences reported were statistically significant at the $p < 0.05$ significance level. Standard errors were estimated using Taylor series linearization to account for the complex sampling design, and 95% confidence intervals were calculated using the methodology proposed by Korn and Graubard (15). Interview sample weights were used for all analyses to account for unequal probability of selection and nonresponse (16). The reliability of estimates was assessed using the National Center for Health Statistics data presentation standards for proportions (17). Estimates that did not meet these standards were noted. Statistical analyses were conducted using SAS System for Windows version 9.4 (SAS Institute Inc., Cary, N.C.) (18) and SUDAAN version 11.0 (RTI International, Research Triangle Park, N.C.) (19).

Results

Data used for this analysis were from the household interview ($n = 15,560$). Those with unknown or missing DS information ($n = 12$) were excluded. The final analytic sample was 15,548. Participants with missing information for family income ($n = 2,193$) and education level for adults ($n = 13$) were only excluded from analyses that included those covariates.

Prevalence of DS use

During 2017–March 2020, among children and adolescents aged 0–19 years, 34.8% used any DS in the past 30 days, and use was higher among females (38.3%) than males (31.3%) ($p < 0.05$) (Table A). Except among children aged 12–24 months, similar differences by sex were observed for all age groups, for Asian and White youth, and for youth

Table A. Prevalence of dietary supplement use among children and adolescents aged 0–19 years, by demographic characteristics: United States, 2017–March 2020

Characteristic	All		Male		Female	
	Sample size	Percent (95% confidence interval)	Sample size	Percent (95% confidence interval)	Sample size	Percent (95% confidence interval)
Total	6,324	34.8 (32.1–37.4)	3,240	31.3 (27.3–35.6)	3,084	¹ 38.3 (35.9–40.8)
Age group						
Under 12 months	573	² 21.0 (14.8–28.4)	291	² 13.9 (8.3–21.4)	282	^{1,2} 28.5 (19.7–38.7)
12 to under 24 months	406	25.2 (20.2–30.7)	219	26.8 (20.4–33.9)	187	23.4 (15.6–32.8)
2–5 years	1,361	45.2 (40.7–49.7)	690	42.1 (36.2–48.1)	671	¹ 48.3 (43.5–53.1)
6–11 years	1,984	38.6 (35.4–41.9)	1,011	36.5 (32.1–41.1)	973	¹ 40.8 (37.7–44.0)
12–19 years	2,000	29.5 (26.0–33.2)	1,029	24.9 (19.4–31.0)	971	¹ 34.4 (28.9–40.1)
Race and Hispanic origin ³						
Hispanic	1,537	^{4,5} 26.5 (22.1–31.2)	772	^{4,5} 25.5 (19.6–32.0)	765	^{4,5} 27.5 (22.6–32.8)
Non-Hispanic Asian	518	⁶ 37.8 (32.2–43.6)	259	⁶ 33.4 (26.7–40.6)	259	^{1,6} 42.4 (34.7–50.3)
Non-Hispanic Black	1,637	⁴ 21.7 (17.8–26.0)	859	⁴ 20.3 (16.9–24.1)	778	⁴ 23.1 (18.1–28.7)
Non-Hispanic White	2,052	41.9 (37.5–46.3)	1,041	36.1 (30.5–41.9)	1,011	¹ 48.1 (42.6–53.6)
Family income relative to federal poverty level ⁷						
Less than 130%	2,279	⁸ 22.2 (18.5–26.4)	1,141	⁸ 21.4 (17.1–26.2)	1,138	⁸ 23.0 (18.6–27.8)
130% to less than 350%	1,948	36.0 (31.4–40.9)	1,024	32.1 (26.1–38.6)	924	¹ 40.3 (35.9–44.9)
350% or more	1,301	46.0 (41.6–50.4)	644	40.7 (34.3–47.3)	657	¹ 51.1 (45.6–56.5)

¹Significantly different from males.²Significant quadratic trend by age.³Participants who reported their race as other were included in the overall estimates but are not shown separately.⁴Significantly different from non-Hispanic White children and adolescents.⁵Significantly different from non-Hispanic Asian children and adolescents.⁶Significantly different from non-Hispanic Black children and adolescents.⁷Participants missing information for family income (*n* = 796).⁸Significant linear trend by family income relative to federal poverty level.

SOURCE: National Center for Health Statistics, National Health and Nutrition Examination Survey, 2017–March 2020 pre-pandemic data files.

at higher income levels (130% to less than 350% of federal poverty level and 350% or more). A significant quadratic trend was seen for DS use by age, with a peak at 2–5 years overall (45.2%) and for males and females. Significantly higher percentages of Asian and White youth reported DS use compared with Black and Hispanic youth overall and for males and females. DS use increased with increasing income overall and for males and females.

Among adults aged 20 and over, 58.5% used any DS in the past 30 days, and use was higher among women (65.0%) than men (51.5%) ($p < 0.05$) (Table B). This pattern by sex was observed for all age, race and Hispanic origin, income, and education level subgroups. DS use increased with increasing age overall and for males and females, with 68.9% of men and 80.4% of women aged 60 and over taking at least one DS. Among all adults and among males, DS use was highest among White people compared with the other race and Hispanic-origin groups. Among females, DS use was higher among Asian and White people compared with Black and Hispanic people, although the

observed difference between Hispanic and Asian females was not significant. DS use increased with increasing income and education level overall and for males and females.

Number of DSs used

Among children and adolescents aged 0–19 years, 65.2% did not use any DSs, 27.7% used one, and 7.0% used two or more DSs in the past 30 days (Table 1). Among adults aged 20 and over, 41.5% did not use any DSs, 23.0% used one, 13.6% used two, 7.3% used three, and 14.7% used four or more DSs in the past 30 days. (Figure 1, Table 2).

Among children and adolescents aged 0–19 years, use of one DS increased from children under 12 months (18.6%) to those aged 2–5 years (36.3%) and then decreased through those aged 12–19 years (21.7%). The use of two or more DSs followed a pattern similar to one DS, where it increased from children aged 2–5 years (8.8%) and then decreased through those aged 12–19 years (7.8%). The estimates for the use of two or more DSs among children under 12 months and those 12 to less than 24 months were

unreliable and underpowered (did not have a sufficiently large sample size) to find a significant quadratic trend (Figure 2). Use of two or more DSs increased with increasing income level (Figure 3). A higher percentage of Asian (8.8%) and White (8.8%) youth reported using two or more DSs compared with Black (2.6%) and Hispanic (5.2%) youth (Figure 4).

The use of one or more DSs increased with age among adults aged 20 and over, with one-quarter of adults aged 60 and over reporting using four or more DSs (Figure 5). The use of two, three, and four or more DSs also increased with income (Figure 6) and education level (Figure 7). No DS use at all was lowest among White adults (36.6%). Use of only one DS was similar between Hispanic (22.8%) and White (22.3%) adults, and between Asian (25.2%) and Black (25.6%) adults. However, only the difference between Black and White adults was significant. The use of two, three, or four or more DSs tended to be higher in White adults compared with the other race and Hispanic-origin groups, but not all differences were statistically significant. Use of four or more DSs was

Table B. Prevalence of dietary supplement use among adults aged 20 and over, by demographic characteristics: United States, 2017–March 2020

Characteristic	All		Men		Women	
	Sample size	Percent (95% confidence interval)	Sample size	Percent (95% confidence interval)	Sample size	Percent (95% confidence interval)
Total	9,224	58.5 (56.8–60.3)	4,475	51.5 (49.5–53.5)	4,749	¹ 65.0 (62.8–67.2)
Age group						
20–39	2,798	² 44.5 (41.5–47.5)	1,306	² 37.0 (32.8–41.5)	1,492	^{1,2} 51.9 (47.9–55.8)
40–59	3,009	58.8 (55.2–62.3)	1,440	52.8 (48.0–57.6)	1,569	¹ 64.5 (60.6–68.2)
60 and over.	3,417	75.2 (72.1–78.0)	1,729	68.9 (64.5–73.1)	1,688	¹ 80.4 (77.2–83.2)
Race and Hispanic origin ³						
Hispanic	1,996	^{4,5} 47.9 (43.9–51.8)	957	⁴ 39.0 (33.9–44.5)	1,039	^{1,4} 56.5 (52.4–60.5)
Non-Hispanic Asian	1,117	^{4,6} 55.6 (51.4–59.7)	514	⁴ 46.4 (38.9–53.9)	603	^{1,6} 63.4 (58.2–68.4)
Non-Hispanic Black	2,456	⁴ 48.6 (45.6–51.7)	1,164	⁴ 39.3 (36.0–42.7)	1,292	^{1,4} 56.2 (53.1–59.2)
Non-Hispanic White	3,216	63.4 (60.9–65.8)	1,603	57.3 (54.6–59.9)	1,613	¹ 69.1 (65.8–72.3)
Family income relative to federal poverty level ⁷						
Less than 130%	2,201	⁸ 45.4 (40.5–50.4)	959	⁸ 35.7 (31.1–40.5)	1,242	^{1,8} 52.6 (47.3–58.0)
130% to less than 350%	3,087	56.7 (52.8–60.5)	1,529	47.4 (43.1–51.8)	1,558	¹ 64.9 (60.8–68.7)
350% or more.	2,539	67.3 (64.1–70.3)	1,299	61.9 (57.9–65.7)	1,240	¹ 72.9 (68.8–76.8)
Education level ⁹						
Less than high school.	1,759	¹⁰ 43.2 (39.8–46.7)	899	^{10,11} 33.8 (29.3–38.7)	860	^{1,10} 52.9 (47.8–57.9)
High school diploma or GED	2,224	50.4 (46.3–54.5)	1,130	42.9 (39.2–46.7)	1,094	¹ 58.0 (52.1–64.0)
Some college	2,973	59.4 (56.8–61.9)	1,360	50.4 (46.9–53.9)	1,613	¹ 67.2 (63.5–70.6)
College degree or higher	2,255	70.1 (67.8–72.1)	1,079	67.1 (63.1–70.9)	1,176	¹ 72.7 (69.7–75.4)

¹Significantly different from males.²Significant linear trend by age.³Participants who reported their race as other were included in the overall estimates but are not shown separately.⁴Significantly different from non-Hispanic White adults.⁵Significantly different from non-Hispanic Asian adults.⁶Significantly different from non-Hispanic Black adults.⁷Participants missing information for family income ($n = 1,397$).⁸Significant linear trend by family income relative to federal poverty level.⁹Participants missing information for education ($n = 13$).¹⁰Significant linear trend by education.¹¹Significant quadratic trend by education.

SOURCE: National Center for Health Statistics, National Health and Nutrition Examination Survey, 2017–March 2020 prepandemic data files.

also higher in Asian adults compared with Black and Hispanic adults (Figure 8).

Frequency of MVM and vitamin D supplement use

During 2017–March 2020, 23.5% of youth and 31.5% of adults reported MVM use, and 3.0% of youth and 18.5% of adults reported vitamin D use (Figure 9). Among those who reported MVM use, 44.9% of youth and 63.7% of adults reported taking the supplement all 30 days (Figure 10). Of those who reported vitamin D use, 33.9% of youth and 66.9% of adults reported taking the supplement all 30 days.

Discussion

During 2017–March 2020, about one-third of children and adolescents used DSs in the past 30 days. Use was higher among females than males for all

age groups except children aged 12–24 months. During the same time period, 58.5% of adults used DSs in the past 30 days. Use was higher among females than males for all age (except for children aged 12–24 months), race and Hispanic origin, income, and education subgroups. Among youth and adults, use of DSs increased with income similar to previous reports based on NHANES 2011–2014 data (20,21). Patterns of DS use by age group, race and Hispanic origin, and education also stayed consistent with previously reported results based on earlier NHANES data (6,20,22–24). Asian and White adults reported higher DS use compared with Black and Hispanic adults.

The percentage using multiple DSs was 7.0% in youth and 35.6% among adults, with 25.0% of adults aged 60 and over reporting use of four or more DSs. DSs may contain 100% or more of daily nutrient intake recommendations (25,26).

As reported in previous studies based on earlier NHANES data, MVM and vitamin D are the two most reported DSs (7,8). About one-quarter of youth and one-third of adults used MVMs, and 3.0% of youth and 18.5% of adults used vitamin D in the past 30 days during 2017–March 2020. While the Dietary Guidelines for Americans recommend that nutritional needs be met primarily through foods (27), DSs are recognized to be beneficial for specific population subgroups, such as breastfeeding infants, youth on restrictive diets, pregnant women, people with various illnesses, and older adults (26–29). Previous studies using NHANES data have reported decreased micronutrient deficiencies and intakes slightly exceeding the upper limit for a few nutrients among adults who took MVM supplements more than 16 days per month (3) and 21 days or more per month (30). MVMs contribute significantly to the total nutrient

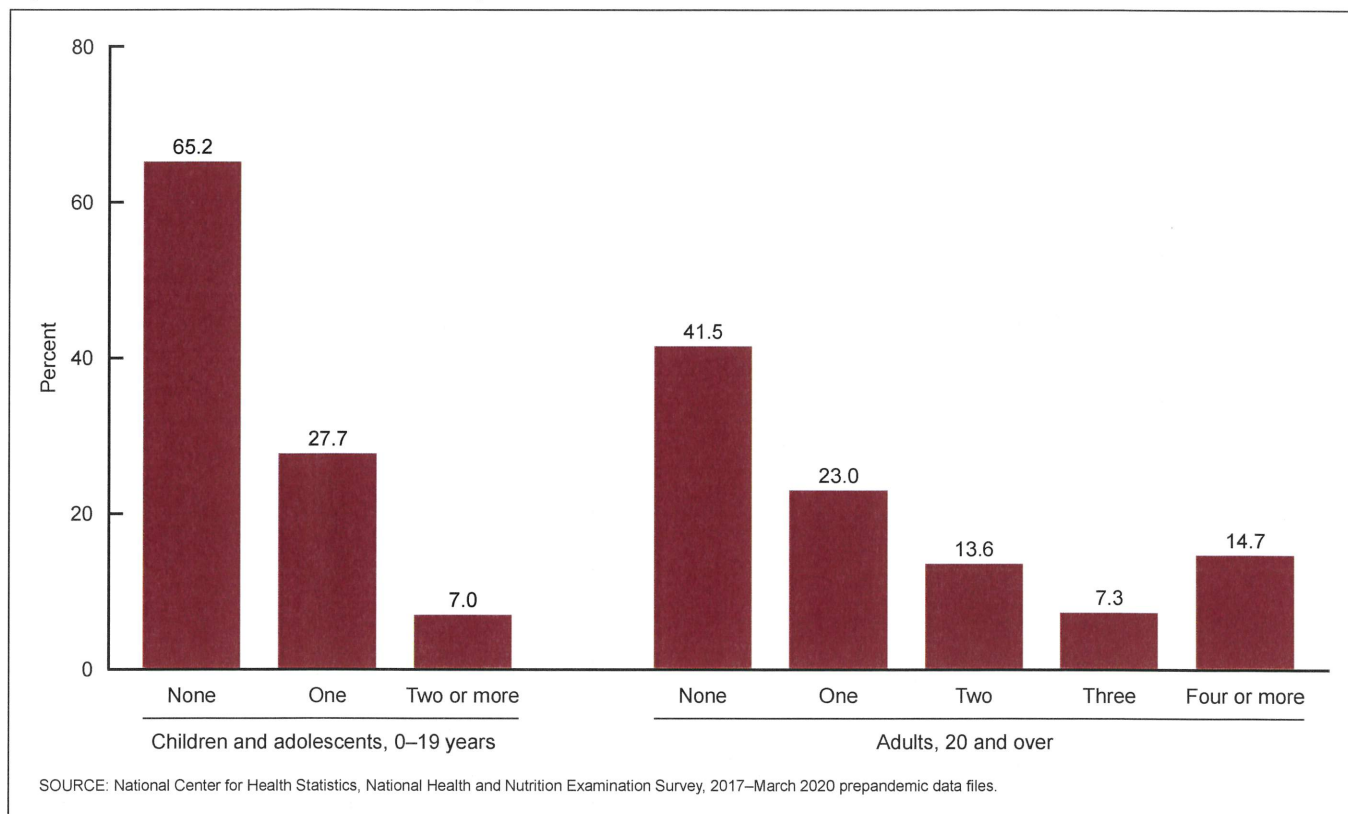
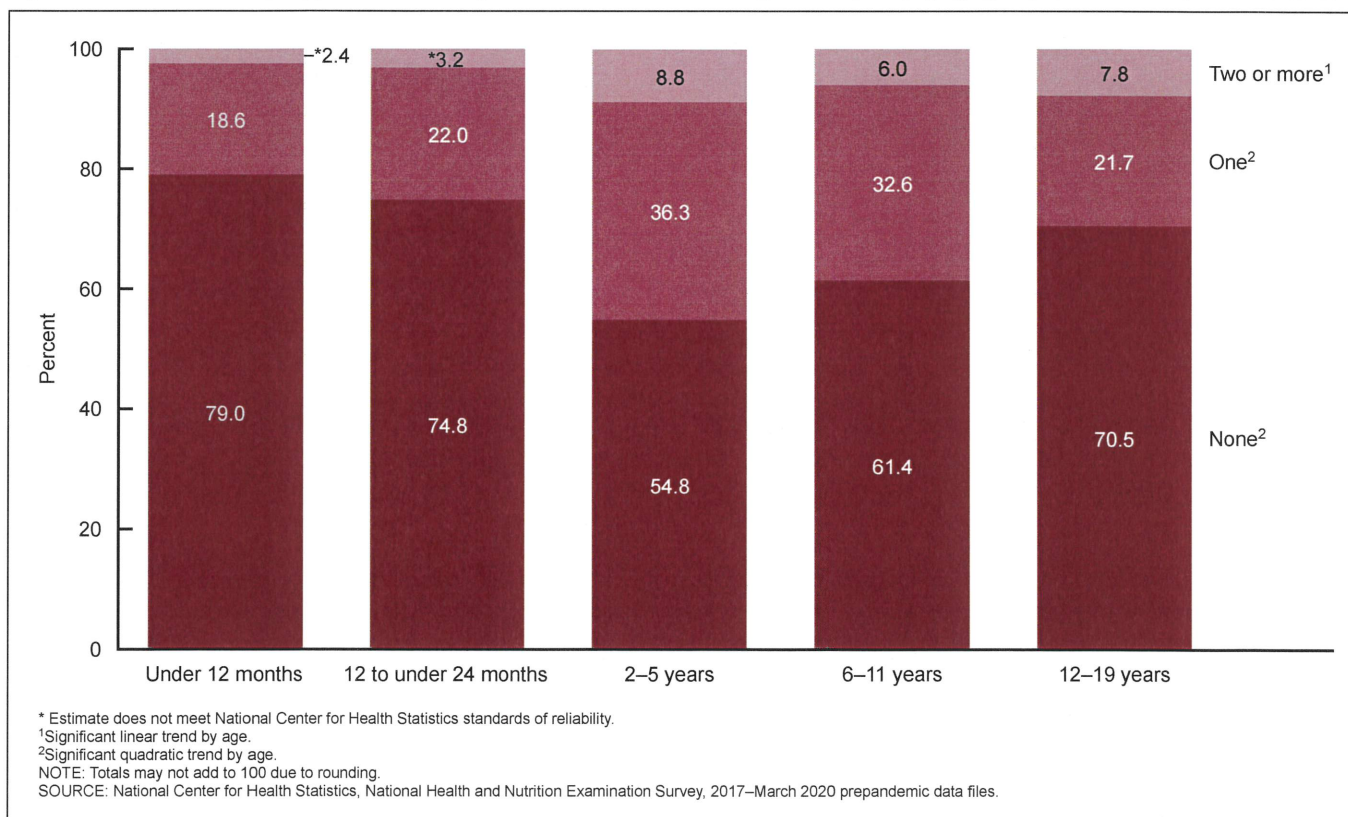
Figure 1. Number of dietary supplements used by children, adolescents, and adults: United States, 2017–March 2020**Figure 2. Number of dietary supplements used by children and adolescents aged 0–19 years, by age group: United States, 2017–March 2020**

Figure 3. Number of dietary supplements used by children and adolescents aged 0–19 years, by federal poverty level: United States, 2017–March 2020

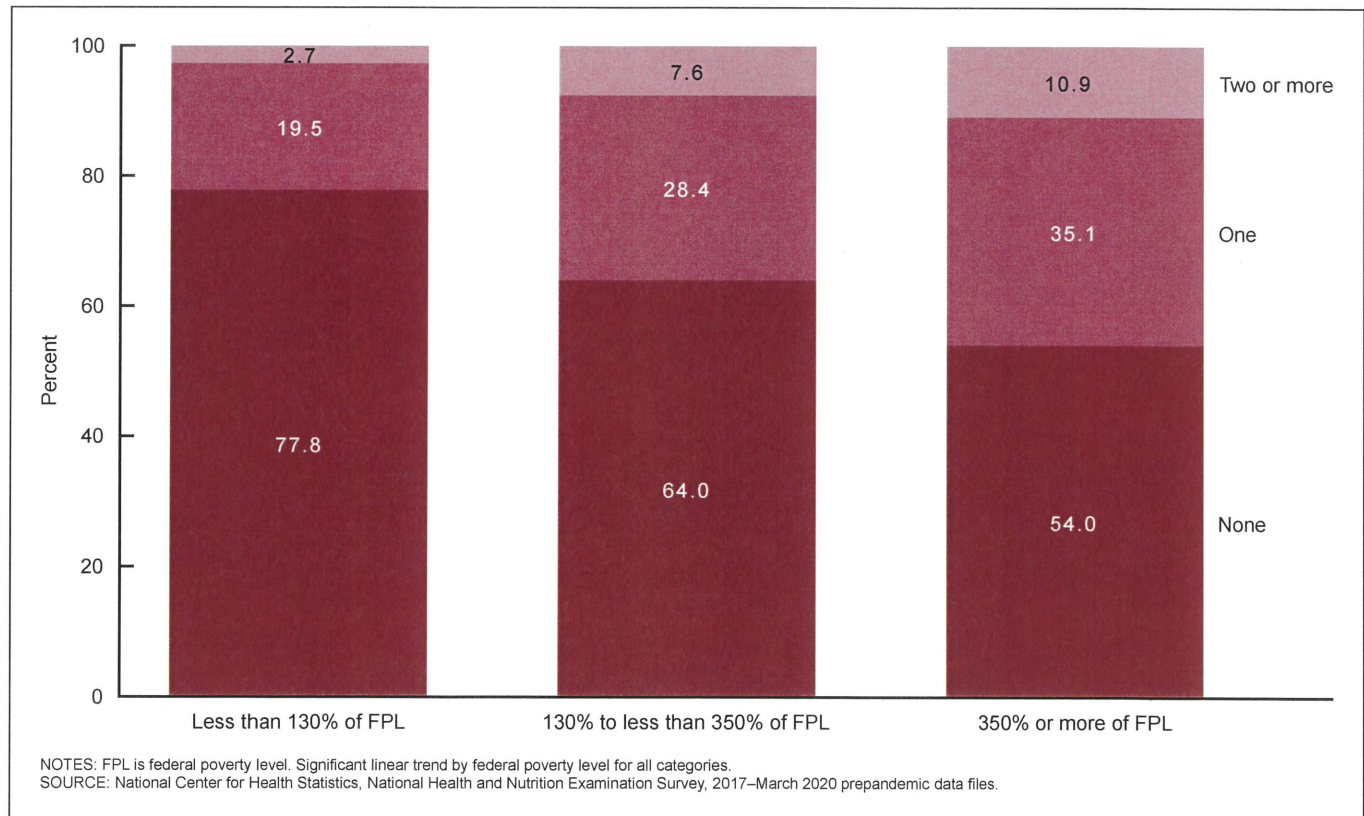


Figure 4. Number of dietary supplements used by children and adolescents aged 0–19 years, by race and Hispanic origin: United States, 2017–March 2020

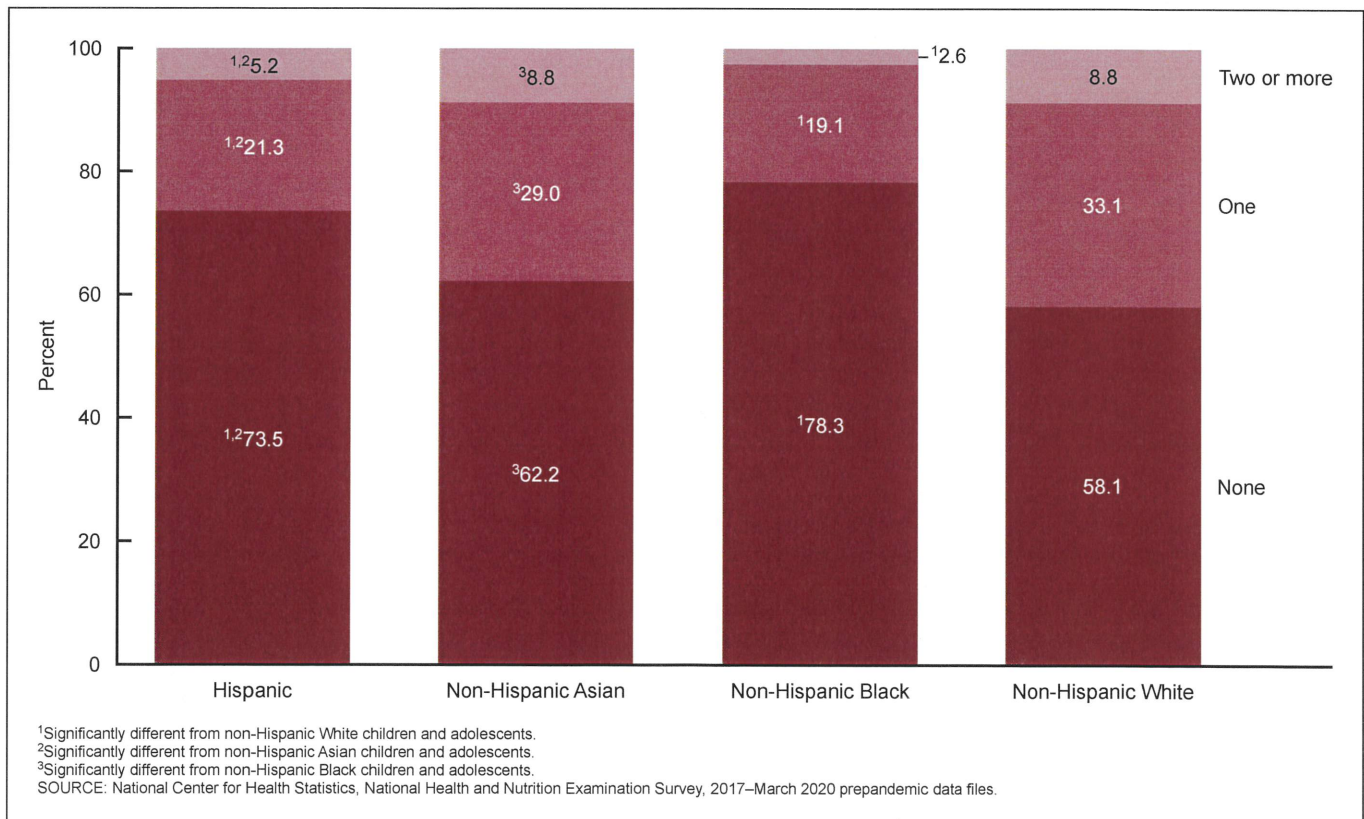


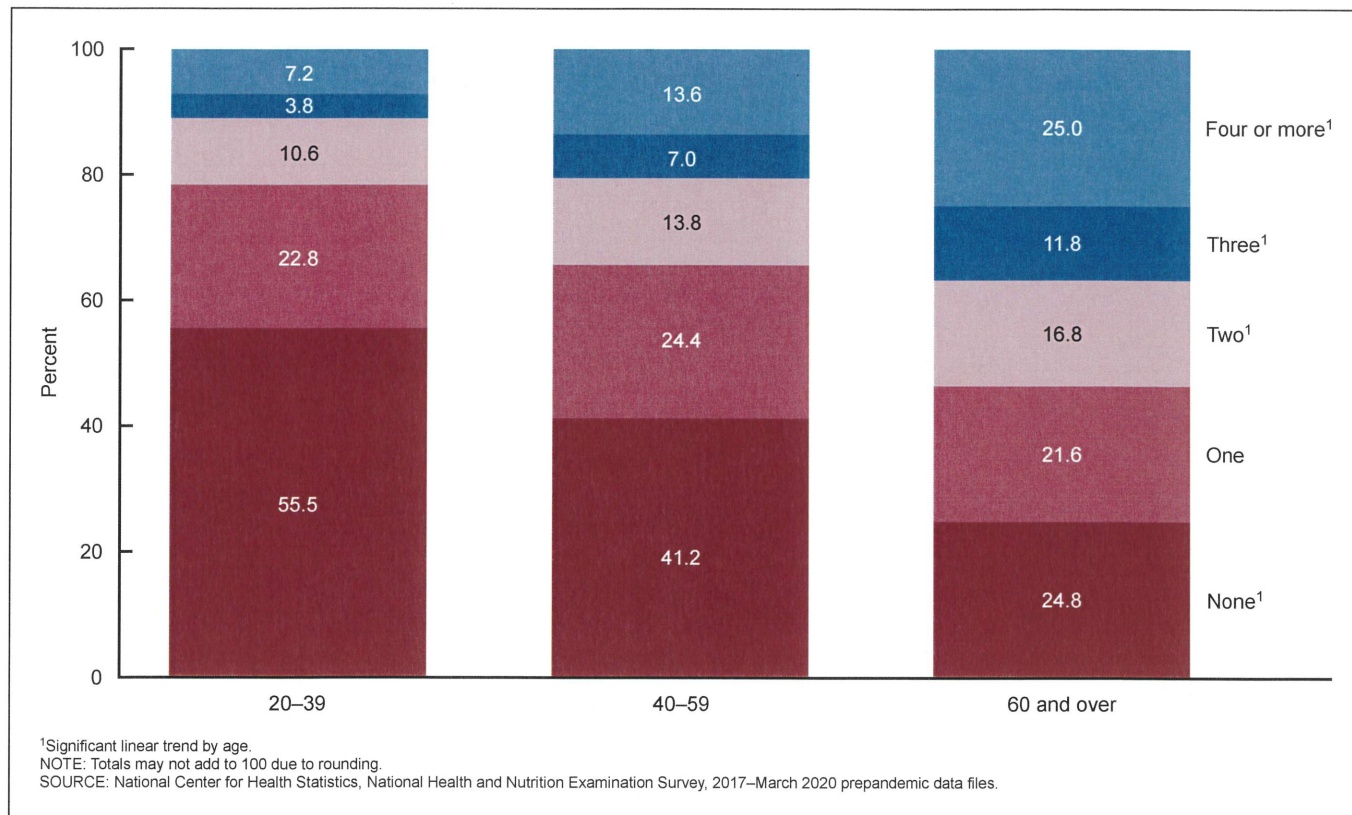
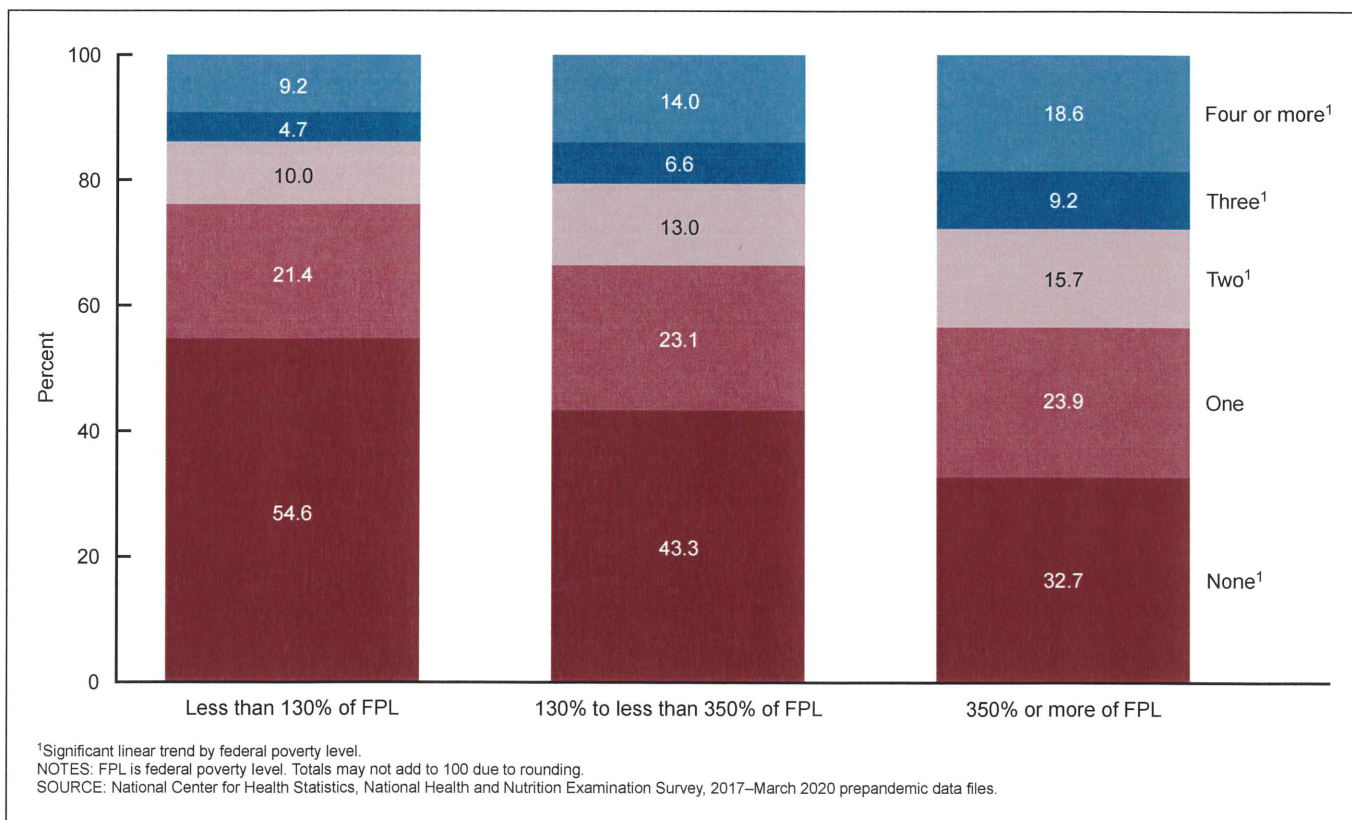
Figure 5. Number of dietary supplements used by adults aged 20 and over, by age: United States, 2017–March 2020**Figure 6. Number of dietary supplements used by adults aged 20 and over, by federal poverty level: United States, 2017–March 2020**

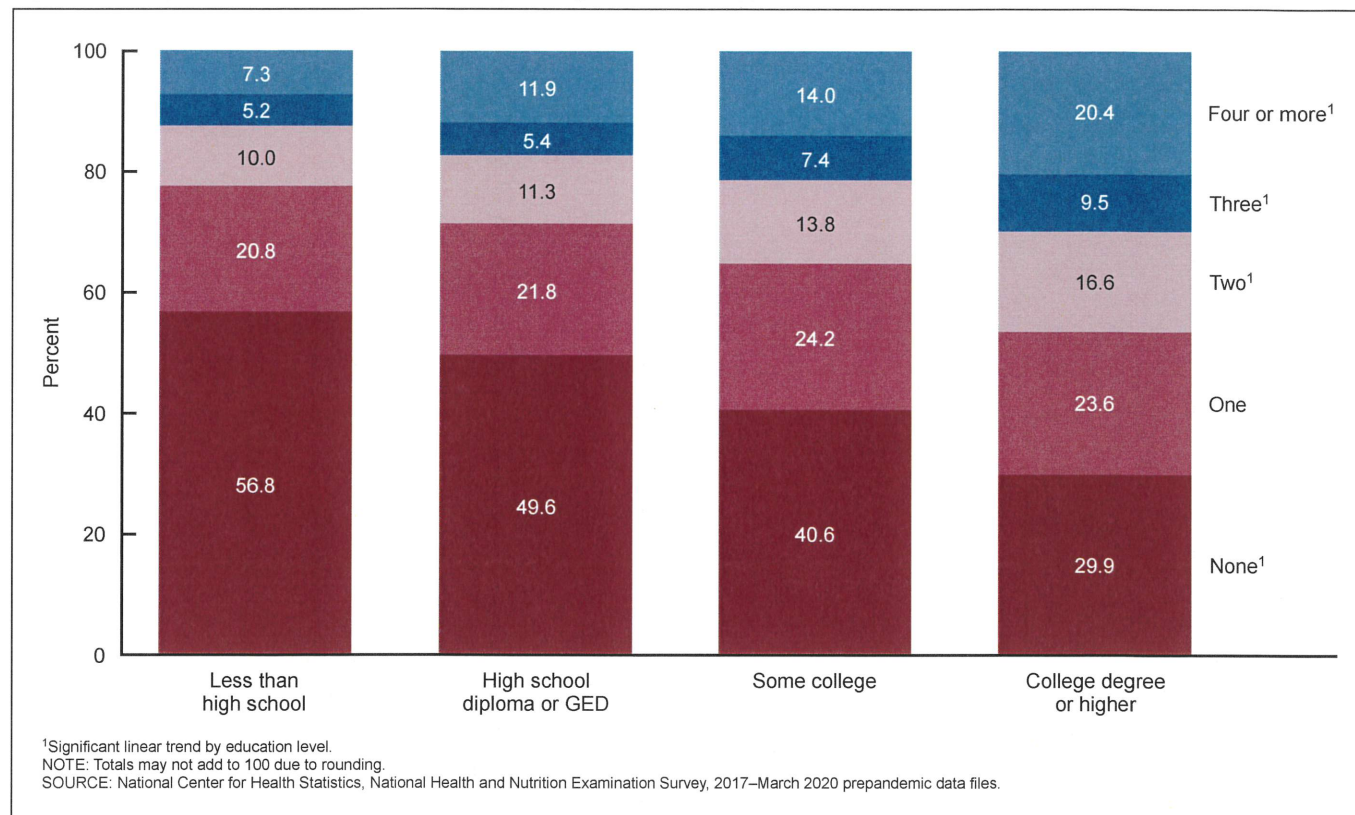
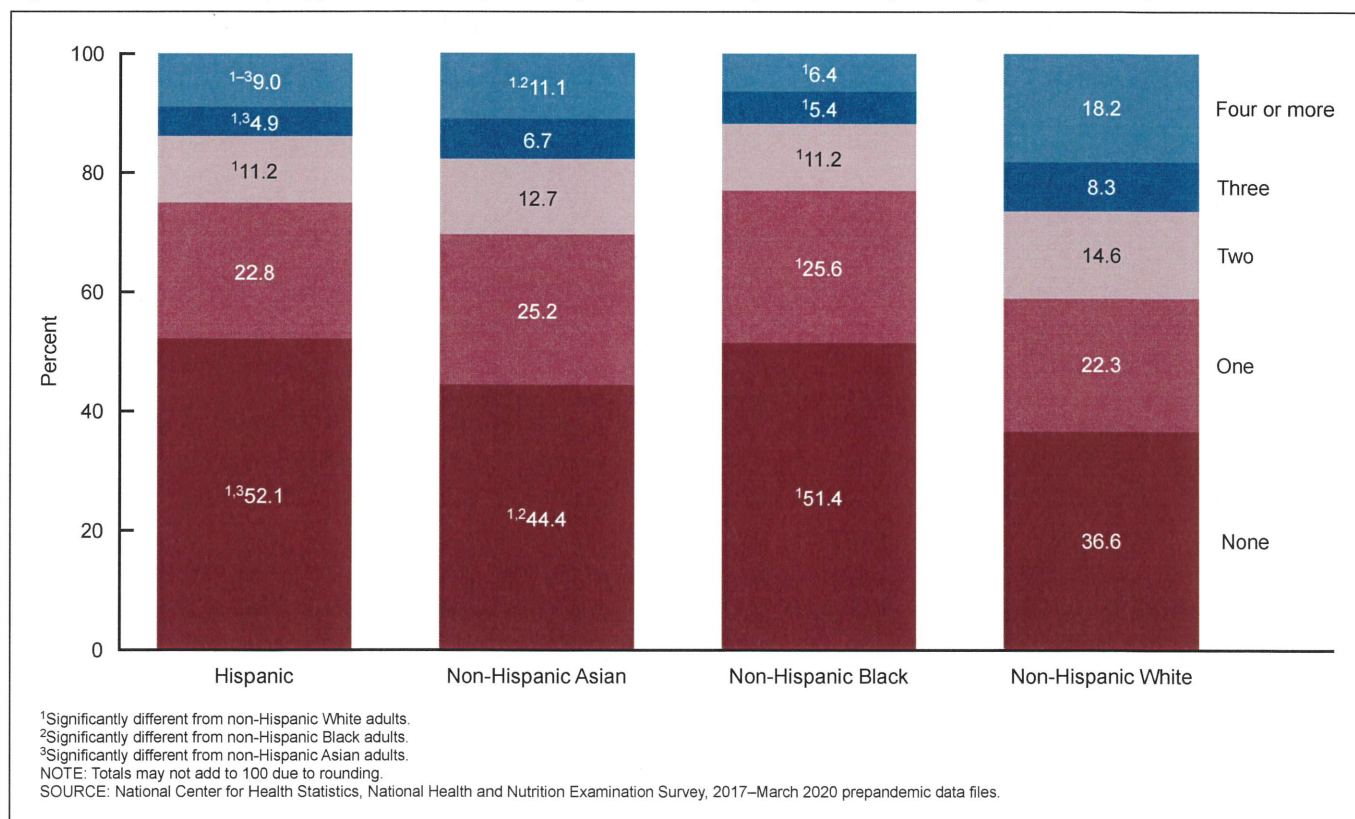
Figure 7. Number of dietary supplements used by adults aged 20 and over, by education level: United States, 2017–March 2020**Figure 8. Number of dietary supplements used by adults aged 20 and over, by race and Hispanic origin: United States, 2017–March 2020**

Figure 9. Percentage of children and adolescents aged 0–19 years and adults aged 20 and over who reported multivitamin-mineral and vitamin D supplement use in the past 30 days: United States, 2017–March 2020

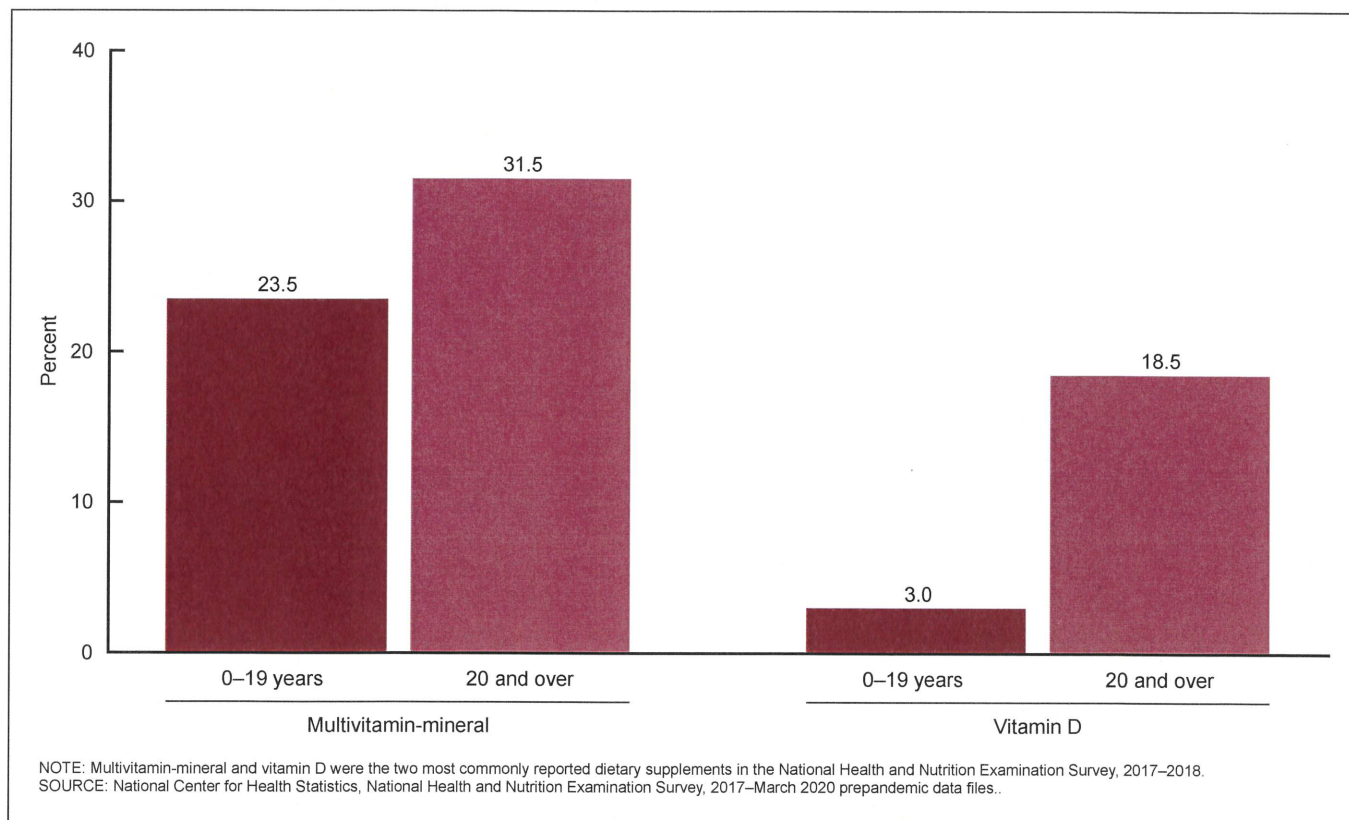
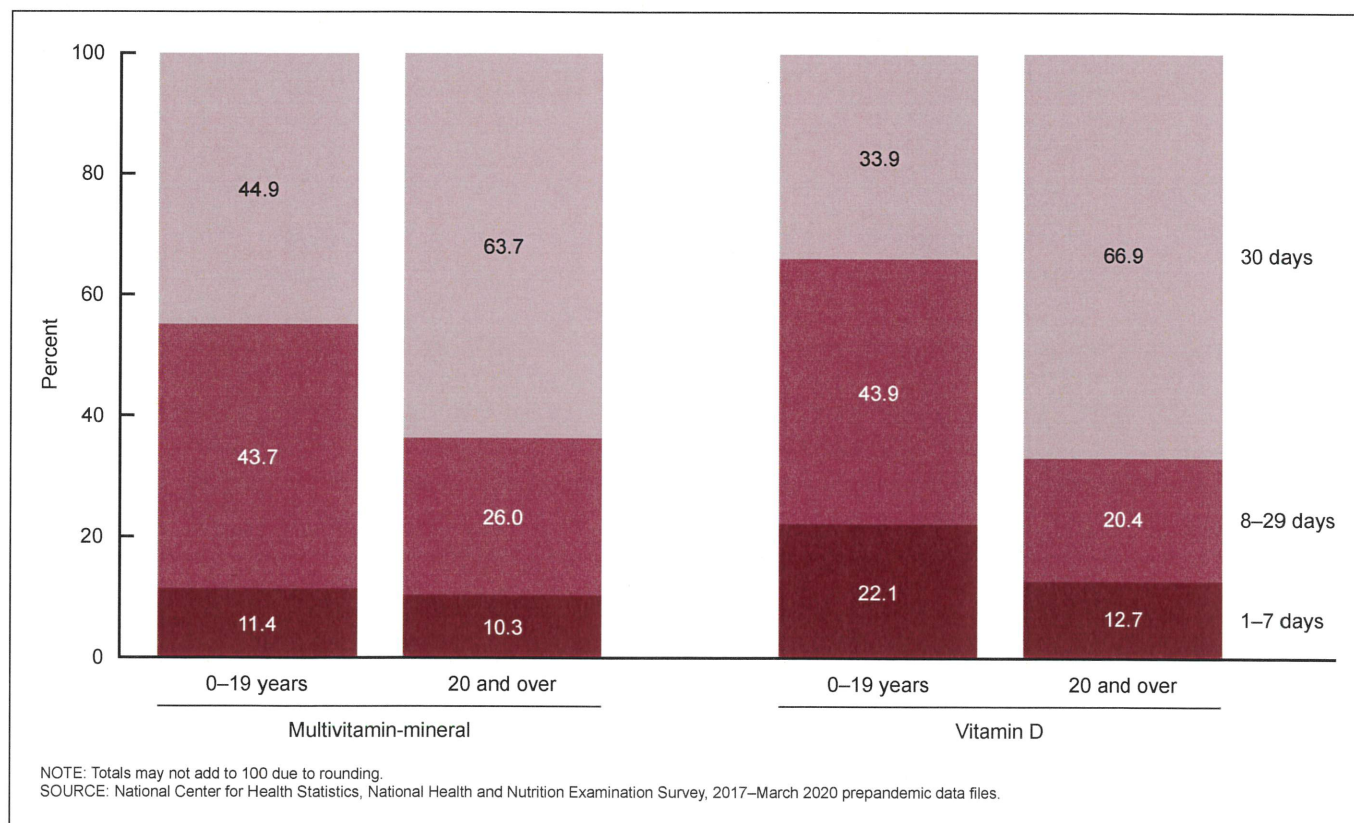


Figure 10. Frequency of multivitamin-mineral and vitamin D use among children and adolescents aged 0–19 years and adults aged 20 and over who reported use in the past 30 days: United States, 2017–March 2020



intake, and consumption of multiple DSs simultaneously may easily lead to intakes above the upper limit (25,26,30). Therefore, surveillance of nutrient intakes from DSs in addition to those from diet is critical for monitoring total nutrient intakes.

This report has certain limitations. First, the low prevalence of use of multiple dietary supplements among children and adolescents makes these estimates less reliable for some subgroups and leads to some subgroups being underpowered to detect significant differences. Second, reliance on self-reported frequency of MVM and vitamin D use may introduce recall as well as social desirability bias (the tendency to underreport socially undesirable attitudes and behaviors and overreport more desirable attributes). Third, the lack of universal definitions for DS product types limits comparisons across studies. Finally, declining response rates in national surveys, including NHANES, over the past 2 decades may impact generalizability; however, use of well-calibrated weights to address survey nonresponse helps address concerns about potential bias (31).

Conclusion

In 2017–March 2020, just over one in three U.S. youth and three in five adults used DSs, and nearly 15% of adults reported using four or more DSs. These results indicate that any DS and multiple DS intake is common in the United States, and national surveys, such as NHANES, should continue to monitor DS use among children, adolescents, and adults.

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Table 1. Number of dietary supplements used among children and adolescents aged 0–19 years, by demographic characteristics: United States, 2017–March 2020

Characteristic	Sample size	None	One	Two or more
Percent (95% confidence interval)				
Total	6,324	65.2 (62.6–67.9)	27.7 (25.8–29.8)	7.0 (5.9–8.3)
Age group				
Under 12 months	573	¹ 79.0 (71.6–85.2)	¹ 18.6 (13.3–24.9)	^{*2} 2.4 (0.6–6.5)
12 to under 24 months	406	74.8 (69.3–79.8)	22.0 (17.4–27.3)	^{*3} 3.2 (1.0–7.6)
2–5 years	1,361	54.8 (50.3–59.3)	36.3 (32.0–40.8)	8.8 (7.0–11.0)
6–11 years	1,984	61.4 (58.1–64.6)	32.6 (29.4–35.9)	6.0 (4.4–8.0)
12–19 years	2,000	70.5 (66.8–74.0)	21.7 (18.5–25.2)	7.8 (6.0–9.9)
Race and Hispanic origin				
Hispanic	1,537	^{3,4} 73.5 (68.8–77.9)	^{3,4} 21.3 (17.2–25.7)	^{3,4} 5.2 (3.6–7.2)
Non-Hispanic Asian	518	⁵ 62.2 (56.4–67.8)	⁵ 29.0 (24.3–34.0)	⁵ 8.8 (5.5–13.2)
Non-Hispanic Black	1,637	³ 78.3 (74.0–82.2)	³ 19.1 (15.2–23.5)	³ 2.6 (1.8–3.6)
Non-Hispanic White	2,052	58.1 (53.7–62.5)	33.1 (30.0–36.3)	8.8 (6.6–11.4)
Family income relative to federal poverty level				
Less than 130%	2,279	² 77.8 (73.6–81.7)	² 19.5 (15.9–23.7)	² 2.7 (1.7–4.0)
130% to less than 350%	1,948	64.0 (59.1–68.6)	28.4 (24.3–32.7)	7.6 (5.9–9.7)
350% or more	1,301	54.0 (49.6–58.4)	35.1 (31.4–38.8)	10.9 (8.0–14.4)

* Estimate does not meet National Center for Health Statistics standards of reliability.

¹Significant quadratic trend.

²Significant linear trend.

³Significantly different from non-Hispanic White children and adolescents.

⁴Significantly different from non-Hispanic Asian children and adolescents.

⁵Significantly different from non-Hispanic Black children and adolescents.

SOURCE: National Center for Health Statistics, National Health and Nutrition Examination Survey, 2017–March 2020 prepanemic data files.

Table 2. Number of dietary supplements used among adults aged 20 and over, by demographic characteristics: United States, 2017–March 2020

Characteristic	Sample size	None	One	Two	Three	Four or more
Percent (95% confidence interval)						
Total	9,224	41.5 (39.7–43.2)	23.0 (21.8–24.1)	13.6 (12.5–14.7)	7.3 (6.4–8.2)	14.7 (12.9–16.7)
Age group						
20–39	2,798	¹ 55.5 (52.4–58.5)	22.8 (20.7–25.1)	¹ 10.6 (9.0–12.5)	¹ 3.8 (3.1–4.6)	¹ 7.2 (5.3–9.6)
40–59	3,009	41.2 (37.6–44.8)	24.4 (22.1–26.8)	13.8 (11.7–16.1)	7.0 (5.6–8.8)	13.6 (10.3–17.5)
60 and over	3,417	24.8 (21.9–27.9)	21.6 (19.2–24.1)	16.8 (14.8–18.9)	11.8 (10.5–13.1)	25.0 (21.9–28.4)
Race and Hispanic origin						
Hispanic	1,996	^{2,3} 52.1 (48.1–56.1)	22.8 (20.4–25.3)	² 11.2 (9.4–13.3)	^{2,3} 4.9 (3.8–6.3)	^{2–4} 9.0 (7.5–10.6)
Non-Hispanic Asian	1,117	^{2,4} 44.4 (40.2–48.7)	25.2 (21.2–29.4)	12.7 (10.0–15.9)	6.7 (5.3–8.3)	^{2,4} 11.1 (9.3–13.1)
Non-Hispanic Black	2,456	² 51.4 (48.3–54.4)	² 25.6 (23.9–27.3)	² 11.2 (9.8–12.8)	² 5.4 (4.2–6.9)	² 6.4 (5.5–7.4)
Non-Hispanic White	3,216	36.6 (34.1–39.1)	22.3 (20.5–24.3)	14.6 (13.0–16.3)	8.3 (7.0–9.7)	18.2 (15.3–21.5)
Family income relative to federal poverty level						
Less than 130%	2,201	¹ 54.6 (49.6–59.5)	21.4 (19.1–24.0)	¹ 10.0 (8.8–11.3)	¹ 4.7 (3.5–6.3)	¹ 9.2 (5.9–13.7)
130% to less than 350%	3,087	43.3 (39.4–47.3)	23.1 (20.5–25.9)	13.0 (11.2–15.0)	6.6 (5.3–8.1)	14.0 (11.4–16.9)
350% or more	2,539	32.7 (29.6–35.9)	23.9 (21.1–26.9)	15.7 (13.7–17.8)	9.2 (7.4–11.2)	18.6 (15.7–21.7)
Education level						
Less than high school	1,759	¹ 56.8 (53.2–60.3)	20.8 (17.8–24.0)	¹ 10.0 (7.9–12.3)	¹ 5.2 (3.6–7.4)	¹ 7.3 (5.0–10.2)
High school diploma or GED	2,224	49.6 (45.4–53.7)	21.8 (20.0–23.8)	11.3 (10.0–12.7)	5.4 (4.0–7.1)	11.9 (8.2–16.6)
Some college	2,973	40.6 (38.0–43.3)	24.2 (21.9–26.5)	13.8 (12.1–15.6)	7.4 (6.3–8.6)	14.0 (12.1–16.1)
College degree or higher	2,255	29.9 (27.8–32.2)	23.6 (21.3–26.0)	16.6 (14.2–19.2)	9.5 (7.5–11.9)	20.4 (17.5–23.5)

¹Significant linear trend.²Significantly different from non-Hispanic White adults.³Significantly different from non-Hispanic Asian adults.⁴Significantly different from non-Hispanic Black adults.

SOURCE: National Center for Health Statistics, National Health and Nutrition Examination Survey, 2017–March 2020 prepandemic data files.

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