

Cross-Sectional Study of Mothers' Perception of Postpartum Visit Benefit by Rural Status

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The postpartum period is associated with a high prevalence of maternal mortality and morbidity, particularly among rural communities. This study aimed to identify differences in the perceived benefit of the postpartum visit among participants in rural and non-rural counties. This cross-sectional study recruited postpartum mothers from counties in north-central Florida. Participants completed an online survey focused on experiences during pregnancy, birth, and postpartum. Eligibility criteria included being at least 18 and giving birth to a healthy, full-term, singleton infant in the past year. Mann-Whitney U and Fisher's exact tests were used to compare the differences in mothers from rural versus non-rural counties. Participants ($N = 91$) lived in rural ($n = 18$) and non-rural counties ($n = 73$), and most attended the postpartum visit (93.8% of rural and 97.2% of non-rural participants). Rural participants reported higher scores in receiving information on

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health services (4.24 vs. 3.6, $p = 0.02$), physical health (4.24 vs. 3.43, $p = 0.01$), and mood changes (3.71 vs. 3.21, $p = 0.14$) compared to non-rural participants. Rural participants perceived greater benefits from the postpartum visit than non-rural participants, highlighting the need to explore why attendance rates at this visit are often low for mothers from rural counties. These results support the need to restructure postpartum care to meet the needs of mothers from all areas and make policy changes to support mothers. Future research should explore the individual barriers and facilitators to postpartum care for those in rural versus non-rural areas.

Keywords: rurality, postpartum, perinatal care

Maternal and infant mortality rates in the United States are higher than in many other developed countries and have risen steadily over the past 30 years (Collier & Molina, 2019; Kassebaum et al., 2016). Maternal mortality signifies the death of a woman during pregnancy or within one year after birth related to the pregnancy (Hoyert, 2023). In 2021, there were 32.9 maternal deaths per 100,000 live births, nearly double the rate of 17.4 deaths per 100,000 live births in 2018 (Joseph et al., 2024). Trends in maternal mortality indicate that most maternal deaths now occur during the first year postpartum (Kassebaum et al., 2016). Moreover, infant mortality is defined as an infant's death prior to his or her first birthday. Infant mortality rates also remain high in the United States, with 5.6 deaths per 1,000 live births in 2022 (Centers for Disease Control and Prevention [CDC], 2024; Kassebaum et al., 2016). Maternal and infant mortality differences across race and geographic location highlight the health disparities in maternal-child health. Changes in support, education, and care during the perinatal period are needed to reduce these rates across all groups. Currently, one maternal visit at six weeks postpartum is the only recommended healthcare visit and is known to be insufficient in meeting maternal needs (Paladine et al., 2019). Thus, additional research is needed to understand the concerns and challenges for mother-infant dyads following birth to identify how to enhance care during the postpartum period (Admon et al., 2018; Oribhabor et al., 2020).

The *fourth trimester* is the period from birth to 12 weeks after birth and is a key time for intervention to address mother-infant needs (Paladine et al.,

2019; Tully et al., 2017). This period is a time of transition for mothers, infants, and families, and it is associated with many challenges and possible unmet healthcare needs. Maternal concerns during this time encompass several domains, such as physical complications from pregnancy (e.g., hypertensive disorders, gestational diabetes, incontinence), psychological difficulties (e.g., depression, anxiety, intimate partner violence), and social concerns (e.g., financial constraints, contraception, sexuality) (Kassebaum et al., 2016; Paladine et al., 2019; Tully et al., 2017). Mothers also experience the psychological stress of caring for a newborn who requires frequent feeding, is at risk for communicable diseases, and could suffer from inborn errors of metabolism or congenital heart defects (Tognasso et al., 2022). Ensuring adequate infant growth and development is essential to positive infant outcomes (Paladine et al., 2019; Tully et al., 2017).

Postpartum mothers living in rural areas have reduced access to healthcare, lower levels of health literacy, and high rates of poor health outcomes that include maternal and infant morbidity (Natarajan et al., 2023). Specifically, mothers from rural areas are less likely to attend medical visits in the postpartum period compared to mothers from urban areas (Bozkurt et al., 2024). The National Advisory Committee on Rural Health and Human Services provided a briefing titled “Maternal and Obstetrics Challenges in Rural America,” which identified a need for comprehensive and integrative case management, refined safety and treatment guidelines in rural clinics, and a need to reduce the obstetrics workforce shortage in rural America (Colyer et al., 2020). Moreover, a study comparing rural and urban postpartum mothers found that rural mothers were less likely to attend postpartum medical visits and receive comprehensive postpartum screening and counseling (Bozkurt et al., 2024). Florida is the third largest state by population, with more than 200,000 deliveries annually across multiple health systems, and represents a diverse maternal population with variations in race, ethnicity, and geographic background (March of Dimes, 2025). Additionally, 32 of Florida’s 67 counties are defined as rural, with 81% in the north-central regions of Florida (Florida Department of Health, 2023; Florida Legislature, 2025). Thus, focusing on rural populations is necessary to identify ways to intervene and improve maternal-child outcomes in Florida.

Given the known challenges and medical risks inherent to the fourth trimester, a single six-week postpartum visit is inadequate in addressing maternal health needs (American College of Obstetricians and Gynecologists

[ACOG], 2018; Walker et al., 2019). Postpartum visits often fail to address the unique postpartum needs identified by mothers, inadequately connect women with primary care services, and have low attendance (ACOG, 2018; Walker et al., 2019). It is also known that cultural or familial perceptions of postpartum care and patient-provider communication can inhibit attendance at the postpartum visit (Henderson et al., 2016). Recently, national organizations such as the ACOG have focused on restructuring postpartum care to reduce postpartum and long-term morbidity and improve well-being (ACOG, 2018; Firoz et al., 2018; Walker et al., 2019). This restructuring includes a focused assessment of the physical, social, and psychological well-being of new mothers via analysis of mood, infant feeding, sexuality, contraception, fatigue, physical tolls of birthing procedures, and chronic disease management. ACOG recommended that added policies should support postpartum care as a process rather than a singular visit with an obstetrician (ACOG, 2018). This study aimed to identify the perceived maternal benefit of the postpartum visit, specifically examining the differences between mothers from rural and non-rural counties. We hypothesized that fewer rural mothers would attend the postpartum visit compared to non-rural mothers due to lower perceived benefits from the visit.

Methods

This cross-sectional study recruited participants aged 18 or older who had given birth to a healthy, singleton, full-term (≥ 37 weeks gestation) infant in the past year. Recruited participants had to live in north-central Florida in one of three cities (Gainesville, Jacksonville, and Tallahassee) or the surrounding counties. Participants were excluded if they were under 18 years old, gave birth to twins or multiples, or had an infant with a complex medical condition (e.g., congenital or genetic anomalies). In-person and online recruitment strategies that were linguistically and culturally appropriate were utilized for outreach, recruitment, and enrollment of participants in the study (Fam & Ferrante, 2018; Vaughan et al., 2022). This included providing flyers via postpartum and pediatric clinic visits, postnatal education classes, social media platforms, and word of mouth. Efforts were made to include diverse populations. Participants were recruited, and data was collected from August 2022 to July 2023. A one-time survey was completed with the option to complete a qualitative interview.

A total of 100 mothers were sought for the study to represent a diverse sample of postpartum mothers in the target area.

All recruitment material provided participants with a link to the one-time online survey to complete via the Research Electronic Data Capture (REDCap) platform. Paper surveys were available for participants with limited online access, although they were never requested. Demographic questions included maternal age, race, ethnicity, marital status, education level, and employment status. Additionally, the participants' zip code was collected to determine rurality status as defined by Florida. A questionnaire was developed to collect maternal perspectives on physical, psychological, and social aspects of pregnancy, birth, and the postpartum experience. The survey was developed based on existing literature and modeled after Sjetne and colleagues' (2015) questionnaire. The questionnaire was modified to be appropriate to a population in the United States. Once developed, it was reviewed by pediatric and obstetric clinicians and mothers who had recently given birth to confirm that the survey was valid and reliable.

The measure of social support was gathered via a questionnaire used in previous work by the Welfare Children Families (WCF) project (Radey, 2018). This 9-item questionnaire has three response options regarding the level of support: no one, some people, and enough people (Radey, 2018). Mothers reported depression via the Edinburgh Postnatal Depression Scale (EPDS) and body image perception via the Body Shape Questionnaire (BSQ)-8b. The EPDS analyzes emotional experiences over 7 days using 10 Likert-scale items that assess sadness, fear, loss of interest, anxiety, sleep, self-blame, and suicide ideation. Scores range between 0 and 30, with scores above 10 suggesting the need for in-depth depression evaluation (Atuhaire et al., 2023). The BSQ-8b is a questionnaire abbreviated from the full BSQ, which provides a self-reported assessment of body shape and body dysmorphia. The questionnaire has eight items with Likert-scale responses ranging from 1 (never) to 6 (always). The total score ranges from 8 to 48 points, with higher scores indicating greater concerns regarding body shape (Evans & Dolan, 1993; Yurtsever et al., 2022).

Mothers were compensated \$20 for survey completion. After the online survey, participants were asked if they would be willing to participate in an in-depth interview to elaborate on their responses. A series of open-ended questions regarding the mothers' experience during the fourth trimester were asked, and the results were analyzed. The Institutional Review Boards at Florida State University and the University of Florida approved the study.

Data Analysis

The demographic characteristics of this sample were analyzed using descriptive techniques. All surveys were calculated as appropriate to each tool. Participants reported current (post-pregnancy) height and weight, from which a body-mass index score (BMI) was calculated. BMI categories were derived based on CDC guidelines for the United States (CDC, 2024). Baby age was calculated as the difference in days from the survey date and the baby's date of birth. Mothers reported infant birth weight in pounds and ounces, which was converted to kilograms (kg). Marital status was dichotomized into two groups: married or living as married and single.

Due to the limited diversity in race and education, groups were created based on what would provide the broadest representation of the sample. Three racial groups were created: White (Caucasian), Black (African American), or mixed (other). Three education groups were created: high school graduate or less than high school education, some college or vocational school, and a college graduate. Poverty status was based on the federal poverty level for 2023 by examining household income and the number of individuals living in the household (Department of Health and Human Services, n.d.). The variable was dichotomized into yes, living below the poverty level, or no, living above the poverty level. Rural status was determined by the Florida county in which the mother resides. Florida defines a rural county as one with a population of 75,000 or less or a county with a population of 125,000 or less adjacent to a county of 75,000 or less (Florida Department of Health, 2023; Florida Legislature, 2025). Maternal care deserts were defined based on the March of Dimes 2024 Report (Stoneburner et al., 2024). Specific questions regarding the 6-week postpartum visit were extracted from the survey for these analyses, and descriptive statistics for each question were analyzed.

Normality was assessed for the primary outcome questions (Table 2); none met the assumptions for normality. In addition, with the small sample size, especially considering the small number of participants from rural areas, non-parametric tests were chosen, and confounders and effect modifiers were not considered. Independent group tests were used to examine differences between mothers living in rural and non-rural counties: Mann-Whitney U for continuous variables and Fisher's exact test for categorical variables. Missing data were eliminated from analyses; imputation methods were not used due to the small amount of missing data.

Results

A total of 97 participants completed the entire or part of the survey. Five were excluded due to infant age of over one year, and one participant with twins, leaving a sample size of 91. Eighteen of the participants lived in a rural county. Four mothers lived in areas considered to be deserts regarding access to maternity care, and 14 lived with low maternity care access, leaving 80.2% with full access. Demographic data are presented to examine differences based on rurality (Table 1). The only significant differences were in maternal age and eligibility for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); infant birth weight, race, and poverty trended towards significance.

Table 1

Demographic Characteristics of Participants (N = 91)

	Rural	Non-Rural	<i>p</i> -value
Maternal Age ¹	27.4	31.1	0.01
Baby Age (days)	78.4	84.6	0.79
Birth Weight (kg) ²	3.53	3.30	0.14
BMI	28.8	28.9	0.99
BSQ (Mean)	21.9	20.9	0.71
Depression Score ³	8.38	8.34	0.74
Marital Status ⁴			0.47
Married	10 (71.4%)	61 (81.3%)	
Single	4 (28.6%)	14 (18.7%)	
Education ⁵			0.53
College Grad	10 (58.8%)	50 (70.4%)	
No College	7 (41.1%)	21 (29.6%)	
Race ⁶			0.08
White (Caucasian)	12 (70.6%)	51 (73.9%)	
Black (African American)	2 (11.8%)	16 (23.2%)	

	Rural	Non-Rural	<i>p</i> -value
Other or Mixed Race	3 (17.6%)	2 (2.9%)	
Hispanic ⁵			0.74
Yes	4 (22.2%)	13 (18.1%)	
No	14 (77.8%)	59 (81.9%)	
Work Status (at survey completion)			0.64
Working	12 (66.7%)	53 (72.6%)	
Looking for work	1 (5.6%)	6 (8.3%)	
Unemployed	3 (16.7%)	11 (15.3%)	
Other/Student	2 (11.1%)	3 (4.2%)	
Birth Type ⁵			0.56
Vaginal Birth	10 (58.5%)	51 (69.9%)	
C-Section	7 (41.1%)	22 (39.1%)	
Eligible for WIC ⁴			0.04
Yes	9 (50%)	24 (33.8%)	
No	5 (27.8%)	41 (57.7%)	
Unsure	4 (22.2%)	6 (8.5%)	
Poverty			0.15
Yes	5 (27.8%)	9 (12.9%)	
No	13 (72.2%)	61 (87.1%)	
Baby Friendly Hospital			0.72
Yes	13 (86.7%)	50 (78.1%)	
No	2 (13.3%)	14 (21.9%)	
Attended Postpartum Visit ¹			0.46
Yes	15 (93.8%)	69 (97.2%)	
No	1 (6.2%)	2 (2.8%)	

Note. BMIs under 16 were excluded. ¹n = 87; ²n = 85; ³n = 83; ⁴n = 89; ⁵n = 90; ⁶n = 86. Significant values ($p < .05$) in bold.

Seven questions were asked of mothers specific to the postpartum visit (Table 2). Missing data for these questions was minimal, with 4.4% for most of these questions; 19.8% of participants did not answer or had not contacted their healthcare provider, and 12% did not answer the question regarding the benefit of the postpartum visit.

Table 2

Survey Responses of Participants (N = 91)

Variable	Rural*	Non-Rural*	<i>p</i> -value	Effect size (<i>r</i>)
To what extent were your healthcare providers easy to get in touch with?	3.67	3.52	0.59	0.12
To what extent were your questions sufficiently answered by your healthcare provider?	4.07	4.11	0.79	0.06
What benefits did you have from your postpartum check-up?	3.13	3.05	0.78	0.06
How would you rate your relationship with your healthcare provider?	4.18	3.89	0.27	0.25
To what extent have you received information about the services offered at the health clinic?	4.24	3.5	0.02	0.52
To what extent have you received information about your physical health after birth?	4.24	3.43	0.01	0.58
To what extent have you received information about possible mood changes since giving birth?	3.71	3.21	0.14	0.33

Note. *Average score on a 1-5 Likert scale. Significant values ($p < .05$) in bold.

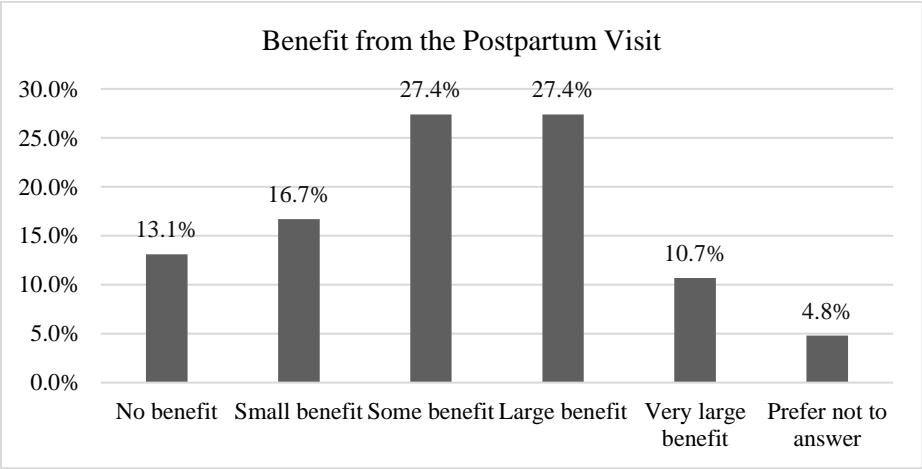
When asked about the benefits of the postpartum visit, only 38.1% of participants found a large or very large benefit to this visit (Figure 1). Although

74% felt their questions were sufficiently answered by healthcare professionals, 50% reported that their healthcare professionals were not easily accessible. About half of the participants reported receiving substantial information on services offered (53.4%), physical health (54.5%), and mood changes (45.5%) after birth (Table 2).

There was a statistically significant, medium difference in perception of information on health services received and information on physical health. Participants from rural areas rated receiving information on health services higher than participants from non-rural areas ($M = 4.24$ vs. $M = 3.5$, $p = 0.02$, $r = 0.52$). Similarly, participants from rural areas rated receiving more information on their physical health than participants from non-rural areas ($M = 4.24$ vs. $M = 3.43$, $p = 0.01$, $r = 0.58$). Although it did not reach statistical significance and demonstrates a small effect size, participants from rural areas also rated higher on receiving more information on mental health ($M = 3.71$ vs. $M = 3.21$, $p = 0.14$, $r = 0.33$) (Table 2).

Figure 1

Participant Perceived Benefit From the 6-week Postpartum Visit



Discussion

This study examined maternal perceptions of the benefit of the postpartum visit, using data from a diverse population in north-central Florida, including both rural and non-rural participants. Consistent with prior literature, most participants did not find large or very large benefit from the 6-week postpartum visit, highlighting the need for restructuring care during the fourth trimester. Most of our participants attended the postpartum visit, with no significant difference between mothers living in rural versus non-rural counties. However, participants from rural counties perceived a greater benefit regarding information received on services offered at the clinic, physical changes postpartum, and mood changes postpartum compared to participants from non-rural counties. This suggests that when mothers from rural counties attend the postpartum visit, they find it beneficial.

These results provide insight into maternal attendance at the 6-week postpartum visit and highlight a potential barrier to attendance—the lack of perceived benefit. According to ACOG, up to 40% of mothers do not attend the postpartum visit (ACOG, 2018). The reasons cited include lack of transportation and financial constraints, such as the need to return to work (Dennis et al., 2007; Henderson et al., 2016). These barriers are heightened for mothers living in rural areas. Mothers often prioritize their baby's needs over their care (Attanasio et al., 2022). ACOG recognizes the need to change the postpartum visit structure, advocating for individualized care plans and smooth transitions to primary care for ongoing management of chronic health conditions (ACOG, 2018). Policy changes may be needed, such as reimbursement for additional visits during the fourth trimester, including the option for telemedicine and home visits for families living in rural areas with limited transportation (Gordon et al., 2025; Society for Maternal-Fetal Medicine, 2023; van den Heuvel et al., 2018). This study contributes to the literature by showing that mothers from rural counties find benefits when they attend the postpartum visit. However, additional information is needed to understand why mothers in this sample had a high attendance rate for the postpartum visit. We suspect that mothers who did not attend the visit did not agree to participate in the research study as the focus was on the postpartum period.

The postpartum visit is of utmost importance as it addresses perinatal complications, chronic health conditions, mental health concerns,

contraception, and referrals to primary care providers for ongoing care. Without this visit, these issues remain unaddressed, thus increasing the risk of postpartum morbidity and mortality. Disparities in attendance are notable, with historically marginalized racial and ethnic groups and rural residents less likely to attend, placing these individuals at higher risk for complications (Admon et al., 2018; Bozkurt et al., 2024; Oribhabor et al., 2020). Systemic barriers such as lack of provider continuity, poor patient-provider communication, low health literacy, insurance lapses, financial concerns, long wait times, and cultural beliefs and practices contribute to lack of attendance (Bellerose et al., 2022; Gordon et al., 2025). Additionally, research suggests lower attendance rates among mothers living in rural areas (Colyer et al., 2020; Natarajan et al., 2023). Although this difference was not seen in our study, differences among rural and non-rural participants were present.

Demographically, rural mothers were younger, more likely to live in poverty, more were eligible for WIC, and their infants were slightly heavier at birth. Despite these differences, rural participants reported receiving more information on available healthcare services, postpartum physical health, and potential mood changes than non-rural participants. However, there was no significant difference in participants' overall perception of the visit's benefit. Though not significant, the generally lower education levels of rural participants in comparison to non-rural participants (58.8% with a college degree vs. 70.4% with a college degree) may explain differences in perceived benefit through baseline level of knowledge related to perinatal health. Additionally, the larger percentage of rural participants living in poverty and eligible for WIC may have amplified a need for additional resources that led to higher perceived benefits in rural populations who attended their postpartum visit. Further research is needed to understand and characterize the influence of this perception on postpartum service utilization and maternal health outcomes.

Aligning with ACOG's (2018) recommendations, our results underscore the importance of addressing postpartum care as a process rather than a single visit. We advocate for individualized care plans focusing on the physical, social, and psychological well-being of new mothers, including mood assessment, infant feeding, sexuality, contraception, fatigue, physical tolls of birthing, and chronic disease management (ACOG, 2018). Future research should explore what mothers find beneficial in postpartum visits to develop targeted interventions to improve attendance (Jones et al., 2019). The

postpartum period is also viewed as a time of rest and recovery, with some cultures emphasizing staying home (Handler et al., 2019; Mokhtari et al., 2018), supporting the need for individualized care and a home care model, which has been successful in various countries and parts of the United States, including federally funded maternal-child home visiting programs (Condon, 2019; Handler et al., 2019; Mokhtari et al., 2018). A recent scoping review provides focus areas for future interventions during the perinatal period for mothers from rural areas (Gordon et al., 2025). Specifically, Gordon et al. (2025) found that interventions should center on increasing care connection and frequency, social support, education, self-efficacy, and positive reinforcement. Our results contribute to this work by identifying the need to discover what mothers value from postpartum visits. These data can be utilized to build comprehensive, resourceful postpartum care.

A strength of this study was its focus on the differences in the perceived benefits of the postpartum visit between mothers from rural and non-rural counties in Florida. Our critical finding of a higher perceived benefit of the postpartum visit in rural participants was unexpected, particularly regarding knowledge about health services and physical health resources. However, this finding provides an excellent avenue for future research priorities, specifically to identify why these mothers attended the postpartum visit. Additionally, there is a need to focus on mothers from rural areas who do not attend the postpartum visit to identify their needs and how to provide care to this population. Limitations include the small number of participants from rural areas, preventing the ability to know whether results are true for all mothers from rural counties.

Additionally, the ability to control for confounding variables was not possible and could influence results. Future research should aim to increase enrollment from rural counties to determine if the differences observed in this small sample hold in a larger sample. While the sample's racial and ethnic diversity closely matches the demographics of the counties studied, its regional focus and overrepresentation of Hispanic participants limits generalizability. An additional limitation was the length of the survey (20-30 minutes), resulting in some incomplete responses, reducing the number of participants and the effect size for later questions.

Conclusion

This study highlights maternal perceptions of the 6-week postpartum visit, focusing on differences among mothers from rural counties compared to non-rural counties. The findings indicate that a substantial proportion of mothers do not find the postpartum visit beneficial and often feel their healthcare professionals are not easily accessible. Mothers in rural areas felt they received more information on healthcare services, physical health, and mood changes than those in non-rural areas. Understanding these perceptions and addressing barriers to attendance are crucial for improving maternal health outcomes.

Our findings emphasize the need to treat postpartum care as an individualized, ongoing process rather than a singular event, which aligns with ACOG recommendations. Individualized care plans that cater to new mothers' physical, social, and psychological well-being are essential. Future research should identify what mothers find beneficial in postpartum visits to develop targeted interventions that enhance attendance and effectiveness. We should also explore the challenges that non-rural and rural populations face individually that may alter outcomes. Additionally, adopting home care models and considering cultural practices can further support postpartum maternal health. This study, with its unique focus on rurality and its influence on maternal healthcare, provides a valuable foundation for future research and policy adjustments to improve postpartum care and reduce maternal morbidity and mortality.

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