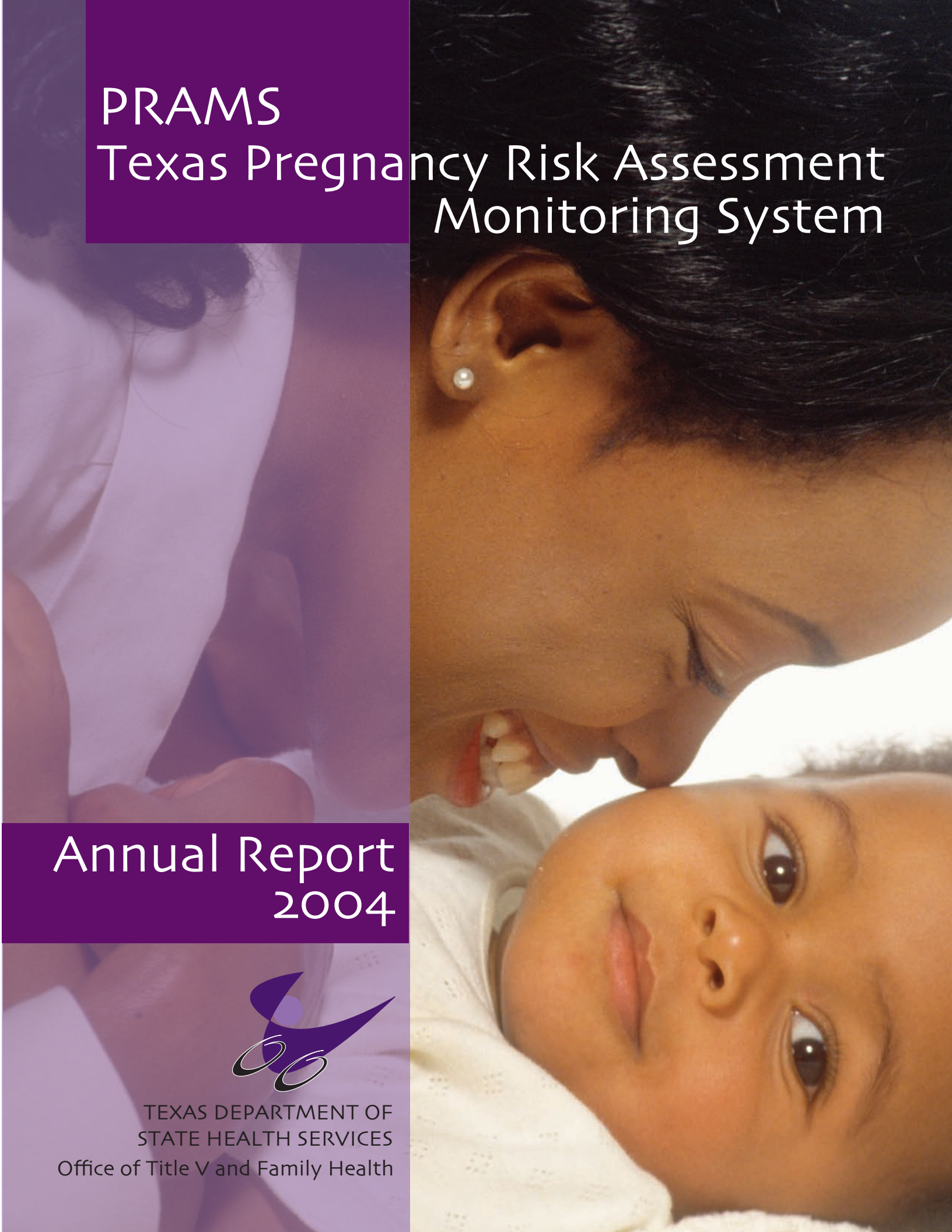


PRAMS Texas Pregnancy Risk Assessment Monitoring System

Annual Report
2004



TEXAS DEPARTMENT OF
STATE HEALTH SERVICES
Office of Title V and Family Health



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Texas Pregnancy Risk Assessment Monitoring System Annual Report 2004

For more information about PRAMS and additional results please visit
<http://www.dshs.state.tx.us/mch/>

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Glossary

Body Mass Index (BMI): A measure calculated by taking a person's weight (in kilograms) and dividing by their height squared (in meters). Adults are commonly placed in the categories below based on their BMI:

Underweight: less than 19.8 kg/m²

Normal weight: 19.9 to 24.9 kg/m²

Overweight: 25 to 29.9 kg/m²

Obese: 30 kg/m² or more

Low birthweight – Birth of an infant weighing less than 2500g (5lbs 8oz).

Perinatal – There are varying definitions of the perinatal period. In this report, it is defined as the time period spanning from just before pregnancy (~3-5 months) to after birth (~1 month).

Prenatal – The time period occurring or existing before birth.

Preterm Birth – Birth of an infant before 37 weeks of gestation.

Prevalence – The proportion of individuals in a defined population who have a particular attribute or disease.

Rate – The frequency of a particular occurrence during a specified time period in a defined population.

Risk factor – A characteristic or exposure associated with a particular outcome.

Executive Summary

The Pregnancy Risk Assessment Monitoring System (PRAMS), sponsored by the Centers for Disease Control and Prevention (CDC), is intended help reduce infant mortality and low birthweight by collecting useful information from mothers after delivery of a live infant. It is a population-based surveillance system designed to identify and monitor selected maternal experiences before, during, and after pregnancy. The PRAMS questionnaire addresses many topics, including prenatal care, obstetric history, use of alcohol and cigarettes, exposure to secondhand smoke, knowledge of folic acid, multivitamin use, access to care, physical abuse, pregnancy intention, and breastfeeding. Data from PRAMS have been used to increase understanding of maternal behaviors and experiences and their relationships with adverse pregnancy outcomes. Additionally, PRAMS data help identify high-risk groups and are used in planning and assessing perinatal health programs. This is a summary of some of the important indicators of maternal and infant health in Texas.

Obesity and Diabetes

- Approximately 20% of women were obese just before they became pregnant.
- Almost 10% of women developed diabetes during pregnancy (gestational diabetes).

Unintended Pregnancy

- Almost 50% of women had an unintended pregnancy.
- Women who had an unintended pregnancy were more likely to have delayed prenatal care (after the first trimester).

Prenatal Care

- Almost three quarters of women received prenatal care in the first trimester.
- Among women who did not get prenatal care as early as they wanted, the most common barriers were “not enough money or insurance,” “didn’t have Medicaid card,” and “couldn’t get an appointment.”

Prenatal Vitamins, Multivitamins, and Folic Acid

- Over half of the women did NOT take a prenatal vitamin or multivitamin in the month before pregnancy.
- Just over half of women aged 19 years or less knew folic acid prevented birth defects.

Smoking

- Approximately 15% of women smoked three months before they became pregnant.
- The percent of low birthweight infants was double among women who smoked compared to women who did not.

Alcohol

- Almost half of women reported drinking during the three months before pregnancy.
- Almost 10% reported drinking during the last three months of pregnancy.

Abuse

- Almost 10% of women were physically hurt by a husband, partner, ex- husband or ex- partner in the 12 months before pregnancy or during pregnancy.
- The prevalence of physical abuse was approximately five times higher among women who were not married.

Breastfeeding

- Almost three quarters of women initiated breastfeeding after their most recent pregnancy.
- Almost half of women breastfed at least nine weeks.

Sleep Position

- Approximately half of the women most often placed their infants on their backs to sleep.

PRAMS Background

The experiences and behaviors of women before, during and after pregnancy can have important implications for their health and the health of their infants. There are a number of factors, such as unhealthy behaviors and poor access to health care, which can lead to adverse pregnancy outcomes, including infant morbidity, and/or mortality.

The Pregnancy Risk Assessment Monitoring System (PRAMS), sponsored by the Centers for Disease Control and Prevention (CDC), is intended to help reduce infant mortality and low birthweight by collecting useful information from mothers after delivery of a live infant. It is a population-based surveillance system designed to identify and monitor selected maternal experiences before, during, and after pregnancy. In Texas, PRAMS is conducted by the Department of State Health Services (DSHS). Texas initiated PRAMS data collection in May 2002, and currently participates along with 37 other states, New York City, and the Yankton Sioux Tribe of South Dakota.

PRAMS enhances data from birth certificates by providing more in-depth information and including information that is not available elsewhere. The PRAMS questionnaire addresses many topics, including prenatal care, obstetric history, use of alcohol and cigarettes, exposure to secondhand smoke, knowledge of folic acid, multivitamin use, access to care, HIV testing, physical abuse, pregnancy intention, and breastfeeding.

Data from PRAMS have been used to increase understanding of maternal behaviors and experiences and their relationship with adverse pregnancy outcomes. Additionally, PRAMS data help identify high-risk groups and are used in planning and assessing perinatal health programs. This report highlights some of the important indicators of maternal and infant health in Texas.



Actual quotes from women who participated in PRAMS are displayed throughout this report.

“Thank you for doing important research for the health of mothers and babies in Texas.”

PRAMS Methodology

Each year, approximately 3,600 women in Texas are randomly selected from birth certificates of live births to participate in PRAMS. The sample consists of biological mothers of infants aged 60 to 180 days and is stratified by race/ethnicity (African-American, Hispanic, white/other) and birthweight (less than 2500 grams, and 2500 grams or more). Because PRAMS data are population-based, findings from data analyses can be generalized to an entire state's population of women having a live birth.

Randomly-selected mothers are first contacted by mail. If there is no response after three survey mailings, the mothers are then contacted to complete the survey by phone. Staff also attempt to obtain completed interviews with mothers of deceased infants. The majority of responses are obtained through the mailed survey.

The PRAMS survey is 84 questions and consists of core questions that are asked in all participating states and several additional questions that are selected by each state. All survey data are sent to the CDC for cleaning and weighting. The data are weighted to represent all live births in Texas and are adjusted for sampling probabilities, nonresponse, and noncoverage. Analysis of data is conducted using SUDAAN statistical software to account for the complex sampling.

Data Limitations

In 2004, 1,800 women participated in PRAMS with an overall weighted response rate of 65%. Because characteristics of women who respond might differ from those of women who do not, the reported estimates are potentially biased and might not be representative of all mothers of live births in Texas. In addition, data from PRAMS are self-reported and some mothers might not accurately recall events or certain behaviors might be over- or underreported.

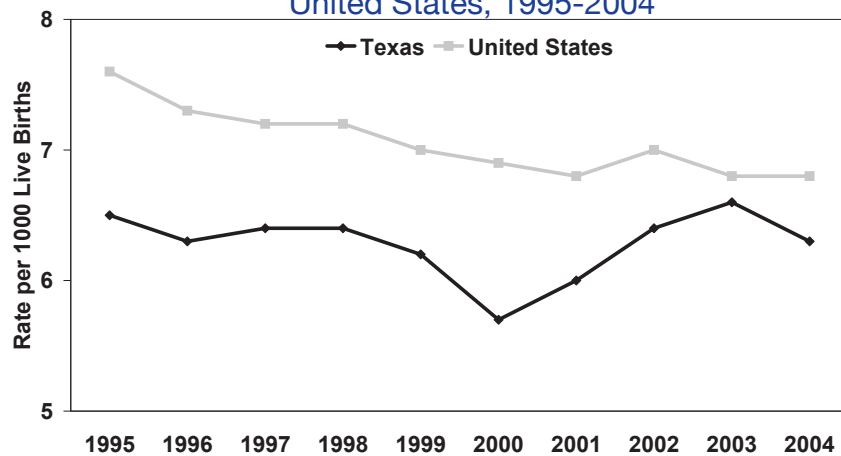
There are too few women of race/ethnicities other than Black/African-American and Hispanic to sample separately and were combined with the white race category. Therefore, women of other race/ethnicities cannot be examined separately.

Maternal and Child Health in Texas

Infant Mortality

In Texas, there are approximately 380,000 births per year. The mortality rate of infants aged less than one year in 2004 was 6.3 per 1000 births, which was lower than the national rate (6.8/1000 births). However, similar to the national rate, there was an increase in the infant mortality rate after 2000 (Figure 1). In 2000, the infant mortality rate in Texas was at its lowest point of 5.6 per 1000 births and increased to 6.5 per 1000 in 2003. It is unclear what accounts for the recent increase [1].

Figure 1. Infant Mortality Rate in Texas and the United States, 1995-2004*

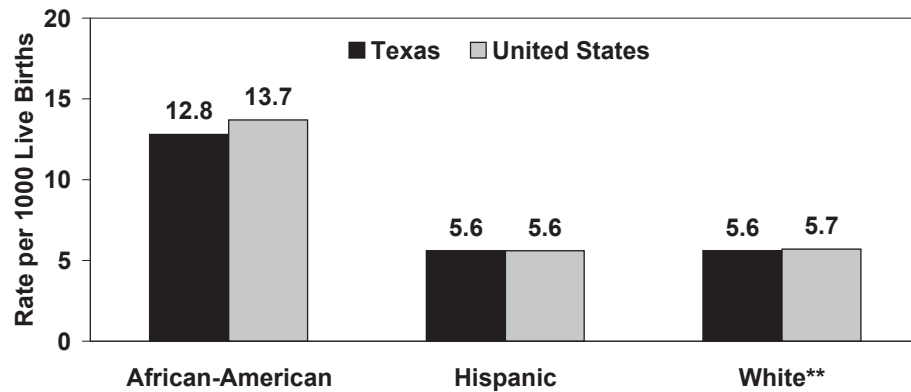


*Centers for Disease Control and Prevention. National Center for Health Statistics. Vital Stats.

http://www.cdc.gov/nchs/datawh/vitalstats/vitalstats_perinatal1.htm.

There is also a substantial disparity in mortality rates by race/ethnicity. The mortality rates for white non-Hispanic infants and Hispanic infants in 2004 were both 5.6 per 1000 live births. The rate among African-American infants was more than double at 12.8 per 1000 (Figure 2).

Figure 2. Infant Mortality Rate of Infants Less Than 1 Year of Age by Race/Ethnicity – Texas and the United States,*2004



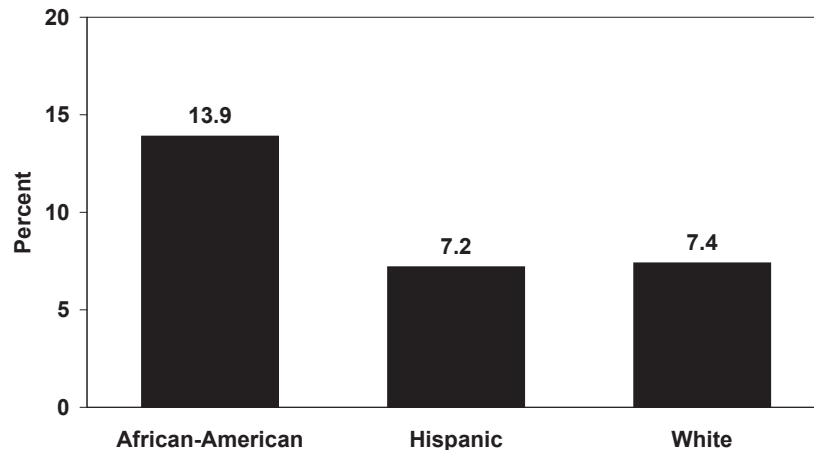
*Preliminary 2004 data (http://www.cdc.gov/nchs/data/nvsr/nvsr54/nvsr54_19.pdf)

**Vital statistics data and does not include “other” race/ethnicities

Low Birthweight

Low birthweight is one of the strongest risk factors for infant mortality. Infants born less than 2500 grams are at a *25 times higher risk of death* compared to infants born at 2500 grams or more [1]. Low birthweight is also associated with a number of long-term disabilities, including cerebral palsy [2], autism [3, 4], mental retardation [5], and vision [6] and hearing impairments [7]. In addition, there are substantial financial costs associated with low birthweight. The cost of hospitalization for delivery of a low birthweight infant has been reported to be approximately three times higher than an infant of adequate birthweight [8]. In 2004, there were over 30,000 infants born in Texas with low birthweight. By race/ethnicity, the percent of low birthweight infants mirrors the rate of infant mortality (Figure 3).

Figure 3. Low Birthweight (<2500 grams) Births by Race/Ethnicity–Texas, 2004*



* <http://soupfin.tdh.state.tx.us/birth.htm>

References

1. MacDorman, M.F., et al., *Explaining the 2001-02 infant mortality increase: data from the linked birth/infant death data set*. Natl Vital Stat Rep, 2005. 53(12): p. 1-22.
2. Ellenberg, J.H. and K.B. Nelson, *Birth weight and gestational age in children with cerebral palsy or seizure disorders*. Am J Dis Child, 1979. 133(10): p. 1044-8.
3. Maimburg, R.D. and M. Vaeth, *Perinatal risk factors and infantile autism*. Acta Psychiatr Scand, 2006. 114(4): p. 257-64.
4. Larsson, H.J., et al., *Risk factors for autism: perinatal factors, parental psychiatric history, and socioeconomic status*. Am J Epidemiol, 2005. 161(10): p. 916-25; discussion 926-8.
5. Mervis, C.A., et al., *Low birthweight and the risk for mental retardation later in childhood*. Paediatr Perinat Epidemiol, 1995. 9(4): p. 455-68.
6. Gallo, J.E. and G. Lennerstrand, *A population-based study of ocular abnormalities in premature children aged 5 to 10 years*. Am J Ophthalmol, 1991. 111(5): p. 539-47.
7. Bergman, I., et al., *Cause of hearing loss in the high-risk premature infant*. J Pediatr, 1985. 106(1): p. 95-101.
8. Lewit, E.M., et al., *The direct cost of low birth weight*. Future Child, 1995. 5(1): p. 35-56.

Obesity and Diabetes

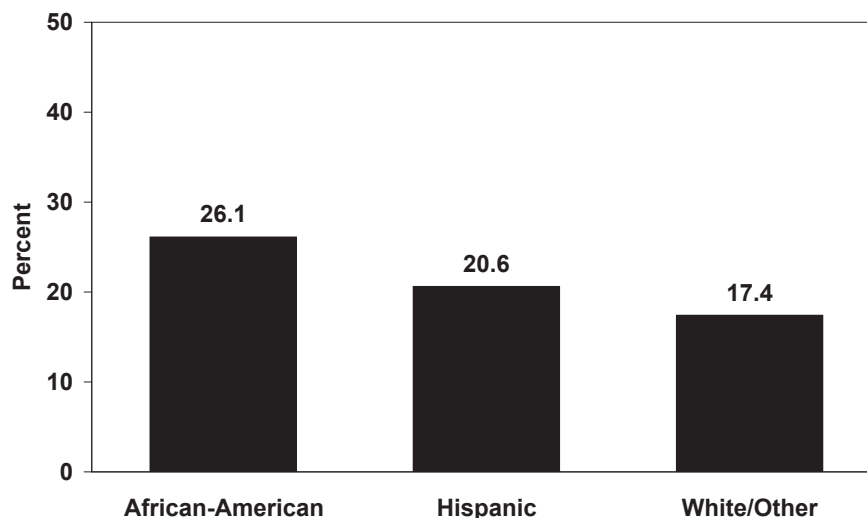
Pre-Pregnancy Obesity

Numerous complications are associated with obesity, including adverse pregnancy outcomes that impact both maternal and infant health. Women who are obese [Body Mass Index (BMI) of 30 kg/m² or more] when becoming pregnant are at a greater risk of pregnancy complications (e.g. hypertension, gestational diabetes) [1], labor and delivery complications (e.g. pre-eclampsia) [2], and having a cesarean section delivery [3]. Infants of women who are obese are at a greater risk of birth defects [4, 5], fetal and neonatal death [6], and being large for gestational age (macrosomia) [1, 2].

Percent of women who were obese (BMI ≥ 30) just before they became pregnant: 20%

- ◆ In PRAMS, the highest prevalence of pre-pregnancy obesity was among African-American women, followed by Hispanic and white/other women (Figure 4).

Figure 4. Pre-Pregnancy Obesity (BMI ≥ 30kg/m²) by Race/Ethnicity



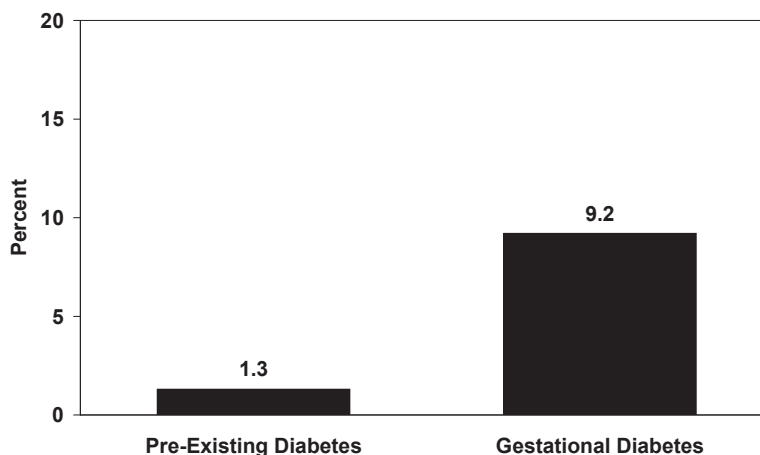
“...Doctors should put more emphasis on doing some form of daily exercise such as walking or swimming.”

Diabetes

Diabetes is one of the major complications of obesity. For women who have diabetes or develop diabetes during pregnancy, good control of blood sugar is essential for a healthy pregnancy. Women who have poorly controlled diabetes are at a much higher risk of having a baby with birth defects, having a miscarriage or stillbirth, and macrosomia [7-10]. In addition, women who develop diabetes during their pregnancy (gestational diabetes) are more likely to develop gestational diabetes in future pregnancies and are at greater risk of developing type II diabetes in the future [11, 12].

- ◆ The prevalence of women who reported having diabetes prior to pregnancy was 1.3%. Nine percent of women reported having diabetes that started during their pregnancy (Figure 5).

Figure 5. Pre-Existing Diabetes and Gestational Diabetes



References

1. Baeten, J.M., E.A. Bukusi, and M. Lambe, *Pregnancy complications and outcomes among overweight and obese nulliparous women*. Am J Public Health, 2001. 91(3): p. 436-40.
2. Cedergren, M.I., *Maternal morbid obesity and the risk of adverse pregnancy outcome*. Obstet Gynecol, 2004. 103(2): p. 219-24.
3. Chu, S.Y., et al., *Maternal obesity and risk of cesarean delivery: a meta-analysis*. Obes Rev, 2007. 8(5): p. 385-94.

4. Watkins, M.L., et al., *Maternal obesity and risk for birth defects*. Pediatrics, 2003. 111(5 Part 2): p. 1152-8.
5. Waller, D.K., et al., *Prepregnancy obesity as a risk factor for structural birth defects*. Arch Pediatr Adolesc Med, 2007. 161(8): p. 745-50.
6. Cnattingius, S., et al., *Prepregnancy weight and the risk of adverse pregnancy outcomes*. N Engl J Med, 1998. 338(3): p. 147-52.
7. Clausen, T.D., et al., *Poor pregnancy outcome in women with type 2 diabetes*. Diabetes Care, 2005. 28(2): p. 323-8.
8. Macintosh, M.C., et al., *Perinatal mortality and congenital anomalies in babies of women with type 1 or type 2 diabetes in England, Wales, and Northern Ireland: population based study*. Bmj, 2006. 333(7560): p. 177.
9. Towner, D., et al., *Congenital malformations in pregnancies complicated by NIDDM*. Diabetes Care, 1995. 18(11): p. 1446-51.
10. O'Sullivan, J.B., *Gestational diabetes. Unsuspected, asymptomatic diabetes in pregnancy*. N Engl J Med, 1961. 264: p. 1082-5.
11. O'Sullivan, J.B., *Diabetes mellitus after GDM*. Diabetes, 1991. 40 Suppl 2: p. 131-5.
12. Kim, C., D.K. Berger, and S. Chamany, *Recurrence of gestational diabetes mellitus: a systematic review*. Diabetes Care, 2007. 30(5): p. 1314-9.

Pregnancy Intention

Almost 50% of pregnancies in the United States are unintended [1], meaning the pregnancy was mistimed or unwanted at the time of conception. Unintended pregnancies are associated with a number of behaviors that can lead to adverse pregnancy outcomes, such as smoking, alcohol intake, and delayed prenatal care.

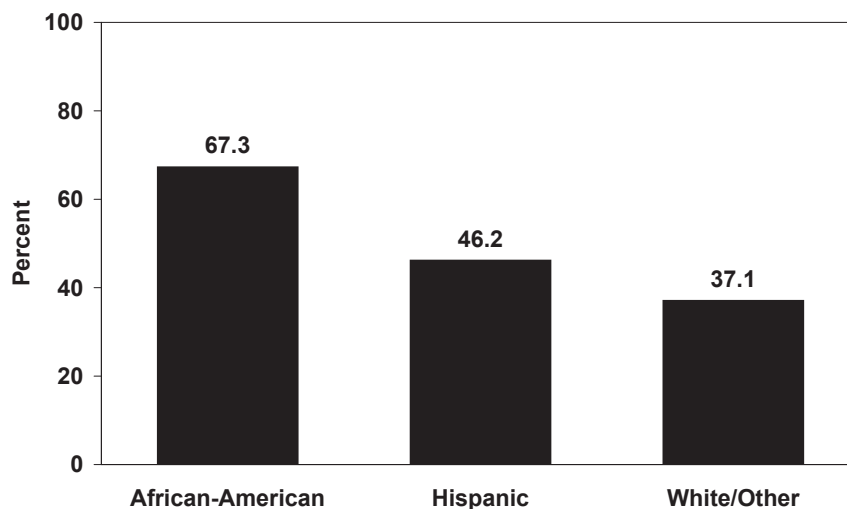
"I think if a women is thinking of becoming pregnant, she needs to prepare herself mentally and physically for the changes ahead..."

- ◆ In Texas, the prevalence of unintended pregnancy among women responding to the survey is 45%, which is similar to the national prevalence of 49%. Among women who had an unintended pregnancy, 34% of the pregnancies were mistimed and 11% were unwanted.

"We knew it could happen but we didn't think it would."

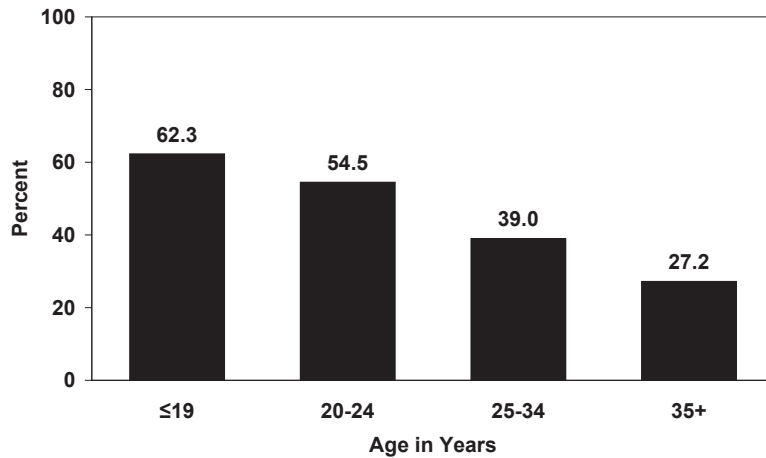
- ◆ There were significant differences in the prevalence of unintended pregnancies by race/ethnicity and age. The highest prevalence of unintended pregnancies was among African-American women, followed by Hispanic and white/other women (Figure 6).

Figure 6. Unintended Pregnancies by Race/Ethnicity



- ◆ The prevalence of unintended pregnancy is much higher among younger age groups. Over 60% of pregnancies among women aged 19 years and younger were unintended compared to 27% among women aged 35 years or older (Figure 7).

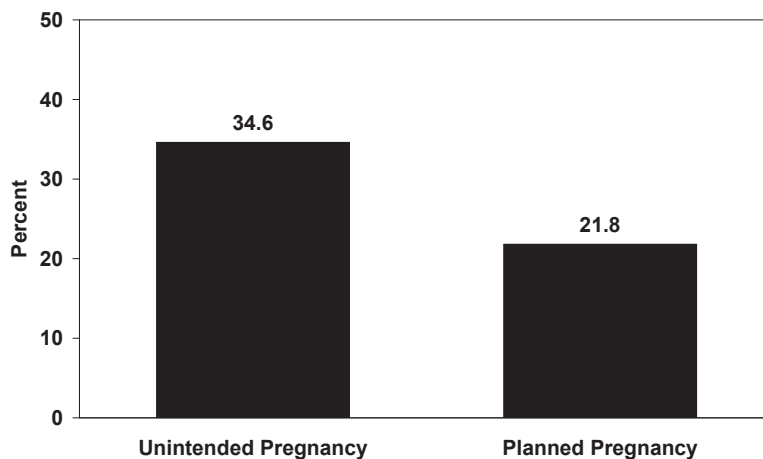
Figure 7. Unintended Pregnancies by Age



Women with an unintended pregnancy are more likely to have delayed prenatal care (after first trimester). This problem can be further compounded if a woman did not have health insurance when she became pregnant.

- ◆ In Texas, the prevalence of women with delayed prenatal care (after first trimester) was approximately 12% higher among women who had an unintended pregnancy (Figure 8).

Figure 8. Delayed Prenatal Care (After First Trimester) by Pregnancy Intention



Percent of unintended pregnancies among women who did not have health insurance or Medicaid just before they became pregnant: 50%



“Due to my age and the fact that I was in high school at the time I was pregnant, I did not seek medical attention for fear of my parents and no means of money, I had no job and no time to go see a doctor.”

References

1. Finer, L.B. and S.K. Henshaw, *Disparities in rates of unintended pregnancy in the United States, 1994 and 2001*. *Perspect Sex Reprod Health*, 2006. 38(2): p. 90-6.

Prenatal Health

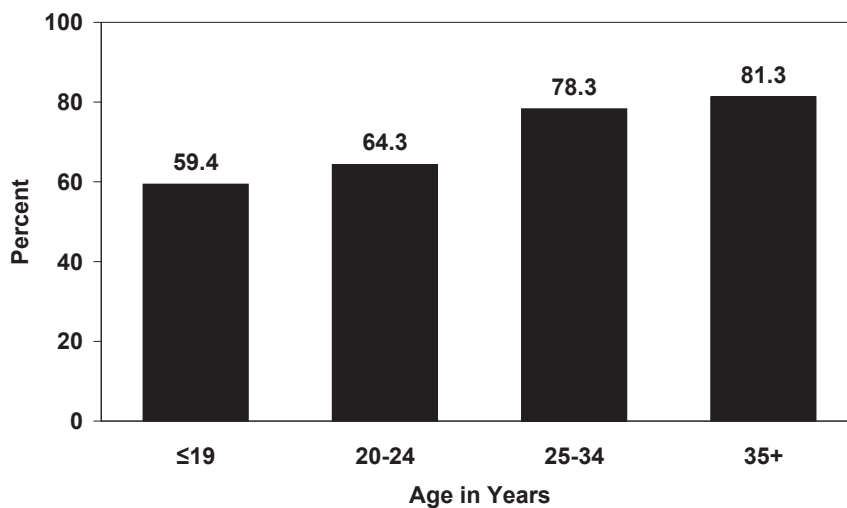
Prenatal Care

Prenatal care plays an important role in a healthy pregnancy. Prenatal care visits provide health care professionals the opportunity to assess maternal health, monitor the pregnancy, promote and reinforce healthy behaviors, and observe changes that could threaten the health of the mother or child. Entry into prenatal care after the first trimester has been found to be associated with a number of adverse pregnancy outcomes, including prematurity [1], low birthweight [2, 3], and infant [3] and maternal mortality [4].

Percent of women who received prenatal care in the first trimester: 73%

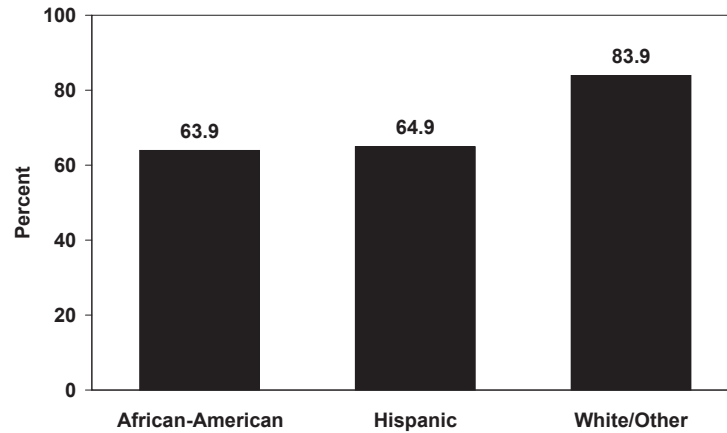
- ◆ There is a significant difference in the prevalence of first trimester prenatal care by age. The prevalence of women aged 19 years or younger receiving prenatal care in the first trimester was approximately 20% lower than women aged 35 years and older (Figure 9).

Figure 9. First Trimester Prenatal Care by Age



- ◆ There were also significant differences by race/ethnicity. The prevalence of women receiving prenatal care in the first trimester was approximately 20% higher among women who were of white/other race/ethnicity compared to African-American and Hispanic women (Figure 10).

Figure 10. First Trimester Prenatal Care by Race/Ethnicity



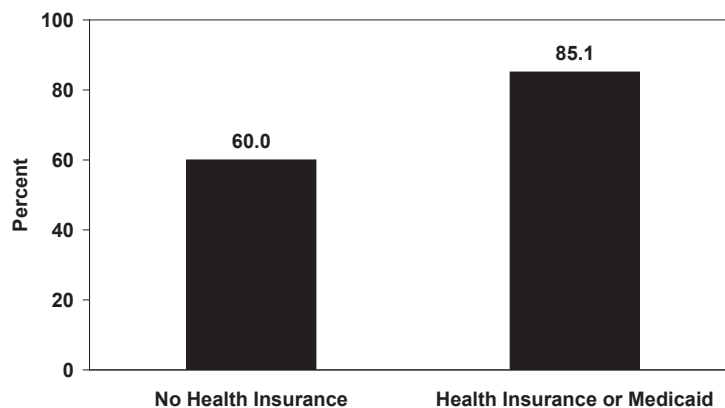
Barriers to Prenatal Care

There are a number of barriers that might prevent or delay women from receiving prenatal care as early as they want. Lack of money or health insurance is often cited as a reason for delaying prenatal care.

Percent of women without health insurance or Medicaid just before they became pregnant: 51%

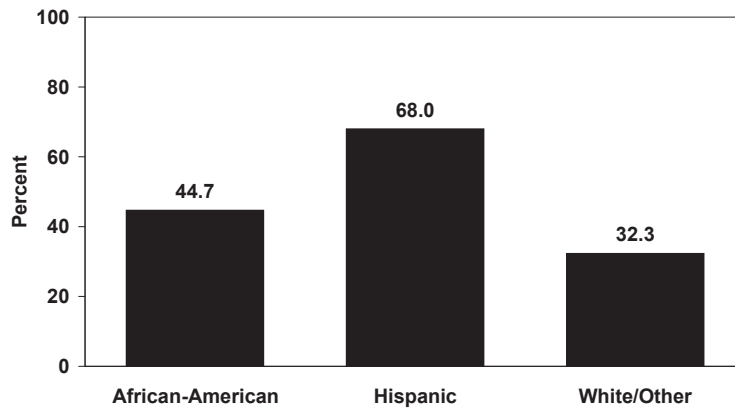
- ◆ The prevalence of women who received prenatal care in the first trimester was significantly higher among women who had health insurance or Medicaid before they became pregnant (Figure 11).

Figure 11. First Trimester Prenatal Care by Insurance Status Just Before Pregnancy



- ◆ There were significant differences in the prevalence of women who were uninsured just before they became pregnant by race/ethnicity. Almost 70% of Hispanic women reported not having health insurance or Medicaid just before they became pregnant. This is more than double the percent of women of white/other race/ethnicities. Approximately 45% of African-American women were uninsured just before they became pregnant (Figure 12).

Figure 12. Lack of Health Insurance or Medicaid Just Before Pregnancy by Race/Ethnicity



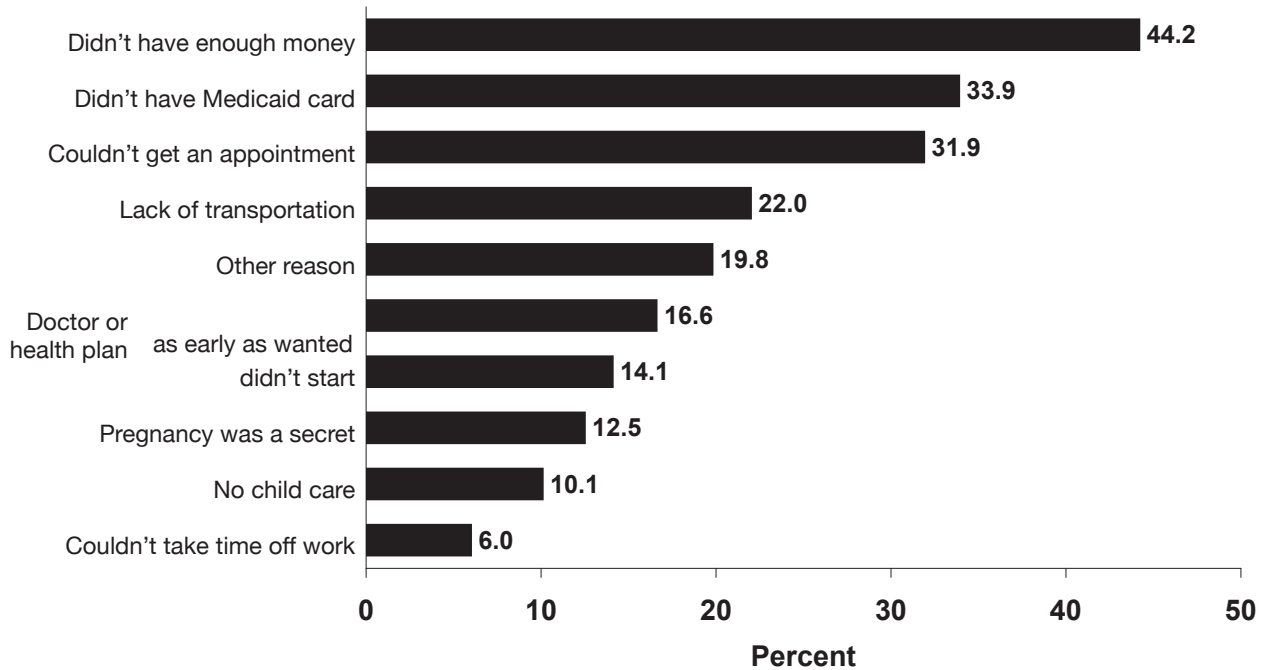
Percent of women who did NOT receive prenatal care as early as they wanted: 23%

- ◆ Among women who did not get prenatal care as early as they wanted, the most common barriers were “not enough money or insurance,” “didn’t have Medicaid card,” and “couldn’t get an appointment.” Women could select more than one answer (Figure 13).

“I traveled 90 miles for adequate care for myself and my baby.”



Figure 13. Barriers to Prenatal Care Among Women Who Did Not Get Care as Early as They Wanted*



*Women could select more than one answer.

- ◆ Not knowing the importance of early prenatal care is another reason for late entry into prenatal care (after first trimester). Among the 27% of women who did not receive prenatal care in the first trimester, 50% reported that they received prenatal care as early as they wanted.

Prenatal Vitamins, Multivitamins, and Folic Acid

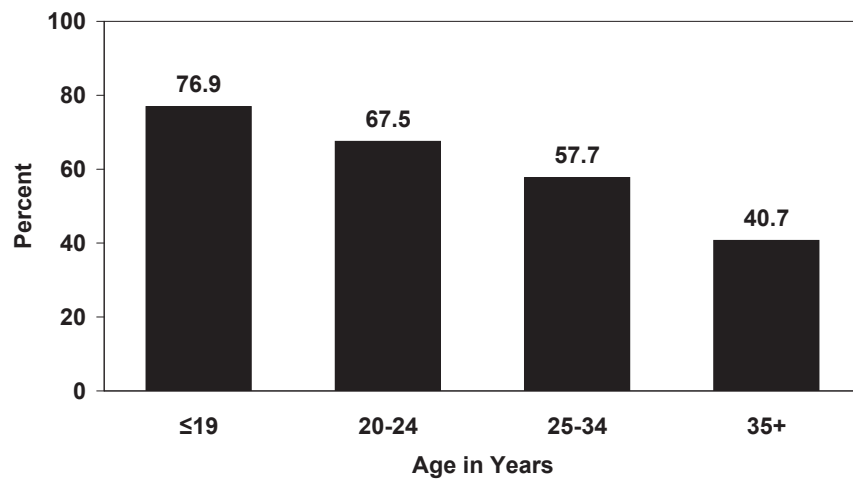
Getting enough folic acid (a B vitamin) early in pregnancy can help prevent certain major birth defects [5], but it can be difficult to get the recommended daily amount of folic acid through diet alone. Therefore, the CDC recommends that all women of childbearing age take a prenatal vitamin or folic-acid containing vitamin everyday [6]. The critical period of fetal development for many birth defects is during the first few weeks of pregnancy. Because women might not realize they are pregnant until after this critical period, it is important that women take a prenatal vitamin or a folic acid-containing multivitamin before they become pregnant.

“ My pregnancy was planned so I was on prenatal vitamins and eating a healthy diet.”

Percent of women who did NOT take a prenatal vitamin or multivitamin in the month before pregnancy: 61%

- ◆ The largest difference in prevalence of prenatal vitamin or multivitamin use in the month before pregnancy is by age. Seventy-seven percent of teenaged mothers did NOT take a prenatal or multivitamin in the month before pregnancy compared to 41% among women aged 35 years and older.

Figure 14. Lack of Multivitamin or Prenatal Vitamin Use in the Month Before Pregnancy by Age

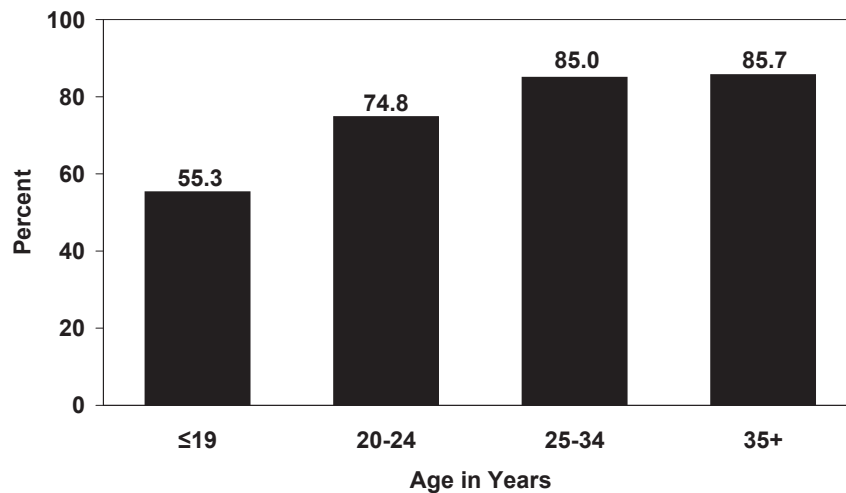


“ I wished I could have afforded to take vitamins.”

One explanation for the disparity in the number of women who do not take a multivitamin or prenatal vitamin is a lack of knowledge of the benefits of folic acid among younger age groups. In 2001, a survey of women in Texas found that only 17% of women aged 25 years and younger knew that folic acid prevented birth defects [7]. Although knowledge of folic acid is higher in PRAMS because it is a sample of women with a recent pregnancy, the disparity in knowledge by age is still evident.

- ◆ Only 55% of teenage mothers knew folic acid prevented birth defects compared to 85% among women aged 25 years and older (Figure 15).

Figure 15. Knowledge that Folic Acid Prevents Birth Defects by Age



References

1. Showstack, J.A., P.P. Budetti, and D. Minkler, *Factors associated with birthweight: an exploration of the roles of prenatal care and length of gestation*. Am J Public Health, 1984. 74(9): p. 1003-8.
2. Fisher, E.S., J.P. LoGerfo, and J.R. Daling, *Prenatal care and pregnancy outcomes during the recession: the Washington State experience*. Am J Public Health, 1985. 75(8): p. 866-9.
3. Gortmaker, S.L., *The effects of prenatal care upon the health of the newborn*. Am J Public Health, 1979. 69(7): p. 653-60.
4. Koonin, L.M., et al., *Maternal mortality surveillance, United States, 1979-1986*. MMWR CDC Surveill Summ, 1991. 40(2): p. 1-13.
5. CDC. *Folic Acid Basics*. 2007 [cited 10/03/2007]; Available from: <http://www.cdc.gov/ncbddd/folicacid/basics.htm>.
6. CDC. *Folic Acid PHS Recommendations*. 2007 [cited 10/03/2007]; Available from: http://www.cdc.gov/ncbddd/folicacid/health_recomm.htm.
7. Canfield, M.A., et al., *Folic acid awareness and supplementation among Texas women of childbearing age*. Prev Med, 2006. 43(1): p. 27-30.

Tobacco and Alcohol

Smoking

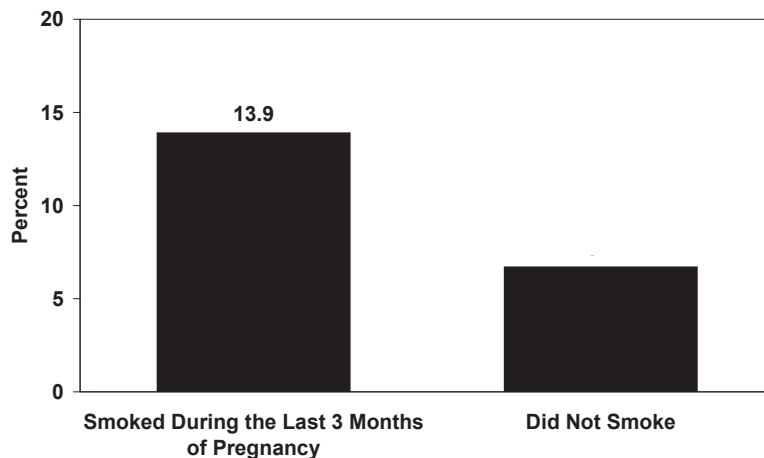
Smoking during pregnancy is associated with numerous adverse pregnancy outcomes, including an increased risk of spontaneous abortion, ectopic pregnancy, and premature rupture of membranes [1]. Infants of mothers who smoke are at a greater risk for preterm birth, low birthweight, and a number of birth defects [1].

"If I would not have been smoking during my pregnancy my baby would have been more healthier."

Percent of women who smoked three months before they became pregnant: 16%

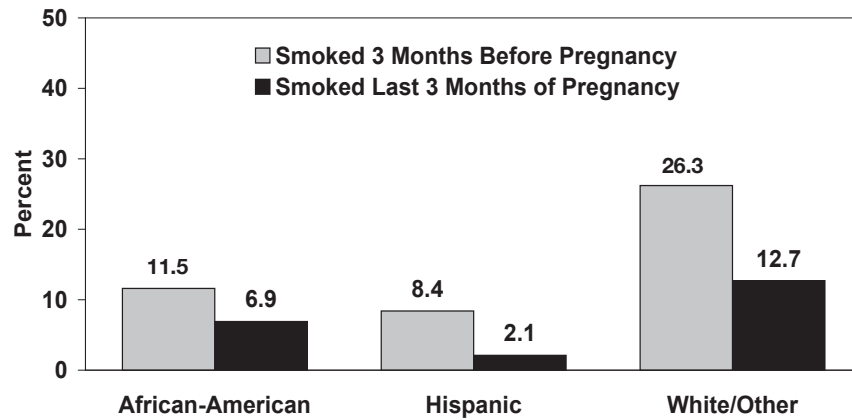
- ◆ The percent of women who smoked and had a low birthweight infant was approximately double that of women who did not smoke (Figure 16).

Figure 16. Low Birthweight Births by Smoking Status



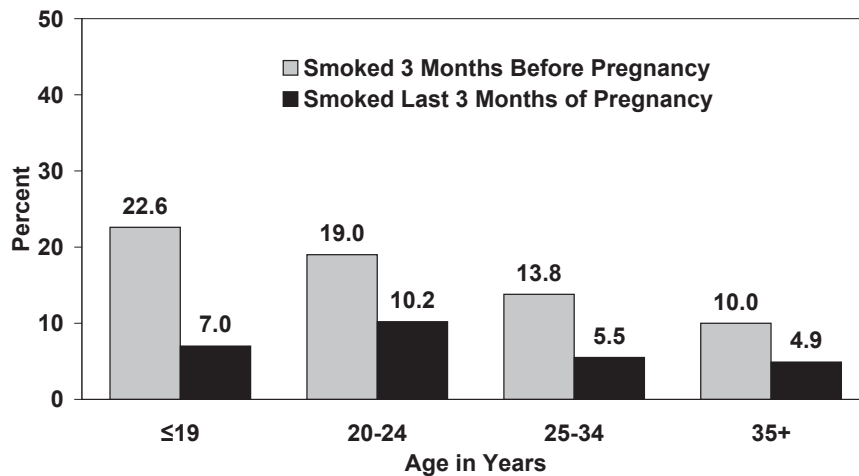
- ◆ The prevalence of smoking before and during pregnancy differs significantly by race/ethnicity. Hispanic women had the lowest prevalence of smoking while the highest prevalence was among white/other women (Figure 17).

Figure 17. Smoking Before and During Pregnancy by Race/Ethnicity



- ◆ The prevalence of smoking before pregnancy decreases with older age. Compared to smoking before pregnancy, there is a substantially lower prevalence of smoking during the last three months of pregnancy, which is not statistically different by age (Figure 18).

Figure 18. Smoking Before and During Pregnancy by Age

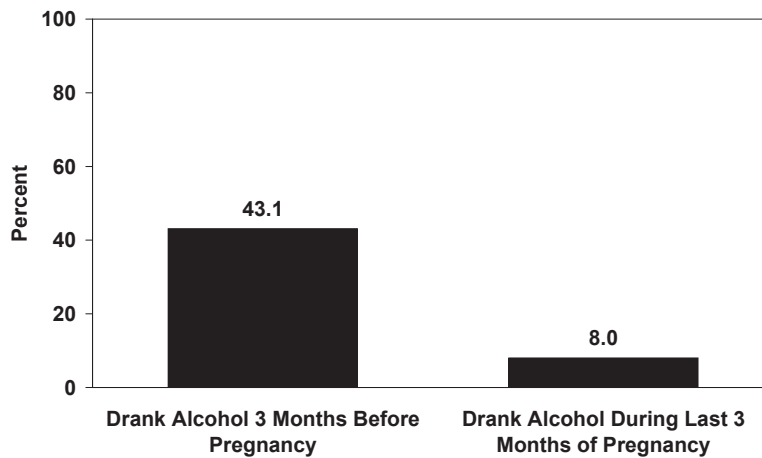


Alcohol

Alcohol consumption during pregnancy is associated with fetal alcohol spectrum disorders (FASD) [2] and certain birth defects [3]. Because women might not know they are pregnant for several weeks, the CDC recommends that women who are sexually active and do not use birth control abstain from drinking [2]. Additionally, because there is no known safe amount of alcohol to drink during pregnancy, it is recommended that all pregnant women abstain from drinking [2].

- ◆ Approximately 43% of women reported drinking during the three months before pregnancy and 8% reported drinking during the last three months of pregnancy (Figure 19).

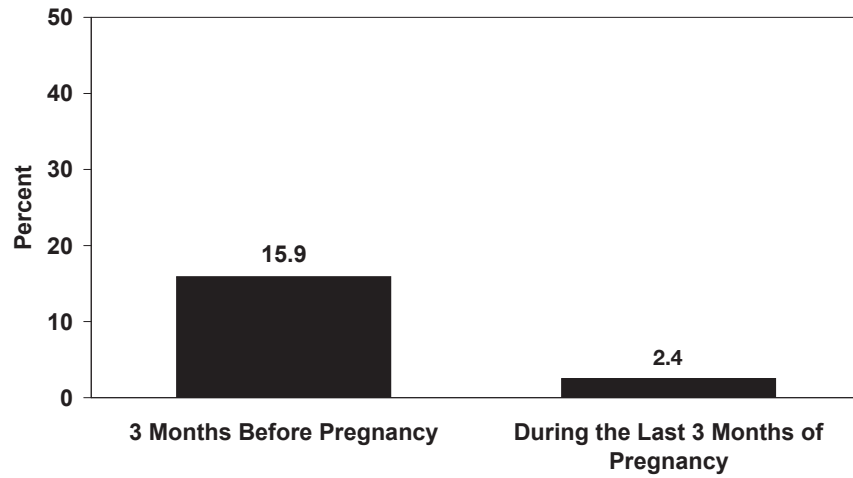
Figure 19. Alcohol Intake Before and During Pregnancy



Women who binge drink (defined as five or more drinks on the same occasion) are more likely to have an unintended pregnancy and are more likely to drink during pregnancy [4].

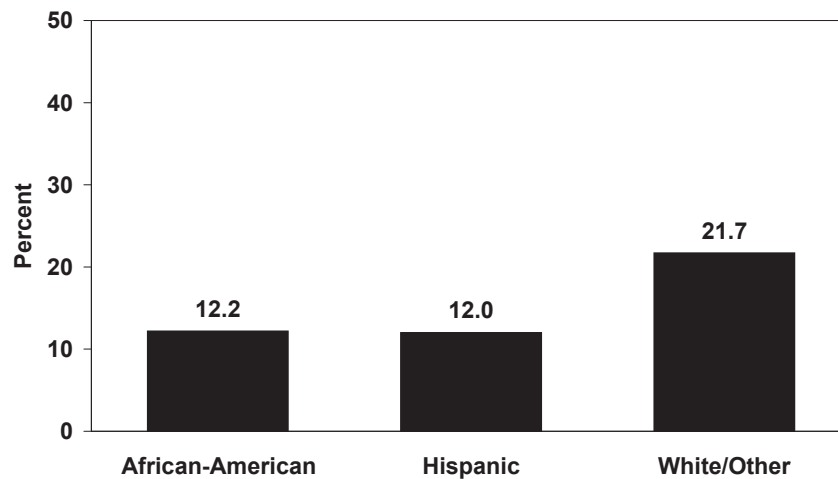
- ◆ Approximately 16% of women reported binge drinking during the three months before pregnancy. Almost 3% reported binge drinking during the last three months of pregnancy (Figure 20).

Figure 20. Binge Drinking (5+ Drinks on One Occasion) Before and During Pregnancy



◆ The highest prevalence of binge drinking before pregnancy was among white/other women (Figure 21).

Figure 21. Binge Drinking Three Months Before Pregnancy by Race/Ethnicity



References

1. CDC. *Tobacco Use and Pregnancy*. 2007 [cited 10/03/2007]; Available from: <http://www.cdc.gov/reproductivehealth/TobaccoUsePregnancy/index.htm>.
2. CDC. *Fetal Alcohol Spectrum Disorders*. 2007 [cited 10/15/2007]; Available from: <http://www.cdc.gov/ncbddd/fas/fasask.htm>.
3. Ernhart, C.B., et al., *Alcohol teratogenicity in the human: a detailed assessment of specificity, critical period, and threshold*. Am J Obstet Gynecol, 1987. 156(1): p. 33-9.
4. Naimi, T.S., et al., *Binge drinking in the preconception period and the risk of unintended pregnancy: implications for women and their children*. Pediatrics, 2003. 111(5 Part 2): p. 1136-41.

Abuse



Nationwide, approximately 324,000 pregnant women are affected by intimate partner violence each year [1]. This includes physical, sexual, psychological, and emotional abuse. In 2005, it was reported that homicide was the leading cause of injury death among pregnant and postpartum women [2]. Women younger than 20, African-American, and with late or no prenatal care were found to be at highest risk. In addition to physical and emotional injuries to the mother,

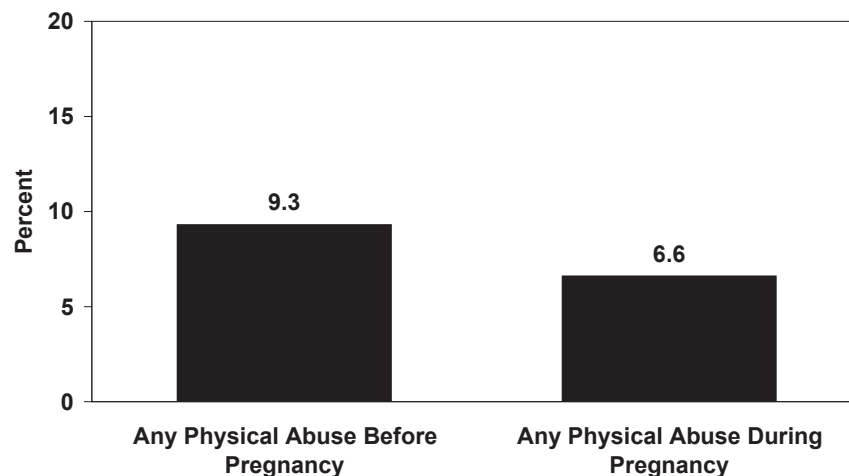
there are a number of adverse consequences that can affect the developing fetus, including preterm birth, low birthweight and fetal loss.

The PRAMS survey asks mothers specifically about physical violence before and during their pregnancy.

“I wish someone would have talked with me about marital problems and violence in the home. Not everyone is as happy as they pretend to be.”

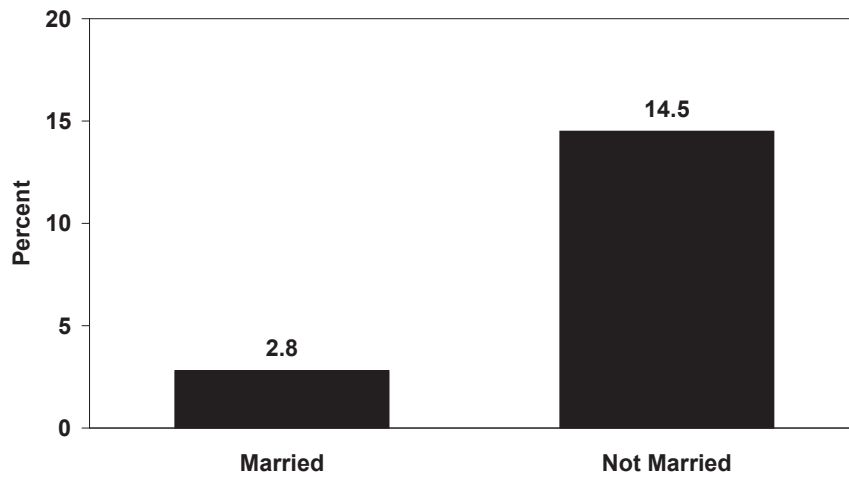
- ◆ In Texas, 9% of women reported being physically hurt in the 12 months before pregnancy and 7% during pregnancy (Figure 22).

Figure 22. Any Physical Abuse Before and During Pregnancy Among Women Aged 18 Years and Older



- ◆ Women who were not married had a significantly higher prevalence of physical abuse during pregnancy (Figure 23).

Figure 23. Any Physical Abuse During Pregnancy Among Women Aged 18 Years and Older by Marital Status



References

1. Gazmararian, J.A., et al., *Prevalence of violence against pregnant women*. *Jama*, 1996. 275(24): p. 1915-20.
2. Chang, J., et al., *Homicide: a leading cause of injury deaths among pregnant and post-partum women in the United States, 1991-1999*. *Am J Public Health*, 2005. 95(3): p. 471-7.

Infant Health

Breastfeeding

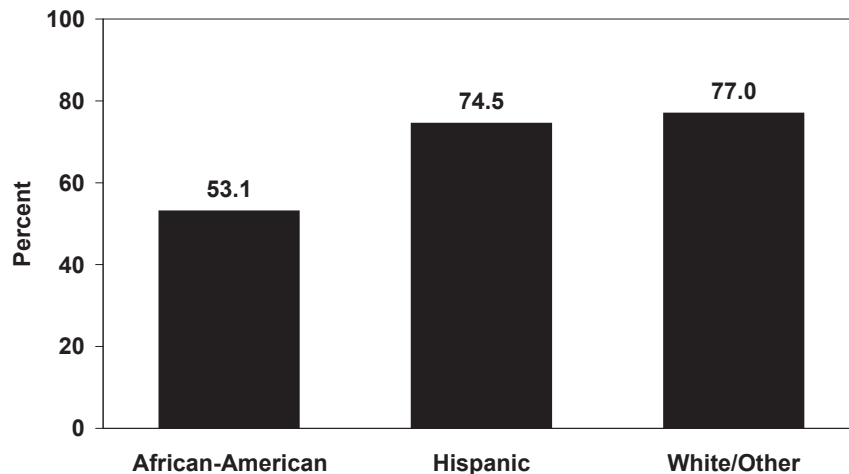
Breastfeeding provides substantial benefits to both mother and child. Infants receive complete nutrition from breast milk as well as antibodies that help protect against infection. Benefits to mothers include quicker pregnancy weight reduction, less bleeding after delivery, and possible reduced risks of breast and ovarian cancers [1].

“No one in the hospital helped me with breastfeeding or answered any questions.”

Percent of women who initiated breastfeeding after their most recent pregnancy: 73%

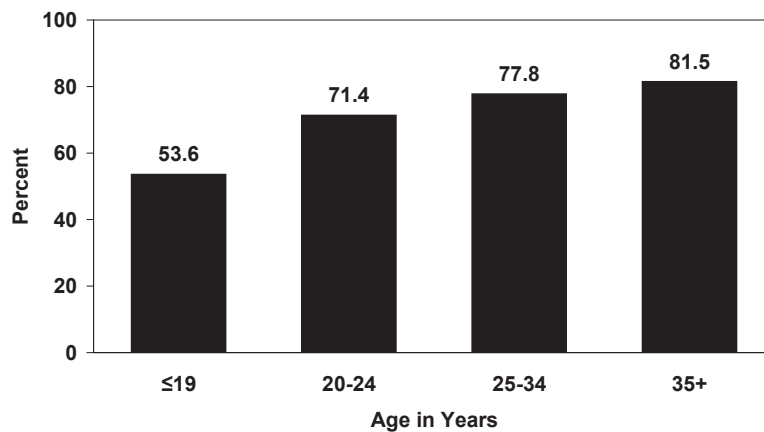
- ◆ There was a significant difference in the prevalence of breastfeeding initiation after the most recent pregnancy by race/ethnicity. Only 53% of African-American women initiated breastfeeding compared to over 70% among women who were of Hispanic and white/other race/ethnicities (Figure 24).

Figure 24. Breastfeeding Initiation After Most Recent Pregnancy by Race/Ethnicity



- ◆ The prevalence of breastfeeding also differs by age group. The prevalence increases with older age and is substantially lower among teenage mothers (Figure 25).

Figure 25. Breastfeeding Initiation After Most Recent Pregnancy by Age



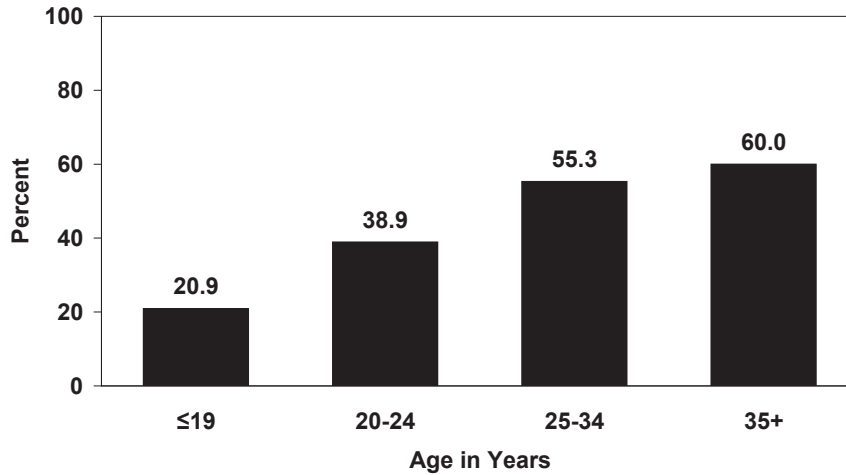
The American Academy of Pediatrics recommends that women breastfeed exclusively for six months [1] and the Healthy People 2010 target is 50% of women who breastfeed for six months [2]. Because women become eligible for PRAMS at two months after delivery, the data were analyzed for the prevalence of women who breastfed for at least nine weeks.

"My job didn't allow me to pump as often as I needed to."



- ◆ The overall percent of women who breastfed at least nine weeks was 47%. The prevalence substantially increases with age (Figure 26).

Figure 26. Breastfeeding for at Least Nine Weeks After Most Recent Pregnancy



"I would just like to say thanks to the media and magazines for emphasizing the importance of keeping babies on their backs only to sleep. I think it's very important."

Sleep position

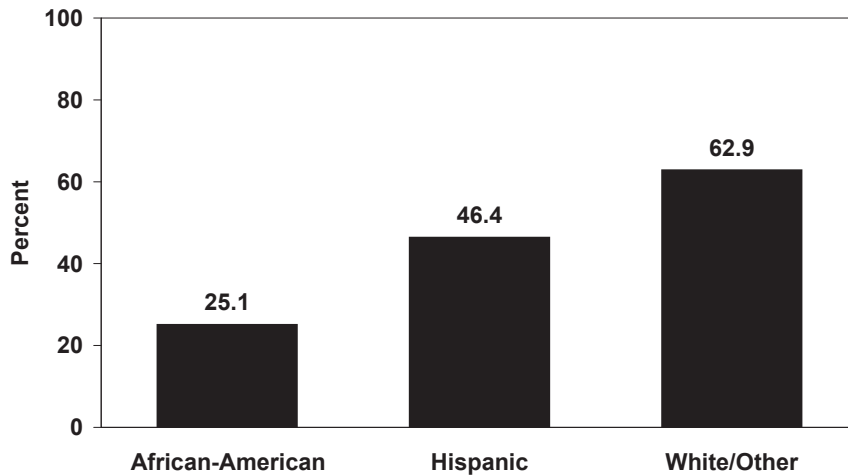
Among infants aged one to 12 months, Sudden Infant Death Syndrome (SIDS) is the leading cause of death [3]. Placing an infant on its back to sleep has been identified as way to help reduce the risk of SIDS. In 1996, the percent of infants who were consistently placed on their backs to sleep in the U.S. was 35%. The Healthy People 2010 target is 70% [2].



"I do not believe that putting babies on their backs helps reduce SIDS. I believe it raised chances of choking."

- ◆ In Texas, 2004 PRAMS data indicate that the percent of infants placed on their backs to sleep was 51%. The prevalence differed by race/ethnicity and was lowest among African-American women (Figure 27).

Figure 27. Infants Most Often Placed on Their Backs to Sleep by Race/Ethnicity



References

1. Gartner, L.M., et al., *Breastfeeding and the use of human milk*. Pediatrics, 2005. 115(2): p. 496-506.
2. *Healthy People 2010*, U.S. DHHS, Editor. 2000, Government Printing Office.
3. CDC. *Sudden Infant Death Syndrome*. 2007 [cited 10/03/2007]; Available from: <http://www.cdc.gov/SIDS/index.htm>.

