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Comparison of Parent and Teen Reports of Teen Healthcare Use: United States, July 2021–December 2023

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Abstract

Objective—This report examines selected measures of healthcare use among teenagers ages 12–17 by parent- or self-report. Agreement between parent-reported and teen self-reported data is also evaluated.

Methods—The percentage of teenagers with doctor visits, wellness visits, having a usual place of care, having a personal doctor or nurse, and having time alone with a doctor were estimated using teen-reported data from the National Health Interview Survey—Teen collected from July 2021 through December 2023. These estimates were compared with parent-reported estimates from the same time period using data from the National Health Interview Survey. Cohen's kappa and prevalence-adjusted, bias-adjusted kappa (PABAK) values were used to evaluate agreement between parent and teen responses.

Results—Across all measures, parents reported higher healthcare use for their teenagers than teenagers reported for themselves (for example, 91.4% of parents reported a doctor's visit in the last 12 months compared with 83.0% of teenagers). Cohen's kappa values across measures showed fair to slight agreement, with PABAK values showing slightly higher agreement, ranging from slight to substantial. Percentage agreement patterns were most often driven by both parent and teenager affirming healthcare use indicators, except for having time alone with a doctor, which was driven slightly more by the parent and teenager both reporting the teenager had not received this service. Disagreement patterns were driven by parents affirming services the teenager did not; disagreement was highest for having a personal doctor or nurse and time alone with a doctor.

Keywords: adolescent • agreement • national survey • National Health Interview Survey (NHIS) • National Health Interview Survey—Teen (NHIS—Teen)

Introduction

Receipt of routine and preventive healthcare services is important for reducing the risk of disease and disability for people of all ages. Among adolescents in particular, these services are opportunities to identify health problems and risk behaviors through screenings and discussions with healthcare providers (1,2). Consistent receipt of healthcare services may also help adolescents transition to adult health care and create positive patterns of healthcare usage that can be carried into adulthood (3). Measuring the patterns of adolescent healthcare use in the United States, including doctor visits, and receipt of recommended primary care services is helpful for understanding the overall health landscape and can guide public health initiatives.

To date, most national estimates of adolescent healthcare use rely primarily on parent report (4,5). Recent studies have shown differences in health topic reporting (for example, traumatic brain injuries and social and emotional support) between parent and adolescent self-reported data (6–8). However, it was not known if differences exist in the reporting of adolescent healthcare use when comparing parent and teen reports.

Using data from the National Health Interview Survey (NHIS) and NHIS—Teen, this report seeks to 1) provide parent- and teen-reported estimates of receipt of selected measures of healthcare use in the past 12 months, and 2) assess agreement between parent and teen report.



Methods

Data source

NHIS is a nationally representative household survey of the U.S. civilian noninstitutionalized population, conducted continuously throughout the year by the National Center for Health Statistics (NCHS). Interviews are typically initiated face-to-face in respondents' homes, with follow-ups conducted by telephone as needed. One adult age 18 or older (known as the Sample Adult) and one child (Sample Child) are randomly selected from each household to be the subject of a detailed health interview. Sample Adults answer questions about themselves, while a knowledgeable adult (typically a parent) answers questions about the Sample Child. The Sample Child response rate ranged from 44.9% to 49.9% between 2021–2023 (9–11). For more information about NHIS, visit: https://www.cdc.gov/ nchs/nhis.htm.

NHIS-Teen is a web-based, selfadministered follow-back survey of adolescents ages 12-17 (referred to as teenagers) who were selected for the NHIS Sample Child component and whose parent completed the NHIS Sample Child interview. Parents provided permission for their teenagers to be invited to participate in the survey. Eligible teenagers received an invitation letter and a series of scheduled reminders with instructions for completing a 15-minute online health survey. On average, teenagers completed the survey within 2–3 weeks of their parent's interview.

NHIS—Teen covers topics such as physical activity, doctor's visits, screen time, social connectedness, bullying, and symptoms of depression and anxiety. In general, NHIS—Teen survey content is similar to that of the NHIS Sample Child interview and many of the questions are the same between the surveys. The parent permission rate for NHIS—Teen was 60.4% and teen participation rate was 46.2%, resulting in an overall NHIS—Teen interview rate of 27.9%. More detailed information about NHIS—Teen, including its methodology and recruitment strategy, has been published elsewhere (12).

Measures

Healthcare use

For this analysis, measures of healthcare use were based on a 12-month recall (doctor's visit, time alone with a doctor, and a well visit) and those asked at the time of interview (usual place of care and a personal doctor or nurse). Parents and teenagers answered similar questions about healthcare use when they completed the NHIS Sample Child Interview and NHIS—Teen, respectively. Detailed measure information can be found in the Technical Notes.

Statistical analyses

Parent–teen pairs with missing data for all healthcare use outcomes were excluded in this analysis (n = 3), resulting in an analytic sample size of 1,955. Respondents with missing information for the outcome examined were removed from the denominator for that outcome. The percentage of missing outcomes ranged from 0.7%–9.3%.

Parent- and teen-reported data were used separately to estimate the percentage of teenagers who used the selected healthcare services. Differences between percentages were assessed using two-sided pairwise tests at the 0.05 alpha level. The term "more likely" indicates a statistically significant difference.

Distribution of percentage agreement and disagreement of parent and teen responses to all healthcare use outcomes was calculated (parent yes and teen yes, parent yes and teen no, parent no and teen yes, and parent no and teen no). Parent-teen agreement was further examined using weighted Cohen's kappa (13) and prevalence-adjusted, bias-adjusted kappa (PABAK) statistics (14). Values were evaluated according to the strength of the kappa value (slight: 0.00 to less than 0.20, fair: 0.20 to less than 0.40, moderate: 0.40 to less than 0.60, substantial: 0.60 to less than 0.80, and almost perfect: 0.80 to 1.00) (14). PABAK was presented alongside Cohen's kappa, as Cohen's kappa may not fully account for bias among variables of lower prevalence (15).

All estimates and analyses except PABAK were weighted with the NHIS-

Teen weight and calculated using SAS-callable SUDAAN software to account for the complex sample design of NHIS and NHIS—Teen (16). The Korn—Graubard method for complex surveys was used to generate 95% confidence intervals. All estimates presented meet NCHS data presentation standards for proportions (17).

Results

Prevalence

For all healthcare use outcomes, parent-reported estimates were higher than teen-reported estimates. Most teenagers had at least one usual place of care (parent report: 96.3%, teen report 87.0%) (Figure 1, Table 1, Table 2). Similarly, the percentage of teenagers who had a doctor's visit in the last 12 months was high (parent report: 91.4%, teen report: 83.0%) as was the percentage who had a well visit in the last 12 months (parent report: 89.8%, teen report: 78.1%). In contrast, both parents and teenagers reported lower percentages of teenagers who had someone they consider their personal doctor or nurse, and had time alone with their doctor (Figure 2). Depending on the reporter, a little over one-half to two-thirds of teenagers had a personal doctor or nurse (parent report: 67.2%, teen report: 56.6%), while less than one-half had time alone with a doctor (parent report: 46.5%, teen report: 37.6%).

Percentage agreement and disagreement

Percentage agreement between parent and teen report ranged from 58.7% for having a personal doctor or nurse to 88.6% for having a usual place of care (Table 1). Percentage agreement patterns were largely driven by both parent and teenager reporting receipt of health care (32.2% for time alone with a doctor to 87.4% for usual place of care) rather than both reporting nonreceipt (Figure 3). Disagreement patterns were largely driven by parents who reported service use that teenagers did not report. For example, for usual source of care, 9.7% of parents reported yes while their

Figure 1. Percentage of teenagers ages 12–17 who had a usual place of care, doctor's visit, or well visit, by parent-or self-report: United States, July 2021–December 2023

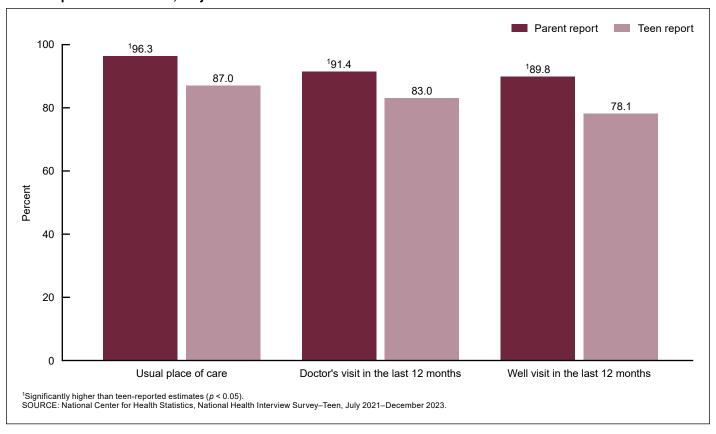
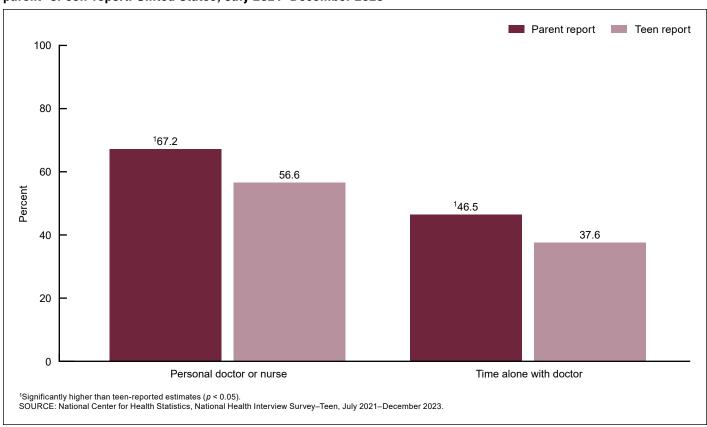


Figure 2. Percentage of teenagers ages 12–17 who had a personal doctor or nurse or time alone with a doctor, by parent- or self-report: United States, July 2021–December 2023



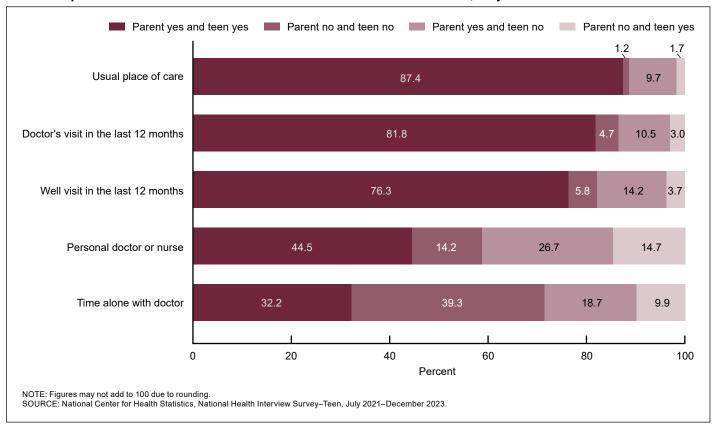


Figure 3. Percent distribution of agreement for healthcare use responses between parents and teenagers ages 12–17 who had a personal doctor or nurse or time alone with a doctor: United States, July 2021–December 2023

teenagers reported no, compared with 1.7% of parents who reported no while their teenagers reported yes. Overall, disagreement was highest for personal doctor or nurse (41.4%) and time alone with doctor (28.6%).

Kappa statistics

Table 1 presents weighted Cohen's kappa and PABAK values showing agreement between parent and teen responses to questions about healthcare use. Weighted Cohen's kappa values ranged from slight agreement (for example, personal doctor or nurse, k = 0.08 and usual place of care, k = 0.12) to fair agreement (well visit, k = 0.30and doctor's visit, k = 0.36) to moderate agreement (time alone with doctor, k = 0.42). Agreement improved for the PABAK values, which account for biases that Cohen's kappa does not, and ranged from k = 0.17 for having a personal doctor or nurse to k = 0.77 for usual place of care.

Discussion

The NHIS-Teen follow-back survey provides an opportunity to examine responses to questions on a variety of health measures based on teen selfreport as compared with the parent report collected in NHIS. Estimates of selected healthcare use for teenagers based on parent-reported data were consistently higher than estimates based on teen self-reported data. Percentage agreement was largely driven by parents and teenagers both reporting receipt of health care, while disagreement was driven by the parent being more likely to report healthcare use compared with the teenager. Additionally, measures of agreement between parent and teen report using Cohen's kappa and PABAK ranged from slight to substantial.

This study's findings suggest that national estimates of teen healthcare use are higher when based on parent-reported data than when based on teen self-reported data. Because medical records and provider data are not collected with this study, parent and teen responses

cannot be validated. Future reporting may be helpful to explore more fully the differences in these prevalence estimates.

Findings in this report align with previous studies suggesting that parents and their teenagers may have different perspectives, knowledge, or recall when reporting on their health (6–8), with parents being more likely than their teenagers to report that their teenagers received services. Additionally, this report finds higher agreement between parent- and teen-report for healthcare use, such as having a usual place of care or a doctor's visit, and lower agreement for having a personal doctor or nurse or time alone with a doctor.

Although both reporters suggest that the majority of teenagers have regular access to health care, less than one-half of teenagers have time alone with their doctor, an important part of the transition to adult health care (18). Additionally, according to both parents and teenagers, only about two-thirds of teenagers have a healthcare provider they think of as their personal doctor or nurse (19). Having a personal doctor or nurse as a teenager

has been shown to be associated with improved health care management and likelihood of pursuing preventive services into adulthood (20).

This report is not without limitations. First, analyses are based on two surveys with different modes of administration. Self-reported teen data were collected using a self-administered web-based survey, while parent-reported data were collected using an intervieweradministered in-person survey. In-person interviews may be more subject to social desirability bias, and may lead to parents providing more positive responses (21). Second, both data sources are subject to recall bias, as most measures used a reference period of the last 12 months. Third, apart from well visit, respondents were not provided definitions or additional context for the concepts in the survey (for example, what constitutes a personal doctor or nurse), so questions may have been interpreted differently, leading to measurement error for either respondent type, which may also contribute to disagreement. Additionally, parent-reported estimates detailed here may differ slightly from other published NHIS estimates, as the present sample is limited to respondents with paired parent-teen information.

Conclusions

This report presents both parent- and teen-reported estimates of healthcare use among a national sample of teenagers ages 12–17 in the United States. Across all measures, parents reported higher healthcare use compared with their teenagers, and agreement between respondents ranged from slight to substantial, depending on the specificity of the outcome.

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Table 1. Prevalence, percentage agreement, and kappa estimates of parent- and teen-reported healthcare use: United States, July 2021–December 2023

Healthcare use	Parent-reported prevalence ¹	Teen-reported prevalence	Percent agreement	Weighted kappa	Prevalence-adjusted, bias-adjusted kappa
Usual place of care	96.3	87.0	88.6	0.12	0.77
Doctor's visit in the last 12 months	91.4	83.0	86.5	0.36	0.73
Well visit in the last 12 months	89.8	78.1	82.1	0.30	0.64
Time alone with doctor	46.5	37.6	71.5	0.42	0.43
Personal doctor or nurse	67.2	56.6	58.7	0.08	0.17

¹Significantly higher than teen-reported estimates.

NOTES: Estimates are weighted using the National Health Interview Survey (NHIS)—Teen weight. Weighted kappa values were calculated using the NHIS—Teen weight. Prevalence-adjusted, bias-adjusted kappa (PABAK) values are not weighted. The kappa measure interprets the magnitude of agreement by considering the severity of disagreement (slight: 0.00–0.20, fair: 0.20–0.40, moderate: 0.40–0.60, substantial: 0.60–0.80, or almost perfect: 0.80–1.00). Given that Cohen's kappa may not fully account for biases introduced when differing methodologies are used (for example, self-administered compared with interview-administered), PABAK values are also presented.

SOURCE: National Center for Health Statistics, National Health Interview Survey-Teen, July 2021-December 2023.

Table 2. Percentage of parent- and teen-reported healthcare use among teenagers ages 12–17: United States, July 2021–December 2023

	Parent-reported estima	te ¹	Teen-reported estimate	
Healthcare use	Percent (95% confidence interval)	Standard error	Percent (95% confidence interval)	Standard error
Usual place of care	96.3 (95.2–97.6)	0.59	87.0 (84.8–89.0)	1.05
Doctor's visit in the last 12 months	91.4 (89.6-93.1)	0.87	83.0 (80.6-85.1)	1.14
Well visit in the last 12 months	89.8 (87.9–91.6)	0.93	78.1 (75.7–80.5)	1.21
Time alone with doctor	46.5 (42.6–50.4)	1.95	37.6 (34.0-41.2)	1.81
Personal doctor or nurse	67.2 (63.4–71.0)	1.91	56.6 (53.1–60.5)	1.86

¹Significantly higher than teen-reported estimates

NOTES: Estimates are weighted using the National Health Interview Survey (NHIS)—Teen weight. Confidence intervals were calculated using the Korn—Graubard method for complex surveys. Estimates are based on household interviews of a sample of the U.S. civilian noninstitutionalized population.

SOURCE: National Center for Health Statistics, National Health Interview Survey-Teen, July 2021-December 2023.

Technical Notes

Definitions

Doctor's visit in the last 12 months— Based on response of "within the past year" to the question, "About how long has it been since you last saw a doctor or other health professional about your health?" Response options included:

- Never
- Within the past year (anytime less than 12 months ago)
- Within the last 2 years (1 year but less than 2 years ago)
- Within the last 3 years (2 years but less than 3 years ago)
- Within the last 5 years (3 years but less than 5 years ago)
- Within the last 10 years (5 years but less than 10 years ago)
- 10 years ago or more

Personal doctor or nurse—Based on a "yes" response to the question, "Do you have one or more persons you think of as your personal doctor or nurse?"

Time alone with doctor—Categorized based on a "yes" response to having spoken with a doctor or other health professional privately, without a parent or guardian in the room, at either their last medical care visit in the past 12 months, or during a wellness, physical, or general-purpose check-up in the past 12 months.

Usual place of care—Based on a "yes" response to the question, "Is there a place that you usually go to if you are sick and need health care?"

Well visit in the last 12 months— Based on a response of "within the past year" to the question, "About how long has it been since you last saw a doctor or other health professional about your health?" and a "yes" response to the follow-up question, "Was this a wellness visit, physical, or general-purpose checkup?" Alternatively, the respondent could answer "within the past year" to the question, "About how long has it been since you last saw a doctor or other health professional for a wellness visit, physical, or general-purpose check-up?"

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