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Unintended Pregnancy: Colorado Pregnancy Risk Assessment Monitoring System (PRAMS), 1997-1999

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Introduction

In Colorado, as in the United States, the occurrence of unintended pregnancy is a serious public health problem. Certain populations, such as adolescents, women over 40 years of age, and low income women are at increased risk of unintended pregnancy.¹ Unintended pregnancy has been shown to result in adverse health outcomes that affect the mother, infant, and family. Pregnancies characterized as unintended are correlated with late or inadequate prenatal care, poor nutrition, and exposure of the fetus to harmful substances like tobacco, alcohol, and other drugs.² Unintended pregnancies are associated with social and economic hardships, failure to achieve educational and career goals, domestic violence, and relationship dissolution.² The child of an unintended pregnancy is at greater risk for low birth weight, for dying in the first year of life, and of being abused or neglected.²

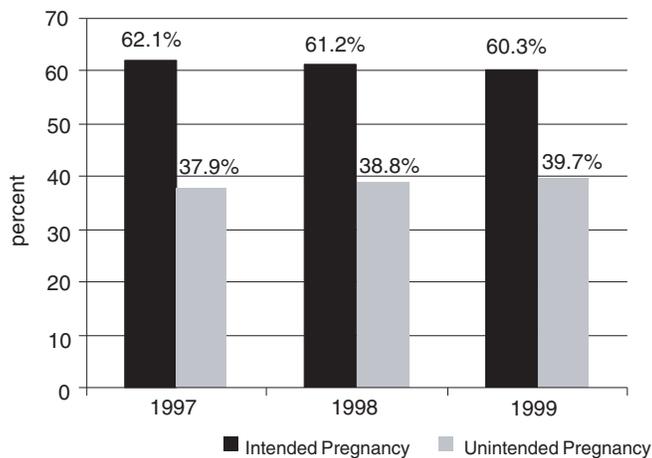
“Unintended” is a broad term that includes pregnancies a woman characterizes as either unwanted (pregnancy not wanted at any time) or mistimed (pregnancy not wanted until some time in the future) at the time of conception. The overall rate of unintended pregnancy is difficult to calculate because estimates include live births, as well as pregnancies that end in abortion or miscarriage. This report focuses on live births that a woman describes as either unwanted or mistimed at the time of conception and all subsequent uses of “unintended” will refer to this definition.

This report compares intended and unintended pregnancies that resulted in a live birth from 1997 to 1999. Data were collected through the Pregnancy Risk Assessment Monitoring System (PRAMS), a survey of new mothers about the time before, during, and after the birth of their most recent baby.

Methods

The Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing, population-based surveillance system designed to supplement vital records and to generate state-specific perinatal health data. Each month, a stratified random sample of infants 2 to 4 months old is selected from birth certificate files to comprise the PRAMS sample. The sample is stratified by region of residence (Denver Metro, Other Metro, Rural) and birth weight (low, adequate) to ensure a large enough sample in the rural and low birth weight categories. The data presented in this brief represent live births to Colorado women between 1997 and 1999. From 1997 to 1999, a total of 8,314 women were selected to participate in PRAMS and 6,069 (73 percent) of those women completed surveys. Survey data from respondents are weighted to represent all live births from 1997 to 1999 to Colorado residents 15 years and older. The analysis in this report includes the 5,662 women who responded to the pregnancy intention question.

Figure 1. Pregnancy intention of live births by year: Colorado PRAMS, 1997-1999 (n=5,662)



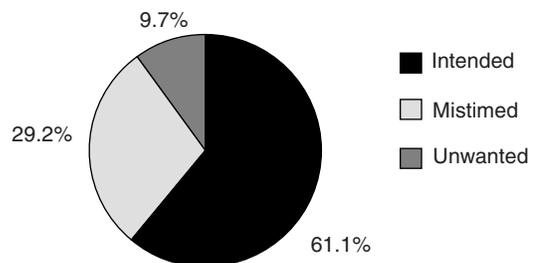
On the PRAMS survey, women are asked, “Thinking back to *just before* you got pregnant, how did you feel about becoming pregnant?” Women are placed into three categories depending on their responses. A pregnancy is categorized as *intended* if the woman responds, “I wanted to be pregnant sooner” or “I wanted to be pregnant then.” If the woman responds, “I wanted to be pregnant later,” the pregnancy is considered *mistimed*. The pregnancy is labeled as *unwanted* if

the woman responds, “I didn’t want to be pregnant then or at any time in the future.” As shown in Figure 1, the percentage of live births reported as unintended pregnancies fluctuated little across the three years (37.9, 38.8, and 39.7 percent, respectively). The data were combined in all following analyses to increase power.

Results

Between 1997 and 1999, 38.9 percent of Colorado women reported that their pregnancies, which resulted in live births, were *mistimed* (29.2 percent) or *unwanted* (9.7 percent) (Figure 2). However, these percentages underestimate unintended pregnancy because the PRAMS survey does not collect information on pregnancies that result in abortion and miscarriage. Because nearly all pregnancies ending in abortion are unintended, the overall rate of unintended pregnancy in Colorado would be higher.²

Figure 2. Percent of pregnancies resulting in live births characterized as intended, mistimed, or unwanted: Colorado PRAMS, 1997-1999 (n=5,662)



A number of maternal characteristics were associated with unintended pregnancy (Table 1). In Colorado, residents of the Denver Metro region had significantly lower rates of unintended pregnancy than the rest of the state. Unintended pregnancy rates were highest among young women 15 to 19 years old (70.7 percent). Women between the ages of 20 to 24 years had the second highest rate of unintended pregnancy (51.7 percent), and women 25 to 29 years had significantly lower rates of unintended pregnancy (34.8 percent). Women aged 30 to 34, and 35 to 39, had the lowest rates of unintended pregnancy (24.5 and 23.3 percent, respectively). Unintended pregnancy rates were higher for women above 40 years (28.0 percent).

Table 1. Percent of pregnancies reported as unintended by selected maternal characteristics: Colorado PRAMS, 1997-1999 (n =5,662)

	Percent	95% CI ¹
Colorado	38.9	(37.1, 40.7)
Region of residence²		
Denver Metro	36.0	(33.2, 38.7)
Other Metro	43.2	(40.4, 45.9)
Rural	42.0	(39.6, 44.4)
Age		
15-19 years	70.7	(65.2, 76.2)
20-24 years	51.7	(48.0, 55.4)
25-29 years	34.8	(31.7, 37.9)
30-34 years	24.5	(21.4, 27.6)
35-39 years	23.3	(19.0, 27.6)
40+ years	28.0	(17.4, 38.6)
Marital status		
Married	29.8	(28.0, 31.6)
Other	68.5	(64.8, 72.2)
Education		
<12 years	52.9	(48.0, 57.8)
12 years	46.5	(43.2, 49.8)
>12 years	29.9	(27.7, 32.0)
Poverty level		
Above 185%	27.4	(25.2, 29.6)
Below 185%	55.0	(51.7, 58.3)
Unknown	42.3	(37.8, 46.8)
Race/Ethnicity		
White/Non-Hispanic	35.5	(33.5, 37.5)
Hispanic	45.6	(41.5, 49.7)
Black	54.7	(45.1, 64.3)
Other	46.5	(35.7, 57.3)
Previous live birth³		
None	41.2	(38.5, 43.9)
One or more	37.0	(34.6, 39.4)
Prenatal care paid for by Medicaid		
Yes	57.2	(53.7, 60.7)
No	31.8	(29.8, 33.8)
Received WIC⁴ services during pregnancy		
Yes	52.3	(49.2, 55.4)
No	32.6	(30.6, 34.6)

¹ Confidence Interval

² Denver Metro region includes Adams, Arapahoe, Boulder, Denver, Douglas, and Jefferson counties. Other Metro region includes El Paso, Larimer, Mesa, Pueblo, and Weld counties. The Rural region includes the remaining counties of the state.

³ As reported on birth certificate

⁴ The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)

Significantly lower rates of unintended pregnancy were found among women who were married, had achieved more than 12 years of education, and had incomes above 185 percent of the federal poverty level. Hispanic and black women had significantly higher rates of unintended pregnancy (45.6 percent and 54.7 percent, respectively) than white women (35.5 percent). However, when adjusted for maternal age, maternal education, and poverty level, differences between racial and ethnic groups were no longer significant. The rate of unin-

tended pregnancy was not significantly different among women who had no previous live births when compared to women who had one or more previous live births (41.2 and 37.0 percent, respectively). Women whose prenatal care was paid for by Medicaid were more likely to characterize their pregnancy as unintended (57.2 percent), as were women who participated in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (52.3 percent).

As shown in Table 2, the percent of women who reported drinking alcohol during pregnancy was not significantly different for women with unintended pregnancies (7.8 percent) compared to women with intended pregnancies (10.0 percent). However, women who described their pregnancies as unintended were nearly two times as likely to smoke during pregnancy (18.3 percent) compared to women who described their pregnancies as intended (9.3 percent). More than twice as many women with unintended pregnancies reported inadequate prenatal care (16.1 percent) compared to women who had intended pregnancies (7.2 percent). Women who described their pregnancies as unintended were significantly less likely to start prenatal care during the first trimester, to initiate breastfeeding, and to continue breastfeeding for nine weeks or more.

The PRAMS survey asks women to characterize their emotional state during pregnancy. Nearly twice as many women who had unintended pregnancies described their emotional state during pregnancy as a moderately hard time, very hard time, or the worst time of their lives when compared to women who had intended pregnancies (see Table 2).

Conclusion

Between 1997 and 1999, 38.9 percent of Colorado women described their pregnancies that resulted in live births as unintended. This figure collected through PRAMS underestimates the actual percentage of pregnancies that are unintended. The PRAMS survey only samples women who delivered live born infants and does not include women whose pregnancies ended in abortion or miscarriage. As a result, the actual percent of unintended pregnancies in Colorado is likely greater than 39 percent.

**Table 2. Characteristics of women who reported intended and unintended pregnancies:
Colorado PRAMS, 1997-1999 (n=5,662)**

	Unintended Pregnancy (n=2,200)		Intended Pregnancy (n=3,462)	
	Percent	95% CI ¹	Percent	95% CI ¹
Drank alcohol during pregnancy	7.8	(6.2, 9.4)	10.0	(8.6, 11.4)
Smoked during pregnancy	18.3	(15.9, 20.7)	9.3	(7.9, 10.7)
Start prenatal care 1st trimester	67.3	(64.6, 70.0)	84.6	(83.0, 86.2)
Prenatal care²				
Inadequate	16.1	(13.9, 18.2)	7.2	(5.9, 8.5)
Intermediate	14.8	(12.7, 17.0)	16.2	(14.5, 18.0)
Adequate	41.4	(38.5, 44.2)	44.8	(42.5, 47.1)
Adequate Plus	26.6	(24.1, 29.1)	30.9	(28.8, 33.0)
Weight gain during pregnancy				
In IOM recommendation ³	34.9	(32.0, 37.8)	39.6	(37.2, 42.0)
Below IOM recommendation ³	23.9	(21.4, 26.4)	22.5	(20.5, 24.5)
Above IOM recommendation ³	41.2	(38.3, 44.1)	37.9	(35.5, 40.3)
Delivered a low birth weight (<2500 g) infant	8.0	(7.4, 8.6)	7.5	(7.1, 7.9)
Initiated breastfeeding	78.1	(75.7, 80.5)	85.7	(83.9, 87.5)
Breastfed⁴				
9 or more weeks	46.6	(43.7, 49.5)	62.6	(60.2, 65.0)
Emotional state during pregnancy				
Happiest time of life	18.4	(16.0, 20.8)	35.4	(33.2, 37.6)
Happy, few problems	45.9	(43.0, 48.8)	46.6	(44.2, 49.0)
Moderately hard time	21.9	(19.5, 24.3)	12.6	(11.0, 14.2)
Very hard time	9.6	(8.0, 11.2)	3.9	(3.1, 4.7)
Worst time	4.2	(3.0, 5.4)	1.5	(0.9, 2.1)

¹ Confidence Interval

² Adequacy of prenatal care measured by the Kotelchuck Index

³ The Institute of Medicine (IOM) provides recommendations for weight gain during pregnancy based on a woman's pre-pregnancy body mass index

⁴ Denominator includes all women

Women who lived outside the Denver Metro area, were young, not married, less educated, and had lower incomes were more likely to characterize their pregnancies as unintended. Women who described their pregnancies as unintended were at higher risk of smoking during pregnancy, receiving late and inadequate prenatal care, not initiating and sustaining breastfeeding, and having a more difficult time emotionally during pregnancy, than women who described their pregnancies as intended.

The findings in this report illustrate the fact that Colorado needs to continue its efforts to decrease the rate of unintended pregnancy in the state.

Additional Information

For more information about unintended pregnancy, contact the Women's Health Section at the Colorado Department of Public Health and Environment, 303-692-2480.

For more information about Colorado PRAMS, contact the Health Statistics Section at the Colorado Department of Public Health and Environment, 303-692-2160.

This Brief is available on our Web site at www.cdphe.state.co.us/hs/pubs.html

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