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Barriers and Facilitators in Rural Maternal Care: An Integrative Review

Tammy F. Hall, PhD, RN, RDMS [1]
Audrey Snyder, PhD, RN, CCRN, CEN, ANCP-BC, FNP-BC, FAANP, FAEN, FAAN [2]

[1] Assistant Professor, Director RN to BSN Program, Professional Education, University of North Carolina Greensboro, tfhall@uncg.edu

[2] Dean of the School of Nursing, Widener University, aesnyder@widener.edu

*Correspondence: Tammy F. Hall

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Abstract

Objective: To answer the following questions: (1) What is the existing evidence on rural maternity care and shared decision making, and (2) what are the knowledge gaps and directions for future research?

Methods: The review was guided by Whittemore and Knafl. Included studies were appraised using the Mixed Methods Appraisal tool.

Data Sources: With librarian support, searches were conducted in PubMed, CINAHL, PsycINFO, and ProQuest. Filters limited results to English-language, full-text publications from January 2019 to January 2026.

Study Selection: The search identified 1,186 research studies. After removing duplicates, the citation mining of six articles and screening, 54 full texts were reviewed; 29 were excluded, leaving 25 studies included in the review.

Data Extraction: Of the 25 studies, 20 (75%) used quantitative, 2 (8%) qualitative, and 3 (12%) mixed methods. Major themes included maternity care deserts, hospital closures, distance to maternity care, insurance, telehealth, social determinants of health, severe maternal morbidity and mortality (SMMM), and shared decision making (SDM) or relational care.

Data Synthesis: Barriers such as hospital closures, maternity care deserts, and travel distances worsened maternal outcomes. Insurance instability, under-reimbursement, and workforce shortages further limited access. Telehealth showed promise but was constrained by broadband gaps. Social drivers compounded risks, with rural Black, Indigenous, and People of Color (BIPOC)

experiencing the poorest outcomes. Studies addressed SDM, though continuity of care, relationships, and communication were emphasized.

Conclusions: Improving rural maternal patients' access to high-quality care is necessary to decrease the risk of SMMM. Nurses promote patient-centered communication, evidence-based interventions, and address social drivers of health through education and advocacy. Expanding the SDM evidence base in rural maternity care will strengthen nursing's role in engagement, empowerment, and health equity.

Keywords: rural maternal care, patient autonomy, patient-centered care, shared decision-making

Barriers and Facilitators in Rural Maternal Care: An Integrative Review

Poor maternal outcomes, including severe maternal morbidity and mortality (SMMM), are a multifactorial problem perplexing many in patient care, research, leadership, and governmental roles. Severe maternal morbidity refers to unexpected pregnancy-related illness with serious short- and long-term consequences affecting the health of the patient. Maternal mortality refers to patients who have died because of a pregnancy-related complication within one year of giving birth, regardless of the gestational age of the fetus (Centers for Disease Control and Prevention [CDC], n.d.). Although the most recent 2025 maternal mortality rates have improved, the risk of experiencing maternal mortality is highest within the rural population (Rural Health Information Hub, n.d.). Research on maternal mortality is prevalent in the literature. However, rural maternal health and the disparities associated with rurality present a persistent and complex problem. While 15% of births are to rural residents, they experience a 9% greater probability of severe maternal morbidity and mortality than their urban counterparts (Kozhimannil et al., 2019).

While this review focuses on rural maternal care, it is critical to recognize that the disparity of rurality intersects with other factors, including race/ethnicity. Black women in rural counties experience maternal mortality at a rate up to 4 times higher than White women in rural counties (Merkt et al., 2021). Racial disparities associated with the social drivers of health, compounded by lack of insurance, racism in health care, and mistrust of the medical community, place, Black, Indigenous, and People of Color (BIPOC) residents at greater risk for SMMM (Basile Ibrahim et al., 2022). The intersectionality of rurality with minority race/ethnicity, low income, lower educational level, insurance payer, lack of access to transportation, challenges with access to housing, and co-morbidities further exacerbate the inequities present in rural maternal care (Basile Ibrahim & Kozhimannil, 2023; Interrante, Tuttle, et al., 2022).

Sociodemographic disparities associated with rurality further complicate outcomes for pregnant residents. Rural women experience a higher incidence of pre-existing morbidity, including diabetes, hypertension, obesity, and substance use disorders, than their urban counterparts (Hansen et al., 2022). The rural maternity population is vulnerable to poor outcomes due to geographic disparities including limited access to care, availability of high-quality care, the increasing number of maternity care deserts, and lack of access to transportation (Basile Ibrahim & Kozhimannil, 2023; Meredith et al., 2024).

Although rurality and its associated factors pose significant obstacles, respectful and relational maternity care helps mitigate their impact by fostering trust and shared decision-making. Providing an atmosphere of mutual respect and engagement increases the likelihood of shared decision-making (SDM), including respect for values, appreciation of opinions, engagement in care choices, and partnership in navigating decisional crossroads (Barry & Edgman-Levitan, 2012). This approach to maternity care has been proven to increase patient engagement, adherence to plans of care, satisfaction, and self-efficacy in pregnant people, resulting in improved health outcomes (Molenaar et al., 2018; Salahshurian & Moore, 2023). However, there is a paucity of research literature regarding SDM among rural maternity patients.

Nurses who address the needs of rural maternity patients require a foundation of knowledge concerning disparities and health care challenges associated with rurality to approach their care holistically. No comprehensive review has synthesized existing evidence; therefore, an integrative review of peer-reviewed research literature on rural maternal health and the use of shared decision-making in the care of rural maternity patients was conducted. This review sought to answer the following questions: (1) What is the existing evidence on rural maternity care, and (2) what are the knowledge gaps and directions for future research?

Methods

After consultation with a health sciences librarian at the University of North Carolina Greensboro, peer-reviewed studies were identified through keyword searches in the PubMed, CINAHL, ProQuest, and PsycINFO databases. The reference lists of selected publications were reviewed for additional articles that met the inclusion criteria. The process presented by Whittemore and Knafl (2005) was followed for review. When reported, authors' original definitions of rurality were retained; however, for synthesis, all nonmetropolitan classifications were categorized as rural.

Search Terms

To identify relevant publications, search terms rural maternity patient, rural maternal care, decision-making, choice, autonomy, and patient-centered care were entered. These terms were searched with the Boolean operator OR between variations of similar terms and the Boolean operator AND between elements of the question.

Inclusion Criteria

Primary research publications were included from peer-reviewed journals that addressed rural maternal health in the U.S. rural maternal population. The review was limited to studies published in English between 2019 and 2025, six years, to evaluate the state of rural maternal health care within and after the COVID-19 pandemic.

Exclusion Criteria

The studies excluded included (a) maternal care in a country other than the US, (b) studies in a language other than English, (c) studies involving a specific disease process, (d) studies related to a chronic illness before pregnancy, (e) studies primarily about cesarean in the rural community, and (f) studies concerning the fetus or newborn rather than the birthing person.

Critical Appraisal of Search Results

The identified papers were appraised using the Mixed Methods Appraisal Tool (MMAT) (Hong, et al., 2018) and the Critical Appraisal Skills Program (CASP) Checklists (n.d.). A data charting sheet was developed to facilitate the selection of variables to extract from the findings. The extracted data elements were coded, enabling the researchers to identify common themes from the literature.

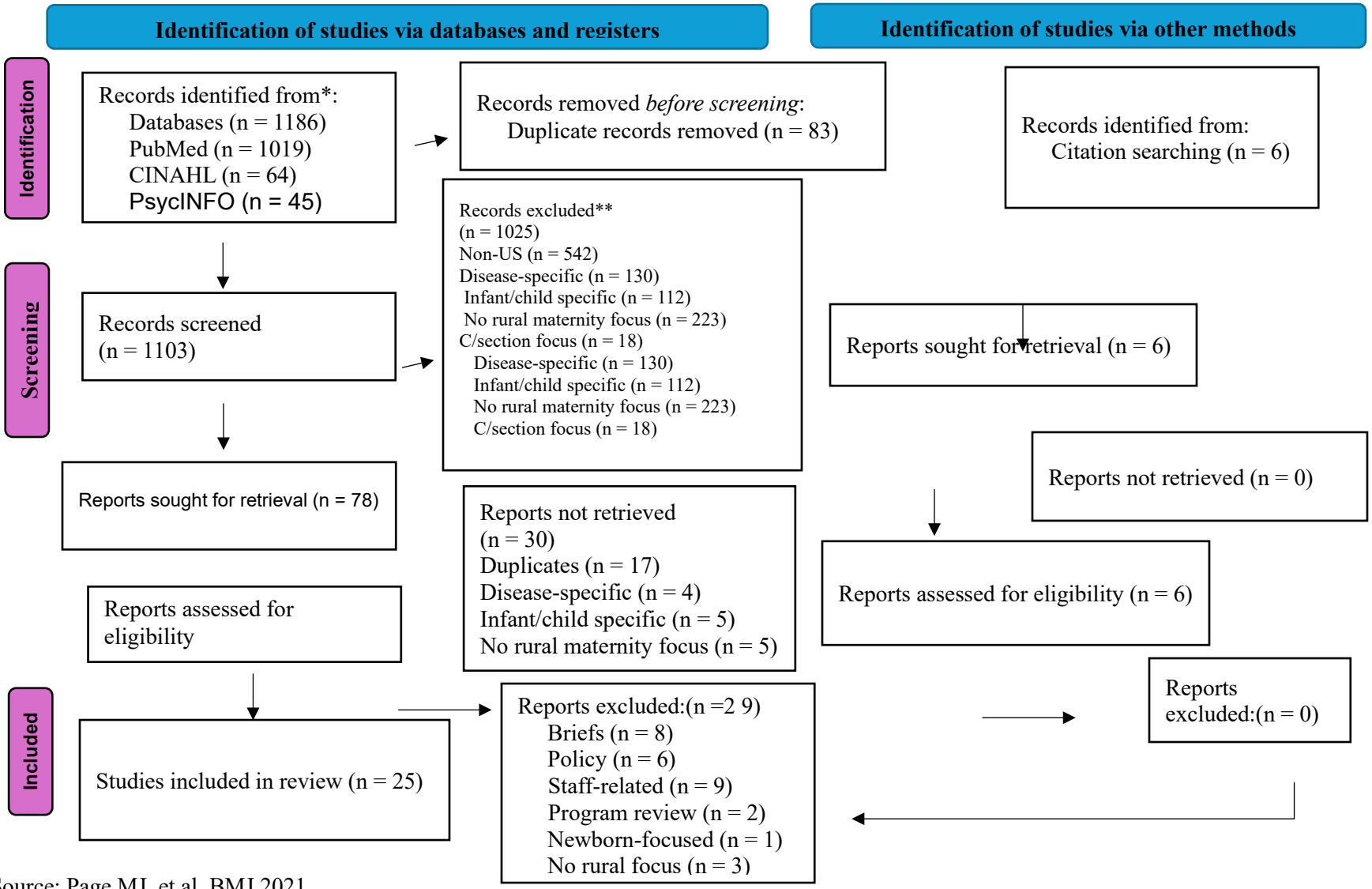
Results

Study Selection

Two reviewers independently reviewed a total of 1,186 publications from the PubMed, CINAHL, PsycINFO, and ProQuest databases. Of those, 83 duplicates were removed. The 1,103 titles and abstracts were reviewed for relevance; 1,025 were excluded for being non-US, disease-specific, infant/child-focused, cesarean-specific, or lacking a rural maternity focus. Of the remaining 78, 30 were excluded because they were disease- or infant/child-specific or lacked a rural maternity focus. Two reviewers independently conducted a full-text review of the remaining 48 items. From this group, 29 were omitted, including briefs, policy documents, staff-related reports, program reviews, and studies focused on newborns or lacking a rural emphasis. Six publications were included through screening the references of included studies. The team reached the consensus that 25 studies met the review criteria (see figure 1).

Figure 1

PRISMA Flow diagram for Reporting Systematic Reviews



Source: Page MJ, et al. BMJ 2021

Table 1 lays out the data extraction in this review.

Table 1

Extracted Data from Included Articles

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
Admon et al. (2023)	Describe differences in perinatal health insurance coverage for rural and urban residents in 43 states.	Cross-sectional analysis of survey data. Insurance coverage was estimated pre-pregnancy, at birth, and postpartum.	154,992 postpartum individuals in 43 states and two jurisdictions who participated in the 2016–2019 PRAMS (Pregnancy Risk Assessment Monitoring System).	Perinatal uninsurance disproportionately affects rural residents, compared with urban residents, in the 43 states examined.
Basile Ibrahim et al, (2022)	Review the characteristics and population trends in rural America, including health behaviors, health care access and quality of care, and maternal health outcomes experienced by rural residents.	Surveys of rural hospitals on evidence-based interventions. Social vulnerability index scores were calculated.	Ninety-five of 285 hospitals responded.	At least half of all rural counties did not have these evidence-based supports: prenatal/postpartum nurse home visits, midwifery care, group prenatal care, doulas, postpartum peer support
Blythe et al. (2021)	The perspectives of rural Kansas women were sought regarding their experience of birth and satisfaction with maternity care.	Cross-sectional structured interview and completion of a paper survey.	47 participants	Characteristics of the provider and staff mattered to the maternity patient. They were willing to travel greater distances to see a provider they trusted and with whom they had a relationship.
Bozkurt et al. (2024)	Estimate the rural–urban differences in receiving pre-pregnancy, prenatal, and postpartum services.	Cross-sectional data analysis using data from the Pregnancy Risk Assessment and Monitoring System (PRAMS)	PRAMS data from 3141 US counties and county-equivalents.	Rural maternity patients are less likely to attend a medical appointment one year prior to pregnancy or during the postpartum period. They are also less likely to receive comprehensive

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
				screenings or counseling during those times.
Daymude et al. (2022)	Explores what factors may be associated with rural hospital LDU closures in Georgia from 2012 to 2016.	Mixed methods	Rural primary care service areas containing, in 2011, (1) only counties outside of the Atlanta Metropolitan Service Area, (2) only counties of population strictly less than 50,000, and (3) exactly one labor and delivery unit (LDU).	LDUs that closed had higher proportions of: • Black female residents in their Primary Care Service Areas (PCSAs), • Black birthing patients, • patients with Medicaid, self-pay or other government insurance • lower LDU birth volume • fewer obstetricians and obstetric provider equivalents per LDU • fewer average annual births per obstetric provider. Qualitative results indicate financial distress primarily contributed to closures, but also suggest that low birth volume and obstetric provider shortage impacted closures
Fontenot et al. (2024)	To assess • access to obstetric hospitals across the U.S., focusing on inequities for birthing people in maternity care deserts and rural areas • the differing distance and time to obstetric hospitals by the predominant race/ethnicity in	Cross-sectional retrospective analysis of secondary data to estimate travel distance and time to LDU.	Births estimated through 2017-2021 American Community Survey (ACS)	The mean distance and time to care by maternity care access designation was 7.1 miles or 12.7 minutes for full access areas; There are 14.2 miles or 20.1 minutes for limited access areas, and 28.1 miles or 36.5 minutes for maternity care deserts. The mean travel time among birthing people in maternity care deserts

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
	each census tract.			was 3.9 times greater than in full-access areas.
Glover et al. (2024)	Deepen the field's understanding of patient-centered care in maternal health from the patients' perspectives to identify improvements that adapt to patient preferences, identities, and need for participation in healthcare decisions.	Online administration of the Maternal Healthcare Experiences Survey to women who had given birth in the last 5 years.	484 women who had given birth within 5 years preceding the survey.	Marginalized populations (rural) experience maternity care lacking respect and autonomy.
Hansen et al. (2022)	Evaluate how rural/urban status and other risk factors alter women's odds of severe maternal morbidity (SMM) at delivery.	Used multiple logistic regression with interaction terms to evaluate the moderating effect of rural/urban residence with other risk factors.	48,608 Kentucky resident delivery hospitalization records from 2017.	Rural women in Kentucky are at an increased risk for SMM.
Harrington, et al. (2023)	Describe differences in maternal admissions to the intensive care unit (ICU) and mortality in rural versus urban areas in the United States.	Cross-sectional nationwide analysis and calculated age-standardized rates and rate ratios (RRs) of maternal ICU admission and mortality per 100,000 live births between 2016 and 2019 in rural versus urban areas.	25,541 maternal ICU admissions during the delivery hospitalization from 2016 to 2019	Pregnant individuals in rural areas are at higher risk for ICU admission and mortality than are their urban counterparts.
Hernandez-Green, et al. (2024)	Aimed to assist in developing an mHealth application that connects with women soon after	Group interviews included questions about (1) post-birth experiences; (2) specific needs	Fourteen mothers participated across 7 group interviews.	Rural mothers who participated in the study shared common reports of neglect and/or discrimination from their healthcare providers, a

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
	discharge, providing personalized and formalized support in the early postpartum period.	(e.g., clinical, social support, social services, etc.) in the postpartum period; (3) perspectives on current hospital discharge processes and information; (4) lived experiences with racism, classism, and/or gender discrimination; and (5) desired features and characteristics for the mobile app development.		lack of resources pertinent to their well-being post-birth, and the need for increased connection with other mothers.
Hung, et al. (2023)	Describe associations between driving time to hospital maternity units and digital access to understand whether augmenting digital access and telehealth services might help mitigate travel burdens to maternity care.	This cross-sectional study used: • 2020 American Hospital Association (AHA) Annual Survey • 2020 American Community Survey (ACS) Calculated driving times of the fastest route from population-weighted ZCTA centroids to the nearest hospital maternity unit. Examine differences in households lacking digital	Data from two sources: (1) the 2020 American Hospital Association (AHA) Annual Survey, and (2) 2020 American Community Survey (ACS),	"Significant disparities in both digital access and travel burdens to accessing hospital maternity care across and within rural-urban communities. State-level variations also indicate structural misallocation of hospital maternity care across the system." "Areas farther away from the nearest hospital maternity unit had lower digital access compared to communities with proximal access to maternity units."

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
		access equipment (any digital device, smartphones, tablet), and lacking broadband subscriptions by spatial accessibility to maternity units		
Interrante, Admon et al. (2022)	Examine the receipt of recommended postpartum care content and describe variations across health insurance type, rural or urban residence, and race and ethnicity.	A cross-sectional survey of patients with births from 2016 to 2019 used data from the Pregnancy Risk Assessment Monitoring System (43 states and 2 jurisdictions)	Patients who attended a postpartum visit were assessed for content at that visit. Analyses were performed from November 2021 to July 2022.	Inequities in the content of postpartum care received are extensive across patients' insurance type, rural or urban residence, and racial and ethnic identities, and these disparities are compounded for patients with multiple intersecting disadvantaged identities.
Interrante, Tuttle et al. (2022)	Examined differences in risk of SMMM for Medicaid-funded compared with privately insured hospital births among U.S. residents, by: • Rural vs. urban • Race/ethnicity • Clinical factors	Used maternal discharge records from childbirth hospitalizations in the Healthcare Cost and Utilization Project's National Inpatient Sample from 2007 to 2015 to predict SMMM rates by payer, rurality, race/ethnicity, and clinical factors	6,357,796 hospitalizations for childbirth	Higher rates of SMMM among Medicaid-funded births indicate an opportunity for tailored state and federal policy responses to address the particular maternal health challenges faced by Medicaid beneficiaries, including Black, Indigenous, and rural residents.
James, et al. (2024)	Examine the accessibility of hospital facilities with maternity care services in 1 rural county in Alabama in preparation for the initiation of prenatal care	Analyzed driving distance (in miles) from maternal city of residence in Conecuh County, Alabama, to hospital of delivery, using	370 births in Conecuh County, Alabama	Pregnant patients in Conecuh County experience significant geographic barriers related to perinatal care access, traveling up to 70 miles for maternity care.

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
	services at a federally qualified health center.	2019–2021 vital statistics data and geographic information system (GIS) software.		
Kozhimannil (2022)	Describe postpartum health insurance coverage for rural and urban U.S. residents who are BIPOC compared to those who are white	Measured the continuity of insurance during childbirth and the postpartum period among White and BIPOC residents in rural and urban counties using the 2016-2019 Pregnancy Risk Assessment Monitoring System.	150,273 entries	Postpartum loss of health insurance was most common among rural BIPOC residents with Medicaid coverage.
Luke (2021)	Aimed to (1) explore whether there were differences in rates of SMM&M by locality, that is, urban, suburban, and rural status; (2) describe whether those differences varied by race; and (3) examine trends in SMM&M by locality and race.	Retrospective Cohort Study of Delivery Hospitalizations. 1. Examined patients by size of city (urban, suburban, medium city, small city, micropolitan rural, noncore rural), race, age, insurance, income quartile, and comorbidities. 2. Calculated raw rates and discharge-weighted univariate odds of SMMM by locale and other covariates using multivariate	4,494,089 delivery hospitalizations.	Mostly urban and mostly rural experience higher rates of SMMM. Black patients experience the highest odds overall.

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
		logistic regression. 3. Hospital characteristics were added. SMMM as outcome was split into CV, Renal, respiratory, obstetric, hemorrhagic, and infectious.		
Meredith et al. (2024)	Characterize regions defined to have a lack of access to obstetric care based on two existing measures of access and to determine the facility interventions required to improve access according to these measures.	Formulated two facility location optimization models to determine the number of new facilities required to minimize the number of reproductive-aged women who lack access to obstetric care.	Obstetric facilities in Georgia that are classified as birth centers, or Perinatal Care Level 1, 2, or 3 hospitals, according to the public records from Georgia's Department of Public Health from 2017	Maternity care deserts are associated with increased rates of maternal mortality, this measure is not a practical performance indicator of improvements to access to obstetric care and may not help determine the optimal number, designations, or coordination of maternity care in a particular region.
Merkt et al. (2021)	Compared pregnancy-related mortality across and within urban and rural counties by race and ethnicity and age.	Conducted a descriptive analysis of 3747 pregnancy-related deaths during 2011 to 2016. Aggregated data by US county and grouped counties per the National Center for Health Statistics Urban-Rural Classification Scheme for Counties.	3747 pregnancy-related deaths were used, representing 92% of all pregnancy-related deaths in the United States that occurred during 2011 to 2016.	Although more than half of pregnancy-related deaths occurred in large metro counties, the pregnancy-related mortality ratio rose with increasing rurality.

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
		Calculated the pregnancy-related mortality ratio (number of pregnancy-related deaths per 100,000 live births) for each urban-rural grouping, obtained 95% confidence intervals, and performed exact tests of ratio comparisons using the Poisson distribution.		
Radke, et al. (2023)	Examine the effects of recent L&D closures (in 2018) on the adequacy of prenatal care for pregnant people in those rural communities.	The initiation of prenatal care and adequacy of prenatal visits were assessed by using birth certificate data for 47 rural counties in Iowa.	Birth certificate data for all 119,430 Iowa births from 2017 to 2019	Utilization of prenatal care is lower in rural communities following L&D unit closure, especially among Medicaid recipients.
Rohr, et al. (2019)	Examine the willingness of rural New Order Amish to utilize healthcare, including obstetrics.	Surveys were conducted in a face-to-face encounter. Medical records were reviewed.	n =15 for surveys n = 422 medical records reviewed	Strong desire for inclusion in decisions; previous exclusion common. Maternity care is most valued, yet transfers disrupt engagement.
Rossen, et al. (2022)	Threefold objective: (1) to estimate the impact of the implementation of the pregnancy status checkbox on maternal mortality ratios (MMRs) by rural-urban maternal residence; (2) estimate trends	Used restricted-use all-county birth and death certificate data from the National Center for Health Statistics (NCHS), collected as part of the National Vital Statistics System.	Restricted-use all-county birth and death certificate data from the National Center for Health Statistics	The impact of the pregnancy status checkbox on MMRs was larger for rural areas than for urban areas in the US.

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
	in MMRs from 1999 through 2017, accounting for the checkbox implementation, by rural-urban maternal residence; and (3) examine the impact of potential misclassification of pregnancy status on the death certificate on rural-urban trends in MMRs from 1999 through 2017	Used ICD-10 codes indicating maternal death. The checkbox indicating a current or recent pregnancy was assessed. Rurality was assessed.		
Sheffield et al. (2024)	Describe the availability of midwifery care in rural US communities with current or prior hospital-based childbirth services.	Surveyed rural hospitals' women's health unit managers and administrators to determine the availability of local midwifery care access identified by responses to the question: "Is midwifery care with CNMs available in your community?" Respondents could answer "In the community and affiliated with my hospital," "In the community but not affiliated with my hospital," or "Not available in the community."	292 rural hospitals were surveyed, and 133 responded	Among surveyed hospitals that had current childbirth services, 27% reported having midwifery care available in the hospital, and 18% reported having midwifery care available in their community. In comparison, 10% of rural hospitals with prior childbirth services reported having midwifery care available in the hospital, and 15% reported having midwifery care available in their community.

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
Statz and Evers (2020)	Describe rural women's interpretations of rural distance as a dimension of accessing health care.	One-on-one semi-structured interviews	Fifty-one in-person interviews with rural women across seven counties in northeastern Minnesota, a region that includes six counties with areas designated FAR Level 4, or most remote	Women, at times, forego health care or travel farther distances to access "better" care owing to medical mistrust.
Sullivan et al. (2021)	Explores local effects of L/D closures in rural areas of North Carolina (NC).	Retrospective cohort study of birth outcomes of 4,065 women in 5 rural areas of NC with LDU unit closures between 2013 and 2017. Outcomes were abstracted from birth certificate data from the NC Vital Statistics Reporting System.	4,065 women in 5 rural areas of NC with L/D unit closures between 2013 and 2017.	LDU closures in rural NC disproportionately affected women on Medicaid.
Wallace et al. (2021)	Explore whether residing in a maternity care desert was associated with risk of death during pregnancy and up to 1 year postpartum among women in Louisiana from 2016 to 2017.	Collected data on maternal deaths: Demographics included age, race/ethnicity, education, and age at death. Delivery volume of the hospitals where the deaths occurred. Parish information included: poverty level,	112 cases of verified pregnancy-associated (up to 1 year PP) mortality from 2016-2017. These were georeferenced. 108,484 live births were also georeferenced.	Residence in a maternity care desert was associated with a three-fold risk of pregnancy-related mortality (aRR, 3.37 [1.71-6.65])

First Author (Publication Year)	Study Aim	Methods	Sample	Findings
		percent with health insurance, and proportion of Medicaid. urban, mostly rural, completely rural.		

The review illustrated a surge in research on rural maternal health. Most studies published from 2022 to 2024 (n = 18; 72%). (See Table 1). Of the 25 research-based publications, 20 (80%) were identified as quantitative, 2 (8%) as qualitative, and 3 (12%) as mixed methods. Quantitative sample sizes ranged from 285 participants to data sets as large as 6,357,796 (Basile Ibrahim & Kozhimannil, 2023; Interrante, Tuttle, et al., 2022). Two quantitative studies included surveys from rural facilities (Basile Ibrahim et al., 2022; Sheffield et al., 2024). The qualitative studies comprised of semi-structured interviews (Hernandez-Green et al., 2024; Statz & Evers, 2020). The three mixed-methods studies used various tools, including surveys, record reviews, and semi-structured interviews (Blythe et al., 2021; Daymude et al., 2022; Rohr et al., 2019).

The central themes of the review included maternity care deserts (those counties without a birthing hospital or birthing professional, regardless of insurance status), hospital closures, and distance to maternity care, insurance of the rural maternity patient, telehealth as a solution to maternity access to care, evidence-based supports and services, the contribution of the social determinants of health in the outcomes of the rural maternal patient, and severe maternal morbidity and mortality, and shared decision-making or relational care.

Maternity Care Deserts, Hospital Closures, and Distance to Maternity Care

The authors of six publications focused on maternity care deserts (Blythe et al., 2021; Fontenot et al., 2024; James et al., 2024; Meredith et al., 2024; Statz & Evers, 2020; Wallace et al., 2021). They investigated the distance rural maternal patients must travel to access maternal care. By analyzing maternity care access designations, hospital locations, and rurality across the United States, it was found that rurality compounded travel times to care; living in a rural maternity care desert results in travel distances 1.9 times that of a rural birthing person and 4.0 times that of an average birthing person (Fontenot et al., 2024). A more localized study in Alabama found driving distances to maternity care up to 70 miles (James et al., 2024). Distance to rural maternity care influences satisfaction and reports of positive experiences (Blythe et al., 2021). Meredith et al. (2024) explored the number and location of new facilities necessary to provide adequate maternal care for all patients of child-bearing age. Three studies investigating the number of hospital closures examined the causal and socioeconomic factors most prevalent in counties where closures occurred (Daymude et al., 2022; Radke et al., 2023; Sullivan et al., 2021). Overall,

findings across the studies indicated that limited access to maternal care was associated with poorer maternal health outcomes and fewer prenatal and postpartum visits, particularly in maternity care deserts and in counties unable to sustain maternal units with sufficient birth volumes to maintain competence in high-risk maternity care (Bozkurt et al., 2024; Fontenot et al., 2024). Radke et al. (2023) also report that rural maternity patients have a relative risk of receiving inadequate care of 18%. Although the relative risk is modest, collectively, thousands of maternity patients lack access to early detection and management of obstetric complications, placing them at higher risk for maternal morbidity and mortality.

Insurance of the Rural Maternity Patient

Insurance coverage and patient access to insurance are topics of concern (n = 4) (Admon et al., 2023; Interrante, Tuttle, et al., 2022; Kozhimannil et al., 2022; Sheffield et al., 2024). The need for policy regarding insurance coverage is discussed in six studies (Admon et al., 2023; Bozkurt et al., 2024; Daymude et al., 2022; Interrante, Tuttle, et al., 2022; James et al., 2024; Kozhimannil et al., 2022). Socioeconomic factors and the need for states to expand Medicaid coverage for 12 months postpartum are common themes in studies on insurance coverage. This call aims to reduce racial and ethnic, as well as geographic, inequities in rural maternal care, particularly during the prenatal and postpartum periods (Kozhimannil et al., 2022; Radke et al., 2023). Two studies (Bozkurt et al., 2024; Statz & Evers, 2020) reported an association between inadequate insurance coverage and late entry into prenatal care. Furthermore, one noted an association between the rurality of the maternity patient and the lack of the full scope of maternity care, including midwifery services (Sheffield et al., 2024).

Telehealth

Telehealth as a means of caring for rural patients was a common theme among the studies (n= 10), as it is considered a plausible solution for geographic disparities (Bozkurt et al., 2024; Daymude et al., 2022; Fontenot et al., 2024; Hernandez-Green et al., 2024; Hung et al., 2023; Interrante, Admon, et al., 2022; James et al., 2024; Meredith et al., 2024; Statz & Evers, 2020; Sullivan et al., 2021). Telehealth is promising, as it provides patients with access to prenatal care, maternal-fetal medicine, fetal echocardiography, home monitoring of fetal heart rate patterns, genetic counseling, and chronic illness monitoring (Bozkurt et al., 2024). Virtual visits negate the need to travel, obtain childcare, or leave the workplace. This modality improved patient engagement and adherence to scheduled prenatal visits (James et al., 2024). However, researchers investigated the correlation between distance to a birthing hospital and internet access in one study. They found that commutes of 30 minutes or more are associated with households without broadband internet access, further complicating the landscape of disparities experienced by rural maternal patients (Hung et al., 2023).

Evidence-based Supports and Services

Two studies examined the availability of evidence-based services such as nurse home visits, midwifery care, group prenatal care, doula care, and postpartum peer support groups in the rural setting and distinguished the difference in receiving these services in urban versus rural settings (Basile Ibrahim et al., 2022; Bozkurt et al., 2024). Social vulnerability considers social drivers and how they shape health and systemic inequalities. It was assessed in rural counties and found to correlate with service provision. Counties with greater vulnerability had fewer available resources. Half the rural counties assessed lacked evidence-based services (Basile Ibrahim et al., 2022).

Contribution of the Social Drivers of Health in the Outcomes of Rural Maternal Patients

In six of the studies, authors focused on the experiences and outcomes of rural maternal patients (Daymude et al., 2022; Hernandez-Green et al., 2024; Interrante, Admon, et al., 2022; Interrante, Tuttle, et al., 2022; Kozhimannil et al., 2022; Statz & Evers, 2020). Multiple disparities were found to be associated with majority-BIPOC rural counties. These disparities included increased vulnerability (n = 3), poor outcomes (n = 10), enrollment in Medicaid (n = 7), and mistrust of the medical system because of experiences with racism (n = 2). One group of researchers investigated the Prevent Maternal Mortality Using Mobile Technology (PM3) mobile application, an intervention developed to support Black rural patients throughout the postpartum period by incorporating a digital tool to provide individualized support (Hernandez-Green et al., 2024). In 12 studies, poverty contributed to poor rural maternal care (Admon et al., 2023; Bozkurt et al., 2024; Daymude et al., 2022; Hansen et al., 2022; Hung et al., 2023; Interrante, Tuttle, et al., 2022; Kozhimannil et al., 2022; Meredith et al., 2024; Merkt et al., 2021; Statz & Evers, 2020; Sullivan et al., 2021; Wallace et al., 2021), while others refer to the social drivers of health (n = 5; Basile Ibrahim & Kozhimannil, 2023; Hernandez-Green et al., 2024; Luke et al., 2021; Sullivan et al., 2021; Wallace et al., 2021). The intersection of rurality with the social drivers of health is discussed in eight studies (Admon et al., 2023; Harrington et al., 2023; Hernandez-Green et al., 2024; Interrante, Admon et al., 2022; Interrante, Tuttle, et al., 2022; Kozhimannil et al., 2022; Merkt et al., 2021; Statz & Evers, 2020).

Severe Maternal Morbidity and Mortality

Severe maternal morbidity and mortality are of concern, as most authors address the issue (n = 18) in their findings. Long travel distances to access care are related to increased SMMM in five studies. One research team highlighted that rural counties account for 17% of all maternal mortality, resulting in the highest pregnancy-related mortality ratios (Merkt et al., 2021). In four of the articles, the postpartum period is considered the time when rural women are most vulnerable to SMMM (Bozkurt et al., 2024; Daymude et al., 2022; Fontenot et al., 2024; Kozhimannil et al., 2022). In contrast, Hansen et al. (2022) claim that access to prenatal care may alleviate the risk of SMMM. The compounding of disparities through intersectionality is noted as a cause of SMMM in nine studies (Admon et al., 2023; Basile Ibrahim & Kozhimannil, 2023; Harrington et al., 2023; Hernandez-Green et al., 2024; Interrante, Admon, et al., 2022; Interrante, Tuttle, et al., 2022;

Kozhimannil et al., 2022; Merkt et al., 2021; Statz & Evers, 2020). One group indicates that maternal mortality is improving globally, but worsening in the US (Glover et al., 2024).

Rural Maternal Health and Shared Decision-Making

The authors of three publications provided information on the experience of shared decision-making (Blythe et al., 2021; Glover et al., 2024; Rohr et al., 2019). One team stated that an inclusive, relational communication style often determines rural patients' willingness to travel long distances to receive prenatal and postpartum care (Blythe et al., 2021). Two groups discussed the preferences of specific rural populations for care and factors related to seeking care, including SDM (Rohr et al., 2019; Statz & Evers, 2020). One (4.2%) offers a framework of SDM and respectful communication with maternity patients with marginalized identities, including rurality (Glover et al., 2024).

Discussion

Maternal morbidity and mortality are essential measures of maternal health and indicators of population health. Severe maternal morbidity and mortality are associated with common themes throughout the identified literature. Distance traveled to receive care and maternity care deserts (Admon et al., 2023; Blythe et al., 2021; Bozkurt et al., 2024; Daymude et al., 2022; Fontenot et al., 2024; Hansen et al., 2022; Hung et al., 2023; Meredith et al., 2024; Statz & Evers, 2020; Sullivan et al., 2021) in combination with the shortage of obstetric providers (Bozkurt et al., 2024; Daymude et al., 2022; Fontenot et al., 2024; James et al., 2024; Meredith et al., 2024; Merkt et al., 2021, 2021; Radke et al., 2023), create hardships for rural patients seeking care during their pregnancies, which makes them vulnerable to SMMM. The nature of rurality in pregnancy puts patients at risk, as demonstrated by this review. This indicates that the more rural the patient, the higher the odds of SMMM (aOR 3.87; CI: 3.09–4.86) (Hansen et al., 2022).

The social determinants of health (SDOH), or social drivers, are closely related to SMMM, especially when considering the intersection of rurality with race/ethnicity, low income, unemployment, low educational attainment, unstable housing, and limited transportation. Outcomes are consistently worse for rural BIPOC patients and become more deleterious when compounded with persistent negative social drivers. Intersectionality, especially for rural maternity patients, creates substantial barriers to equitable health care (Interrante, Admon, et al., 2022; Kozhimannil et al., 2022), as evidenced by the rural maternal mortality rate being nearly twice that of urban areas (Harrington et al., 2023).

The decreasing number of hospitals available to accommodate rural maternity patients creates stress and hardship as they travel significant distances to receive maternity care. The closure of labor and delivery units (LDUs) or hospitals has left some counties without birthing hospitals, creating maternity care deserts. Factors contributing to the closure of LDUs, and hospitals include financial challenges, workforce shortages, and low volumes of births (Daymude et al., 2022; James et al., 2024; Meredith et al., 2024; Radke et al., 2023; Sullivan et al., 2021). Financial concerns are exacerbated by the need to revise policy to improve Medicaid

reimbursement for maternity services (Interrante, Admon, et al., 2022; Radke et al., 2023; Sullivan et al., 2021). Medicaid offers up to 30% less than private insurers for women's services (Sullivan et al., 2021). The reduction in reimbursement has rendered rural hospitals unable to offer maternity services.

Workforce shortages contribute to LDU closures and leave communities without access to prenatal and postpartum care (Radke et al., 2023). Lack of prenatal care providers is associated with poor maternal and neonatal outcomes, including preterm birth and severe maternal morbidity (Radke et al., 2023). The lack of providers also contributes to low delivery volumes at rural hospitals, which is included in the justification for LDU closures (Daymude et al., 2022; Meredith et al., 2024; Radke et al., 2023; Sullivan et al., 2021). Some association with improved outcomes is noted when rural maternity patients travel to give birth at a higher-volume hospital (Sullivan et al., 2021). For instance, those who give birth at low-volume hospitals have 31% greater odds of experiencing postpartum hemorrhage because of a lack of experienced and competent staff and access to necessary equipment (Daymude et al., 2022). However, rural maternity patients are emergently seeking care at hospitals without maternity services. Thus, care is provided by inexperienced staff, resulting in poor outcomes (Hansen et al., 2022).

Longer distances traveled to obtain prenatal, perinatal, and postpartum care, however, are associated with higher rates of SMMM (Blythe et al., 2021; Bozkurt et al., 2024; Daymude et al., 2022; Fontenot et al., 2024; Hung et al., 2023; Interrante, Tuttle, et al., 2022; James et al., 2024; Merkt et al., 2021; Radke et al., 2023). Statz and Evers (2020) equate the disparities and risks associated with maternal rurality to a moral failure of the US. They state that the increasing distances required to obtain high-quality maternity care have led to adverse maternal outcomes and mistrust of medical professionals. At best, greater distances are associated with delayed initiation of prenatal care and missed opportunities for some education and screenings (James et al., 2024).

Delayed initiation of prenatal care is also associated with the rural maternity patient's ability to obtain insurance to cover pregnancy, birth, and postpartum care (Bozkurt et al., 2024; Interrante, Admon, et al., 2022; James et al., 2024). Rural residents are more often uninsured than their urban counterparts (Bozkurt et al., 2024; Hung et al., 2023; Interrante, Admon, et al., 2022, 2022). Researchers have confirmed that having Medicaid is most often correlated with poverty (Admon et al., 2023; Interrante, Admon, et al., 2022). The overrepresentation of Black rural maternal patients on Medicaid is also observed in the literature (Basile Ibrahim et al., 2022; Interrante, Admon, et al., 2022; Kozhimannil et al., 2022). The intersection of rurality and social vulnerability compounds disparities, resulting in delayed insurance or uninsurance (Basile Ibrahim et al., 2022). Perhaps most concerning is the lack of continuity in insurance coverage during the postpartum period, when patients are most likely to experience SMMM (Bozkurt et al., 2024; Fontenot et al., 2024; Kozhimannil et al., 2022). In an effort to decrease the incidence of SMMM in rural communities, most states have enacted Medicaid policy revision, particularly expansion

to 12 months, to impact disparities and gaps in coverage (Admon et al., 2023; Daymude et al., 2022; Fontenot et al., 2024; Interrante, Admon, et al., 2022; Kozhimannil et al., 2022).

Telehealth is promising in alleviating disparities experienced by rural maternal patients (Bozkurt et al., 2024; Daymude et al., 2022; Fontenot et al., 2024; Hernandez-Green et al., 2024; Hung et al., 2023; Interrante, Admon, et al., 2022; James et al., 2024; Meredith et al., 2024; Statz & Evers, 2020; Sullivan et al., 2021). The benefits of telehealth for rural maternity patients include reducing the need to coordinate transportation, arrange childcare, and take time away from work (Bozkurt et al., 2024; Hung et al., 2023; James et al., 2024; Sullivan et al., 2021). While not all prenatal and postpartum visits should be replaced by telehealth services (Hung et al., 2023), many services are appropriately delivered via telehealth, including those requiring a specialist's input. Maternal-fetal medicine, genetic counseling, and chronic illness monitoring visits conducted via telehealth prevent the patient from incurring travel and time-away-from-home costs while receiving the care needed for a safe pregnancy and birth (Bozkurt et al., 2024; Hung et al., 2023). Additionally, the practice of telehealth mitigates the shortage of providers in rural areas, thereby reducing the disparity in access to care associated with rurality (Fontenot et al., 2024; James et al., 2024; Sullivan et al., 2021). Physicians, midwives, and registered nurses in rural areas benefit from consultations when caring for high-risk patients (Bozkurt et al., 2024). Monitoring devices incorporate telehealth principles that enable patients to perform fetal monitoring at home. This prevents the high cost of inpatient monitoring and enhances patient self-efficacy (Hung et al., 2023; Luke et al., 2021).

Telehealth is a viable intervention for many rural patients. However, it is not without its challenges. While a beneficial tool, not all prenatal and postpartum visits are suitable for telehealth (Bozkurt et al., 2024; Hung et al., 2023). High-risk pregnancies may require face-to-face interaction and monitoring for accurate diagnoses and assessments (Hung et al., 2023; Luke et al., 2021). Additionally, telehealth may be a contributing factor to the health care disparities of rural maternity patients. Study results by Hung et al. (2023) showed that communities farther from birthing hospitals experience disproportionately lower broadband and device access, which prevents telehealth use for these patients. Maternity care deserts are associated with greater distance to care and little to no access to broadband internet. This disparity perpetuates the effects of rurality. Efforts are ongoing to enact policy to improve digital access for rural patients (Bozkurt et al., 2024; Daymude et al., 2022; Hung et al., 2023; Statz & Evers, 2020).

Shared decision-making is a crucial aspect of rural maternity care. Although sparse, the literature on SDM in rural settings provides valuable insights into patients' perceptions and needs. Themes relevant to SDM for the rural maternity patient emerged from the literature review. The themes include access to care, relationship with the care team, and communication (Blythe et al., 2021; Glover et al., 2024; Rohr et al., 2019).

Lack of access to a maternity-serving health facility is a barrier to high-quality care and to the provision of SDM. Lack of access requires rural patients to travel for maternity care, often not

seeing the same care team twice, and reduces patients' engagement in SDM (Blythe et al., 2021; Rohr et al., 2019).

The patient-provider relationship (including physicians, midwives, and registered nurses) specific to the care of rural patients is prominent in the SDM literature. Patients preferred the relational aspect provided through continuity of care. Those who reported dissatisfaction with the patient/provider relationship noted meeting their birthing provider during the birth of their child. They believed their knowledge or input was disregarded by the entire care team and perceived pressure to consent to procedures (Glover et al., 2024). Patients voiced dissatisfaction concerning arriving to give birth, having never discussed medications or procedures standard to labor and birth (Glover et al., 2024). Patients linked the lack of relationship to poor birth team bedside manners and negative birth experiences (Blythe et al., 2021). Patients value communication from all involved with their pregnancy, from physicians/midwives, nurses, and office staff to Medicaid case workers, and desire to be informed of options, procedures, and expectations clearly and respectfully (Blythe et al., 2021; Glover et al., 2024; Rohr et al., 2019).

Patients' perception of their care communicates their value to the care team. Some rural patients reported diminished self-worth and perceived second-rate care because of their enrollment in public insurance. This subsequently contributed to mistrust in their caregivers and the medical system (Statz & Evers, 2020). Diligence to allay these perceptions will encourage positive communication and enhance self-worth rather than negatively impacting it.

Finally, patient-centered care and communication foster informed, evidence-based decision-making grounded in the patient's values (Glover et al., 2024). Patients value receiving information, being offered options, and receiving support in their decisions. Patients included in SDM are comfortable approaching the care team and expect mutual respect and inclusion in care decisions. This results in satisfaction and improved health outcomes (Blythe et al., 2021; Glover et al., 2024). On the contrary, those not included in SDM are likely to distrust their team, believe that information is being withheld, or that decisions are made for them rather than with them, with culture or race contributing to their exclusion (Glover et al., 2024).

The national focus on severe maternal morbidity and mortality has resulted in increased investigations into contributing factors, including those related to rural maternal health. However, this review highlights a lack of depth related specifically to SDM and rurality. The evidence relies heavily on quantitative data with little qualitative perspective that captures the patient's voice and lived experiences.

Limitations

Reviewing research presented only in English and published in the US may have omitted valuable knowledge from other perspectives. Intersectionality was not explicitly addressed, which may influence the generalizability of the review.

Implications

Beyond clinical acumen, nurses serve as key contributors to improving rural maternal care. Initially, nurses must understand the compounding impact of rurality as it intersects with race, ethnicity, SES, and other SDOHs. Nurses can ensure the implementation of evidence-based interventions by identifying rural status in acute care settings. initiating nurse home visit programs, coordinating doula services and lactation support, and improving and enhancing telehealth options. Furthermore, those who practice in critical access hospitals, free-standing emergency departments, or low-birth-volume hospitals must ensure competence in caring for patients experiencing obstetric emergencies.

In the context of SDM, nurses are pivotal in improving outcomes by establishing reciprocal relationships with rural maternity patients and providing continuity of care. Nurses can influence policy development and revision to improve access to care, broadband services, and Medicaid. These provisions for high-quality, holistic nursing care are essential for reducing SMMM among the rural maternal population.

Future research should explore nurses' perceptions of rurality and SDM, patient preferences, the influence of the intersectionality of SDOHs and rurality in SDM, and how nurses can leverage telehealth platforms to best support rural maternity patients' engagement.

Conclusion

Rural maternity patients face multiple, intersecting disparities across pregnancy and postpartum care, placing them at greater risk for adverse outcomes. SDM offers a viable strategy to empower patients, enhance self-efficacy, and improve outcomes. Nevertheless, evidence specific to rural contexts remains scarce. Addressing these gaps through targeted research, policy initiatives, and nursing leadership is essential to advancing equity in maternal health.

Artificial Intelligence Disclaimer

No artificial intelligence was used in the writing of this manuscript.

Conflict of Interest

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