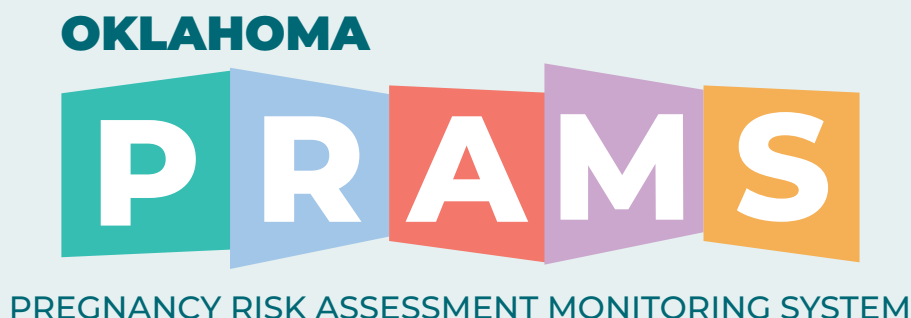




DATA INSIGHTS REPORT

August 2026

Postpartum Birth Control Methods Among Oklahoma Mothers with Intended and Ambivalent Pregnancies

Introduction

Measures of pregnancy intention aim to capture a woman's desires around the time of conception. Traditionally, these intentions are defined by binary definitions: intended or unintended. However, this may fail to reflect the complex, nuanced decision-making processes of women of childbearing age, particularly regarding contraceptive choices. Women experiencing pregnancy ambivalence – the feeling of being unsure or indifferent toward conception – represent a unique group that challenges this traditional dichotomy.

Existing research on pregnancy ambivalence has mainly focused on whether birth control was used at all.^{1,2,3} Fewer studies have explored the specific types of birth control methods chosen by this group. Evidence suggests that ambivalence complicates decisions surrounding long-term methods, as effectiveness is rarely the only factor in method selection.^{4,5,6} For those experiencing ambivalence, contraceptive choices may be related to perceived drawbacks of certain methods, uncertainty that leads to the rationalization of less effective methods, or a concern that Long-Acting Reversible Contraception (LARC) might prevent a pregnancy that would not be unwelcome.

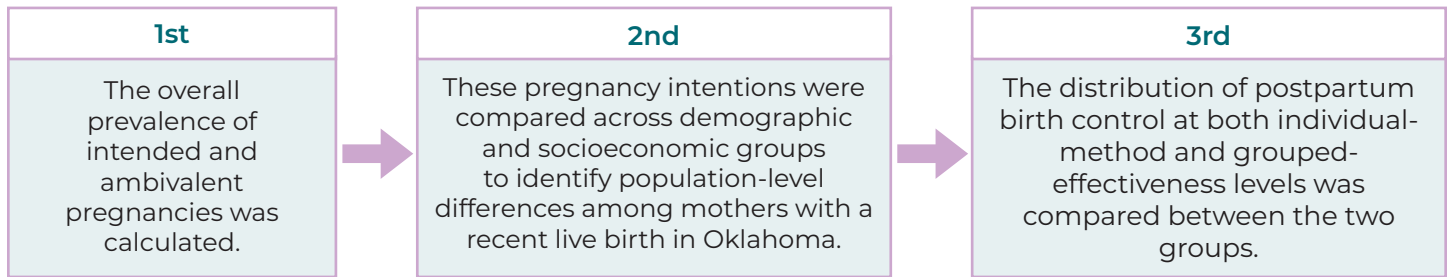
This study addresses these gaps by examining the relationship between pregnancy intention and the effectiveness levels of postpartum birth control methods utilized. By comparing the choices and maternal characteristics of those with intended versus ambivalent pregnancies, this research offers insights into reproductive behavior. Ultimately, these findings aim to enrich state and national conversations regarding postpartum contraceptive preferences and pregnancy intention.

Methods

The study used 2018 to 2022 data from the Oklahoma Pregnancy Risk Assessment Monitoring System (PRAMS). The final sample included 5,612 responses, yielding a weighted response rate of 51.8%. Data from 2020 were excluded due to a low response rate. To assess pregnancy intention, participants were asked, **“Thinking back to just before you got pregnant with your new baby, how did you feel about becoming pregnant?”** The intended pregnancy group comprised individuals who wanted to become pregnant then or sooner, while the ambivalent pregnancy group included those who were unsure of what they wanted. Mothers with unintended pregnancies (those wanting to be pregnant later or not at all) were excluded from this analysis.

Participants reported whether they or their partner used any methods to prevent pregnancy and the specific methods used. Based on existing literature, contraceptive methods were categorized into four tiers: very effective (vasectomy, tubal ligation, implant, or IUD), effective (patch, ring, shots, or pills), moderately effective (condoms), and less effective (rhythm method, abstinence, withdrawal, or other).^{7,8}

The analysis followed a **three-stage approach**.



This study specifically aimed to determine if pregnancy ambivalence is associated with distinct postpartum contraceptive patterns, focusing on the most effective methods. The research was guided by the question: **“Is there a statistically significant difference in the use of very effective postpartum birth control methods between mothers with intended and ambivalent pregnancies?”** The null hypothesis (H_0) was that there is no significant difference between the two groups in the use of very effective postpartum birth control methods.

All analyses were conducted using SAS-callable SUDAAN to account for the complex survey design and sampling weights. Associations were examined using the Cochran-Mantel-Haenszel (CMH) Chi-square test (χ^2). Prevalence estimates and 95% confidence intervals (CIs) were reported. Statistical significance was evaluated at $P < 0.05$. Data weighting procedures and detailed PRAMS methodology are described elsewhere.⁹

Results

Pregnancy Intention

Figure 1 illustrates the distribution of pregnancy intention from 2018 to 2022: 53.8% (n=2,806) of mothers had intended pregnancies, 29.0% (n=1,797) had unintended pregnancies, and 17.2% (n=1,009) had ambivalent pregnancies.

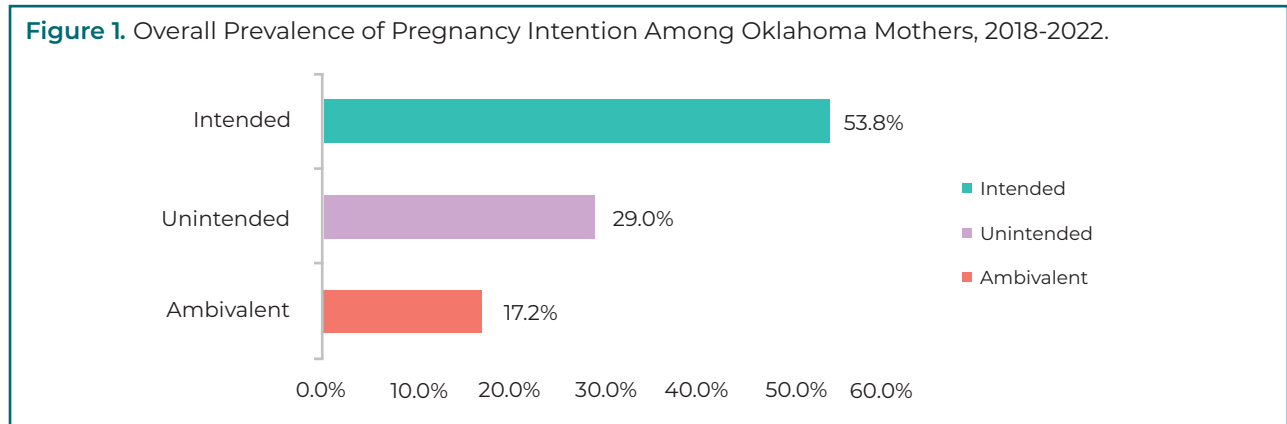
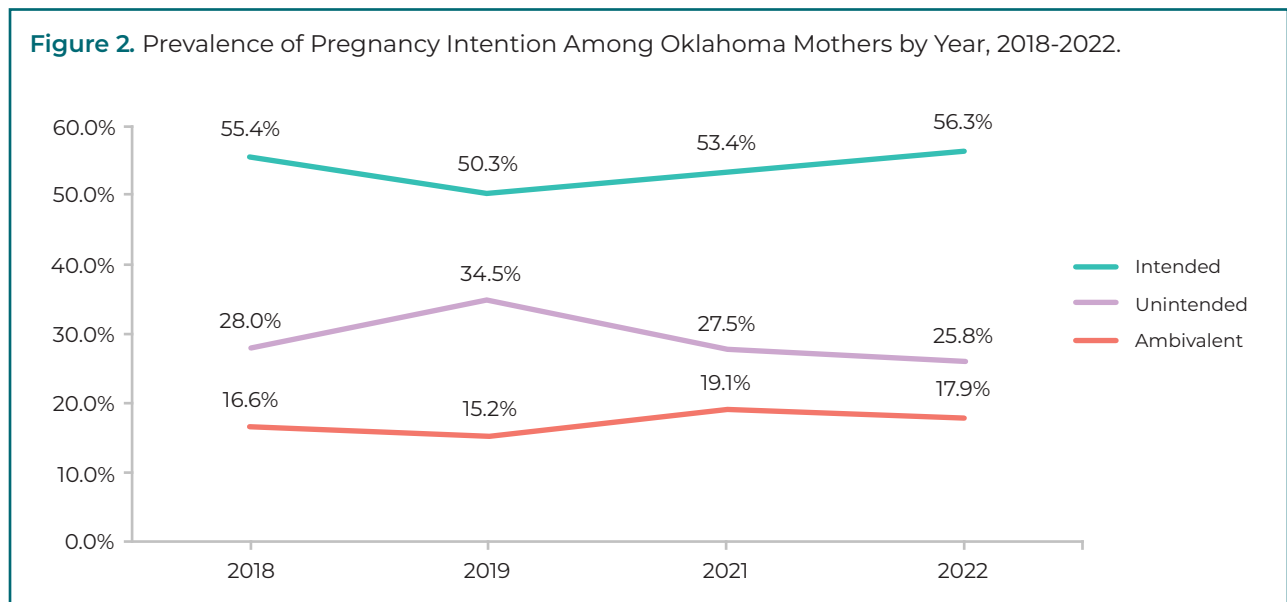


Figure 2 shows pregnancy intention by year from 2018 to 2022 (excluding 2020). The prevalence of mothers with intended pregnancies have been trending upward, unintended pregnancies have been trending downward, and mothers with ambivalent pregnancies have remained largely consistent, with only small fluctuations between years.



Demographic and Socioeconomic Characteristics

Table 1 presents the prevalence of intended versus ambivalent pregnancies across five key demographic and socioeconomic characteristics: maternal age, race/Hispanic origin, educational attainment, marital status, and annual household income.

Table 1. Maternal Characteristics by Intended and Ambivalent Pregnancies, 2018-2022

	Intended		Ambivalent	
Maternal Characteristics	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Maternal age (years)*				
< 20	19.7	15.0-25.4	29.7	23.4-36.9
20-29	51.1	48.5-53.7	17.6	15.6-19.7
>= 30	64.2	61.2-67.1	14.4	12.3-16.7
Race/Hispanic origin*				
Non-Hispanic White	58.2	55.0-61.4	16.3	13.9-18.9
Non-Hispanic Black	31.6	29.0-34.2	25.7	23.2-28.3
Non-Hispanic American Indian	51.2	48.1-54.3	20.1	17.6-22.7
Non-Hispanic Other	52.6	48.1-57.0	18.2	15.1-21.8
Hispanic	52.2	49.6-54.8	14.0	12.3-16.0
Education*				
< High school	40.9	36.4-45.7	20.9	17.2-25.1
High school	41.9	38.4-45.5	23.7	20.7-27.0
> High school	63.7	61.1-66.1	12.6	11.0-14.4
Marital status*				
Married	67.6	65.1-70.0	11.3	9.7-13.0
Other	35.5	32.8-38.3	25.1	22.6-27.8
Annual household income*				
<\$24,001	35.3	32.2-38.4	25.1	22.3-28.1
\$24,001-\$48,000	54.6	50.5-58.5	16.6	13.7-19.8
\$48,001-\$73,000	64.4	58.9-69.5	11.4	8.3-15.5
>\$73,001	78.0	74.3-81.3	8.3	6.3-10.9

*Statistically significant at P<.05

Maternal Age

All three age groups showed **a statistically significant difference across pregnancy intention categories**, with intended pregnancies increasing and ambivalent pregnancies declining as maternal age increased.

- Mothers aged 30 and older reported the highest prevalence of intended pregnancies (64.2%) and the lowest ambivalence (14.4%), a difference of nearly five times.
- In contrast, mothers under 20 had the lowest intended pregnancy rate (19.7%) and the highest ambivalence (29.7%).
- **Notably**, mothers under age 20 were the only demographic across all maternal characteristics in which **ambivalent pregnancies exceeded intended pregnancies**.

Race/Hispanic Origin

Differences between intended and ambivalent pregnancy rates **were significant across all racial and ethnic groups**.

- Non-Hispanic (NH) White mothers exhibited the highest intended pregnancy rate (58.2%) and the widest gap between categories, with intended pregnancies occurring at more than triple the rate of ambivalent ones (16.3%).
- Conversely, NH Black mothers reported the lowest prevalence of intended pregnancies (31.6%) and the highest rate of ambivalence (25.7%).

Education

All three education levels showed **a statistically significant difference between intended and ambivalent pregnancies**.

- Intended pregnancies increased with higher levels of educational attainment.
- Mothers with more than a high school education reported the highest intended pregnancy rate (63.7%) and lowest ambivalence (12.6%), a difference of almost five times.
- Those with less than a high school education reported the highest ambivalence (20.9%).

Marital Status

Across both marital status categories, the differences between intended and ambivalent pregnancies **were statistically significant**.

- Married mothers reported the highest overall prevalence of intended pregnancies (67.6%) and the lowest ambivalence (11.3%).
- For unmarried mothers, the gap narrowed, with intended pregnancies at 35.5% and ambivalence at 25.1%.
- Among married mothers, intended pregnancies occurred at a rate of nearly six times that of ambivalent pregnancies.

Annual Household Income

The prevalence of intended pregnancies **increased** with each higher income bracket.

- Mothers in households with the highest incomes (>\$73,001) reported an intended pregnancy rate (78.0%) nearly 10 times higher than the ambivalence pregnancy rate (8.3%).
- Mothers in the lowest-income households reported the lowest intended pregnancies (35.3%) and the highest ambivalence (25.1%).
- All income levels showed **a statistically significant difference between intended and ambivalent pregnancies**.

Postpartum Birth Control

Method Types

While mothers with intended and ambivalent pregnancies utilized postpartum birth control at nearly identical rates (75.1% and 74.5%, respectively), **the specific methods varied between the two groups.** Table 2 details these differences, presenting the prevalence of individual postpartum birth control methods among mothers who reported intended versus ambivalent pregnancies.

Table 2. Types of Postpartum Birth Control Used by Mothers with Intended and Ambivalent Pregnancies, 2018-2022

Postpartum Birth Control Methods	Intended		Ambivalent	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Condoms	33.9	31.0-36.9	29.2	24.6-34.4
Pills	26.3	23.6-29.2	24.3	19.8-29.4
Withdrawal	22.5	19.9-25.3	19.3	15.4-24.0
Abstinence	9.9	8.3-11.9	18.6	14.9-22.9
Tubes tied (Tubal Ligation)	7.0	5.7-8.7	14.4	11.1-18.5
Intrauterine device (IUD)	14.9	12.8-17.3	14.2	10.6-18.7
Shots every 3 months	4.6	3.6-5.8	8.7	6.1-12.2
Vasectomy	4.7	3.6-6.1	7.1	4.7-10.7
Contraceptive implant	5.7	4.5-7.2	6.6	4.5-9.5
Contraceptive patch/ring	1.5	1.0-2.4	†	†
Rhythm	7.8	6.3-9.7	†	†
Other ^a	2.0	1.3-3.0	†	†

† Sample size < 30

^a Other includes write-in responses, such as breastfeeding.

For most mothers, user-dependent methods such as condoms (33.9% intended; 29.2% ambivalent) and pills (26.3% intended; 24.3% ambivalent) were the primary choices for birth control. However, variations emerged regarding permanent and behavioral methods. Mothers who reported pregnancy ambivalence used abstinence (18.6%) and tubal ligation (14.4%) at nearly twice the rate of those with intended pregnancies.

The use of IUDs remained consistent across both groups (approximately 14%), indicating that pregnancy intention status does not meaningfully affect the use of this LARC. Overall, while several methods were popular across both groups, the pregnancy ambivalence group showed **a statistically higher use of contraceptive shots, tubal ligation, and abstinence.**

Method Effectiveness

To address whether a statistically significant difference existed in the use of “very effective” postpartum birth control methods between mothers with intended and ambivalent pregnancies, a CMH Chi-square test was performed (Table 3).

Table 3. Pregnancy Intention and Postpartum Birth Control Effectiveness Levels, 2018-2022

	Pregnancy Intention		χ^2	df	P
Postpartum Birth Control Effectiveness	Intended (n=2,744)	Ambivalent (n=870)			
Very effective	729 (32.2%)	310 (41.7%)	9.18	1	*.003
Effective	693 (32.3%)	249 (34.7%)	0.59	1	.44
Moderately effective	679 (33.9%)	233 (29.2%)	2.51	1	.11
Less effective	643 (33.1%)	288 (36.3%)	1.13	1	.29

Abbreviations: χ^2 , chi-square (Data are weighted. P-values derived from the CMH Chi-square test to account for survey design); df degrees of freedom

*Statistically significant at $P < .05$

^aVery effective methods result in fewer than one pregnancy per 100 women a year; effective methods result in 1 to 9 pregnancies per 100 women a year; moderately effective methods result in 10 to 19 pregnancies per 100 women a year; and less effective methods result in 20 or more pregnancies per 100 women a year.^{7,8} Abstinence was included in the less effective category because, although theoretically it is 100% effective, studies show that typical use places it among the least effective contraceptive methods.^{10,11}

There was **a significant difference in the use of “very effective” postpartum birth control methods**, with mothers with ambivalent pregnancies more likely than those with intended pregnancies to use these methods (41.7% compared to 32.2%; $P = .003$). This finding **led to the rejection of the null hypothesis** (H_0) that there is no significant difference between the two groups in the use of very effective postpartum birth control methods.

Conversely, there **were no significant differences found between the two groups in the use of “effective”, “moderately effective”, or “less effective” postpartum birth control methods**. Usage rates for these three lower effectiveness tiers of birth control remained relatively similar. Approximately 32% to 35% of mothers used “effective” methods ($P = .44$), roughly 29% to 34% used “moderately effective” methods ($P = .11$), and around 33% to 36% used “less effective” methods ($P = .29$).

Discussion

The results of this study **highlight differences in pregnancy intention across various maternal characteristics**. Pregnancy intention is influenced by socioeconomic stability, age, and racial background. Intended pregnancies were most prevalent among older, NH White, married, highly educated, and higher-income mothers, consistent with the existing literature suggesting that financial security and educational attainment provide a foundation for planned family growth.^{12,13}

In contrast, ambivalent pregnancies were higher among mothers under age 20, NH Black mothers, unmarried mothers, and those with lower educational attainment and household incomes. These disparities likely reflect systemic inequities in reproductive healthcare access and social support, highlighting the need for targeted, culturally competent public health interventions. Identifying these populations is critical, as pregnancy ambivalence is associated with higher risks of adverse birth outcomes, such as low birthweight, compared to intended pregnancies.¹⁴

AMBIVALENT MOTHERS LEAN TOWARD HIGH-CERTAINTY METHODS

A key finding of this study is that pregnancy intention significantly influences the type and effectiveness level of postpartum contraception chosen. While condoms and pills were popular across all groups, mothers with ambivalent pregnancies were significantly more likely to rely on “very effective” methods compared to those with intended pregnancies.

This suggests that experiencing pregnancy ambivalence may influence women to choose high-certainty postpartum birth control methods to prevent future unintended or ambivalent pregnancies.⁶ While some previous research suggests that uncertainty leads to the use of “less effective” methods⁵, this study’s data indicates **a clear trend toward high-tier contraceptive adoption among mothers with ambivalent pregnancies**, emphasizing the importance of providing access to these options.

Future research should examine the influence of partner pregnancy intentions, as nearly 10% of Oklahoma mothers with ambivalent pregnancies reported that their partner did not want them to become pregnant.¹⁵ Exploring these relationship dynamics could provide a deeper context for how interpersonal factors shape reproductive decisions. Additionally, investigating how maternal characteristics align with specific tiers of contraceptive effectiveness could further clarify the motivations behind method selection.⁶

This study is limited by its reliance on self-reported data, which may be subject to social desirability or retrospective recall bias. Because the data is cross-sectional, causal relationships cannot be established. Furthermore, PRAMS does not capture the cultural norms or specific beliefs that influence reproductive choices. Finally, the analysis did not differentiate between solo or concurrent method use, and small sample sizes in certain contraceptive subcategories limited the depth of specific subgroup conclusions.

Recommendations and Conclusion

Understanding the intersection of pregnancy intention and contraceptive behavior is essential for delivering patient-centered reproductive healthcare. **This study demonstrates that mothers with ambivalent pregnancies are significantly more likely to select the most effective postpartum birth control methods.**

CLINICAL APPLICATIONS

To capitalize on this, healthcare providers should shift toward proactive care models such as One Key Question®. By routinely asking, **“Would you like to become pregnant in the next year?”** providers can identify ambivalence early and dedicate the necessary time to help patients navigate complex contraceptive decisions.^{8,16}

Given the strong relationship between ambivalence and the use of “very effective” contraception postpartum, identifying uncertainty should serve as an indicator to prioritize counseling on LARC and permanent methods. Additionally, policy efforts must ensure equitable access to high-tier contraceptives. This includes removing financial and systemic barriers for the most vulnerable demographics by ensuring publicly funded insurance coverage for all contraceptive tiers.

While this study highlights a clear trend toward the use of “very effective” methods among mothers with ambivalent pregnancies, it is important to acknowledge that **a complex array of interpersonal and contextual factors** often influences contraceptive decision-making.¹⁷ For individuals who are unsure about their pregnancy goals, counseling on the benefits of various options, including LARC methods, offers a framework to address uncertainty while supporting future reproductive autonomy.⁶ Ultimately, these findings underscore the necessity of providing robust, high-tier reproductive healthcare access to support the diverse family planning goals of all mothers.

References

1. LaCross A, Smaldone A, Angelson J. Ambivalence Toward Pregnancy as an Indicator for Contraceptive Nonuse: A Systematic Review and Meta-Analysis. *Journal of Midwifery & Women's Health*. 2019;64(4):385-394. [doi:10.1111/jmwh.12969](https://doi.org/10.1111/jmwh.12969)
2. Manze MG, Romero DR, De P, Hartnett J, Roberts L. The association of pregnancy control, emotions, and beliefs with pregnancy desires: A new perspective on pregnancy intentions. Erbil N, ed. *PLOS ONE*. 2021;16(3):e0249032. [doi:10.1371/journal.pone.0249032](https://doi.org/10.1371/journal.pone.0249032)
3. Cutler A, McNamara B, Qasba N, Kennedy HP, Lundsberg L, Garipey A. "I Just Don't Know": An Exploration of Women's Ambivalence about a New Pregnancy. *Women's Health Issues*. 2018;28(1):75-81. [doi:10.1016/j.whi.2017.09.009](https://doi.org/10.1016/j.whi.2017.09.009)
4. Rocca CH, Smith MG, Hale NL, Khoury AJ. Ranges of pregnancy preferences and contraceptive use: Results from a population-based survey in the southeast United States. *Perspectives on Sexual and Reproductive Health*. 2022;54(3):90-98. [doi:10.1363/psrh.12205](https://doi.org/10.1363/psrh.12205)
5. Sundstrom B, Ferrara M, DeMaria AL, Baker-Whitcomb A, Payne JB. Integrating Pregnancy Ambivalence and Effectiveness in Contraceptive Choice. *Health Communication*. 2016;32(7):820-827. [doi:10.1080/10410236.2016.1172294](https://doi.org/10.1080/10410236.2016.1172294)
6. Higgins JA. Pregnancy Ambivalence and Long-Acting Reversible Contraceptive (LARC) Use Among Young Adult Women: A Qualitative Study. *Perspectives on Sexual and Reproductive Health*. 2017;49(3):149-156. [doi:10.2307/48576854](https://doi.org/10.2307/48576854)
7. The American College of Obstetricians and Gynecologists. Effectiveness of Birth Control Methods. www.acog.org. Published April 2023. <https://www.acog.org/womens-health/infographics/effectiveness-of-birth-control-methods>
8. World Health Organization. Family planning/Contraception. [Who.int](http://who.int). Published July 3, 2025. <https://www.who.int/news-room/fact-sheets/detail/family-planning-contraception>
9. Shulman HB, D'Angelo DV, Harrison L, Smith RA, Warner L. The Pregnancy Risk Assessment Monitoring System (PRAMS): Overview of Design and Methodology. *American Journal of Public Health*. 2018;108(10):1305-1313. [doi:10.2105/ajph.2018.304563](https://doi.org/10.2105/ajph.2018.304563)
10. Ott MA, Santelli JS. Abstinence and abstinence-only education. *Current Opinion in Obstetrics and Gynecology*. 2007;19(5):446-452. [doi:10.1097/gco.0b013e3282efdc0b](https://doi.org/10.1097/gco.0b013e3282efdc0b)

11. Dailard, C. Understanding “Abstinence”: Implications for Individuals, Programs and Policies. Guttmacher Institute. Published September 22, 2004. <https://www.guttmacher.org/gpr/2003/12/understanding-abstinence-implications-individuals-programs-and-policies>
12. Kavanaugh ML, Pliskin E, Hussain R. Associations between unfulfilled contraceptive preferences due to cost and low-income patients’ access to and experiences of contraceptive care in the United States, 2015–2019. *Contraception: X*. 2022;4:100076. [doi:10.1016/j.conx.2022.100076](https://doi.org/10.1016/j.conx.2022.100076)
13. Daniels K, Abma J. Current contraceptive status among women aged 15–49: United States, 2017–2019. *www.cdc.gov*. Published October 2020. <https://www.cdc.gov/nchs/products/databriefs/db388.htm>
14. Hall JA, Benton L, Copas A, Stephenson J. Pregnancy Intention and Pregnancy Outcome: Systematic Review and Meta-Analysis. *Maternal and Child Health Journal*. 2017;21(3):670-704. [doi:10.1007/s10995-016-2237-0](https://doi.org/10.1007/s10995-016-2237-0)
15. Oklahoma State Department of Health. Data from: Ambivalent Pregnancies and Partner Pregnancy Intention. Oklahoma PRAMS unpublished raw data. 2024.
16. Allen D, Hunter MS, Wood S, Beeson T. One Key Question®: First Things First in Reproductive Health. *Maternal and Child Health Journal*. 2017;21(3):387-392. [doi:10.1007/s10995-017-2283-2](https://doi.org/10.1007/s10995-017-2283-2)
17. Dehlendorf C, Rodriguez MI, Levy K, Borrero S, Steinauer J. Disparities in Family Planning. *American Journal of Obstetrics and Gynecology*. 2010;202(3):214-220. [doi:10.1016/j.ajog.2009.08.022](https://doi.org/10.1016/j.ajog.2009.08.022)

PRAMS collects population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy. Around 250 Oklahoma mothers are randomly selected monthly to participate and can respond by mail, phone, or web survey in English or Spanish. Information included in the birth registry is used to develop analysis weights that adjust for selection probability and non-response.

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