Figure. Associated Changes in Pediatric Emergency Department (ED) Visits for Suicide Attempts (SA) and Suicidal Ideation (SI)

![Graph showing changes in pediatric ED visits for suicide attempts and suicidal ideation](image)

For children age 5 to younger than 18 years and overall pediatric emergency department visits for all children age younger than 18 years over time. Error bars indicate 95% CI.

same period. An earlier NHAMCS analysis reported a doubling in ED visits for suicidal behavior in all age categories between 1993 and 2008, reflecting an apparent acceleration of pediatric suicide-associated visits to US EDs. Findings suggest a critical need to augment community mental health resources, ED physician preparedness, and post-emergency department risk reduction initiatives to decrease the burden of suicide among children.

A strength of the NHAMCS is its inclusion of hospitals other than academic centers, which are the settings for most published research, thereby giving a more complete picture of health care trends. In this broader setting, NHAMCS data suggest more at-risk young children than described among pediatric hospitals alone. Moreover, NHAMCS population-level estimates highlight the magnitude of this trend (7.3 million pediatric SA/SI visits over 9 years).

Among the study limitations, it is possible that nonsuicidal self-harm was incorrectly coded by physicians as SA/SI. The NHAMCS validation processes minimize data misclassification; however, coding processes may miss cases in which suicidal intent was not elicited, possibly underestimating SA/SI visits. We analyzed SA/SI together; however, SA and SI are different behaviors and likely exist along a spectrum for the risk of future death by suicide. The analysis that was restricted to SA alone revealed a similar trend. No conclusions can be drawn regarding the cause for the observed increase, which is likely multifactorial. We studied only ED visits and not office-based encounters.

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Pregnant women and developing fetuses are vulnerable to exposure to tobacco products. Some animal studies have shown that maternal use of electronic cigarettes (e-cigarettes) adversely affects offspring's lung development and cognitive

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function. There is an urgent need for clinical and epidemiologic studies of e-cigarette use during pregnancy. Estimating the prevalence of e-cigarette use among pregnant women is critical to inform future research and policy. Previous studies have reported national prevalence of e-cigarette use among general adult populations. However, less is known about e-cigarette use in pregnant women. We used nationally representative data from the National Health Interview Survey (NHIS) to estimate the prevalence of e-cigarette and conventional cigarette use among pregnant women and nonpregnant women aged 18 to 44 years in the United States.

Methods | The NHIS is a nationally representative annual survey of the noninstitutionalized civilian US population. The NHIS collects information about health-related topics through household interviews. Women of reproductive age are also asked whether they are currently pregnant. The University of Iowa institutional review board determined that the current study was exempt from approval because of the use of deidentified data.

Since 2014, NHIS participants have been asked the following question about their lifetime use of e-cigarettes: “Have you ever used an e-cigarette, even one time?” Adults who answer in the affirmative are then asked, “Do you now use e-cigarettes every day, some days, or not at all?” Current use of e-cigarettes is defined as using e-cigarettes every day or some days. In addition, all participants are asked about their lifetime and current use of conventional cigarettes.

We estimated the prevalence of ever and current use of e-cigarettes and conventional cigarettes from 2014 to 2017, with survey weights to account for unequal probability of selection and nonresponse. We calculated age-adjusted estimates for nonpregnant women by direct standardization according to the age distribution of pregnant women. Differences were calculated using the Rao-Scott χ² test with an adjusted F statistic. All data analyses were conducted using survey procedures in SAS 9.4 (SAS Institute). Two-sided P <.05 was considered statistically significant.

Results | This analysis included 27,920 women aged 18 to 44 years (1071 pregnant women and 26,849 nonpregnant women). The weighted prevalence (standard error [SE]) of current conventional cigarette use was significantly lower among pregnant women (8.0% [2.4%]) than among nonpregnant women (14.3% [0.4%]; P = .01 for difference). However, the weighted prevalence (SE) of current e-cigarette use was not significantly different between pregnant women (3.6% [2.4%]) and nonpregnant women (3.3% [0.2%]; P = .92 for difference) (Figure 1). The prevalence of current e-cigarette use differed substantially by conventional cigarette smoking status (Figure 2). Among pregnant women, the weighted prevalence (SE) of current e-cigarette use was 38.9% (19.0%) among current conventional cigarette smokers, 1.3% (1.0%) among former smokers, and 0.3% (0.3%) among never smokers. Among nonpregnant women, the weighted prevalence of current e-cigarette use was 13.5% (0.8%) for current conventional cigarette smokers, 8.8% (1.0%) for former smokers, and 0.7% (0.1%) for never smokers.

Discussion | Using data from a national leading health survey, this study provided the first national estimates of e-cigarette use among US pregnant women and nonpregnant women of reproductive age. Previous studies on the prevalence of e-cigarette use during pregnancy are sparse, and none of the previous studies was based on a nationally representative sample. In this study, although the prevalence of current conventional cigarette use was significantly lower in pregnant women than in nonpregnant women, the prevalence of current e-cigarette use was almost identical between pregnant and nonpregnant women. The prevalence of current e-cigarette use was high among pregnant women who currently used conventional cigarettes.
cigarettes. It is possible that some pregnant women perceived e-cigarettes as a safe alternative to conventional cigarettes. In addition, some women who used conventional cigarettes might have switched to e-cigarettes in pregnancy as a means of smoking cessation.6 A major limitation of this study is the limited sample size for pregnant women, although the overall sample size was large. As a result, the precision of the prevalence estimates among pregnant women may be limited. Further investigation with a larger sample size is warranted. Longitudinal studies starting from the preconception period are needed to determine the changing patterns in e-cigarette and conventional cigarette use among pregnant women.

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Association of Caloric Intake From Sugar-Sweetened Beverages With Water Intake Among US Children and Young Adults in the 2011-2016 National Health and Nutrition Examination Survey

Sugar-sweetened beverages (SSBs) add empty calories to children’s diets1 and may increase the risk of weight gain, obesity, and diabetes.2 Substituting water for SSBs may reduce total energy intake.3 Furthermore, school-based interventions to displace SSBs by increasing water access were associated with decreased body mass index.4 However, how water consumption in daily life is associated with children’s caloric intake from SSBs is unclear. We examined whether the number of calories and percentage of total energy intake from SSBs differs among US children by water intake status on a given day.

Methods | The National Health and Nutrition Examination Survey (NHANES) uses a complex, multistage probability design to obtain representative samples of the noninstitutionalized civilian US population. This analysis used data from the 2011 to 2016 NHANES cross-sectional survey waves. Response rates ranged from 77.0% (2011-2012) to 64.6% (2015-2016). NHANES is approved by the research ethics review board of the National Center for Health Statistics. Parents provided written informed consent, and children aged 7 to 17 years provided written assent.

An in-person 24-hour dietary recall was assessed using the automated multiple-pass method in the mobile examination center by trained interviewers with the assistance of caretakers for children 11 years or younger.5 A single 24-hour recall allowed estimates of population means and differences between groups6 on a given day. Methods to classify SSBs (sodas, fruit drinks, sports and energy drinks, sweetened coffees and teas, and other) followed those of previous analyses.7 Calories were summed to estimate total energy intake from SSBs and divided by total caloric intake to estimate the contribution of SSBs to daily total energy intake. Plain water was defined as tap or nonsweetened, noncarbonated bottled water. Children with water intake of more than 0 mL were categorized as drinking water; those with 0 mL as not.

Linear regression models estimated associations between water intake status and the number of calories and percentage of total daily energy intake from SSBs across race/ethnicity (non-Hispanic white, non-Hispanic black, non-Hispanic Asian, or Hispanic) and age (2-5, 6-11, or 12-19 years; categorized based on NHANES sample selection) adjusted for sex and federal income to poverty ratio ≤130%, 131%-350%, or >350%. Interactions between these covariates and water intake status were tested. Regressions were plotted using marginal standardization. Statistical significance was set at 2-sided P < .05. Dietary day 1 sample weights were used to adjust for day of week, oversampling, nonresponse, noncoverage, and loss of participants from being screened, to the interview, to the examination component. Survey analyses were conducted in Stata software, version 15.1 (StataCorp).