South Dakota 2021 PRAMS Surveillance Data Report

SOUTH DAKOTA DEPARTMENT OF HEALTH

January 2024

Executive Summary

The 2021 PRAMS survey gave South Dakota women an opportunity to share their experiences as part of an effort to improve the health of mothers, babies, and families in South Dakota. The data presented supports efforts to reduce infant mortality and improve maternal health by describing needs, focusing interventions, influencing clinical practice, and shaping policy and budget development. Below is a summary of prevalence rates associated with various behaviors and health factors. Demographic characteristics and risk factors/outcomes associated with some of these behaviors and health factors are summarized in the Data Tables section of this report.

Preconception care

- 67.2% of mothers visited a health care worker the 12 months *before* pregnancy.
- 16.7% of mothers visited a health care worker the 12 months before pregnancy *and* talked with a health care worker about improving their health before pregnancy.

Preconception health

- 40.4% of mothers exercised three or more days/week for fitness the *12 months before pregnancy.*
- Prevalence of other health-related activities done the *12 months before pregnancy* included talking to a health care worker about family medical history (31.2%), dieting to lose weight (27.5%), regularly taking prescription medicines other than birth control (24.3%) and being checked for diabetes (12.2%).
- Among women with a previous birth, 14.1% had their current infant within 18 months of the previous child.

Pregnancy intention & birth control use

- 59.3% of mothers had an intended pregnancy (were trying to get pregnant). The Healthy People 2030 target is 63.5%.
- Among women who were not trying to get pregnant, 61.8% were not using birth control at conception.

Nutrition & weight

- 39.1% of mothers were taking a vitamin daily the *month before pregnancy.*
- Among women not taking vitamins daily, the top two reasons for *not* taking vitamins daily were that the mother was not planning on becoming pregnant (59.0%) and she did not think she needed vitamins (37.7%).
- 44.0% of mothers had a healthy body mass index before pregnancy. The Healthy People 2030 target is 47.1%.
- 54.2% of South Dakota mothers were overweight or obese.

Medical risk factors (depression and gestational diabetes)

- 21.0% of mothers reported having depression the *three months before pregnancy.*
- 20.7% of mothers reported having depression *during pregnancy*.
- 14.9% of mothers had gestational diabetes.

Prenatal care: entry, adequacy, and barriers

- 87.3% of mothers began prenatal care in the first trimester.

- 83.8% of mothers attended 80% or more of their prenatal care visits.
- 83.8% of mothers received early and adequate prenatal care based on the Kotelchuck Index. The Healthy People 2030 target is 80.5%.
- Among women who received prenatal care, 89.6% started prenatal care as early as they wanted.
- The top two reasons mothers reported for not getting prenatal care or not getting prenatal care as early as they wanted included not knowing they were pregnant (31.1%), and they could not get an appointment when they wanted (28.8%).
- Among women who received prenatal care, 92.4% self-reported going to all their recommended prenatal visits.
- The top two barriers among women who received prenatal care and were not able to attend all their recommended visits included having too many other things going on (46.0%) and not having transportation to get to the clinic or office (38.8%).

Flu vaccinations

- 69.4% of mothers received a flu vaccine the *12 months before the delivery* of the infant (16.5% before pregnancy and 52.9% during pregnancy). The Healthy People 2030 recommendation is 70%.

Oral health

- 45.2% of mothers had their teeth cleaned *during their most recent* pregnancy. The Healthy People 2030 recommendation is 45.0%.
- The top two barriers to dental care were not being able to afford to go (17.2%) and not thinking it was safe to go to the dentist during pregnancy (9.4%).

Abuse

- 4.5% of mothers reported being physically abused before and during pregnancy by their partner or husband.
- 2.1% of mothers reported being sexually abused during pregnancy by their partner or husband.
- 5.8% of mothers reported being emotionally abused during pregnancy.

Tobacco, quit status and infant environmental smoke exposure

- 19.5% of mothers smoked in the *three months before pregnancy*.
- 9.8% of mothers smoked in the *last three months of pregnancy.* The Healthy People 2030 target is 4.3% *(adapted – see Chapter 11).*
- Among mothers who smoked in the *three months before pregnancy*, the top two barriers to quitting included cravings for a cigarette (63.4%) and loss of a way to manage stress (50.8%).
- Among mothers who smoked prior to pregnancy and quit during pregnancy, the relapse rate (restarted smoking at the time of the survey) was 40.5%.
- 9.2% of mothers used e-cigarettes or other electronic nicotine products in the *two years before pregnancy*.
- 98.3% of mothers stated that their infant was not in an enclosed space with someone who smoked in the previous week.

Alcohol & Drug Use

- 66.5% of mothers drank in the *three months before pregnancy*.

- Among women who drank in the *three months before pregnancy*, 39.0% drank four alcoholic drinks or more in a 2-hour time span (binge drinking) at least one time.
- 11.8% of mothers drank in the *last three months of pregnancy.* The Healthy People 2030 target is 7.8% *(adapted – see Chapter 14).*
- 11.0% of mothers used an illicit drug *before* pregnancy.
- 5.9% of mothers used an illicit drug *during* pregnancy.

Breastfeeding

- 89.8% of mothers ever breastfed.
- 72.4% of mothers breastfed at least two months.
- Mothers reported that the two most common sources of information about breastfeeding included the mother's doctor (79.2%) and a nurse, midwife, or doula (73.5%).
- The top two reasons for stopping breastfeeding included the mother thinking she was not producing enough milk, or milk dried up (55.0%) and baby had difficulty latching or nursing (32.6%).

Infant health

- 10.1% of all mothers had a preterm birth. The Healthy People 2030 target is 9.4%.
- 9.4% of mothers had a singleton infant that was born preterm.
- 5.0% of mothers had a singleton infant with a low birth weight (< 2,500 grams).
- 73.3% of infants stayed in the hospital two days or less following birth.

Infant safe sleep

- 89.4% of mothers *placed their infant on his or her back to sleep*. The Healthy People 2030 target is 88.9%.
- 43.9% of mothers *placed their infants on an approved sleep* surface (HRSA definition).
- 60.3% of mothers most often *laid their infant to sleep without soft objects or loose bedding.*
- 46.5% of mothers' *infants room-shared without bed-sharing.*

Postpartum health and birth control use

- 90.9% of mothers attended a postpartum visit.
- 11.1% of mothers had indications of postpartum depression.
- Among women who were not pregnant or trying to get pregnant *at the time of the survey*, 21.0% were not using contraceptives, 24.8% were using the least effective contraceptives, 24.3% were using moderately effective contraceptives, and 30.0% were using the most effective contraceptives.
- The top two reasons for not using birth control as reported by the mother was not wanting to use birth control (56.5%) and being worried about side effects from birth control (32.0%).

Adverse Childhood Experiences (ACEs)

- 21.8% of mothers had a high ACE score (4+).

Health insurance

- 11.4% of mothers were uninsured *before pregnancy*.
- 2.9% of mothers were uninsured *during pregnancy* and 8.6% of mothers had no insurance *after the delivery*.

Household income and poverty

- 26.6% of mothers had household incomes at or below 100% of the Federal Poverty Level (FPL).

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Most importantly, a special thank you to the mothers who responded to this survey to help improve the health of all mothers and babies in South Dakota.

This report is available at: https://doh.sd.gov/health-data-reports/maternal-child-health/pregnancy-risk-assessment-monitoring-system-prams

Introduction

Quotes from 2021 SD PRAMS mothers:

- *"I really like being a mother and I had a lot of resources to help me with my pregnancy."*
- *"Pregnancy is a beautiful process if we know how to take it with the responsibility that it requires."*
- *"The medical care they gave me before, during and after my pregnancy was and has been very good and in terms of personal health, I think that each person is responsible for taking care of themselves and taking all the measures and precautions to be healthier avoiding things or activities that affect both ourselves and our babies."*

The health status of South Dakotans is commonly reported from public health surveillance surveys. Surveys such as the Behavioral Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Surveillance System (YRBSS) provide information that is used by policy makers, public health professionals, advocacy groups, health care organizations, and others to develop initiatives to improve the health of the population. South Dakota has one of the highest infant mortality rates in the U.S. yet there are little data available on factors that influence health behaviors and attitudes of mothers that can ultimately influence birth outcomes. The Pregnancy Risk Assessment Monitoring System (PRAMS) survey is a Centers for Disease Control and Prevention (CDC) recommended surveillance tool that is used to provide this type of information.

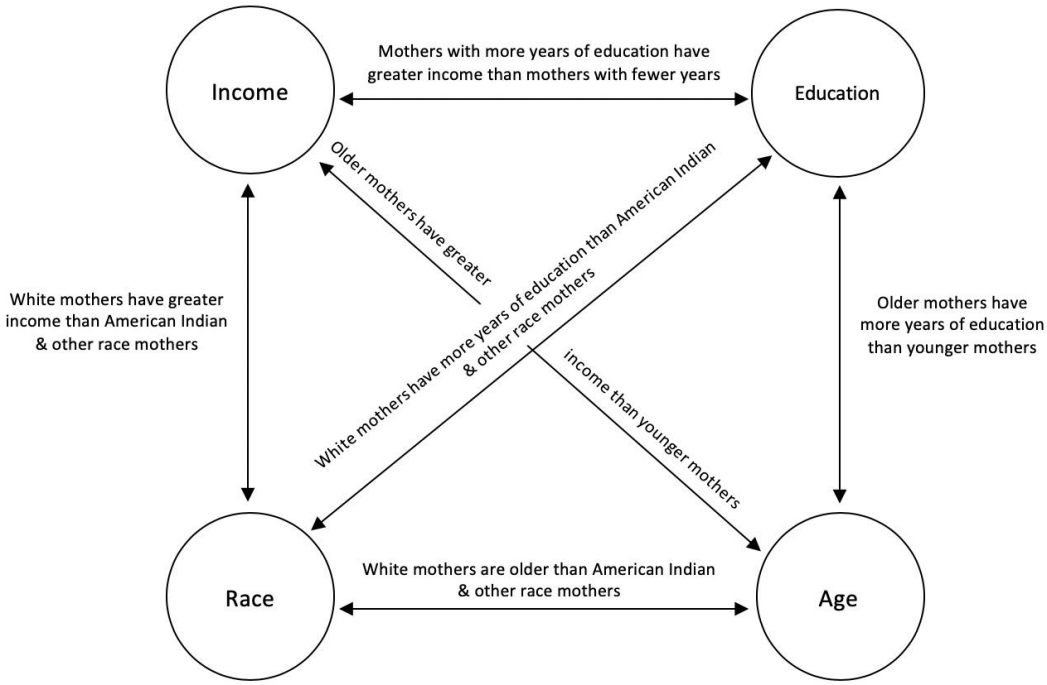
The CDC established the PRAMS in 1987 to obtain information about maternal behavior and experiences that may be associated with adverse birth outcomes. The survey is disseminated to women who have recently given birth to live-born infants. In 2021, 46 states (including South Dakota), New York City, Northern Mariana Islands, Puerto Rico, and the District of Columbia participated in PRAMS.

A random sample of South Dakota residents who delivered a live-born infant in 2021 was selected from birth certificate files to complete the survey through mail, online or by telephone. American Indian and other race infants were oversampled to ensure sufficient numbers to obtain reliable estimates. Data were collected on a variety of topics that included: intendedness of pregnancy, access to prenatal care, health insurance, infant sleeping positions, medical problems during pregnancy, delivery of the infant, and health-related behaviors of the mother (e.g., smoking and alcohol use). Most of the questions came from the CDC PRAMS core and standardized questions. In addition, questions about illicit drug use and adverse childhood experiences (ACEs) were added due to the increasing prevalence of drug use and the recognition of the role of stress in early life on adult behaviors and health.

The 2021 PRAMS survey provides information for South Dakota to assess overall pregnancy experiences and maternal health behaviors, and data may be used to develop, modify, or evaluate programs for new mothers and their children. Furthermore, the PRAMS survey will provide useful data to assess future trends in problematic areas. The current report includes data from the 2017, 2018, 2019, 2020, and 2021 PRAMS surveys for trend analysis.

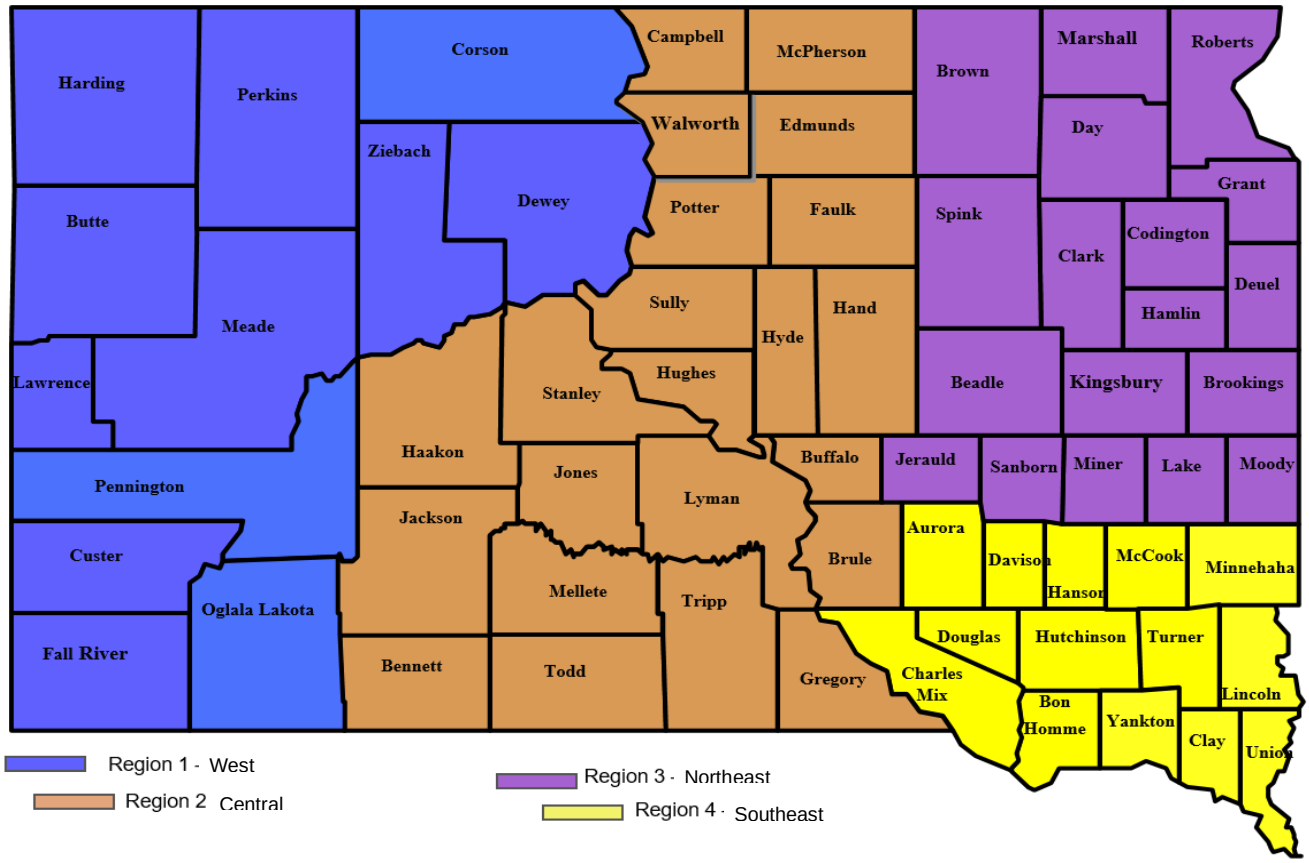
In each chapter, a table is provided displaying the statewide prevalence rates of various characteristics, along with ***trends over time*** and prevalence rates by ***demographic characteristics*** (race, ethnicity, age, education, marital status, annual income, and region of the state). The association between the characteristic and selected risk factors, attitudes, behaviors, or outcomes of interest are

also included. ***Risk factors, or specific attitudes, behaviors, or outcomes*** included: unintended pregnancy, no insurance before pregnancy, smoking or drinking before pregnancy, illicit drug use before pregnancy, maternal obesity, delay or no prenatal care, attending less than 80% of prenatal visits, teeth not cleaned during pregnancy, emotional abuse during pregnancy, medical conditions [diabetes, hypertension, depression] diagnosed during pregnancy, caesarean section, low or high birthweight, preterm birth, NICU admission, never breastfeeding, not sleeping alone in room with the mother, the infant being exposed to smoke, and ACE score of 4 or greater. Unless otherwise noted (e.g., Chapter 17) the characteristics, risk factors, and outcomes shown are presented for all births. The associations between the outcomes and demographic characteristics and risk factors are summarized in the Appendix. The statistical significance of these associations that are presented does not account for relationships with other characteristics. Such interconnected relationships better describe the roles of potential risk factors, but the necessary evaluations are complex. The diagram below shows the associations among four of the seven demographic characteristics that are described. Ethnicity, marital status, and insurance status also were associated with these four characteristics as well as each other.



To determine which demographic characteristics or risk factors are *independently* associated with a specific outcome, a more complex statistical approach needs to be taken, which is beyond the scope of this report. However, it is important to consider these interrelationships when interpreting associations between the behaviors and attitudes that are presented and the demographic characteristics and risk factors. For example, there are racial disparities in factors known to be associated with smoking (young maternal age, lack of education, poverty) and race differences that may be observed in smoking rates may be explained by racial disparities in these other factors. In fact, that is what we found with the South Dakota 2014 PRAMS-like survey.[1] Once the influence of maternal age, lack of education, and poverty were controlled statistically, race differences in cigarette smoking were no longer apparent.

Map of health regions of South Dakota used in this report:



In addition to describing the prevalence of various behaviors and attitudes by demographic characteristics (maternal race, ethnicity, age, education, marital status, household income), the prevalence is also given by region of the state that the mother resides. The map above defines the counties that are included in each region.

Data Tables

Chapter 1: Preconception care

Significance

Preconception care focuses on management of behavioral risk factors and chronic diseases that can lead to increased risk of adverse birth outcomes such as still births, birth defects, low birthweight, preterm birth, infant death, and sudden infant death syndrome (SIDS).[2,3]

PRAMS asked women:

Q10 In the *12 months before* you got pregnant with your new baby, did you have any health care visits with a doctor, nurse, or other health care worker, including a dental or mental health worker?

Q11 What type of health care visit did you have in the *12 months before* you got pregnant with your new baby? [List]

Q12 During any of your health care visits in the *12 months before* you got pregnant, did a doctor, nurse, or other health care worker do any of the following things? [List]

Measure	% of women (95% CI, N)
Preconception care*	
Visited a health care worker the 12 months before pregnancy	67.2 (64.0-70.3, 10703)
Visited a health care worker the 12 months before pregnancy *and* talked about preparing for a healthy pregnancy	16.7 (14.2-19.6, 10707)
A*mong those women* who visited a health care worker the 12 months before pregnancy, the visit was a:	
Regular checkup at family doctor's office	45.2 (40.8-49.7, 7176)
Regular checkup at OB/GYN office	49.2 (44.7-53.6, 7176)
Visit for an illness or chronic condition	19.2 (15.9-23.1, 7176)
Visit for an injury	3.7 (2.4-5.8, 7176)
Visit for family planning or birth control	13.8 (11.0-17.2, 7176)
Visit for depression or anxiety	17.8 (14.6-21.4, 7176)
Visit to have teeth cleaned by a dentist or dental hygienist	65.5 (61.2-69.5, 7172)
***Among those women* who visited a health care worker the 12 months before pregnancy, the preconception care topics included:**	

Told to take a vitamin with folic acid	33.8 (29.7-38.2, 7173)
Talked about maintaining a healthy weight	32.1 (28.1-36.4, 7230)
Talked about controlling any medical conditions such as diabetes or high blood pressure	11.6 (9.2-14.5, 7168)
Talked about desire to have or not have children	40.2 (35.9-44.7, 7166)
Talked about using birth control to prevent pregnancy	37.3 (33.2-41.7, 7162)
Talked about improving health before pregnancy	24.8 (21.2-28.9, 7198)
Talked about sexually transmitted infections such as chlamydia, gonorrhea, or syphilis	22.0 (18.8-25.7, 7148)
Asked about smoking cigarettes	76.5 (72.4-80.1, 7180)
Asked if someone was hurting them emotionally or physically	62.6 (58.1-66.8, 7156)
Asked if they were feeling down or depressed	65.1 (60.7-69.3, 7169)
Asked about the kind of work they did	63.8 (59.4-68.0, 7133)
Tested for HIV (the virus that causes AIDS)	15.7 (13.0-18.9, 7164)

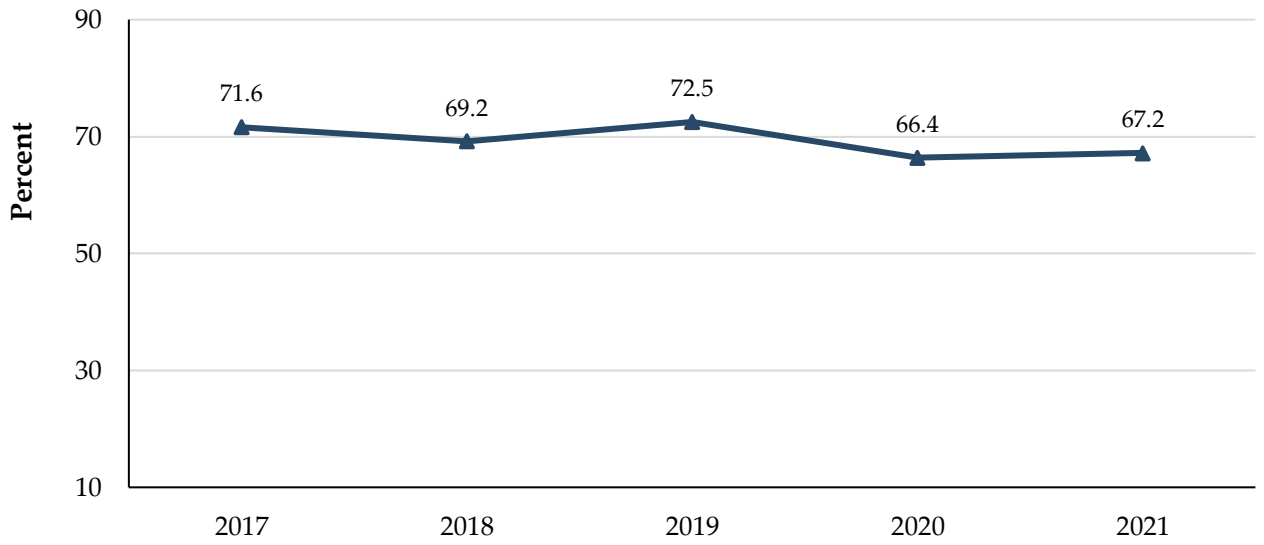
*Denominator includes all mothers (population-based estimate).

Visited a Health Care Worker the 12 Months Before Pregnancy

Prevalence and Trends (Figure 1.1)

The percentage of South Dakota mothers who visited a health care worker the *12 months before* pregnancy has decreased over time (p-value for linear trend less than 0.05).

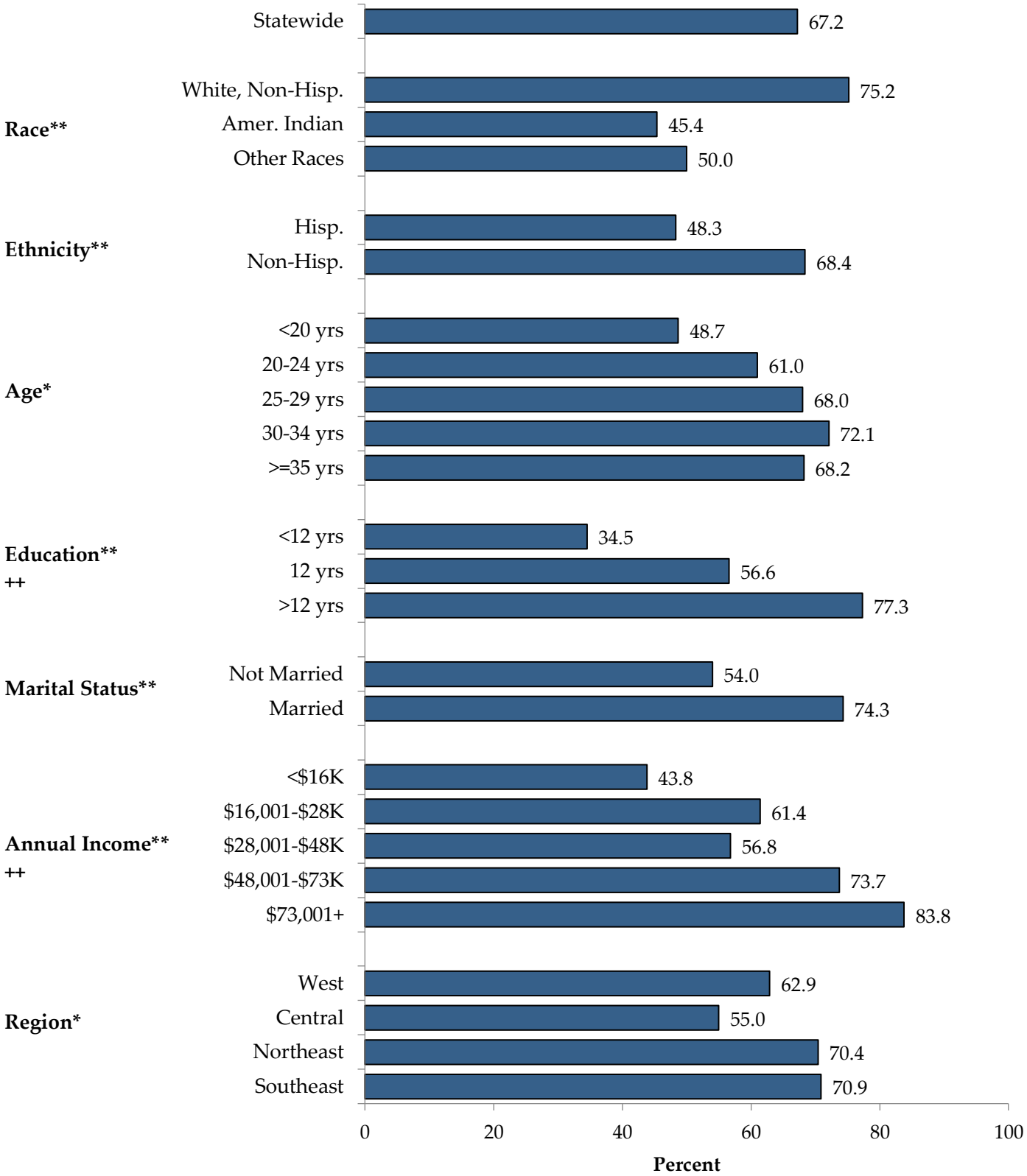
Figure 1.1: Mothers who visited a health care worker the 12 months before pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 1.2)

- Overall prevalence of South Dakota mothers who visited a health care worker the *12 months before* pregnancy was 67.2%.
- All demographic characteristics assessed were significantly (p-value less than 0.05) associated with visiting a health care worker the 12 months before pregnancy including maternal race, ethnicity, age, education, marital status, household income, and region.
- Mothers who were white, non-Hispanic, older, had more years of education, married, and had a higher household income had higher prevalence of visiting a health care worker the 12 months before pregnancy compared with their counterparts. Mothers who resided in the Northeast and Southeast had the highest prevalence of visiting a health care worker in the 12 months before pregnancy.

Figure 1.2: Percentage of mothers who visited a health care worker the 12 months before pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.

++ p-value <0.01, based on logistic regression results for linear trend

Risk Behaviors and Outcomes (Figure 1.3)

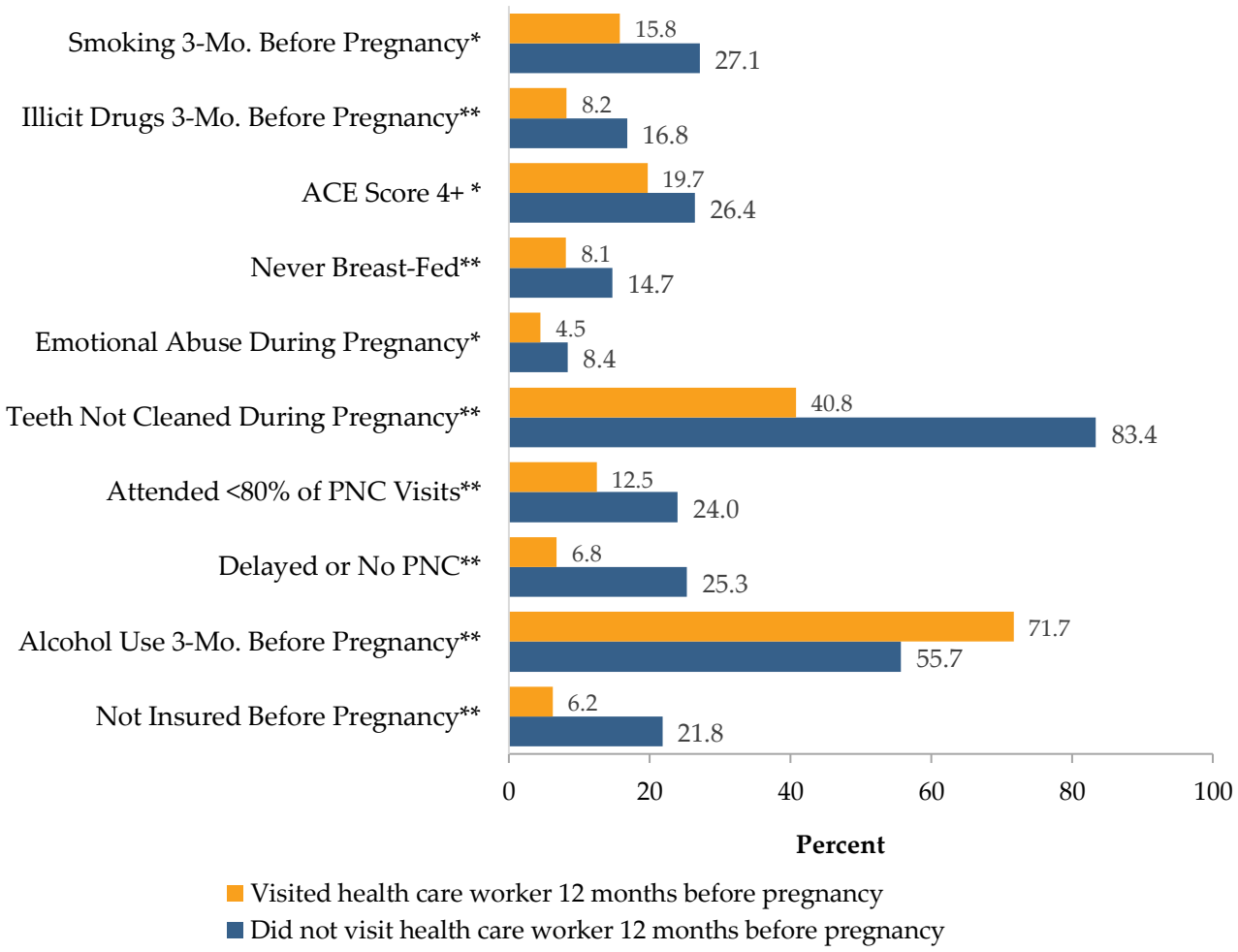
Mothers who visited a health care worker the *12 months before* pregnancy, compared to mothers who *did not* visit a health care worker, were significantly (p-value less than 0.05) *more likely* to report that:

- They drank alcohol the 3 months before pregnancy (71.7% vs. 55.7%).

Mothers who visited a health care worker the *12 months before* pregnancy, compared to mothers who *did not* visit a health care worker, were significantly (p-value less than 0.05) *less likely* to report that:

- They were uninsured before pregnancy (6.2% vs. 21.8%).
- They smoked the 3 months before pregnancy (15.8% vs. 27.1%).
- They used illicit drugs the 3 months before pregnancy (8.2% vs. 16.8%).
- They started prenatal care after the first trimester or had no prenatal care (6.8% vs. 25.3%).
- They attended fewer than 80% of their prenatal visits (12.5% vs. 24.0%).
- They did not have their teeth cleaned during pregnancy (40.8% vs. 83.4%).
- They suffered emotional abuse during pregnancy (4.5% vs. 8.4%).
- They never breastfed their infant (8.1% vs. 14.7%).
- They had a high ACE score (4+) (19.7% vs. 26.4%).

Figure 1.3: Significant risk behaviors and outcomes by mother visiting a health care worker the 12 months before pregnancy, South Dakota, 2021 (weighted)



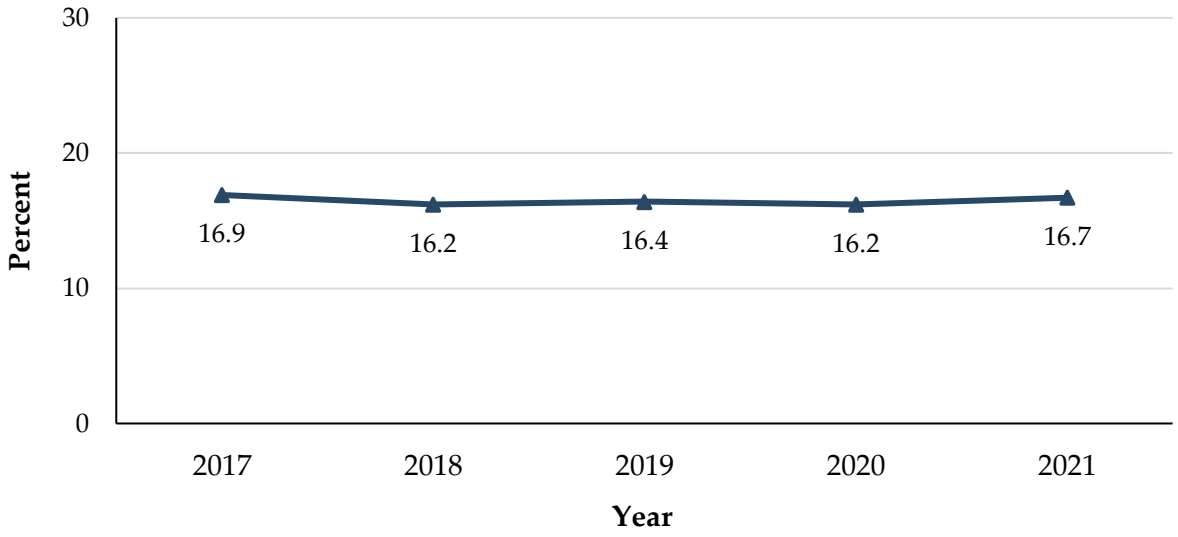
* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test; PNC = prenatal care

Preconception Care

Prevalence and Trends (Figure 1.4)

The percentage of South Dakota mothers who visited a health care worker the *12 months before* pregnancy *and* who talked with health care worker about improving their health before pregnancy has not changed over time (p-value for linear trend greater than 0.05).

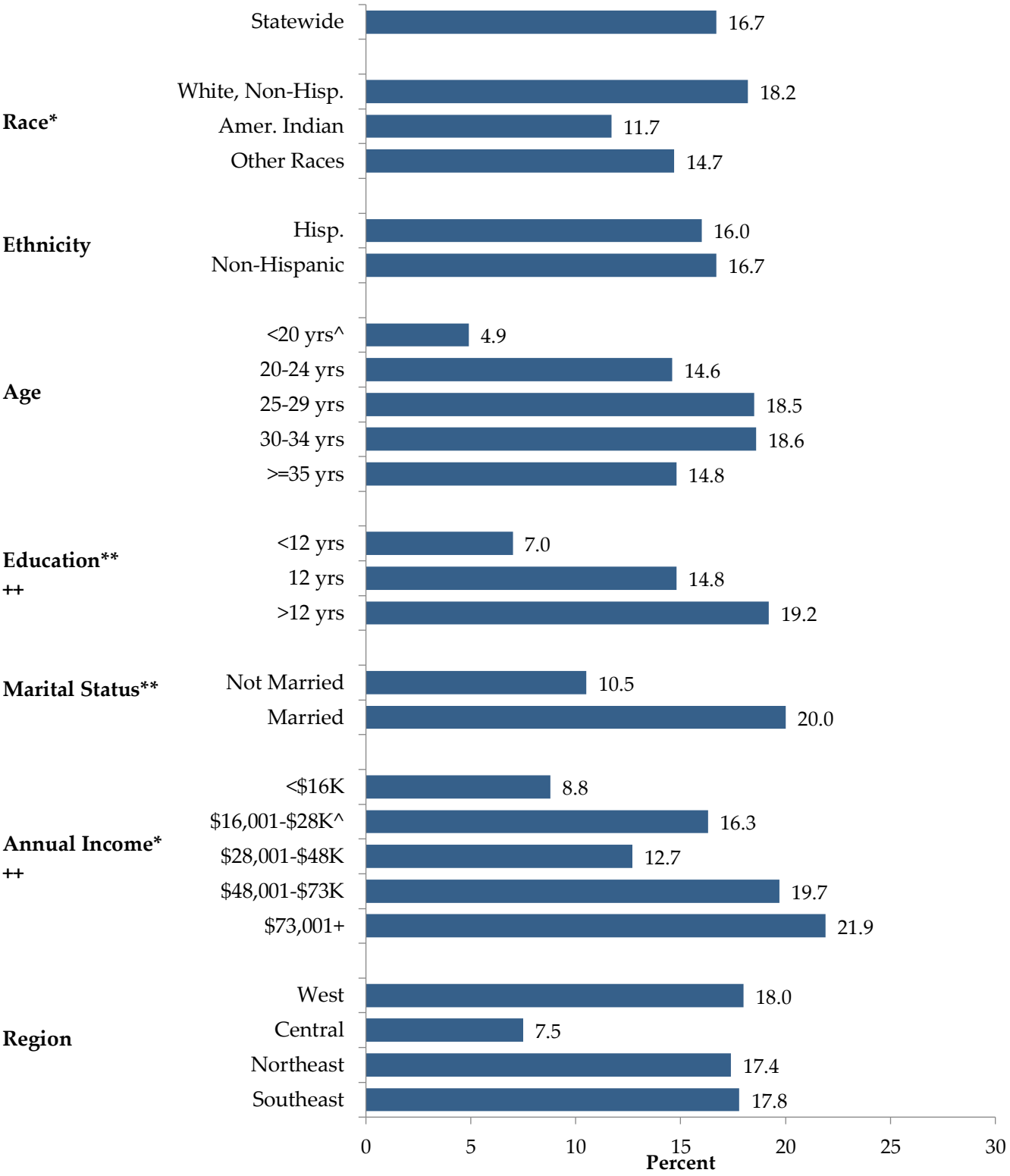
Figure 1.4: Mothers who visited a health care worker the 12 months before pregnancy and who talked with health care worker about improving their health before pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 1.5)

- Overall prevalence of South Dakota mothers who visited a health care worker the *12 months before* pregnancy *and* who talked with healthcare worker about improving their health before pregnancy was 16.7%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with talking with a health care worker about improving health before pregnancy included maternal education, maternal race, marital status, and household income.
- Mothers who had a higher education level, were white, married, and higher household income had a higher prevalence of talking to a healthcare worker about improving their health before pregnancy.

Figure 1.5: Percentage of mothers who visited a health care worker the 12 months before pregnancy and talked with health care worker about improving health before pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value <0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Risk Behaviors and Outcomes (Figure 1.6)

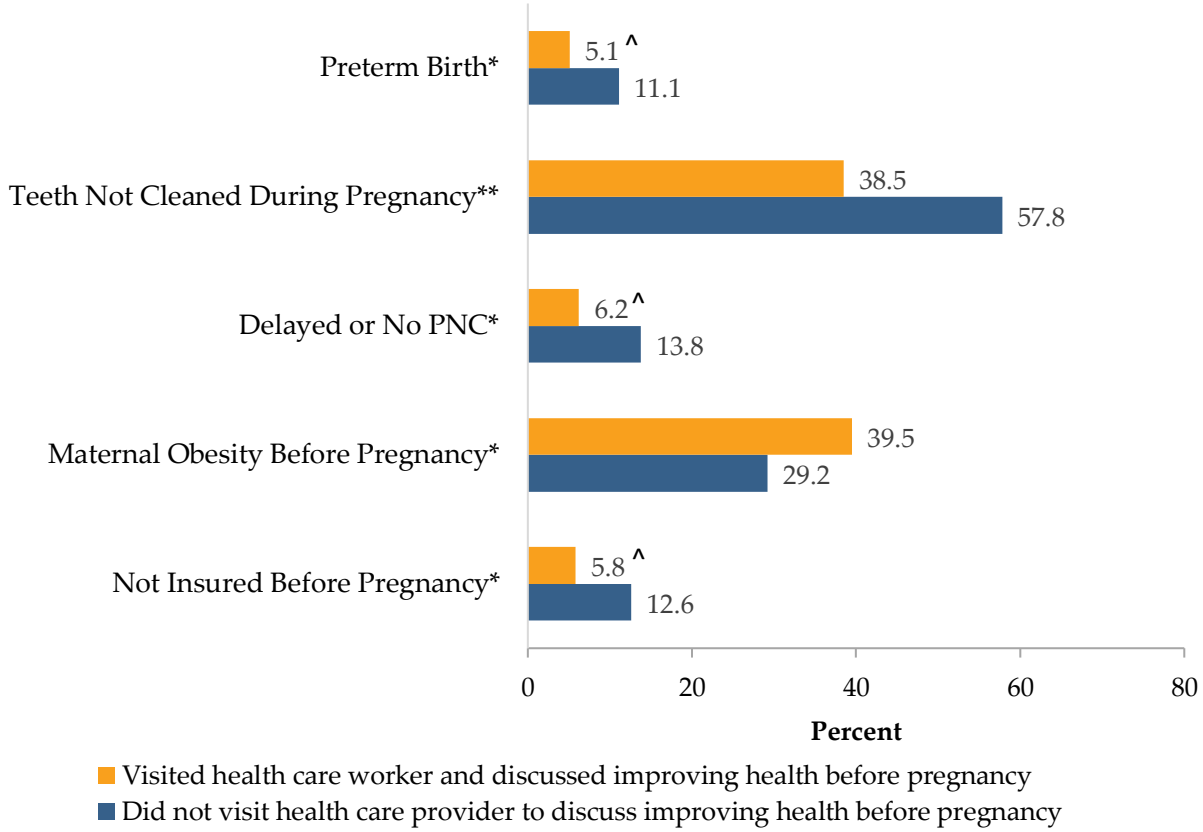
Mothers who visited a health care provider the 12 months before pregnancy about improving their health before pregnancy, compared to mothers who *did not* visit with a provider or talk about improving their health before pregnancy, were significantly (p-value less than 0.05) *more likely* to report that:

- They had obesity before pregnancy (39.5% vs. 29.2%).

Mothers who visited a health care provider the 12 months before pregnancy about improving their health before pregnancy, compared to mothers who *did not* visit with a provider or talk about improving their health before pregnancy, were significantly (p-value less than 0.05) less likely to report that:

- They were not insured before pregnancy (5.8% vs. 12.6%; interpret these percentages with caution).
- They started prenatal care after the first trimester or had no prenatal care (6.2% vs. 13.8%; interpret these percentages with caution).
- They did not have teeth cleaned during pregnancy (38.5% vs. 57.8%).
- They had a preterm birth (5.1% vs. 11.1%; interpret these percentages with caution).

Figure 1.6: Significant risk behaviors and outcomes by mother visiting a health care worker about improving her health before pregnancy, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Chapter 2: Preconception health

Significance

Preconception health is important for healthy birth outcomes. A national action plan for promoting preconception health notes the importance of physical activity, routine health checkup in the 12 months before pregnancy, maintaining a healthy weight and diabetes screening.[2] Interpregnancy intervals shorter than 18 months are associated with adverse pregnancy outcomes, especially among women aged 35 years and older.[4]

PRAMS asked women:

Q6 At any time during the *12 months before* you got pregnant with your new baby, did you do any of the following things? [List]

Q5 What is the age difference between your *new* baby and the child you delivered *just before* your new one?

Healthy People 2030 related measure*

- Reduce the proportion of pregnancies conceived within 18 months of a previous birth to 26.9% (FP-02)

Measure	% of women (95% CI, N)	
Health-related activities done during the *12 months before* pregnancy		
Exercised 3 or more days/week for fitness outside of regular job	40.4	(37.0-44.0, 10693)
Talked to a health care worker about family medical history	31.2	(28.0-34.6, 10697)
Dieting to lose weight	27.5	(24.4-30.8, 10662)
Regularly taking prescription medicines other than birth control	24.3	(21.3-27.5, 10684)
Checked for diabetes	12.2	(10.3-14.4, 10666)
Among women who had a previous birth, age difference between last child and most recent baby		
0 to 12 months	2.4	(1.6-3.6, 7085)
13 to 18 months	11.7	(9.3-14.6, 7085)
19 to 24 months	15.2	(12.2-18.6, 7085)
2 to 3 years	24.6	(21.0-28.6, 7085)
3 to 5 years	28.7	(24.9-32.7, 7085)
More than 5 years	17.5	(14.5-20.8, 7085)

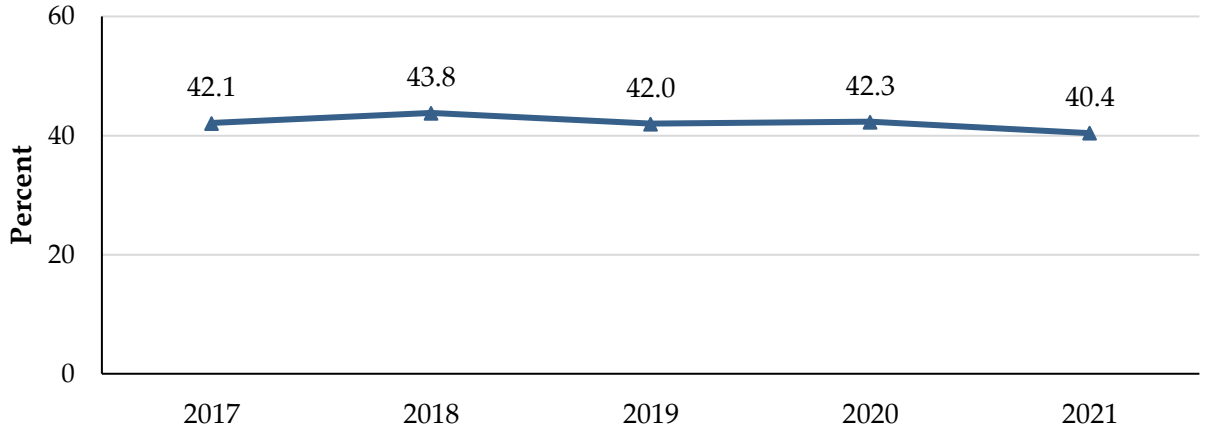
**Healthy People 2030 measure was not directly assessed in 2021 SD PRAMS data. Conception interval will be assessed in 2022 SD PRAMS data.*

Exercised 3 or More Days/Week for Fitness the 12 Months Before Pregnancy

Prevalence and Trends (Figure 2.1)

The percentage of South Dakota mothers who were exercising 3 or more days/week for fitness the 12 months before pregnancy has not changed over time (p-value for linear trend greater than 0.05).

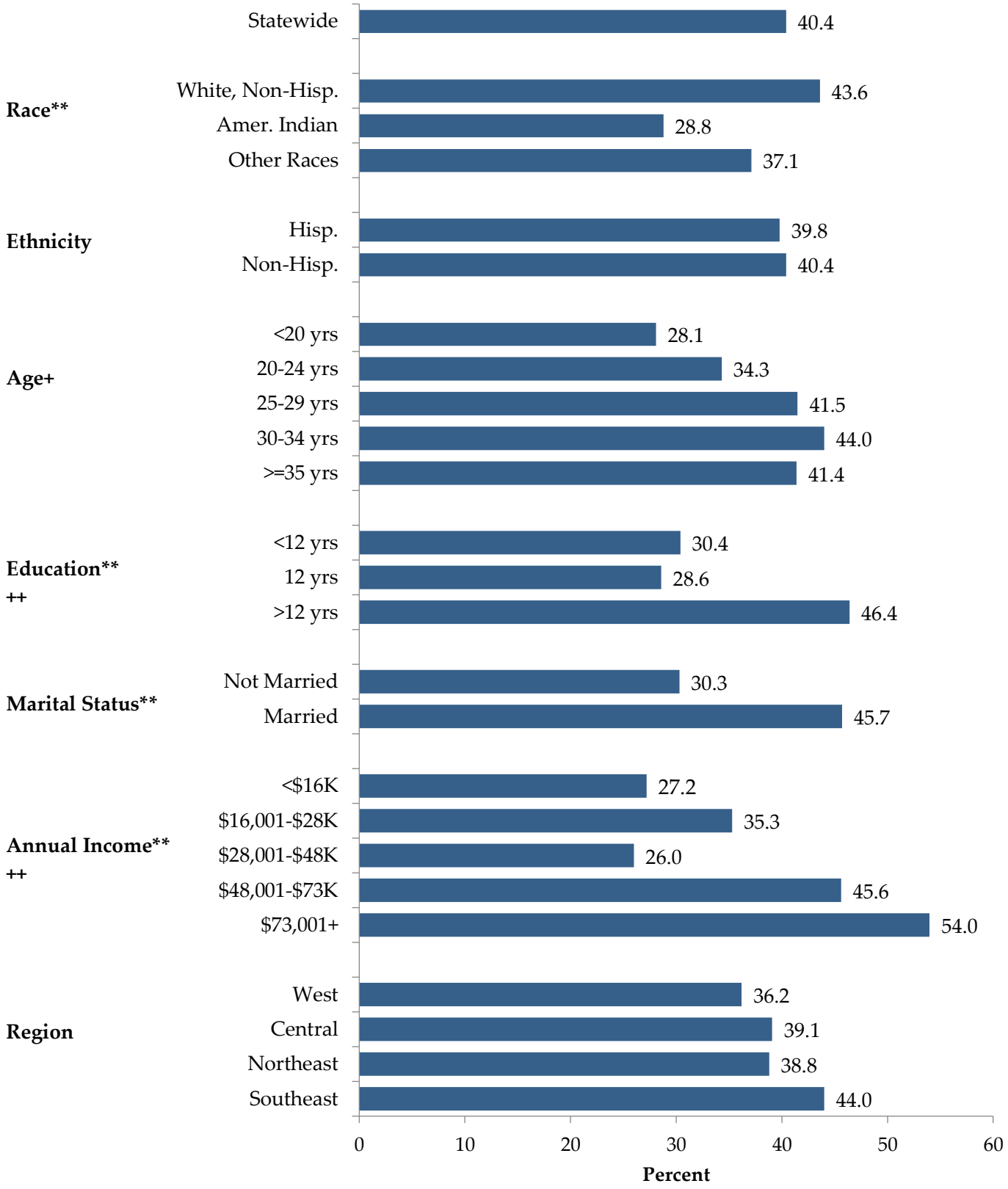
Figure 2.1: Mothers who were exercising three or more days/week for fitness the 12 months before pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 2.2)

- Overall prevalence of South Dakota mothers who were exercising 3 or more days/week for fitness the 12 months before pregnancy was 40.4%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with exercising 3 or more days/week for fitness the 12 months before pregnancy included maternal race, education, marital status, and household income.
- Mothers who were white, had more years of education, were married, and had greater household income had a higher prevalence of exercising 3 or more days/week for fitness in the 12 months before pregnancy compared with their counterparts.

Figure 2.1: Percentage of mothers who were exercising three or more days/week for fitness the 12 months before pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.
+ p-value <0.05; ++ p-value < 0.01, based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 2.3)

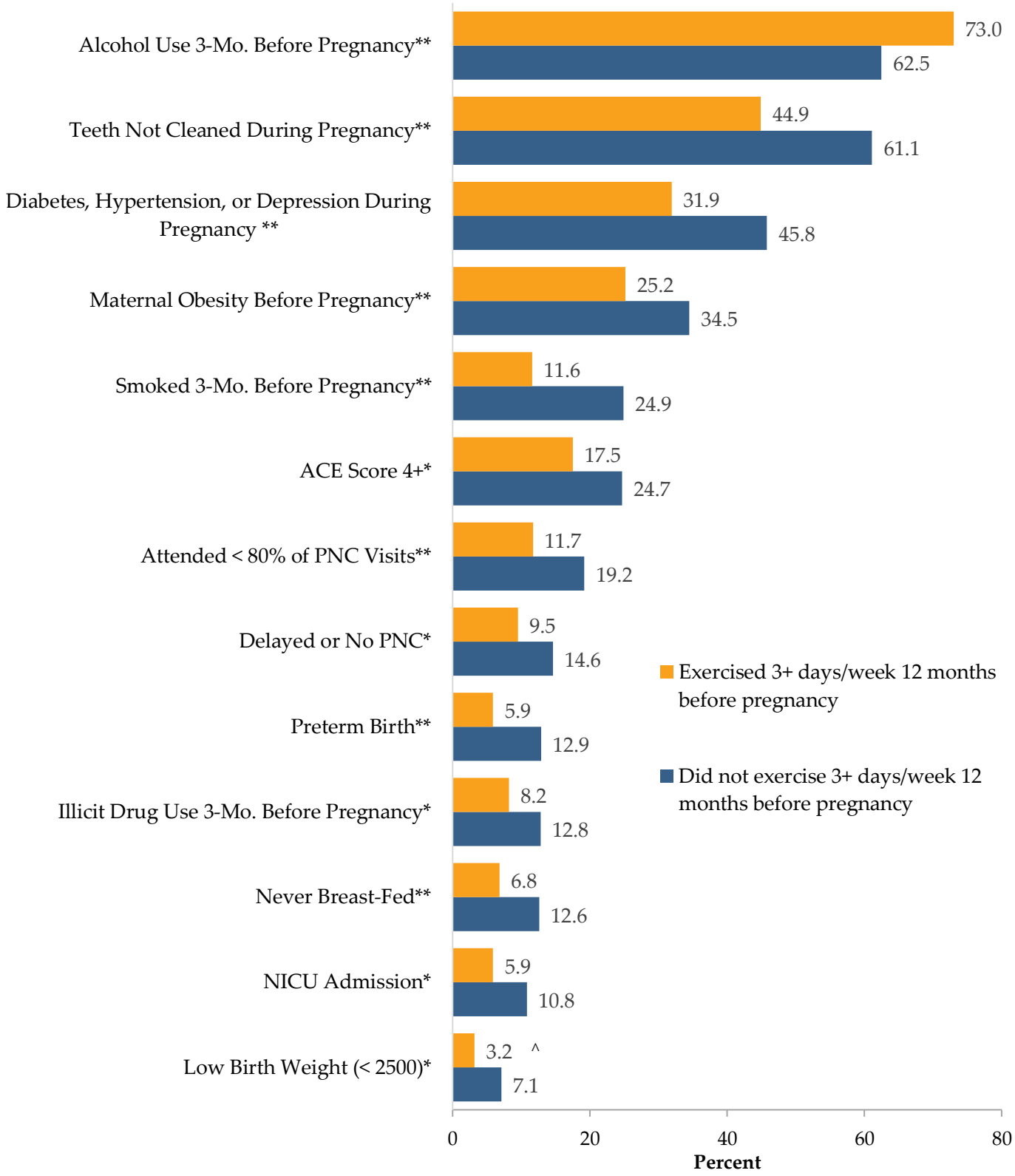
Mothers who exercised 3 or more days of the week, compared to mothers who did not exercise 3 or more days of the week, were significantly (p-value less than 0.05) *more likely* to report that:

- They drank alcohol the 3 months before pregnancy (73.0% vs. 62.5%).

Mothers who exercised 3 or more days of the week, compared to mothers who did not exercise 3 or more days of the week, were significantly (p-value less than 0.05) *less likely* to report that:

- They smoked the 3 months before pregnancy (11.6% vs. 24.9%).
- They used illicit drugs the 3 months before pregnancy (8.2% vs. 12.8%).
- They had obesity before pregnancy (25.2% vs. 34.5%).
- They started prenatal care after the first trimester or had no prenatal care (9.5% vs. 14.6%).
- They attended less than 80% of prenatal care visits (11.7% vs. 19.2%).
- They did not have their teeth cleaned during pregnancy (44.9% vs. 61.1%).
- They had diabetes, hypertension, or depression during pregnancy (31.9% vs. 45.8%).
- Their infant was low birth weight (<2500 grams) (3.2% vs. 7.1%; interpret these percentages with caution).
- Their infant was born preterm (5.9% vs. 12.9%).
- Their infant was admitted to the NICU (5.9% vs. 10.8%).
- They never breastfed their infant (6.8% vs. 12.6%).
- They had a high ACE Score 4+ (17.5% vs. 24.7%).

Figure 2.4: Risk behaviors and outcomes by exercise frequency in the 12 months before pregnancy, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Chapter 3: Pregnancy intention and birth control use prior to pregnancy

Significance

Data on the intendedness of pregnancy is sparse. Researchers at the Guttmacher Institute released an article in 2019 stating that 4.5% of pregnancies in 2011 among women aged 15-44 years in the United States were unintended.[5] While the actual definition of unintended pregnancy is debatable, the argument of the adverse public health implications of unintended pregnancies is not. The cost burden for publicly funded pregnancies was estimated to be $21.4 billion in 2010.[6] An estimate for South Dakota's total public cost for the estimated 2,400 publicly funded unintended births was $49.4 million in 2010, with $35 million from federal funds and $14.4 million from state funds.[6]

PRAMS asked women:

Q16 Thinking back to *just before* you got pregnant with your *new* baby, how did you feel about becoming pregnant? [I wanted to be pregnant sooner, I wanted to be pregnant later, I wanted to be pregnant then, I didn't want to be pregnant then or at any time in the future, I was not sure]

Q17 When you got pregnant with your new baby, were you trying to get pregnant?

Q18 When you got pregnant with your new baby, were you or your husband or partner doing anything to keep from getting pregnant?

Healthy People 2030 related objective

- Reduce the proportion of pregnancies that are unintended to 36.5%. (FP-1; *63.5% of women report intended pregnancy*)

Measure	% of women (95% CI, N)
Maternal intention and timing of pregnancy	
Later (*mistimed*)	14.6 (12.3-17.2, 10698)
Sooner (*mistimed*)	17.1 (14.5-20.1, 10698)
Then (*intended*)	44.6 (41.1-48.1, 10698)
Did not want then or in the future (*unintended*)	5.3 (4.1-6.9, 10698)
Was not sure (*unsure*)	18.4 (16.0-21.1, 10698)
Women who were trying to get pregnant at conception	59.3 (56.0-62.6, 10701)
Among women who were not trying to get pregnant, those who were not using birth control at conception	61.8 (56.7-66.7, 4362)

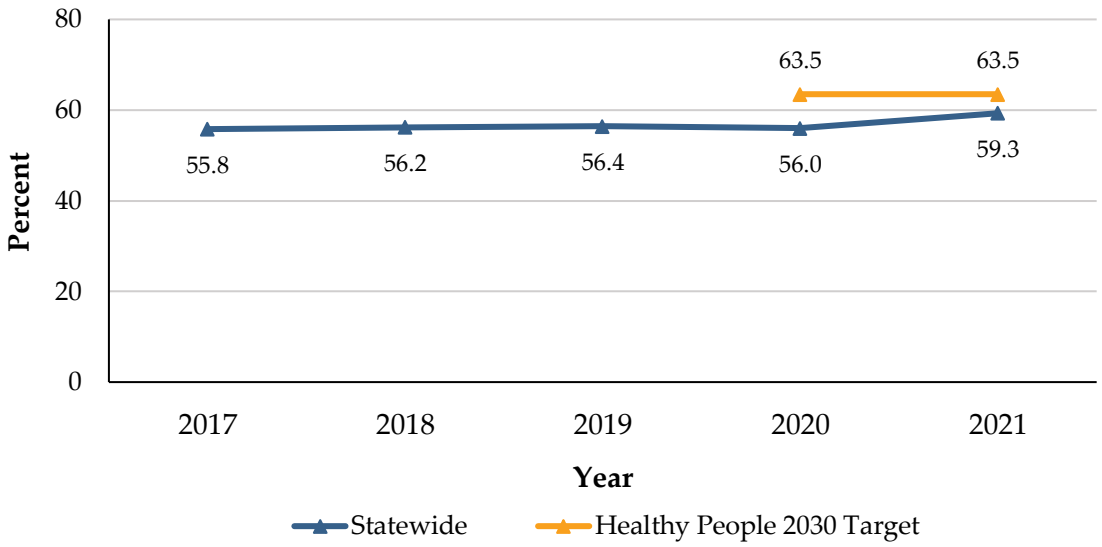
Intended Pregnancy

Prevalence and Trends (Figure 3.1)

The percentage of South Dakota mothers who had an intended pregnancy (were trying to get pregnant) has not changed over time (p-value for linear trend greater than 0.05).

The Healthy People 2030 goal focuses on unintended pregnancies with a target of 36.5%. To provide comparable measure with SD PRAMS data, the intended pregnancy rate target of 63.5% was used (the portion opposite of unintended pregnancies).

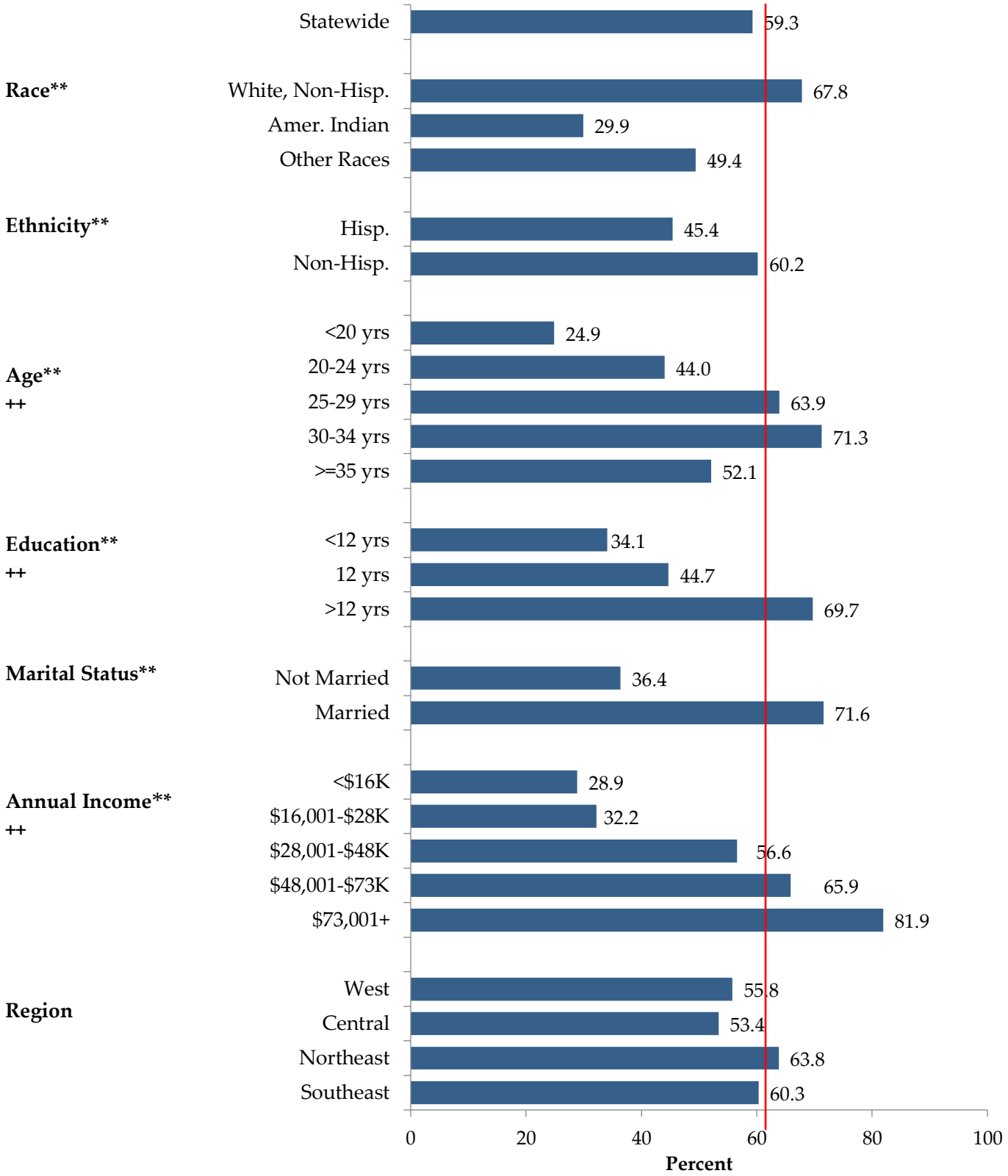
Figure 3.1: Mothers who had an intended pregnancy by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 3.2)

- Overall prevalence of South Dakota mothers who had an intended pregnancy (were trying to get pregnant) was 59.3%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with having an intended pregnancy included maternal race, ethnicity, age, education, marital status, and household income.
- Mothers who were white, non-Hispanic, between 30-34 years of age, had more years of education, were married, and had greater household income had a higher prevalence of having an intended pregnancy compared with their counterparts.

Figure 3.2: Percentage of South Dakota mothers who had an intended pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value <0.01 based on logistic regression results for linear trend.

—— Healthy People 2030 (63.5%)

Risk Behaviors and Outcomes (Figure 3.3)

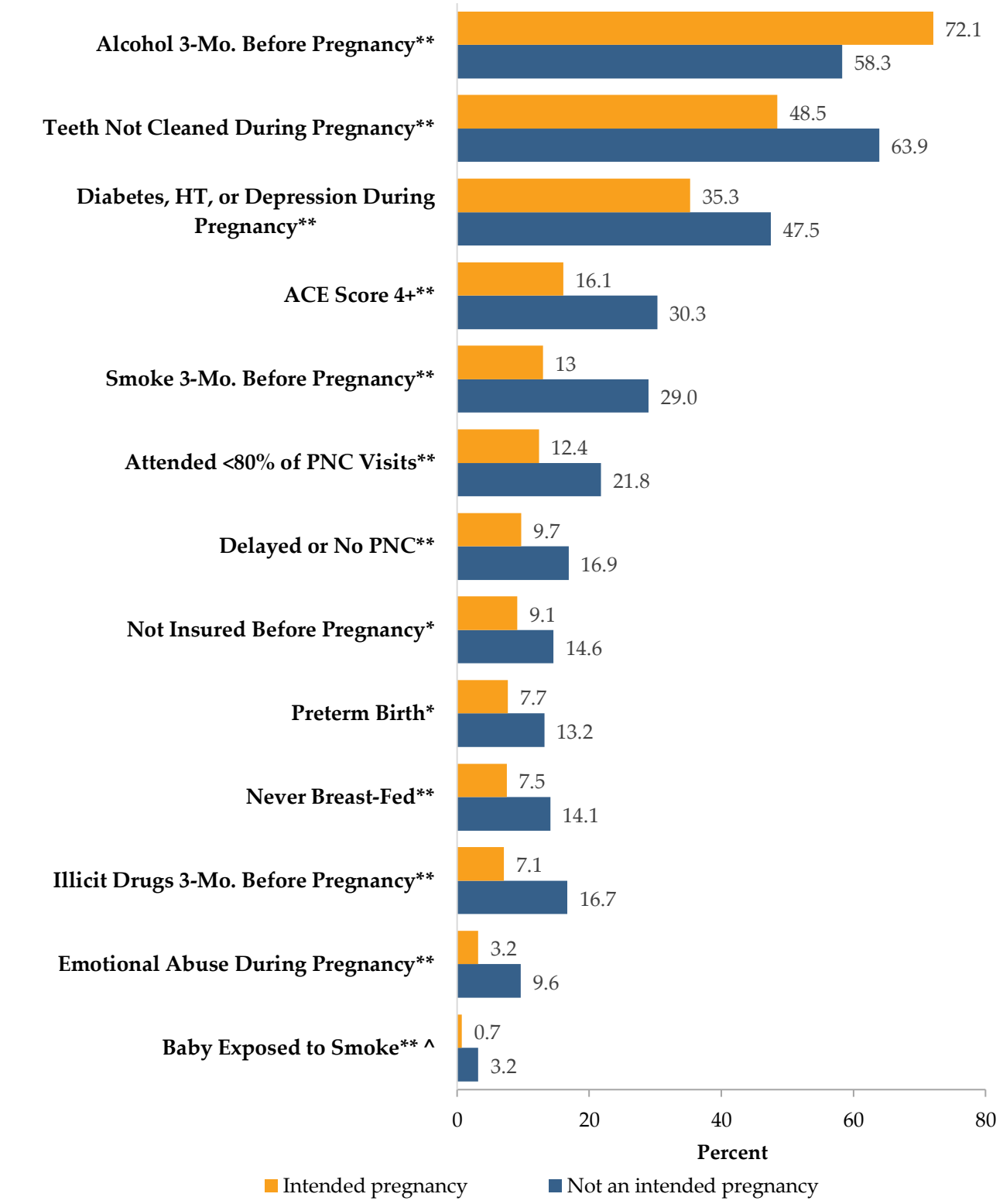
Mothers who had an intended pregnancy, compared to mothers who did not have an intended pregnancy, were significantly (p-value less than 0.05) *more likely* to report that:

- They drank alcohol 3 months before pregnancy (72.1% vs 58.3%)

Mothers who had an intended pregnancy, compared to mothers who did not have an intended pregnancy, were significantly (p-value less than 0.05) *less likely* to report that:

- They were uninsured before pregnancy (9.1% vs. 14.6%).
- They smoked the 3 months before pregnancy (13% vs. 29%).
- They used illicit drugs the 3 months before pregnancy (7.1% vs. 16.7%).
- They started prenatal care after the first trimester or had no prenatal care (9.7% vs. 16.9%).
- They attended fewer than 80% of their prenatal visits (12.4% vs. 21.8%).
- They did not have their teeth cleaned during pregnancy (48.5% vs. 63.9%).
- They suffered emotional abuse during pregnancy (3.2% vs. 9.6%).
- They developed diabetes, hypertension, or depression during pregnancy (35.3% vs. 47.5%).
- They had a preterm birth (7.7% vs. 13.2%).
- They never breast-fed their baby (7.5% vs. 14.1%).
- Baby was exposed to smoke (0.7^% vs. 3.2^%; interpret these percentages with caution).
- They had a high ACE score (4+) (16.1% vs. 30.3%).

Figure 3.3: Risk behaviors and outcomes by mothers with an intended pregnancy, South Dakota, 2021 (weighted)



*p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
PNC = prenatal care; ACE = adverse childhood experiences

Chapter 4: Nutrition and maternal weight (body mass index)

Significance

A low intake of micronutrients and of vitamins like folate may increase the risk of adverse pregnancy outcomes including preterm birth and low birthweight births.[7] Additionally, a high body mass index (BMI) prepregnancy, and excessive weight gain during pregnancy, are associated with adverse pregnancy outcomes including increased risk of maternal hypertension and increased rates of cesarean section.[8]

PRAMS asked women:

Q8 During the *month before* you got pregnant with your new baby, how many times a week did you take a multivitamin, a prenatal vitamin, or a folic acid vitamin? [List]

Q9 During the *month before* you got pregnant with your new baby, what were your reasons for not taking multivitamins, prenatal vitamins, or folic acid vitamins? [List]

Healthy People 2030 Objectives

- Increase the proportion of women who had a healthy weight before pregnancy to 47.1%. (MICH-13)

Definitions

Folic acid is a B vitamin present in leafy green vegetables, legumes, citrus, whole grains, poultry, pork, shellfish, and liver. Taken before and during pregnancy, folic acid can prevent the neural tube defects spina bifida and anencephaly.[9]

Body Mass Index (BMI) is a measure of the relationship between weight and height (BMI = weight [kg] / height [m]^2) that is associated with body fat and health risk.

Measure	% of women (95% CI, N)
Vitamin use the *month before* pregnancy	
No vitamin use	41.4 (38.0-44.7, 10715)
1 to 3 times per week	9.2 (7.4-11.5, 10715)
4 to 6 times per week	10.3 (8.3-12.8, 10715)
Daily use	39.1 (35.7-42.6, 10715)
***Among women who did not take daily vitamins*, reasons include**	
Not planning to get pregnant	59.0 (53.8-64.0, 4407)
Did not think they needed vitamins	37.7 (33.0-42.7, 4407)
Did not want to take vitamins	17.5 (13.9-21.9, 4407)
Was not told to take a vitamin	15.4 (12.0-19.5, 4407)
Vitamins were too expensive	6.9 (4.6-10.3, 4407)
Vitamins gave side effects	5.8 (3.8-8.6, 4407)
Pre-pregnancy Body Mass Index (BMI)[10]**	
Underweight (<18.5)	1.8 (1.1-3.0, 10707)
Healthy weight (18.5 to less than 25)	44.0 (40.5-47.5, 10707)
Overweight (25.0 to less than 30)	23.4 (20.6-26.5, 10707)
Obese (30 or over)	30.8 (27.6-34.1, 10707)

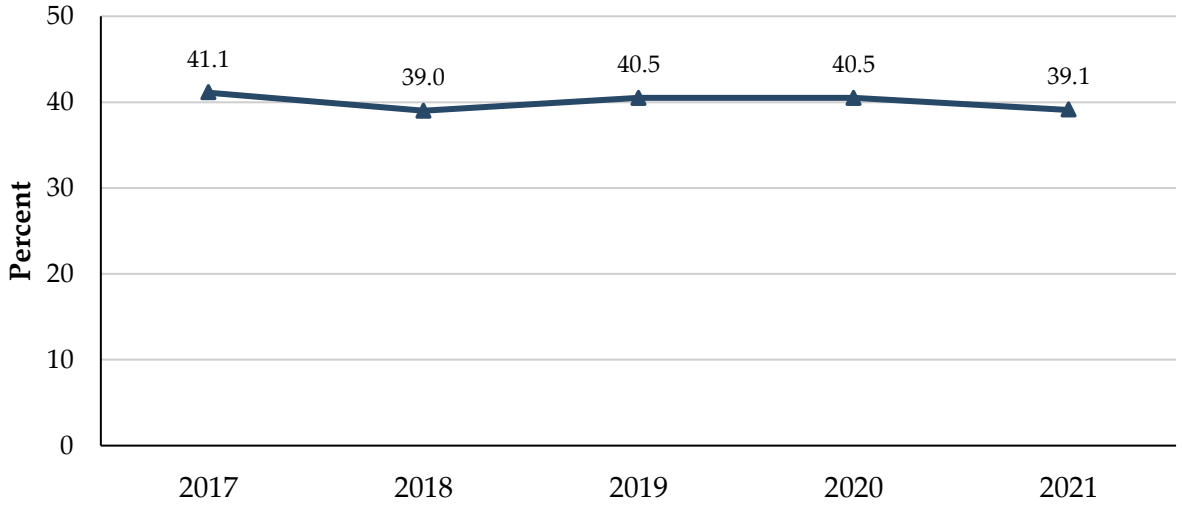
** Body mass index calculated from pre-pregnancy height and weight based on birth certificate data.

Taking a Vitamin Daily the Month Before Pregnancy

Prevalence and Trends (Figure 4.1)

The percentage of South Dakota mothers who took a vitamin daily the month before pregnancy has not changed over time (p-value for linear trend greater than 0.05).

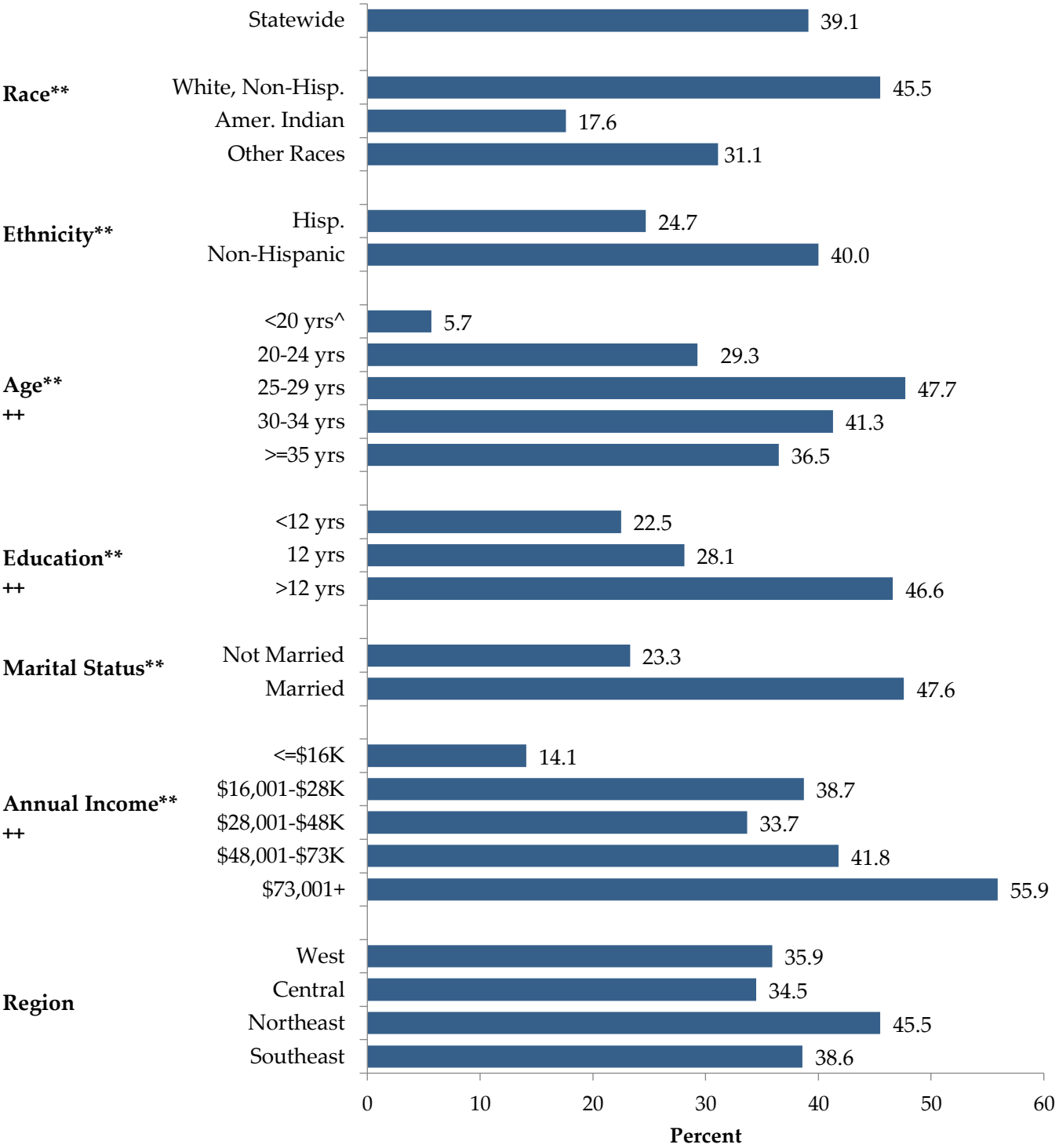
Figure 4.1: Mothers who took a daily vitamin the month before pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 4.2)

- The overall prevalence of South Dakota mothers who were taking a vitamin daily the month before pregnancy was 39.1%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with the percentage of mothers taking a vitamin daily the month before pregnancy included maternal race, ethnicity, age, education, marital status, and household income.
- Mothers who were white, non-Hispanic, 25-29 years of age, had more years of education, were married, and had greater household income had a higher prevalence of taking a vitamin daily the month before pregnancy compared with their counterparts.

Figure 4.2: Percentage of mothers who were taking a daily vitamin the month before pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



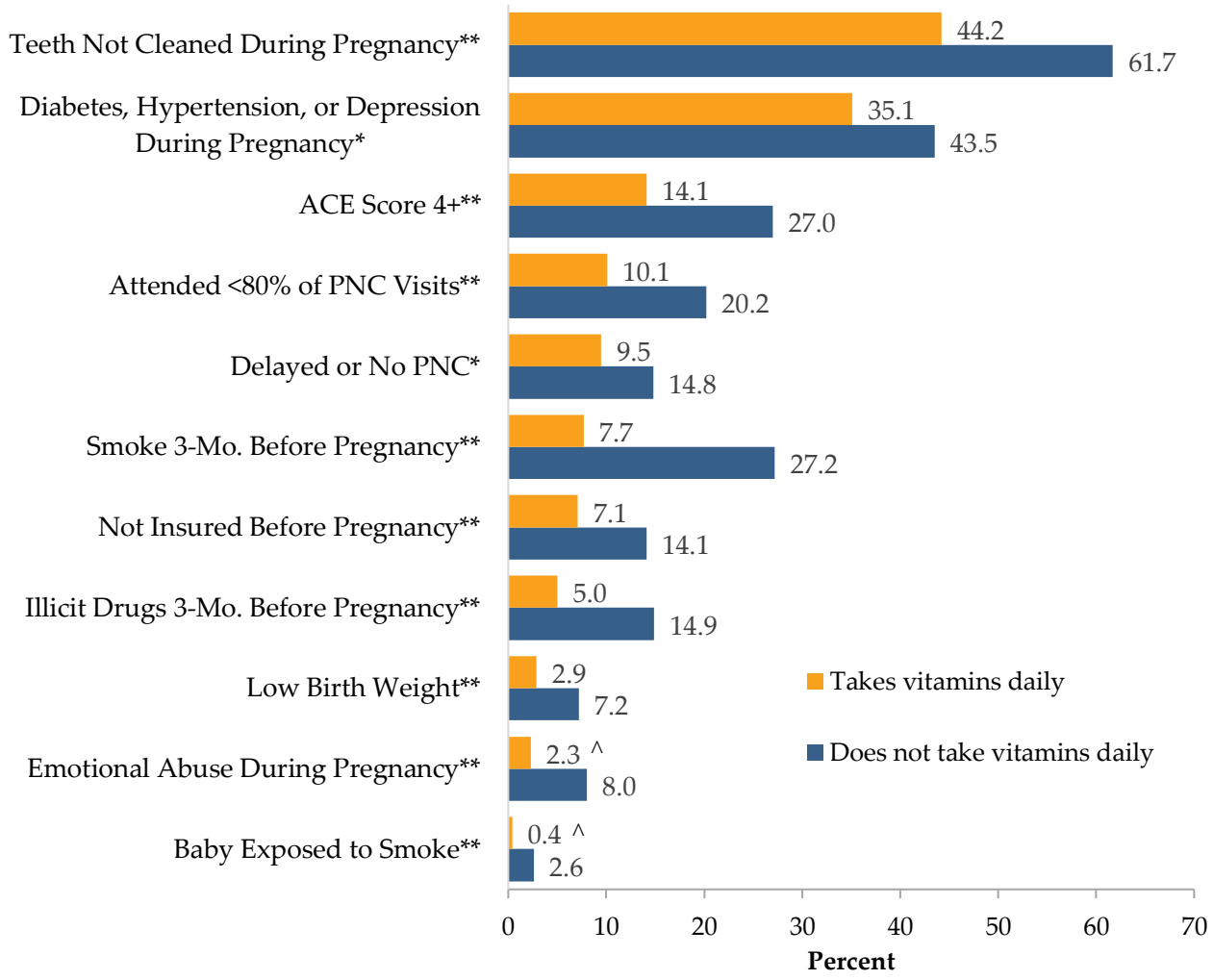
** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value <0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Risk Behaviors and Outcomes (Figure 4.3)

Mothers who took a vitamin daily, compared to mothers who did not take a vitamin daily, were significantly (p-value less than 0.05) *less likely* to report that:

- They were uninsured before pregnancy (7.1% vs. 14.1%).
- They smoked the 3 months before pregnancy (7.7% vs. 27.2%).
- They used illicit drugs the 3 months before pregnancy (5.0% vs. 14.9%).
- They started prenatal care after the first trimester or had no prenatal care (9.5% vs. 14.8%).
- They attended less than 80% of PNC visits (10.1% vs. 20.2%).
- They did not have their teeth cleaned during pregnancy (44.2% vs. 61.7%).
- They suffered emotional abuse during pregnancy (2.3% vs. 8.0%; interpret these percentages with caution).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (35.1% vs. 43.5%).
- They had a baby with low birth weight (2.9% vs. 7.2%).
- Their baby was exposed to smoke (0.4^% vs. 2.6%: interpret these percentages with caution).
- They had a high ACE score (4+) (14.1% vs. 27.0%).

Figure 4.3: Risk behaviors and outcomes by mothers who took a daily vitamin the month before pregnancy, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.

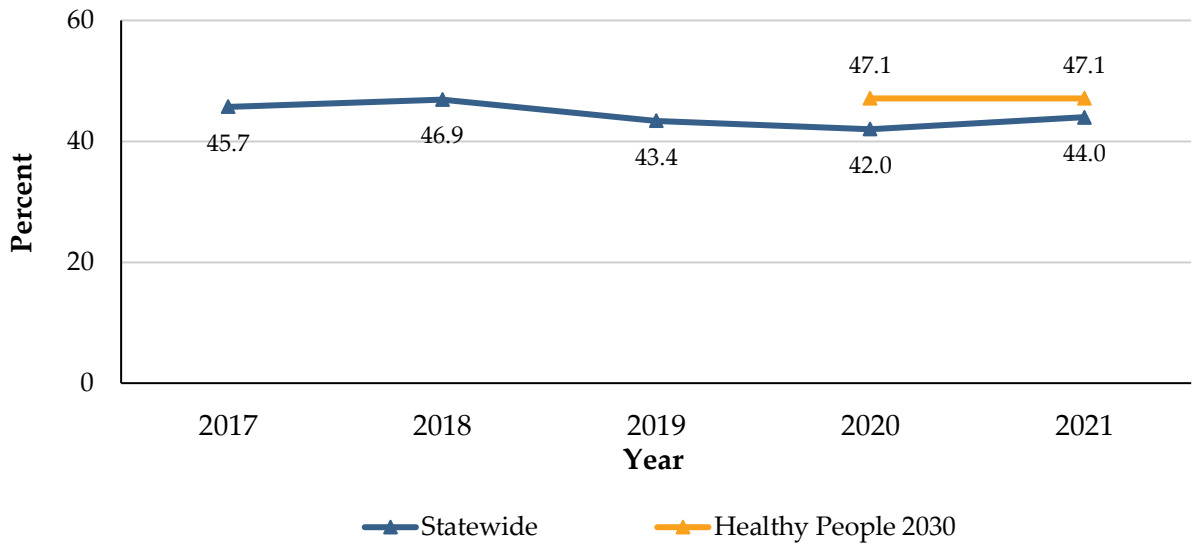
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Normal BMI

Prevalence and Trends (Figure 4.4)

The percentage of South Dakota mothers who had a normal BMI before pregnancy has not changed over time (p-value for linear trend greater than 0.05). The Healthy People 2030 goal of 47.1% has not been achieved in any year.

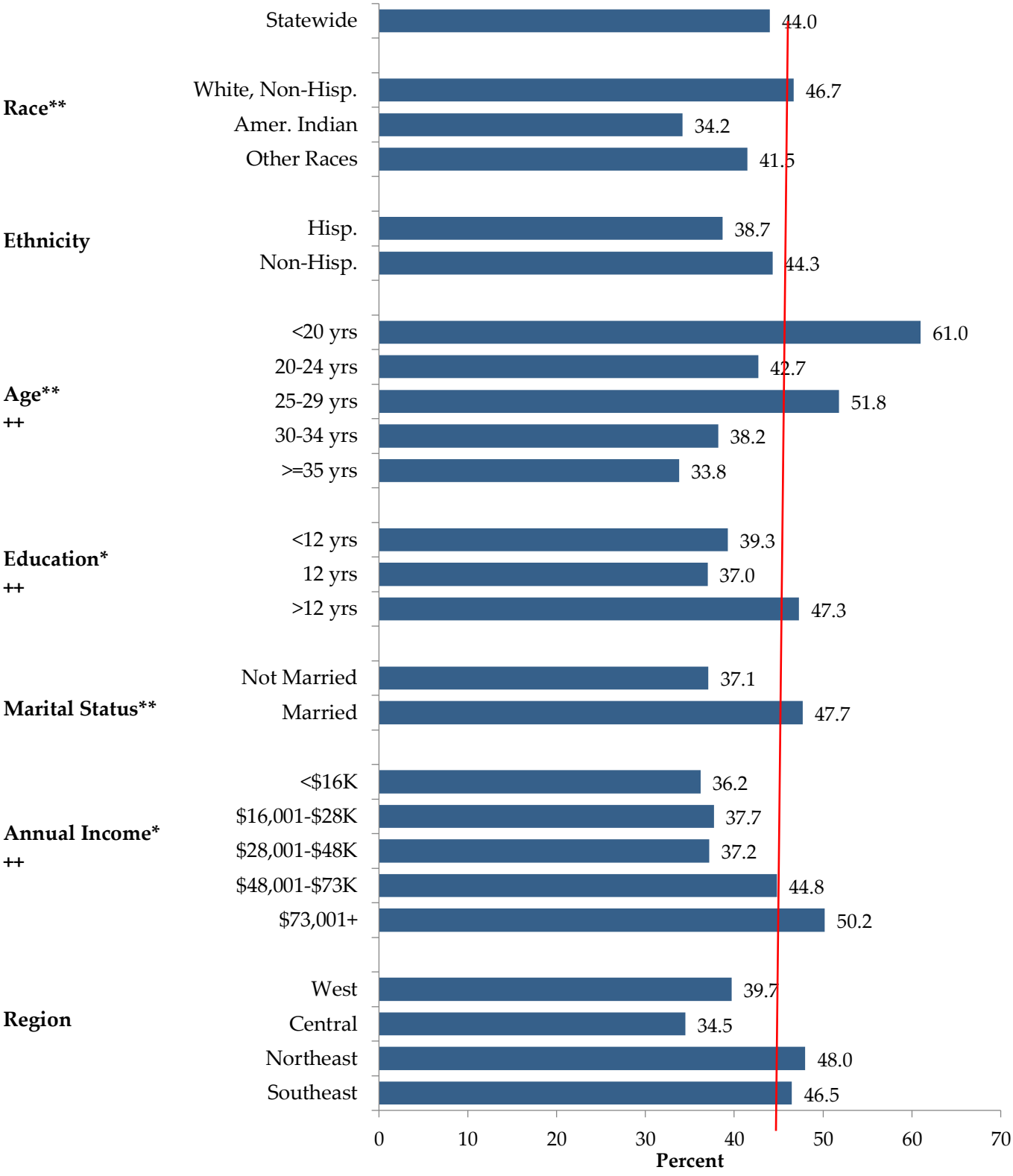
Figure 4.4: Mothers who had a normal BMI before pregnancy by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 4.5)

- Overall prevalence of South Dakota mothers with a normal BMI (18.5 - 24.9 kg/m^2) before pregnancy was 44.0%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with the percentage of mothers who had a normal BMI before pregnancy included maternal race, age, education level, marital status, and income .
- Mothers who were not American Indian, less than 20 years in age, married, and had higher levels of education and income had a higher prevalence of being a healthy weight compared with their counterparts.

Figure 4.5: Percentage of mothers who had a normal BMI before pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



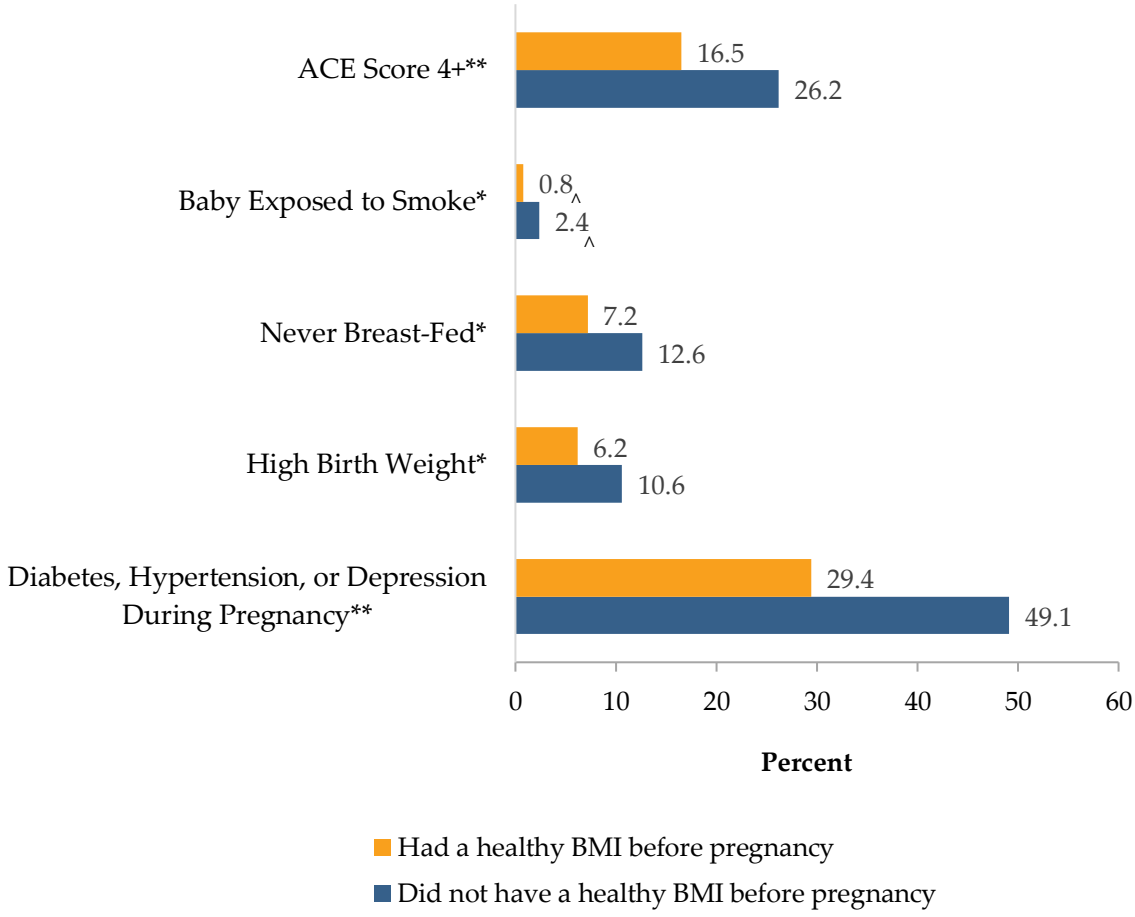
* p-value <0.05; ** p-value <0.01; based on Rao-Scott chi-square test
\+ p-value <0.05 based on logistic regression results for linear trend.
— Healthy People 2020 (47.1%)

Risk Behaviors and Outcomes (Figure 4.6)

Mothers who had a normal BMI, compared to mothers who *did not have* a normal BMI, were significantly (p-value less than 0.05) *less likely* to report that:

- They had diabetes, hypertension, or depression diagnosed during pregnancy (29.4% vs. 49.1%).
- They had an infant with high birth weight (6.2% vs. 10.6%).
- They never breast fed (7.2% vs. 12.6%).
- Their baby was exposed to smoke (0.8% vs. 2.4%: interpret these percentages with caution).
- They had a high ACE score (4+) (16.5% vs. 26.2%).

Figure 4.6: Risk behaviors and outcomes by mothers who had a normal BMI before pregnancy, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
ACE = adverse childhood experiences

Chapter 5: Medical risk factors

Significance

An infant's health at birth can be greatly affected by the mother's health during pregnancy. Health risks such as diabetes, hypertension, and depression pose threats to the health of the infant and mother. Although physical ailments are more obvious, mental health is also a factor to consider because of the potential adverse effects for the mother and infant.

Type 1 or type 2 diabetes, as well as gestational diabetes, can lead to health concerns for the mother and baby not only during pregnancy and delivery but also for a lifetime. Women with diabetes have an increased risk of high blood pressure and preterm labor. Possible complications for the baby at delivery include low blood sugar, respiratory distress, and birth trauma due to increased birthweight. In addition, the long-term concern is that gestational diabetes increases the future risk of developing type 2 diabetes in both the mother and her infant.[11]

Preeclampsia, a type of hypertension that affects pregnant mothers, is a major factor in maternal and fetal mortality. Mild preeclampsia is characterized by a blood pressure greater than 140/90 mmHg.[12] Along with hypertension, preeclampsia can be diagnosed by excessive protein loss in the urine, liver and kidney dysfunction, and issues with the central nervous system such as headaches and vision problems. Preeclampsia is associated with intrauterine growth retardation (IUGR), placental abruption, and oligohydramnios (low amniotic fluid levels).

Mental health disorders such as depression, anxiety, or perceived stress can contribute to negative birth outcomes. About 23% of pregnant women in the US suffer from minor or major depression. Depression may affect the mother, developing fetus, birthing process, and infant development.[13] Depression can also lead to physiological complications such as intra-uterine growth restriction, low birth weight, and preterm birth[14], making it an important disorder to screen for in pregnant women.

PRAMS asked women:

Q7 During the *3 months before* you got pregnant with your new baby, did you have any of the following health conditions… diabetes, high blood pressure or depression?

Q27 During *your most recent* pregnancy, did you have any of the following health conditions… gestational diabetes, high blood pressure or depression?

Q28 During *your most recent* pregnancy, did a doctor, nurse, or other health care worker give you a series of weekly shots of medicine called progesterone, Makena®, or 17P (17 alpha-hydroxyprogesterone) to try to keep your new baby from being born too early?

Measure	% of women (95% CI, N)
Medical risk factors three months before pregnancy	
Type 1 or type 2 diabetes	2.7 (1.8-3.9, 10661)
High blood pressure/hypertension	3.7 (2.6-5.2, 10639)
Depression	21.0 (18.4-24.0, 10661)
Medical risk factors during pregnancy	
Gestational diabetes (diabetes that started during this pregnancy)	14.9 (12.6-17.6, 10642)
High blood pressure (that started during this pregnancy), pre-eclampsia or eclampsia	14.1 (11.8-16.8, 10620)
Depression	20.7 (18.1-23.7, 10547)

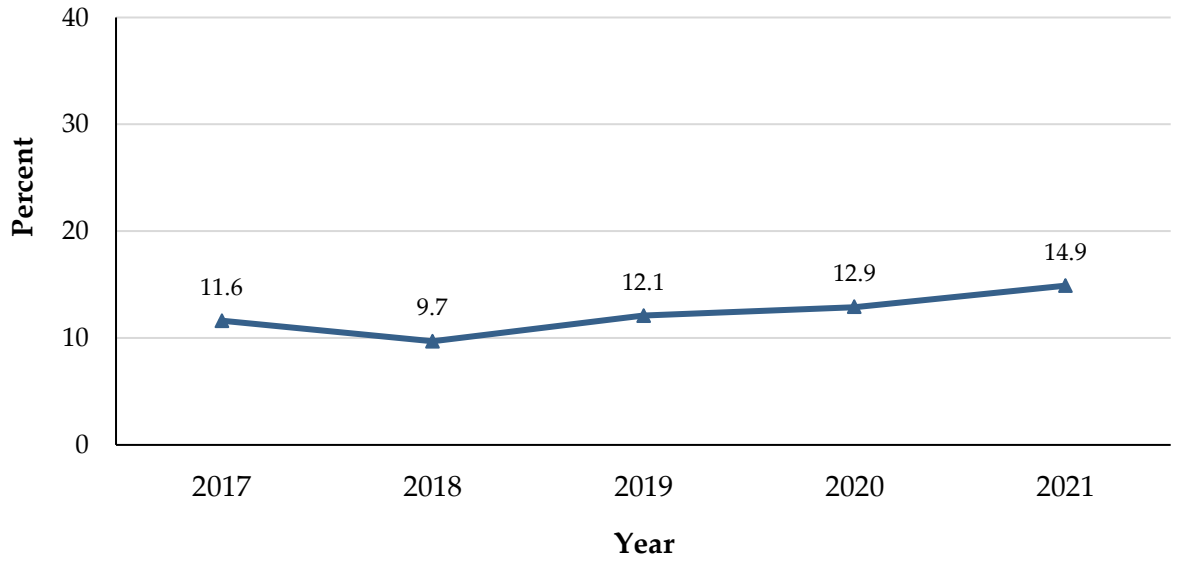
Received weekly shots of progesterone to prevent preterm birth	5.2 (3.8-7.1, 10227)

Gestational Diabetes

Prevalence and Trends (Figure 5.1)

The percentage of South Dakota mothers who had gestational diabetes has increased over time (p-value for linear trend greater than 0.05).

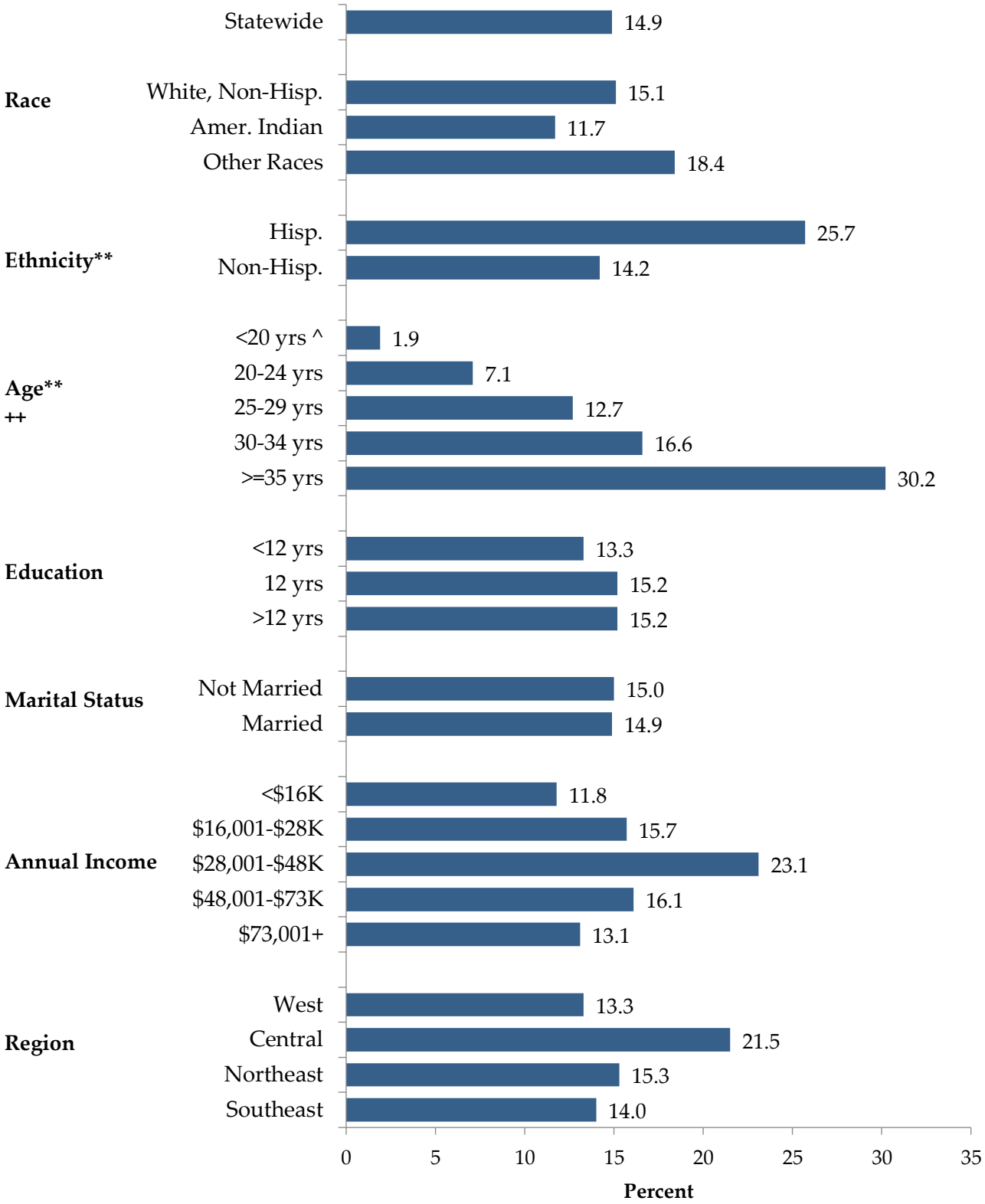
Figure 5.1: Mothers who had gestational diabetes by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 5.2)

- Overall prevalence of South Dakota mothers who had gestational diabetes was 14.9%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with gestational diabetes included maternal age and ethnicity.
- Mothers who were Hispanic or 35 years and older age had a higher prevalence of gestational diabetes compared to their counterparts.

Figure 5.2: Percentage of mothers who reported gestational diabetes by demographic characteristics, South Dakota, 2021 (weighted)



** p-value <0.01 based on Rao-Scott chi-square test.
++ p-value <0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Risk Behaviors and Outcomes (Figure 5.3)

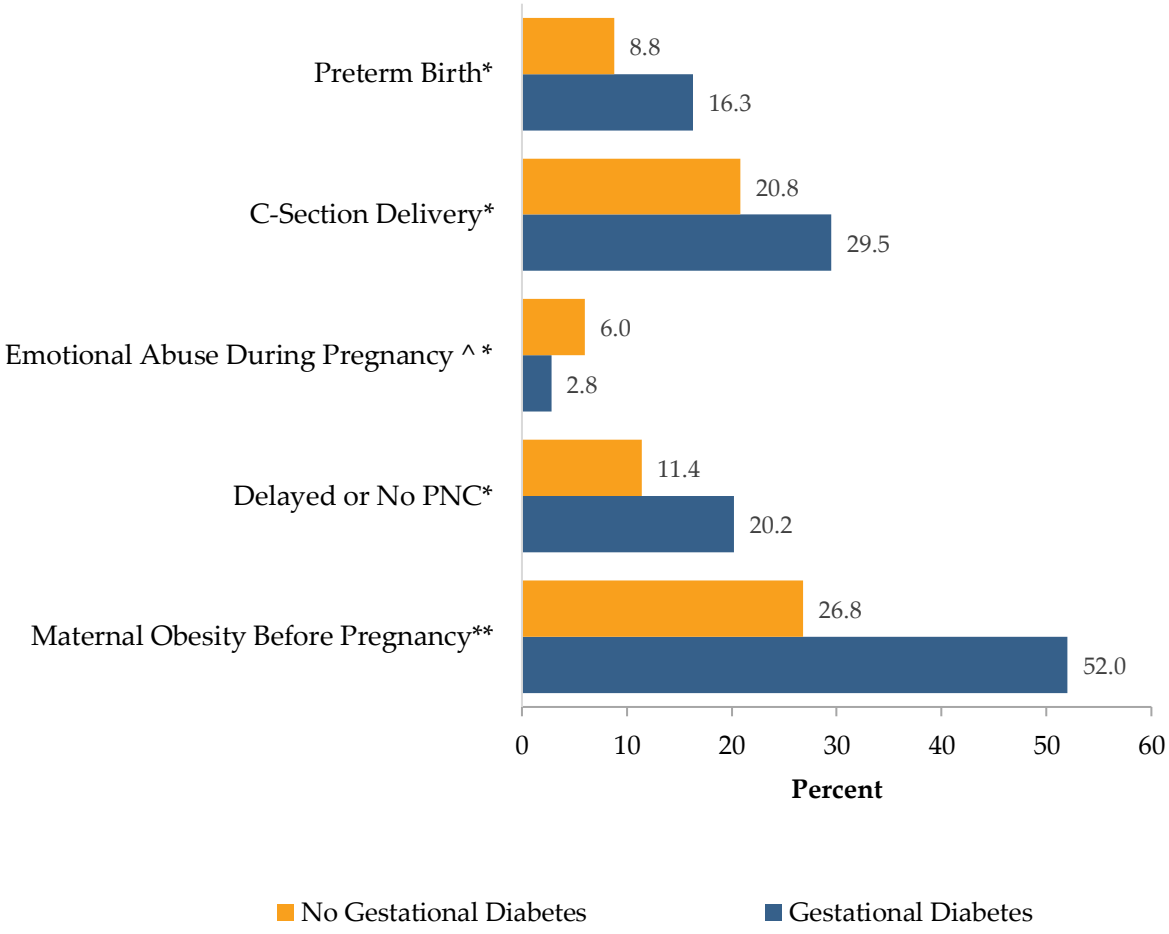
Mothers who reported having gestational diabetes, compared to mothers who *did not* report having gestational diabetes, were significantly (p-value less than 0.05) *more likely* to report that:

- They had obesity prior to pregnancy (52.0% vs. 26.8%).
- They started prenatal care after the first trimester or had no prenatal care (20.2% vs. 11.4%).
- They had a cesarean section delivery (29.5% vs. 20.8%).
- Their infant was born preterm (16.3% vs. 8.8%).

Mothers who reported having gestational diabetes, compared to mothers who *did not* report having gestational diabetes, were significantly (p-value less than 0.05) *less likely* to report that:

- They suffered emotional abuse during pregnancy (2.8% vs. 6.0%; interpret these percentages with caution).

Figure 5.3: Risk behaviors and outcomes by mothers who reported having gestational diabetes, South Dakota, 2021 (weighted)



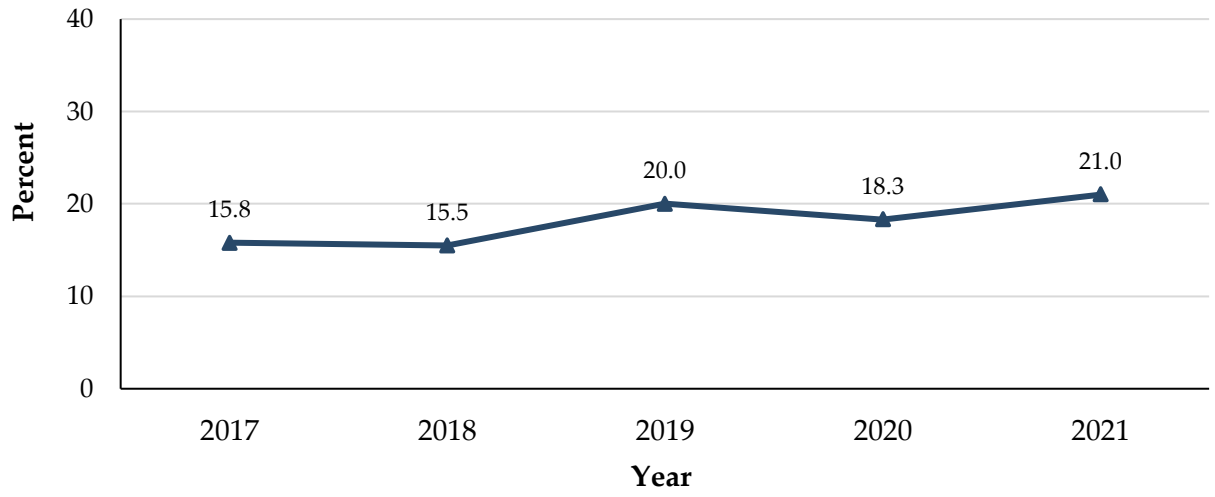
* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
NICU = neonatal intensive care unit, PNC = prenatal care
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Depression Before Pregnancy

Prevalence and Trends (Figure 5.4)

The percentage of South Dakota mothers with depression the three months before pregnancy **has increased over time** (p-value for linear trend equal to 0.05).

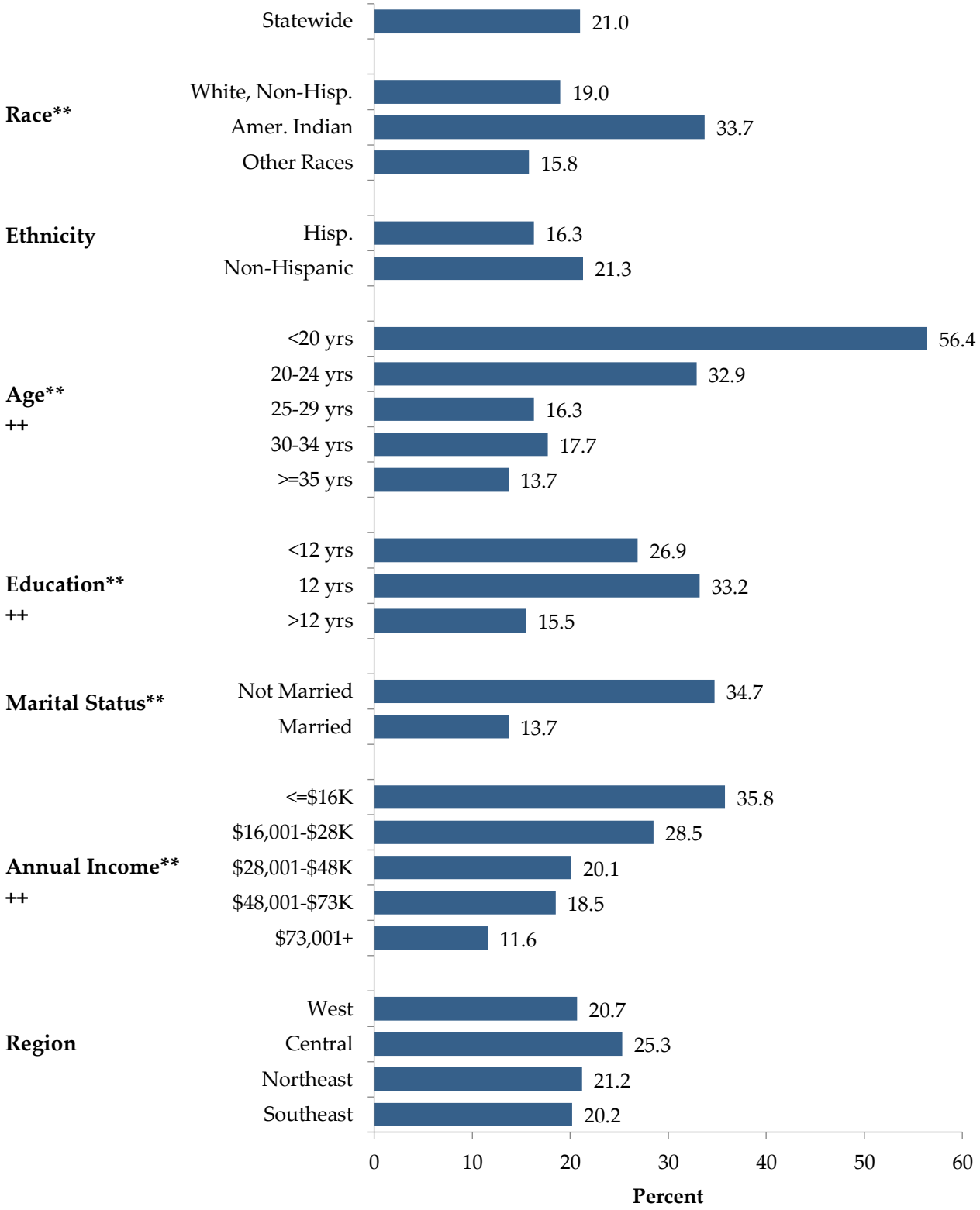
Figure 5.4: Mothers with depression before pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figures 5.5)

- Overall prevalence of South Dakota mothers who reported having depression the three months before pregnancy was 21.0%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with depression the three months before pregnancy included maternal race, maternal age, maternal education, marital status, and household income.
- Mothers who were American Indian, less than 20 years of age, were not married, had less than a High School education, and resided in households with less income had a greater prevalence of depression the three months before pregnancy compared with their counterparts.

Figure 5.5: Percentage of mothers who reported depression the three months before pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



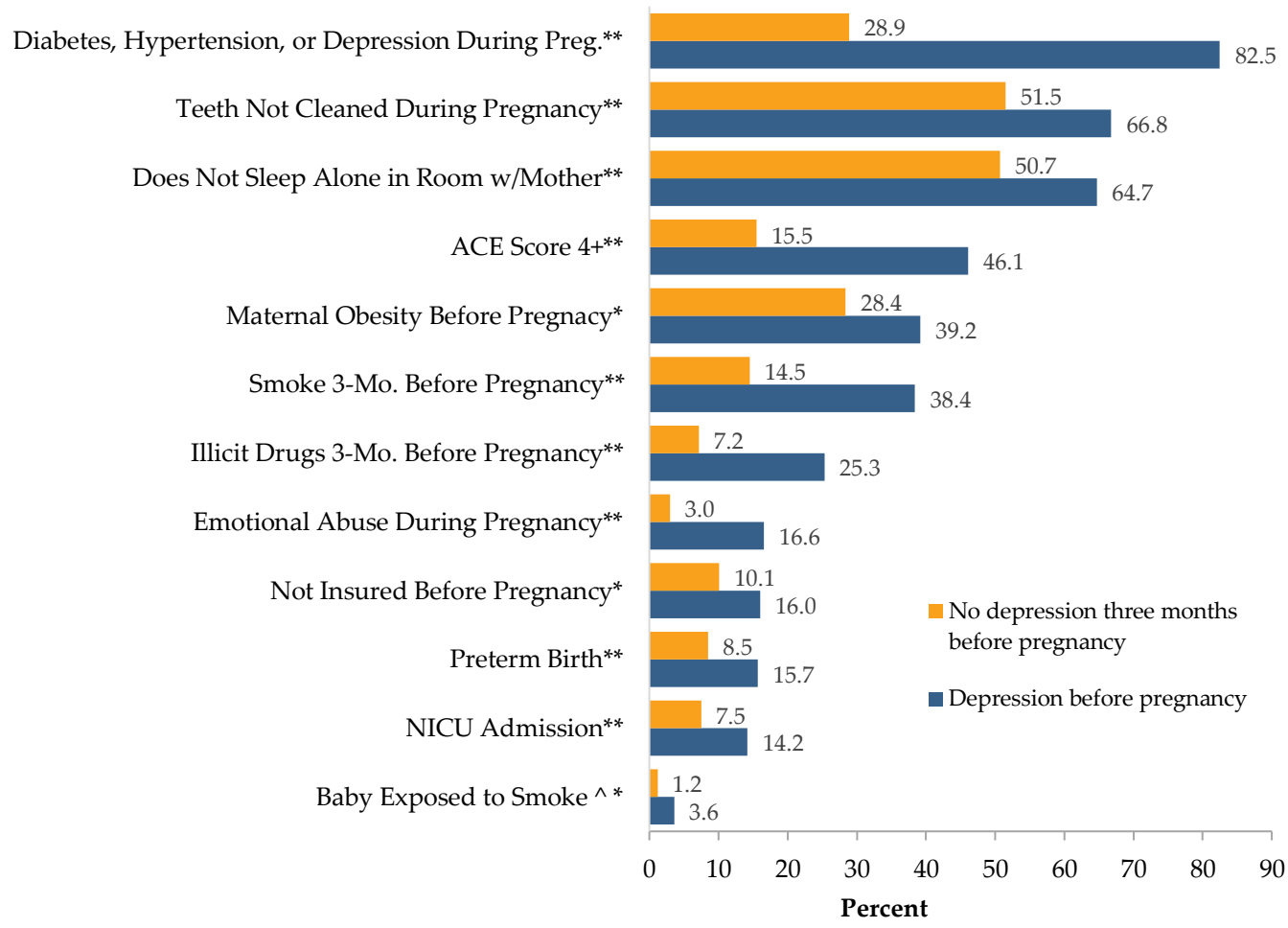
** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 5.6)

Mothers who had depression three months before pregnancy, compared to mothers who did not have depression three months before pregnancy, were significantly (p-value less than 0.05) *more likely* to report that:

- They were not insured before pregnancy (16.0% vs. 10.1%).
- They smoked the 3 months before pregnancy (38.4% vs. 14.5%).
- They used illicit drugs the 3 months before pregnancy (25.3% vs. 7.2%).
- They had obesity prior to pregnancy (39.2% vs. 28.4%).
- They did not have their teeth cleaned during pregnancy (66.8% vs. 51.5%).
- They suffered emotional abuse during pregnancy (16.6% vs. 3.0%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (82.5% vs. 28.9%).
- Their infant was born preterm (15.7% vs. 8.5%).
- Their infant was admitted to the NICU (14.2% vs. 7.5%).
- Their infant does not sleep alone in room with mother (64.7% vs. 50.7%).
- Their baby is exposed to smoke (3.6% vs. 1.2%; interpret these percentages with caution).
- They had a high ACE score (4+) (46.1% vs. 15.5%).

Figure 5.6: Risk behaviors and outcomes by mothers who had depression the three months before pregnancy, South Dakota, 2021 (weighted)



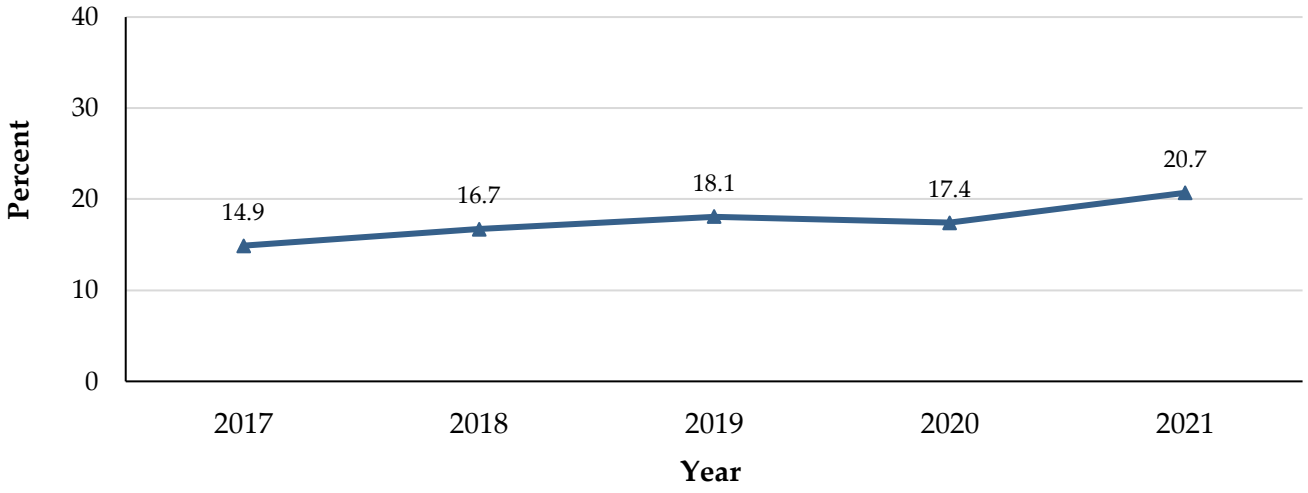
* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
ACE = adverse childhood experiences, PNC = prenatal care
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Depression During Pregnancy

Prevalence and Trends (Figure 5.7)

The percentage of South Dakota mothers with depression during pregnancy has increased over time (p-value for linear trend greater than 0.05).

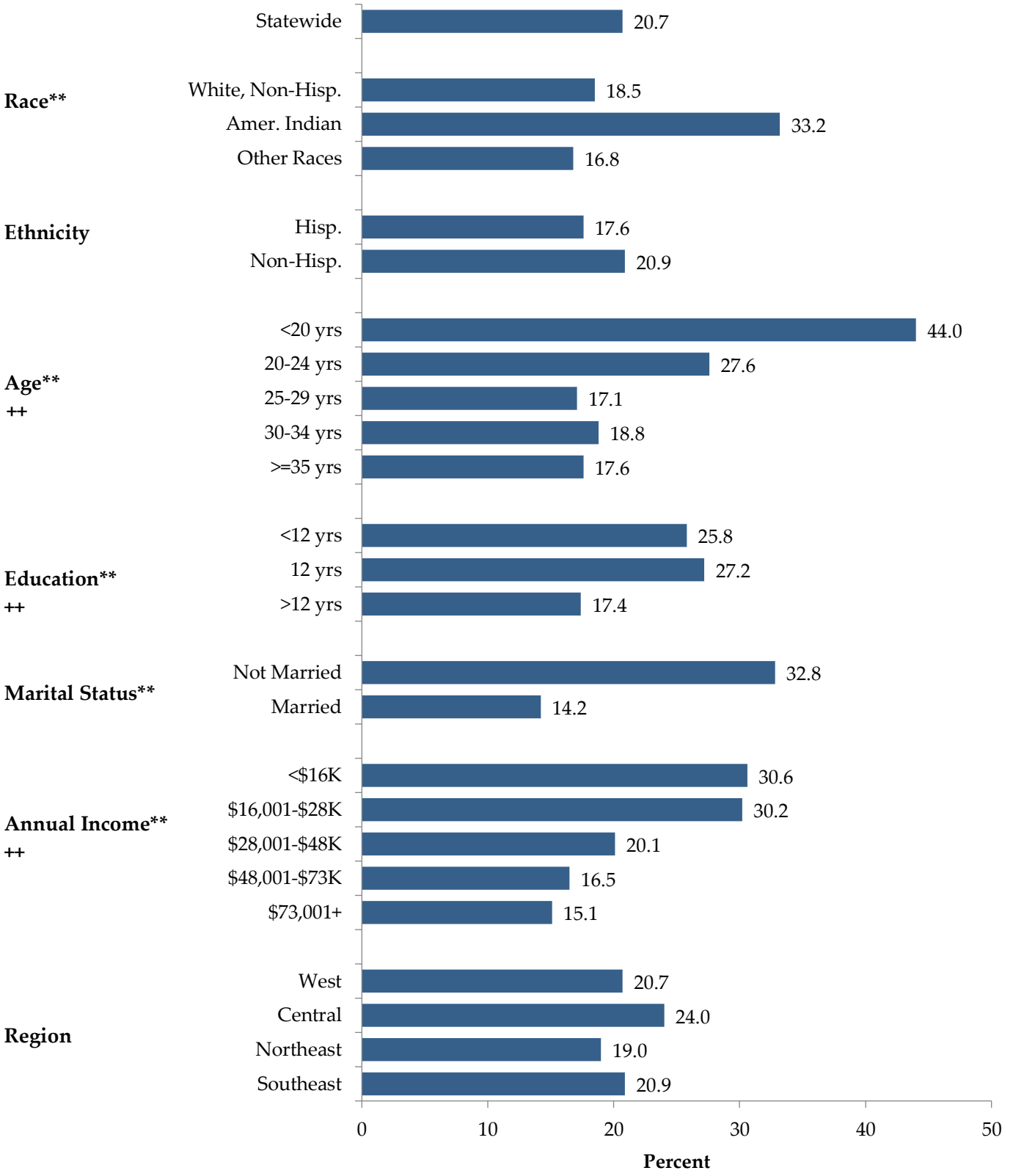
Figure 5.7: Mothers with depression during pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figures 5.8)

- Overall prevalence of South Dakota mothers who reported having depression during pregnancy was 20.7%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with depression during pregnancy included maternal race, maternal age, education, marital status, and household income.
- Mothers who were American Indian, younger, had a High School education, were not married, and resided in households with less income had a greater prevalence of depression during pregnancy compared with their counterparts.

Figure 5.8: Percentage of mothers who reported depression during pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



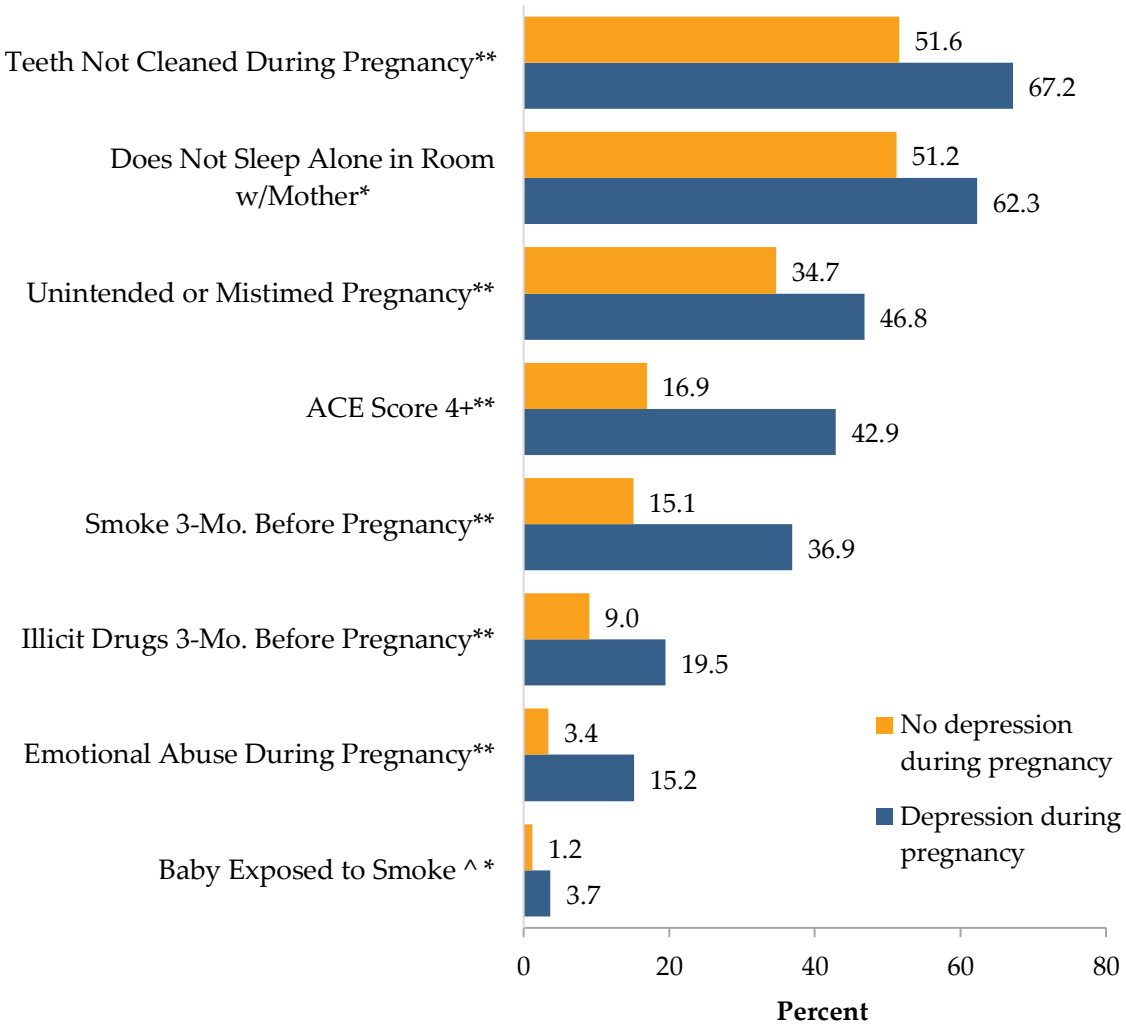
** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression to test for linear trend.

Risk Behaviors and Outcomes – Depression During Pregnancy (Figure 5.9)

Mothers who had depression during pregnancy, compared to mothers who did not have depression during pregnancy, were significantly (p-value less than 0.05) *more likely* to report that:

- They had an unintended or mistimed pregnancy (46.8% vs. 34.7%).
- They smoked the 3 months before pregnancy (36.9% vs. 15.1%).
- They used illicit drugs the 3 months before pregnancy (19.5% vs. 9.0%).
- They did not have their teeth cleaned during pregnancy (67.2% vs. 51.6%).
- They suffered emotional abuse during pregnancy (15.2% vs. 3.4%)
- Their infant does not sleep alone in mother's room (62.3% vs. 51.2%)
- Their baby is exposed to smoke (3.7% vs. 1.2%; interpret these percentages with caution).
- They had a high ACE score (4+) (42.9% vs. 16.9%).

Figure 5.9: Risk behaviors and outcomes by mothers who had depression during pregnancy, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
NICU = neonatal intensive care unit; ACE = adverse childhood experiences

Chapter 6: Prenatal care entry and adequacy

Significance

Prenatal care, beginning in the first trimester, is essential for detecting problems early in fetal development. Women who receive no prenatal care are more likely to have stillbirths, preterm births, and low birthweight infants.[15]

PRAMS asked women:

Q19 How many weeks *or* months pregnant were you when you had your first visit for prenatal care?

Healthy People 2030 Objectives

- Increase the proportion of pregnant women who receive early and adequate prenatal care to 80.5%. (MICH-08)

Definitions

A *trimester* is any of three periods, approximately three months each, into which a human pregnancy is divided.

Measure	% of women (95% CI, N)
Entry into prenatal care*	
Early entry (within first trimester)	87.3 (85.0-89.4, 10257)
Late entry (after first trimester)	12.3 (10.3-14.6, 10257)
No prenatal care	0.3 (0.1-1.1, 10257)^
Percent of visits attended**	
Less than 50% or no prenatal care	4.8 (3.7-6.2, 10661)
50-79%	11.4 (9.5-13.6, 10661)
80% or greater	83.8 (81.4-86.0, 10661)
Adequacy of prenatal care (Kotelchuck Index) ***	
Inadequate	15.9 (13.8-18.3, 10683)
Intermediate	9.2 (7.5-11.3, 10683)
Adequate	53.0 (49.5-56.5, 10683)
More than adequate	21.8 (19.0-25.0, 10683)

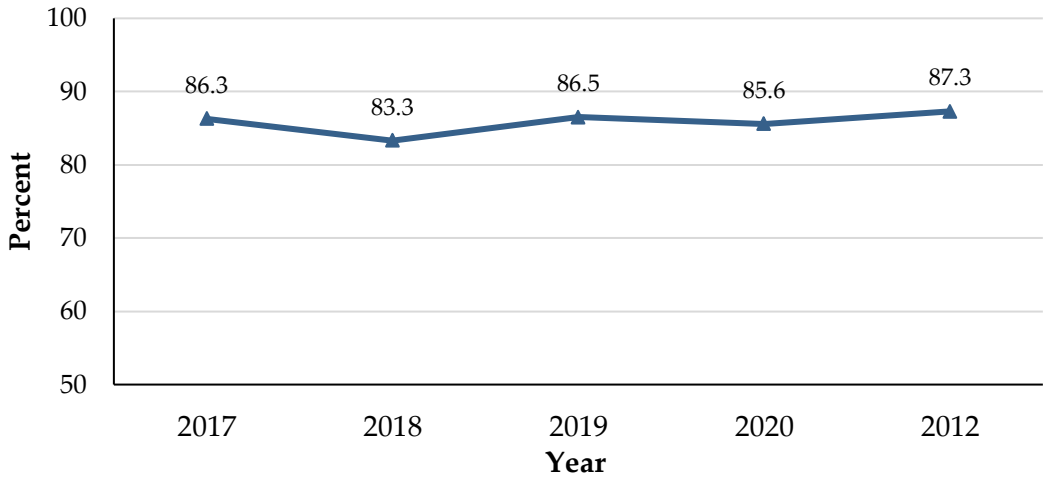
* Data obtained from survey and vital records.
** Adjusted for when prenatal care began.
*** Kotelchuck Index of adequacy or prenatal care is calculated from birth certificate data, see Methods.
^ Too few cases to meet precision standard, interpret with caution.

Prenatal Care Entry

Prevalence and Trends (Figure 6.1)

The percentage of South Dakota mothers who began prenatal care in the first trimester has not changed over time (p-value for linear trend greater than 0.05).

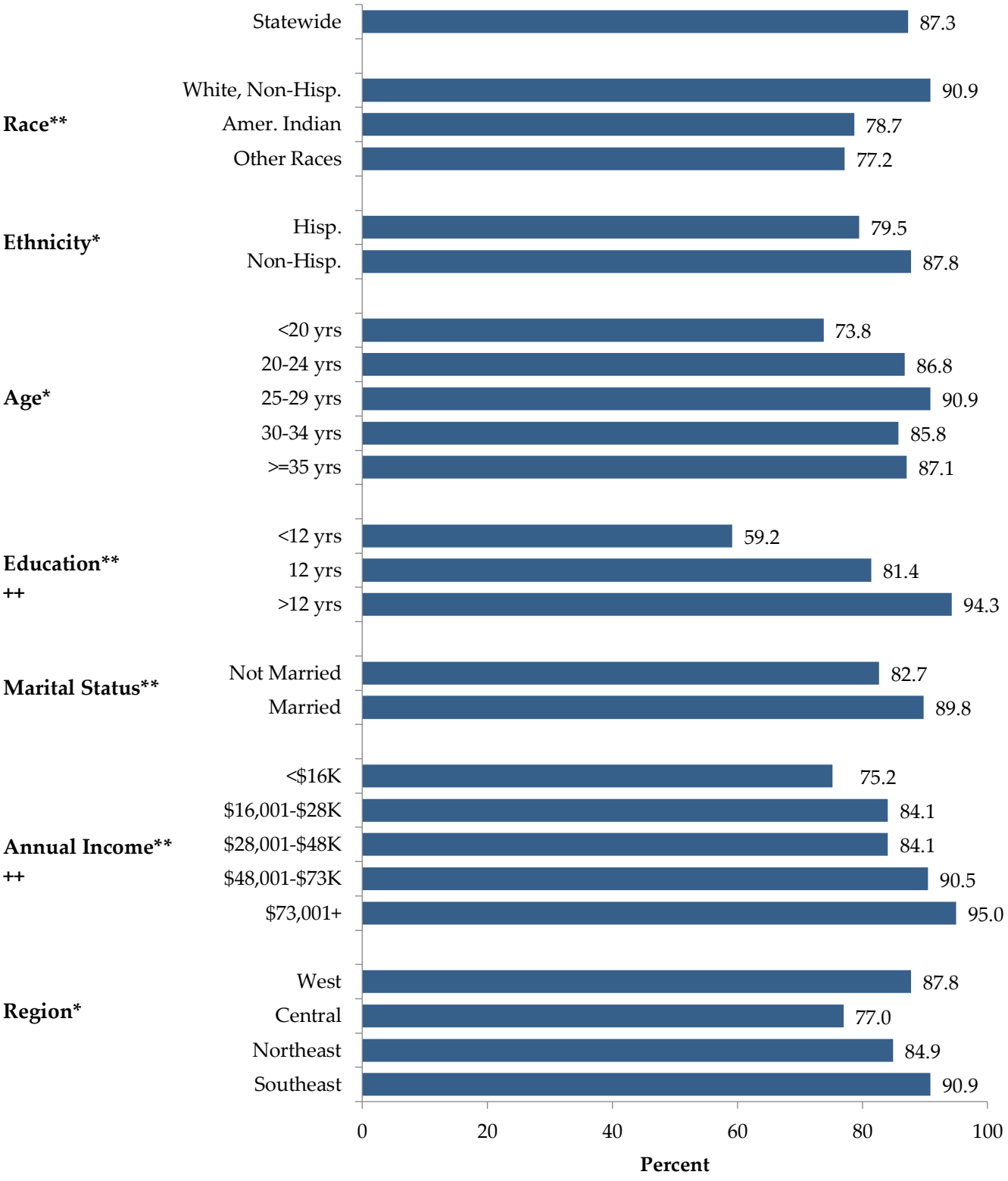
Figure 6.1: Mothers who began prenatal care in the first trimester by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 6.2)

- Overall prevalence of South Dakota mothers who began prenatal care in the first trimester was 87.3%.
- All demographic characteristics assessed were significantly (p-value less than 0.05) associated with beginning prenatal care in the first trimester including maternal race, ethnicity, age, education, marital status, household income, and region of the state that the mother resided.
- Mothers who were white, non-Hispanic, had more years of education, were married, and had higher household incomes had a higher prevalence of beginning prenatal care in the first trimester compared with their counterparts. Mothers who resided in the Western and Southeast regions had the highest prevalence of mothers who started prenatal care in the first trimester.

Figure 6.2: Percentage of mothers who began prenatal care in the first trimester by demographic characteristics, South Dakota, 2021 (weighted)



* p-value <0.05, ** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes by Starting PNC in First Trimester (Figure 6.3)

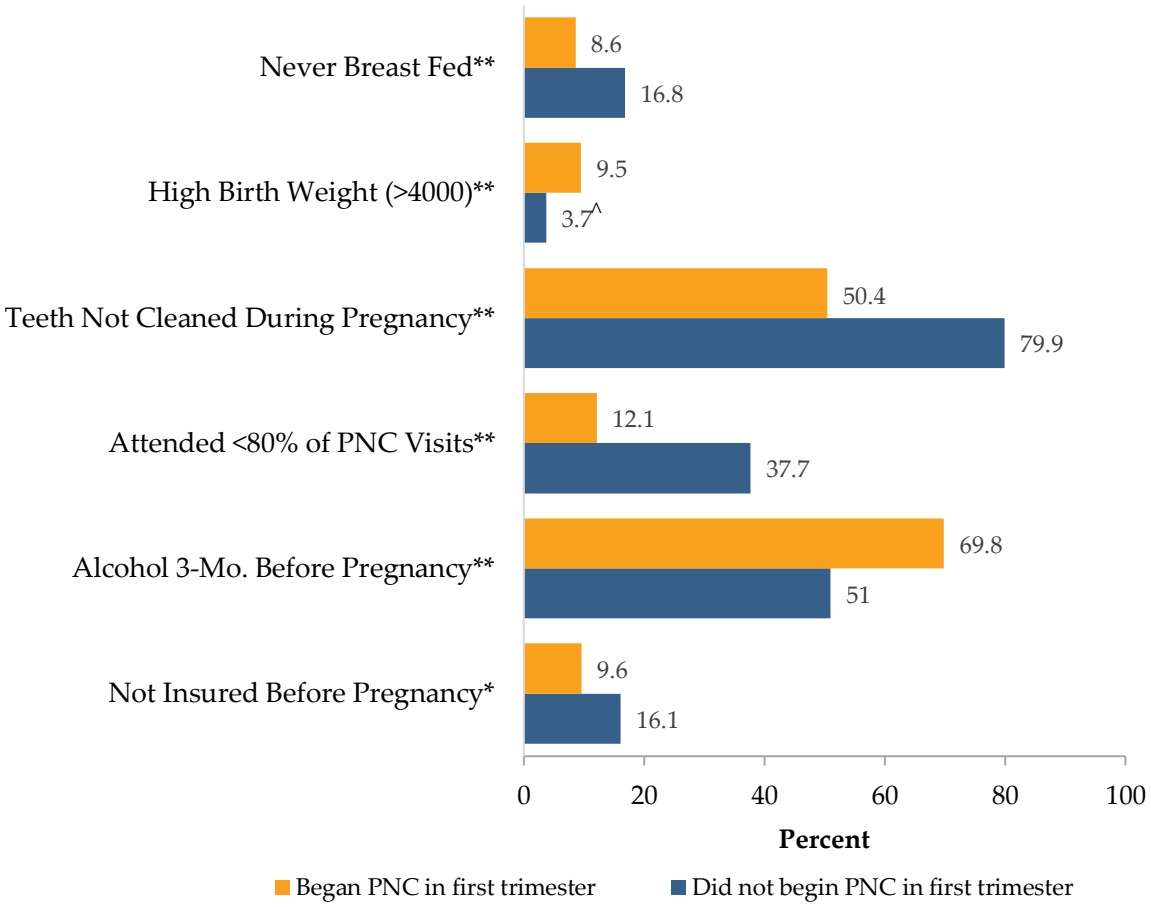
Mothers who started PNC in the first trimester, compared to mothers who did not start PNC in the 1st trimester, were significantly (p-value less than 0.05) *more likely* to report that:

- They used alcohol the three months before pregnancy (69.8% vs 51.0%).
- They had an infant with high birth weight (9.5% vs. 3.7%, interpret these percentages with caution).

Mothers who started PNC in the first trimester, compared to mothers who did not start PNC in the 1st trimester, were significantly (p-value less than 0.05) *less likely* to report that:

- They were uninsured before pregnancy (9.6% vs. 16.1%).
- They attended fewer than 80% of their prenatal visits (12.1% vs. 37.7%).
- They did not have their teeth cleaned during pregnancy (50.4% vs. 79.9%).
- They never breastfed their infant (8.6% vs. 16.8%).

Figure 6.3: Risk behaviors and outcomes by mothers who began prenatal care in the first trimester, South Dakota, 2021 (weighted)



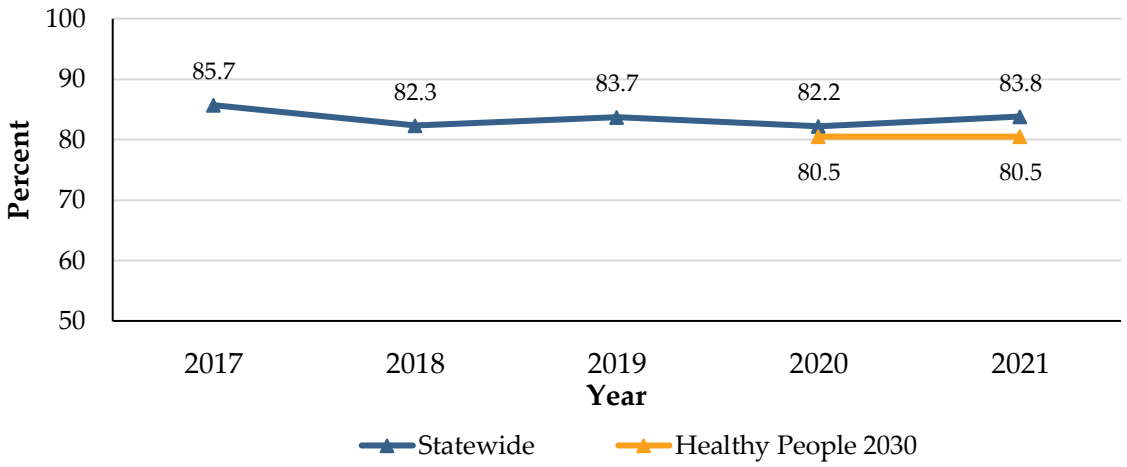
* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
PNC = prenatal care, NICU = neonatal intensive care unit

Early and Adequate Prenatal Care

Prevalence and Trends (Figure 6.4)

The percentage of South Dakota mothers who received adequate PNC (care in the first trimester and attended 80% or more of their prenatal care visits) has not changed over time (p-value for linear trend greater than 0.05). The Healthy People 2030 goal of 80.5% has been achieved for all years.

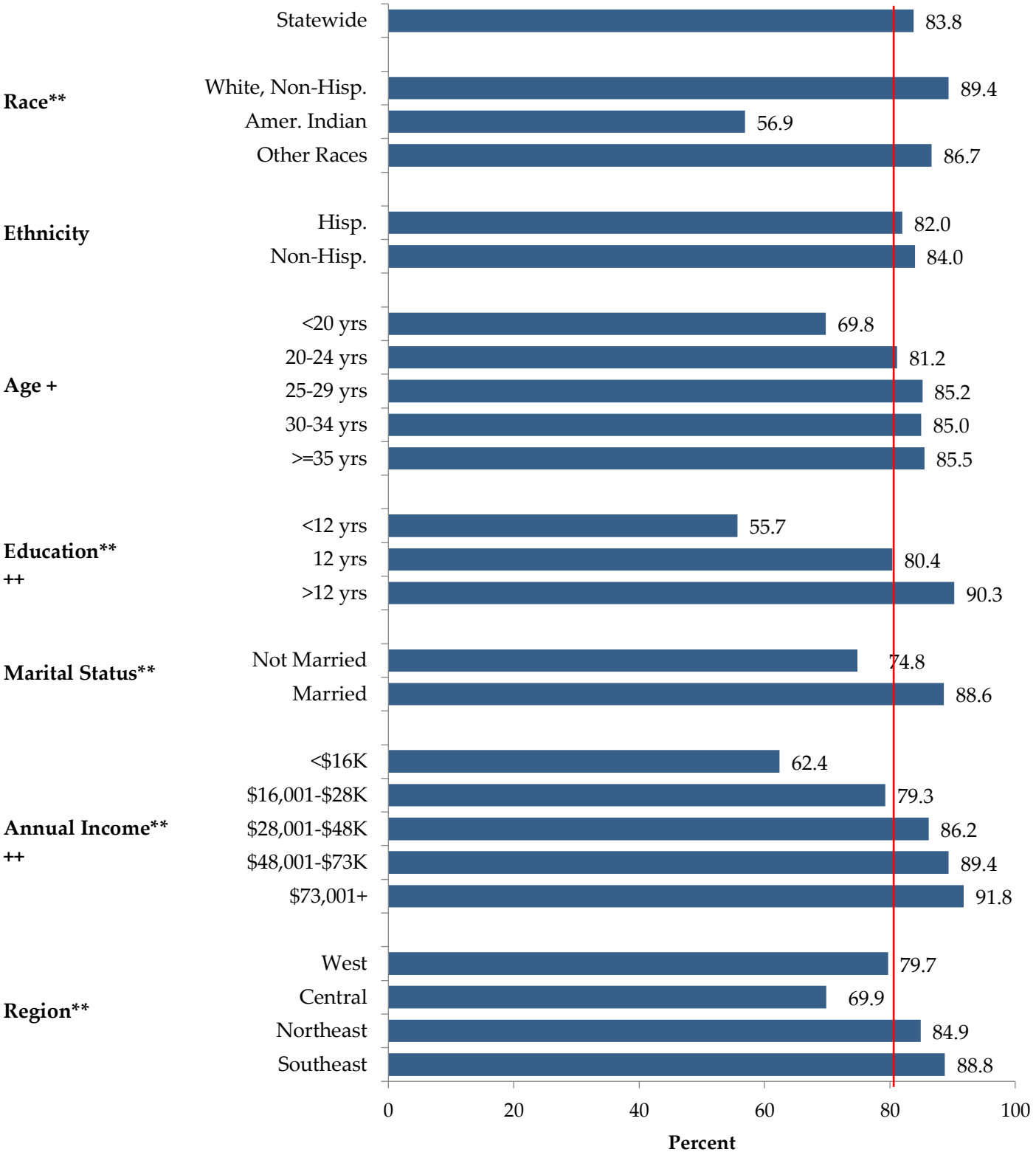
Figure 6.4: Mothers who received early and adequate prenatal care by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 6.5)

- The overall prevalence of South Dakota mothers who receive early and adequate PNC was 83.8%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with early and adequate PNC included maternal race, education, marital status, household income, and region of the state that the mother resided.
- Mothers who were white, older, had more years of education, were married, and had a higher income had higher prevalence of receiving early and adequate PNC compared with their counterparts. The Central region had the lowest prevalence of early and adequate PNC.

Figure 6.5: Percentage of mothers who receive early and adequate PNC by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.
+ p-value < 0.05; ++ p-value < 0.01 based on logistic regression results for linear trend.

Healthy People 2030 (80.5%)

Risk Behaviors and Outcomes by Receipt of Early and Adequate PNC (Figure 6.6)

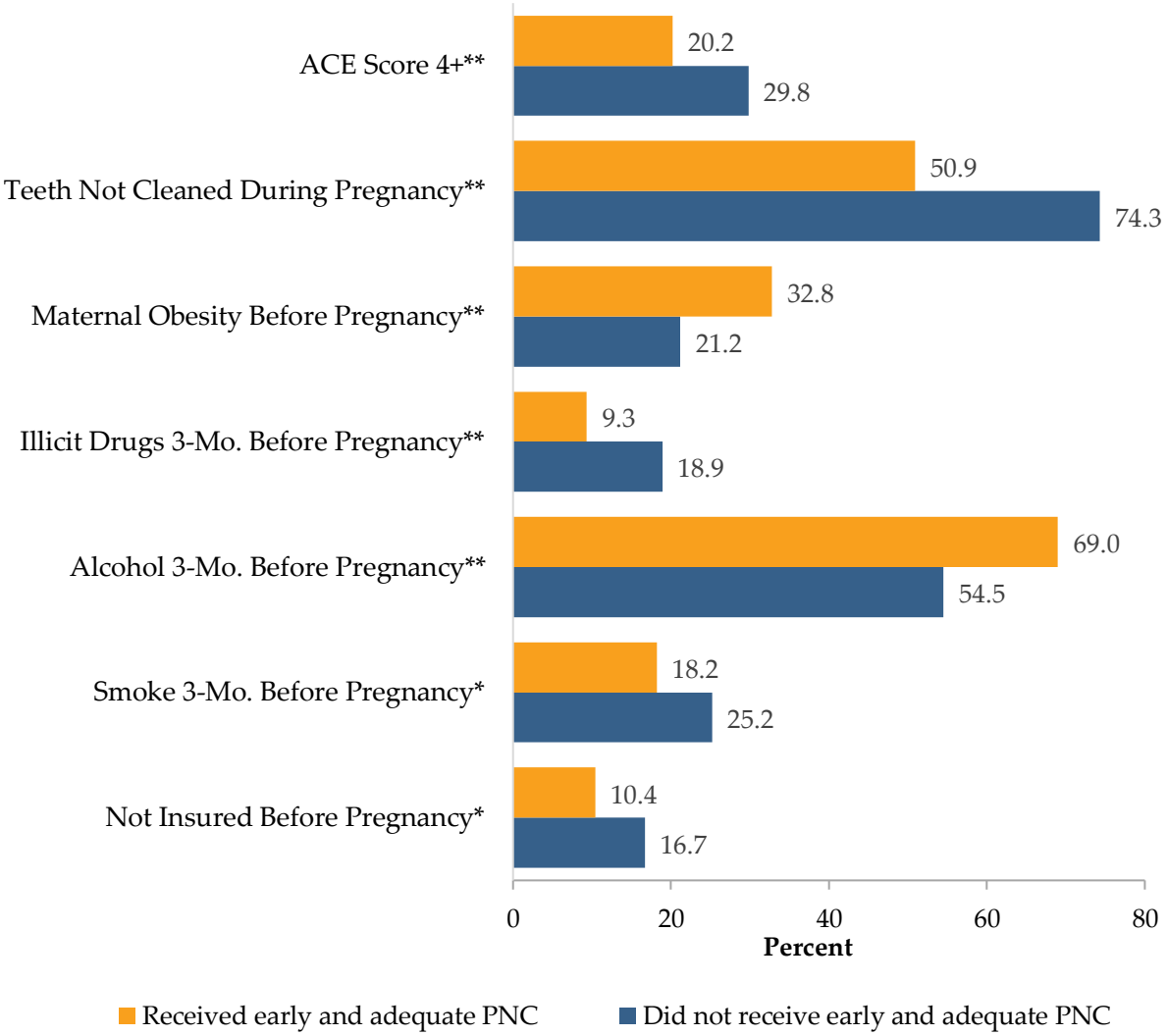
Mothers who received early and adequate PNC, compared to mothers who did not, were significantly (p-value less than 0.05) *more likely* to report that:

- They used alcohol the 3 months before pregnancy (69.0% vs, 54.5%).
- They had obesity before pregnancy (32.8% vs. 21.2%).

Mothers who received early and adequate PNC, compared to mothers who did not, were significantly (p-value less than 0.05) *less likely* to report that:

- They were uninsured before pregnancy (10.4% vs. 16.7%).
- They smoked the 3 months before pregnancy (18.2% vs. 25.2%).
- They used illicit drugs the 3 months before pregnancy (9.3% vs. 18.9%).
- They did not have their teeth cleaned during pregnancy (50.9% vs. 74.3%).
- They had a high ACE score (4+) (20.2% vs. 29.8%).

Figure 6.6: Risk behaviors and outcomes by mothers who received early and adequate PNC, South Dakota, 2020 (weighted)



* p-value < 0.05 ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
PNC = prenatal care, ACE = adverse childhood experiences

Chapter 7: Prenatal care barriers

PRAMS asked women:

Q20 Did you get prenatal care as early in your pregnancy as you wanted?
Q21 Did any of these things keep you from getting prenatal care when you wanted it?… [List]
Q22 *During any of your prenatal care visits*, did a doctor, nurse, or other health care worker ask you any of the things listed below? [List]
Q69 Were you able to go to all of your recommended prenatal visits?
Q70 Did any of these things keep you from *going* to your recommended prenatal visits? [List]

Measure	% of women	(95% CI, N)
Desire for prenatal care		
Among women who went for prenatal care:		
Started as early as they wanted	89.6	(87.4-91.4, 10276)
Went to all recommended visits	92.4	(90.4-93.9, 10395)
***Among women who did not get prenatal care as early as they wanted*, barriers were:**		
Did not know she was pregnant	31.1	(23.8-39.4, 1372)
Could not get an appointment when wanted	28.8	(21.7-37.1, 1401)
Had too many other things going on	25.1	(18.6-32.8, 1372)
Did not have enough money or insurance to pay for visits	18.5	(12.5-26.6, 1410)
Doctor or health plan would not start care as early as wanted	18.5	(12.2-27.1, 1363)
Did not have any transportation to get to the clinic or doctor's office	17.9	(13.5-23.4, 1368)
Did not have anyone to take care of children	16.8	(11.5-24.0, 1395)
Did not want anyone to know she was pregnant	13.6	(8.9-20.0, 1359)
Could not take time off from work or school	12.7	(8.0-19.6, 1360)
Did not have a Medicaid card	8.5	(5.3-13.2, 1404)
Afraid she would be reported for using alcohol/drugs during pregnancy	4.5	(2.1-9.1, 1368)^
Did not want prenatal care	2.6	(1.3-5.0, 1355)^
***Among women who did not go to all recommended visits*, barriers were:**		
Too many other things going on	46.0	(34.5-58.0, 760)
Did not have any transportation to get to clinic or doctor's office	38.8	(28.7-49.9, 765)
Did not have anyone to take care of children	32.1	(22.1-43.9, 760)
Could not get an appointment when wanted one	24.1	(16.3-34.1, 760)
Did not want prenatal care	19.7	(11.2-32.3, 760)
Could not take time off from work or school	17.2	(9.4-29.4, 760)
Did not have enough money or insurance to pay for visits	14.2	(8.0-23.8, 760)
Did not have Medicaid card	9.4	(4.9-17.4, 760)^
Afraid she would be reported for using alcohol/drugs during pregnancy	4.6	(2.2-9.3, 756)^
***Among women who received prenatal care*,** topics discussed with, or asked about by a health care worker during prenatal care visits:		
Smoking	96.6	(95.2-97.6, 10316)
Use of prescription medication	96.4	(95.0-97.4, 10318)
Drinking alcohol	94.7	(92.9-96.0, 10260)
Breastfeeding	93.2	(91.1-94.9, 10302)
Postpartum birth control	86.4	(83.7-88.7, 10329)
Symptoms of depression	86.3	(83.5-88.6, 10316)
Emotional or physical abuse	81.7	(78.7-84.4, 10268)
Illegal drugs	80.0	(76.9-82.9, 10301)
Weight gain during pregnancy	55.5	(51.8-59.0, 10284)
HIV testing	45.9	(42.3-49.4, 10310)

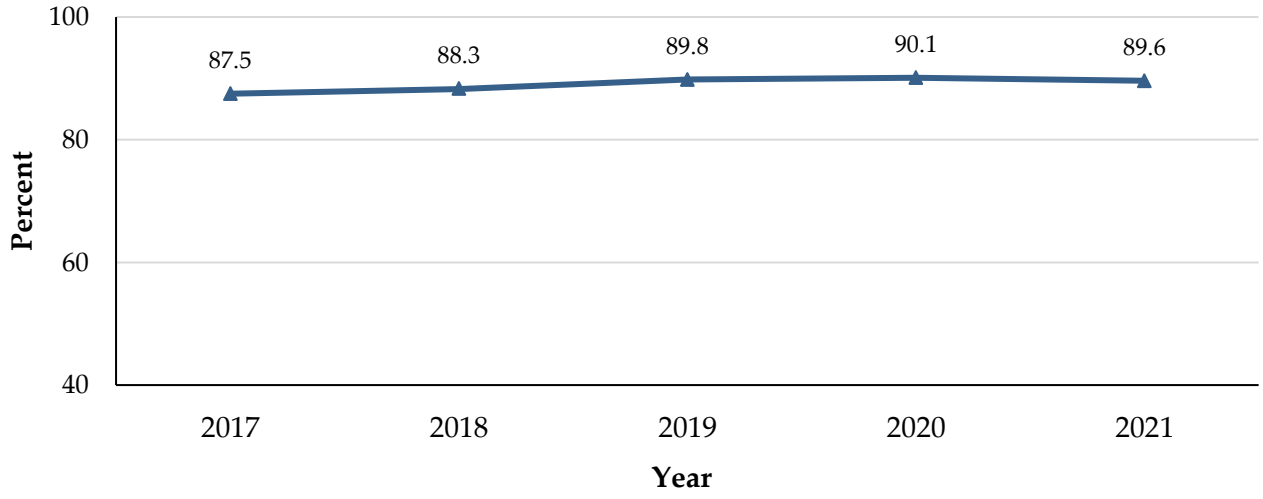
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Started Prenatal Care as Early as Wanted

Prevalence and Trends (Figure 7.1)

The percentage of South Dakota mothers who started prenatal care as early as they wanted has not changed over time (p-value for linear trend greater than 0.05).

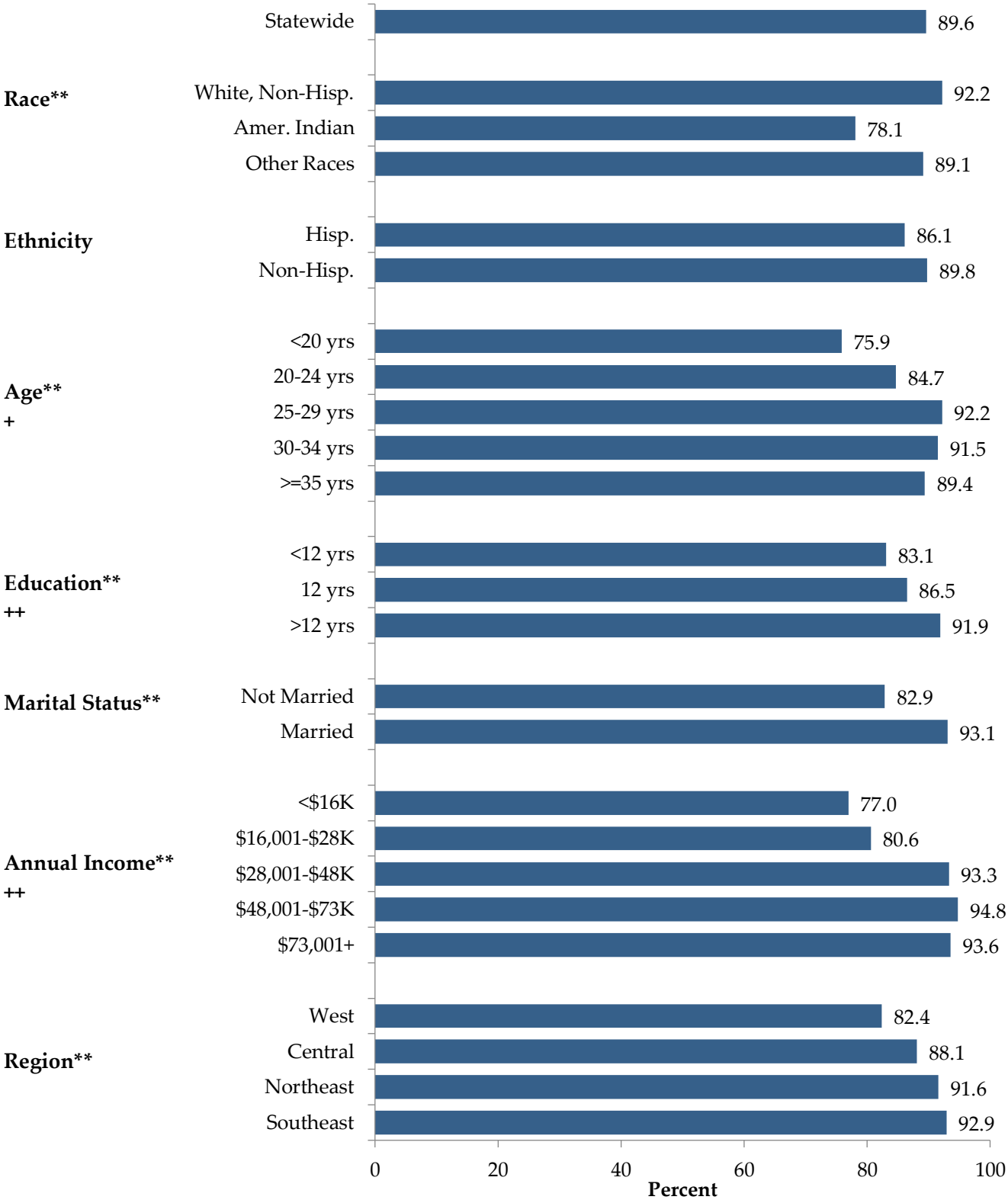
Figure 7.1: Mothers who received prenatal care as early as they wanted by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 7.2)

- The overall prevalence of South Dakota mothers who started prenatal care as early as they wanted was 89.6%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with receiving prenatal care as early as they wanted included maternal race, age, maternal education, marital status, household income, and region.
- Mothers who were white, older, had more years of education, were married, and had greater household income had a higher prevalence of receiving prenatal care as early as they wanted compared with their counterparts. The Southeast and Northeast regions had the highest prevalence of starting prenatal care as early as they wanted.

Figure 7.2: Percentage of mothers who received prenatal care as early as they wanted by demographic characteristics, South Dakota, 2021 (weighted)



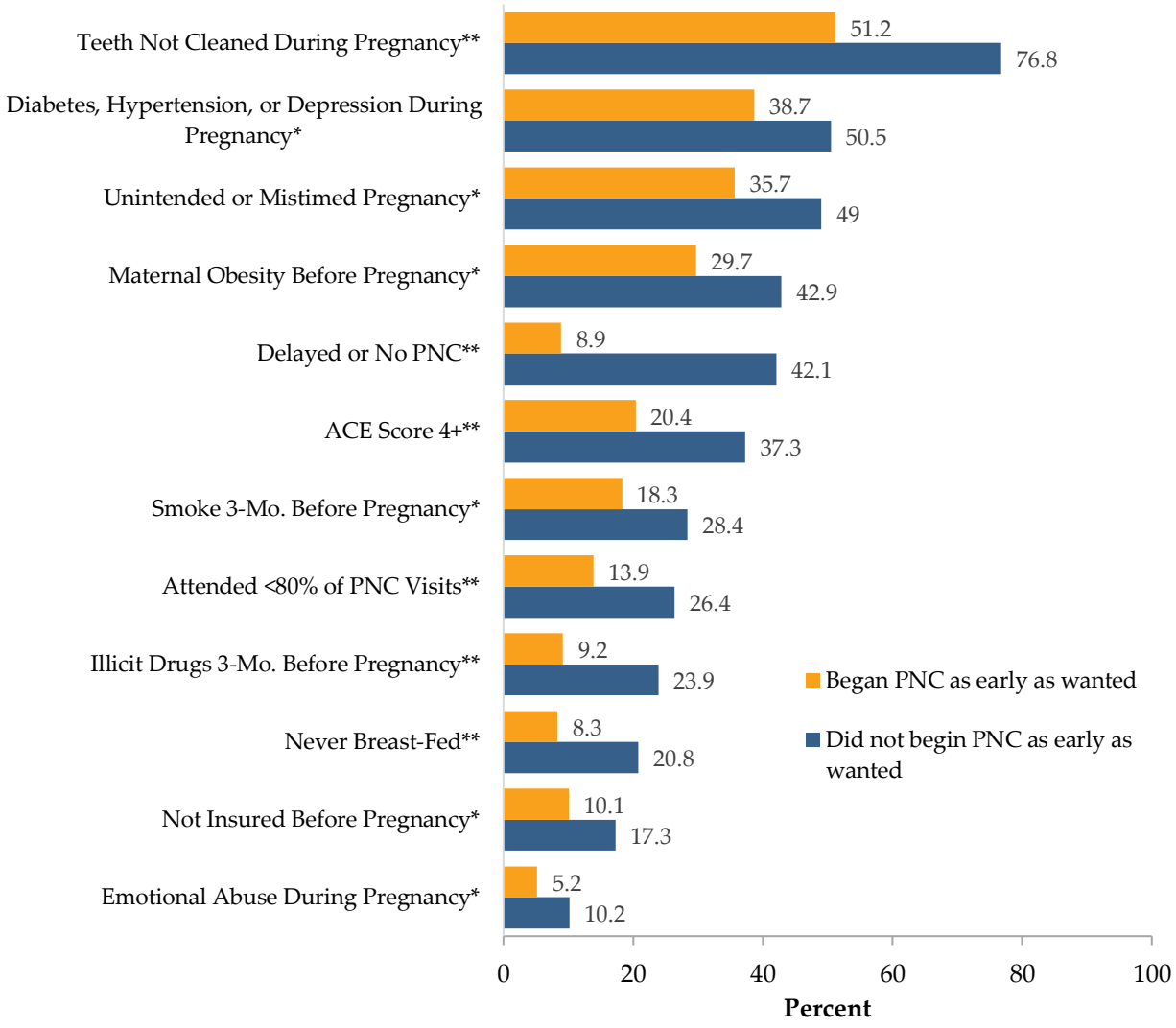
** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 7.3)

Mothers who started prenatal care as early as they wanted, compared to mothers who did not start prenatal care as early as they wanted, were significantly (p-value less than 0.05) *less likely* to report that:

- They had an unintended or mistimed pregnancy (35.7% vs. 49.0%).
- They were uninsured before pregnancy (10.1% vs. 17.3%).
- They smoked the 3 months before pregnancy (18.3% vs. 28.4%).
- They used illicit drugs the 3 months before pregnancy (9.2% vs. 23.9%).
- They had obesity before pregnancy (29.7% vs. 42.9%)
- They started prenatal care after the first trimester or had no prenatal care (8.9% vs. 42.1%).
- They attended fewer than 80% of their prenatal visits (13.9% vs. 26.4%).
- They did not have their teeth cleaned during pregnancy (51.2% vs. 76.8%).
- They suffered emotional abuse during pregnancy (5.2% vs. 10.2%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (38.7% vs. 50.5%).
- They never breastfed their infant (8.3% vs. 20.8%).
- They had a high ACE score (4+) (20.4% vs. 37.3%).

Figure 7.3: Risk behaviors and outcomes by mothers who began prenatal care as early as they wanted, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
PNC = prenatal care, ACE = adverse childhood experiences

Chapter 8: Flu vaccinations

Significance

Maternal influenza vaccination has been shown to be associated with a decreased risk of influenza and its complications in pregnant women and their infants for the first 6 months of life. Infants of mothers who were infected with influenza during pregnancy were more likely to be born preterm and have a low birthweight.[16]

PRAMS asked women:

Q23 During the *12 months before the delivery* of your new baby, did a doctor, nurse, or other health care worker *offer* you a flu shot or *tell* you to get one?

Q24 During the *12 months before the delivery* of your new baby, did you *get* a flu shot? Check ONE answer [List]

Healthy People 2030 Objectives

- Increase the proportion of people who got the flu vaccine every year to 70%. (IID-09)

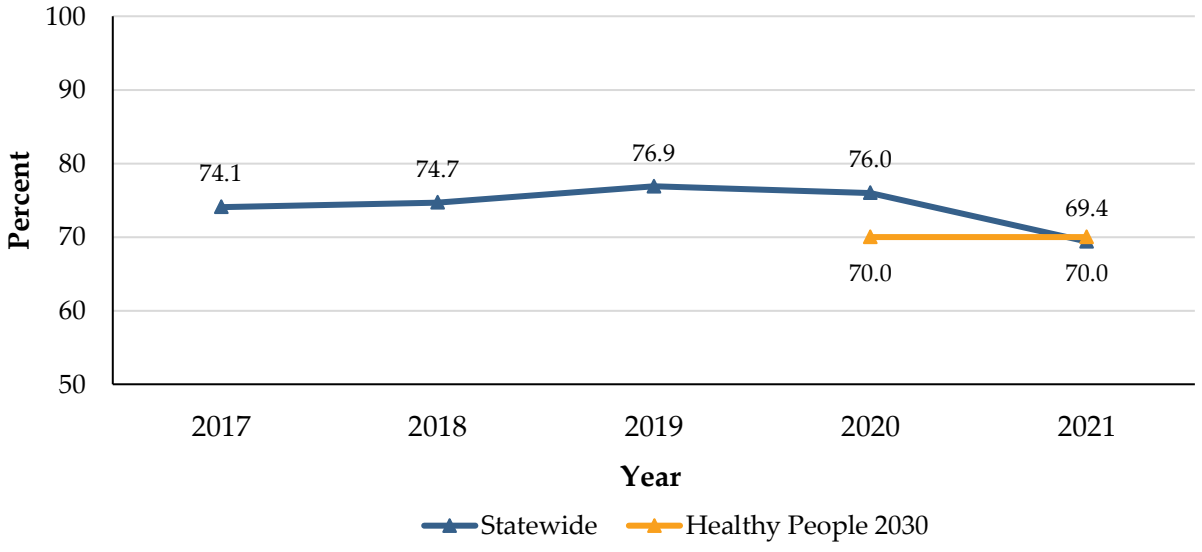
Measure	% of women (95% CI, N)
Flu shot offered during the 12 months before delivery of the infant	87.9 (85.6-90.0, 10685)
Flu shot received the 12 months before the infant's birth	
No	30.6 (27.5-33.8, 10668)
Yes, before pregnancy	16.5 (14.0-19.3, 10668)
Yes, during pregnancy	52.9 (52.9-56.4, 10668)

Flu Shot 12 Months Before Delivery

Prevalence and Trends (Figure 8.1)

The percentage of South Dakota mothers who received a flu vaccine the 12 months before the delivery of the infant (either before or during pregnancy) has not changed over time (p-value for linear trend greater than 0.05).

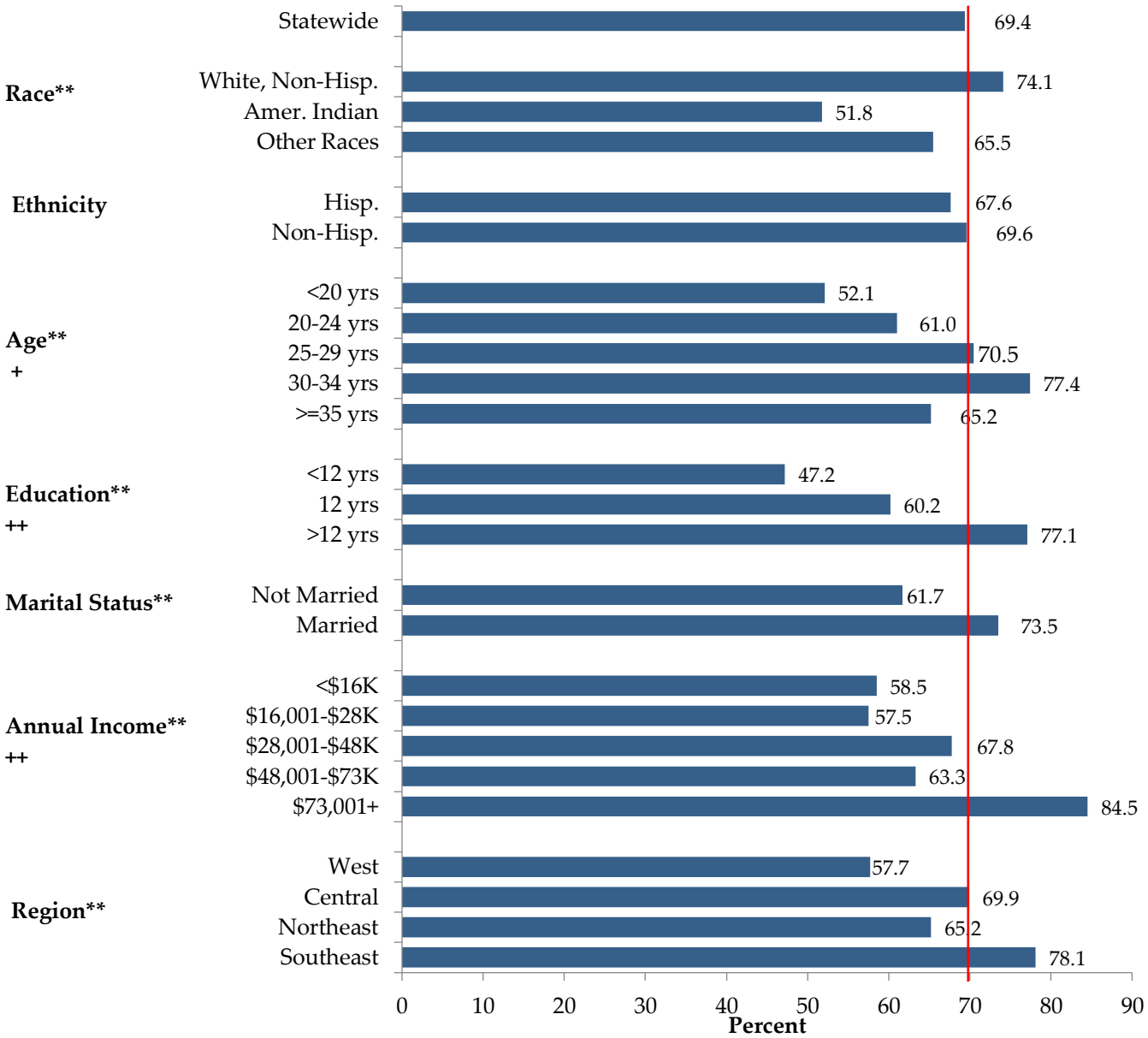
Figure 8.1: Mothers who received a flu vaccine the 12 months before the delivery of the infant (either before or during pregnancy) by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 8.2)

- Overall prevalence of South Dakota mothers who received a flu vaccine the 12 months before the delivery of the infant (either before or during pregnancy) was 69.4%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with receiving a flu vaccine the 12 months before the delivery of the infant included maternal race, age, education, marital status, and household income.
- Mothers who were White, age 30-34 years, had more years of education, married, and had a household income over $73,000 had a higher prevalence of receiving a flu vaccine the 12 months before the delivery of the infant compared with their counterparts. Mothers in the southeast region were also more likely to report receiving a flu vaccine.

Figure 8.2: Percentage of mothers who received a flu vaccine in the 12 months before the infant's birth by demographic characteristics, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01 based on Rao-Scott chi-square test.
+ p-value < 0.05; ++ p-value < 0.01 based on logistic regression results for linear trend.

— Healthy People 2030 (70%)

Risk Behaviors and Outcomes (Figure 8.3)

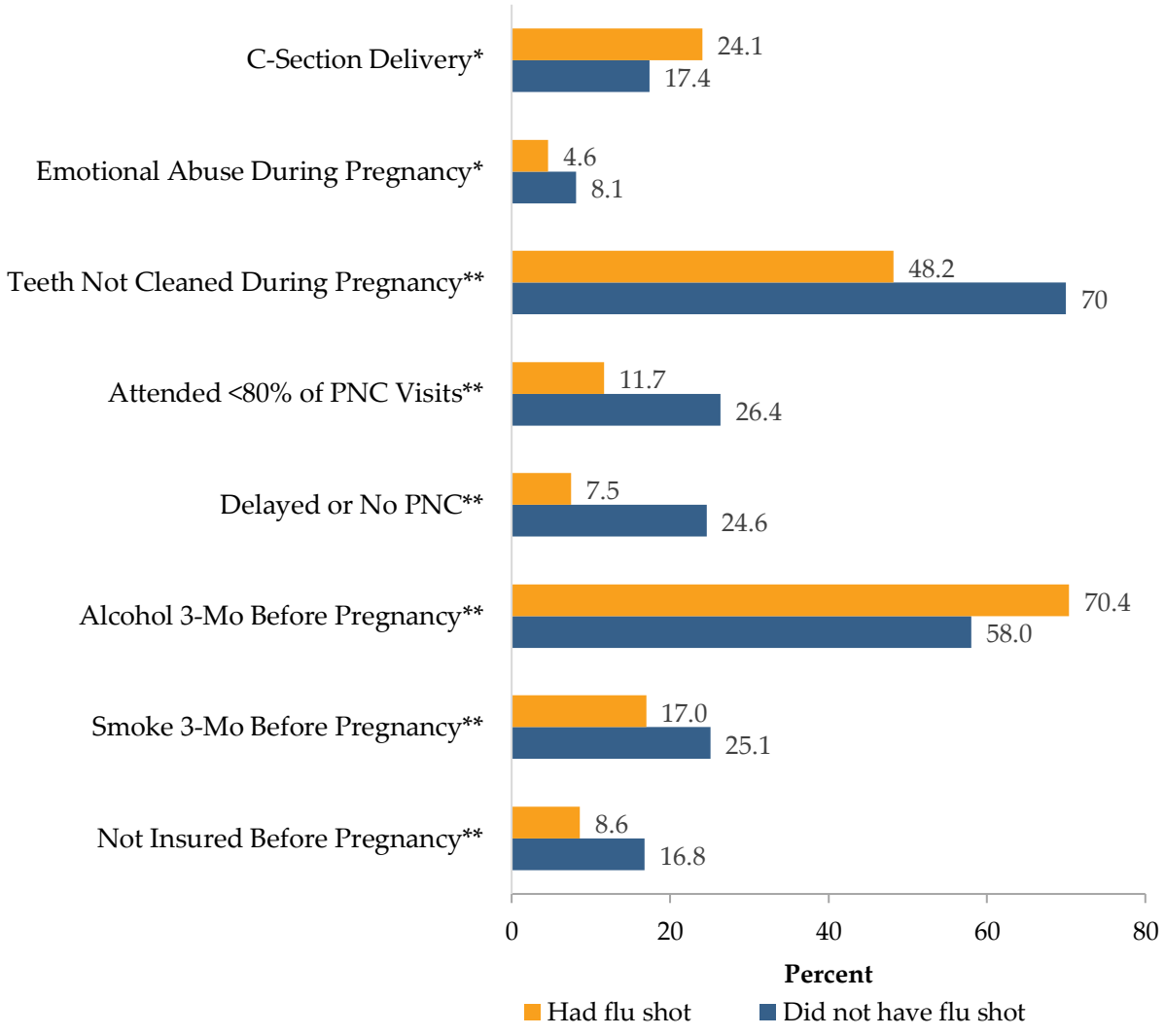
Mothers who had a flu shot 12 months before delivery, compared to mothers who did not have a flu shot before delivery, were significantly (p-value less than 0.05) *more likely* to report that:

- They used alcohol 3-months before during pregnancy (70.4% vs. 58.0%).
- They had a C-section delivery (24.1% vs. 17.4%).

Mothers who had a flu shot 12 months before delivery, compared to mothers who did not have a flu shot before delivery, were significantly (p-value less than 0.05) *less likely* to report that:

- They were uninsured before pregnancy (8.6% vs. 16.8%).
- They smoked 3 months before pregnancy (17.0% vs. 25.1%).
- They started prenatal care after the first trimester or had no prenatal care (7.5% vs. 24.6%).
- They attended fewer than 80% of their prenatal visits (11.7% vs. 26.4%).
- They did not have their teeth cleaned during pregnancy (48.2% vs. 70.0%).
- They experienced emotional abuse during pregnancy (4.6% vs. 8.1%).

Figure 8.3: Risk behaviors and outcomes by mothers who received a flu vaccine the 12 months before the infant's birth, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
PNC = prenatal care

Chapter 9: Oral health

Significance

Oral health during pregnancy is just as important to consider as other aspects of health.[17] If dental diseases during pregnancy are left untreated, they can affect not only the mother, but the fetus as well. One of the most common untreated dental diseases is periodontitis. Periodontitis is associated with both preterm birth and low birthweight, which are known to be leading causes of infant mortality.[18]

PRAMS asked women:

Q10 In the *12 months before you got pregnant* with your new baby, did you have any health care visits with a doctor, nurse, or other health care worker, including a dental or mental health worker?

Q11 What type of health care visit did you have in the *12 months before you got pregnant* with your new baby? [List]

Q25 During *your most recent* pregnancy, did you have your teeth cleaned by a dentist or dental hygienist?

Q26 Did any of the following things make it hard for you to go to a dentist or dental clinic during *your most recent* pregnancy? [List]

Healthy People 2030 Objectives

- Increase the use of the oral health care system to 45%. (OH-08)

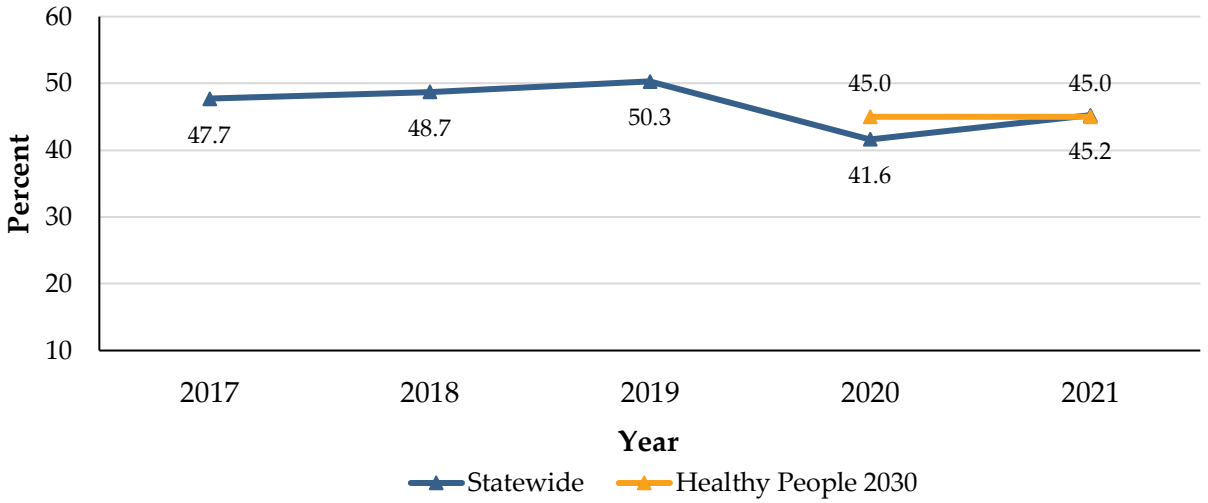
Measure	% of women (95% CI, N)
Had teeth cleaned *12 months before* getting pregnant	44.0 (40.5-47.5, 10681)
Had teeth cleaned *during most recent* pregnancy	45.2 (41.7-48.7,10669)
Barriers to dental care	
Could not afford to go to the dentist/dental clinic	17.2 (14.8-20.0, 10451)
Did not think it was safe to go to the dentist during pregnancy	9.4 (7.8-11.3, 10356)
Could not find a dentist/dental clinic that would take Medicaid	6.3 (5.0-7.9, 10369)
Could not find a dentist/dental clinic that would take pregnant	4.1 (3.1-5.3, 10315)

Teeth Cleaned During Pregnancy

Prevalence and Trends (Figure 9.1)

The percentage of South Dakota mothers who had their teeth clean *during their most recent* pregnancy **has decreased** over time (p-value for linear trend less than 0.05). The Healthy People 2030 goal of 45% was achieved in 2021.

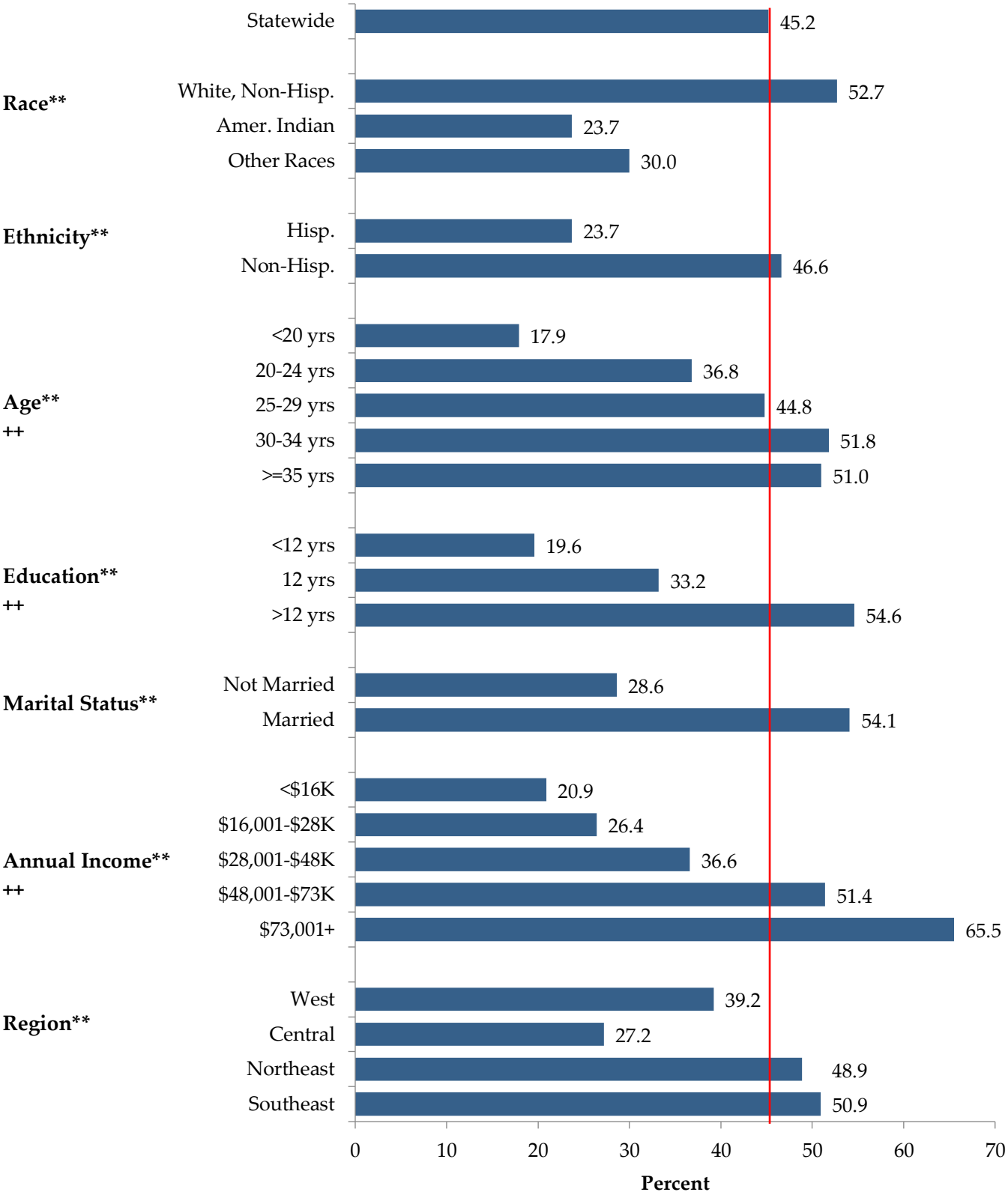
Figure 9.1: Mothers who had their teeth cleaned during their most recent pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 9.2)

- The overall prevalence of South Dakota mothers who had their teeth clean *during their most recent* pregnancy was 45.2%.
- All demographic characteristics assessed were significantly (p-value less than 0.05) associated with mothers having their teeth clean *during their most recent* pregnancy including maternal race, ethnicity, age, education, marital status, and household income.
- Mothers who were white, non-Hispanic, older, had more years of education, were married, and had a household income greater than $73,000 had a higher prevalence of having their teeth cleaned during their most recent pregnancy compared with their counterparts. Mothers in the Northeast and Southeast region had the highest rates of having teeth cleaned during pregnancy.

Figure 9.2: Percentage of mothers who had their teeth cleaned during their most recent pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.

—— Healthy People 2030 (45%)

Risk Behaviors and Outcomes (Figure 9.3)

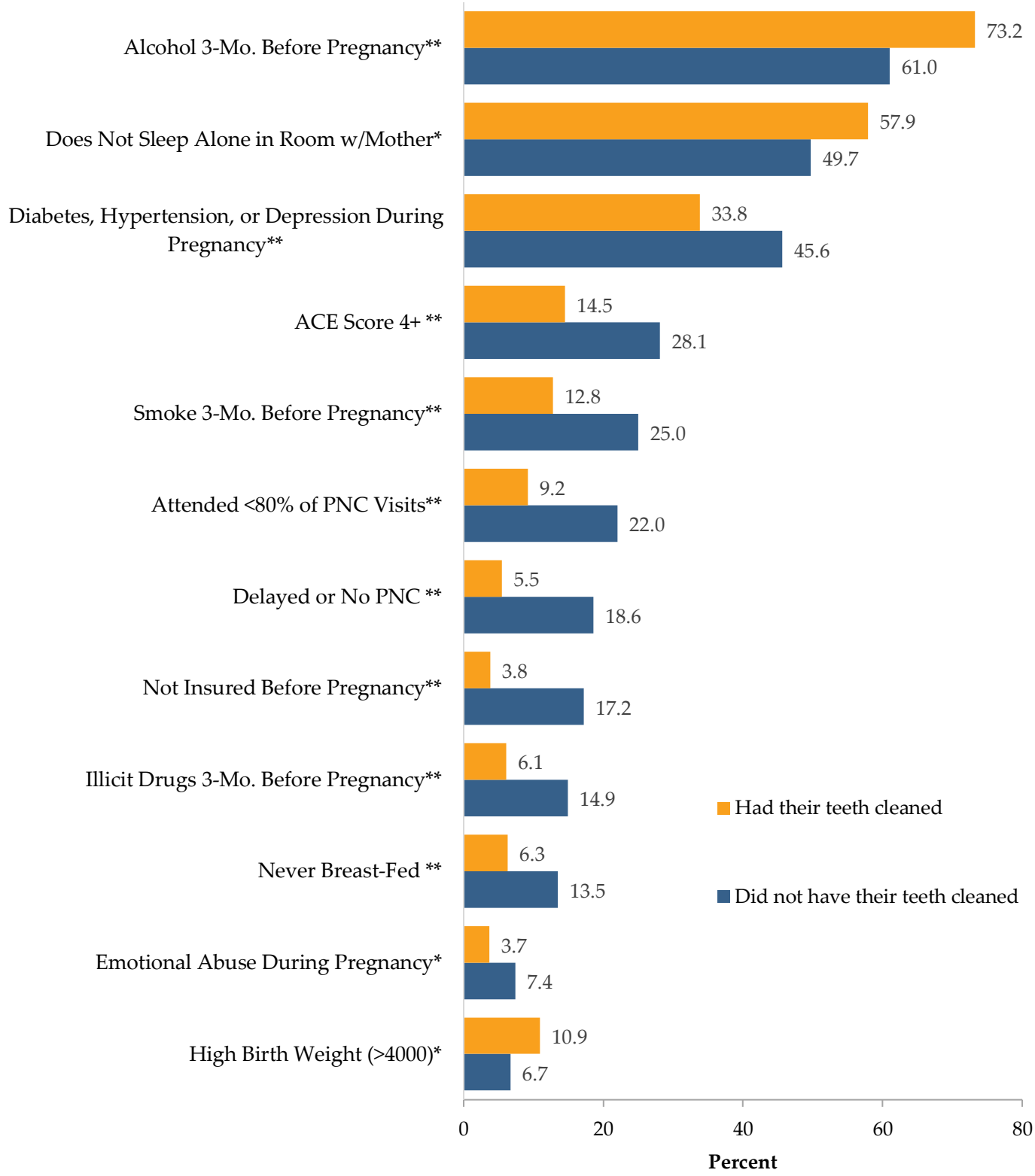
Mothers who had had their teeth cleaned during pregnancy, compared to mothers who did not were significantly (p-value less than 0.05) *more likely* to report that:

- They drank alcohol the 3 months before pregnancy (73.2% vs. 61.0%).
- Their infant was born high birth weight (10.9% vs. 6.7%).
- Their infant did not sleep alone in the room with her (57.9% vs. 49.7%).

Mothers who had their teeth cleaned during pregnancy, compared to mothers who did not have their teeth cleaned during pregnancy, were significantly (p-value less than 0.05) *less likely* to report that:

- They were uninsured before pregnancy (3.8% vs. 17.2%).
- They smoked the 3 months before pregnancy (12.8% vs. 25.0%).
- They used illicit drugs the 3 months before pregnancy (6.1% vs. 14.9%).
- They started prenatal care after the first trimester or had no prenatal care (5.5% vs. 18.6%).
- They attended fewer than 80% of their prenatal visits (9.2% vs. 22.0%).
- They suffered emotional abuse during pregnancy (3.7% vs. 7.4%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (33.8% vs. 45.6%).
- They never breastfed their infant (6.3% vs. 13.5%).
- They had a high ACE score (4+) (14.5% vs. 28.1%).

Figure 9.3: Risk behaviors and outcomes by mothers who had their teeth cleaned during their most recent pregnancy, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
PNC = prenatal care, ACE = adverse childhood experiences

Chapter 10: Abuse

Background

Domestic abuse during pregnancy is linked to negative effects on maternal health, such as inconsistent access to prenatal care, insufficient weight gain, substance use, inadequate nutrition, and mental health concerns.[19-21] Effects of domestic abuse on neonatal health include insufficient size for gestational age, preterm birth, low birth weight, and an increased risk of mortality.[19,22]

PRAMS asked women:

Q44 In the *12 months before you got pregnant* with your new baby, did any of the following people push, hit, slap, kick, choke, or physically hurt you in any other way?

Q45 During *your most recent pregnancy*, did any of the following people push, hit, slap, kick, choke, or physically hurt you in any other way? [husband/partner, ex-husband/partner, someone else]

Q46 During *your most recent pregnancy*, did any of the following things happen to you? [My husband or partner threatened me or made me feel unsafe in some way; I was frightened for my safety or my family's safety because of the anger or threats of my husband or partner; My husband or partner tried to control my daily activities, for example, controlling who I could talk to or where I could go; My husband or partner forced me to take part in touching or any sexual activity when I did not want to].

Healthy People 2030 Objectives

- Reduce intimate partner violence (i.e., sexual violence, physical violence, and stalking) across the lifespan (IVP-D04, developmental).

Definitions:

Sexual abuse was defined as husband/partner forcing the woman to take part in touching or sexual activity when she did not want to.

Emotional abuse was defined as the husband/partner either trying to control the mother's daily activities, threatening the mother in a way that made her feel unsafe, or frightening the mother for her or her family's safety.

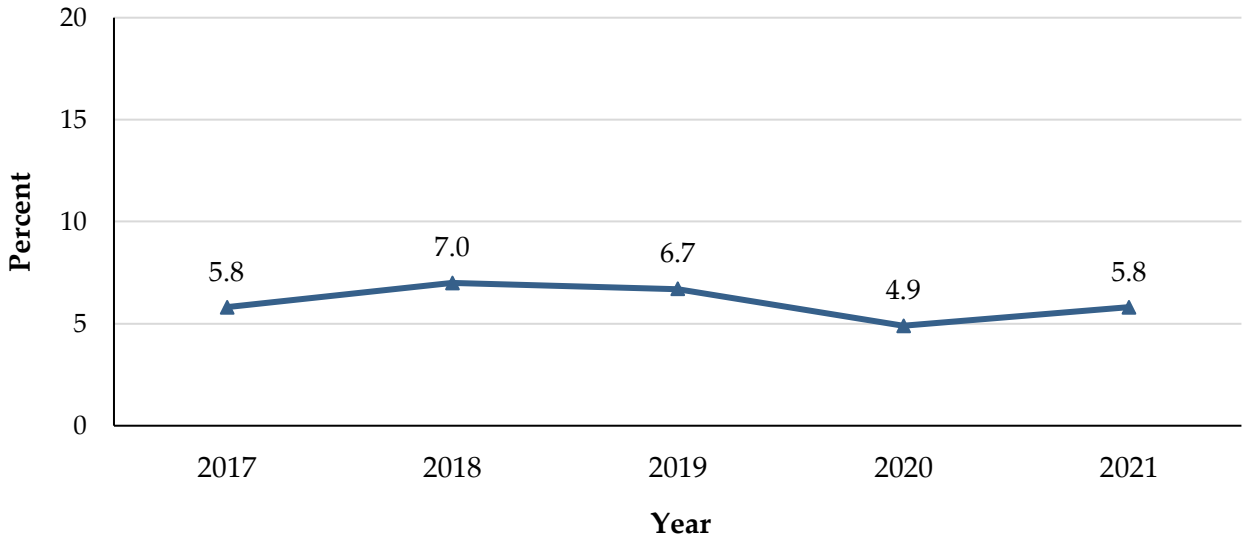
Measure	% of women (95% CI, N)	
Abuse by partner/husband		
Physical, before pregnancy	2.6	(1.8-3.7, 10705)
Physical, during pregnancy	1.9	(1.2-2.9, 10725)
Sexual abuse, during pregnancy	2.1	(1.3-3.3, 10732)
Emotional abuse during pregnancy	5.8	(4.6-7.3, 10719)
Tried to control daily activities	4.8	(3.7-6.2, 10729)
Was threatened or made to feel unsafe	3.9	(2.9-5.2, 10748)
Was frightened for her or family's safety	3.2	(2.2-4.4, 10748)

Emotional Abuse During Pregnancy

Prevalence and Trends (Figure 10.1)

The percentage of South Dakota mothers who were emotionally abused during pregnancy has not changed over time (p-value for linear trend greater than 0.05).

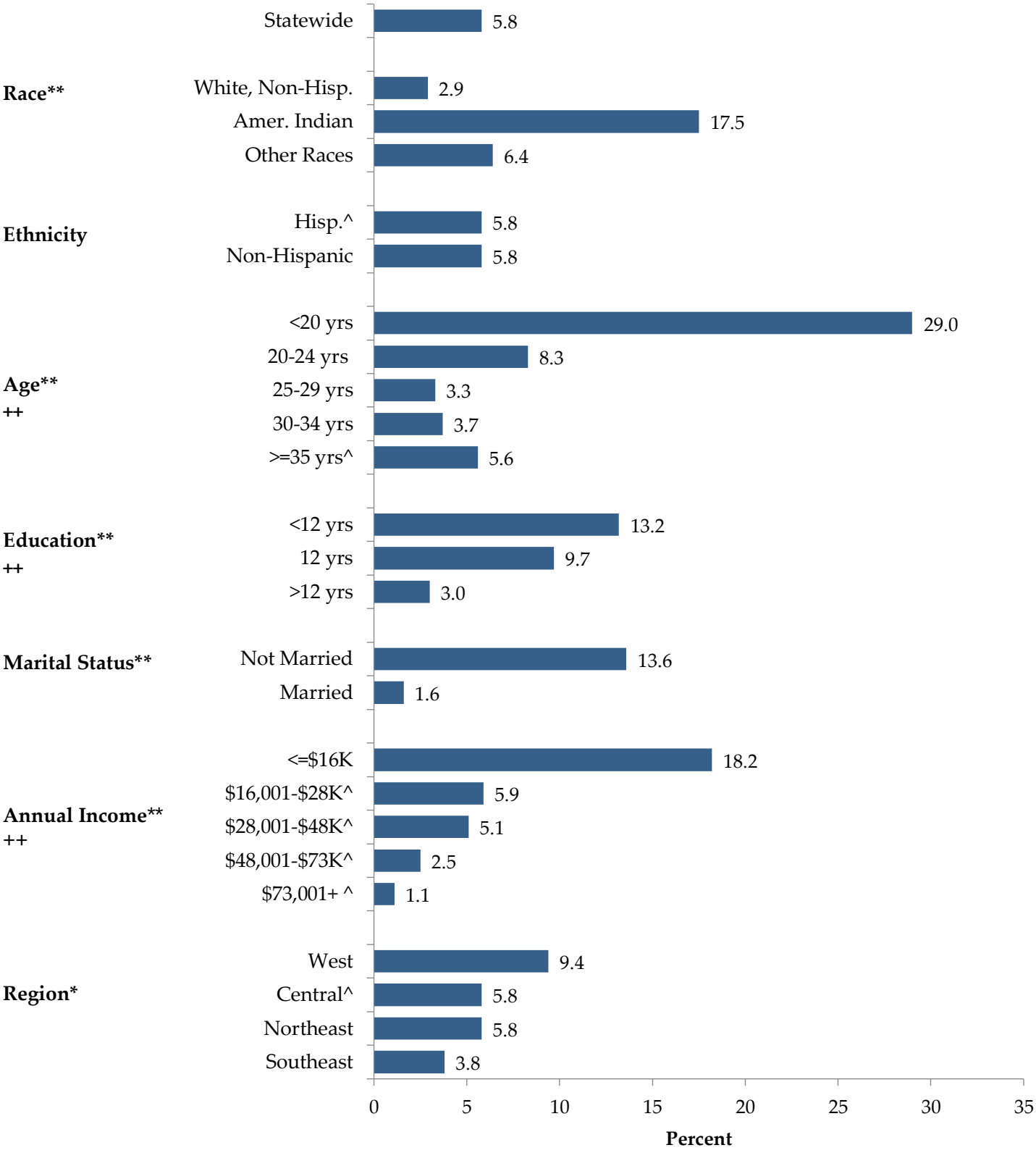
Figure 10.1: Mothers who were emotionally abused during pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 10.2)

- The overall prevalence of South Dakota mothers who were emotionally abused during pregnancy was 5.8%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with being emotionally abused during pregnancy included maternal race, age, education, marital status, household income and region of the state that the mother resided.
- Mothers who were American Indian, less than 20 years of age, had fewer years of education, were not married, had less household income and resided in the Western region had a higher prevalence of emotional abuse during pregnancy compared with their counterparts.

Figure 10.2: Percentage of mothers who were emotionally abused during pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



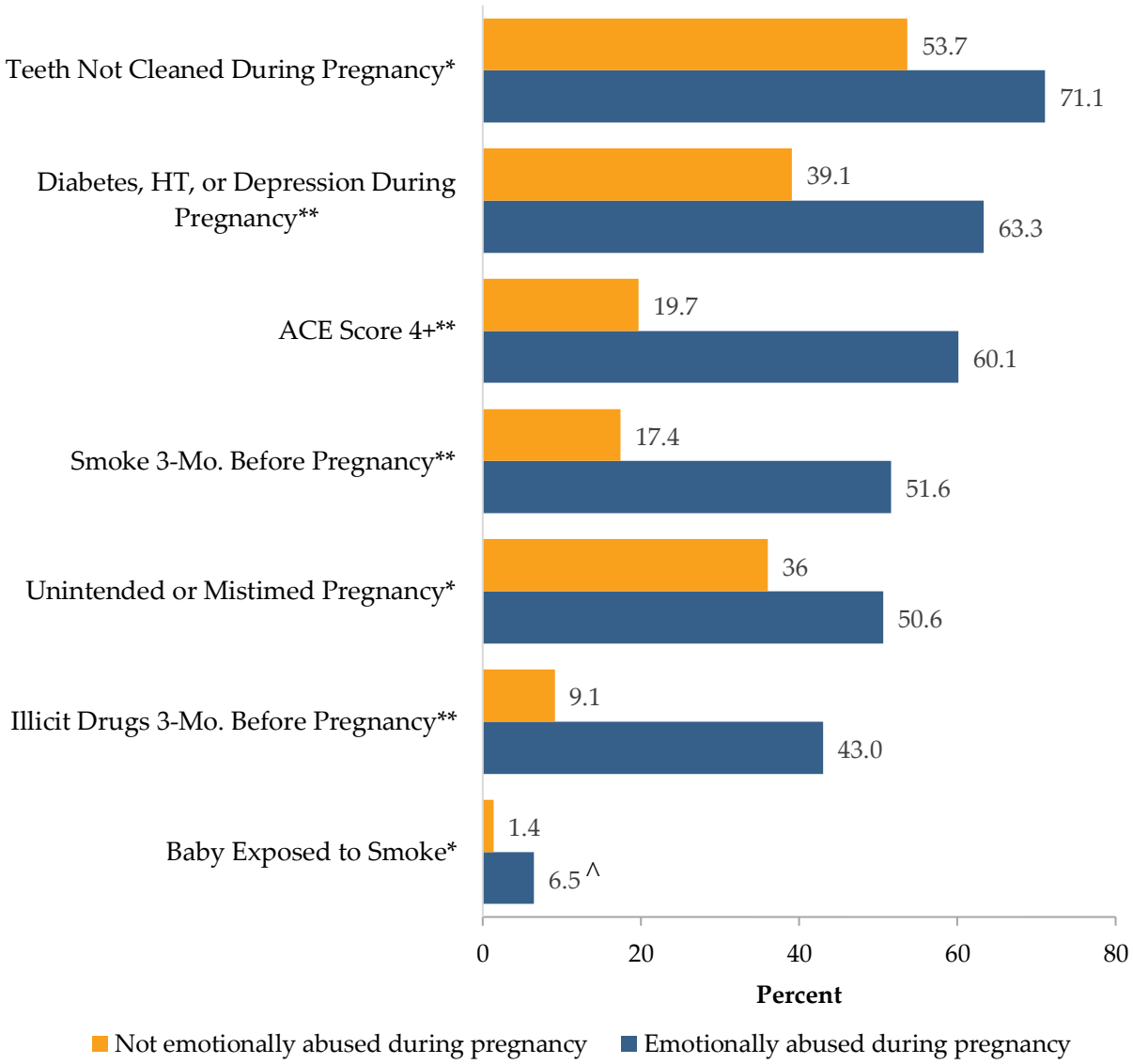
* p-value <0.05 ** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Risk Behaviors and Outcomes (Figure 10.3)

Mothers who were emotionally abused during pregnancy, compared to mothers who were not emotionally abused during pregnancy, were significantly (p-value less than 0.05) *more likely* to report that:

- They had an unintended or mistimed pregnancy (50,6% v. 36.0).
- They smoked the 3 months before pregnancy (51.6% vs. 17.4%).
- They used illicit drugs the 3 months before pregnancy (43.0% vs. 9.1%).
- They did not have teeth cleaned during pregnancy (71.1% vs. 53.7%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (63.3% vs. 39.1%).
- Their baby is exposed to smoke (6.5^% vs. 1.4%; interpret these percentages with caution).
- They had a high ACE score (4+) (60.1% vs. 19.7%).

Figure 10.3: Risk behaviors and outcomes by mothers who were emotionally abused during pregnancy, South Dakota, 2021 (weighted)



* p-value < 0.05; ** p-value < 0.01; p-value based on Rao-Scott chi-square test

^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

PNC = prenatal care, ACE = adverse childhood experiences

Chapter 11: Tobacco use

Significance

Tobacco use during pregnancy is associated with developmental problems of the fetal brain and kidneys, low birthweight, and preterm birth.[23,24] Preterm birth is one of the leading causes of death in the neonatal period.[25]

PRAMS asked women:

Q29 Have you smoked any cigarettes in the *past 2 years*?
Q30 In the *3 months before* you got pregnant, how many cigarettes did you smoke on an average day? [List]
Q31 In the *last 3 months* of your pregnancy, how many cigarettes did you smoke on an average day? [List]
Q36 How many cigarettes do you smoke on an average day *now*? [postpartum] [List]
Q37 Have you used any of the following products in the *past 2 years*? [e-cigarettes, hookah]
Q38 During the *3 months before* you got pregnant, on average, how often did you use e-cigarettes or other electronic nicotine products? [List]
Q39 During the *last 3 months* of your pregnancy, on average, how often did you use e-cigarettes or other electronic nicotine products? [List]

Healthy People 2030 Objectives

- Increase abstinence from cigarette smoking among pregnant women to 95.7% *(*MICH-10; *prevalence of smoking during pregnancy to 4.3%).*

Measure	% of women (95% CI, N)
Cigarette use, maternal	
In the past 2 years	21.5 (19.0-24.3, 10686)
3 months before pregnancy	19.5 (17.1-22.2, 10714)
Last 3 months of pregnancy	9.8 (8.0-12.0, 10702)
Postpartum	13.4 (11.3-15.7, 10710)
Among women who smoked in the past 2 years, amount smoked *3 months before* pregnancy	
None (did not smoke then)	10.2 (6.7-15.3, 2329)
Less than 5 cigarettes per day	39.3 (32.9-46.0, 2329)
6 to 10 cigarettes per day	28.3 (22.4-35.1, 2329)
11 cigarettes or more per day	22.2 (16.8-28.9, 2329)
Among women who smoked in the past 2 years, amount smoked *last 3 months* of pregnancy	
None (did not smoke then)	54.6 (47.6-61.4, 2317)
Less than 5 cigarettes per day	29.6 (23.5-36.5, 2317)
6 to 10 cigarettes per day	11.6 (7.6-17.3, 2317)
11 cigarettes or more per day	4.2 (2.3-7.7, 2317)^
Among women who smoked in the past 2 years, amount smoked *now*	
None (did not smoke then)	38.4 (31.9-45.5, 2325)
Less than 5 cigarettes per day	31.0 (25.3-37.3, 2325)
6 to 10 cigarettes per day	17.9 (13.0-24.1, 2325)
11 cigarettes or more per day	12.7 (8.5-18.5, 2325)

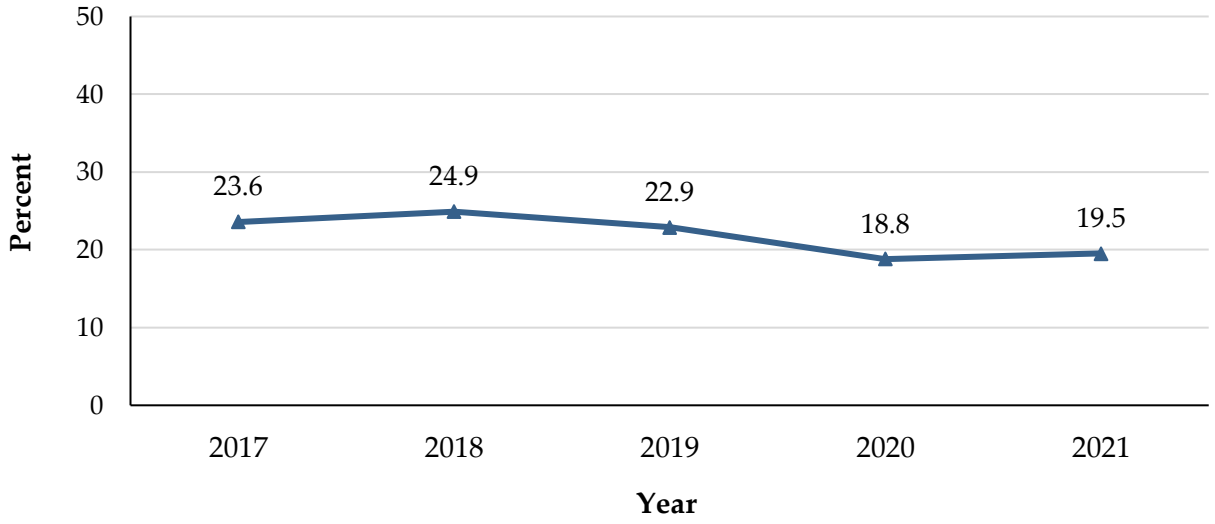
Measure	% of women (95% CI, N)
Other tobacco use, maternal use among all women	
E-cigarettes or other electronic nicotine products *in past 2 years*	9.2 (7.4-11.4, 10674)
Hookah use past 2 years	2.1 (1.3-3.2, 10634)
Among women who used e-cigarettes or other nicotine products in the past 2 years, frequency of use the *3 months before* pregnancy*:*	
More than once a day	38.7 (28.2-50.3, 1001)
Once a day	5.4 (2.4-11.5, 1001)^
2-6 days a week	13.7 (7.5-23.5, 1001)
1 day a week or less	17.4 (10.6-27.0, 1001)
Did not use e-cigarette or other electronic nicotine products then	24.9 (16.4-35.9, 1001)
Among women who used e-cigarettes or other nicotine products in the past 2 years, frequency of use the *last 3 months* of pregnancy*:*	
More than once a day	15.3 (8.4-26.3, 1001)
Once a day	1.9 (0.3-11.6, 1001)
2-6 days a week	1.7 (0.6-4.6, 1001)^
1 day a week or less	2.7 (1.3-5.6, 1001)^
Did not use e-cigarettes or other electronic nicotine products then	78.4 (67.5-86.3, 1001)

Smoked Three Months Before Pregnancy

Prevalence and Trends (Figure 11.1)

The percentage of South Dakota mothers who smoked three months before pregnancy **has decreased** over time (p-value for linear trend less than 0.05).

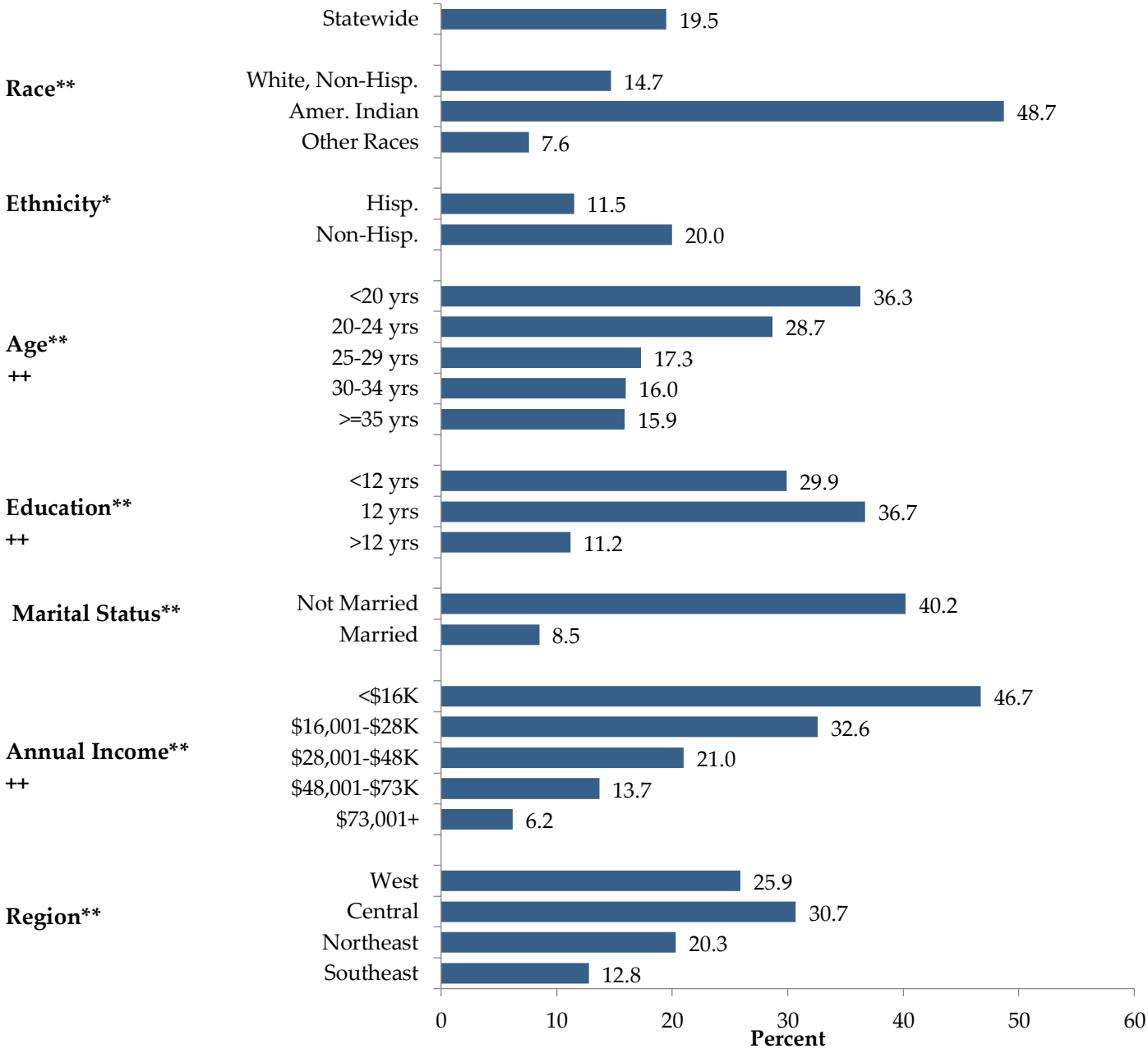
Figure 11.1: Mothers who smoked the three months before pregnancy by year, South Dakota, 2017-2020 (weighted)



Demographic Characteristics (Figure 11.2)

- The overall prevalence of mothers who smoked in the three months before pregnancy was 19.5%.
- All demographic characteristics assessed were significantly (p-value less than 0.05) associated with smoking in the three months before pregnancy including maternal race, ethnicity, age, education, marital status, household income, and region of the state that the mother resided.
- Mothers who were American Indian, Non-Hispanic, less than age 24, had a high school education, were not married, had less household income, and who resided in the Central region of South Dakota had higher prevalence of smoking before pregnancy compared with their counterparts.

Figure 11.2: Percentage of mothers who smoked in the three months before pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



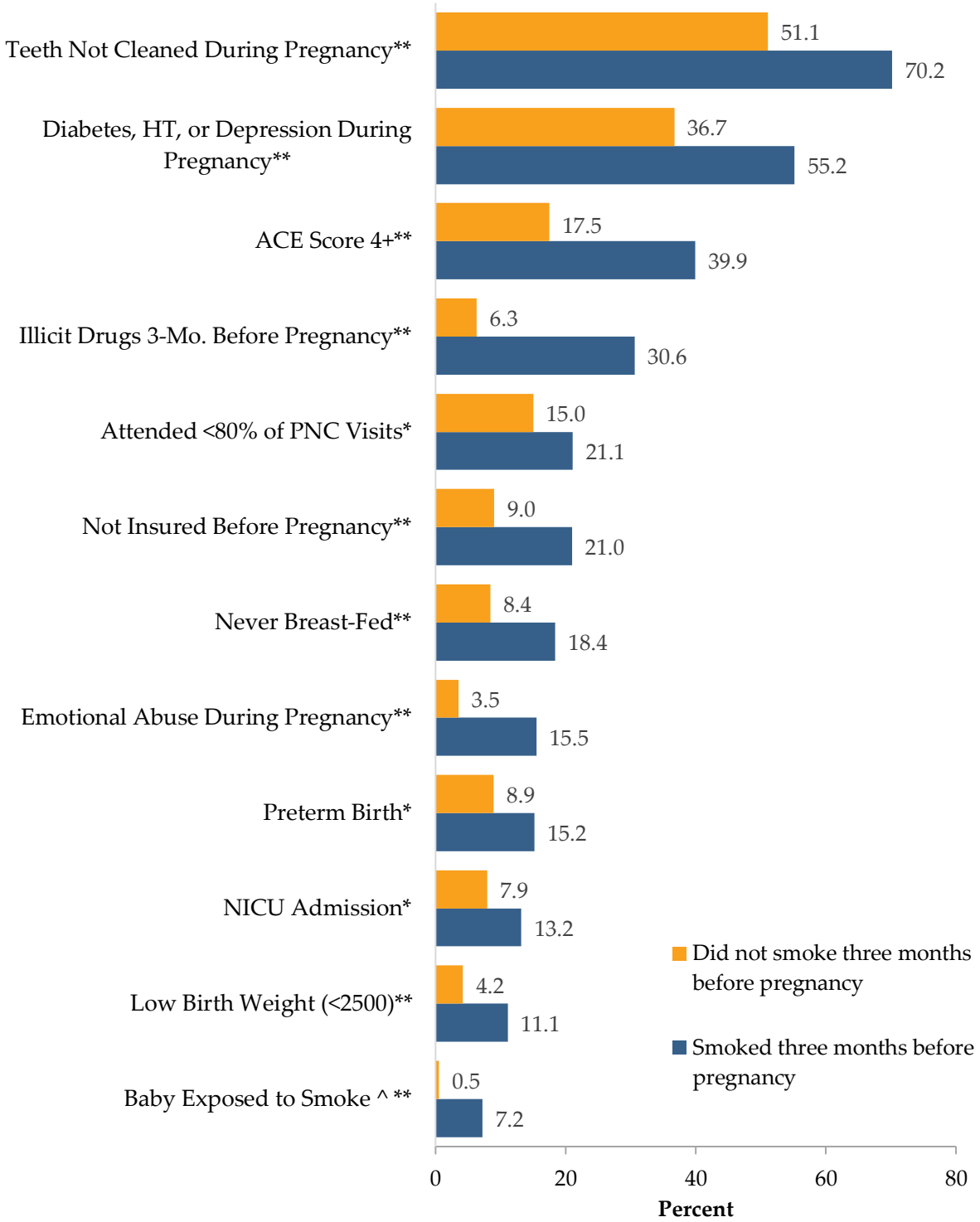
* p-value < 0.05; ** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 11.3)

Mothers who smoked three months before pregnancy, compared to mothers who did not smoke three months before pregnancy, were significantly (p-value less than 0.05) *more likely* to report that:

- They were uninsured before pregnancy (21.0% vs. 9.0%).
- They used illicit drugs the 3 months before pregnancy (30.6% vs. 6.3%).
- They attended fewer than 80% of their prenatal visits (21.1% vs. 15.0%).
- They did not have their teeth cleaned during pregnancy (70.2% vs. 51.1%).
- They suffered emotional abuse during pregnancy (15.5% vs. 3.5%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (55.2% vs. 36.7%).
- Their infant was low birth weight (<2500 grams) (11.1% vs. 4.2%).
- Their infant was born preterm (15.2% vs. 8.9%).
- Their infant was admitted to the NICU (13.2% vs. 7.9%).
- They never breastfed their infant (18.4% vs. 8.4%).
- Their baby is exposed to smoke (7.2^% vs. 0.5^%; interpret these percentages with caution).
- They had a high ACE score (4+) (39.9% vs. 17.5%).

Figure 11.3: Risk behaviors and outcomes by mothers who smoked the three months before pregnancy, South Dakota, 2021 (weighted)



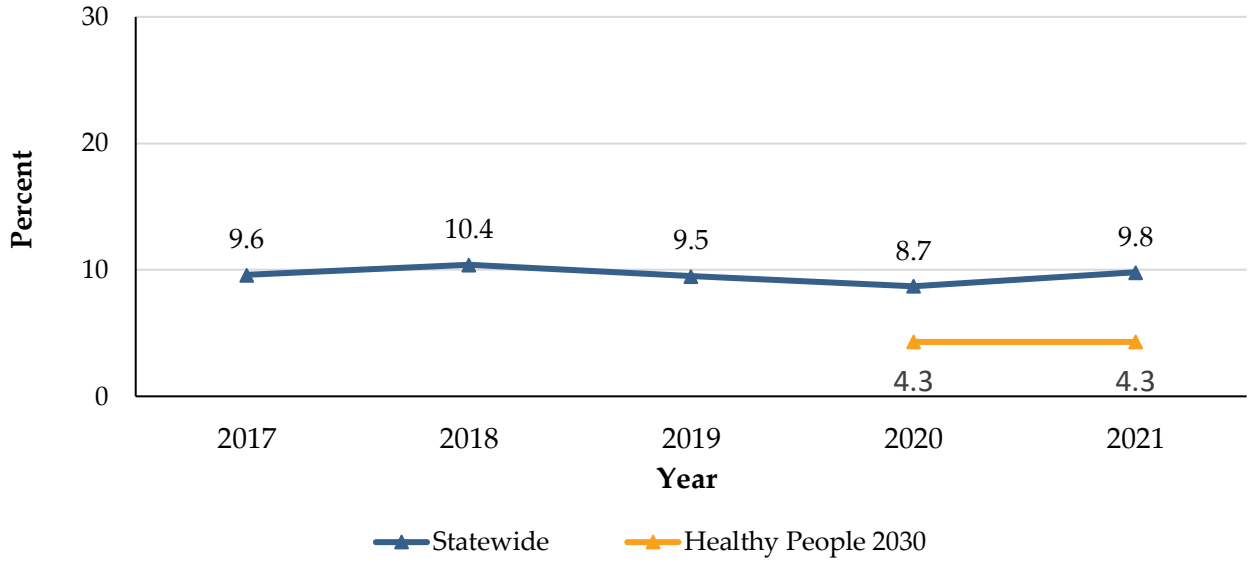
* p-value < 0.05, ** p-value < 0.01 p-value based on Rao-Scott chi-square test.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
PNC = prenatal care, ACE = adverse childhood experiences, NICU= neonatal intensive care unit

Smoked the Last Three Months of Pregnancy

Prevalence and Trends (Figure 11.4)

The percentage of South Dakota mothers who smoked in the last three months of pregnancy has not changed over time (p-value for linear trend greater than 0.05). The Healthy People 2030 goal of 95.7% of women delivering a live birth not smoking prior to pregnancy (4.3% smoking prevalence) has not been achieved for any year.

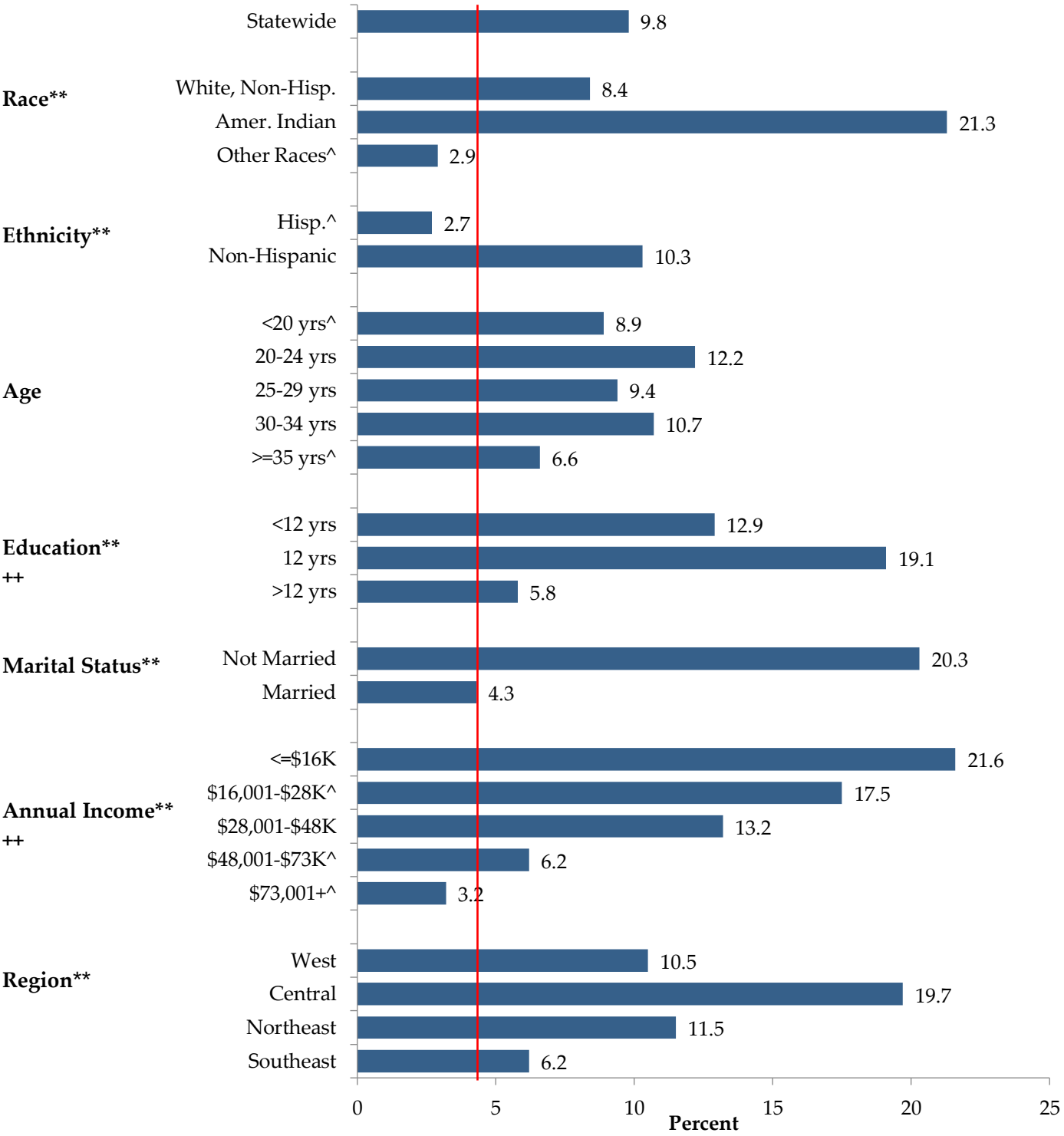
Figure 11.4: Mothers who smoked in the last three months of pregnancy by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 11.5)

- Overall prevalence of South Dakota mothers who smoked in the last three months of pregnancy was 9.8%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with smoking in the last three months of pregnancy included maternal race, ethnicity, education, marital status, household income, and region of the state that the mother resided.
- Mothers who were American Indian, non-Hispanic, had a High School education, were not married, had household income less than $16,000, and who resided in the Western region had higher prevalence of smoking in the last three months of pregnancy compared with their counterparts.

Figure 11.5: Percentage of mothers who smoked in the last three months of pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Healthy People 2030 (4.3%)

Risk Behaviors and Outcomes (Figure 11.6)

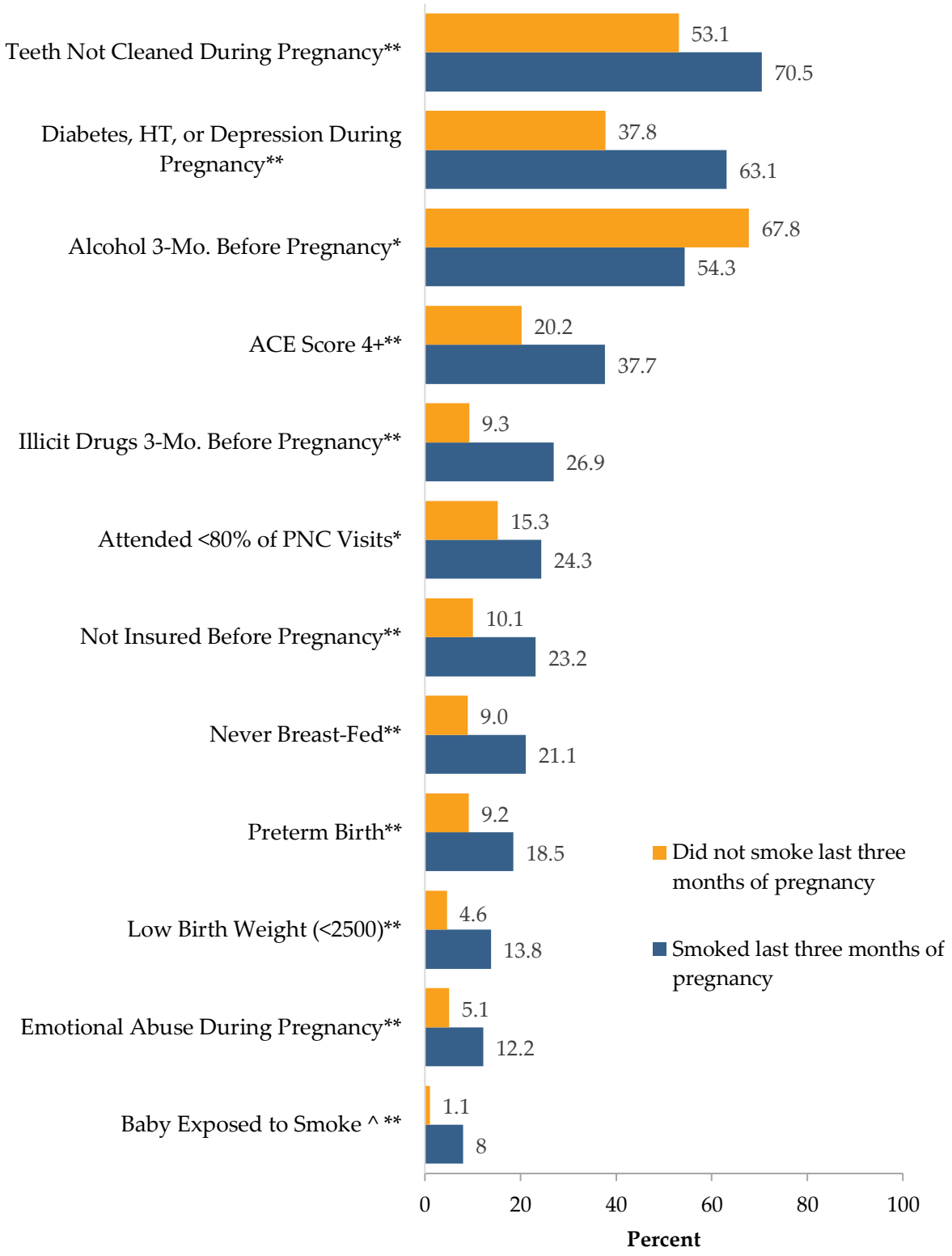
Mothers who smoked during pregnancy, compared to mothers who did not smoke during pregnancy, were significantly (p-value less than 0.05) *more likely* to report that:

- They were not insured before pregnancy (23.2% vs. 10.1%).
- They used illicit drugs the 3 months before pregnancy (26.9% vs. 9.3%).
- They attended fewer than 80% of their prenatal visits (24.3% vs. 15.3%).
- They did not have their teeth cleaned during pregnancy (70.5% vs. 53.1%).
- They suffered emotional abuse during pregnancy (12.2% vs. 5.1%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (63.1% vs. 37.8%).
- Their infant was low birth weight (<2500 grams) (13.8% vs. 4.6%).
- Their infant was born preterm (18.5% vs. 9.2%).
- They never breastfed their infant (21.1% vs. 9.0%).
- Their baby is exposed to smoke (8.0% vs. 1.1%; interpret these percentages with caution).
- They had a high ACE score (4+) (37.7% vs. 20.2%).

Mothers who smoked during pregnancy, compared to mothers who did not smoke during pregnancy, were significantly (p-value less than 0.05) *less likely* to report that:

- They drank alcohol the 3 months before pregnancy (54.3% vs. 67.8%).

Figure 11.6: Risk behaviors and outcomes by mothers who smoked the last three months of pregnancy, South Dakota, 2021 (weighted)



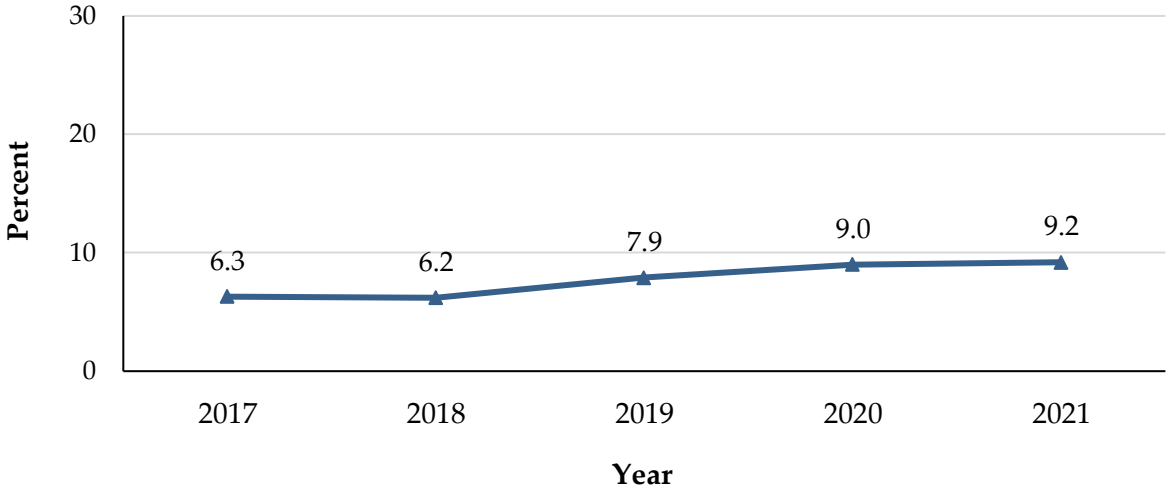
* p-value < 0.05, ** p-value < 0.01, p-value based on Rao-Scott chi-square test.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
PNC = prenatal care; ACE = adverse childhood experiences

Use of E-cigarettes or Other Electronic Nicotine Products in the Last Two Years

Prevalence and Trends (Figure 11.7)

The percentage of South Dakota mothers who used e-cigarettes or other electronic nicotine products **has increased** over time (p-value for linear trend less than 0.05).

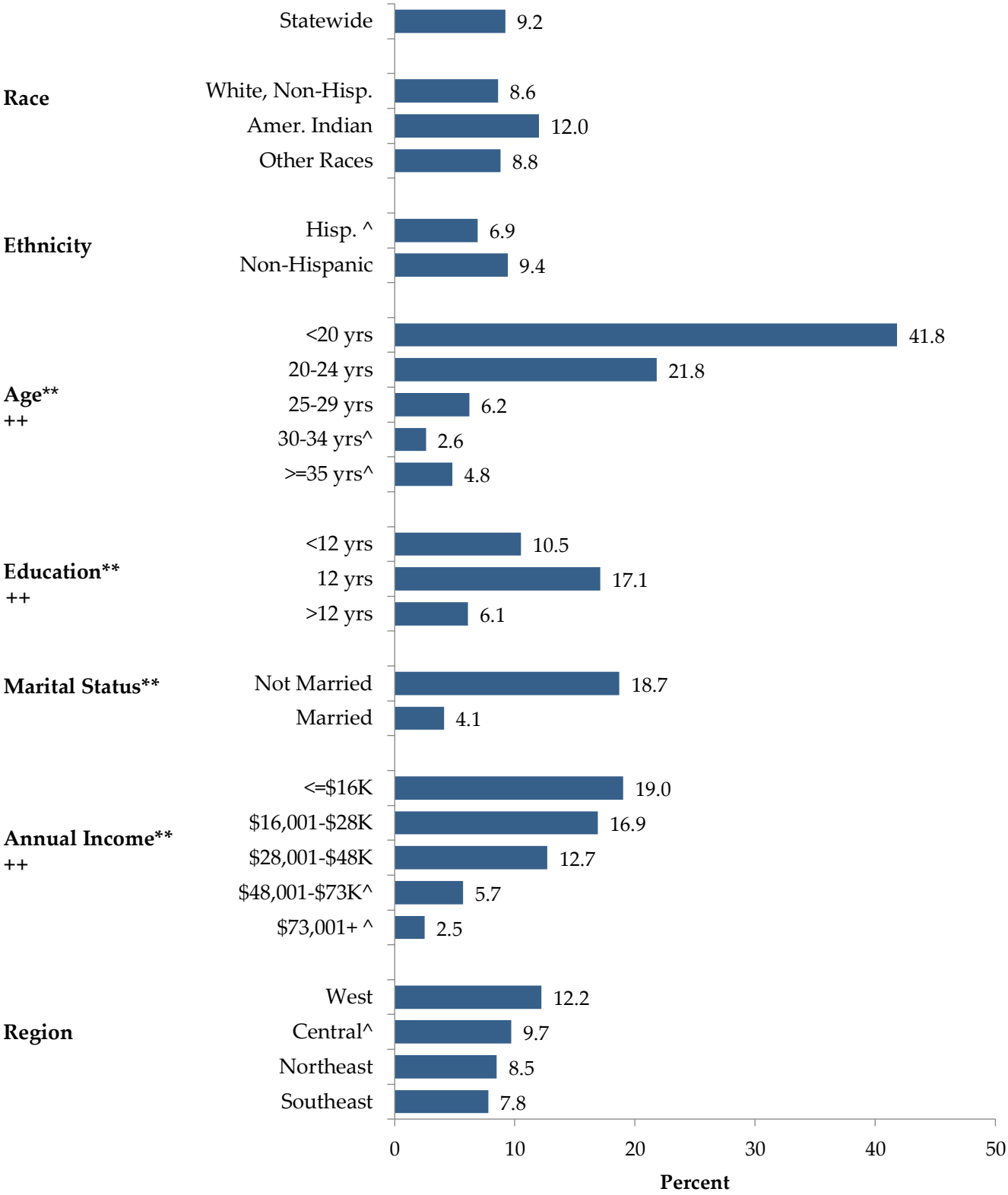
Figure 11.7: Mothers who used e-cigarettes or other electronic nicotine products in the last two years by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 11.8)

- Overall prevalence of South Dakota mothers who used e-cigarettes or other electronic nicotine products in the last two years was 9.2%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with using e-cigarettes in the last two years included maternal age, maternal education, marital status, and household income.
- Mothers who were less than 20 years old, had a High School education, were not married and who had less household income had higher prevalence of using e-cigarettes or other electronic nicotine products in the last two years compared with their counterparts.

Figure 11.8: Percentage of mothers who used e-cigarettes or other electronic nicotine products in the last two years by demographic characteristics, South Dakota, 2021 (weighted)



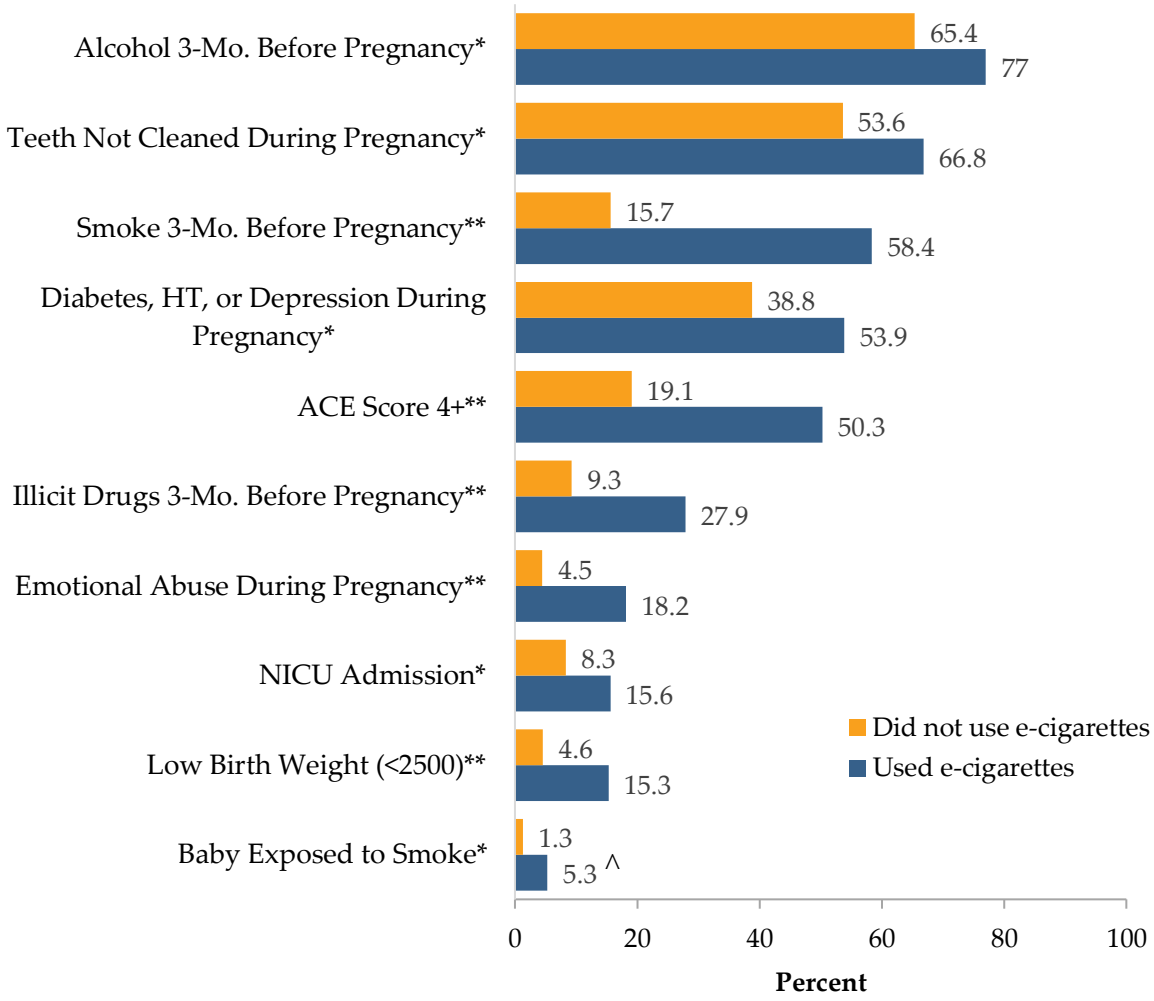
** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Risk Behaviors and Outcomes (Figure 11.9)

Mothers who used e-cigarettes or other electronic nicotine products in the last two years, compared to mothers who did not use e-cigarettes or other electronic nicotine products in the last two years, were significantly (p-value less than 0.05) *more likely* to report that:

- They smoked the 3 months before pregnancy (58.4% vs. 15.7%).
- They drank alcohol the 3 months before pregnancy (77.0% vs. 65.4%).
- They used illicit drugs the 3 months before pregnancy (27.9% vs. 9.3%).
- They did not have their teeth cleaned during pregnancy (66.8% vs. 53.6%).
- They suffered emotional abuse during pregnancy (18.2% vs. 4.5%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (53.9% vs. 38.8%).
- Their infant was low birth weight (<2500 grams) (15.3% vs. 4.6%).
- Their infant was admitted to the NICU (15.6% vs. 8.3%).
- Their infant was exposed to smoke (5.3% vs. 1.3%; interpret these percentages with caution).
- They had a high ACE score (4+) (50.3% vs. 19.1%).

Figure 11.9: Risk behaviors and outcomes by mothers who used e-cigarettes or other electronic nicotine devices in the past two years, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01 p-value based on Rao-Scott chi-square test.

^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Chapter 12: Tobacco quit status, relapse after pregnancy and barriers to quitting

PRAMS asked women who had smoked the 3 months before pregnancy:

Q30 In the *3 months before* you got pregnant, how many cigarettes did you smoke on an average day? [List]

Q31 In the last 3 months of your pregnancy, how many cigarettes did you smoke on an average day? [List]

Q34 Did you quit smoking *around the time of your most recent* pregnancy? [List]

Q35 Listed below are some things that can make it hard for some people to quit smoking. For each item, check **No** if it is not something that might make it hard for you or **Yes** if it is. [List]

Q36 How many cigarettes do you smoke on an average day *now*? A pack has 20 cigarettes. [List]

Healthy People 2030 Objectives*

- Increase successful quit attempt in pregnant women who smoke to 24.4% (TU-15).

Measure	% of women (95% CI, N)
Smoking status during pregnancy*	
Non-smoker	80.6 (77.9-83.0, 10702)
Smoker who quit	9.6 7.9-11.6, 10702)
Not quit	9.8 (8.0-12.0, 10702)
Amount smoked during pregnancy for mothers who smoked*	
# Cigarettes reduced	63.9 (53.3-73.3, 1052)
# Cigarettes same or more	36.1 (26.7-46.7, 1052)
Barriers to quitting among mothers who smoked in the past 2 years.	
Cravings for a cigarette	63.4 (53.5-72.3, 1068)
Loss of a way to manage stress	50.8 (40.7-60.8, 1074)
Other people smoking around her	49.9 (39.8-60.1, 1068)
Not wanting to quit	36.8 (27.4-47.3,1068)
Lack of support from others to quit	19.6 (12.8-29.0, 1074)
Fear of gaining weight	18.2 (11.2-28.1, 1058)
Cost of medicines or products to help with quitting	12.0 (7.0-19.8, 1074)
Cost of classes to help with quitting	10.9 (6.1-18.9, 1068)
Relapse rate *(measured among women who smoked before pregnancy, quit during pregnancy, and who report use of cigarettes at the time of the survey)*	40.5 (31.5-50.2, 1028)

*Population-based measures based on questions Q30 and Q31.

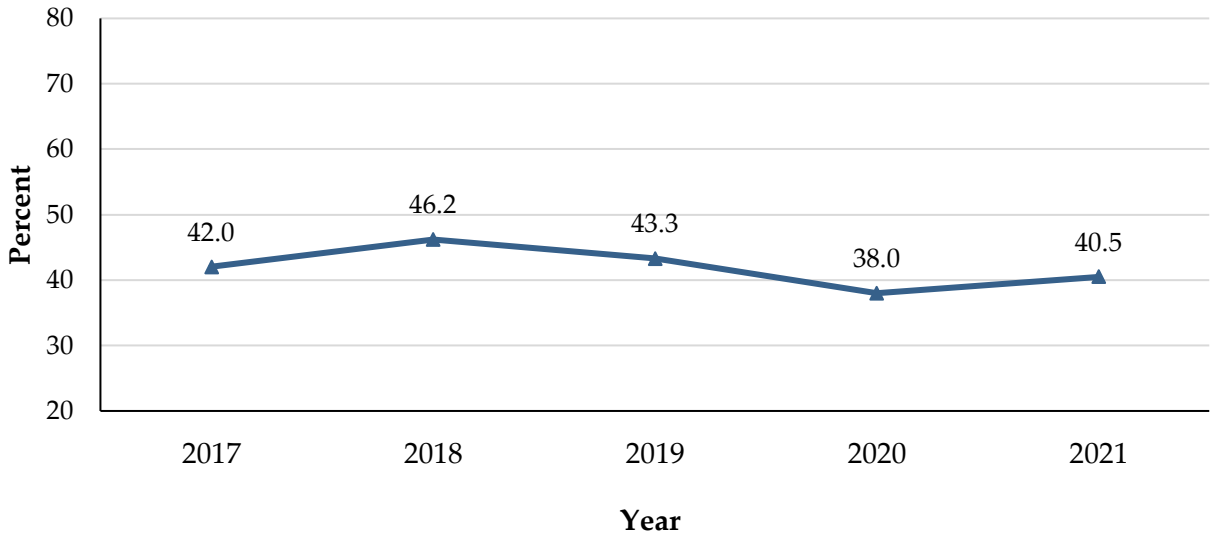
**Healthy People 2030 measure was not directly assessed in 2021 SD PRAMS data. Smoking quit attempts in pregnancy will be assessed in 2022 SD PRAMS data.*

Relapse Rate

Prevalence and Trends (Figure 12.1)

The percentage of South Dakota mothers who quit smoking during pregnancy but had restarted at the time of the survey (relapse rate) has not changed over time (p-value for linear trend greater than 0.05).

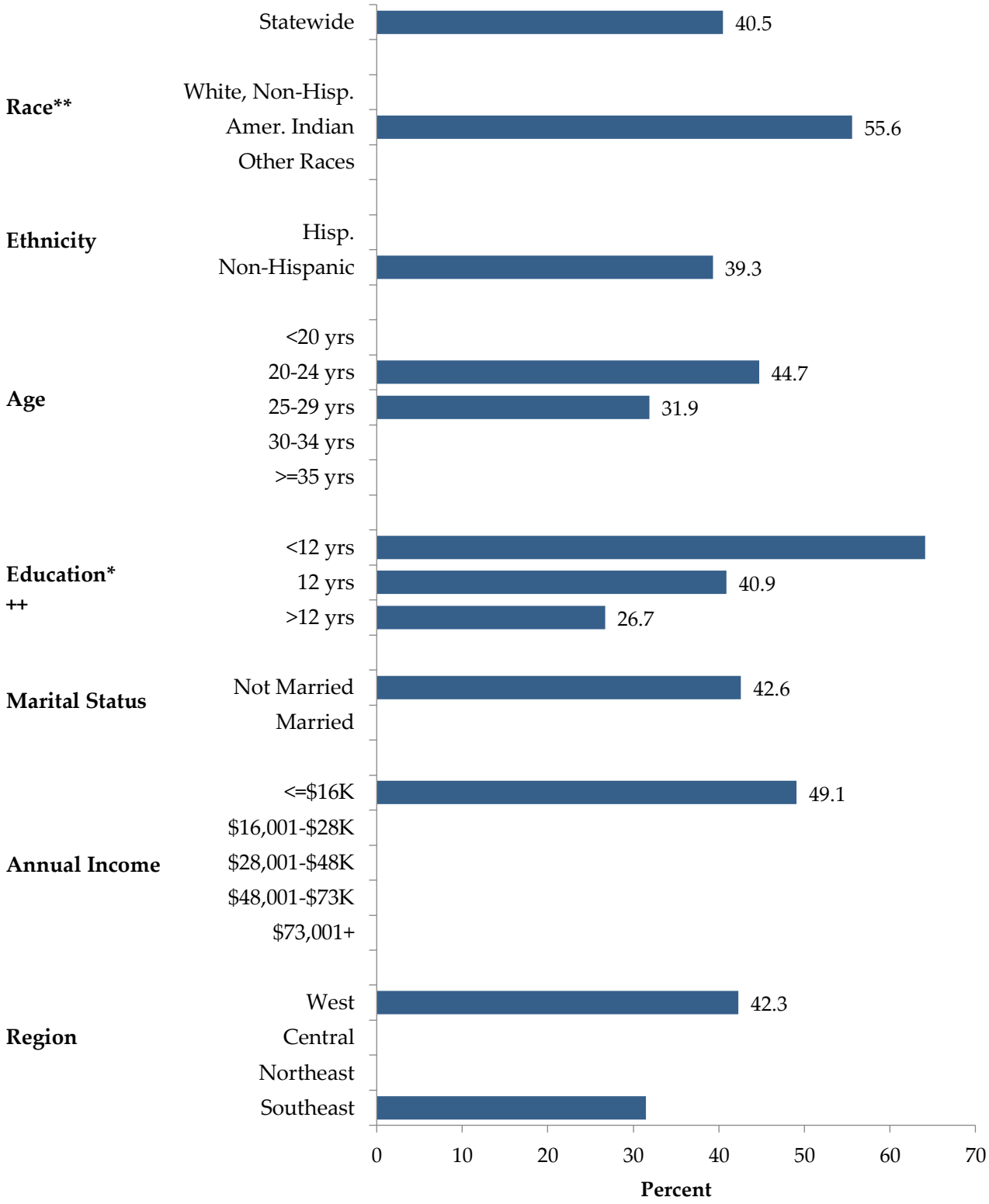
Figure 12.1: Mothers who quit smoking during pregnancy and had relapsed at the time the survey was completed by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 12.2)

- Among South Dakota mothers who smoked prior to pregnancy and quit during pregnancy, the relapse rate at the time the survey was completed (restarted smoking after pregnancy) was 40.5%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with smoking relapse included maternal race and maternal education.
- Mothers who were American Indian and had less than a High School education had a higher prevalence of relapse compared with their counterparts.

Figure 12.2: Percentage of mothers who quit smoking during pregnancy and had relapsed at the time the survey was completed by demographic characteristics, South Dakota, 2021 (weighted)†



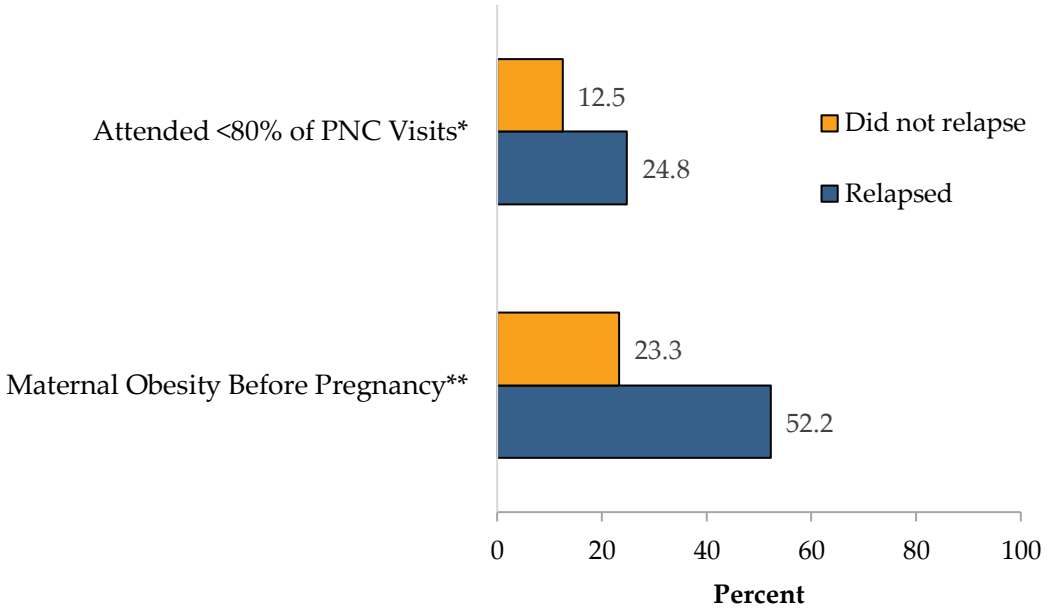
* p-value < 0.05 based on Rao-Scott chi-square test; ++ p-value < 0.01 based on logistic regression results for linear trend.
† Missing bars suppressed since respondents in category were less than 35 (unweighted).

Risk Behaviors and Outcomes (Figure 12.3)

Mothers who quit smoking during pregnancy and had relapsed at the time the survey was completed were significantly (p-value less than 0.05) *more likely* to report that:

- They had maternal obesity before pregnancy (52.2% vs. 23.3%).
- They attended fewer than 80% of their prenatal visits (24.8% vs. 12.5%).

Figure 12.3: Risk behaviors and outcomes by mothers who quit smoking during pregnancy and had relapsed at the time the survey was completed, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01 p-value based on Rao-Scott chi-square test.

^

Chapter 13: Environmental smoke exposure and actions of the healthcare provider

PRAMS asked women who had smoked the 3 months before pregnancy:

Q72 How many hours and minutes *in the last week* was your new baby in an enclosed space, such as a room or a vehicle, with someone who was smoking?

Q32 *During any of your prenatal care visits*, did a doctor, nurse, or other health care worker advise you to quit smoking?

Q33 Listed below are some things about quitting smoking that a doctor, nurse, or other health care worker might have done *during any of your prenatal care visits*. [List]

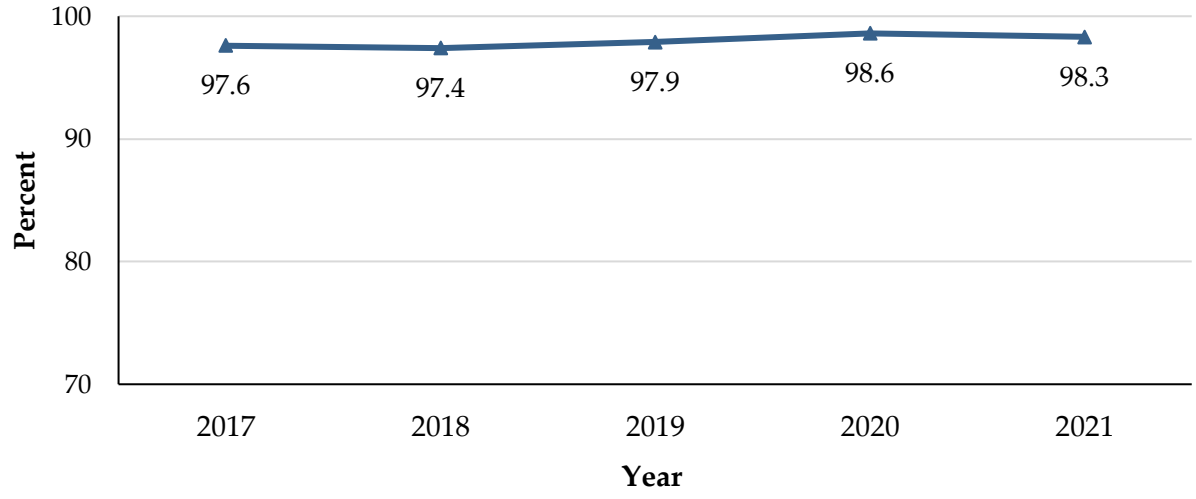
Measure	% of women (95% CI, N)
Among women whose infant is alive, living with her and not in the hospital,	
Infant not around someone who smokes	98.3 (97.2-99.0, 10244)
Among women who smoked in the 3 months before pregnancy,	
Was advised to quit smoking by a health care provider	75.4 (65.3-83.4, 1080)
Actions of the health care provider:	
Spent time discussing how to quit smoking	44.7 (34.8-55.1, 1059)
Referred to a national or state quit line	36.5 (27.5-46.6, 1059)
Provided booklets, videos, or other materials to help quit smoking	33.9 (25.3-43.6, 1059)
Suggested attending a class or program to stop smoking	20.9 (14.3-29.6, 1059)

Environmental Smoke Exposure – Infant

Prevalence and Trends (Figure 13.1)

The percentage of South Dakota mothers who stated that their infant was not in an enclosed space with someone who smoked has not changed over time (p-value for linear trend greater than 0.05).

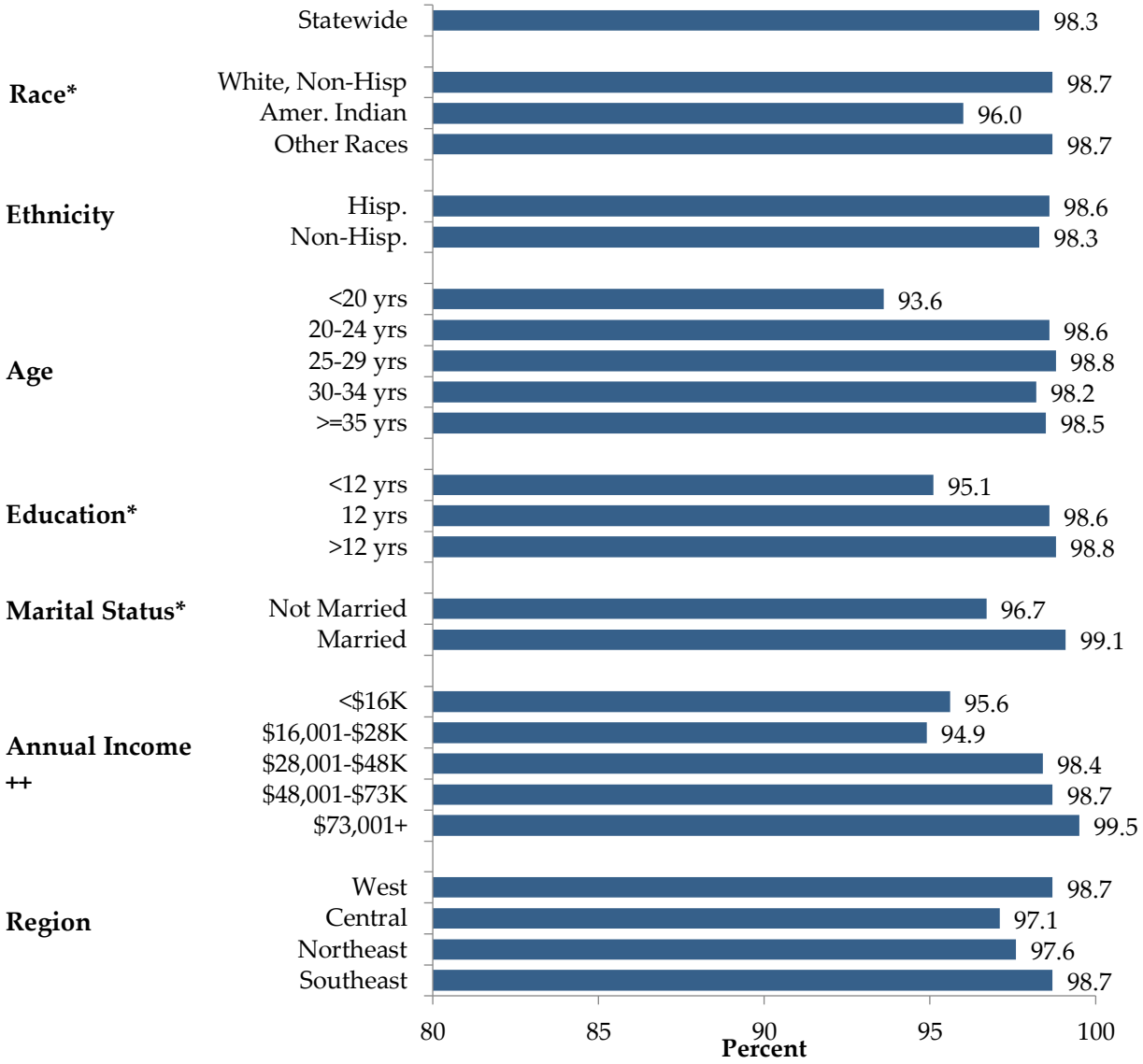
Figure 13.1: Mothers who stated that their infant was not in an enclosed space with someone who smoked by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 13.2)

- Overall prevalence of South Dakota mothers who stated that their infant was not in an enclosed space with someone who smoked in the previous week was 98.3%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with having their baby in an enclosed space with someone who smoked included maternal race, maternal education, and marital status.
- Mothers who were White or Other Races, had greater than high school education, and were married had a higher prevalence of stating that their infant was not in an enclosed space with anyone who smoked compared with their counterparts.

Figure 13.2: Percentages of mothers who stated that their infant was not in an enclosed space with someone who smoked by demographic characteristics, South Dakota, 2021 (weighted)



* p-value < 0.05 based on Rao-Scott chi-square test. ++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 13.3)

Risk behaviors and outcomes related to infant environmental smoke exposure are not reported since the category of infants with smoke exposure had less than 35 respondents.

Chapter 14: Alcohol use

Significance

Alcohol consumption during pregnancy can have negative effects including Fetal Alcohol Syndrome (FAS).[26] FAS includes physical abnormalities, behavioral problems, learning disabilities, or below average head size, height, and weight. Since many pregnancies are unintended and often not known until late in the first trimester, it is important to reduce alcohol consumption in women of childbearing age who are at risk of pregnancy.

PRAMS asked women:

Q40 Have you had any alcoholic drinks in the *past 2 years*?

Q41 During the *3 months before* you got pregnant, how many alcoholic drinks did you have in an average week? [List]

Q42 During the *3 months before* you got pregnant, how many times did you drink 4 alcoholic drinks or more in a 2-hour time span? [List]

Q43 During the *last 3 months* of your pregnancy, how many alcoholic drinks did you have in an average week? [List]

Healthy People 2030 Objectives

- Increase abstinence from alcohol among pregnant women to 92.2% (MICH-09; *7.8% who drink alcohol*).

Measure	% of women (95% CI, N)
Alcohol use	
Among all women, had any alcoholic drinks in the *past 2 years*	74.2 (71.3-76.8, 10687)
Among all women, had any alcoholic drinks the 3 months before pregnancy	66.5 (63.4-69.4, 10698)
Among all women, had any alcoholic drinks the last 3 months of pregnancy	11.8 (9.7-14.3, 10720)
Alcohol use before pregnancy	
Among women who drank in the past 2 years, amount drank the **3 months before pregnancy**	
Did not drink then	10.4 (8.3-13.1, 7937)
Less than 1 drink a week	41.1 (36.9-45.4, 7937)
1 to 3 drinks a week	28.9 (25.2-33.0, 7937)
4 to 7 drinks a week	12.3 (9.7-15.4, 7937)
8 or more drinks a week	7.3 (5.4-9.8, 7937)
Among women who drank in the 3 months before pregnancy, number of times they drank 4 alcoholic drinks or more in a 2-hour time span	
Never	61.0 (56.5-65.3, 7088)
1 time	14.2 (11.3-17.6, 7088)
2 to 3 times	19.2 (15.9-23.0, 7088)
4 to 5 times	3.4 (2.2-5.4, 7088)
6 or more times	2.2 (1.3-3.8, 7088)
Alcohol use during pregnancy	
Among women who drank in the past 2 years, amount drank the **last 3 months of pregnancy**	
Did not drink then	84.1 (80.8-87.0, 7959)

Less than 1 drink a week	9.6 (7.4-12.4, 7959)
1 or more drinks a week	6.3 (4.5-8.7, 7959)

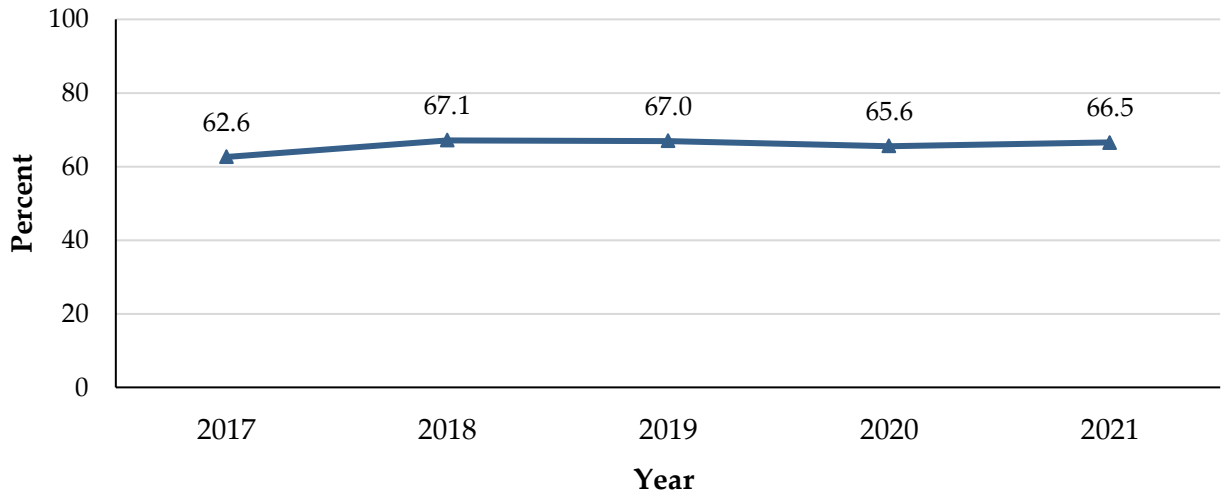
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Drinking in the Three Months Before Pregnancy

Prevalence and Trends (Figure 14.1)

The percentage of South Dakota mothers who drank in the three months before pregnancy has not changed over time (p-value for linear trend greater than to 0.05).

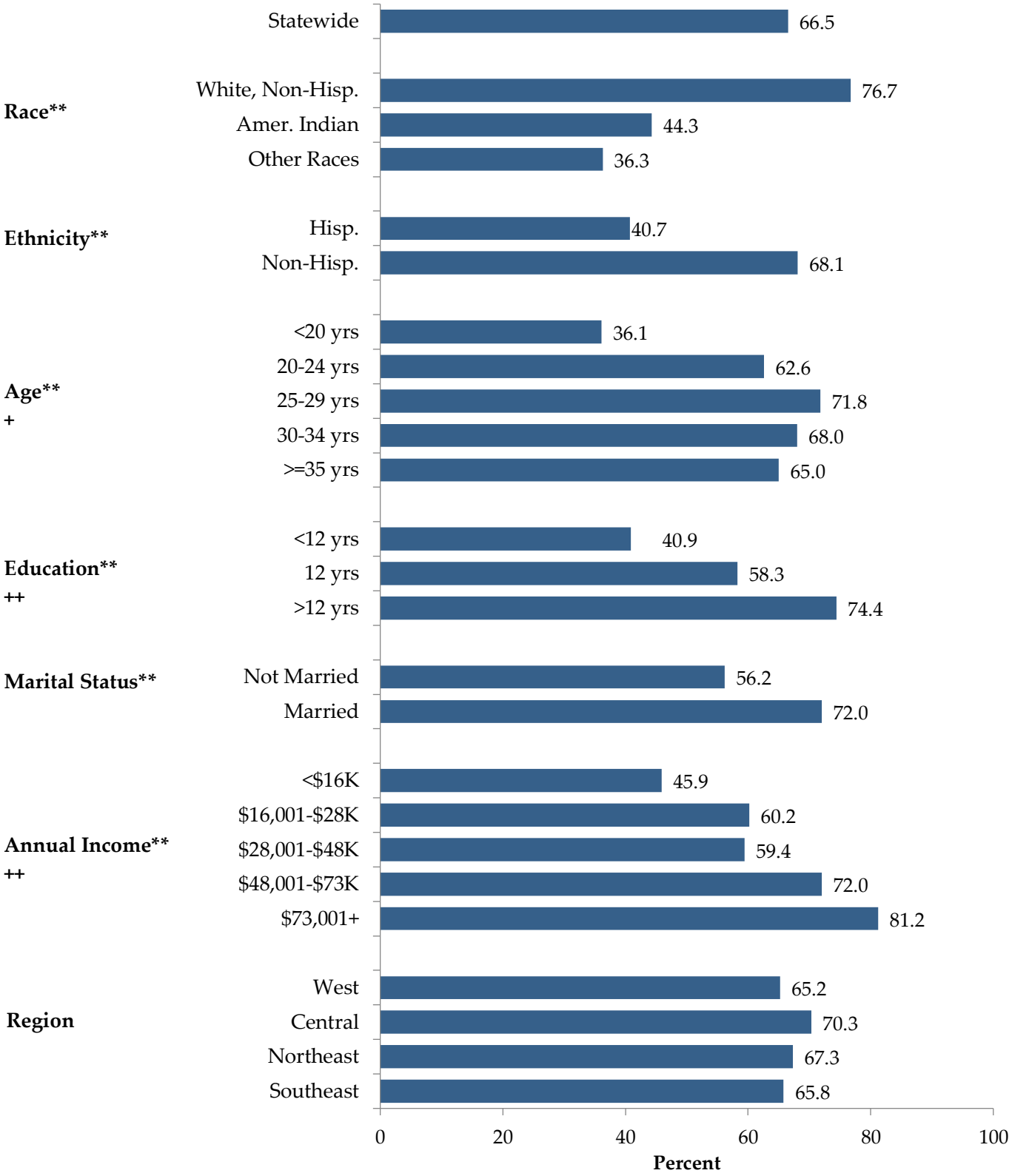
Figure 14.1: Mothers who drank in the three months before pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 14.2)

- Overall prevalence of South Dakota mothers who drank in the three months before pregnancy was 66.5%.
- All demographic characteristics assessed were significantly (p-value less than 0.05) associated with drinking in the three months before pregnancy including maternal race, ethnicity, age, education, marital status, and household income.
- Mothers who were white, non-Hispanic, between 25-29 years of age, had greater than High School education, were married, and had a higher household income had a higher prevalence of drinking alcohol in the three months before pregnancy compared with their counterparts.

Figure 14.2: Percentage of mothers who drank in the three months before pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



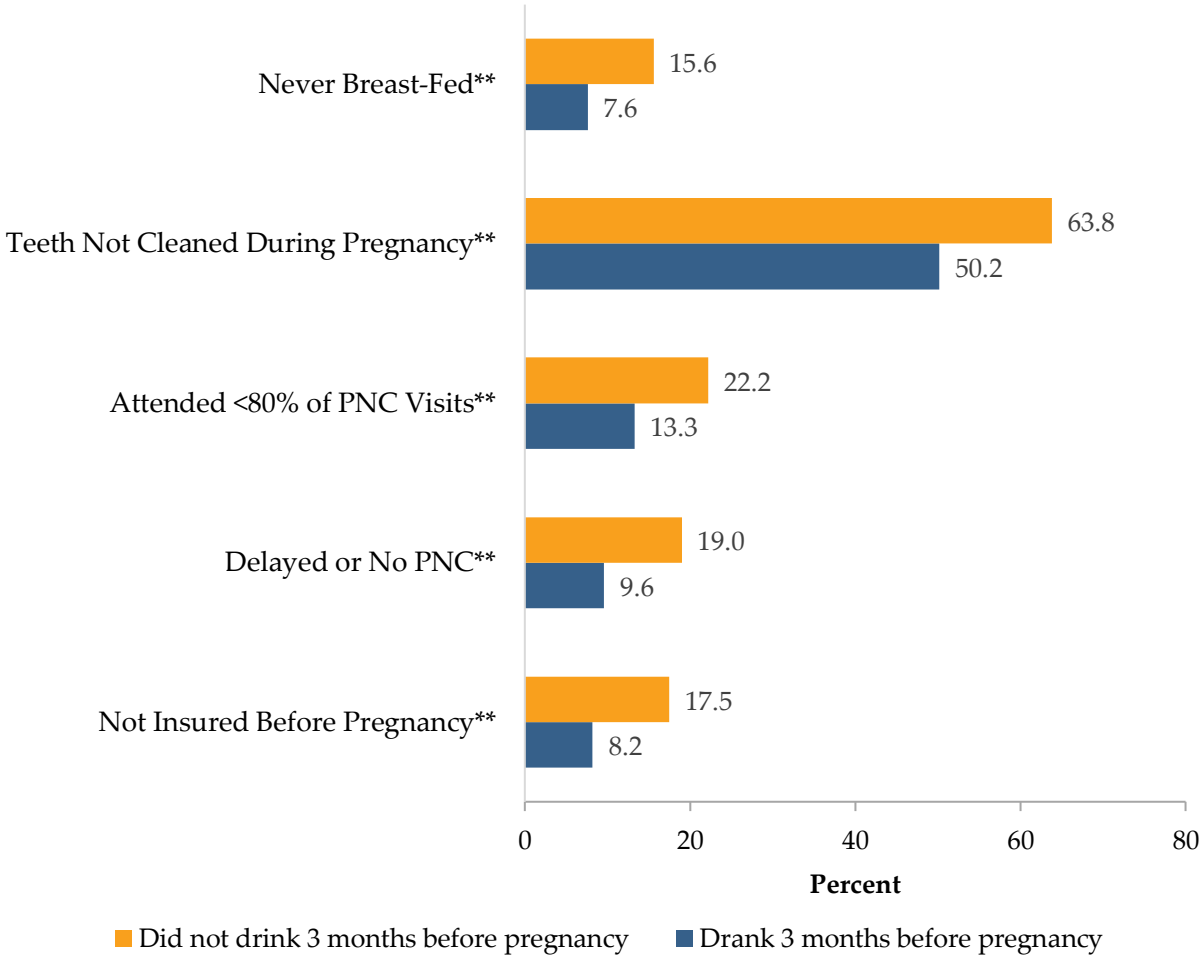
* p-value < 0.05, ** p-value < 0.01 based on Rao-Scott chi-square test.
+ p-value <0.05, ++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 14.3)

Mothers who drank alcohol before pregnancy, compared to mothers who did not drink alcohol in the three months before pregnancy, were significantly (p-value less than 0.05) *less likely* to report that:

- They were uninsured before pregnancy (8.2% vs. 17.5%).
- They started prenatal care after the first trimester or had no prenatal care (9.6% vs. 19.0%).
- They attended fewer than 80% of their prenatal visits (13.3% vs. 22.2%).
- They did not have their teeth cleaned during pregnancy (50.2% vs. 63.8%).
- They never breastfed their infant (7.6% vs. 15.6%).

Figure 14.3: Risk behaviors and outcomes by mothers who drank in the three months before pregnancy, South Dakota, 2021 (weighted)



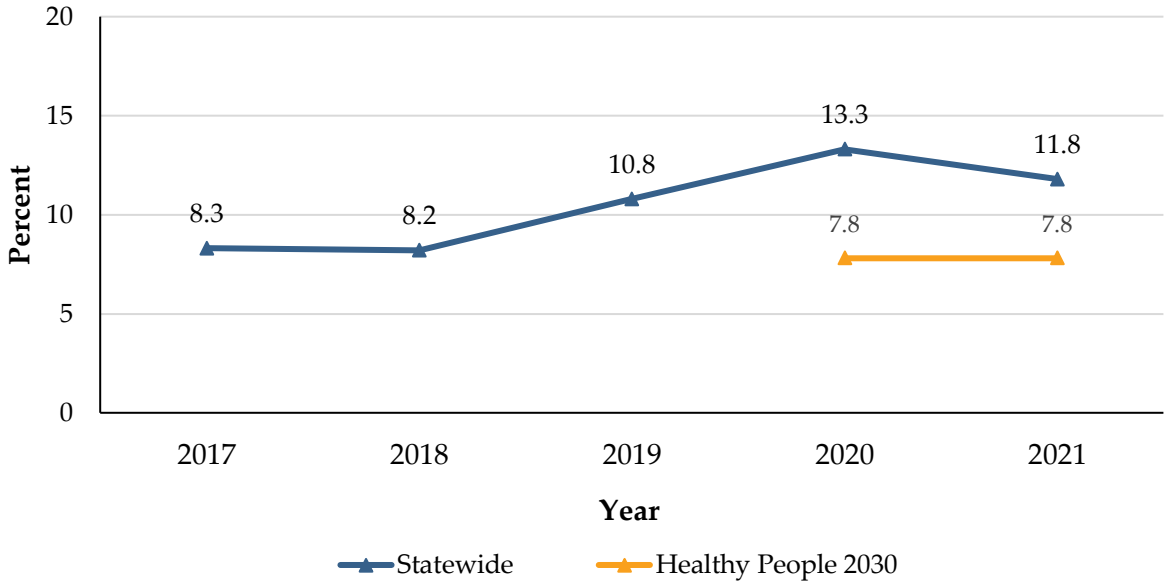
* p-value < 0.05, ** p-value < 0.01 based on Rao-Scott chi-square test.
PNC = prenatal care

Drinking in the Last Three Months of Pregnancy

Prevalence and Trends (Figure 14.4)

The percentage of South Dakota mothers who drank in the last three months of pregnancy **has increased** over time (p-value for linear trend less than 0.05). The Healthy People 2030 goal of 7.8% has not been achieved in any year.

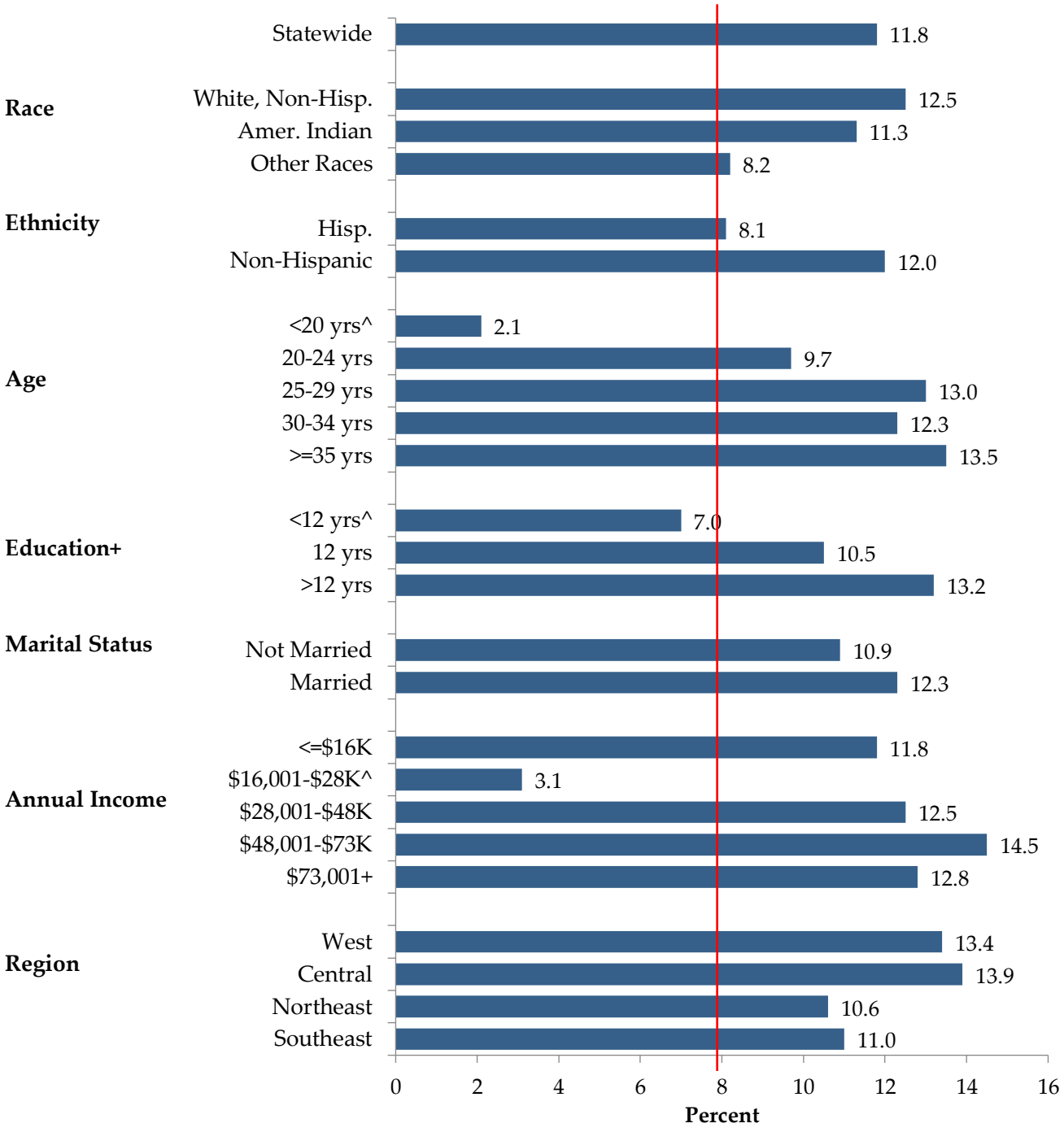
Figure 14.4: Mothers who drank in the last three months of pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 14.5)

- The overall prevalence of South Dakota mothers who drank in the last three months of pregnancy was 11.8%.
- There were no demographic characteristics significantly (p-value less than 0.05) associated with drinking in the last three months of pregnancy.

Figure 14.5: Percentage of mother who drank during pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



+ p-value < 0.05 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
— Healthy People 2030 (92.2% abstinence – *7.8% who drink*)

Risk Behaviors and Outcomes (Figure 14.6)

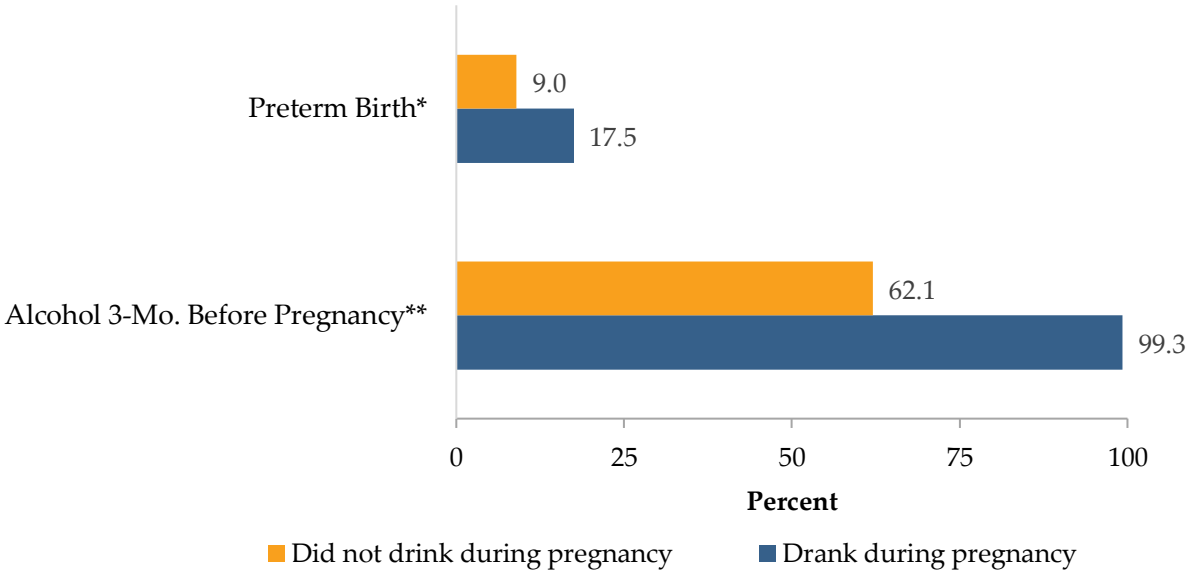
Mothers who drank alcohol during pregnancy, compared to mothers who did not drink alcohol during pregnancy, were significantly (p-value less than 0.05) *more* likely to report that:

- They drank alcohol in the 3 months before pregnancy (99.3% vs. 62.1%).

Mothers who drank alcohol during pregnancy, compared to mothers who did not drink alcohol during pregnancy, were significantly (p-value less than 0.05) *less* likely to report that:

- They had a preterm birth (9.0% vs. 17.5%).

Figure 14.6: Risk behaviors and outcomes by mothers who drank during pregnancy, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01 p-value based on Rao-Scott chi-square test

Chapter 15: Drug Use

Significance

Illicit drug use during pregnancy leads to increased risks of adverse outcomes to the pregnant mother as well as the developing fetus. Illicit substances may cause drug dependence and addiction for the newborns, and they may exhibit withdrawal symptoms or neonatal abstinence syndrome.[27,28] Drugs like marijuana or cocaine exhibit problems like growth defects, behavior problems, increased risk for miscarriage or still birth, heart problems, and preterm labor.[28] Recommendations for use of over-the-counter medications are available[29] and it should be noted that not all are considered safe and the risks and benefits of each medication should be considered.

PRAMS asked women:

Q68 During *the month before* you got pregnant, did you take or use any of the following drugs for any reason? [List]

Q71 During *your most recent pregnancy*, did you take or use any of the following drugs for any reason? [List]

List of drugs included: Over-the-counter pain relievers such as aspirin, Tylenol®, Advil®, or Aleve®; prescription pain relievers such as hydrocodone (Vicodin®), oxycodone (Percocet®), or codeine; Adderall®, Ritalin®, or another stimulant; marijuana or hash; synthetic marijuana (K2, Spice); methadone, naloxone, Subutex, or Suboxone®; heroin (smack, junk, black tar, Chiva); amphetamines (uppers, speed, crystal meth, crank, ice, agua); cocaine (crack, rick, coke, blow, snow, nieve); tranquilizers (downers, ludes); hallucinogens (LSD/acid, PCP/angel dust, Ecstasy, Molly, mushrooms, bath salts); and sniffing gasoline, glue, aerosol spray cans, or paint to get high (huffing).

Healthy People 2030 Objective

- Increase abstinence from illicit drugs among pregnant women to 95.3% (MICH-11; *4.7% for illicit drug use*).

Measure	% of women (95% CI, N)
Drug use before pregnancy *	
Over-the-counter pain relievers (aspirin, Tylenol®, etc.)	74.3 (71.3-77.0, 10631)
Marijuana or hash	9.8 (8.1-11.9, 10569)
Adderall®, Ritalin®, or another stimulant	2.3 (1.4-3.7, 10600)
Prescription pain relievers (hydrocodone, oxycodone, etc.)	1.5 (0.9-2.7, 10631)
Amphetamines (speed, crystal meth, ice, etc.)	1.6 (1.1-2.4, 10611)
Any illicit drugs#	11.0 (9.2-13.1, 10420)
Drug use during pregnancy *	
Over-the-counter pain relievers (aspirin, Tylenol®, etc.)	73.9 (71.0-76.7, 10609)
Marijuana or hash	5.3 (4.2-6.8, 10562)
Adderall®, Ritalin®, or another stimulant	0.6 (0.3-1.5, 10585)^
Prescription pain relievers (hydrocodone, oxycodone, etc.)	2.6 (1.6-4.1, 10567)
Amphetamines (speed, crystal meth, ice, etc.)	1.1 (0.7-1.8, 10565)
Any illicit drugs#	5.9 (4.7-7.5, 10426)

* Drugs also asked about but not listed either before or during pregnancy, or both, include synthetic marijuana; methadone, naloxone, Subutex, or Suboxone®; heroin; cocaine; tranquilizers; hallucinogens and huffing (see full list below). The prevalence rates for these drugs were less than 1% and are not shown.

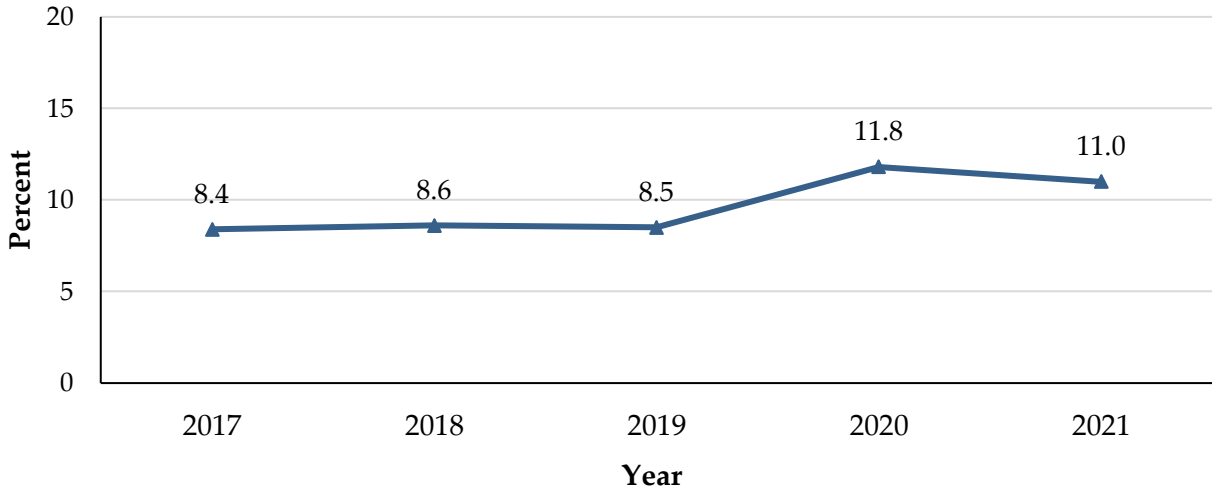
Illicit drug use includes marijuana, synthetic marijuana, methadone, heroin, amphetamines, cocaine, tranquilizers, hallucinogens, or sniffing gasoline, glue, etc. to get high.

Illicit Drug Use Before Pregnancy

Prevalence and Trends (Figure 15.1)

The percentage of South Dakota mothers who used any illicit drugs before pregnancy **has increased** over time (p-value for linear trend less than 0.05).

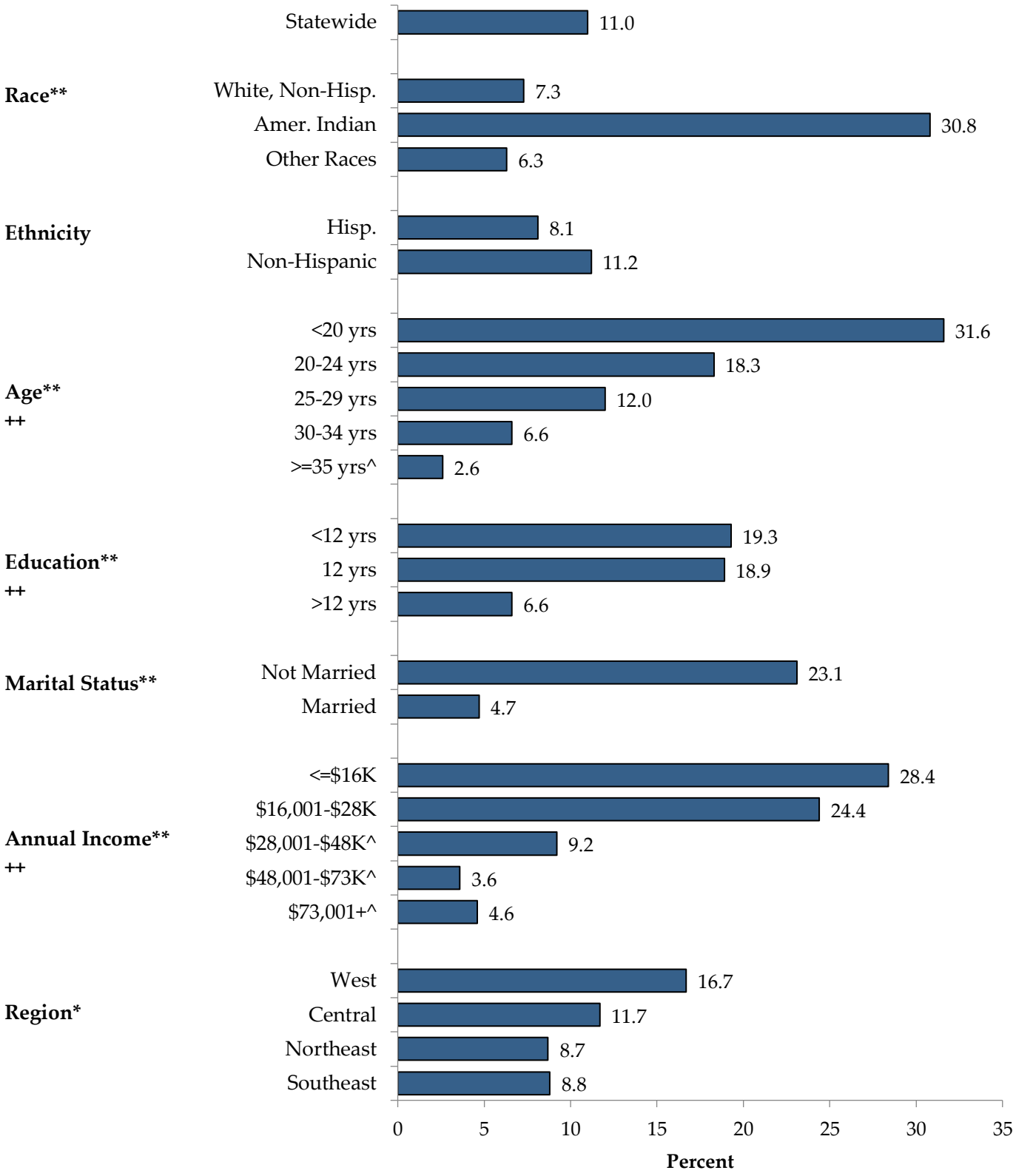
Figure 15.1: Mothers who used any illicit drugs before pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 15.2)

- Overall prevalence of South Dakota mothers who used any illicit drugs before pregnancy was 11.0%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with using illicit drugs before pregnancy included maternal race, age, education, marital status, household income and region of the state that the mother resided.
- Mothers who were American Indian, less than 20 years of age, had fewer years of education, who were not married, had household income less than $28,000 and who resided in the West region had a higher prevalence of using illicit drugs before pregnancy compared to their counterparts.

Figure 15.2: Percentage of mothers who used any illicit drug the month before pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



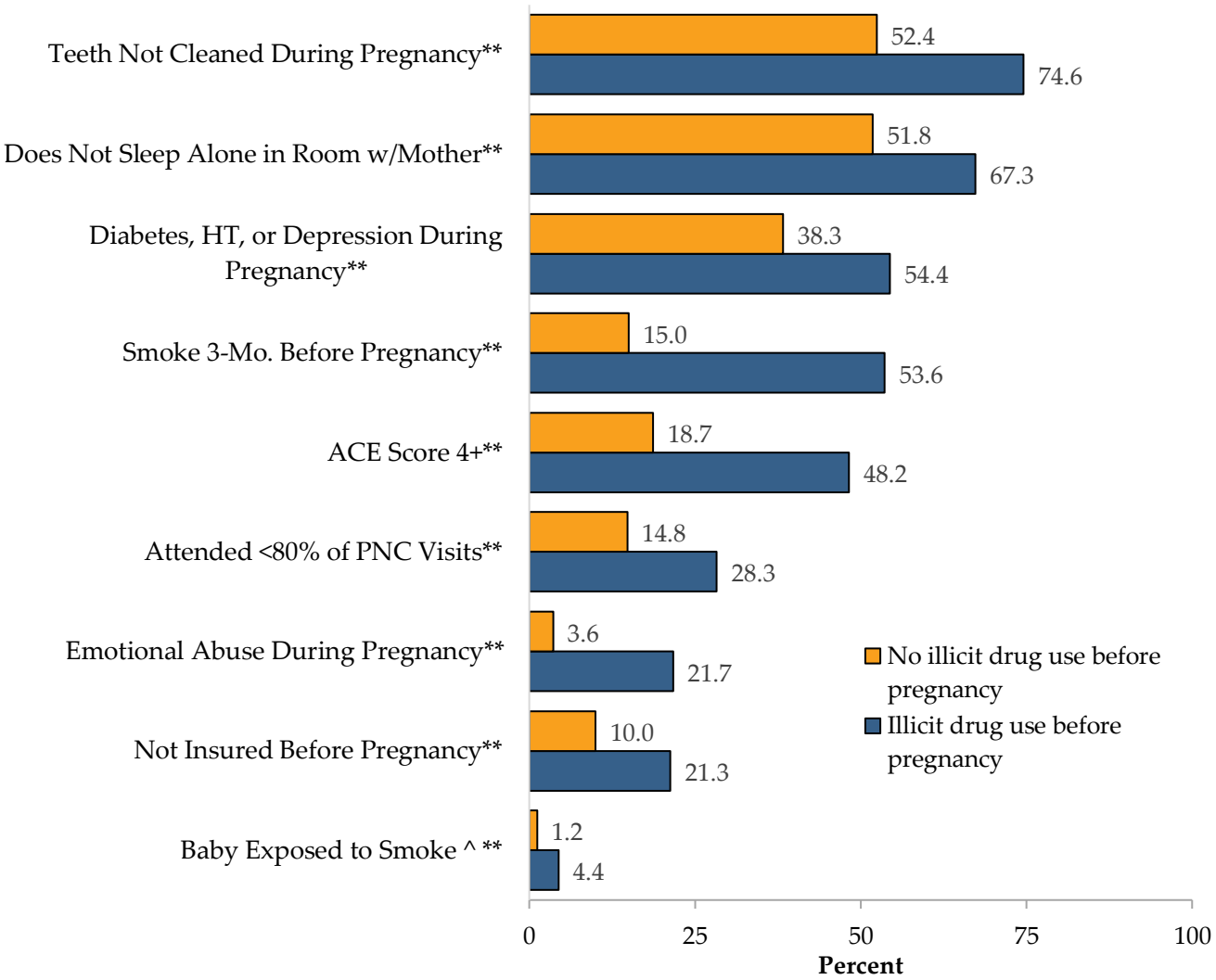
* p-value <0.05, ** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Risk Behaviors and Outcomes (Figure 15.3)

Mothers with any illicit drug use before pregnancy, compared to mothers who did not have illicit drug use before pregnancy, were significantly (p-value less than 0.05) *more likely* to report that:

- They were uninsured before pregnancy (21.3% vs. 10.0%).
- They smoked the 3 months before pregnancy (53.6% vs. 15.0%).
- They attended fewer than 80% of their prenatal visits (28.3% vs. 14.8%).
- They did not have their teeth cleaned during pregnancy (74.6% vs. 52.4%).
- They suffered emotional abuse during pregnancy (21.7% vs. 3.6%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (54.4% vs. 38.3%).
- Their infant does not sleep alone in the mother's room (67.3% vs. 51.8%).
- Their baby is exposed to smoke (4.4% vs. 1.2%; interpret these percentages with caution).
- They had a high ACE score (4+) (48.2% vs. 18.7%).

Figure 15.3: Risk behaviors and outcomes by mothers who used illicit drugs the month before pregnancy, South Dakota, 2021 (weighted)



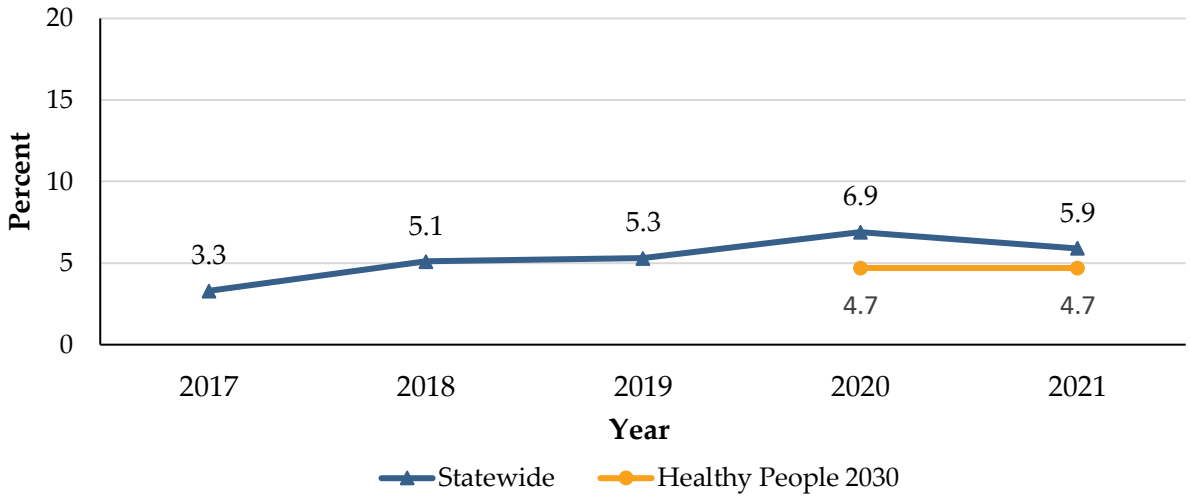
** p-value < 0.01 p-value based on Rao-Scott chi-square test.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
PNC = prenatal care; ACE = adverse childhood experiences, NICU = neonatal intensive care unit

Illicit Drug Use During Pregnancy

Prevalence and Trends (Figure 15.4)

The percentage of South Dakota mothers who used any illicit drugs during pregnancy **has increased over time** (p-value for linear less than 0.05).

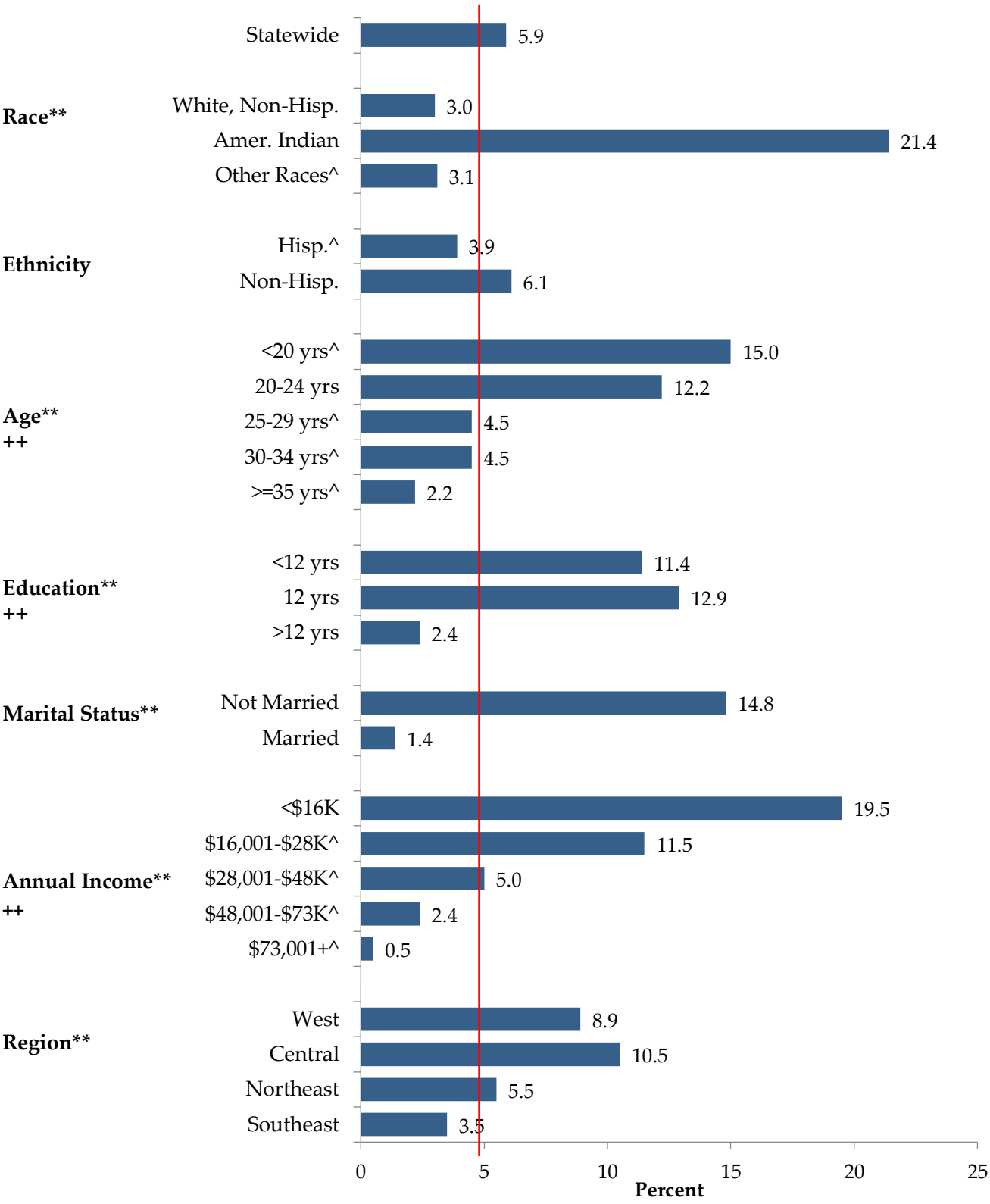
Figure 15.4: Mothers who used any illicit drugs during pregnancy by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 15.5)

- Overall prevalence of South Dakota mothers who used any illicit drugs during pregnancy was 5.9%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with using illicit drugs during pregnancy included maternal race, age, education, marital status, household income and region of the state that the mother resided.
- Mothers who were American Indian, less than 24 years old, had less education, were not married, had household income less than $16,000 and who resided in the Central region had a higher prevalence of using illicit drugs during pregnancy compared to their counterparts.

Figure 15.5: Percentage of mothers who used any illicit drug during pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



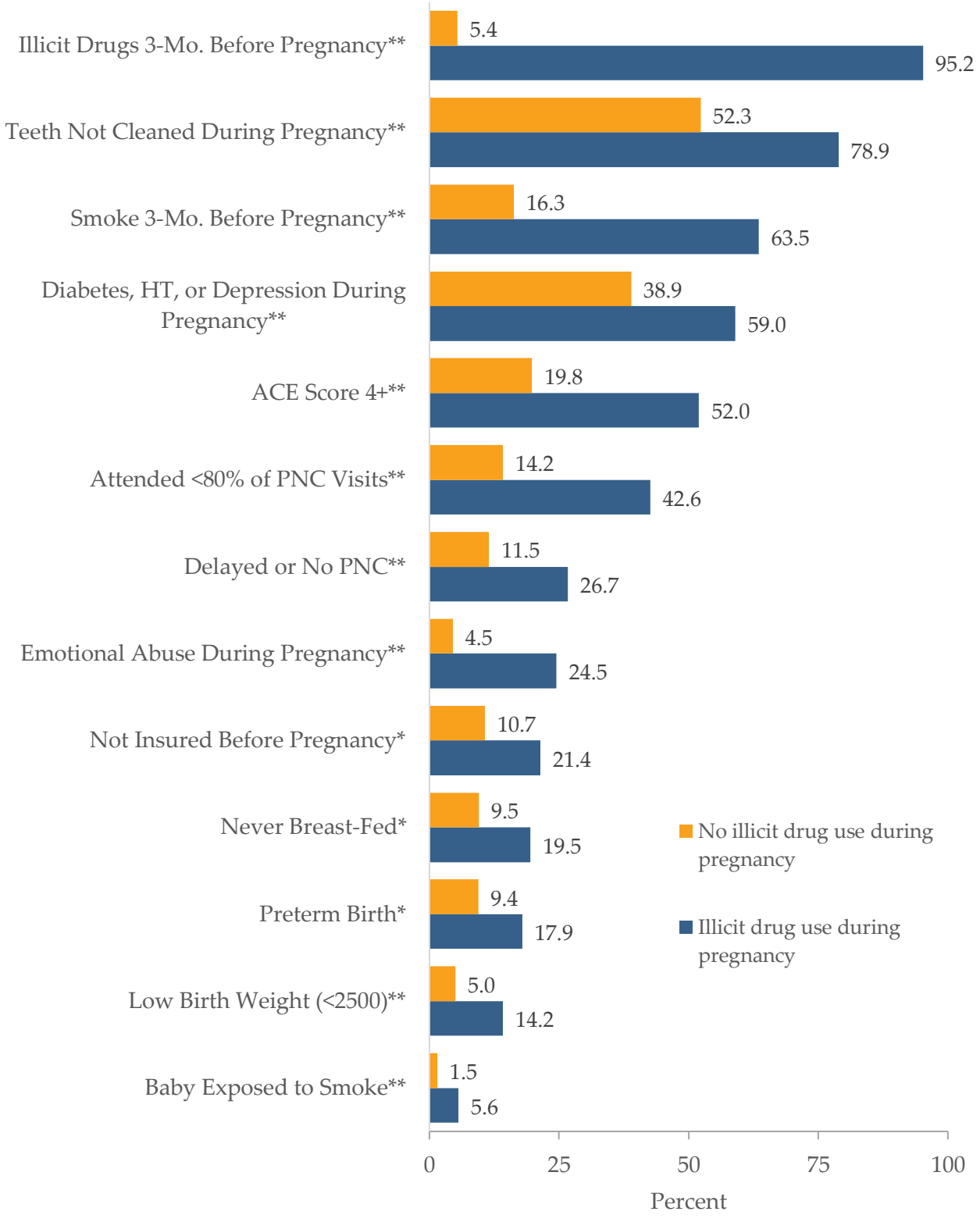
** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
— Healthy People 2020 (4.7% *who use illicit drugs*)

Risk Behaviors and Outcomes (Figure 15.6)

Mothers with any illicit drug use during pregnancy, compared to mothers who did not have illicit drug use before pregnancy, were significantly (p-value less than 0.05) *more likely* to report that:

- They were uninsured before pregnancy (21.4% vs. 10.7%).
- They smoked the 3 months before pregnancy (63.5% vs. 16.3%).
- The used illicit drugs the 3 months before pregnancy (95.2% vs. 5.4%).
- They started prenatal care after the first trimester or had no prenatal care (26.7% vs. 11.5%).
- They attended fewer than 80% of their prenatal visits (42.6% vs. 14.2%).
- They did not have their teeth cleaned during pregnancy (78.9% vs. 52.3%).
- They suffered emotional abuse during pregnancy (24.5% vs. 4.5%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (59.0% vs. 38.9%).
- Their infant was low birth weight (<2500 grams) (14.2% vs. 5.0%).
- They had a preterm birth (17.9% vs. 9.4%).
- They never breastfed their infant (19.5% vs. 9.5%).
- Their infant was exposed to smoke (5.6% vs. 1.5%; interpret these percentages with caution).
- They had a high ACE score (4+) (52.0% vs. 19.8%).

Figure 15.6: Risk behaviors and outcomes by mothers who used any illicit drugs during pregnancy, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01 p-value based on Rao-Scott chi-square test.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
PNC = prenatal care; ACE = adverse childhood experiences

Chapter 16: Breastfeeding

Significance

Breastfeeding is considered to be the best method for infant feeding. Dietary guidelines recommend that a new mother should exclusively breastfeed for six months with continued breastfeeding for up to one year, while other foods are being introduced.[30] Breastfeeding may continue as long as the mother desires. There are numerous benefits to breastfeeding including decreasing postpartum blood loss through increased uterine contractions. Long-term benefits for the mother may include lower risk of diabetes, ovarian cancer, and certain types of breast cancer.[31] Benefits to the infant include receiving a large variety of antibodies that are in breast milk that may help infants fight off viral and bacterial infections. Additionally, human milk provides the precise amounts of proteins, carbohydrates, fats, minerals, and vitamins that are needed for optimal health, with the exception of vitamins D and K. Long-term benefits of breastfeeding for the infant may include a reduced risk of developing obesity, type 2 diabetes, infections, atopic dermatitis, and asthma later in life.[31-32]

PRAMS asked women:

Q51 *Before or after your new baby was born*, did you receive information about breastfeeding from any of the following sources? [List]
Q52 Did you ever breastfeed or pump breast milk to feed your new baby, even for a short period of time?
Q53 Are you currently breastfeeding or feeding pumped milk to your new baby?
Q54 How many weeks or months did you breastfeed or feed pumped milk to your baby?
Q55 What were your reasons for stopping breastfeeding? [List]

Measure	% of women (95% CI, N)
Women's breastfeeding practices with this infant *	
Ever breastfed or pumped breastmilk	89.8 (87.6-91.6, 10536)
Breastfed or pumped breastmilk at least 2 months	72.4 (69.2-75.4, 10419)
Sources of information about breastfeeding	
Mother's doctor	79.2 (76.1-81.9, 10497)
A nurse, midwife, or doula	73.5 (70.1-76.6, 10285)
Baby's doctor or health care provider	69.7 (66.2-73.0, 10276)
Family or friends	64.1 (60.6-67.5, 10288)
A breastfeeding or lactation specialist	68.3 (64.8-71.5, 10312)
A breastfeeding support group	26.1 (23.0-29.3, 10056)
A breastfeeding hotline or toll-free number	13.3 (11.2-15.9, 10025)

* Among mothers whose infants were alive, had been discharged from the hospital, and were living with them at the time of the survey.

Measure	% of women (95% CI, N)
***Among women who breastfed even for a short time but currently are not breast-feeding*, reasons for stopping ***	
Thought she was not producing enough milk, or milk dried up	55.0 (48.3-61.4, 2806)
Baby had difficulty latching or nursing	32.6 (26.7-39.1, 2806)
Breast milk alone did not satisfy baby	32.5 (26.6-39.1, 2806)
Had too many other household duties	26.5 (21.1-32.8, 2806)
Nipples were sore, cracked, or bleeding or it was too painful	19.0 (14.3-24.7, 2806)
Went back to work	19.7 (14.9-25.5, 2806)
Thought baby was not gaining enough weight	16.9 (12.5-22.5, 2806)
Felt it was the right time to stop breastfeeding	7.9 (4.9-12.7, 2806)
Baby was jaundiced (yellowing of the skin or whites of the eyes)	7.3 (4.5-11.6, 2806)
Got sick or had to stop for medical reasons	4.8 (2.7-8.4, 2806)
Went back to school	4.2 (2.2-7.9, 2806)^
Partner did not support breastfeeding	3.5 (1.7-7.3, 2806)^

* Among mothers whose infants were alive, had been discharged from the hospital, and were living with them at the time of the survey.

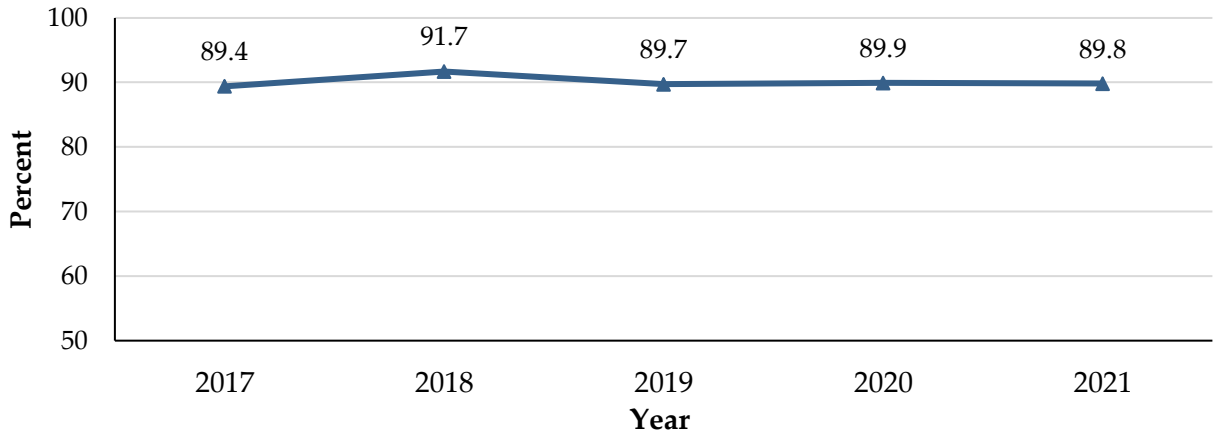
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Ever Breastfed or Pumped Milk

Prevalence and Trends (Figure 16.1)

The percentage of South Dakota mothers who ever breastfed or pumped milk at any time has not changed over time (p-value for linear trend greater than 0.05).

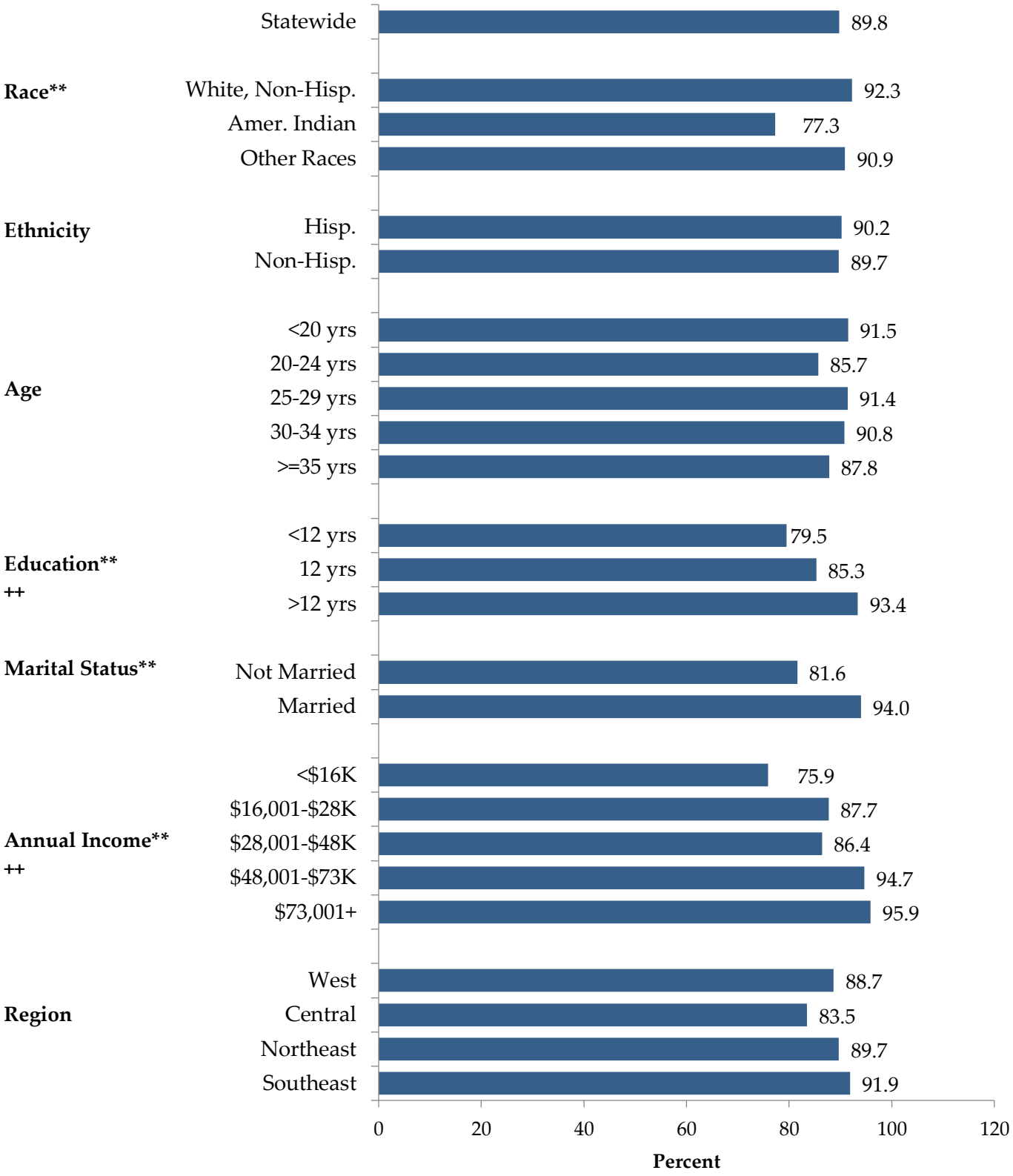
Figure 16.1: Mothers who ever breastfed by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 16.2)

- Overall prevalence of South Dakota mothers who ever breastfed was 89.8%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with ever breastfeeding included maternal race, education, marital status, and household income.
- Mothers who were white and other races, had a higher education level, were married, and had greater household income had a higher prevalence of ever breastfeeding compared with their counterparts.

Figure 16.2: Percentage of mothers who ever breastfed or pumped breastmilk by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 16.3)

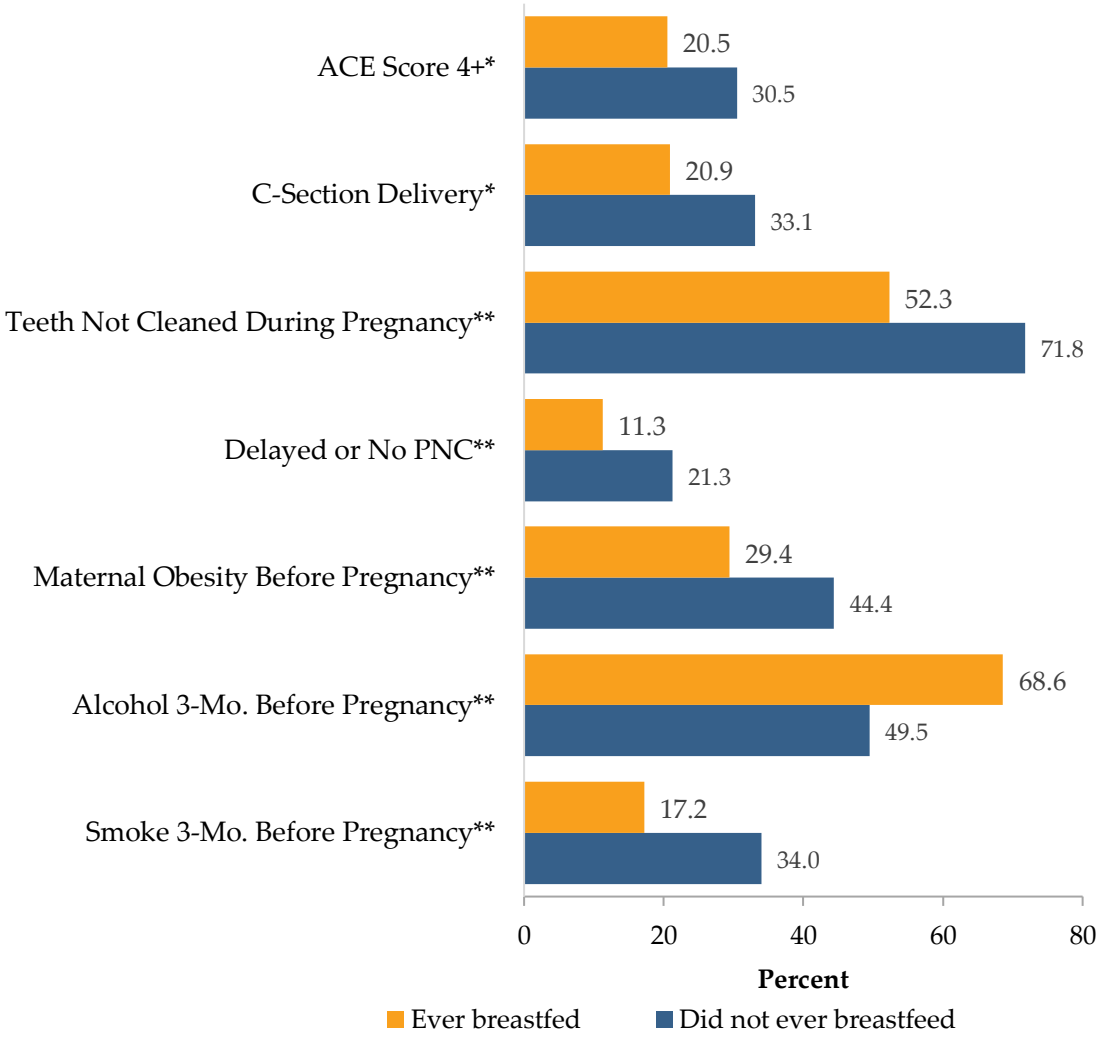
Mothers who ever breastfed, compared to mothers who did not ever breastfeed, were significantly (p-value less than 0.05) *more likely* to report that:

- They drank alcohol the 3 months before pregnancy (68.6% vs. 49.5%).

Mothers who ever breastfed, compared to mothers who did not ever breastfeed, were significantly (p-value less than 0.05) *less likely* to report that:

- They smoked the 3 months before pregnancy (17.2% vs. 34.0%).
- They had obesity prior to pregnancy (29.4% vs. 44.4%).
- They started prenatal care after the first trimester or had no prenatal care (11.3% vs. 21.3%).
- They did not have their teeth cleaned during pregnancy (52.3% vs. 71.8%).
- They had a C-Section delivery (20.9% vs. 33.1%).
- They had a high ACE score (4+) (20.5% vs. 30.5%).

Figure 16.3: Risk behaviors and outcomes by mothers who ever breastfed or pumped breastmilk, South Dakota, 2021 (weighted)



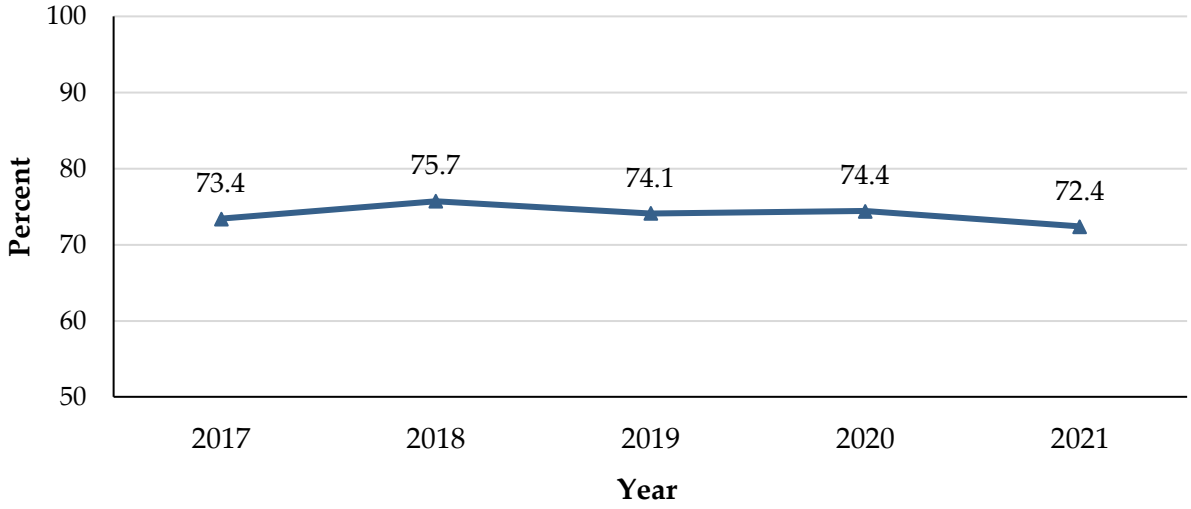
* p-value < 0.05, ** p-value < 0.01 p-value based on Rao-Scott chi-square test.
PNC = prenatal care

Breastfeeding at Two Months

Prevalence and Trends (Figure 16.4)

The percentage of South Dakota mothers who breastfed at least two months has not changed over time (p-value for linear trend greater than 0.05).

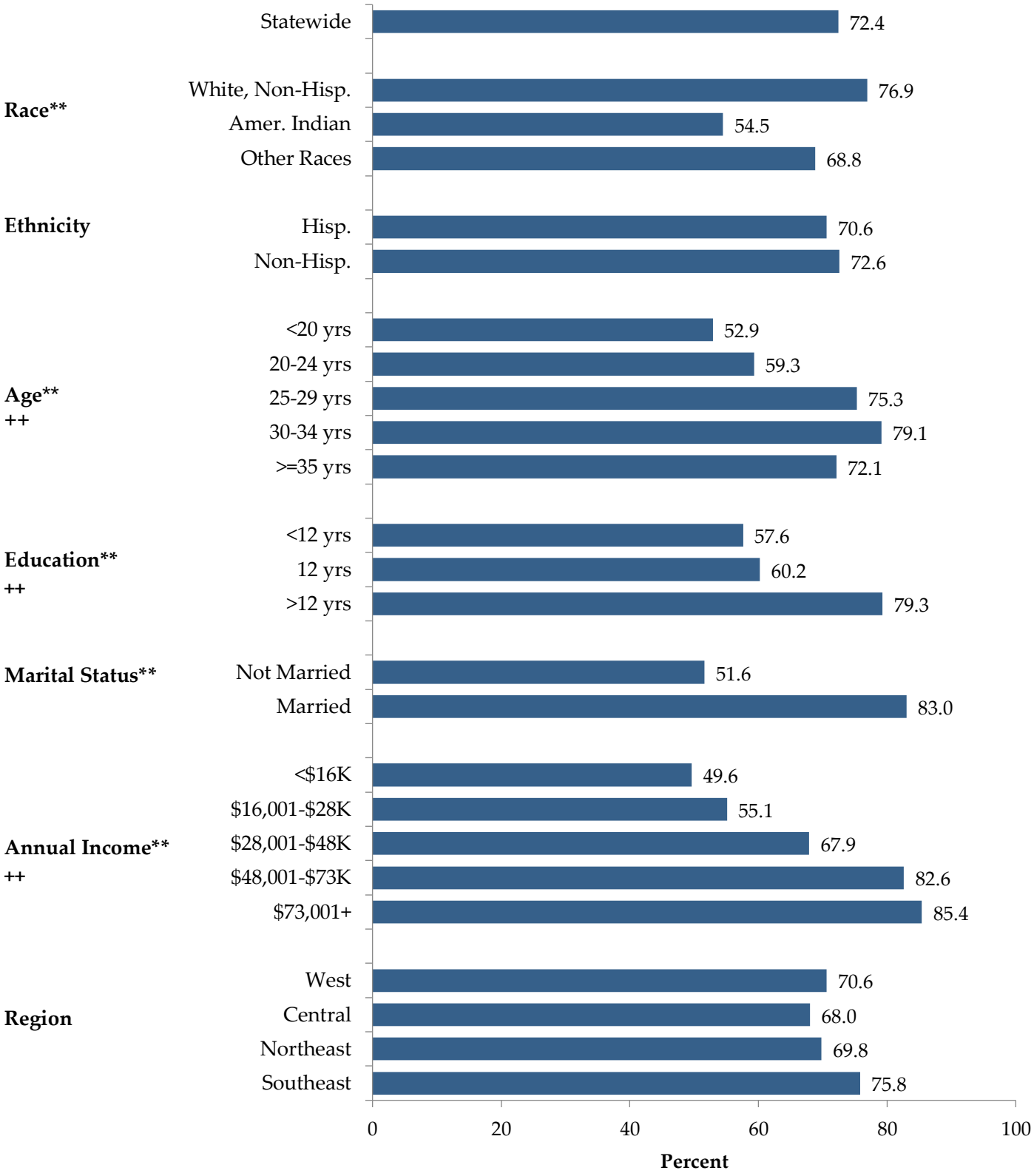
Figure 16.4: Mothers who breastfed at least two months by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 16.5)

- Overall prevalence of South Dakota mothers who breastfed at least two months was 72.4%.
- Characteristics significantly (p-value less than 0.05) associated with breastfeeding for at least two months included maternal race, age, education, marital status, and household income.
- Mothers who were white, older, had greater than High School education, were married, and who had greater household income had a higher prevalence of breastfeeding at least two months postpartum compared with their counterparts.

Figure 16.5: Percentage of mothers who breastfed or pumped breastmilk at least two months by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 16.6)

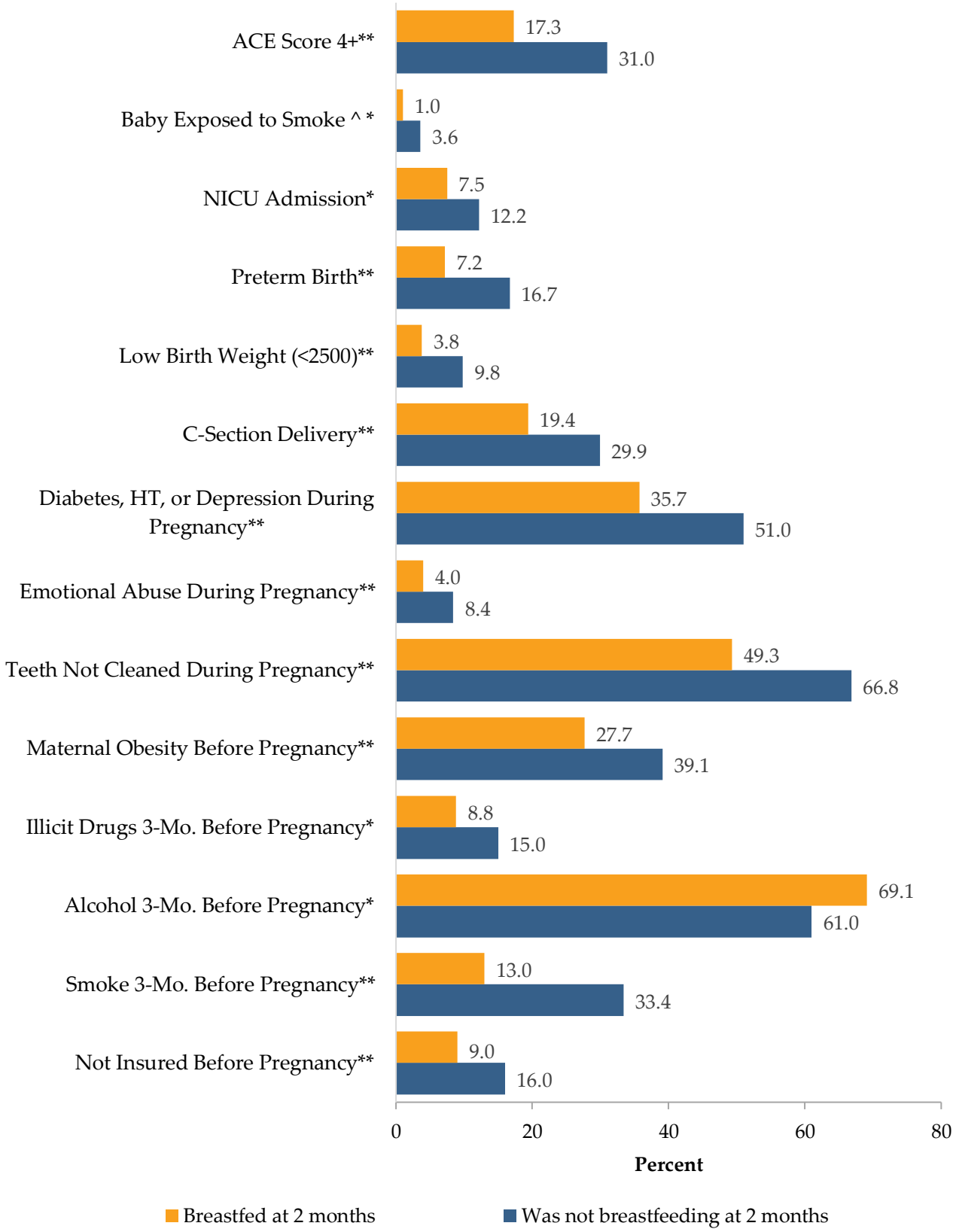
Mothers who breastfed at 2 months, compared to mothers who did not breastfeed at least two months, were significantly (p-value less than 0.05) *more likely* to report that:

- They drank alcohol 3 months before pregnancy (69.1% vs. 61.0%).

Mothers who breastfed at 2 months, compared to mothers who did not breastfeed at least two months, were significantly (p-value less than 0.05) *less likely* to report that:

- They were not insured before pregnancy (9.0% vs. 16.0%).
- They smoked the 3 months before pregnancy (13.0% vs. 33.4%).
- They used illicit drugs the 3 months before pregnancy (8.8% vs. 15.0%).
- They had maternal obesity before pregnancy (27.7% vs. 39.1%).
- They did not have their teeth cleaned during pregnancy (49.3% vs. 66.8%).
- They suffered emotional abuse during pregnancy (4.0% vs. 8.4%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (35.7% vs. 51.0%).
- They had a C-Section delivery (19.4% vs. 29.9%).
- Their infant was low birth weight (<2500 grams) (3.8% vs. 9.8%).
- They had a preterm birth (7.2% vs. 16.7%).
- They had a NICU admission (7.5% vs. 12.2%).
- Their infant was exposed to smoke (1.0% vs. 3.6%; interpret these percentages with caution).
- They had a high ACE score (4+) (17.3% vs. 31.0%).

Figure 16.6: Risk behaviors and outcomes by mothers who breastfed at least two months, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01 p-value based on Rao-Scott chi-square test.
PNC = prenatal care

Chapter 17: Infant health

Significance

Preterm birth, defined as a birth at less than 37 completed weeks of gestation, is the single most important cause of perinatal morbidity and mortality in industrialized countries.[33] It has been estimated that 60 to 80% of deaths among infants without congenital anomalies are related to preterm births.[34] In addition, preterm birth has long-term health implications, such as increased risk of cerebral palsy, cognitive impairment, deafness, and blindness. The majority of preterm births follow spontaneous rupture of membranes or onset of labor or both. The reason for preterm labor is not clear although it appears that both genetic and environmental factors are important. Environmental risk factors that have been identified for preterm birth include infection, low socioeconomic status, and smoking.

PRAMS asked women:

Q47 When was your baby born?
Q48 After your baby was delivered, how long did he or she stay in the hospital? [List]

Healthy People 2030 Objectives

- Reduce preterm births to 9.4% (MICH-07)

Definition

A *singleton* is an offspring (baby) born singly, as distinguished from twins.

Measure	% of women (95% CI, N)
Length of infant hospital stay, all infants	
Less than 1 day	3.8 (2.7-5.2, 10744)
1-2 days	69.5 (66.3-72.6, 10744)
3-5 days	18.7 (16.2-21.5, 10744)
6-14 days	3.3 (2.3-4.7, 10744)
More than 14 days	3.0 (2.0-4.3, 10744)
Not born in hospital	1.0 (0.5-2.0, 10744)^
Still in hospital	0.7 (0.3-1.6, 10744)^
Infant health after delivery	
Among mothers of all infants	
Infants who were born preterm (less than 37 weeks)	10.1 (8.2-12.3, 10740)
Infants who were low birth weight (less than 2500 grams)	5.5 (4.2-7.2, 10744)
Among mothers with singletons only	
Infants who were born preterm (less than 37 weeks)	9.4 (7.5-11.4, 10536)
Infants who were low birth weight (less than 2500 grams)	5.0 (3.7-6.6, 10540)
Singleton infants with gestational age	
Less than 28 weeks (extremely preterm)	0.4 (0.1-1.3, 10536)^
28-33 weeks (moderately preterm)	0.8 (0.5-1.5, 10536)
34-36 week (late preterm)	8.2 (6.4-10.3, 10536)
37-44 weeks (term or post-term)	90.6 (88.4-92.4, 10536)
Singleton infants with birth weight (g)	
250-1449 (very low birth weight, VLBW)	0.5 (0.2-1.4, 10540)^
1500-2499 (low birth weight, LBW)	4.4 (3.2-6.0, 10540)
2500-4000 (normal birth weight)	86.3 (83.7-88.5, 10540)

Over 4000 (high birth weight)	8.8	(7.0-11.0, 10540)

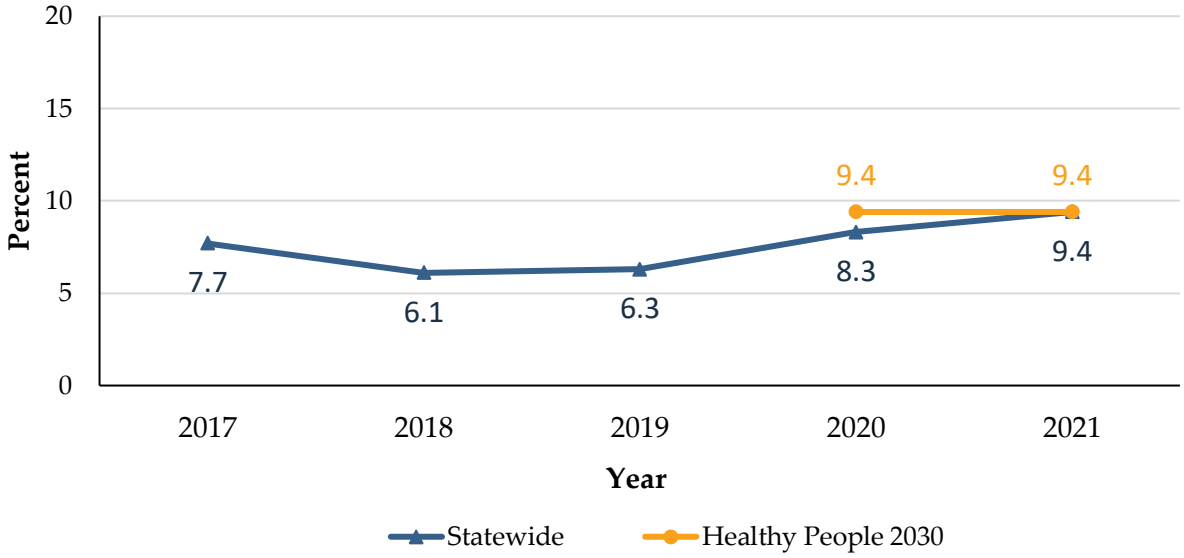
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Preterm Birth (singletons only)

Prevalence and Trends (Figure 17.1)

The percentage of South Dakota mothers who had a singleton preterm birth has not changed over time (p-value for linear trend greater than 0.05).

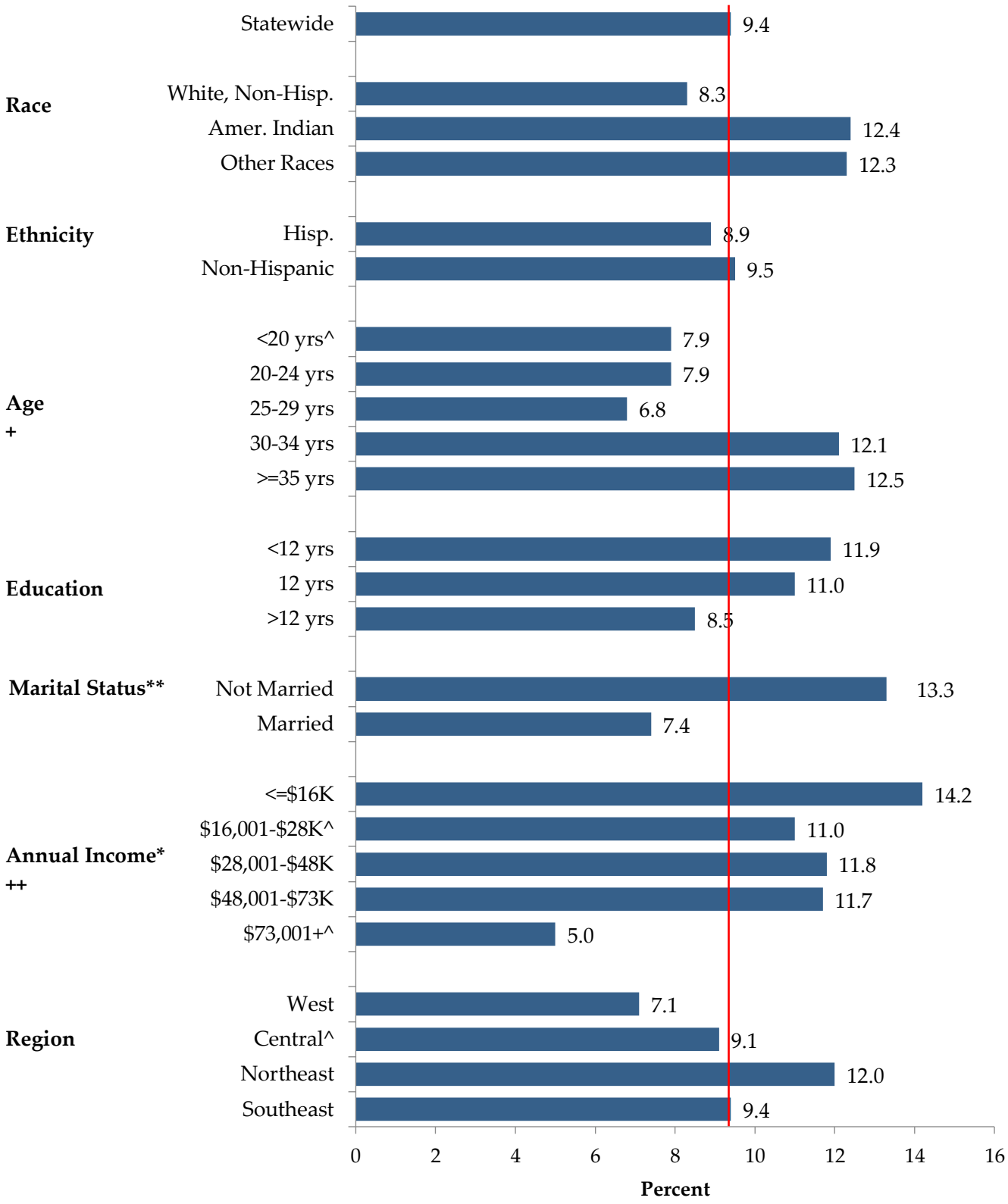
Figure 17.1: Mothers who had a singleton preterm birth by year, South Dakota, 2017–2021 (weighted)



Demographic Characteristics (Figure 17.2)

- The overall prevalence of South Dakota mothers who had a singleton preterm birth was 9.4%.
- Characteristics significantly (p-value less than 0.05) associated with having a singleton preterm birth included marital status and household income.
- Mothers who were not married, and who had a household income less than $16,000 had a higher prevalence of singleton preterm births compared with their counterparts.

Figure 17.2: Percentage of mothers with a singleton infant who was born premature by demographic characteristics, South Dakota, 2021 (weighted)



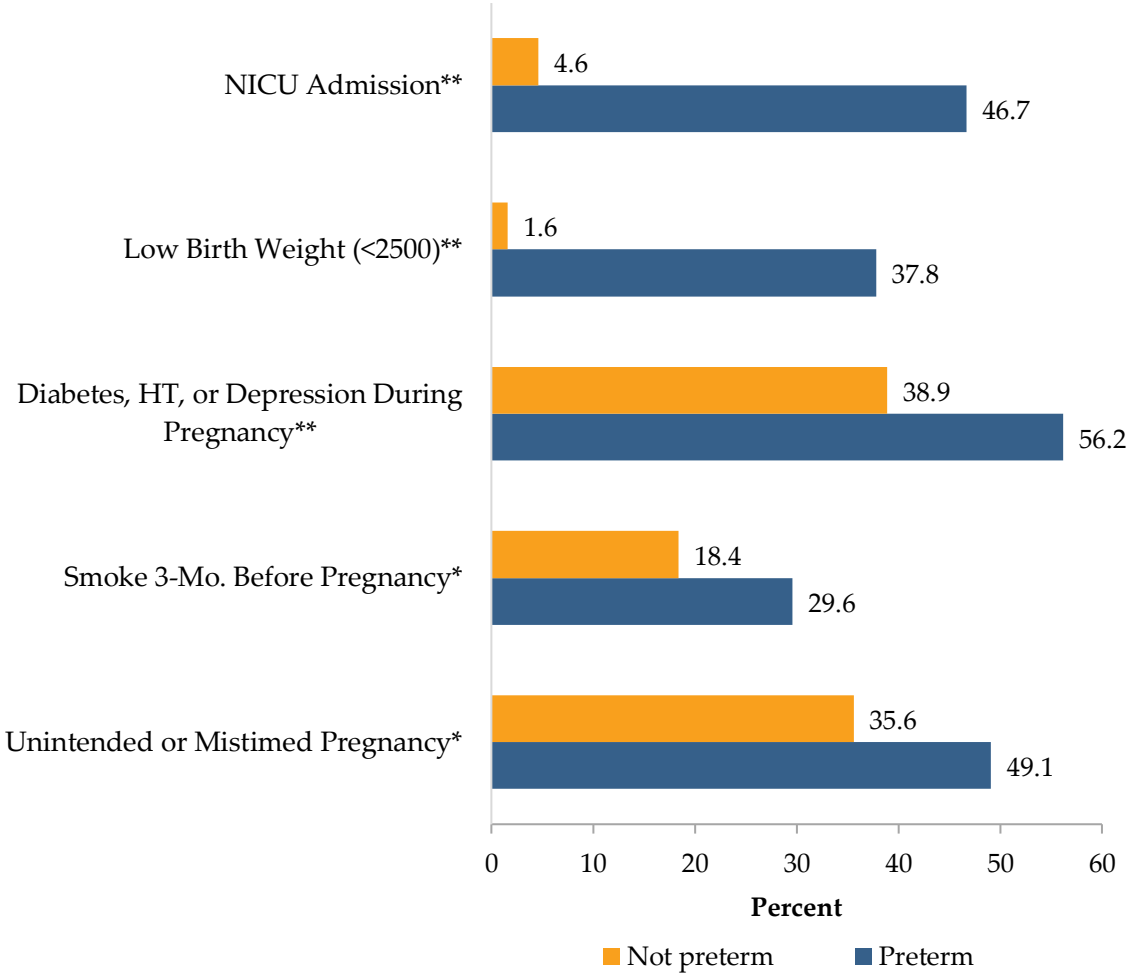
* p-value < 0.05, ** p-value < 0.01 based on Rao-Scott chi-square test.
+ p-value < 0.05, ++ p-value < 0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
— Healthy People 2020 (9.4% for all births, not just singletons)

Risk Behaviors and Outcomes (Figure 17.3)

Mothers who had a singleton preterm birth, compared to mothers who did not have a preterm birth, were significantly (p-value less than 0.05) *more likely* to report that:

- They had an unintended or mistimed pregnancy (49.1% vs. 35.6%).
- They smoked the 3 months before pregnancy (29.6% vs. 18.4%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (56.2% vs. 38.9%).
- Their infant was low birth weight (<2500 grams) (37.8% vs. 1.6%).
- Their infant was admitted to the NICU (46.7% vs. 4.6%).

Figure 17.3: Risk behaviors and outcomes by mothers with a singleton infant who was born preterm, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01 p-value based on Rao-Scott chi-square test.
NICU = neonatal intensive care unit, ACE = adverse childhood experiences

Chapter 18: Infant safe sleep

Significance

Although the rate of SIDS in the United States has decreased from 130.3 deaths per 100,000 live births in 1990 to 38.0 deaths per 100,000 live births in 2016, deaths from both unknown causes and accidental suffocation/strangulation have been increasing since 1997.[35] The 2013-2015 rate for sudden unexplained infant deaths (SUID) for the United States was 89.2/100,000 live births with a rate in South Dakota of 157.3/100,000 live births, resulting in a rank of 46th out of 50 states.[36] Due to similarities in many of the risk factors for SIDS and suffocation-related infant deaths, the American Academy of Pediatrics released updated recommendations for a safe sleep environment to reduce SIDS and sleep-related infant deaths related to suffocation and entrapment based on available data.[37]

PRAMS asked women:

Q56 In which *one* position do you *most often* lay your baby down to sleep now? [List]
Q57 In the *past 2 weeks*, how often has your new baby slept alone in his or her own crib or bed? [List]
Q58 When your new baby sleeps alone, is his or her crib or bed in the same room where *you* sleep?
Q59 Listed below are some more things about how babies sleep. How did your new baby *usually* sleep in the *past 2 weeks*? [List]
Q60 Did a doctor, nurse, or other health care worker tell you any of the following things? [List]

Healthy People 2030 Objectives

- Increase the proportion of infants who are put to sleep on their backs to 88.9%. (MICH-14)

Definitions

- *Sudden unexpected infant death (SUID)* is a term used to describe any sudden and unexpected death, whether explained or unexplained, and includes sudden infant death syndrome (SIDS) and sleep-related infant deaths.
- *Approved sleep surface* is a composite of how the infant usually slept in the past 2 weeks: 1) alone in their own crib or bed (always/often versus sometimes/rarely/never) 2) in a crib, bassinet, or pack and play 3) not in a standard bed 4) not in a couch or armchair 5) not in car seat or swing.
- *Without soft objects or loose bedding* is a composite of three items indicating that the infant usually slept without 1) blankets; 2) toys, cushions, or pillows; and 3) crib bumper pads.
- *Room-sharing without bed-sharing* is a composite of two items indicating that the infant usually slept 1) alone in their own crib or bed (always versus often/sometimes/rarely/never) and 2) in the same room as their mothers.

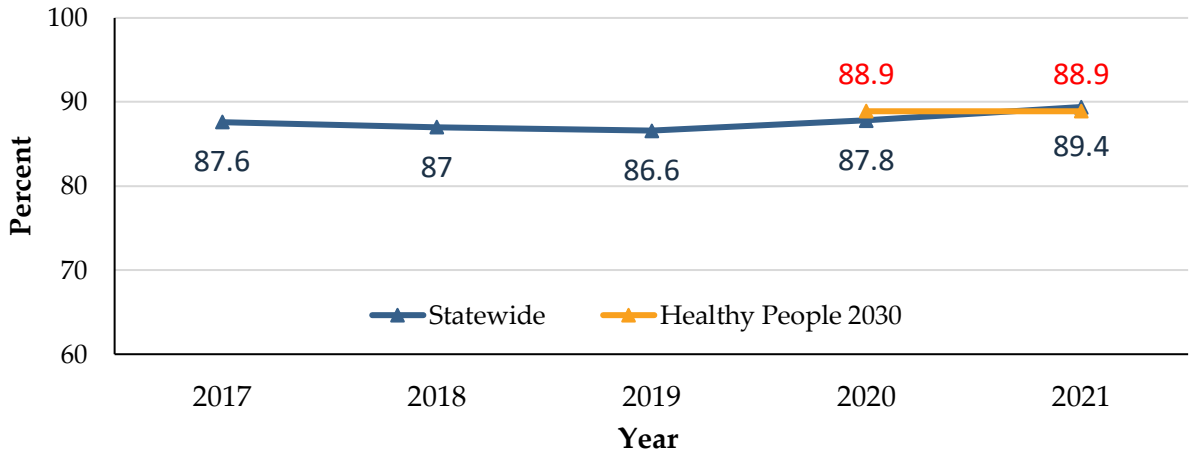
Measure	% of women (95% CI, N)
Infant sleep practices	
Infant most often laid to sleep on back	89.4 (87.1-91.4, 10456)
Infant sleeps alone in his or her own crib or bed	
Always	61.0 (57.5-64.3, 10447)
Often/almost always	20.0 (17.3-23.0, 10447
When infant sleeps alone, the crib or bed is in the same room as the mother	81.6 (78.3-84.4, 9904)
How infant usually slept in the past 2 weeks	
In a crib, bassinet, or pack and play	91.6 (89.7-93.2, 10397)
In a sleeping sack or wearable blanket	57.6 (54.1-61.1, 10147)
In an infant car seat or swing	42.2 (38.7-45.9, 10191)
With a blanket	37.0 (33.6-40.5, 10155)
On a twin or larger mattress or bed	21.3 (18.6-24.2, 10173)
On a couch, sofa, or armchair	8.1 (6.4-10.1, 10180)
With crib bumper pads (mesh or non-mesh)	8.0 (6.2-10.2, 10158)
With toys, cushions, or pillows, including nursing pillows	6.1 (4.7-8.0, 10147)
Infants were placed to sleep	
On approved sleep surface (HRSA Definition)	43.9 (40.3-47.6, 10070)
Without soft objects or loose bedding	60.3 (56.7-63.8, 10020)
Room-sharing without bed-sharing	46.5 (42.9-50.1, 10352)
Infant sleep recommendations discussed by health care worker	
Place infant on back to sleep	95.5 (93.9-96.6, 10413)
Place infant to sleep in a crib, bassinet, or pack and play	92.2 (90.2-93.9, 10351)
Place infant's crib or bed in mother's room	64.4 (60.9-67.8, 10329)
What things should and should not go in the infant's bed	89.6 (87.2-91.6, 10348)

Infant laid on back to sleep

Prevalence and Trends (Figure 18.1)

The percentage of South Dakota mothers who placed their infant on his or her back to sleep has not changed over time (p-value for linear trend greater than 0.05).

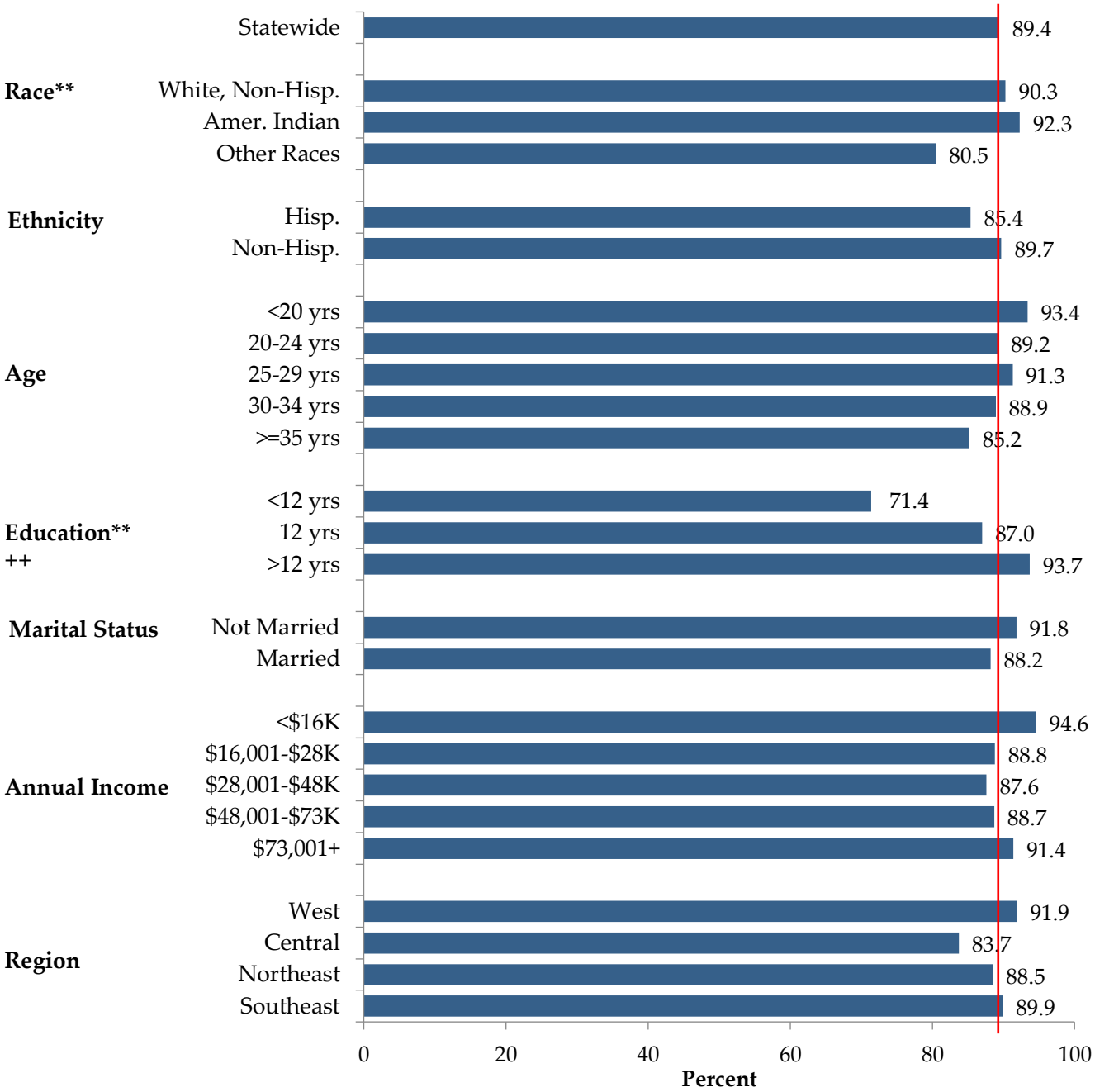
Figure 18.1: Mothers who placed their infant on his or her back to sleep by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 18.2)

- The overall prevalence of South Dakota mothers who placed their infant on his or her back to sleep was 89.4%.
- The demographic characteristics significantly (p-value less than 0.05) associated with mothers placing their infant on his or her back to sleep were maternal race and education.
- Mothers who were American Indian and had greater education level had higher prevalence of placing their infant on his or her back to sleep compared with their counterparts.

Figure 18.2: Percentage of mothers who most often laid their infant to sleep on their back by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.

++ p-value < 0.01 based on logistic regression results for linear trend.

— Healthy People 2030 (88.9%)

Risk Behaviors and Outcomes (Figure 18.3)

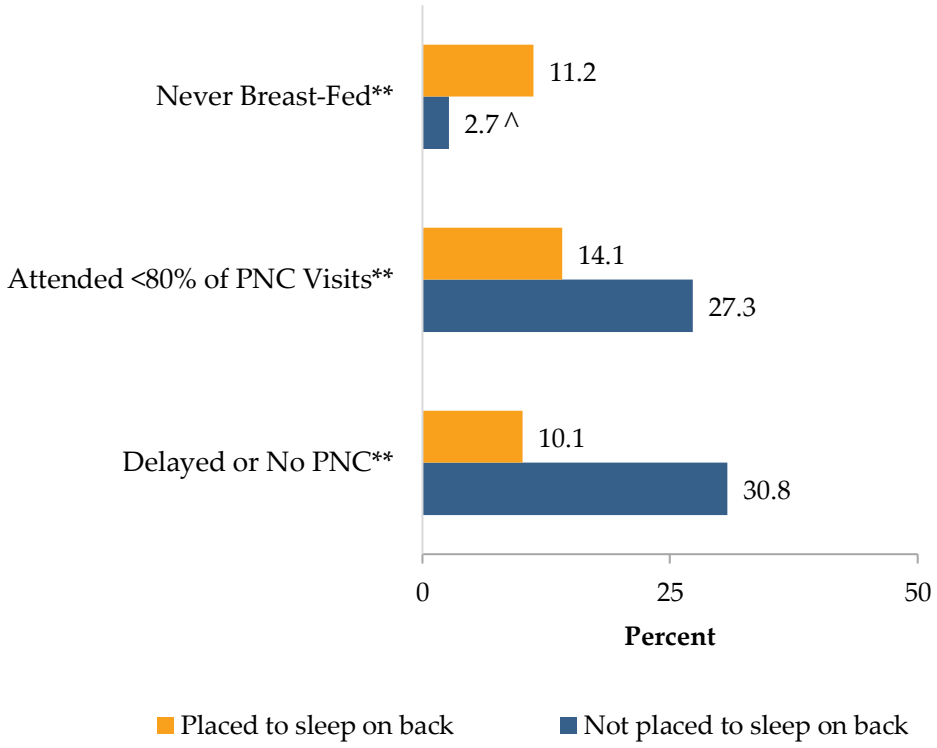
Mothers who placed their infant on his or her back to sleep, compared to mothers who *did not* place their infant on his or her back to sleep, were significantly (p-value less than 0.05) *more likely* to report that:

- They never breastfed their infant (11.2% vs. 2.7%; interpret these percentages with caution).

Mothers who placed their infant on his or her back to sleep, compared to mothers who *did not* place their infant on his or her back to sleep, were significantly (p-value less than 0.05) *less likely* to report that:

- They started prenatal care after the first trimester or had no prenatal care (10.1% vs. 30.8%).
- They attended fewer than 80% of their prenatal visits (14.1% vs. 27.3%).

Figure 18.3: Risk behaviors and outcomes by mothers who placed their infant to sleep on his or her back, South Dakota, 2021 (weighted)



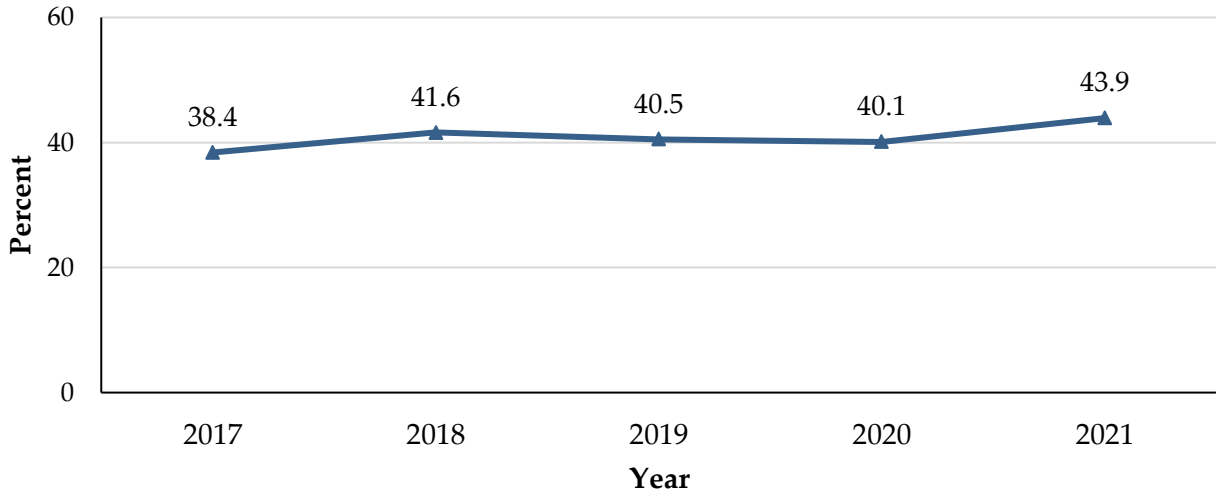
* p-value < 0.05, p-value based on Rao-Scott chi-square test.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
PNC = prenatal care

Infant sleeps on an approved surface (HRSA definition)

Prevalence and Trends (Figure 18.4)

The percentage of South Dakota mothers who placed their infant on an approved sleep surface has not changed over time (p-value for linear trend greater than 0.05).

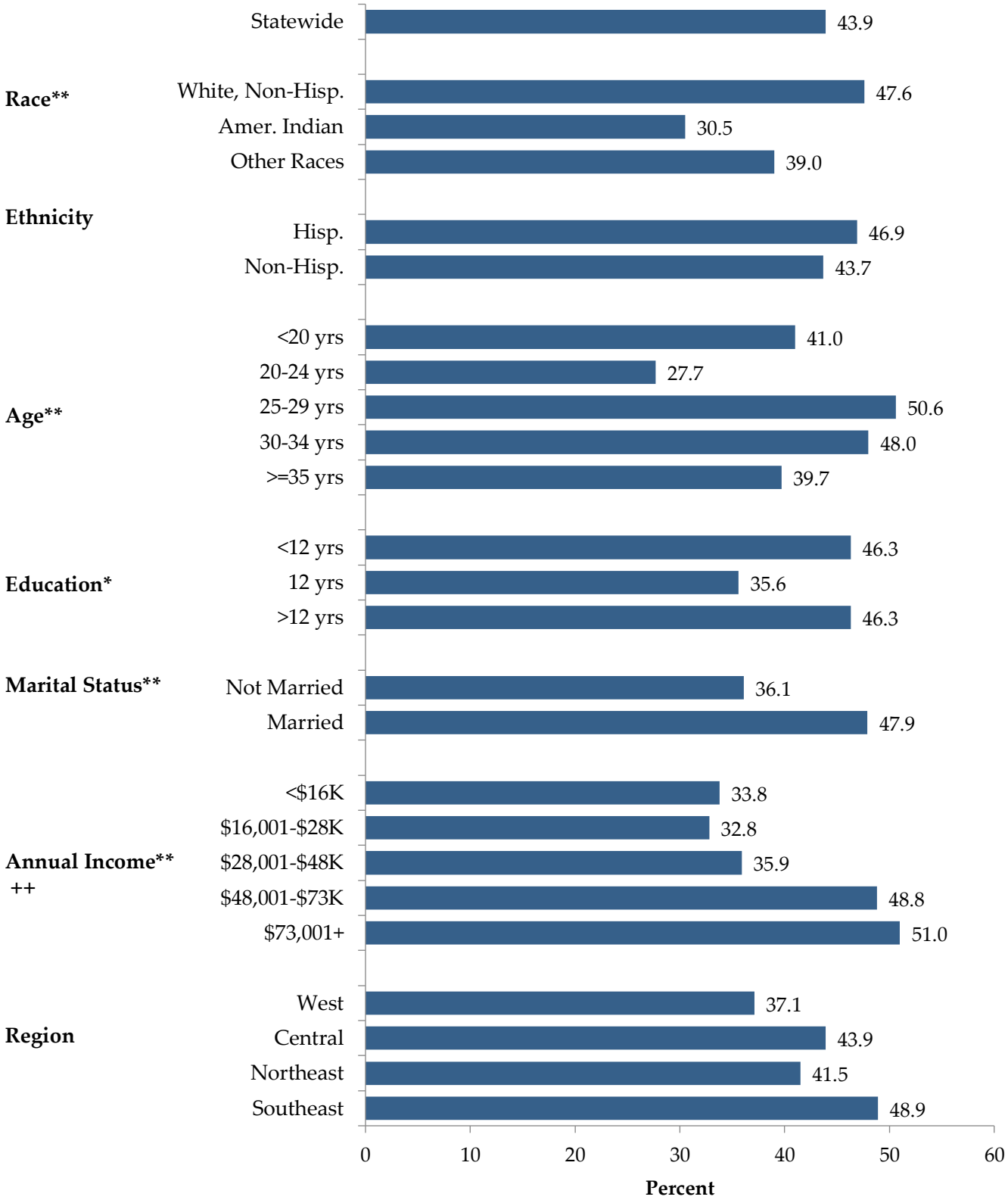
Figure 18.4: Mothers who placed their infant on an approved sleep surface by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 18.5)

- The overall prevalence of South Dakota mothers who placed their infants on an approved sleep surface was 43.9%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with placing the infant on an approved sleep surface included maternal race, age, education, marital status, and household income.
- Mothers who were White, between 25-29 years of age, had less than or greater than a High School education, married, and who had a household income greater than $48,000 had a higher prevalence of placing their infants on an approved sleep surface compared with counterparts.

Figure 18.5: Percentage of mothers who most often laid their infant to sleep on an approved sleep surface by demographic characteristics, South Dakota, 2021 (weighted)



* p-value < 0.05 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend

Risk Behaviors and Outcomes (Figure 18.6)

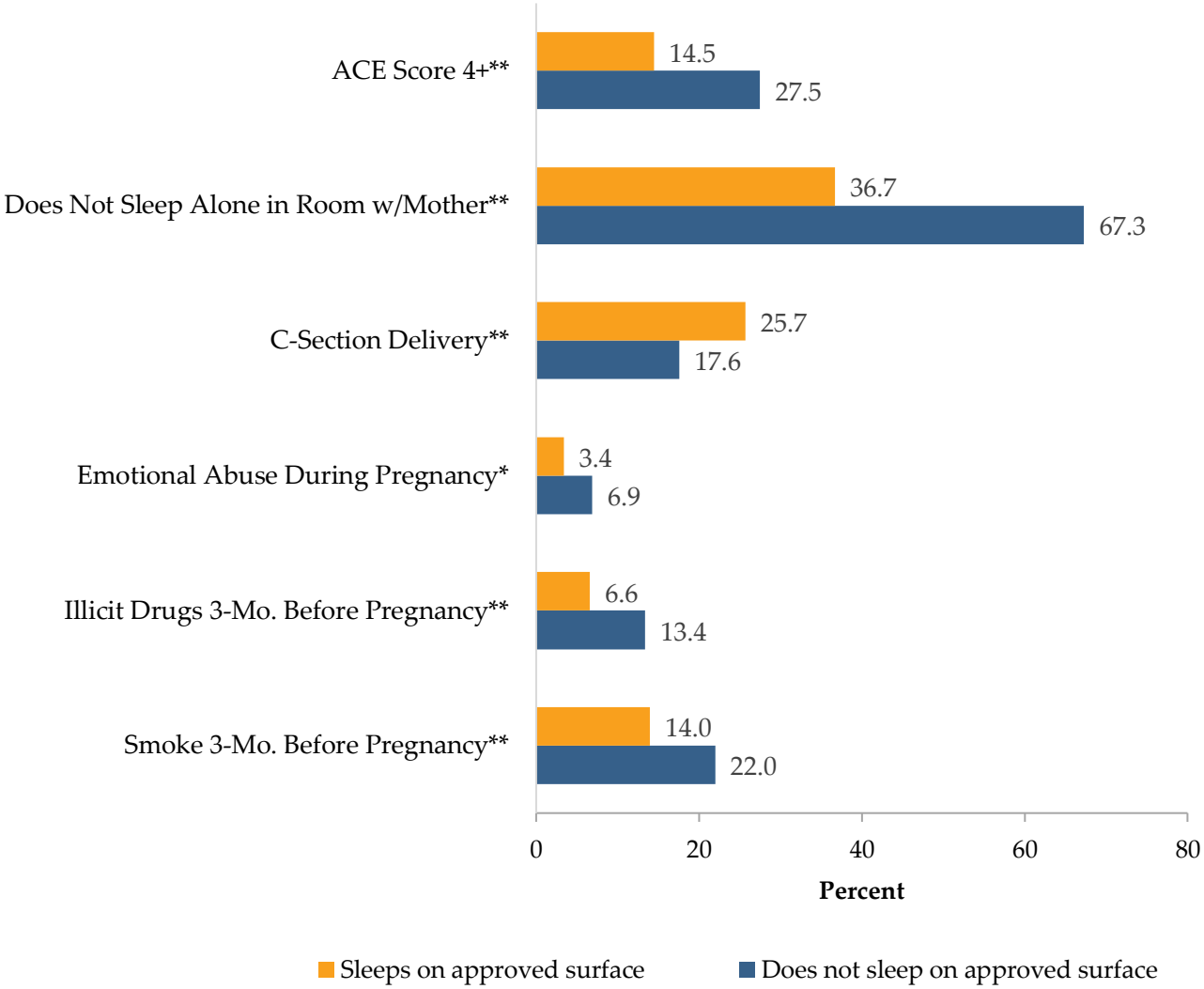
Mothers who most often laid their infant to sleep on an approved sleep surface, compared to mothers who did not, were significantly (p-value less than 0.05) *more likely* to report that:

- They had a cesarean section (25.7% vs. 17.6%).

Mothers who most often laid their infant to sleep on an approved sleep surface, compared to mothers who did not, were significantly (p-value less than 0.05) *less likely* to report that:

- They smoked the 3 months before pregnancy (14.0% vs. 22.0%).
- They used illicit drugs 3 months before pregnancy (6.6% vs. 13.4%).
- They suffered emotional abuse during pregnancy (3.4% vs. 6.9%).
- Their infant does not sleep alone in the mother's room (36.7% vs. 67.3%).
- They had a high ACE score (4+) (14.5% vs. 27.5%).

Figure 18.6: Risk behaviors and outcomes by mothers who most often laid their infant to sleep on an approved sleep surface, South Dakota, 2021 (weighted)



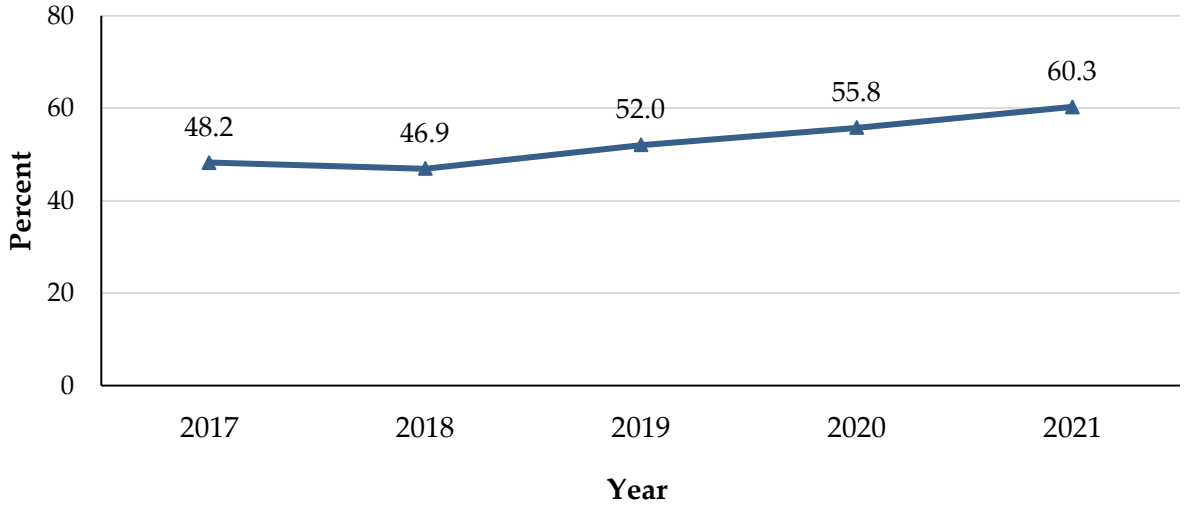
* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
ACE = adverse childhood experiences

No soft objects or loose bedding in infant's sleep area

Prevalence and Trends (Figure 18.7)

The percentage of South Dakota mothers who most often laid their infant to sleep *without* soft objects or loose bedding **has increased** over time (p-value less than 0.05).

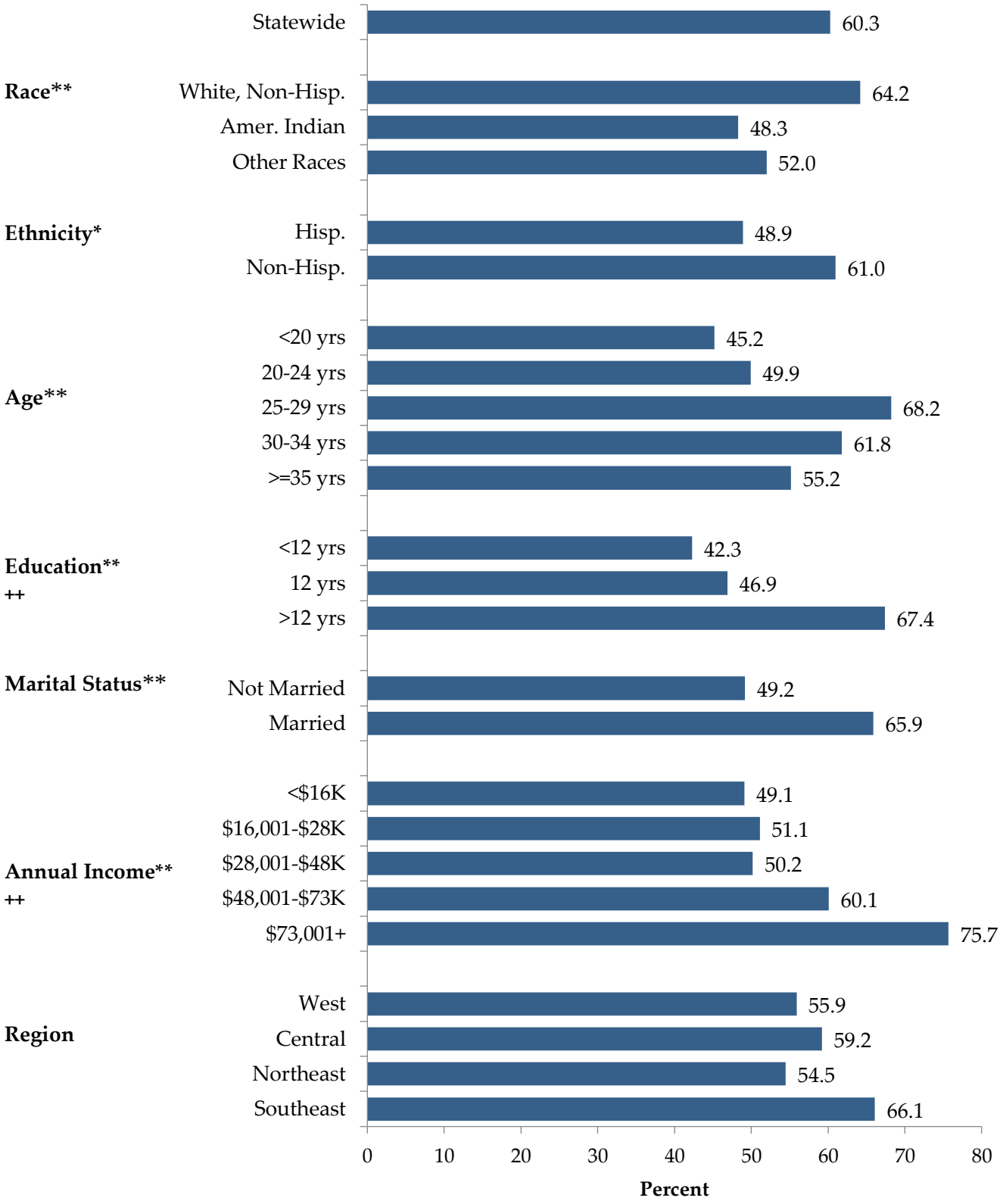
Figure 18.7: Mothers who most often laid their infant to sleep without soft objects or loose bedding by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 18.8)

- Overall prevalence of South Dakota mothers who most often laid their infant to sleep *without* soft objects or loose bedding was 60.3%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with laying their infant to sleep *without* soft objects or loose bedding included maternal race, ethnicity, age, education, marital status, and household income.
- Mothers who were white, non-Hispanic, between 25-29 years of age, had more years of education, were married, and who had household income greater than $73,000 had a higher prevalence of laying their infant to sleep *without* soft objects or loose bedding compared with their counterparts.

Figure 18.8: Percentage of mothers whose infant slept without soft objects or loose bedding by demographic characteristics, South Dakota, 2021 (weighted)



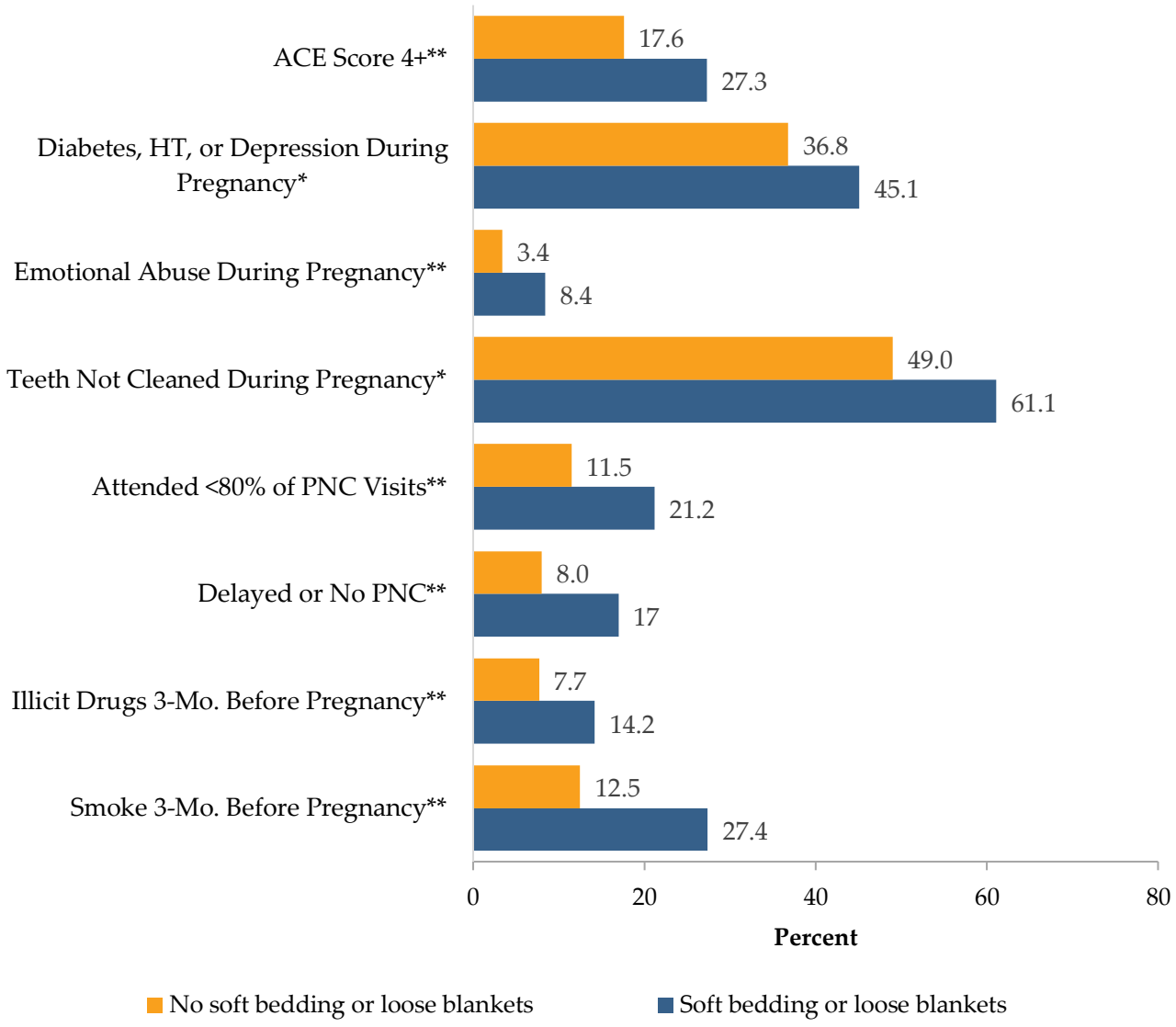
* p-value < 0.05, ** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 18.9)

Mothers whose infant slept *without* soft objects or loose bedding, compared to mothers whose infant slept *with* soft objects or loose bedding, were significantly (p-value less than 0.05) *less likely* to report that:

- They smoked the 3 months before pregnancy (12.5% vs. 27.4%).
- They used illicit drugs 3 months before pregnancy (7.7% vs. 14.2%).
- They started prenatal care after the first trimester or had no prenatal care (8.0% vs. 17.0%).
- They attended fewer than 80% of their prenatal visits (11.5% vs. 21.2%).
- They did not have teeth cleaned during pregnancy (49.0% vs. 61.1%).
- They suffered emotional abuse during pregnancy (3.4% vs. 8.4%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (36.8% vs. 45.1%).
- They had a high ACE score (4+) (17.6% vs. 27.3%).

Figure 18.9: Risk behaviors and outcomes by mothers whose infant slept without soft objects or loose bedding, South Dakota, 2021 (weighted)



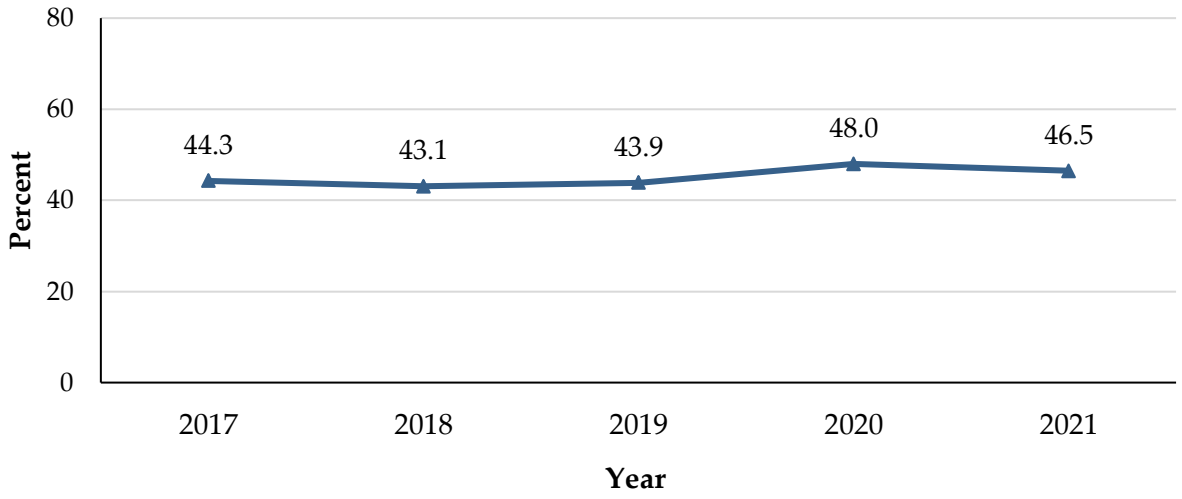
* p-value < 0.05, ** p-value < 0.01 p-value based on Rao-Scott chi-square test.
PNC = prenatal care; ACE = adverse childhood experiences

Infant sleeps alone in the mother's room (room-sharing without bed-sharing)

Prevalence and Trends (Figure 18.10)

The percentage of South Dakota mothers who had their infant sleep alone in the mother's room without bed-sharing has not changed over time (p-value for linear trend greater than 0.05).

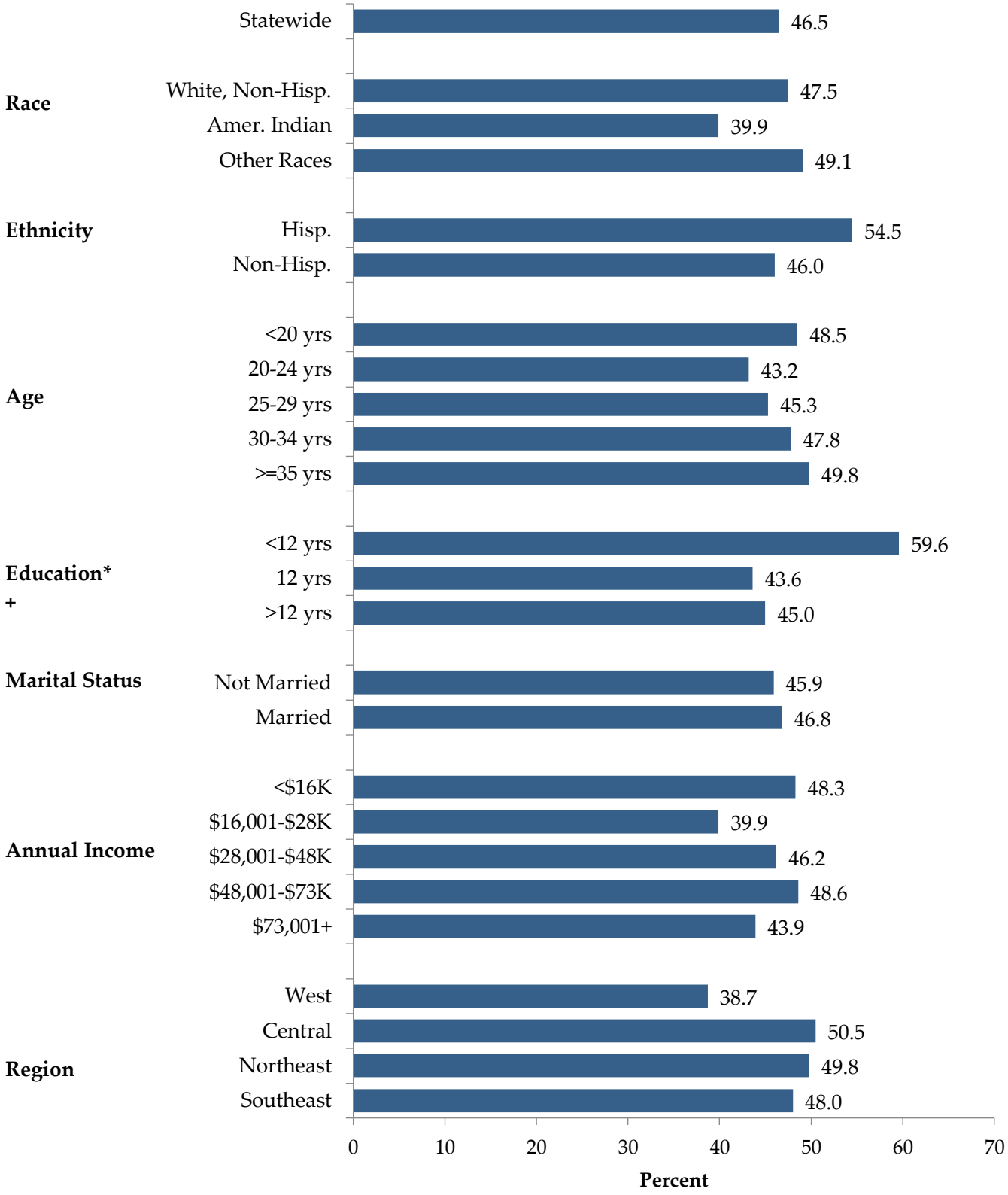
Figure 18.10: Mothers whose infant room-shared without bed-sharing by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 18.11)

- Overall prevalence of South Dakota mothers whose infant room-shared without bed-sharing was 46.5%.
- Maternal education was the only demographic characteristics significantly (p-value less than 0.05) associated with room-sharing without bed-sharing.
- Mothers who had less than a high school education had a higher prevalence of room-sharing without bed-sharing compared with their counterparts.

Figure 18.11: Percentage of mothers whose infant room-shares without bed-sharing by demographic characteristics, South Dakota, 2021 (weighted)



* p-value < 0.05 based on Rao-Scott chi-square test.
\+ p-value < 0.05 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 18.12)

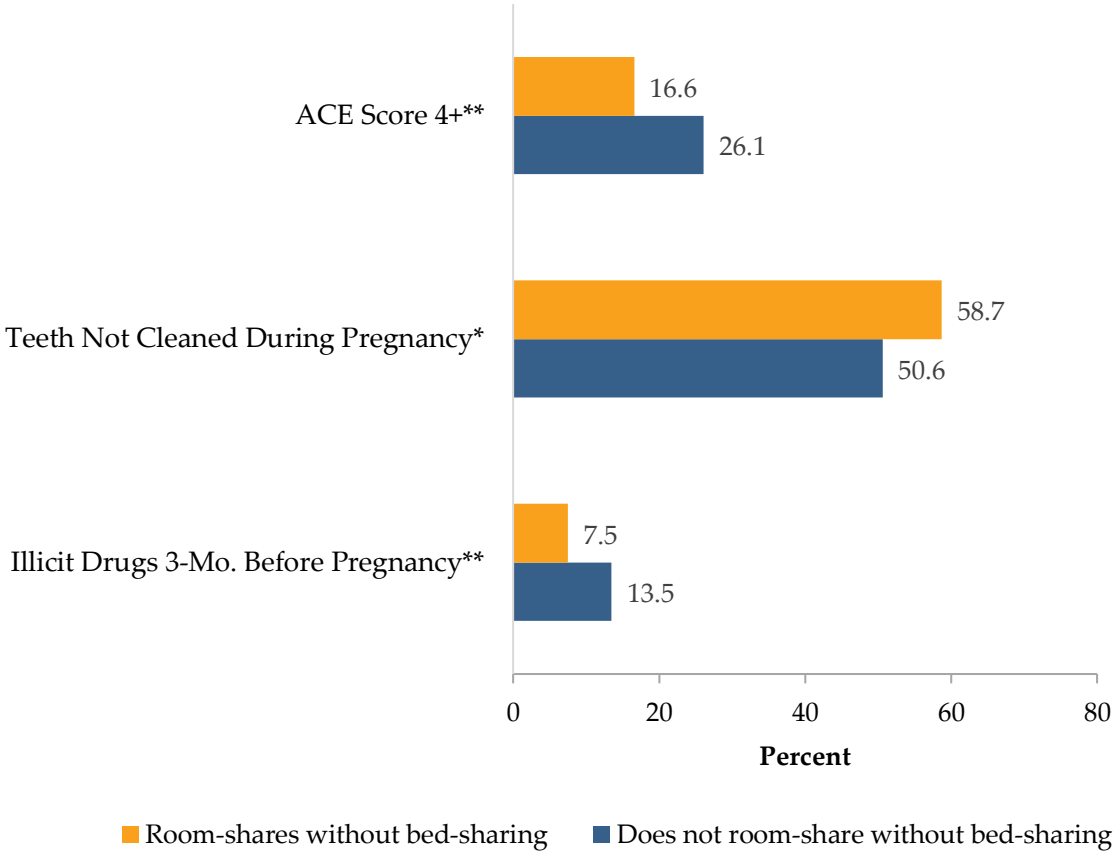
Mothers whose infant room-shared without bed-sharing, compared to mothers whose infant did not room-share without bed-sharing, were significantly (p-value less than 0.05) *more likely* to report that:

- They did not have their teeth cleaned during pregnancy (58.7% vs. 50.6%).

Mothers whose infant room-shared without bed-sharing, compared to mothers whose infant did not room-share without bed-sharing, were significantly (p-value less than 0.05) *less likely* to report that:

- They used illicit drugs the 3 months before pregnancy (7.5% vs. 13.5%).
- They had a high ACE score (4+) (16.6% vs. 26.1%).

Figure 18.12: Risk behaviors and outcomes by mothers whose infant room-shares without bed-sharing, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01 p-value based on Rao-Scott chi-square test.
PNC = prenatal care, ACE = adverse childhood experiences

Chapter 19: Postpartum health and birth control use

Significance

Postpartum care visits allow for the identification of pregnancy-related issues like postpartum depression, gestational diabetes, and breast health, along with providing additional information on breastfeeding.[38] Early postpartum care of the mother offers opportunities for healthcare providers to assess specific behaviors and needs of the mother, which ultimately can affect infant health care. The American College of Obstetricians and Gynecologists recommends that mothers attend a postpartum visit 4 to 6 weeks after delivery.[38]

PRAMS asked women:

Q61 Are you or your husband or partner doing anything *now* to keep from getting pregnant?
Q62 What are your reasons for not doing anything to keep from getting pregnant *now*? [List]
Q63 What kind of birth control are you or your husband or partner using *now* to keep from getting pregnant? [List]
Q64 *Since your new baby was born*, have you had a postpartum checkup for yourself?
Q65 *During your postpartum checkup*, did a doctor, nurse, or other health care worker do any of the following things? [List]
Q66 *Since your new baby was born*, how often have you felt down, depressed, or hopeless? [List]
Q67 *Since your new baby was born*, how often have you had little interest or little pleasure in doing things you usually enjoyed? [List]

Definition

Postpartum symptoms were based on a composite score based on having little interest or pleasure in doing things that are usually enjoyed and how often the mother felt down, depressed, or hopeless.

Effectiveness of birth control was defined as 1) most effective [female/male sterilization, implant, IUD], 2) moderately effective [DMPA, pills, patch/ring], 3) least effective [condoms, NFP, withdrawal], or 4) no method.

Measure	% of women (95% CI, N)
Services women received postpartum	
Attended postpartum health check-up	90.9 (89.4-92.2, 10656)
Among those women with a postpartum check-up, the following was done	
Told to take a vitamin with folic acid	61.7 (57.9-65.3, 9629)
Discussed healthy eating, exercise, and losing weight gained during pregnancy	52.0 (48.1-55.8, 9605)
Discussed how long to wait before getting pregnant again	55.0 (51.1-58.7, 9580)
Discussed birth control methods	92.0 (89.8-93.7, 9622)
Given or prescribed a contraceptive method	38.5 (34.9-42.3, 9606)
Inserted an IUD or a contraceptive implant	24.9 (21.8-28.3, 9593)
Asked about smoking cigarettes	70.1 (66.4-73.6, 9577)
Asked if someone was being abusive either emotionally or physically	71.6 (68.0-75.0, 9595)
Asked about feeling down or depressed	93.3 (91.1-94.9, 9616)
Tested for diabetes	16.4 (14.0-19.2, 9559

Measure	% of women (95% CI, N)
Use of postpartum birth control	
Women who were using postpartum birth control	78.8 (75.8-81.5, 10660)
Among women who were not pregnant or trying to get pregnant at the time of the survey, type of contraceptive being used	
None	21.0 (18.2-24.0, 10104)
Least effective contraceptive	24.8 (21.7-28.1, 10104)
Moderately effective contraceptive	24.3 (21.2-27.6, 10104)
Most effective contraceptive	30.0 (26.8-33.4, 10104)
Among women who were not using postpartum birth control, reasons for non-use:	
Did not want to use birth control	56.5 (49.1-63.6, 2270)
Worried about side effects from birth control	32.0 (25.5-39.3, 2270)
Not having sex	21.4 (16.5-27.4, 2270)
Wanted to get pregnant	17.5 (12.4-24.0, 2270)
Her husband or partner didn't want to use anything	9.1 (5.8-14.1, 2270)
Had problems paying for birth control	1.3 (0.6-2.7, 2270)^
Currently pregnant	1.8 (0.7-4.8, 2270)^
Had tubes tied or blocked	1.7 (0.6-4.6, 2270)^
Depressive symptoms, postpartum	11.1 (9.2-13.3, 10622)

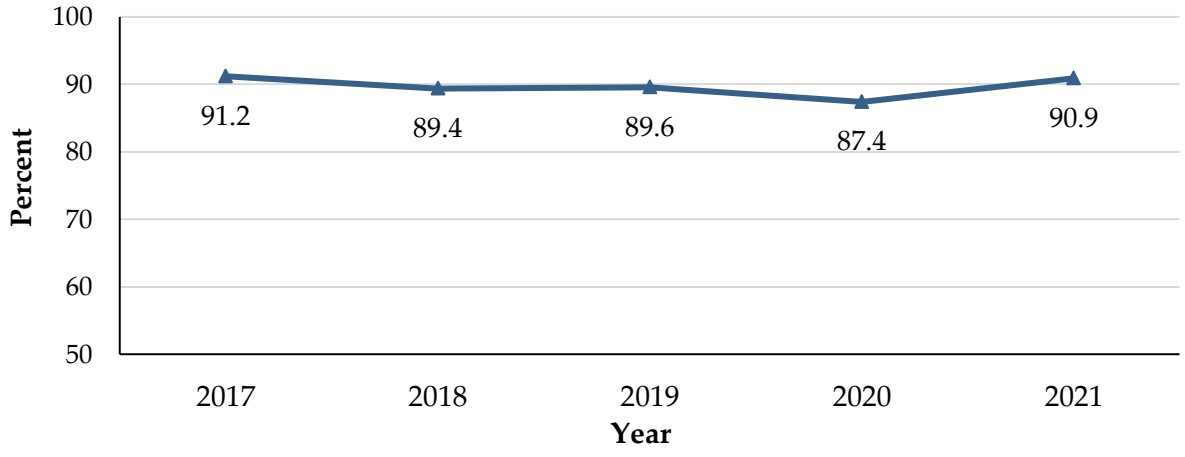
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Attended Postpartum Visit

Prevalence and Trends (Figure 19.1)

The percentage of South Dakota mothers who attended a postpartum visit **has not changed** over time (p-value for linear trend less than 0.05).

Figure 19.1: Mothers who attended a postpartum visit by year, South Dakota, 2017-2021 (weighted)

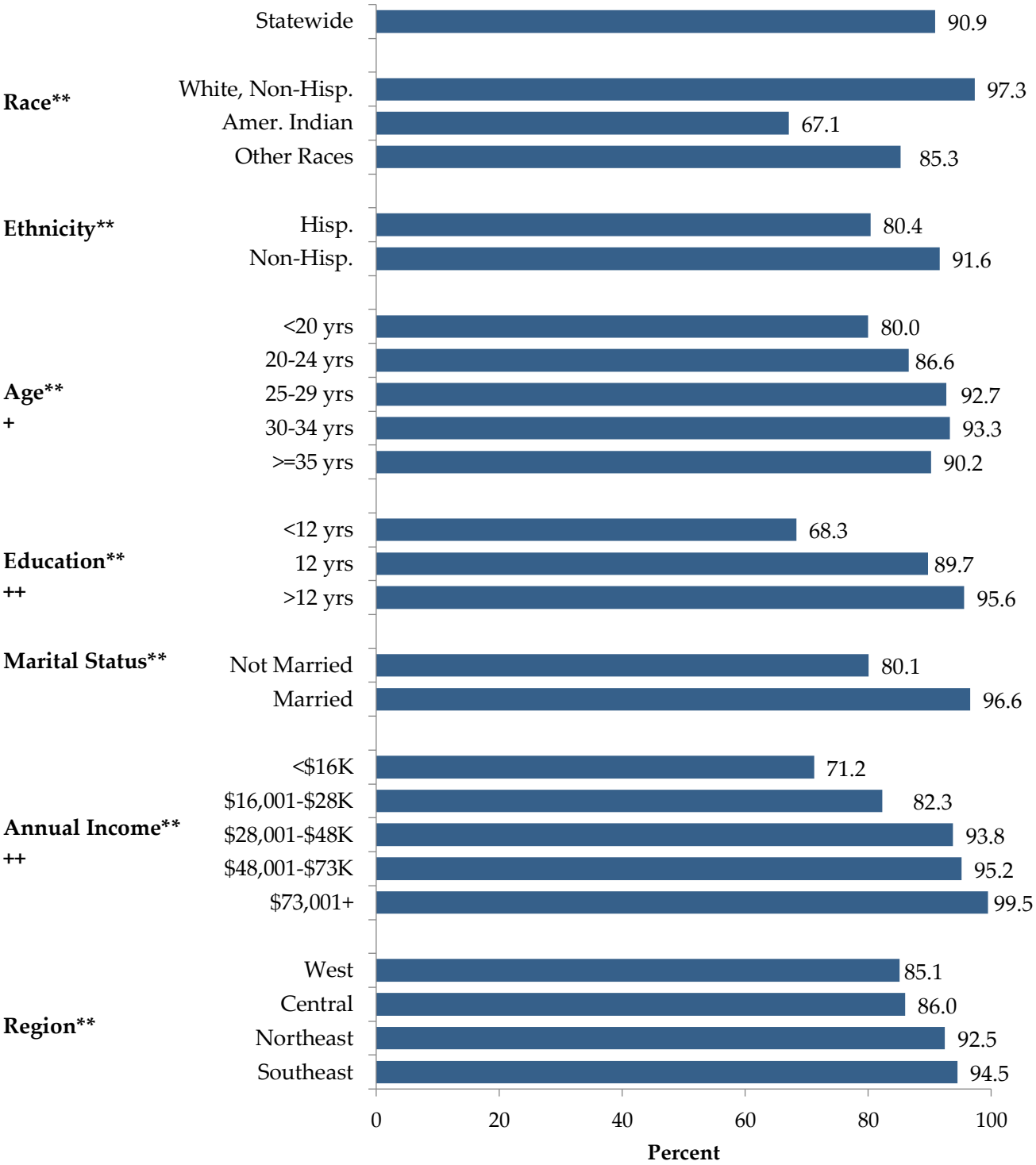


Demographic Characteristics (Figure 19.2)

- The overall prevalence of South Dakota mothers who attended a postpartum visit was 90.9%.
- All demographic characteristics assessed were significantly (p-value less than 0.05) associated with attending a postpartum visit including maternal race, ethnicity, age, education, marital status, household income, and region of the state that the mother resided.

- Mothers who were white, non-Hispanic, older, married, had higher education levels, and who had greater household income had a higher prevalence of attending a postpartum visit compared with their counterparts. Mothers from the Northeast and Southeast regions had the highest prevalence of attending a postpartum visit.

Figure 19.2: Percentage of mothers who attended a postpartum visit by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.
+ p-value < 0.05, ++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 19.3)

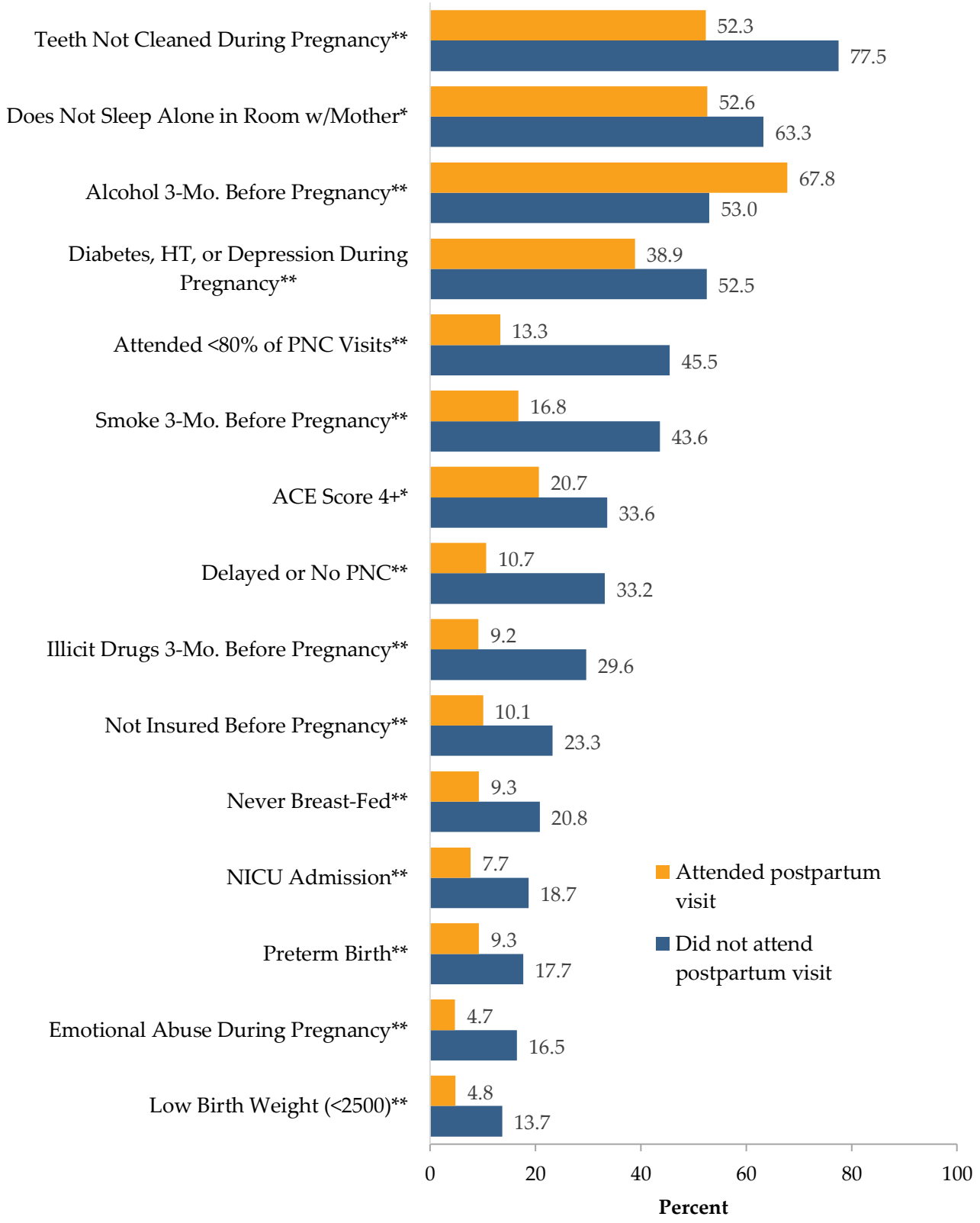
Mothers who attended a postpartum visit, compared to mothers who did not attend a postpartum visit, were significantly (p-value less than 0.05) *more likely* to report that:

- They drank alcohol the 3 months before pregnancy (67.8% vs. 53.0%).

Mothers who attended a postpartum visit, compared to mothers who did not attend a postpartum visit, were significantly (p-value less than 0.05) *less likely* to report that:

- They were uninsured before pregnancy (10.1% vs. 23.3%).
- They smoked the 3 months before pregnancy (16.8% vs. 43.6%).
- They used illicit drugs the 3 months before pregnancy (9.2% vs. 29.6%).
- They started prenatal care after the first trimester or had no prenatal care (10.7% vs. 33.2%).
- They attended fewer than 80% of their prenatal visits (13.3% vs. 45.5%).
- They did not have their teeth cleaned during pregnancy (52.3% vs. 77.5%).
- They suffered emotional abuse during pregnancy (4.7% vs. 16.5%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (38.9% vs. 52.5%).
- Their infant was low birth weight (<2500 grams) (4.8% vs. 13.7%).
- Their infant was born preterm (9.3% vs. 17.7%).
- Their infant was admitted to the NICU (7.7% vs. 18.7%).
- They never breastfed their infant (9.3% vs. 20.8%).
- Their infant does not sleep alone in the mother's room (52.6% vs. 63.3%).
- They had a high ACE score (4+) (20.7% vs. 33.6%).

Figure 19.3: Risk behaviors and outcomes by mothers who attended a postpartum visit, South Dakota, 2021 (weighted)



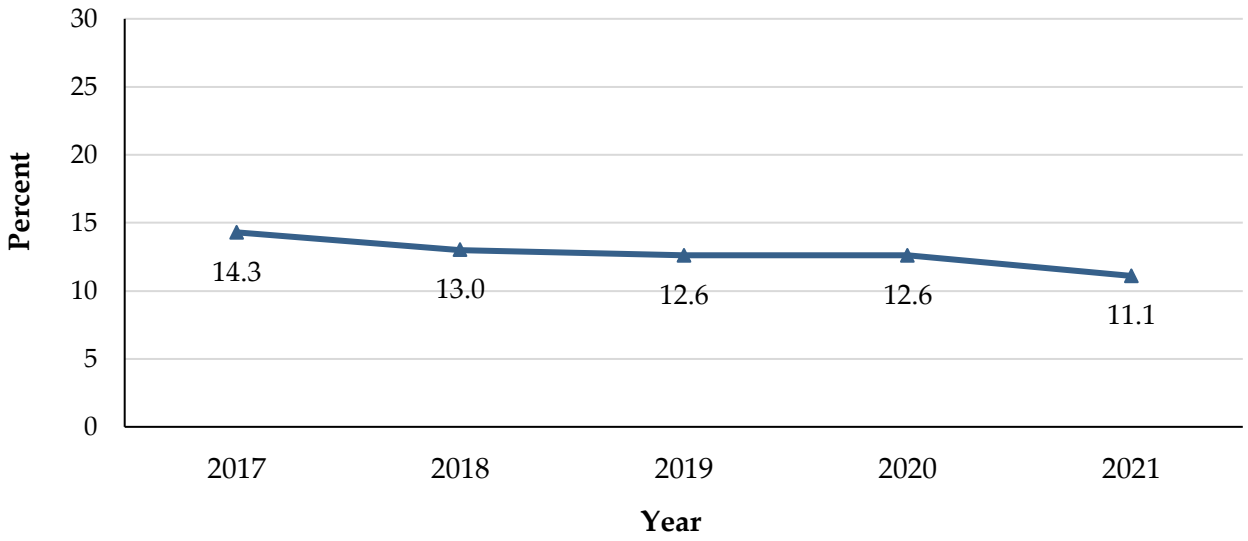
* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
PNC = prenatal care; ACE = adverse childhood experiences

Indications of Postpartum Depression

Prevalence and Trends (Figure 19.4)

The percentage of South Dakota mothers who had indications of postpartum depression has not changed over time (p-value for linear trend greater than 0.05).

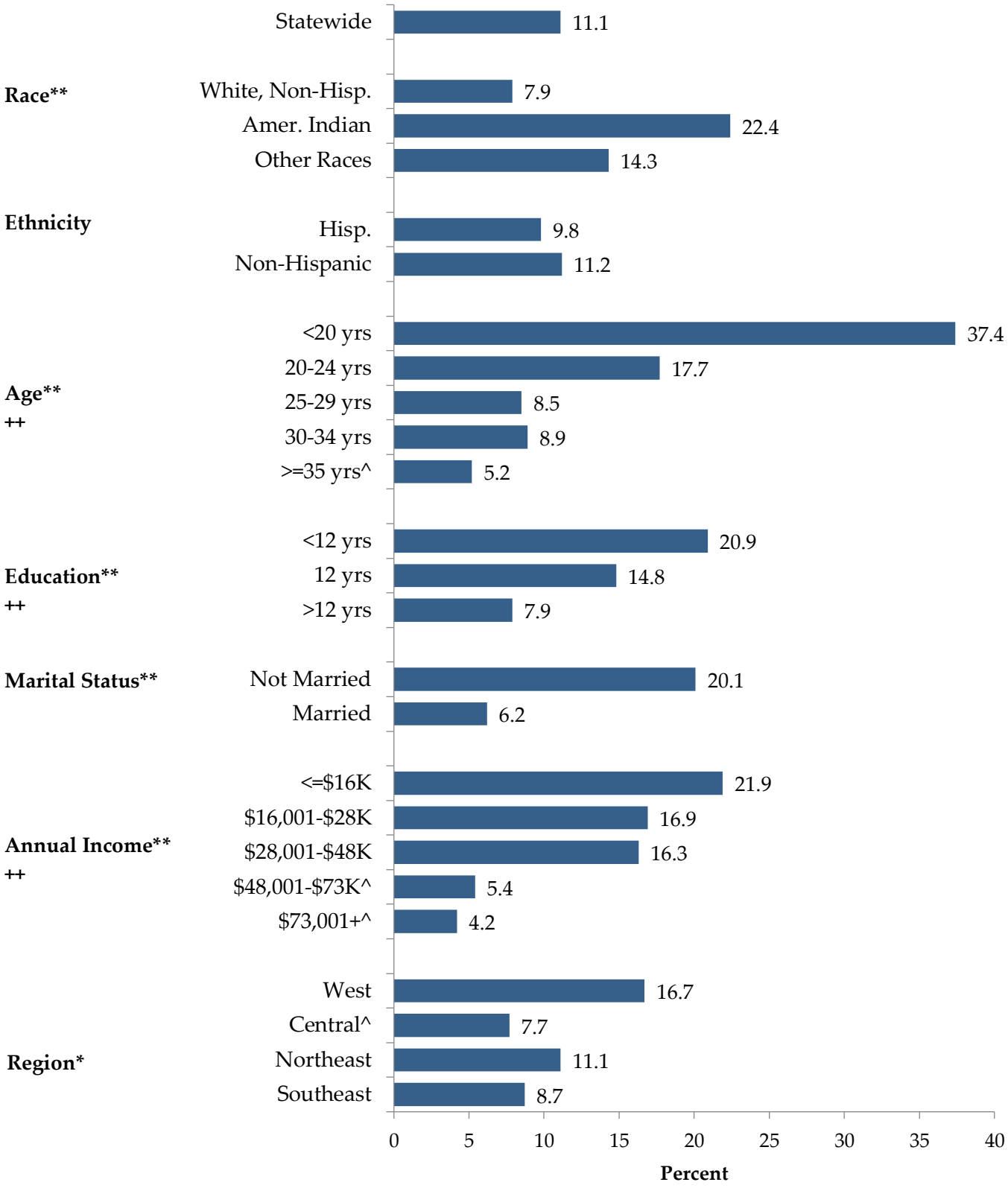
Figure 19.4: Mothers who had indication of postpartum depression by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 19.5)

- The overall prevalence of South Dakota mothers who had indications of postpartum depression was 11.1%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with having indications of postpartum depression included maternal race, age, education, marital status, household income, and region of the state that the mother resided.
- Mothers who were American Indian, less than 20 years of age, had less than High School education, were not married, and had household income less than $16,000 had a higher prevalence of postpartum depression compared with their counterparts. Mothers from the West region had the highest prevalence of postpartum depression compared with their counterparts.

Figure 19.5: Percentage of mothers who exhibited postpartum depressive symptoms by demographic characteristics, South Dakota, 2021 (weighted)



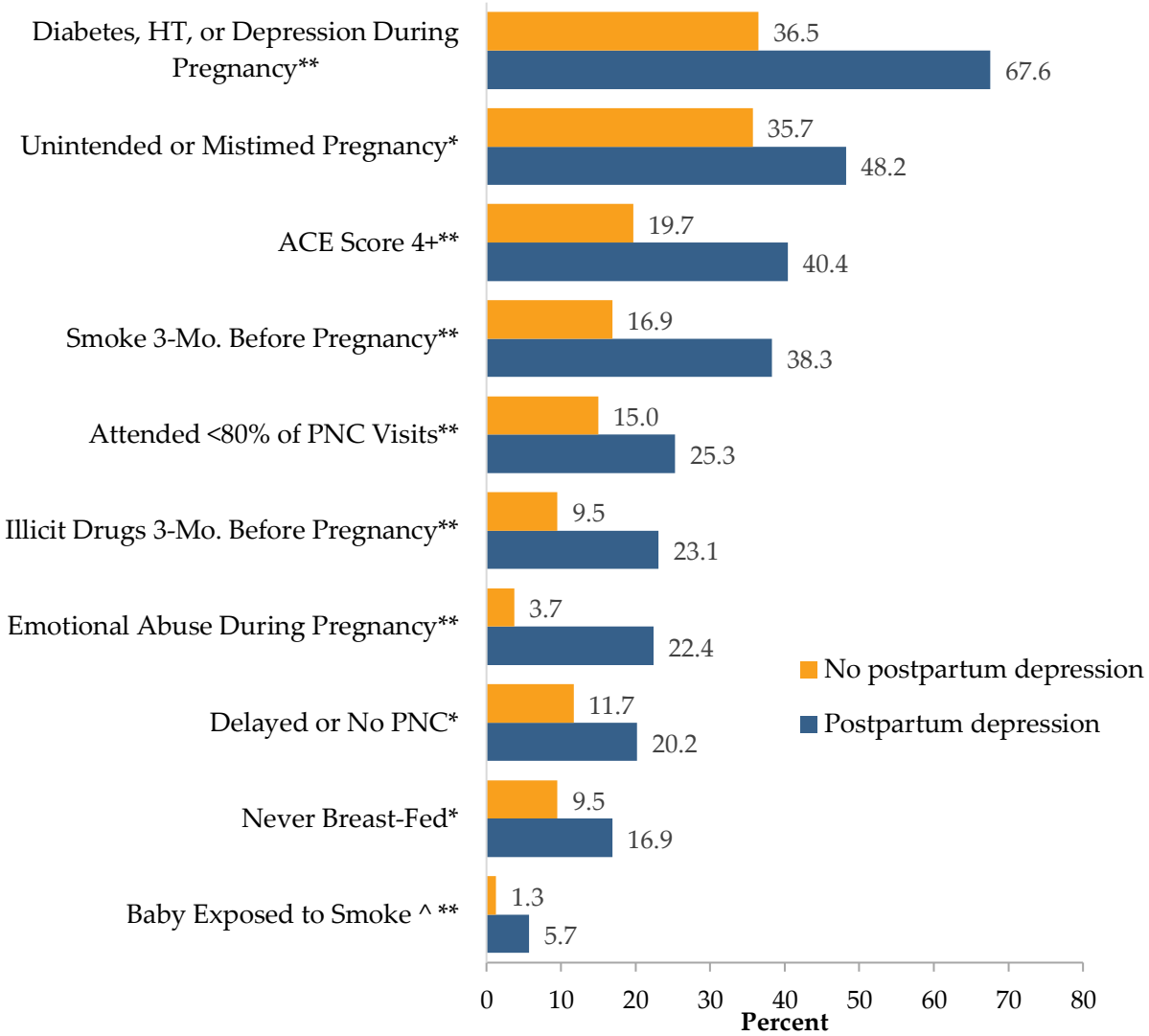
* p-value < 0.05, ** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Risk Behaviors and Outcomes (Figure 19.6)

Mothers who had postpartum depression, compared to mothers who did not have postpartum depression, were significantly (p-value less than 0.05) *more likely* to report that:

- They had an unintended or mistimed pregnancy (48.2% vs. 35.7%).
- They smoked the 3 months before pregnancy (38.3% vs. 16.9%).
- They used illicit drugs the 3 months before pregnancy (23.1% vs. 9.5%).
- They started prenatal care after the first trimester or had no prenatal care (20.2% vs. 11.7%).
- They attended fewer than 80% of their prenatal visits (25.3% vs. 15.0%).
- They suffered emotional abuse during pregnancy (22.4% vs. 3.7%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (67.6% vs. 36.5%).
- They never breastfed their infant (16.9% vs. 9.5%).
- Their infant was exposed to smoke (5.7% vs. 1.3%; interpret these percentages with caution).
- They had a high ACE score (4+) (40.4% vs. 19.7%).

Figure 19.6: Risk behaviors and outcomes by mothers who exhibited symptoms of postpartum depression, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.

^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

PNC = prenatal care, ACE = adverse childhood experiences

Chapter 20: Adverse Childhood Experiences (ACEs) and handling life events

Significance

Adverse childhood experiences (ACEs) refer to early life experiences and can be categorized into three areas: 1) abuse, 2) neglect, and 3) household dysfunction. The original ACE Study was based at Kaiser Permanente's San Diego Health Appraisal Clinic and was conducted in collaboration with the Centers for Disease Control and Prevention.[69] Results from numerous studies indicate that ACEs are common among adults, and that having even one ACE correlates to higher risk for other adverse experiences.[39,40] High ACE scores have been shown to associate with adult health risk behaviors and diseases including alcoholism, drug abuse, smoking, poor self-rated health, fifty or more sexual partners, sexually transmitted diseases, physical inactivity, suicide attempt, adult depression, obesity, ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease.[40-42]

Definitions

ACE scores are calculated as the sum of each positive response for the 10 questions listed below. ACE scores were considered missing if more than five ACE questions were unanswered.

Category	Specific question:
Abuse	
Sexual abuse	Did an adult or person at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way **OR** attempt or actually have oral, anal, or vaginal intercourse with you?
Emotional abuse	Did a parent or other adult in the household swear at you, insult you, put you down, or humiliate you **OR** act in a way that made you afraid that you might be physically hurt?
Physical abuse	Did a parent or other adult in the household push, grab, slap, or throw something at you **OR** ever hit you so hard that you had marks or were injured?
Neglect	
Emotional neglect	Did you feel that no one in your family loved you or thought you were important or special **OR** your family didn't look out for each other, feel close to each other, or support each other?
Physical Neglect	Did you feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you **OR** your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
Household (HH) dysfunction	
Parental divorce or separation	Were your parents ever separated or divorced?
HH Substance abuse	Did you live with someone who was a problem drinker or alcoholic or who used street drugs?
HH Mental illness	Was a household member depressed or mentally ill, or did a household member attempt suicide?
Incarcerated HH member	Did a household member go to prison?
Mother treated violently	Was your mother or stepmother pushed, grabbed, slapped, or had something thrown at her **OR** ***sometimes, often, or very often*** kicked, bitten, hit with a fist, or hit with something hard **OR** ***ever*** repeatedly hit at least a few minutes or threatened with a gun or knife?

PRAMS asked women:

Q73 The following statements are about the way you handle life events. Please check all that are true for you most of the time. [List]

Q74 While you were growing up, during your *first 18 years of life*: Were your parents ever separated or divorced? Did you live with anyone who was a problem drinker or alcoholic or who used street drugs? Was a household member depressed or mentally ill, or did a household member attempt suicide? Did a household member go to prison? Did an adult or person at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way OR attempt or actually have oral, anal, or vaginal intercourse with you?

Q75 While you were growing up, during your *first 18 years of life*, did any of the following things happen often or very often: Did a parent or other adult in the household swear at you, insult you, put you down, or humiliate you OR act in a way that made you afraid that you might be physically hurt? … push, grab, slap, or throw something at you OR ever hit you so hard that you had marks or were injured? Did you feel that no one in your family loved you or thought you were important or special OR your family didn't look out for each other, feel close to each other, or support each other? …that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you OR your parents were too drunk or high to take care of you or take you to the doctor if you needed it? Was your mother or stepmother pushed, grabbed, slapped, or had something thrown at her OR sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard OR ever repeatedly hit at least a few minutes or threatened with a gun or knife?

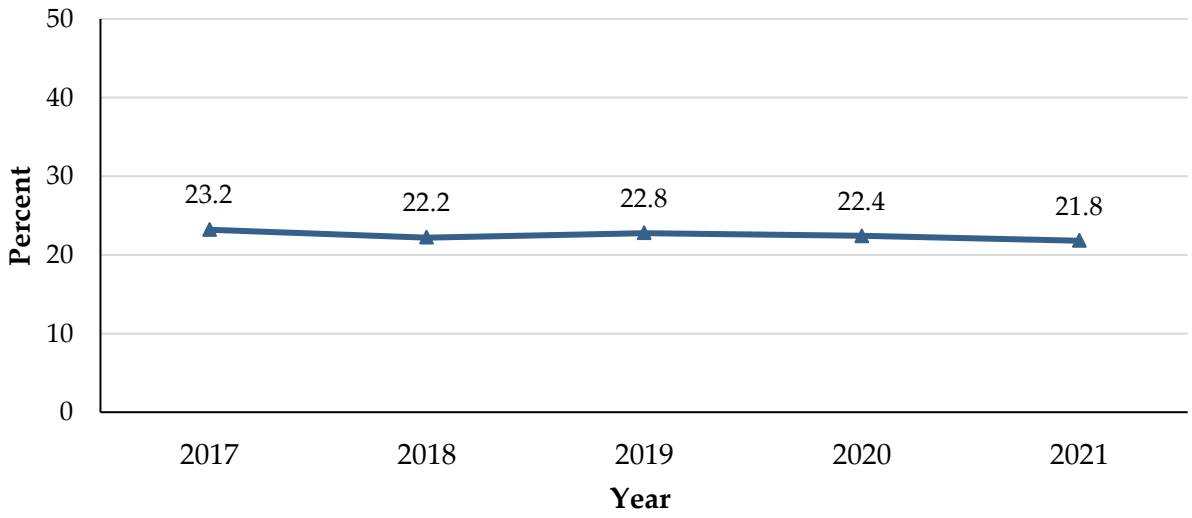
Measure	% of women (95% CI, N)
ACE Score	
0	38.5 (35.1-42.1, 10547)
1	17.6 (15.0-20.4, 10547)
2	13.1 (10.8-15.8, 10547)
3	9.0 (7.1-11.3, 10547)
4 or greater	21.8 (19.2-24.7, 10547)
ACEs	
Parental divorce or separation	42.9 (39.5-46.4, 10509)
Household substance abuse	28.0 (25.0-31.1, 10554)
Household mental illness	27.3 (24.3-30.6, 10527)
Incarcerated household member	11.4 (9.6-13.5, 10497)
Sexual abuse	13.7 (11.6-16.2, 10451)
Emotional abuse	26.2 (23.3-29.4, 10525)
Physical abuse	16.7 (14.3-19.3, 10511)
Emotional neglect	18.1 (15.6-20.8, 10493)
Physical neglect	6.5 (5.2-8.2, 10506)
Mother treated violently	11.6 (9.7-13.9, 10510)
Handling life events	
Bounces back quickly after hard times	60.7 (57.2-64.1, 10733)
Hard time making it through stressful events	13.7 (11.5-16.2, 10733)
Does not take long to recover from a stressful event	51.6 (48.0-55.1, 10736)
Hard to snap back when something bad happens	12.7 (10.5-15.2, 10730)
Usually comes through a difficult time with little trouble	46.3 (42.8-49.9, 10736)
Takes a long time to get over set-backs	7.8 (6.2-9.8, 10730)

High ACE Score (4+)

Prevalence and Trends (Figure 20.1)

The percentage of South Dakota mothers who have high ACE score has not changed over time (p-value for linear trend greater than 0.05).

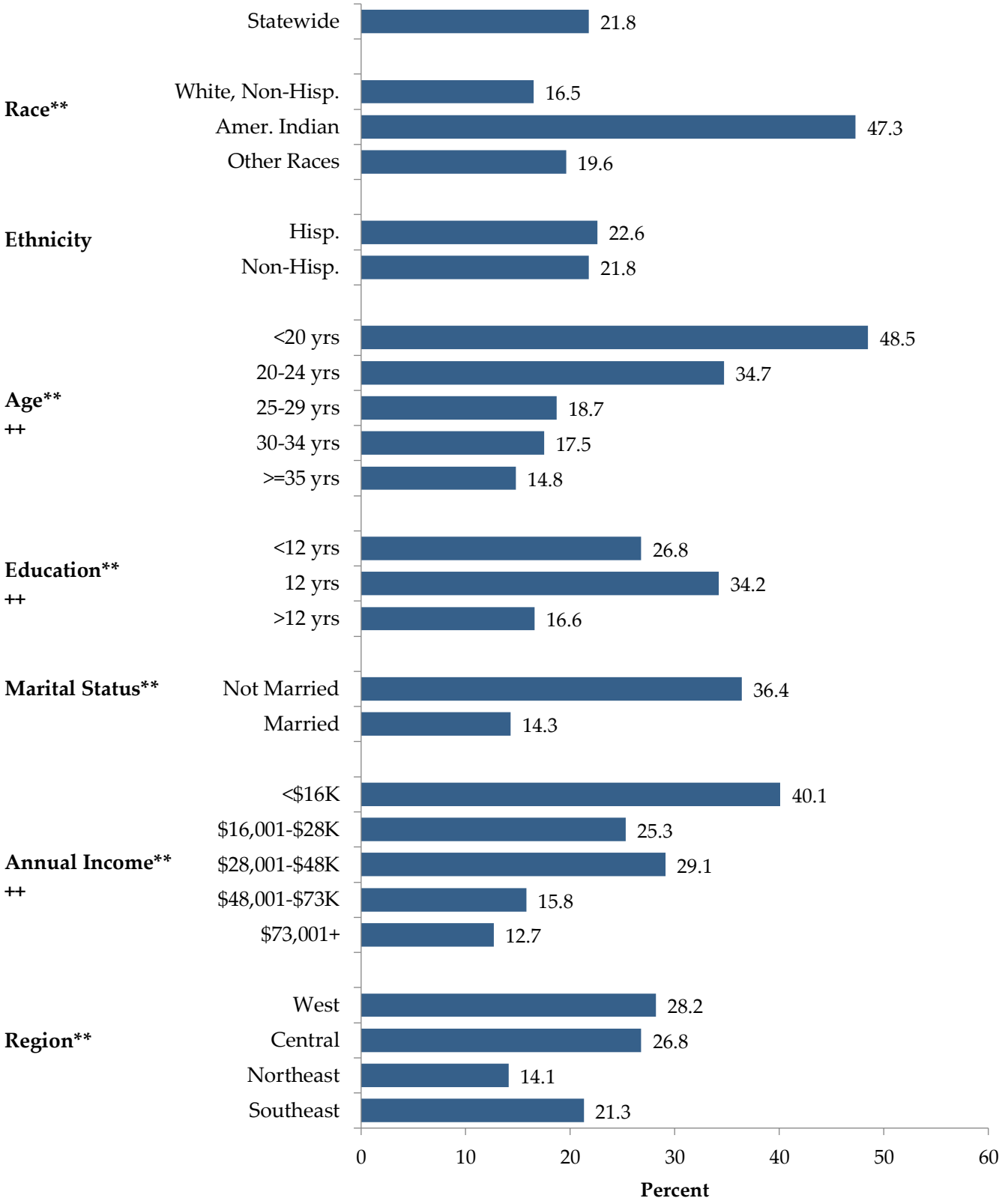
Figure 20.1: Mothers with a high ACE (4+) score by year, South Dakota, 2017-2022 (weighted)



Demographic Characteristics (Figure 20.2)

- The overall prevalence of South Dakota mothers who had a high ACE score (4+) was 21.8%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with a high ACE score included maternal race, age, education, marital status, household income, and region of the state they resided.
- Mothers who were American Indian, less than 20 years of age, had a High School education, were not married, and had household income less than $16,000 had a higher prevalence of a high ACE score compared with their counterparts. Mothers who resided in the West region had the highest prevalence of a high ACE score.

Figure 20.2: Percentage of mothers with a high ACE score (greater or equal to 4) by demographic characteristics, South Dakota, 2022 (weighted)



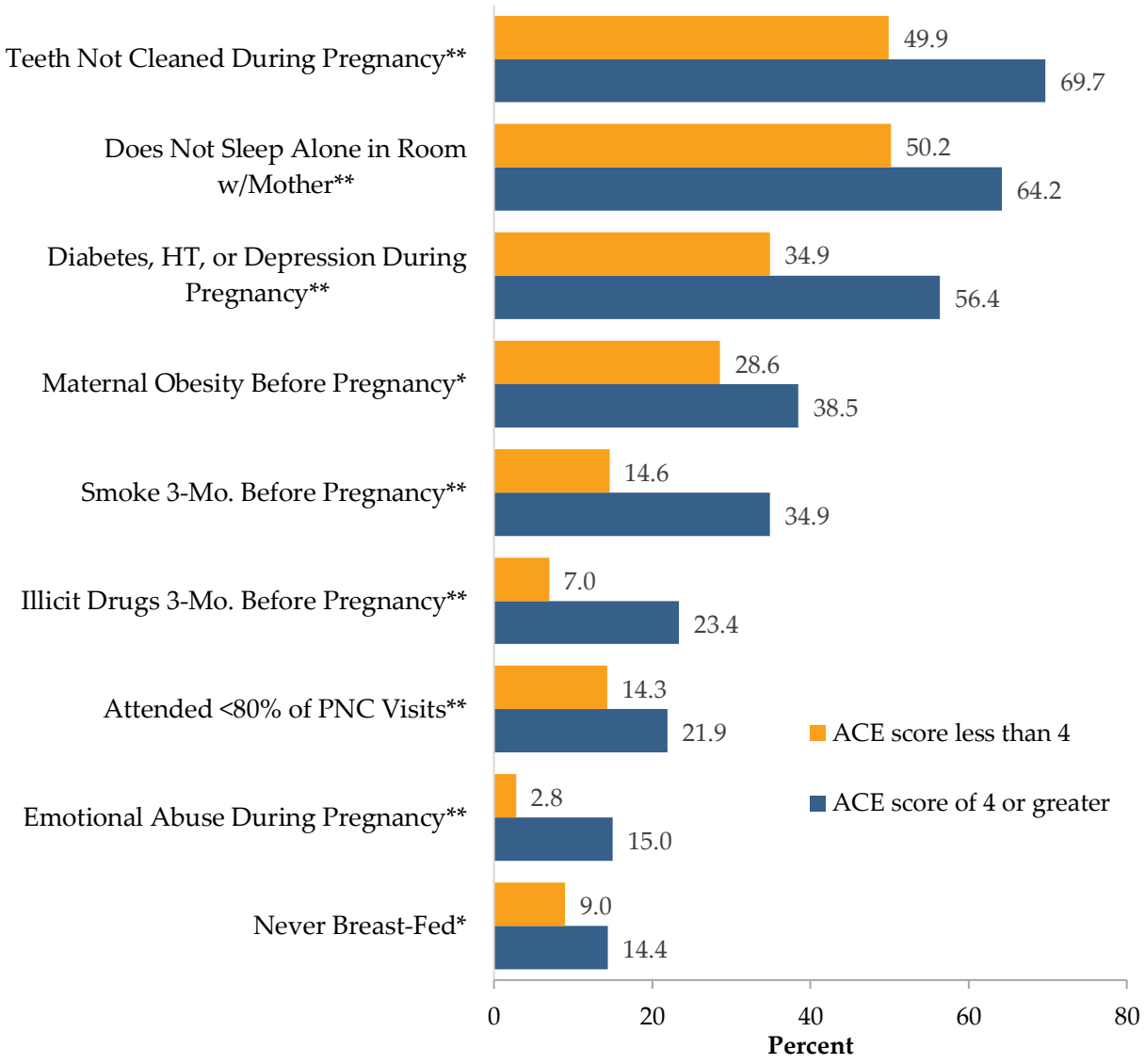
* p-value < 0.05, ** p-value < 0.01 based on Rao-Scott chi-square test.
++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 20.3)

Mothers who had high ACE scores, compared to mothers who did not have high ACE scores, were significantly (p-value less than 0.05) *more likely* to report that:

- They smoked the 3 months before pregnancy (34.9% vs. 14.6%).
- They used illicit drugs the 3 months before pregnancy (23.4% vs. 7.0%).
- They had obesity prior to pregnancy (38.5% vs. 28.6%).
- They attended fewer than 80% of their prenatal visits (21.9% vs. 14.3%).
- They did not have their teeth cleaned during pregnancy (69.7% vs. 49.9%).
- They suffered emotional abuse during pregnancy (15.0% vs. 2.8%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (56.4% vs. 34.9%).
- Their infant was never breast-fed (14.4% vs. 9.0%)
- Their infant does not sleep alone in the mother's room (64.2% vs. 50.2%).

Figure 20.3: Risk behaviors and outcomes by mothers with a high ACE Score (greater than or equal to 4), South Dakota, 2022 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
PNC = prenatal care

Chapter 21: Health insurance

Significance

Health insurance coverage is important for accessing health care and staying healthy. Nationally, 11% of women aged 19-64 years were not insured in 2021, and in South Dakota, 13% of women aged 19-64 were not insured.[43] Lack of health care coverage for pregnant women is directly associated with inadequate prenatal care, which can lead to poor health outcomes.[44] In 2008, it was estimated that if pregnant teenagers received prenatal care, it could save between $2,274 and $3,146 per pregnancy depending on the month prenatal care was begun, with costs related primarily to caring for low birth-weight infants.[45]

PRAMS asked women:

Q13 During the *month before* you got pregnant with your new baby, what kind of health insurance did you have? Check ALL that apply [List]

Q14 During your *most recent pregnancy*, what kind of health insurance did you have for your *prenatal care*? Check ALL that apply [List]

Q15 What kind of health insurance do you have *now*? [List]

Healthy People 2030 Objectives

- Increase the proportion of persons with medical insurance to 92.4% (AHS-01; *7.6% for uninsured).*

Measure^	% of women (95% CI, N)
Coverage the month before pregnancy	
No insurance	11.4 (9.5-13.6, 10602)
Medicaid	17.8 (15.8-20.0, 10602)
Indian Health Service	9.7 (8.8-10.7, 10602)
Private health insurance from job or the job of husband or	54.2 (50.9-57.5, 10602)
Private health insurance from parents	7.5 (5.7-9.7, 10602)
Private health insurance from Health Insurance	5.4 (3.9-7.4, 10602)
Other health insurance	3.5 (2.3-5.2, 10602)
Coverage prenatal care	
I did not go for prenatal care	2.7 (1.9-4.0, 10646)
No insurance	2.9 (1.9-4.3, 10353)
Medicaid	31.3 (28.5-34.2, 10353)
Indian Health Service	9.1 (8.0-10.2, 10353)
Private health insurance from job or the job of husband or	54.9 (51.5-58.2, 10353)
Private health insurance from parents	6.3 (4.7-8.5, 10353)
Private health insurance from Health Insurance Marketplace	5.7 (4.2-7.7, 10353)
Other health insurance	3.5 (2.4-5.3, 10353)
Coverage after delivery **	
No insurance	8.6 (6.9-10.6, 10625)
Medicaid	25.3 (22.9-27.9, 10621)
Indian Health Service	8.5 (7.7-9.5, 10625)
Private health insurance from job or the job of husband or	55.7 (52.4-58.9, 10625)
Private health insurance from parents	4.6 (3.3-6.5, 10625)
Private health insurance from Health Insurance Marketplace	6.0 (4.4-8.1, 10625)

Other health insurance	3.1 (2.0-4.7, 10625)

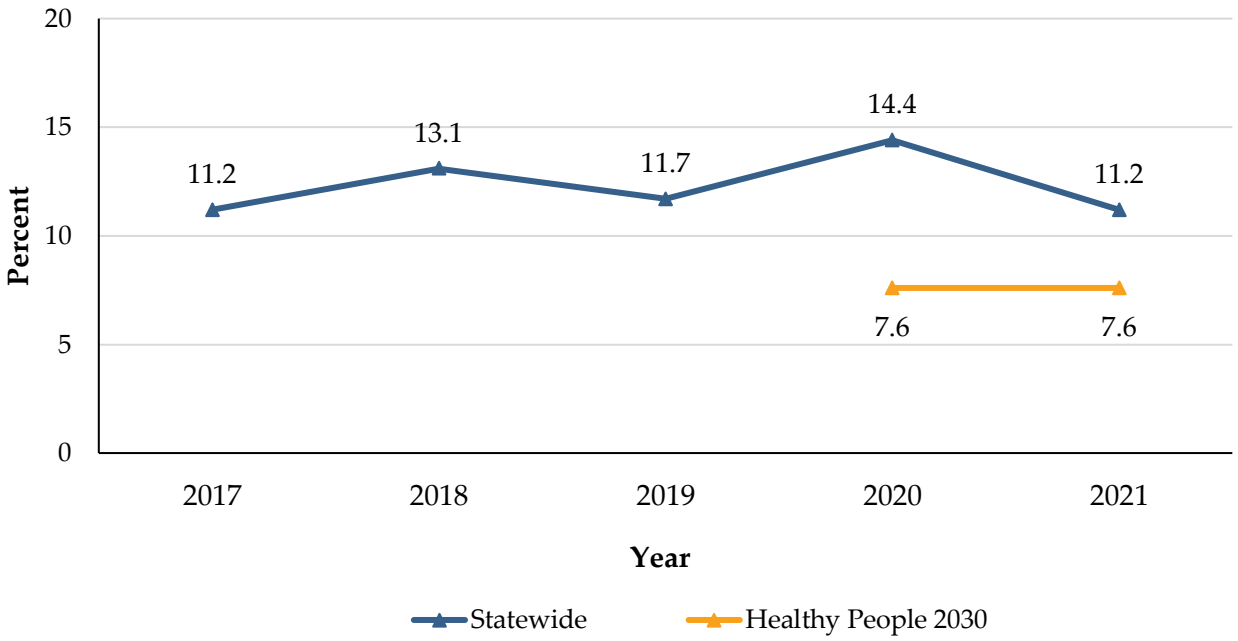
^ Women checked all that applied. **At time of survey completion.

Uninsured Before Pregnancy

Prevalence and Trends (Figure 21.1)

The percentage of South Dakota mothers with no insurance the month before pregnancy has not changed over time (p-value for linear trend greater than 0.05). The Healthy People 2030 goal of 7.6% for uninsured has not been achieved in any year.

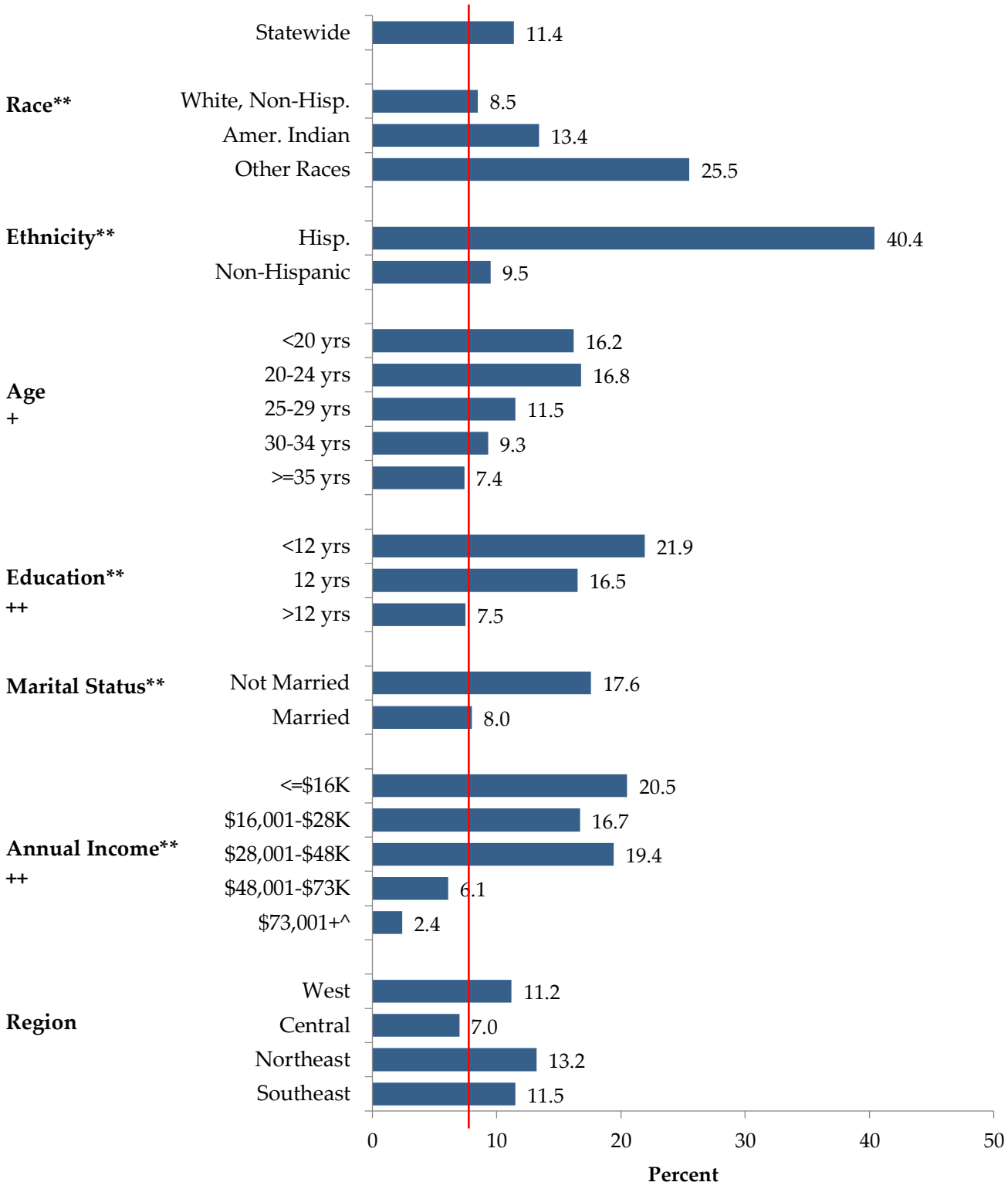
Figure 21.1: Mothers with no insurance coverage the month before pregnancy by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 21.2)

- The overall prevalence of South Dakota mothers who were uninsured before pregnancy was 11.2%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with being uninsured before pregnancy included maternal race, ethnicity, education, marital status, and household income.
- Mothers who were of other races, Hispanic, had less than a High School education, were not married, and had less household income had a higher prevalence of being uninsured before pregnancy compared with their counterparts.

Figure 21.2: Percentage of mothers with no insurance coverage the month before pregnancy by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.
+ p < 0.05; ++ p < 0.01 based on logistic regression results for linear trend.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
— Healthy People 2030 (92.4% insured, *7.6% uninsured*)

Risk Behaviors and Outcomes (Figure 21.3)

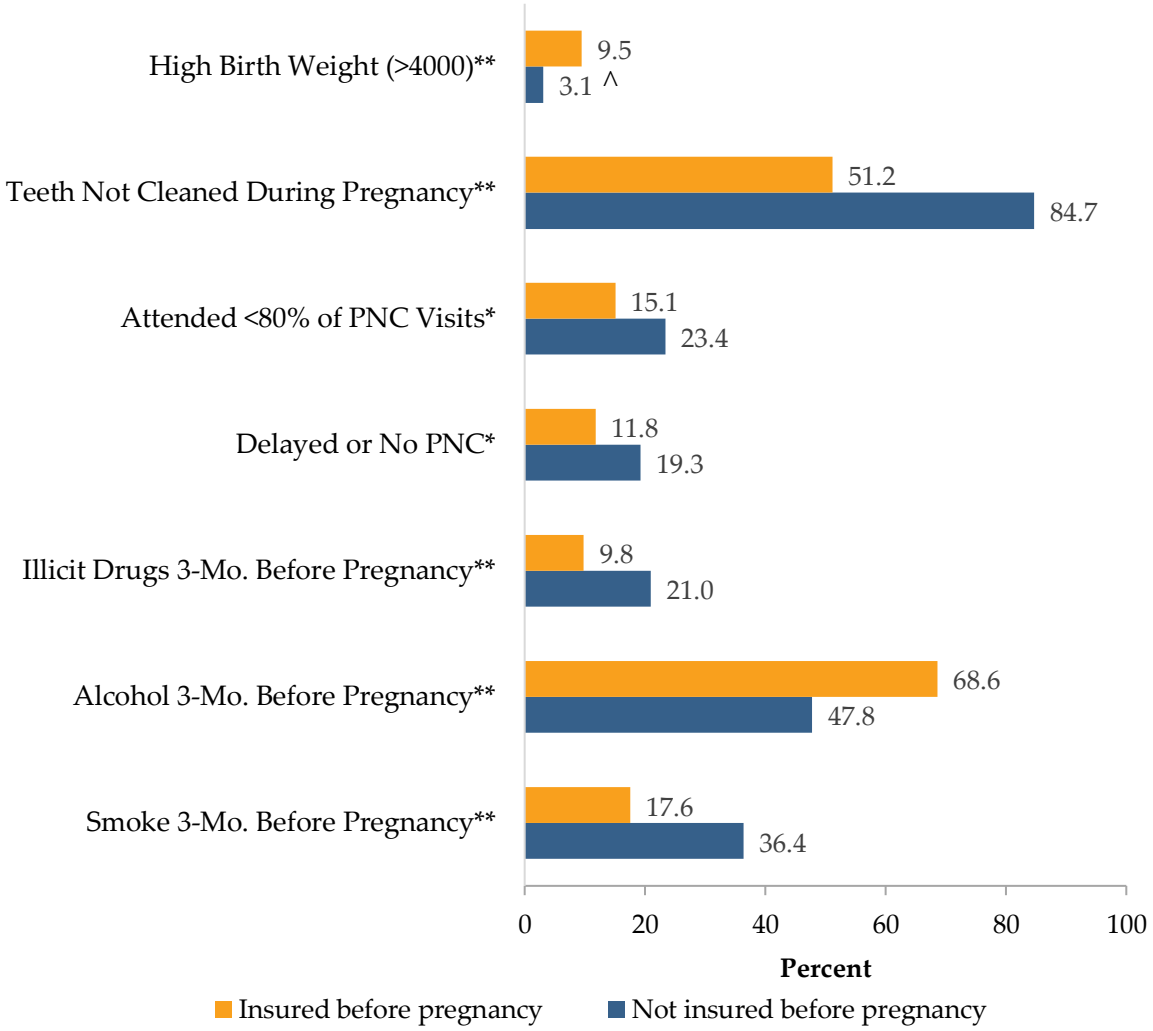
Mothers who had no insurance coverage the month before pregnancy, compared to mothers who did, were significantly (p-value less than 0.05) *more likely* to report that:

- They smoked the 3 months before pregnancy (36.4% vs. 17.6%).
- They used illicit drugs the 3 months before pregnancy (21.0% vs. 9.8%).
- They started prenatal care after the first trimester or had no prenatal care (19.3% vs. 11.8%).
- They attended fewer than 80% of their prenatal visits (23.4% vs. 15.1%).
- They did not have their teeth cleaned during pregnancy (84.7% vs. 51.2%).

Mothers who had no insurance coverage before pregnancy, compared to mothers who did, were significantly (p-value less than 0.05) *less likely* to report that:

- They drank alcohol the 3 months before pregnancy (47.8% vs. 68.6%).
- They had an infant with high birth weight (3.1% vs. 9.5%).

Figure 21.3: Risk behaviors and outcomes by mothers with no insurance coverage before pregnancy, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
PNC = prenatal care; ACE = adverse childhood experiences
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).

Chapter 22: Household income

PRAMS asked women:

Q76 During the *12 months before* your new baby was born, what was your total household income before taxes? [List]

Q77 During the *12 months before* your new baby was born, how many people, *including yourself*, depended on this income?

Definitions

Federal poverty level (FPL) is used to measure a household's poverty status.[46] Adjusted each year for inflation, the FPL can help determine if a family qualifies for certain government benefits, such as Medicaid; the Women, Infants and Children (WIC) program; food stamps; or funds for education.

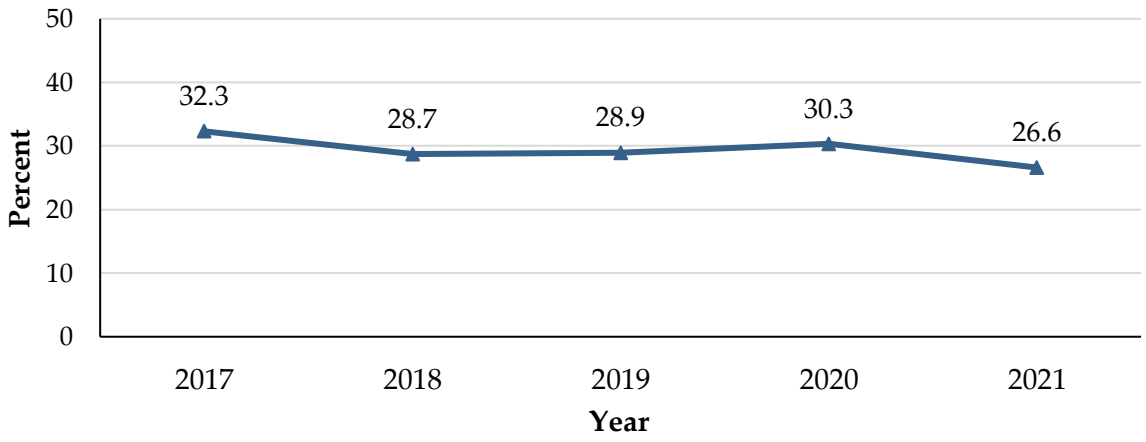
Measure	% of women (95% CI, N)
Household annual income during 12 months before delivery	
$0 to $16,000	17.5 (15.7-19.6, 9702)
$16,001 to $28,000	7.1 (5.6-9.0, 9702)
$28,001 to $48,000	15.7 (13.2-18.6, 9702)
$48,001 to $73,000	22.6 (19.5-26.0, 9702)
$73,001 or more	37.0 (33.4-40.7, 9702)
Federal Poverty Level (FPL)	
0-100%	26.6 (24.1-29.3, 9948)
101-150%	13.0 (10.8-15.7, 9948)
>150%	60.4 (57.1-63.5, 9948)

Household Income at or below 100% of the Federal Poverty Level

Prevalence and Trends (Figure 22.1)

The percentage of South Dakota mothers whose household income was at or below 100% of the FPL has decreased over time (p-value for linear trend greater than 0.05).

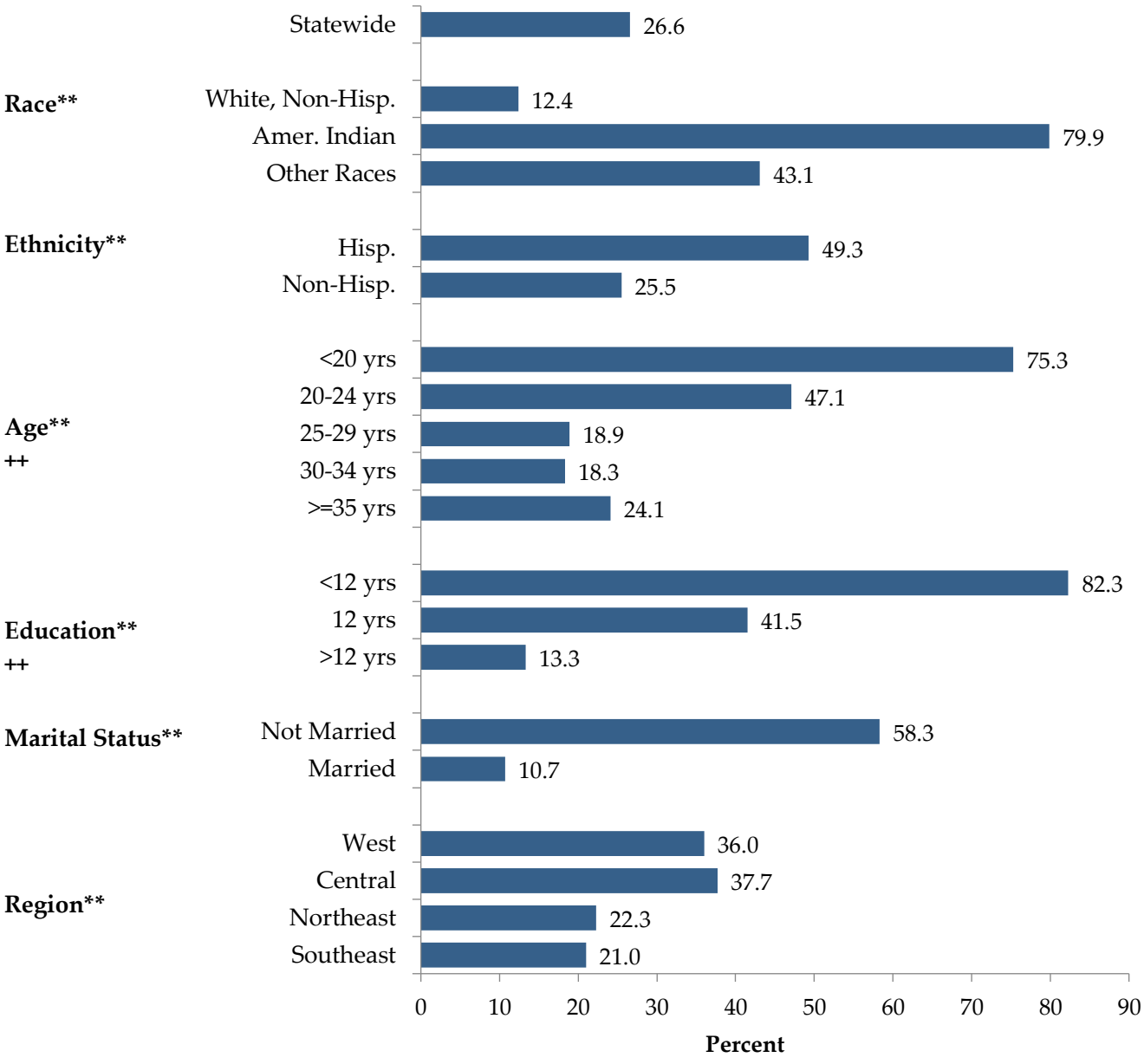
Figure 22.1: Mothers whose household income was at or below 100% of the FPL by year, South Dakota, 2017-2021 (weighted)



Demographic Characteristics (Figure 22.2)

- The overall prevalence of South Dakota mothers whose household income was at or below 100% of the Federal Poverty Level (FPL) was 26.6%.
- Demographic characteristics that were significantly (p-value less than 0.05) associated with being at or below 100% of the FPL included maternal race, ethnicity, age, education, marital status, and region of the state that they resided.
- Mothers who were American Indian, Hispanic, less than 20 years of age, had less than a High School education, and were not married had a higher prevalence of being at or below 100% of the FPL compared with their counterparts. Mothers who resided in the Central and West regions had the highest prevalence of being at or below 100% of the FPL.

Figure 22.2: Percentage of mothers with a household income at or below 100% of the federal poverty level by demographic characteristics, South Dakota, 2021 (weighted)



** p-value < 0.01 based on Rao-Scott chi-square test.

++ p-value < 0.01 based on logistic regression results for linear trend.

Risk Behaviors and Outcomes (Figure 22.3)

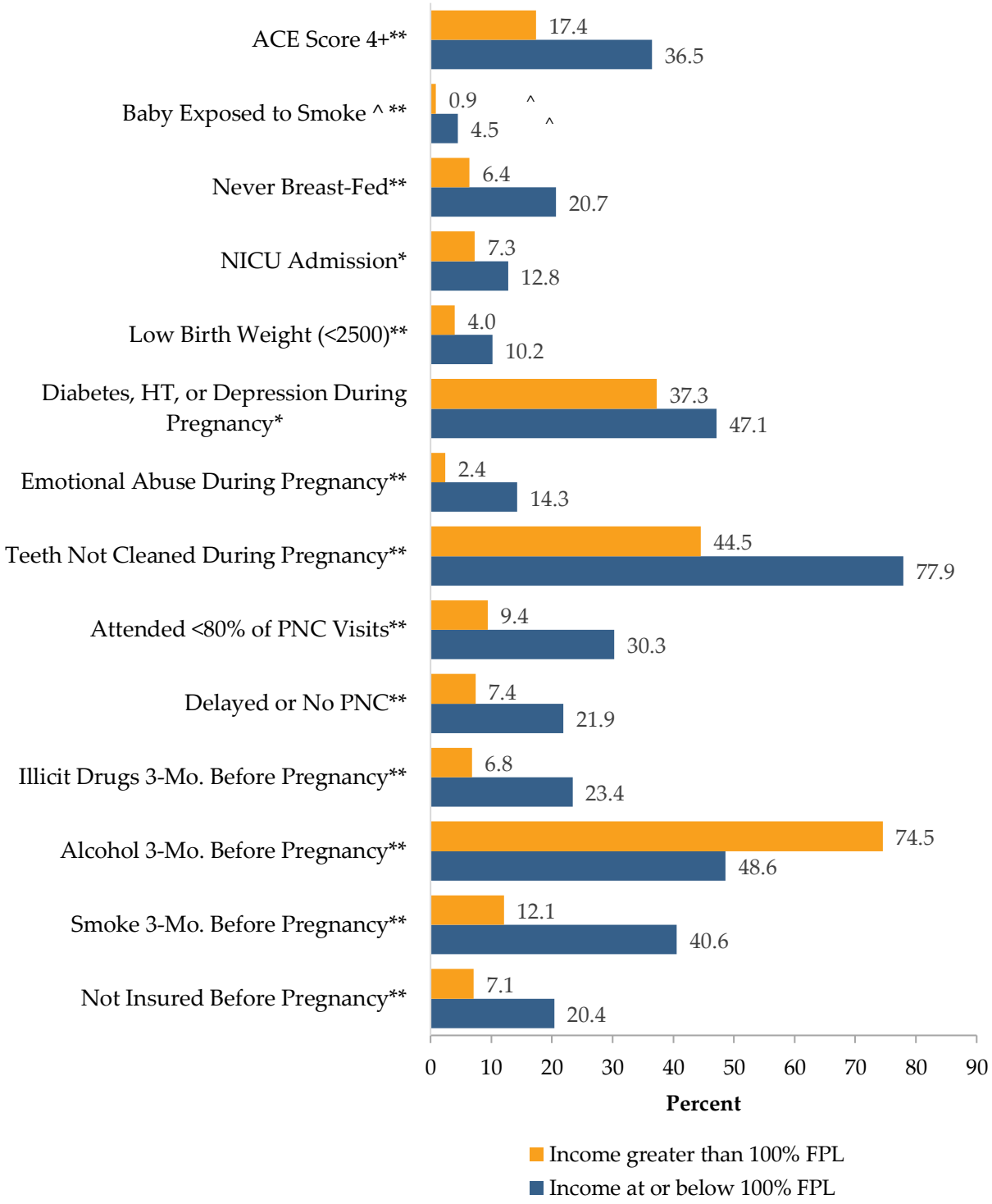
Mothers who had household incomes at or below 100% Federal Poverty Level, compared to mothers who had household incomes greater than 100% Federal Poverty Level, were significantly (p-value less than 0.05) *more likely* to report that:

- They were uninsured before pregnancy (20.4% vs. 7.1%).
- They smoked the three months before pregnancy (40.6% vs. 12.1%).
- They used illicit drugs the three months before pregnancy (23.4% vs. 6.8%).
- They started prenatal care after the first trimester or had no prenatal care (21.9% vs. 7.4%).
- They attended fewer than 80% of their prenatal visits (30.3% vs. 9.4%).
- They did not have their teeth cleaned during pregnancy (77.9% vs. 44.5%).
- They suffered emotional abuse during pregnancy (14.3% vs. 2.4%).
- They had diabetes, hypertension, or depression diagnosed during pregnancy (47.1% vs. 37.3%).
- Their infant was low birth weight (<2500 grams) (10.2% vs. 4.0%).
- Their infant was admitted to the NICU (12.8% vs. 7.3%).
- They never breastfed their infant (20.7% vs. 6.4%).
- Their baby is exposed to smoke (4.5^% vs. 0.9%^); interpret these percentages with caution).
- They had a high ACE score (4+) (36.5% vs. 17.4%).

Mothers who had household incomes at or below 100% Federal Poverty Level, compared to mothers who had household incomes greater than 100% Federal Poverty Level, were significantly (p-value less than 0.05) *less likely* to report that:

- They drank alcohol the 3 months before pregnancy (48.6% vs. 74.5%).

Figure 22.3: Risk behaviors and outcomes by mothers with a household income at or below 100% of the Federal Poverty Level, South Dakota, 2021 (weighted)



* p-value < 0.05, ** p-value < 0.01; p-value based on Rao-Scott chi-square test.
^ Too few cases to meet precision standard, interpret with caution (RSE 30% or higher).
PNC = prenatal care; ACE = adverse childhood experiences

Appendices

Healthy People 2030 Objectives and SD 2021 PRAMS data

Healthy People 2030 Measure	Target Percentage	SD 2021 PRAMS*	Report Chapter
FP-02 Reduce the proportion of pregnancies conceived within 18 months of a previous birth.	26.9%	Not assessed	2
Increase the portion of intended pregnancies. • Measure adapted from "FP-01 Reduce the proportion of pregnancies that are unintended to 36.5%" to align with PRAMS data measures.	63.5%	59.3%	3
MICH-13 Increase the proportion of women who had a healthy weight before pregnancy.	47.1%	44.0%	4
MICH-08 Increase the proportion of pregnant women who receive early and adequate prenatal care.	80.5%	83.8%[4]	6
IID-09 Increase the proportion of people who get the flu vaccine every year.	70.0%	69.4%	8
OH-08 Increase use of the oral health care system.	45.0%	45.2%[7]	9
IVP-D04 Reduce intimate partner violence. (SD PRAMS rate of emotional abuse)	*	5.8%[2]	10
IVP-D04 Reduce intimate partner violence. (SD PRAMS rate of physical abuse)	*	1.9%[2]	10
IVP-D04 Reduce intimate partner violence. (SD PRAMS rate of sexual abuse)	*	2.1%[2]	10
Decrease the portion of mothers who smoke during pregnancy. • Measure adapted from "MICH-10 Increase abstinence from cigarette smoking among pregnant women to 95.7%."	4.3%	9.8%[5]	11
TU-15 Increase successful quit attempt in pregnant women who smoke.	24.0%	Not assessed	12
Decrease the portion of mothers who use alcohol during pregnancy. • Measure adapted from "MICH-09 Increase abstinence from alcohol among pregnant women to 95.2%."	7.8%	11.8%[5]	14
Decrease illicit drug use among pregnant women. • Measure adapted from "MICH-11 Increase abstinence from illicit drugs among pregnant women to 95.3%."	4.7%	5.9%	15
MICH-07 Reduce preterm births.	9.4%	9.4%[3]	17
MICH-14 Increase the proportion of infants who are put to sleep on their backs.	88.9%	89.4%	18
Decrease the portion of uninsured pregnant women. • Measure adapted from "AHS-01 Increase the portion of people with medical insurance to 92.4%."	7.6%	11.2%[1]	21

See https://health.gov/healthypeople/objectives-and-data for Healthy People 2030 Objectives.

[1] Before pregnancy; [2] during pregnancy by partner/husband; [3] singletons only; [4] based on Kotelchuck definition of adequacy (includes early initiation), includes adequate plus; [5] last 3 months of pregnancy; [7] during the most recent pregnancy.

Demographics

The table below summarizes the demographic characteristics of the 2021 South Dakota eligible population and the participants.

Characteristics	All Eligible* Counts (%)	Survey Respondents* Counts (%)	Weighted Estimates (95% CI, N)
Total number	10,721	1,026	--
Maternal Race/Ethnicity**			
White, non-Hispanic	7,652 (71.4)	410 (40.0)	71.5 (71.1-71.9, 10728)
Black, non-Hispanic	372 (3.5)	68 (6.6)	3.7 (3.0-4.4, 10728)
Hispanic	667 (6.2)	140 (13.6)	5.9 (5.2-6.7, 10728)
American Indian	1,405 (13.1)	271 (26.4)	13.5 (12.8-14.2, 10728)
Asian/Pacific Islander	205 (1.9)	53 (5.2)	2.0 (1.6-2.5, 10728)
Other/Mixed	399 (3.7)	79 (7.7)	3.4 (2.8-4.1, 10728)
Missing	21 (0.2)	5 (0.5)	***
Hispanic Ethnicity			
Yes	665 (6.2)	139 (13.5)	5.9 (5.2-6.7, 10744)
No	10,046 (93.7)	886 (86.4)	94.1 (93.3-94.8, 10744)
Missing	10 (0.1)	1 (0.1)	***
Maternal age (years)			
Less than 20	480 (4.5)	65 (6.3)	4.7 (3.5-6.1, 10748)
20 – 24	1,992 (18.6)	188 (18.3)	17.0 (14.6-19.6, 10748)
25 – 34	6,685 (62.4)	623 (60.7)	64.3 (60.9-67.5, 10748)
35+	1,564 (14.6)	150 (14.6)	14.1 (11.8-16.7, 10748)
Maternal education			
Less than high school	1,494 (13.9)	196 (19.1)	12.2 (10.6-14.0, 10691)
High school	2,685 (25.0)	270 (26.3)	23.9 (21.1-26.9, 10691)
More than high school	6,504 (60.7)	551 (53.7)	63.9 (60.8-67.0, 10691)
Missing	38 (0.4)	9 (0.9)	***
Marital status at infant's birth			
Married	6,860 (64.0)	545 (53.1)	64.9 (61.9-67.8, 10744)
Not married	3,857 (36.0)	480 (46.8)	35.1 (32.2-38.1, 10744)
Missing	4 (0.0)	1 (0.1)	***
Birthweight			
Low birth weight less than 2500 g	681 (6.4)	69 (6.7)	5.5 (4.2-7.2, 10748)
Birthweight greater than 2500 g	10,040 (93.6)	957 (93.3)	94.5 (92.8-95.8, 10748)
Parity	3,588 (33.5)	307 (29.9)	32.7 (29.4-36.1, 10748)
1st birth	7,133 (66.5)	719 (70.1)	67.3 (63.9-70.6, 10748)
2nd or later	681 (6.4)	69 (6.7)	5.5 (4.2-7.2, 10748)

* Not weighted.
** Maternal race strata are based on allocated race. If multiple races are listed and one included American Indian, they were included under 'Mixed' in this table, but under American Indian for the survey strata.
*** Unweighted missing are the same as survey respondents.

Prevalence of Risk Factors

The table below summarizes the statewide prevalence rates of the behavioral risk factors and outcomes that were investigated among South Dakota mothers in 2021.

Risk Factor/Outcome	**Prevalence across All Births** (95% CI)
Unintended or mistimed pregnancy	37.0% (33.7-40.5, 10698)
Uninsured before pregnancy	11.4% (9.5-13.6, 10602)
Smoked 3 months before pregnancy	19.5% (17.1-22.2, 10714)
Drank 3 months before pregnancy	66.5% (63.4-69.4, 10698)
Used illicit drugs 3 months before pregnancy	11.0% (9.2-13.1, 10420)
Obesity prior to pregnancy	30.8% (27.6-34.1, 10707)
Started prenatal care after first trimester or had no prenatal care	12.7% (10.6-15.0, 10257)
Attended fewer than 80% of prenatal visits	16.2% (14.0-18.6, 10661)
Did not have teeth cleaned during pregnancy	54.8% (51.3-58.3, 10669)
Suffered emotional abuse during pregnancy	5.8% (4.6-7.3, 10729)
Had diabetes, hypertension, or depression diagnosed during pregnancy	40.1% (36.7-43.6, 10748)
Had a cesarean section delivery	22.1% (19.4-25.2, 10748)
Infant was low birthweight (less than 2,500 g)	5.5% (4.2-7.2, 10744)
Infant was high birthweight (greater than 4000 g)	8.7% (6.9-10.9, 10665)
Infant was born preterm (less than 37 weeks)	10.1% (8.2-12.3, 10740)
Infant admitted to NICU	8.9% (7.2-11.0, 10748)
Never breastfed their infant	10.2% (8.4-12.4, 10536)
Infant does not sleep alone in the mother's room	53.5% (49.9-57.1, 10352)
Baby is exposed to smoke	1.7% (1.0-2.8, 10244)
Mother had a high ACE score (4+)	21.8% (19.2-24.7, 10547)

Summary of demographic factors associated with outcomes

Demographics	Maternal Race	Ethnicity	Maternal Age	Maternal Education	Marital Status	Annual Income	Region
Main Outcome Variables							
Visited health care worker before pregnancy	X	X	X	X	X	X	X
Discussed preparing for healthy pregnancy before pregnancy	X			X	X	X	
Exercised 3+ days/week before	X		X	X	X	X	
Intended pregnancy	X	X	X	X	X	X	
Vitamin daily before pregnancy	X	X	X	X	X	X	
Healthy weight before pregnancy	X		X	X	X	X	
Gestational diabetes		X	X				
Depression before pregnancy	X		X	X	X	X	
Depression during pregnancy	X		X	X	X	X	
Began PNC in first trimester	X	X	X	X	X	X	X
Attended 80% or more of PNC visits	X		X	X	X	X	X
Obtained PNC as early as desired	X		X	X	X	X	X
Received flu shot	X		X	X	X	X	X
Teeth cleaned	X	X	X	X	X	X	X
Emotionally abused	X		X	X	X	X	X
Smoked before pregnancy	X	X	X	X	X	X	X
Smoked during pregnancy	X	X		X	X	X	X
E-cigarettes use			X	X	X	X	
Smoking relapse during postpartum	X			X			
Infant exposed to smoke	X			X	X	X	
Alcohol use before pregnancy	X	X	X	X	X	X	
Alcohol use during pregnancy				X			
Illicit drug use before pregnancy	X		X	X	X	X	X
Illicit drug use during pregnancy	X		X	X	X	X	X
Ever breastfed	X			X	X	X	
Breastfeeding at 2 months	X		X	X	X	X	
Preterm birth			X		X	X	
Put to sleep on back	X			X			
Sleeps on approved sleep surface	X		X	X	X	X	
Sleeps without soft objects	X	X	X	X	X	X	
Sleeps in own crib in mother's room				X			
Postpartum checkup	X	X	X	X	X	X	X
Postpartum depression	X		X	X	X	X	X
High ACE score	X		X	X	X	X	X
No insurance before pregnancy	X	X	X	X	X	X	
Below federal poverty level	X	X	X	X	X		X

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Summary of risk factors associated with outcomes

Risk Behaviors & Outcomes	Unintended or Mistimed Pregnancy	Not Insured Before Pregnancy	Smoke Before Pregnancy	Alcohol Before Pregnancy	Illicit Drugs Before Pregnancy	Maternal Obesity Before Pregnancy	Delayed or No PNC
Main Outcome Variables							
Visited health care worker before pregnancy		X	X	X	X		X
Discussed preparing for healthy pregnancy before pregnancy		X				X	X
Exercised 3+ days/week before pregnancy			X	X	X	X	X
Intended pregnancy		X	X	X	X		X
Vitamin daily before pregnancy		X	X		X		X
Healthy weight before pregnancy							
Gestational diabetes						X	X
Depression before pregnancy		X	X		X	X	
Depression during pregnancy	X		X		X		
Began PNC in first trimester		X		X			
Attended 80% or more of PNC visits		X	X	X	X	X	
Obtained PNC as early as desired	X	X	X		X	X	X
Received flu shot		X	X	X			X
Teeth cleaned		X	X	X	X		X
Emotionally abused	X		X		X		
Smoked before pregnancy		X			X		
Smoked during pregnancy		X		X	X		
E-cigarettes use			X	X	X		
Smoking relapse during postpartum						X	
Alcohol use before pregnancy		X					X
Alcohol use during pregnancy				X			
Illicit drug use before pregnancy		X	X				
Illicit drug use during pregnancy		X	X		X		X
Ever breastfed			X	X		X	X
Breastfeeding at 2 months postpartum		X	X	X	X	X	
Preterm birth	X		X				
Put to sleep on back							X
Sleeps on approved sleep surface			X		X		
Sleeps without soft objects			X		X		X
Sleeps in own crib in mother's room					X		
Postpartum checkup		X	X	X	X		X
Postpartum depression	X		X		X		X
High ACE score			X		X	X	
No insurance before pregnancy			X	X	X		X
Below federal poverty level		X	X	X	X		X

Risk Behaviors & Outcomes	Attended <80% of PNC Visits	Teeth Not Cleaned During Pregnancy	Emotional Abuse During Pregnancy	Illness* During Pregnancy	C-Section	LBW	HBW
Main Outcome Variables							
Visited health care worker before pregnancy	X	X	X				
Discussed preparing for healthy pregnancy before pregnancy		X					
Exercised 3+ days/week before pregnancy	X	X		X		X	
Intended pregnancy	X	X	X	X			
Vitamin daily before pregnancy	X	X	X	X		X	
Healthy weight before pregnancy				X			X
Gestational diabetes			X		X		
Depression before pregnancy		X	X	X			
Depression during pregnancy		X	X				
Began PNC in first trimester	X	X					X
Attended 80% or more of PNC visits		X					
Obtained PNC as early as desired	X	X	X	X			
Received flu shot	X	X	X		X		
Teeth cleaned	X		X	X			X
Emotionally abused		X		X			
Smoked before pregnancy	X	X	X	X		X	
Smoked during pregnancy	X	X	X	X		X	
E-cigarettes use		X	X	X		X	
Smoking relapse during postpartum	X						
Alcohol use before pregnancy	X	X					
Alcohol use during pregnancy							
Illicit drug use before pregnancy	X	X	X	X			
Illicit drug use during pregnancy	X	X	X	X		X	
Ever breastfed		X			X		
Breastfeeding at 2 months postpartum		X	X	X	X	X	
Preterm birth				X		X	
Put to sleep on back	X						
Sleeps on approved sleep surface			X		X		
Sleeps without soft objects	X	X	X	X			
Sleeps in own crib in mother's room		X					
Postpartum checkup	X	X	X	X		X	
Postpartum depression	X		X	X			
High ACE score	X	X	X	X			
No insurance before pregnancy	X	X					X
Below federal poverty level	X	X	X	X		X	

* Diabetes, hypertension, or depression

LBW = low birth weight (<2,500 g); HBW = high birth weight (>4,000 g)

Risk Behaviors & Outcomes	Preterm Birth	NICU Admission	Never Breast-Fed	Does Not Sleep Alone in Room w/Mother	Baby Exposed to Smoke	ACE Score 4+
Main Outcome Variables						
Visited health care worker before pregnancy			X			X
Discussed preparing for healthy pregnancy before pregnancy	X					
Exercised 3+ days/week before pregnancy	X	X	X			X
Intended pregnancy	X		X		X	X
Vitamin daily before pregnancy					X	X
Healthy weight before pregnancy			X		X	X
Gestational diabetes	X					
Depression before pregnancy	X	X		X	X	X
Depression during pregnancy				X	X	X
Began PNC in first trimester			X			
Attended 80% or more of PNC visits						X
Obtained PNC as early as desired			X			X
Received flu shot						
Teeth cleaned			X	X		X
Emotionally abused					X	X
Smoked before pregnancy	X	X	X		X	X
Smoked during pregnancy	X		X		X	X
E-cigarettes use		X			X	X
Smoking relapse during postpartum						
Alcohol use before pregnancy			X			
Alcohol use during pregnancy	X					
Illicit drug use before pregnancy				X	X	X
Illicit drug use during pregnancy	X		X		X	X
Ever breastfed						X
Breastfeeding at 2 months postpartum	X	X			X	X
Preterm birth		X				
Put to sleep on back			X			
Sleeps on approved sleep surface				X		X
Sleeps without soft objects						X
Sleeps in own crib in mother's room						X
Postpartum checkup	X	X	X	X		X
Postpartum depression			X		X	X
High ACE score			X	X		
No insurance before pregnancy						
Below federal poverty level		X	X		X	X

Response rate - aggregated data only

The final numbers and response rates for SD 2021 PRAMS are given below:

	Non-Hispanic White	American Indian	Other Races	Total
Final Eligible Births on Frame#	7,646	1,785	1,290	10,721
Final Eligible Births Sampled	579	618	519	1,716
Non-response	171	279	240	690
Completed	408	339	279	1,026
Mail	83	64	53	200
Phone	1	10	26	37
Online	324	265	200	789
Response Rate	**70.5%**	**54.9%**	**53.8%**	**65.9%^**

There were 10,748 eligible births (see SD 2021 Final Report from CDC).

^ Weighted percent response with weights based on the race distribution for final births on frame.

Methods

Population and Sample

PRAMS is a population-based surveillance system developed by the CDC that is conducted by surveying mothers with infants between two and six months of age. The 2021 South Dakota PRAMS survey sample was derived from birth certificate data (stillbirths and fetal deaths were not included). The following exclusions were used when sampling 2021 births: mothers less than 14 years of age; out-of-state births to residents; in-state births to non-residents; missing key information (such as mother's last name or mother's mailing address); delayed processing of birth certificates (greater than 4 months after birth); all but one infant from twin and triplet births; all infants from multiple gestation births with plurality greater than 3; and adopted infants or surrogate births.

The sampling was stratified by the mother's race, which was self-identified on the birth certificate, into three categories: white non-Hispanic race, American Indian race (includes mixed race if American Indian is indicated), and a category for all other races. Births within the race categories were randomly sampled each month at approximately 8% for white race, 34% for American Indian race, and 41% for the other races. American Indian and other race births were sampled at higher rates to ensure that adequate precision for prevalence estimates were available in these smaller populations. The total sample size, as recommended by CDC, was targeted to be approximately 1,200 completed surveys over one year (2021). Sampling rates by strata were based on the race distribution and numbers of births occurring in 2016 and adjusted for expected participation rates.

Questionnaire

The SD PRAMS questionnaire was based on the CDC phase 8 core PRAMS questionnaire. Mandatory items made up approximately 75% of the entire questionnaire. Optional items were selected to address the unique needs of South Dakota. The question selection process included extensive input from the South Dakota Department of Health and the PRAMS Steering Committee. The survey was available in both English and Spanish.

Collection of data

Mailings started about 2-4 months after delivery. Mail packets included a cover letter, questionnaire, stamped return envelope, calendar, informed consent information sheet, a picture of the thank-you gift, a resource guide, and a brightly colored paper notifying the mother of an online option. A two-dollar incentive was sent to all participants with the first questionnaire. Mothers who completed the questionnaire received a $30 prepaid Visa. The SDSU PRAMS office sent data without personal identifiers to CDC for editing, weighting, and creation of the analysis file.

Response rate

The overall weighted response rate for 2020 SD PRAMS was 65.9%.

Sampling and weighting procedures

Samples of eligible women were drawn monthly beginning in April 2021 and ending in April 2022. The last batches allowed inclusion of births that were registered late to be included. Other than the last batch, which was small, the batch size each month ranged from about 90 to 200.

For the survey results to be generalized to represent the population of all South Dakota women giving birth in 2021, a process of weighting was used. A weight can be interpreted as the number of women in the population that each survey respondent represents. For the SD PRAMS, three sample

weights were calculated: sampling, non-response and non-coverage.

Sampling weights take into account the different sampling rates for the race strata and are the reciprocal of the sampling fraction applied to each stratum.

Non-response weights compensate for lower response rates among women with certain demographic characteristics, such as lower education, because women with these demographic characteristics are assumed to provide similar survey answers. Women with lower response rates are given higher non-response weights.

Non-coverage weights account for the omission from the survey of births that met eligibility requirements. The 2021 birth file was provided to CDC for comparison to the sampling frame to produce non-coverage weights. In 2021, a small non-coverage weight of 1.00252 was used due to incomplete sample frame. The sampling, non-response and non-coverage weights are multiplied to yield an analysis weight for each respondent.

This report was prepared using SAS (software v9.4) procedures that take into account sampling design and weighting.

Bias

Relying on mail and telephone for surveys may select mothers of higher socioeconomic status. Other potential sources of bias include observations with missing values, lack of control for confounding factors (see Introduction), and recall bias, because questions are asked regarding time periods of up to one year prior to pregnancy.

Confidence intervals, unstable data, significance

Confidence intervals, or margins of error, describe the range of possible percentages that could be observed for a particular measure among all women giving birth to a live infant. Though a point estimate (percentage) is provided, there remains a level of uncertainty around that estimate. The 95% confidence interval provides a measure of the uncertainty around the point estimate. The wider the confidence interval, the greater the uncertainty around the point estimate. For each measure in this report, the data tables present the low and high boundaries of the 95% confidence interval. The weighted frequency is also provided so that an idea of the total number of women affected is known.

Measures with too few respondents (less than 35 women) are not presented and measures with a relative standard error of 30% or greater yielded point estimates and confidence intervals considered to be unstable representations of the measure's actual occurrence and are identified in the data tables.

Significance of associations were based on Rao-Scott chi-square test and ordinal demographic variables (age, education, income), as well as changes over time, were tested for linear trend using logistic regression.

Measures

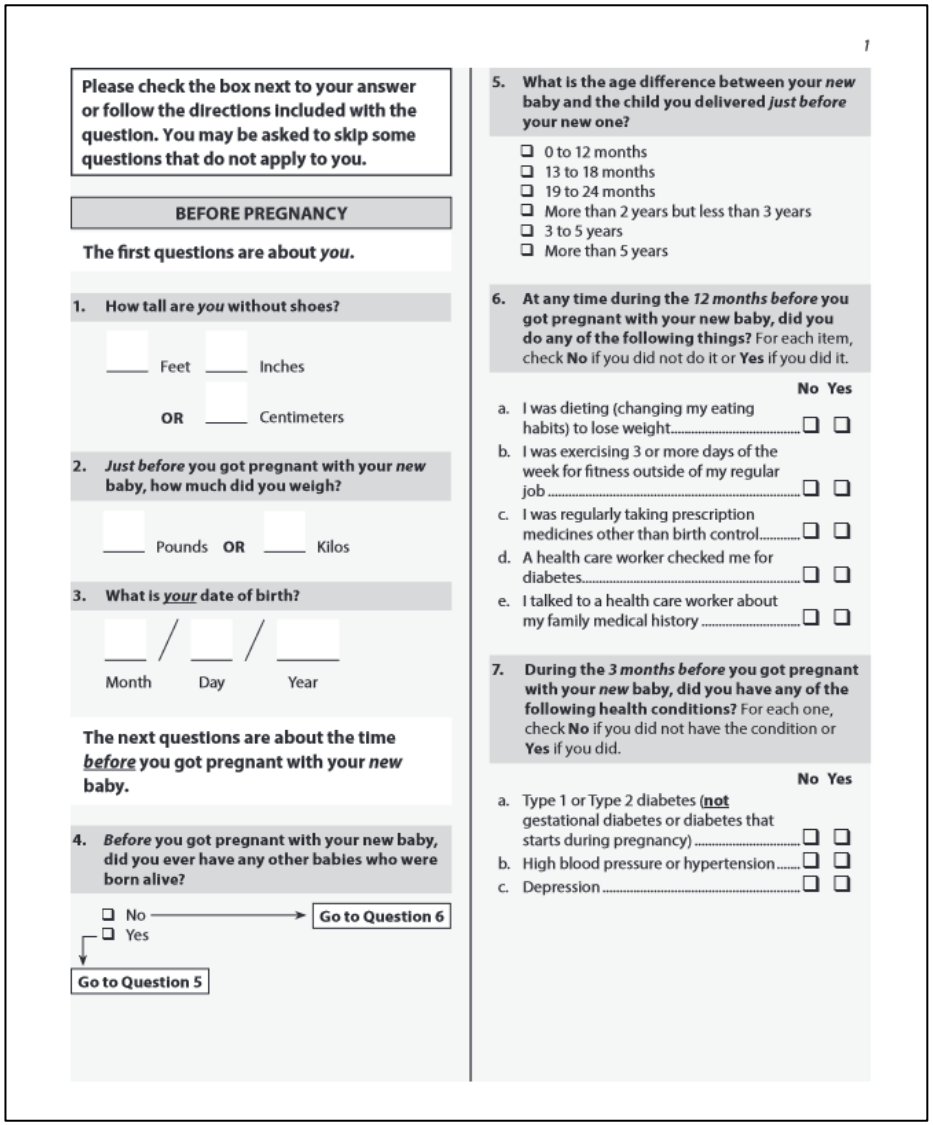
Kotelchuk Index. Also called the Adequacy of Prenatal Care Use Index, the Kotelchuck Index uses two birth certificate elements to classify adequacy of prenatal care.[47] Timing of initiation of prenatal care, assuming earlier is better, and number of prenatal care visits, compared against an expected number of visits based on the American College of Obstetricians and Gynecologists' standards for an uncomplicated pregnancy.

The two dimensions of initiation and number of visits are combined into a summary measure. Inadequate care is defined as prenatal care begun after the 4th month or under 50% of expected visits were received. Intermediate care is defined as prenatal care begun by month 4 and between 50-79% of expected visits were received. Adequate care is defined as prenatal care begun by month 4 and 80-109% of expected visits were received. Adequate plus (intensive) care is defined as prenatal care begun by month 4 and 110% or more of expected visits were received.[47] The Kotelchuck Index does not measure quality or content of care, and it also may not measure adequacy of prenatal care for women with high-risk pregnancies.

Body Mass Index. Body mass index (BMI) is a commonly used measure of the relationship between weight and height that approximates body fat (BMI formula = weight (kg) / [height (m)]^2). Pre-pregnancy BMI values were calculated based on information provided on the birth certificate.

In this report, BMI results based on the Centers for Disease Control and Prevention definition: underweight (less than 18.5); healthy weight (18.5 to less than 25); overweight (25 to less than 30); and obese (30 or over).[10] These categories are commonly used in primary care settings.

SD PRAMS 2021 Questionnaire



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Please check the box next to your answer or follow the directions included with the question. You may be asked to skip some questions that do not apply to you.

BEFORE PREGNANCY

The first questions are about *you*.

1. How tall are *you* without shoes?

____ Feet ____ Inches

OR ____ Centimeters

2. *Just before* you got pregnant with your *new* baby, how much did you weigh?

____ Pounds **OR** ____ Kilos

3. What is *your* date of birth?

____ / ____ / ____

Month Day Year

The next questions are about the time *before* you got pregnant with your *new* baby.

4. *Before* you got pregnant with your new baby, did you ever have any other babies who were born alive?

- ❑ No → **Go to Question 6**
- ❑ Yes

Go to Question 5

5. What is the age difference between your *new* baby and the child you delivered *just before* your new one?

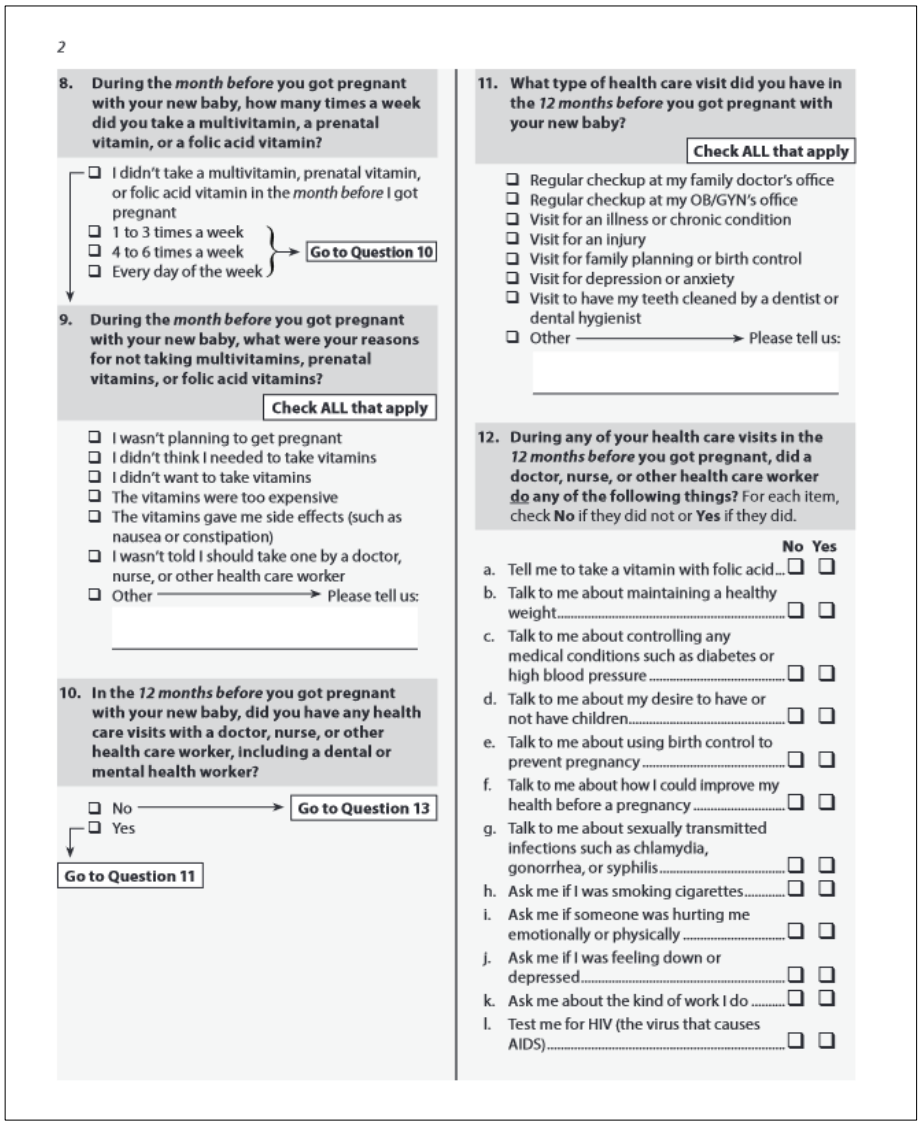
- ❑ 0 to 12 months
- ❑ 13 to 18 months
- ❑ 19 to 24 months
- ❑ More than 2 years but less than 3 years
- ❑ 3 to 5 years
- ❑ More than 5 years

6. At any time during the *12 months before* you got pregnant with your new baby, did you do any of the following things? For each item, check **No** if you did not do it or **Yes** if you did it.

	No	Yes
a. I was dieting (changing my eating habits) to lose weight	❑	❑
b. I was exercising 3 or more days of the week for fitness outside of my regular job	❑	❑
c. I was regularly taking prescription medicines other than birth control	❑	❑
d. A health care worker checked me for diabetes	❑	❑
e. I talked to a health care worker about my family medical history	❑	❑

7. During the *3 months before* you got pregnant with your *new* baby, did you have any of the following health conditions? For each one, check **No** if you did not have the condition or **Yes** if you did.

	No	Yes
a. Type 1 or Type 2 diabetes (**not** gestational diabetes or diabetes that starts during pregnancy)	❑	❑
b. High blood pressure or hypertension	❑	❑
c. Depression	❑	❑



2

8. During the *month before* you got pregnant with your new baby, how many times a week did you take a multivitamin, a prenatal vitamin, or a folic acid vitamin?

- ❑ I didn't take a multivitamin, prenatal vitamin, or folic acid vitamin in the *month before* I got pregnant
- ❑ 1 to 3 times a week
- ❑ 4 to 6 times a week
- ❑ Every day of the week

→ **Go to Question 10**

9. During the *month before* you got pregnant with your new baby, what were your reasons for not taking multivitamins, prenatal vitamins, or folic acid vitamins?

Check ALL that apply

- ❑ I wasn't planning to get pregnant
- ❑ I didn't think I needed to take vitamins
- ❑ I didn't want to take vitamins
- ❑ The vitamins were too expensive
- ❑ The vitamins gave me side effects (such as nausea or constipation)
- ❑ I wasn't told I should take one by a doctor, nurse, or other health care worker
- ❑ Other → Please tell us:

10. In the *12 months before* you got pregnant with your new baby, did you have any health care visits with a doctor, nurse, or other health care worker, including a dental or mental health worker?

- ❑ No → **Go to Question 13**
- ❑ Yes

Go to Question 11

11. What type of health care visit did you have in the *12 months before* you got pregnant with your new baby?

Check ALL that apply

- ❑ Regular checkup at my family doctor's office
- ❑ Regular checkup at my OB/GYN's office
- ❑ Visit for an illness or chronic condition
- ❑ Visit for an injury
- ❑ Visit for family planning or birth control
- ❑ Visit for depression or anxiety
- ❑ Visit to have my teeth cleaned by a dentist or dental hygienist
- ❑ Other → Please tell us:

12. During any of your health care visits in the *12 months before* you got pregnant, did a doctor, nurse, or other health care worker do any of the following things? For each item, check **No** if they did not or **Yes** if they did.

	No	Yes
a. Tell me to take a vitamin with folic acid	❑	❑
b. Talk to me about maintaining a healthy weight	❑	❑
c. Talk to me about controlling any medical conditions such as diabetes or high blood pressure	❑	❑
d. Talk to me about my desire to have or not have children	❑	❑
e. Talk to me about using birth control to prevent pregnancy	❑	❑
f. Talk to me about how I could improve my health before a pregnancy	❑	❑
g. Talk to me about sexually transmitted infections such as chlamydia, gonorrhea, or syphilis	❑	❑
h. Ask me if I was smoking cigarettes	❑	❑
i. Ask me if someone was hurting me emotionally or physically	❑	❑
j. Ask me if I was feeling down or depressed	❑	❑
k. Ask me about the kind of work I do	❑	❑
l. Test me for HIV (the virus that causes AIDS)	❑	❑

The next questions are about your *health insurance coverage* before, during, and after your pregnancy with your *new* baby.

13. During the *month before* you got pregnant with your new baby, what kind of health insurance did you have?

Check ALL that apply

- ❑ Private health insurance from my job or the job of my husband or partner
- ❑ Private health insurance from my parents
- ❑ Private health insurance from the South Dakota Health Insurance Marketplace or HealthCare.gov
- ❑ Medicaid
- ❑ Indian Health Service (IHS) or tribal
- ❑ Other health insurance → Please tell us:

_____

- ❑ I did not have any health insurance during the *month before* I got pregnant

14. During your *most recent pregnancy*, what kind of health insurance did you have for your *prenatal care*?

Check ALL that apply

- ❑ I did not go for prenatal care → **Go to Question 15**
- ❑ Private health insurance from my job or the job of my husband or partner
- ❑ Private health insurance from my parents
- ❑ Private health insurance from the South Dakota Health Insurance Marketplace or HealthCare.gov
- ❑ Medicaid
- ❑ Indian Health Service (IHS) or tribal
- ❑ Other health insurance → Please tell us:

_____

- ❑ I did not have any health insurance for my *prenatal care*

15. What kind of health insurance do you have *now*?

Check ALL that apply

- ❑ Private health insurance from my job or the job of my husband or partner
- ❑ Private health insurance from my parents
- ❑ Private health insurance from the South Dakota Health Insurance Marketplace or HealthCare.gov
- ❑ Medicaid
- ❑ Indian Health Service (IHS) or tribal
- ❑ Other health insurance → Please tell us:

_____

- ❑ I do not have health insurance *now*

16. Thinking back to *just before* you got pregnant with your new baby, how did you feel about becoming pregnant?

Check ONE answer

- ❑ I wanted to be pregnant later
- ❑ I wanted to be pregnant sooner
- ❑ I wanted to be pregnant then
- ❑ I didn't want to be pregnant then or at any time in the future
- ❑ I wasn't sure what I wanted

17. When you got pregnant with your new baby, were you trying to get pregnant?

- ❑ No
- ❑ Yes → **Go to Page 4, Question 19**

18. When you got pregnant with your new baby, were you or your husband or partner doing anything to keep from getting pregnant? Some things people do to keep from getting pregnant include having their tubes tied, using birth control pills, condoms, withdrawal, or natural family planning.

- ❑ No
- ❑ Yes

DURING PREGNANCY

The next questions are about the prenatal care you received during your most recent pregnancy. Prenatal care includes visits to a doctor, nurse, or other health care worker before your baby was born to get checkups and advice about pregnancy. (It may help to look at the calendar when you answer these questions.)

19. How many weeks *or* months pregnant were you when you had your first visit for prenatal care?

_____ Weeks **OR** _____ Months

- ❑ I didn't go for prenatal care → **Go to Question 21**

20. Did you get prenatal care as early in your pregnancy as you wanted?

- ❑ No
- ❑ Yes → **Go to Question 22**

Go to Question 21

21. Did any of these things keep you from getting prenatal care when you wanted it? For each item, check **No** if it did not keep you from getting prenatal care or **Yes** if it did.

	No	Yes
a. I couldn't get an appointment when I wanted one	❑	❑
b. I didn't have enough money or insurance to pay for my visits	❑	❑
c. I didn't have any transportation to get to the clinic or doctor's office	❑	❑
d. The doctor or my health plan would not start care as early as I wanted	❑	❑
e. I had too many other things going on	❑	❑
f. I couldn't take time off from work or school	❑	❑
g. I didn't have my Medicaid card	❑	❑
h. I didn't have anyone to take care of my children	❑	❑
i. I didn't know that I was pregnant	❑	❑
j. I didn't want anyone else to know I was pregnant	❑	❑
k. I didn't want prenatal care	❑	❑
l. I was afraid I would be reported for using alcohol or drugs during my pregnancy	❑	❑

If you did not get prenatal care, go to Question 23.

22. *During any of your prenatal care visits*, did a doctor, nurse, or other health care worker ask you any of the things listed below? For each item, check **No** if they did not ask you about it or **Yes** if they did.

	No	Yes
a. If I knew how much weight I should gain during pregnancy	❑	❑
b. If I was taking any prescription medication	❑	❑
c. If I was smoking cigarettes	❑	❑
d. If I was drinking alcohol	❑	❑
e. If someone was hurting me emotionally or physically	❑	❑
f. If I was feeling down or depressed	❑	❑
g. If I was using drugs such as marijuana, cocaine, crack, or meth	❑	❑
h. If I wanted to be tested for HIV (the virus that causes AIDS)	❑	❑
i. If I planned to breastfeed my new baby	❑	❑
j. If I planned to use birth control after my baby was born	❑	❑

23. During the 12 months *before the delivery* of your new baby, did a doctor, nurse, or other health care worker *offer* you a flu shot or *tell* you to get one?

- ❑ No
- ❑ Yes

24. During the 12 months *before the delivery* of your new baby, did you *get* a flu shot?

Check ONE answer

- ❑ No
- ❑ Yes, before my pregnancy
- ❑ Yes, during my pregnancy

25. During *your most recent* pregnancy, did you have your teeth cleaned by a dentist or dental hygienist?

- ❑ No
- ❑ Yes

26. Did any of the following things make it hard for you to go to a dentist or dental clinic during *your most recent* pregnancy? For each item, check **No** if it was not something that made it hard for you or **Yes** if it was.

	No	Yes
a. I could not find a dentist or dental clinic that would take pregnant patients	❑	❑
b. I could not find a dentist or dental clinic that would take Medicaid patients	❑	❑
c. I did not think it was safe to go to the dentist during pregnancy	❑	❑
d. I could not afford to go to the dentist or dental clinic	❑	❑

27. During *your most recent* pregnancy, did you have any of the following health conditions? For each one, check **No** if you did not have the condition or **Yes** if you did.

	No	Yes
a. Gestational diabetes (diabetes that **started** during *this* pregnancy)	❑	❑
b. High blood pressure (that **started** during *this* pregnancy), pre-eclampsia or eclampsia	❑	❑
c. Depression	❑	❑

28. During *your most recent* pregnancy, did a doctor, nurse, or other health care worker give you a series of weekly shots of a medicine called progesterone, Makena®, or 17P (17 alpha-hydroxyprogesterone) to try to keep your new baby from being born too early?

- ❑ No
- ❑ Yes
- ❑ I don't know

The next questions are about smoking cigarettes around the time of pregnancy (before, during, and after).

29. Have you smoked any cigarettes in the *past 2 years*?

- ❑ No → **Go to Question 37**
- ❑ Yes

30. In the *3 months before* you got pregnant, how many cigarettes did you smoke on an average day? A pack has 20 cigarettes.

- ❑ 41 cigarettes or more
- ❑ 21 to 40 cigarettes
- ❑ 11 to 20 cigarettes
- ❑ 6 to 10 cigarettes
- ❑ 1 to 5 cigarettes
- ❑ Less than 1 cigarette
- ❑ I didn't smoke then

31. In the *last 3 months* of your pregnancy, how many cigarettes did you smoke on an average day? A pack has 20 cigarettes.

- ❑ 41 cigarettes or more
- ❑ 21 to 40 cigarettes
- ❑ 11 to 20 cigarettes
- ❑ 6 to 10 cigarettes
- ❑ 1 to 5 cigarettes
- ❑ Less than 1 cigarette
- ❑ I didn't smoke then

If you did not smoke at any time in the *3 months before* you got pregnant, go to Question 36.

32. *During any of your prenatal care visits*, did a doctor, nurse, or other health care worker advise you to quit smoking?

- ❑ No
- ❑ Yes
- ❑ I didn't go for prenatal care → **Go to Question 34**

Go to Question 33

33. Listed below are some things about quitting smoking that a doctor, nurse, or other health care worker might have done *during any of your prenatal care visits*. For each thing, check **No** if it was not done or **Yes** if it was.

	No	Yes
a. Spend time with me discussing how to quit smoking	❑	❑
b. Suggest I attend a class or program to stop smoking	❑	❑
c. Provide me with booklets, videos, or other materials to help me quit smoking on my own	❑	❑
d. Refer me to a national or state quit line	❑	❑

34. Did you quit smoking around the time of *your most recent* pregnancy?

Check ONE answer

- ❑ No
- ❑ No, but I cut back
- ❑ Yes, I quit before I found out I was pregnant
- ❑ Yes, I quit when I found out I was pregnant
- ❑ Yes, I quit later in my pregnancy

35. Listed below are some things that can make it hard for some people to quit smoking. For each item, check **No** if it is not something that might make it hard for you or **Yes** if it is.

	No	Yes
a. Cost of medicines or products to help with quitting	❑	❑
b. Cost of classes to help with quitting	❑	❑
c. Fear of gaining weight	❑	❑
d. Loss of a way to handle stress	❑	❑
e. Other people smoking around me	❑	❑
f. Cravings for a cigarette	❑	❑
g. Lack of support from others to quit	❑	❑
h. Not wanting to quit	❑	❑
i. Some other reason	❑	❑

Please tell us:

_____

36. How many cigarettes do you smoke on an average day *now*? A pack has 20 cigarettes.

- ❑ 41 cigarettes or more
- ❑ 21 to 40 cigarettes
- ❑ 11 to 20 cigarettes
- ❑ 6 to 10 cigarettes
- ❑ 1 to 5 cigarettes
- ❑ Less than 1 cigarette
- ❑ I don't smoke now

The next questions are about using other tobacco products around the time of pregnancy.

E-cigarettes (electronic cigarettes) and other electronic nicotine products (such as vape pens, e-hookahs, hookah pens, e-cigars, e-pipes) are battery-powered devices that use nicotine liquid rather than tobacco leaves, and produce vapor instead of smoke.

A **hookah** is a water pipe used to smoke tobacco. It is not the same as an e-hookah or hookah pen.

37. Have you used any of the following products in the *past 2 years*? For each item, check **No** if you did not use it or **Yes** if you did.

	No	Yes
a. E-cigarettes or other electronic nicotine products	❑	❑
b. Hookah	❑	❑

If you used e-cigarettes or other electronic nicotine products in the *past 2 years*, go to Question 38. Otherwise, go to Question 40.

38. During the *3 months before* you got pregnant, on average, how often did you use e-cigarettes or other electronic nicotine products?

- ❑ More than once a day
- ❑ Once a day
- ❑ 2-6 days a week
- ❑ 1 day a week or less
- ❑ I did not use e-cigarettes or other electronic nicotine products then

39. During the *last 3 months* of your pregnancy, on average, how often did you use e-cigarettes or other electronic nicotine products?

- ❑ More than once a day
- ❑ Once a day
- ❑ 2-6 days a week
- ❑ 1 day a week or less
- ❑ I did not use e-cigarettes or other electronic nicotine products then

The next questions are about drinking alcohol around the time of pregnancy.

40. Have you had any alcoholic drinks in the *past 2 years*? A drink is 1 glass of wine, wine cooler, can or bottle of beer, shot of liquor, or mixed drink.

- ❑ No → **Go to Page 8, Question 44**
- ❑ Yes

41. During the *3 months before* you got pregnant, how many alcoholic drinks did you have in an average week?

- ❑ 14 drinks or more a week
- ❑ 8 to 13 drinks a week
- ❑ 4 to 7 drinks a week
- ❑ 1 to 3 drinks a week
- ❑ Less than 1 drink a week
- ❑ I didn't drink then → **Go to Page 8, Question 43**

Go to Page 8, Question 42

42. During the *3 months before* you got pregnant, how many times did you drink 4 alcoholic drinks or more in a 2 hour time span?

- ❑ 6 or more times
- ❑ 4 to 5 times
- ❑ 2 to 3 times
- ❑ 1 time
- ❑ I didn't have 4 drinks or more in a 2 hour time span

43. During the *last 3 months* of your pregnancy, how many alcoholic drinks did you have in an average week?

- ❑ 14 drinks or more a week
- ❑ 8 to 13 drinks a week
- ❑ 4 to 7 drinks a week
- ❑ 1 to 3 drinks a week
- ❑ Less than 1 drink a week
- ❑ I didn't drink then

Pregnancy can be a difficult time. The next questions are about things that may have happened *before* and *during* your most recent pregnancy.

44. In the *12 months before you got pregnant* with your new baby, did any of the following people push, hit, slap, kick, choke, or physically hurt you in any other way? For each person, check **No** if they did not hurt you during this time or **Yes** if they did.

	No	Yes
a. My husband or partner	❑	❑
b. My ex-husband or ex-partner	❑	❑
c. Someone else	❑	❑

45. During *your most recent pregnancy*, did any of the following people push, hit, slap, kick, choke, or physically hurt you in any other way? For each person, check **No** if they did not hurt you during this time or **Yes** if they did.

	No	Yes
a. My husband or partner	❑	❑
b. My ex-husband or ex-partner	❑	❑
c. Someone else	❑	❑

46. During *your most recent* pregnancy, did any of the following things happen to you? For each thing, check **No** if it did not happen to you or **Yes** if it did.

	No	Yes
a. My husband or partner threatened me or made me feel unsafe in some way	❑	❑
b. I was frightened for my safety or my family's safety because of the anger or threats of my husband or partner	❑	❑
c. My husband or partner tried to control my daily activities, for example, controlling who I could talk to or where I could go	❑	❑
d. My husband or partner forced me to take part in touching or any sexual activity when I did not want to	❑	❑

AFTER PREGNANCY

The next questions are about the time since your new baby was born.

47. When was your new baby born?

__ / __ / 20__

Month Day Year

48. After your baby was delivered, how long did he or she stay in the hospital?

- ❑ Less than 24 hours (less than 1 day)
- ❑ 24 to 48 hours (1 to 2 days)
- ❑ 3 to 5 days
- ❑ 6 to 14 days
- ❑ More than 14 days
- ❑ My baby was not born in a hospital
- ❑ My baby is still in the hospital → **Go to Question 51**

49. Is your baby alive now?

- ❑ No → *We are very sorry for your loss.* **Go to Page 10, Question 61**
- ❑ Yes

Go to Question 50

50. Is your baby living with you now?

- ❑ No → **Go to Page 10, Question 61**
- ❑ Yes

51. *Before or after your new baby was born*, did you receive information about breastfeeding from any of the following sources? For each one, check **No** if you did not receive information from this source or **Yes** if you did.

		No	Yes
a.	My doctor	❑	❑
b.	A nurse, midwife, or doula	❑	❑
c.	A breastfeeding or lactation specialist	❑	❑
d.	My baby's doctor or health care provider	❑	❑
e.	A breastfeeding support group	❑	❑
f.	A breastfeeding hotline or toll-free number	❑	❑
g.	Family or friends	❑	❑
h.	Other	❑	❑

Please tell us:

52. Did you ever breastfeed or pump breast milk to feed your new baby, even for a short period of time?

- ❑ No → **Go to Question 56**
- ❑ Yes

53. Are you currently breastfeeding or feeding pumped milk to your new baby?

- ❑ No
- ❑ Yes → **Go to Question 56**

54. How many weeks or months did you breastfeed or feed pumped milk to your baby?

- ❑ Less than 1 week

____ Weeks **OR** ____ Months

55. What were your reasons for stopping breastfeeding?

Check ALL that apply

- ❑ My baby had difficulty latching or nursing
- ❑ Breast milk alone did not satisfy my baby
- ❑ I thought my baby was not gaining enough weight
- ❑ My nipples were sore, cracked, or bleeding or it was too painful
- ❑ I thought I was not producing enough milk, or my milk dried up
- ❑ I had too many other household duties
- ❑ I felt it was the right time to stop breastfeeding
- ❑ I got sick or I had to stop for medical reasons
- ❑ I went back to work
- ❑ I went back to school
- ❑ My partner did not support breastfeeding
- ❑ My baby was jaundiced (yellowing of the skin or whites of the eyes)
- ❑ Other → Please tell us:

If your baby is still in the hospital, go to Page 10, Question 61.

56. In which *one* position do you *most often* lay your baby down to sleep now?

Check ONE answer

- ❑ On his or her side
- ❑ On his or her back
- ❑ On his or her stomach

57. In the *past 2 weeks*, how often has your new baby slept alone in his or her own crib or bed?

- ❑ Always
- ❑ Often
- ❑ Sometimes
- ❑ Rarely
- ❑ Never → **Go to Page 10, Question 59**

Go to Page 10, Question 58

58. When your new baby sleeps alone, is his or her crib or bed in the same room where *you* sleep?

- ❑ No
- ❑ Yes

59. Listed below are some more things about how babies sleep. How did your new baby *usually* sleep in the *past 2 weeks*? For each item, check **No** if your baby did not *usually* sleep like this or **Yes** if he or she did.

		No	Yes
a.	In a crib, bassinet, or pack and play	❑	❑
b.	On a twin or larger mattress or bed	❑	❑
c.	On a couch, sofa, or armchair	❑	❑
d.	In an infant car seat or swing	❑	❑
e.	In a sleeping sack or wearable blanket	❑	❑
f.	With a blanket	❑	❑
g.	With toys, cushions, or pillows, including nursing pillows	❑	❑
h.	With crib bumper pads (mesh or non-mesh)	❑	❑

60. Did a doctor, nurse, or other health care worker tell you any of the following things? For each thing, check **No** if they did not tell you or **Yes** if they did.

		No	Yes
a.	Place my baby on his or her back to sleep	❑	❑
b.	Place my baby to sleep in a crib, bassinet, or pack and play	❑	❑
c.	Place my baby's crib or bed in my room	❑	❑
d.	What things should and should not go in bed with my baby	❑	❑

61. Are you or your husband or partner doing anything *now* to keep from getting pregnant? Some things people do to keep from getting pregnant include having their tubes tied, using birth control pills, condoms, withdrawal, or natural family planning.

- ❑ No
- ❑ Yes → **Go to Question 63**

62. What are your reasons or your husband's or partner's reasons for not doing anything to keep from getting pregnant *now*?

Check ALL that apply

- ❑ I want to get pregnant
- ❑ I am pregnant now
- ❑ I had my tubes tied or blocked
- ❑ I don't want to use birth control
- ❑ I am worried about side effects from birth control
- ❑ I am not having sex
- ❑ My husband or partner doesn't want to use anything
- ❑ I have problems paying for birth control
- ❑ Other → Please tell us:

If you or your husband or partner is not doing anything to keep from getting pregnant *now*, go to Question 64.

63. What kind of birth control are you or your husband or partner using *now* to keep from getting pregnant?

Check ALL that apply

- ❑ Tubes tied or blocked (female sterilization or Essure®)
- ❑ Vasectomy (male sterilization)
- ❑ Birth control pills
- ❑ Condoms
- ❑ Shots or injections (Depo-Provera®)
- ❑ Contraceptive patch (OrthoEvra®) or vaginal ring (NuvaRing®)
- ❑ IUD (including Mirena®, ParaGard®, Liletta®, or Skyla®)
- ❑ Contraceptive implant in the arm (Nexplanon® or Implanon®)
- ❑ Natural family planning (including rhythm method)
- ❑ Withdrawal (pulling out)
- ❑ Not having sex (abstinence)
- ❑ Other → Please tell us:

64. *Since your new baby was born*, have you had a postpartum checkup for yourself? A postpartum checkup is the regular checkup a woman has about 4-6 weeks after she gives birth.

- ❑ No → **Go to Question 66**
- ❑ Yes

Go to Question 65

65. *During your postpartum checkup*, did a doctor, nurse, or other health care worker do any of the following things? For each item, check **No** if they did not do it or **Yes** if they did.

		No	Yes
a.	Tell me to take a vitamin with folic acid	❑	❑
b.	Talk to me about healthy eating, exercise, and losing weight gained during pregnancy	❑	❑
c.	Talk to me about how long to wait before getting pregnant again	❑	❑
d.	Talk to me about birth control methods I can use after giving birth	❑	❑
e.	Give or prescribe me a contraceptive method such as the pill, patch, shot (Depo-Provera®), NuvaRing®, or condoms	❑	❑
f.	Insert an IUD (Mirena®, ParaGard®, Liletta®, or Skyla®) or a contraceptive implant (Nexplanon® or Implanon®)	❑	❑
g.	Ask me if I was smoking cigarettes	❑	❑
h.	Ask me if someone was hurting me emotionally or physically	❑	❑
i.	Ask me if I was feeling down or depressed	❑	❑
j.	Test me for diabetes	❑	❑

66. *Since your new baby was born*, how often have you felt down, depressed, or hopeless?

- ❑ Always
- ❑ Often
- ❑ Sometimes
- ❑ Rarely
- ❑ Never

67. *Since your new baby was born*, how often have you had little interest or little pleasure in doing things you usually enjoyed?

- ❑ Always
- ❑ Often
- ❑ Sometimes
- ❑ Rarely
- ❑ Never

OTHER EXPERIENCES

The next questions are on a variety of topics.

68. During the *month before* you got pregnant, did you take or use any of the following drugs for any reason? Your answers are strictly confidential. For each item, check **No** if you did not use it or **Yes** if you did.

		No	Yes
a.	Over-the-counter pain relievers such as aspirin, Tylenol®, Advil®, or Aleve®	❑	❑
b.	Prescription pain relievers such as hydrocodone (Vicodin®), oxycodone (Percocet®), or codeine	❑	❑
c.	Adderall®, Ritalin® or another stimulant	❑	❑
d.	Marijuana or hash	❑	❑
e.	Synthetic marijuana (K2, Spice)	❑	❑
f.	Methadone, naloxone, subutex, or Suboxone®	❑	❑
g.	Heroin (smack, junk, black tar, *Chiva*)	❑	❑
h.	Amphetamines (uppers, speed, crystal meth, crank, ice, *agua*)	❑	❑
i.	Cocaine (crack, rock, coke, blow, snow, *nieve*)	❑	❑
j.	Tranquilizers (downers, ludes)	❑	❑
k.	Hallucinogens (LSD/acid, PCP/angel dust, Ecstasy, Molly, mushrooms, bath salts)	❑	❑
l.	Sniffing gasoline, glue, aerosol spray cans, or paint to get high (huffing)	❑	❑

If you did not get prenatal care, go to Question 71.

69. Were you able to go to all of your recommended prenatal visits?

- ❑ No
- ❑ Yes → **Go to Question 71**

Go to Question 70

70. Did any of these things keep you from going to your recommended prenatal visits? For each item, check **No** if it did not keep you from getting prenatal care or **Yes** if it did.

		No	Yes
a.	I couldn't get an appointment when I wanted one	❑	❑
b.	I didn't have enough money or insurance to pay for my visits	❑	❑
c.	I didn't have any transportation to get to the clinic or doctor's office	❑	❑
d.	I had too many other things going on	❑	❑
e.	I couldn't take time off from work or school	❑	❑
f.	I didn't have my Medicaid card	❑	❑
g.	I didn't have anyone to take care of my children	❑	❑
h.	I didn't want prenatal care	❑	❑
i.	I was afraid I would be reported for using alcohol or drugs during pregnancy	❑	❑
j.	Other Please tell us:	❑	❑

71. During *your most recent* pregnancy, did you take or use any of the following drugs for any reason? Your answers are strictly confidential. For each item, check **No** if you did not use it or **Yes** if you did.

	No	Yes
a. Over-the-counter pain relievers such as aspirin, Tylenol®, Advil®, or Aleve®	❑	❑
b. Prescription pain relievers such as hydrocodone (Vicodin®), oxycodone (Percocet®), or codeine	❑	❑
c. Adderall®, Ritalin® or another stimulant	❑	❑
d. Marijuana or hash	❑	❑
e. Synthetic marijuana (K2, Spice)	❑	❑
f. Methadone, naloxone, subutex, or Suboxone®	❑	❑
g. Heroin (smack, junk, black tar, *Chiva*)	❑	❑
h. Amphetamines (uppers, speed, crystal meth, crank, ice, *agua*)	❑	❑
i. Cocaine (crack, rock, coke, blow, snow, *nieve*)	❑	❑
j. Tranquilizers (downers, ludes)	❑	❑
k. Hallucinogens (LSD/acid, PCP/angel dust, Ecstasy, Molly, mushrooms, bath salts)	❑	❑
l. Sniffing gasoline, glue, aerosol spray cans, or paint to get high (huffing)	❑	❑

If your baby is not alive, is not living with you, or is still in the hospital, go to Question 73.

72. How many hours and minutes in the last week was your new baby in an enclosed space, such as a room or a vehicle, with someone who was smoking?

____ Hours ____ Minutes

❑ My baby was not around anyone who smoked

73. The following statements are about the way you handle life events. Please check all that are true for you most of the time.

❑ I tend to bounce back quickly after hard times
❑ I have a hard time making it through stressful events
❑ It does not take me long to recover from a stressful event
❑ It is hard for me to snap back when something bad happens
❑ I usually come through a difficult time with little trouble
❑ I tend to take a long time to get over set-backs in my life

The next questions are about harsh events that may have happened during your childhood. We understand these questions are sensitive in nature and if you don't want to answer all or part of a question, that's okay – you may skip it. Remember, your answers are *confidential*, and *your name will not be associated with your survey*.

74. While you were growing up, during your *first 18 years of life*:

	No	Yes
a. Were your parents *ever* separated or divorced?	❑	❑
b. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?	❑	❑
c. Was a household member depressed or mentally ill, or did a household member attempt suicide?	❑	❑
d. Did a household member go to prison?	❑	❑
e. Did an adult or person at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way **OR** attempt or actually have oral, anal, or vaginal intercourse with you?	❑	❑

75. While you were growing up, during your *first 18 years of life*, did any of the following things happen *often* or *very often*?

	No	Yes
a. Did a parent or other adult in the household swear at you, insult you, put you down, or humiliate you **OR** act in a way that made you afraid that you might be physically hurt?	❑	❑
b. Did a parent or other adult in the household push, grab, slap, or throw something at you **OR** ever hit you so hard that you had marks or were injured?	❑	❑
c. Did you feel that no one in your family loved you or thought you were important or special **OR** your family didn't look out for each other, feel close to each other, or support each other?	❑	❑
d. Did you feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you **OR** your parents were too drunk or high to take care of you or take you to the doctor if you needed it?	❑	❑
e. Was your mother or stepmother pushed, grabbed, slapped, or had something thrown at her **OR sometimes, often, or very often** kicked, bitten, hit with a fist, or hit with something hard **OR ever** repeatedly hit at least a few minutes or threatened with a gun or knife?	❑	❑

The next questions are about the time during the *12 months before* your new baby was born.

76. During the *12 months before* your new baby was born, what was your yearly total household income before taxes? Include your income, your husband's or partner's income, and any other income you may have received. *All information will be kept private* and will not affect any services you are now getting.

❑ $0 to $16,000
❑ $16,001 to $20,000
❑ $20,001 to $24,000
❑ $24,001 to $28,000
❑ $28,001 to $32,000
❑ $32,001 to $40,000
❑ $40,001 to $48,000
❑ $48,001 to $57,000
❑ $57,001 to $60,000
❑ $60,001 to $73,000
❑ $73,001 to $85,000
❑ $85,001 or more

77. During the *12 months before* your new baby was born, how many people, *including yourself*, depended on this income?

____ People

78. What is today's date?

____ / ____ / 20____

Month Day Year

The next questions are about the use of pain relievers *during* pregnancy.

O1. *During your most recent pregnancy*, did you use any of the following *over-the-counter* pain relievers? Over-the-counter pain relievers are those *usually* available without a prescription. For each one, check **No** if you did not use it *during* your pregnancy or **Yes** if you did.

	No	Yes
a. Acetaminophen (like regular Tylenol®, Tylenol Extra Strength®, or Tylenol PM®)	❑	❑
b. Ibuprofen (like Motrin® or Advil®), including high dose pills that may be prescribed	❑	❑
c. Aspirin (like Bayer® or Ecotrin®)	❑	❑
d. Naproxen (like Aleve® or Midol®)	❑	❑

O2. *During your most recent pregnancy*, did you use any of the following *prescription* pain relievers? For each one, check **No** if you did not use it *during* your pregnancy or **Yes** if you did. Do *not* include pain relievers you used *only* during labor and delivery.

	No	Yes
a. Hydrocodone (like Vicodin®, Norco®, or Lortab®)	❑	❑
b. Codeine (like Tylenol® #3 or #4, not regular Tylenol®)	❑	❑
c. Oxycodone (like Percocet®, Percodan®, OxyContin®, or Roxicodone®)	❑	❑
d. Tramadol (like Ultram® or Ultracet®)	❑	❑
e. Hydromorphone or meperidine (like Demorol®, Exalgo®, or Dilaudid®)	❑	❑
f. Oxymorphone (like Opana®)	❑	❑
g. Morphine (like MS Contin®, Avinza®, or Kadian ®)	❑	❑
h. Fentanyl (like Duragesic®, Fentora®, or Actiq®)	❑	❑

If you checked "*Yes*" for any of the options in Question O2, continue with the next question. If not, go to Page 16, Question O10.

The next questions are only about the use of *prescription* pain relievers listed in Question O2.

O3. Where did you get the *prescription* pain relievers that you used *during* your most recent pregnancy?

Check ALL that apply

- ❑ OB-GYN, midwife, or prenatal care provider
- ❑ Family doctor or primary care provider
- ❑ Dentist or oral health care provider
- ❑ Doctor in the emergency room
- ❑ I had pain relievers left over from an old prescription
- ❑ Friend or family member gave them to me
- ❑ I got the pain relievers without a prescription some other way
- ❑ Other → Please tell us:

O4. What were your reasons for using *prescription* pain relievers *during* your most recent pregnancy?

Check ALL that apply

- ❑ To relieve pain from an injury, condition, or surgery I had **before** pregnancy
- ❑ To relieve pain from an injury, condition, or surgery that happened **during** my pregnancy
- ❑ To relax or relieve tension or stress
- ❑ To help me with my feelings or emotions
- ❑ To help me sleep
- ❑ To feel good or get high
- ❑ Because I was "hooked" or I had to have them
- ❑ Other → Please tell us:

O5. In each of the following time periods *during* your pregnancy, for how many weeks or months did you use *prescription* pain relievers? Please write the total number of weeks or months in each time period.

a. In the **first** 3 months of pregnancy

_____ Weeks **OR** _____ Months

- ❑ Less than a week
- ❑ Never

b. In the **second** 3 months of pregnancy

_____ Weeks **OR** _____ Months

- ❑ Less than a week
- ❑ Never

c. In the **last** 3 months of pregnancy

_____ Weeks **OR** _____ Months

- ❑ Less than a week
- ❑ Never

O6. *During your most recent pregnancy*, did you want or need to cut down or stop using *prescription* pain relievers?

- ❑ No → **Go to Question O10**
- ❑ Yes

O7. *During your most recent pregnancy*, did you have trouble cutting down or stopping use of the *prescription* pain relievers?

- ❑ No
- ❑ Yes

O8. *During your most recent pregnancy*, did you get help from a doctor, nurse, or other health care worker to cut down or stop using *prescription* pain relievers?

- ❑ No → **Go to Question O10**
- ❑ Yes

O9. *During your most recent pregnancy*, did you receive medication-assisted treatment to help you stop using *prescription* pain relievers? This is when a doctor prescribes medicines such as methadone, buprenorphine, Suboxone®, Subutex®, or naltrexone (Vivitrol®).

- ❑ No
- ❑ Yes

O10. Do you think the use of *prescription* pain relievers *during pregnancy* could be harmful to a *baby's* health?

Check ONE answer

- ❑ Not harmful at all
- ❑ Not harmful, if taken as prescribed
- ❑ Harmful, even if taken as prescribed

O11. Do you think the use of *prescription* pain relievers could be harmful to a woman's *own* health?

Check ONE answer

- ❑ Not harmful at all
- ❑ Not harmful, if taken as prescribed
- ❑ Harmful, even if taken as prescribed

O12. At any time *during your most recent pregnancy*, did a doctor, nurse, or other health care worker talk with you about how using *prescription* pain relievers during pregnancy could affect a baby?

- ❑ No
- ❑ Yes

The next question is about the use of other medications or drugs during pregnancy.

O13. *During your most recent pregnancy*, did you take or use any of the following medications or drugs for any reason? For each item, check **No** if you did not take or use it or **Yes** if you did.

	No	Yes
a. Medication for depression (like Prozac®, Zoloft®, Lexapro®, Paxil®, or Celexa®)	❑	❑
b. Medication for anxiety (like Valium®, Xanax®, Ativan®, Klonopin®, or other "benzos" (benzodiazepines))	❑	❑
c. Methadone, Subutex®, Suboxone®, or buprenorphine	❑	❑
d. Naloxone	❑	❑
e. Cannabidiol (CBD) products	❑	❑

These next questions are about your experiences with prenatal care, delivery, postpartum care, and infant care during the COVID-19 pandemic.

CV1. During the COVID-19 pandemic, which types of *prenatal care* appointments did you attend?

Check ONE answer

- ❑ In-person appointments only
- ❑ Virtual appointments (video or telephone) only → **Go to Page 18, Question CV3**
- ❑ Both, in-person and virtual appointments → **Go to Page 18, Question CV3**
- ❑ I did not have prenatal care → **Go to Page 18, Question CV4**

Go to Question CV2

CV2. What are the reasons that you did not attend virtual appointments for *prenatal care*? For each one, check **No** if it was not a reason or **Yes** if it was.

	No	Yes
a. Lack of availability of virtual appointments from my provider	❑	❑
b. Lack of an available telephone to use for appointments	❑	❑
c. Lack of enough cellular data or cellular minutes	❑	❑
d. Lack of a computer or device	❑	❑
e. Lack of internet service or had unreliable internet	❑	❑
f. Lack of a private or confidential space to use	❑	❑
g. I preferred seeing my health care provider in person	❑	❑
h. Other reason	❑	❑

Please tell us:

_____

CV3. Were any of your *prenatal care* appointments canceled or delayed during the COVID-19 pandemic due to the following reasons? For each one, check **No** if your appointments were not canceled or delayed for that reason or **Yes** if they were.

	No	Yes
a. My appointments were canceled or delayed because my provider's office was closed or had reduced hours	❑	❑
b. I canceled or delayed because I was afraid of being exposed to COVID-19 during the appointments	❑	❑
c. I canceled or delayed because I lost my health insurance during the COVID-19 pandemic	❑	❑
d. I canceled or delayed because I had problems finding care for my children or other family members	❑	❑
e. I canceled or delayed because I worried about taking public transportation and had no other way to get there	❑	❑
f. My appointments were canceled or delayed because I had to self-isolate due to possible COVID-19 exposure or infection	❑	❑

CV4. While you were *pregnant*, how often did you do the following things to avoid getting COVID-19?

For each one, check:
A if you *always* did it,
S if you *sometimes* did it, or
N if you *never* did it.

	A	S	N
a. Avoided gatherings of more than 10 people	❑	❑	❑
b. Stayed at least 6 feet (2 meters) away from others when I left my home	❑	❑	❑
c. Only left my home for essential reasons	❑	❑	❑
d. Made trips as short as possible when I left my home	❑	❑	❑
e. Avoided having visitors inside my home	❑	❑	❑
f. Wore a mask or a cloth face covering when out in public	❑	❑	❑
g. Washed hands for 20 seconds with soap and water	❑	❑	❑
h. Used alcohol-based hand sanitizer	❑	❑	❑
i. Covered coughs and sneezes with a tissue or my elbow	❑	❑	❑

CV5. While you were *pregnant* during the COVID-19 pandemic, did you have any of the following experiences? For each one, check **No** if you did not or **Yes** if you did.

	No	Yes
a. I had responsibilities or a job that prevented me from staying home	❑	❑
b. Someone in my household had a job that required close contact with other people	❑	❑
c. When I went out, I found that other people around me did not practice social distancing	❑	❑
d. I had trouble getting disinfectant to clean my home	❑	❑
e. I had trouble getting hand sanitizer or hand soap for my household	❑	❑
f. I had trouble getting or making masks or cloth face coverings	❑	❑
g. It was hard for me to wear a mask or cloth face covering (trouble breathing, claustrophobia)	❑	❑
h. I was told by a health care provider that I had COVID-19	❑	❑
i. Someone in my household was told by a health care provider that they had COVID-19	❑	❑

If your baby was not born in the hospital, go to Page 20, Question CV9.

CV6. Who was with you in the hospital delivery room as a support person during your labor and delivery?

Check ALL that apply

- ❑ My husband or partner
- ❑ Another family member or friend
- ❑ A doula
- ❑ Some other support person (not including hospital staff)
  Please tell us:

  _____
- ❑ The hospital did not allow me to have any support people

If your baby is not alive, go to Page 20, Question CV10.

CV7. While in the hospital after your delivery, did any of the following things happen to you and your baby because of COVID-19? For each one, check **No** if it did not happen or **Yes** if it did.

	No	Yes
a. My baby was tested for COVID-19 in the hospital	❑	❑
b. I was separated from my baby in the hospital after delivery *to protect my baby from COVID-19*	❑	❑
c. I wore a mask when other people came into my hospital room	❑	❑
d. I wore a mask while I was alone caring for my baby in the hospital	❑	❑
e. I was given information about how to protect my baby from COVID-19 when I went home	❑	❑

If you did not breastfeed your new baby, go to Page 20, Question CV9.

CV8. Did the COVID-19 pandemic affect breastfeeding for you and your baby in any of the following ways? For each one, check **No** if it did not apply to you or **Yes** if it did.

	No	Yes
a. I was given information in the hospital about how to protect my baby from infection while breastfeeding	❑	❑
b. I wore a mask while breastfeeding in the hospital	❑	❑
c. I pumped breast milk in the hospital so someone else could feed my baby to avoid him or her getting infected	❑	❑
d. Due to COVID-19, I had trouble getting a visit from a lactation specialist while I was in the hospital	❑	❑

If your baby is not living with you, go to Question CV10.

CV9. In what ways did the COVID-19 pandemic affect your baby's routine health care? For each one, check **No** if the pandemic did not affect your baby's health care in this way or **Yes** if it did.

	No	Yes
a. My baby's well visits or checkups were canceled or delayed	❑	❑
b. My baby's well visits or checkups were changed from in-person visits to virtual appointments (video or telephone)	❑	❑
c. My baby's immunizations were postponed	❑	❑

CV10. During the COVID-19 pandemic, which types of *postpartum* appointments did you attend for *yourself*?

Check ONE answer

- ❑ In-person appointments only
- ❑ Virtual appointments (video or telephone) only
- ❑ Both, in-person and virtual appointments
- ❑ I did not have any postpartum appointments for myself

CV11. Did any of the following things happen to you *due to the COVID-19 pandemic*? For each one, check **No** if it did not happen or **Yes** if it did.

	No	Yes
a. I lost my job or had a cut in work hours or pay	❑	❑
b. Other members of my household lost their jobs or had a cut in work hours or pay	❑	❑
c. I had problems paying the rent, mortgage, or other bills	❑	❑
d. A member of my household or I received unemployment benefits	❑	❑
e. I had to move or relocate	❑	❑
f. I became homeless	❑	❑
g. The loss of childcare or school closures made it difficult to manage all my responsibilities	❑	❑
h. I had to spend more time than usual taking care of children or other family members	❑	❑
i. I worried whether our food would run out before I got money to buy more	❑	❑
j. I felt more anxious than usual	❑	❑
k. I felt more depressed than usual	❑	❑
l. My husband or partner and I had more verbal arguments or conflicts than usual	❑	❑
m. My husband or partner was more physically, sexually, or emotionally aggressive towards me	❑	❑

These last questions are about the COVID-19 vaccine.

VC1. During *your most recent pregnancy*, did a doctor, nurse, or other health care worker do any of the following things? For each one, check **No** if they did not do it or **Yes** if they did.

	No	Yes
a. Talked with me about the COVID-19 vaccine	❑	❑
b. Recommended that I get the COVID-19 vaccine	❑	❑
c. Offered to give me the COVID-19 vaccine	❑	❑
d. Referred me to another place to get the COVID-19 vaccine	❑	❑

VC2. During *your most recent pregnancy*, did you get at least one shot or dose of a COVID-19 vaccine?

❑ No
❑ Yes → **Go to Page 22, Question VC5**

Go to Question VC3

VC3. What were your reasons for not getting a COVID-19 vaccine during *your most recent pregnancy*?

Check ALL that apply

❑ I was not in one of the groups that could get the COVID-19 vaccine
❑ The vaccine was not available or ran out in my area
❑ I couldn't get an appointment or was placed on a waiting list
❑ I didn't have transportation to get to a vaccination site
❑ The staff at the vaccination site didn't want to give me the vaccine because I was pregnant
❑ I was concerned about possible side effects of the COVID-19 vaccine for my baby
❑ I was concerned about possible side effects of the COVID-19 vaccine for me
❑ I have an allergy or health condition that prevented me from getting the vaccine
❑ My doctor or healthcare provider told me not to get the vaccine
❑ I had gotten the COVID-19 vaccine before my pregnancy
❑ I already had COVID-19
❑ I didn't have enough information about the vaccine to feel comfortable getting it
❑ I was concerned that the COVID-19 vaccine was developed too fast
❑ I didn't think the vaccine would protect me against COVID-19
❑ I didn't think COVID-19 was a serious illness
❑ I didn't think I was at risk for COVID-19 infection
❑ I preferred using masks and other precautions instead
❑ I don't think vaccines are beneficial
❑ Other reason
Please tell us:

VC4. *Since your new baby was born*, have you gotten a COVID-19 vaccine?

❑ No
❑ Yes

VC5. Which ONE of these sources do you trust the *most* for receiving information about the COVID-19 vaccine?

Check ONE answer

❑ My doctor, nurse, or other health care provider
❑ My pharmacist
❑ Centers for Disease Control and Prevention (CDC) website or reports
❑ Food and Drug Administration (FDA) website or reports
❑ My state or local health department
❑ Family or friends
❑ News reports (such as television or radio news)
❑ Social media sites like Facebook
❑ Websites about health or other topics
Please tell us which sites:

❑ Some other source
Please tell us what source:

VC6. Which of the following describes your work or volunteer activities during *your most recent pregnancy*?

Check ALL that apply

❑ I worked or volunteered providing direct medical care to patients (such as being a doctor, nurse, dentist, therapist, home health care provider, or emergency responder)
❑ I worked or volunteered in a health care setting, but not providing direct medical care to patients (such as being administrative staff, cleaning staff, patient transport, or ward clerk)
❑ I worked or volunteered in a position where I regularly came into contact with the public (such as education, grocery or retail stores, public transportation, restaurants or food service, law enforcement, or postal or delivery services)
❑ I worked or volunteered in a position where I did not regularly come in contact with the public
❑ None of the above

Please use this space for any additional comments you would like to make about your experiences around the time of your pregnancy or the health of mothers and babies in South Dakota.

Thanks for answering our questions!

Your answers will help us work to keep mothers and babies in South Dakota healthy.

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