Rural Texan Mothers Need Midwives: A Literature Review

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Abstract

Purpose: To analyze research studies comparing midwife-led care to physician-led care and to compare state-regulatory frameworks and policies for midwives and women's healthcare.

Sample: Fifteen articles published between 2017 and 2022 presenting data on births in the United States.

Method: A keyword search of EBSCOhost, Google Scholar, Wiley Online Library, and PubMed databases. Papers were analyzed if published between 2016-2023, written in English, and studied U.S. populations. A quality appraisal using the John Hopkins Nursing Evidence-Based Practice tool and a synthesis approach similar to Perriman et al. (2018) were used to develop objectives for qualifying articles.

Findings: Midwife-led care has lower rates of birthing interventions and increased rates of patient satisfaction than physicians.

Conclusions: Midwives are a crucial resource with adequate research displaying their innate ability to care for women and infants in an empowering and respectful birthing environment. The state of Texas must act to scale-up and utilize this resource to increase access to health care and improve women's health. Research should be continued to identify stakeholder involvement in advocacy for expanding the midwifery scope of practice and to determine reasoning for the lack of data collection and reporting mechanisms within this field. The need to draft and ratify

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legislation to either equally regulate midwives of all occupations or to remove collaborative/supervisory frameworks is evident.

Keywords: midwives, Texas, maternal health

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Texas has a maternity crisis. One hundred twenty-six counties (126) were classified as maternity deserts, and 56 counties had low access to maternity care (Brigance et al., 2022). The effects of low access to maternity care are reflected in Texas ranking 37th in maternal mortality rates, with 28.2 maternal deaths per 100,000 live births between 2018 and 2022 (Centers for Disease Control and Prevention [CDC], n.d.).This is in comparison to the, at the time, national maternal mortality rate of 23.2 deaths per 100,000 live births (CDC, n.d.). When narrowing this lens, numerous studies support the fact that maternal and infant mortality and morbidity skyrocket in rural communities. Rural births are at higher risk for maternal ICU admission and mortality than their urban counterparts (Harrington et al., 2023).

Although there are currently 3,432 obstetricians and gynecologists (OBGYNs) practicing in Texas, only 4.4% of OBGYNs practice in rural counties, resulting in an estimated 52% deficit (Texas Department of State Health Services, n.d.). While the healthcare workforce decreases, the number of maternity units closing in rural hospitals is increasing. Between 2004-2018, 231 rural counties nationwide lost hospital-based obstetric care due to closures (Kozhimannil et al., 2020) with 27 hospitals in 22 rural Texas counties closing since 2010 (Andreyeva et al., 2022). These numbers are expected to increase throughout the next 30 years, with projections estimating a 31% OBGYN deficit by 2050 (Hagan Vetter et al., 2019). Seventy-five Texas hospitals were identified as *at risk for closure* as of June 2022 (Andreyeva et al., 2022).

Workforce shortages and facility closures negatively affect the millions of women of childbearing age residing in rural Texas. Two studies' authors discussed the effects of losing obstetric services on rural women, citing a lack of designated, local maternity units and increased travel times correlated with increased incidence of postpartum hemorrhaging, intra- and postpartum blood transfusions, delays in transfers of care, and adverse fetal events (Andreyeva et al., 2022; Kozhimannil et al., 2020).

Researchers have found that midwifery-led care results in a lower incidence of medical interventions, higher rates of vaginal birth, increased patient satisfaction, and lower incidence of events contributing to maternal-infant morbidity and mortality than physician or OBGYN-led care. Women in the US have begun to shift towards midwifery-led care, with out-of-hospital births in the US increasing from 0.87% of all births in 2004 to 1.61% in 2017 (MacDorman & Declercq, 2018). This increase in midwife-led care is despite the overall decrease of births per year in the US, with one study finding that births led by either a certified-nurse midwife (CNM), a certified midwife (CM), or an unlicensed midwife in hospitals have increased from 7.4% to 9.0% and an almost 8% decrease in hospital births from 2003 to 2018 (Grünebaum et al., 2020). The demand for integrating midwives into the maternal healthcare system is evident, especially in Texas. However, evidence suggests that due to the limited options when selecting a birth attendant on a birth certificate, about 37% of Texas CNM-attended births were incorrectly attributed to other providers (Biscone et al., 2017).

This suggests that midwifery in rural Texas is not fully understood or accurately portrayed in other quantitative studies. This review will compile the results of studies directly or indirectly examining midwifery in Texas to address this need for more subject knowledge. The analysis will

compare the maternal-infant outcomes of midwives and physicians in the US and Texas and identify gaps in the current literature.

Method

This literature used the definitions provided by the U.S. Department of Agriculture's (USDA) Rural-Urban Continuum Codes (RUCC) to determine what Texas counties are rural. The RUCC is a nine-tiered system, explained in greater detail in Table 1.

Table 1

Rural-Urban Continuum Codes Explained

RUCC	Population Criteria
1	Metro - Counties in metro areas of 1 million population or more
2	Metro - Counties in metro areas of 250,000 to 1 million population
3	Metro - Counties in metro areas of fewer than 250,000 population
4	Nonmetro - Urban population of 20,000 or more, adjacent to a metro area
5	Nonmetro - Urban population of 20,000 or more, not adjacent to a metro area
6	Nonmetro - Urban population of 2,500 to 19,999, adjacent to a metro area
7	Nonmetro - Urban population of 2,500 to 19,999, not adjacent to a metro area
8	Nonmetro - Completely rural or less than 2,500 urban population, adjacent to a metro area
9	Nonmetro - Completely rural or less than 2,500 urban population, not adjacent to a metro area

Adapted from United States Department of Agriculture (n.d.). *Rural-urban continuum codes - 2023.*

The RUCC codes label counties as metro or non-metro and divides them by population and adjacency to metro counties (USDA, n.d.) This study will consider any county assigned a RUCC between five and nine to be rural. Counties with a RUCC of four will not be considered rural because of their adjacency to a metro or urban county.

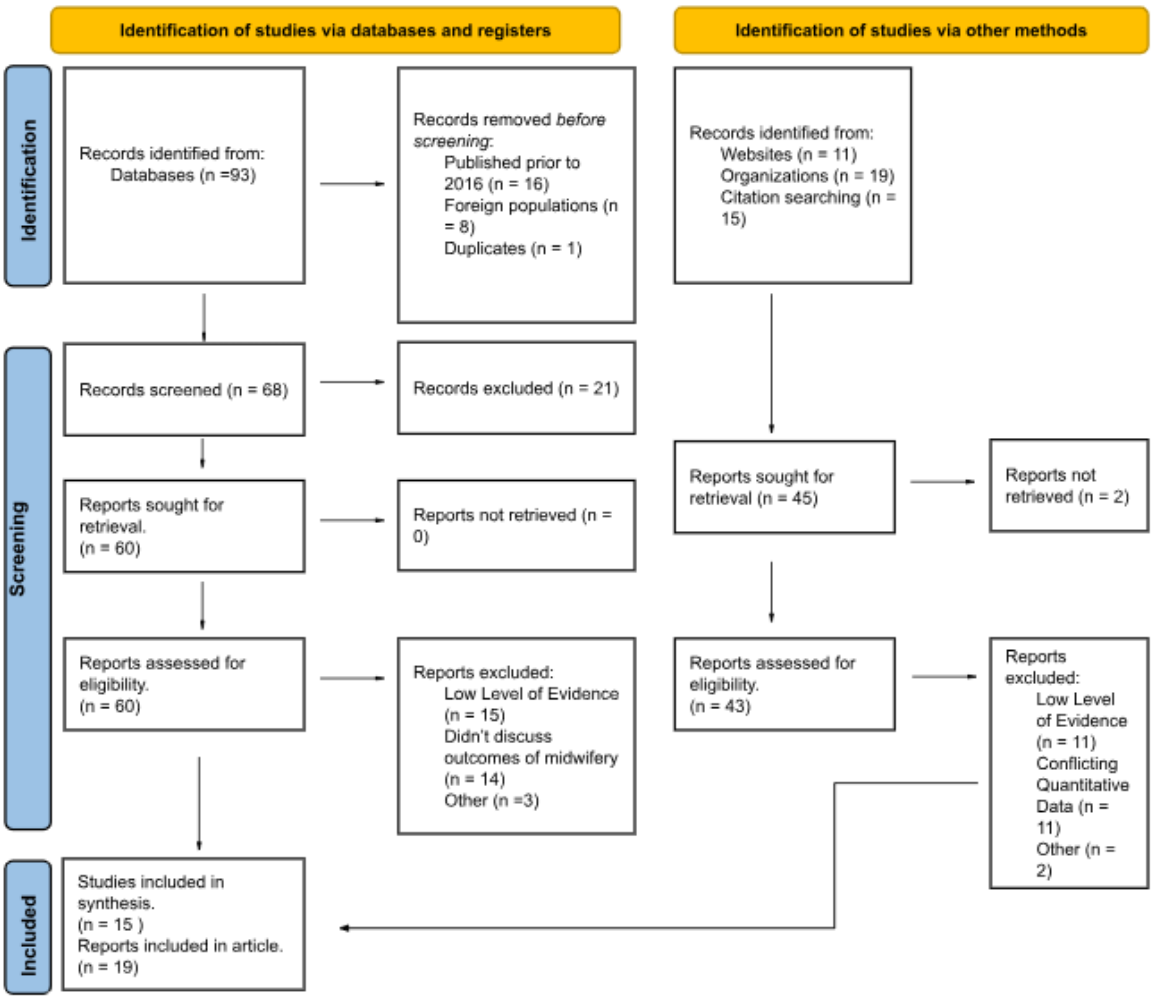
Midwife-led care is when "the midwife is the lead health-care professional, responsible for the planning, organisation and delivery of care given to a woman from the initial booking of antenatal visits through to care during the postnatal period" (International Confederation of Midwives, 2023, p. 1). Midwife-attended birth means that a midwife was the primary health care

provider that delivered the baby. Although a patient may fully intend that a midwife be the health care professional that facilitates the delivery, risks to both patient and body during the labor and delivery period may arise and require medical intervention.

The following keywords were searched using Boolean operators: midwifery, Texas, rural, US, maternal, disparities, and variations of these terms (e.g., midwi∗ to capture midwives, midwife, midwifery). A two-stage process was undertaken; first a review of the articles' titles and abstracts to determine if it qualifies for a secondary quality appraisal, and then a hand-search of eligible article's reference lists of relevant articles for additional material. Between January and July 2023, database searches included EBSCOhost, Google Scholar, Wiley Online Library, and PubMed. The articles selected for the literature review followed PRISMA's recommendations (Page et al., 2021), along with the Johns Hopkins nursing evidence-based practice guide (Dang et al., 2021). The Critical Appraisal Skills Programme (CASP) Checklists were used for further quality appraisal. After the removal of studies published before 2016, articles not exclusive to U.S. populations or articles that did not include midwifery, the article title and abstract were examined (See Figure 1). Sixty-eight article abstracts were screened, of which nine were excluded due to no inclusion of midwifery. Fifty-nine articles were then read in full, leading to fifteen being excluded due to low evidence.

Figure 1

Prisma diagram of systematic review of Midwife-led care and inequities of women's healthcare.



Adapted from Page (2021). *Reviews include searches of databases, registers, and other sources.*

Using a technique similar to Perriman et al. (2018), objectives were created by analyzing the narrative and results from the remaining forty-four articles. The purpose of developing objectives was to name research areas identified in current literature (e.g., comparing birth outcomes of midwives and physicians). The objective of this review was to compare the birth outcomes of midwives and physicians, the cost difference between midwife-attended and physician-attended births, and patients' thoughts and experiences of midwife-led care.

Findings

A total of 15 studies were included in this review. Authors for 13 studies concluded that midwife-led care resulted in a lower occurrence of medical intervention than physician-led care. Two studies' authors delved into the psycho-emotional aspects of midwifery-led care to articulate why the midwifery model of care improves a birthing experience by pointedly involving the patient in their care. Overall, as the midwife-client relationship enhances a woman's confidence and self-esteem and increases the likelihood she will have a natural, physiological birth, an aspect of midwife-led care women find valuable is the increased likelihood they will not have a Cesarean delivery (CD). There is a correlation that an increase in midwife-attended births is associated with a decreased use of CD. This correlation is supported by the fact that, CD decreased by 16% in rural Texas, from 14,904 occurrences in 2007 to 12,516 occurrences in 2021 (Centers for Disease Control and Prevention [CDC] Wonder, n.d.). Midwife-attended births increased by 85%, from 1,194 births in 2007 to 2,206 in 2021 (CDC Wonder, n.d.). Since midwives do not utilize CD and other medical interventions a quarter as often as physicians do, and midwifery-led care is relatively less expensive than physician-led care.

Studies comparing midwife-attended births to physician-attended births consistently showed that births led by midwives resulted in a decreased utilization of CD. Although seven of the nine authors discussed CD, only two studies set out to compare the rates of midwife-led CD and physician-led CD. Wasden and a team (2021) led an analysis of the rates of midwife-led CDs between 2007 and 2018 found the correlation that as midwife deliveries increased 33% from 8.1% in 2007 (n = 340,740) to 10.8% in 2018 (n = 387,439), CD rates decreased 7.2% from 29.1% in 2007 (n = 1,367,340) to 27% in 2018 (n = 1,208,176) In Souter et al.'s (2019) study, they found nulliparous patients of midwives had a 30% lower risk of CD than physician patients of the same

parity (aRR 0.68; 95th% CI 0.57–0.82), while multiparous patients had a 40% lower risk (aRR 0.57; 95th% CI 0.36–0.89).

Table 2

Articles Comparing Midwife-led and Physician-led Care.

Author(s)	Objective	Findings	Setting	Sample	Design	Grade
Altman et al., 2017	Identify for the first-time recent trends in midwife-attended U.S. hospital births	Women in the Certified Nurse Midwife (CNM) cohort during labor had significantly lower relative odds of the following compared with women in the OB/GYN cohort: Cesarean birth: OR ¼ 0.29, 95% CI [0.12, 0.69], *p* = .005. Vacuum-assisted birth: OR ¼ 0.30, 95% CI [0.13, 0.70], *p* = .006. Epidural anesthesia: OR ¼ 0.24, 95% CI [0.17, 0.45], *p* < .001. Odds of using labor induction with oxytocin were significantly lower with women in the CNM cohort compared with women in the OB/GYN cohort: OR ¼ 0.31, 95% CI [0.22, 0.45], *p* < .001	US 2013	1,441 pregnancies	Retrospective cohort	A
Anderson and Gilkison, 2021	Present research aims to fill that void by providing information on the cost of home births	The average cost of home birth in the US is $4,650; 1% increase in home births would have a projected savings of $321 million/year.	US 2021	129 birth centers	Economic analysis	B
Attanasio et al., 2019	Assess costs and resource use of midwife-led care vs obstetrician-led care for low-risk pregnancies	The costs of childbirth for low-risk women with midwife-led care were, on average, $2262 less than births to low-risk women cared for by	US 2011-2012	2,400 pregnancies	Economic analysis	B

Author(s)	Objective	Findings	Setting	Sample	Design	Grade
		obstetricians. These cost differences derive from lower rates of preterm birth and episiotomy among women with midwife-led care, compared with OB-led care.				
Carlson et al., 2017	Compare 2 matched cohorts of healthy, nulliparous, women who were obese and had spontaneous labor onset with different models of intrapartum care	Women who were obese and cared for in labor by CNMs were 87.0% less likely to have operative vaginal birth (adjusted odds ratio [aOR], 0.15; 95% confidence interval [CI], 0.06-0.41) and 76.3% less likely to have third- or fourth-degree perineal lacerations (aOR, 0.31; 95% CI, 0.13-0.79) compared to a matched group of women who were obese and had similarly sized neonates but who were cared for by obstetricians.	Colorado 2005-2012	360 pregnancies	Cross-sectional	A
Carlson et al., 2018	Evaluate associations between provider type and mode of birth, including examination of intrapartum management in healthy, laboring nulliparous women.	Care by obstetricians was associated with an increased risk of unplanned cesarean birth (adjusted odds ratio [aOR] 1.48 [95% {CI} 1.04-2.12]) compared with care by midwives. Obstetricians more frequently used oxytocin augmentation (aOR 1.41 [95% CI 1.10-1.80]), neuraxial anesthesia (aOR 1.69 [95% CI 1.29-2.23]), and operative vaginal delivery with forceps or vacuum (aOR 2.79 [95% CI 1.75-4.44]).	US 2004-2015	1,339 pregnancies	Retrospective cohort	A

Author(s)	Objective	Findings	Setting	Sample	Design	Grade
Curtis et al., 2022	Explore women's perceptions of their birthing experiences and access to different models of perinatal care	85.93% of women said being included in the decision-making process (97.4%), allowed to move freely during labor and being offered alternative pain management (83.2%), and birth-attendant is the same person who provided prenatal care (79.7%) were some of the most important aspects of maternity care. Themes of empowerment and trust-building were mentioned when asked about why mother chose not to give birth in a hospital.	Texas 2019	304 patients	Cross-sectional	B
Daviss et al., 2021	Examine the intersection of the safety and economic efficiency of birth in private homes and freestanding birth centers	Estimated cost of an uncomplicated vaginal home and birth center births are $2,870 and $7,240, resp. Hospital for same birth is $12,156. If OOH births increased by 10%, almost $11 billion/year would be saved w/o compromising safety	US 2019	3.9 million births	Economic analysis	B
Hamlin et al., 2021	Identify the socioeconomic and demographic characteristics of women cared for by Certified Nurse-Midwives (CNMs) versus physicians in the Military Health System (MHS) and compare birth outcomes between provider types	Vaginal births (adjusted odds ratio [AOR], 2.51; 95% confidence interval [CI], 2.45-2.58), VBAC (AOR, 1.04, CL 95%, 0.94-1.15), and early initiation of breastfeeding (AOR, 1.51, CL 95%, 1.45-1.56) were more likely to occur in CNM-attended births. Although statistical insignificant, CNM-attended births were less likely to result in c-	US 2014	124,535 pregnancies	Retrospective Cohort	A

Author(s)	Objective	Findings	Setting	Sample	Design	Grade
		sections (AOR, 0.17, CL 95%, 0.17-0.18), inductions/augmentations (AOR, 0.55, CL 95%, 0.52-0.58), and post-partum hemorrhage (AOR,0.9, CL 95%, 0.85-0.95). Preterm births were significantly less likely to occur with CNM-attended births ((AOR, 0.85, CL 95%, 0.72-1.01)				
Jevitt et al., 2020	Document the pregnancy and birth outcomes of women enrolled for birth center care whose BMIs were 30≤ compared with women enrolled for birth center care of normal BMIs	Majority of women with obese BMIs experienced uncomplicated perinatal courses and vaginal births. There were no significant differences in antenatal complications, postpartum hemorrhage, or newborn outcomes between women with obese BMIs and normal BMIs	US 2012-2015	964 pregnancies	Retrospective Cohort	B
Loewenberg Weisband et al., 2018	Compare the frequency of birth interventions and maternal and neonatal outcomes between women who received prenatal care from a midwife and those who received care from a physician,	Women in midwifery care had lower risks of cesarean (aRR, 0.66; 95% CI, 0.57-0.78) and preterm birth (aRR, 0.58; 95% CI, 0.42-0.79)	US 2012-2015	8,779 pregnancies	Retrospective Cohort	A

Author(s)	Objective	Findings	Setting	Sample	Design	Grade
	among women who were low risk when they initiated prenatal care					
Neal et al., 2018	Compare labor processes and outcomes for low-risk nulliparous women birthing in U.S. medical centers with interprofessional care (midwives and physicians) versus non-interprofessional care (physicians only).	Women at interprofessional medical centers, compared with women at non-interprofessional centers, were 74% less likely to undergo labor induction (risk ratio [RR] 0.26; 95% CI 0.24–0.29) and 75% less likely to have oxytocin augmentation (RR 0.25; 95% CI 0.22–0.29). The cesarean birth rate was 12% lower at interprofessional centers (RR 0.88; 95% CI 0.79–0.98).	US 2002-2008	14,375 pregnancies	Retrospective cohort	B
Perriman et al., 2018	To identify and synthesize research findings presenting childbearing women's perspectives on continuity of midwifery care	The midwife–woman relationship is the vehicle through which personalized care, trust and empowerment are achieved in the continuity of midwifery model of care.	Australia, UK, US, New Zealand, and Denmark 2006-2016	1,273 pregnancies	Systematic Review	A
Souter et al., 2019	Compare midwife and obstetrician labor practices and birth outcomes in women with low-risk pregnancies delivered in the hospital.	Compared with obstetricians, midwifery patients had significantly lower intervention rates, an approximately 30% lower risk of cesarean delivery in nulliparous patients (adjusted relative risk [aRR] 0.68; 95th% CI (0.57–0.82), and an approximately 40% lower risk of cesarean in multiparous patients	US 2014-2018	23,100 births	Retrospective Cohort	A

Author(s)	Objective	Findings	Setting	Sample	Design	Grade
		(aRR 0.57; 95th% CI 0.36–0.89). Operative vaginal birth was also less common in nulliparous patients (aRR 0.73; 95th% CI 0.57–0.93) and multiparous patients (aRR 0.30; 95th% CI 0.14–0.63).				
Thornton, 2017	Compares characteristics and birth outcomes of women attended by midwives and physicians in U.S. hospital	Patients of midwives were less likely to sustain third- or fourth-degree lacerations (OR 0.81; 95% CI, 0.78-0.84), undergo labor induction (OR, 0.76; 95% CI, 0.76-0.77), and be administered an epidural (OR, 0.54; 95% CI, 0.53-0.54). Thornton also found birth occurring after 42 weeks' gestation (OR, 2.07; 95% CI, 1.97-2.17) was more likely to occur under a midwife's care.	US 2014	2,411,980 births	Retrospective cohort	A
Vedam et al., 2018	Examined the relationships between state Midwifery Integration Scores, density of midwives, access to midwives across practice settings, rates of obstetric interventions, and maternal and newborn outcomes.	Higher MISS scores, and improved access to midwives in all settings, were associated with significantly higher rates of spontaneous vaginal delivery, vaginal birth after cesarean (VBAC), and breastfeeding at birth and at six months; and significantly lower rates of cesarean section (CS), preterm (PTB), and low birthweight (LBW) infants. Higher MISS scores were correlated strongly with lower	All 50 states + DC	3,988,076 births	Retrospective cohort	A

Author(s)	Objective	Findings	Setting	Sample	Design	Grade
		rates of neonatal mortality				
Wasden et al., 2021	Review the temporal relationship between rates of hospital deliveries by CNMs and that of CD.	Midwife deliveries increased 33% from 8.1% in 2007 to 10.8% in 2018 ($p < .005$), whereas the CD rate decreased 7.2% from 29.1% in 2007 to 27% in 2018 ($p < .005$)	US 2007-2018	13,644,829 births	Retrospective Cohort	A

Body Mass Index (BMI), Cesarean Delivery (CD), Midwifery Integration Scoring system (MISS), and Obstetrician-gynecologist (OB/GYN).

Carlson et al. (2018) retrospective study observing patients had an approximately 50% increased risk of receiving a CD when attended by an obstetrician (aOR 1.48; 95% CI 1.04-2.12), and Loewenberg Weisband et al.'s (2018) teams claimed there was a 66% increased risk (aRR, 0.66; 95% CI, 0.57-0.78). These two also examined patient risk for preterm birth, induction, and instrumental deliveries. In the study by Loewenberg Weisband et al. (2018), women in midwifery care had a 42% decreased risk of having a preterm birth (aRR, 0.58; 95% CI, 0.42-0.79). Carlson et al. (2018) found obstetricians administered oxytocin (aOR 1.41; 95% CI 1.10-1.80) and epidurals (aOR 1.69; 95% CI 1.29-2.23) more often than midwives, along with obstetricians being almost three times more likely than midwives to perform an operative vaginal delivery with forceps or a vacuum (aOR 2.79; 95% CI 1.75-4.44).

Neal et al. (2018) compared the outcomes of three medical centers that employed midwives (interprofessional) to three that did not (non-interprofessional). Among the 14,375 pregnancies, women who received care at interprofessional centers were 74% less likely to undergo any labor induction (RR 0.26; 95% CI 0.24–0.29) than women at non-interprofessional centers. The CD rates were 12% lower at interprofessional centers (RR 0.88; 95% CI 0.79–0.98).

Hamlin and team (2021) studied 124,535 pregnancies within the military health care system and found that vaginal births (aOR 2.51; 95% Cl 2.45-2.58), vaginal-birth-after-cesarean

(VBAC; aOR 1.04; 95% Cl 0.94-1.15), and early initiation of breastfeeding (aOR 1.51; 95% Cl 1.45-1.56) were more likely to occur in CNM-attended births. They also found that postpartum hemorrhaging, induction or augmentations, and CD were also less likely to occur in CNM-led births. Preterm births were also less likely to occur in CNM-attended births (aOR 0.85; 95% Cl 0.72-1.01).

Thornton (2017) looked at 2,411,980 births from 2014 and found patients of midwives were less likely to sustain third- or fourth-degree lacerations (OR 0.81; 95% CI, 0.78-0.84), undergo labor induction (OR, 0.76; 95% CI, 0.76-0.77), and be administered an epidural (OR, 0.54; 95% CI, 0.53-0.54). Thornton also found that birth occurring after 42 weeks' gestation (OR, 2.07; 95% CI, 1.97-2.17) was more likely to occur under a midwife's care. It should be noted that Thornton specifically analyzed spontaneous births. Since midwives cannot perform operative births (such as a c-section), the gestation period may exceed the expected 40 weeks should the patient opt out of an induction (Thornton, 2017). Thornton did not discuss actual or potential adverse effects of gestation periods exceeding 40 weeks. A smaller study examined 1,441 births to analyze the use of interventions and the monetary costs of hospital births (Altman et al., 2017). That team found that women with CNM-attended births had significantly lower risks of receiving a CD (OR 0.29; 95% CI 0.12, 0.69) vacuum-assisted births (OR 0.30; 95% CI 0.13, 0.70), epidural anesthesia (OR 0.24; 95% CI 0.17, 0.45), and oxytocin (OR 0.31;95% CI 0.22, 0.45) than women with OBGYN-attended births.

Although obesity is an indicator of a high-risk pregnancy (Hollis, 2023), two research teams have analyzed the potential of midwives in an out-of-hospital setting caring for obese women and suggest midwives have the professional competency to care for such pregnancies. One study's team found that women cared for by CNMs were 87% less likely to have an operative

vaginal birth (aOR 0.15; 95% CI 0.06-0.41) and 76.3% less likely to sustain third- or fourth-degree perineal lacerations (aOR, 0.31; 95% CI, 0.13-0.79) than women cared for by obstetricians (Carlson et al., 2017). A different study compared the labor and delivery outcomes of patients with normal and obese body max indexes (BMI) and found obese patients had significantly higher rates of intrapartum transfers than non-obese patients (30.7% vs 19.9%, $p < .0001$). However, this same study found that patients with obese or normal BMIs had similar rates of antenatal (23.7% vs 20.7%, $p < .39$), intrapartum (51.9% vs 43.3%, $p < .53$), and postpartum (9.1% vs 10.6%, $P < .31$) complications (Jevitt et al., 2020). This study highlights that obese patients experience birthing complications at similar rates as non-obese patients, indicating that midwifery-led delivery is safe for obese patients.

As one may expect, regardless of whether an intervention or outcome is unplanned, having a complicated birth results in an expensive hospital bill. Three studies compared the costs of care providers and birth settings. Attanasio et al. (2019) found that, on average, low-risk women with midwife-led care paid $2,226 less than women of the same risk but with obstetrician-led care. They attributed the cost differences to lower rates of preterm birth ($26,870-$53,741) and episiotomies ($169-$319) among women with midwife-led care than women with obstetrician-led care. Although the Attanasio et al. (2019) study compared births held in the hospital setting, two studies compared the costs of out-of-hospital (OoH) to hospital births, estimating annual savings. Daviss et al. (2021) estimated that uncomplicated vaginal OoH births cost from $2,870 to $7,240, while uncomplicated vaginal hospital births cost, on average, $12,156. If OoH births increased by 10%, there would be almost $11 billion annually in savings without compromising the safety of the patient and the infant. Anderson and Gilkison (2021) came to similar conclusions, stating that the

average cost of home birth in 2021 was $4,650. A 1% increase in home births would result in a projected savings of $321 million annually.

Curtis et al. (2022) examined the shift to midwife-led care when 324 women of childbearing age in El Paso, Texas, were asked to compare aspects of their birth preferences to actual experiences, along with questions that explored their feelings about the quality of care and birth experiences. Participants reported having personal involvement in the decision-making process (97.4%), having their preferences for their experience respected (83.2%) and having their birth attendant be the same person who provided prenatal care (79.7%) being significant during their maternity care. Women felt "a sense of pride… [in] the ability to bear children physiologically" and "regarded midwives as trustworthy and able to value a mother's goals for her childbirth" (Curtis et al., 2022, p. 5). When asking women to describe their experiences of physician-led birth, researchers identified constant themes of feeling ignored in the decision-making process, birthing requests being disregarded or denied, and the lack of individualized care (Curtis et al., 2022).

Perriman et al. (2018) developed three themes to explain what women value in the relationship between a midwife and their patients. Researchers synthesized qualitative data describing the perspectives of 1,273 childbearing women. They concluded their findings with the following concept: "The midwife–woman relationship is the vehicle through which personali[z]ed care, trust, and empowerment are achieved in the continuity of midwifery model of care" (Perriman et al., 2018, p. 225). Through the midwife-patient relationship, women reported feeling at ease with the midwife, stating that the midwife always seemed present in the conversation, facilitated open communication, and worked in partnership with the woman during her care (Perriman et al., 2018). This review found that this relationship was the driving force behind building trust between

the midwife and client, which could be further built upon by personalized care. Developing trust and providence of specialized care would further strengthen the woman's sense of empowerment. Seven studies in the review reported that when midwives provided care with positive affirmations and enabled "the woman to take the lead in decision making about the care… provided" (Perriman et al., 2018, p. 227). This review strengthens the findings of other literature reviews on the benefits of midwifery (Raipuria et al., 2018) and the burdens of restricting state-level policies (Casey et al., 2018) by synthesizing the two concepts into one concise document.

Although this review highlights those two concepts, the review also sets out to apply these findings to the rural childbearing population of Texas. In doing so, this review has found numerous gaps in the literature.

Discussion

Vedam et al. (2018) created a scoring system and used state policies on specific aspects of reproductive health to grade said states on a scale from 0-5. The higher a state's score, the greater the access to reproductive care. Texas fell in the middle group, along with nineteen other states. Researchers examined the tiers' average rates of low birthweight and preterm birth. They found that states in the middle tier had higher rates of preterm birth (12.1%, n=1,444,943) and low birth weight (8.5%) than states higher on the scale (10.6%, 7.3%, n=1,553,782).

Researchers found a strong correlation between a state's policies regarding reproductive care and maternal-infant outcomes: the more restricted access a woman has, the greater the risk that the patients will experience an adverse event or outcome during the periods of pregnancy and birth. It can be assumed that due to the overturn of *Roe v. Wade* (1973) and the subsequent implementation of Texas HB 1280, which bans any abortion not deemed medically necessary (Oyez, 2022; Texas State Law Library, 2022), the rates of low birth weight and preterm birth, as

well as the rate of maternal-infant mortality may increase in Texas throughout the upcoming years (Gender Equity Policy Institute, 2023).

Despite Texas having the most restrictive reproductive autonomy bills in the US (Texas State Law Library, 2022) and being 11 of 11 states that imposed supervisory-practice agreements on its midwives (Kleinpell et al., 2022), the utilization of midwives has kept up. Although the utilization is nowhere near the national average (MacDorman & Declercq, 2018; Ranchoff & Declercq, 2020) midwife-attended births in Texas have increased by over 59% in the past decade, with midwives attending 3.04% of all births in 2007 to 5.28% in 2021 (CDC Wonder, n.d.). This is despite Texas seeing a more than 8% decrease in births from 407,600 births in 2007 (the most births in one year in the past fifteen years) to 373,565 in 2021 (CDC Wonder, n.d.).

Others may attribute the increase in midwife-led births to the sustainability and cost-effectiveness of the care. Adjusting for inflation to USD 2021, using the average of $13,111.15 for every physician-attended, non-cesarean delivery (Attanasio et al., 2019), rural women who had a physician-attended delivery in 2021 spent, in total, $28.9 billion. If 5% of those women had a midwife-attended birth, an estimated $9.32 million in savings would have been generated. The prospects of these projected savings would be appealing to any pregnant person and perhaps governmental entities. However, the option of OoH births is unattainable to many women due to constraints set by insurance, both federally and privately funded. While reimbursement rates from private insurers varies on the provider and plan, Texas Medicaid does not reimburse home births and will only reimburse a percentage of services for LM- or CNM-attended deliveries in birth centers, 72% and 92%, respectively (American College of Nurse-Midwives, 2022; Texas Medicaid & Healthcare Partnership, 2022, p.6; The National Academy of State Health Policy Staff, n.d.). Without further research into rural midwifery and state-level stakeholders passing legislation to

increase rural access to maternity care, mothers will be forced to pay a large cost for midwifery-service.

Implications

This literature review supports the need for policymakers and funding organizations to pass legislation that allows APRNs to have full practice authority and, thus, have CNMs be regulated in an autonomous framework. In future sessions, members of the Texas Congress should utilize the evidence collected when drafting and voting on legislation with the prospects of expanding Texan healthcare access and conducting grassroots campaigns to inform their constituencies of current and subsequent legislation regarding healthcare.

National policymakers should allow representatives from midwifery organizations to join discussions about midwives to create and implement a national midwifery model where all states regulate and classify midwives the same. Having consistent laws and regulations between the states would support the need for universal health care in the US. Universal healthcare should be a top priority for policymakers, who must take immediate action to make this vision a reality. By unifying states through not only midwifery practice but also the work of APRNs, we can achieve significant improvements in the nation's overall health.

Institutional-level barriers exist that will take years to dismantle and reform; individual obstetric-care providers can support the integration of midwives into the maternal healthcare system by both midwives and physicians educating themselves on the other's respective models of care or scope of practice. Physicians can improve their patient's quality of care by recommending midwifery care to low-risk patients, allowing physicians more time to build relationships and care for patients for whom midwifery care is not recommended.

Future research should compare the maternal-infant outcomes of certified-professional midwives and collect data on this underreported subclassification of midwives. Such research can be spearheaded with a call to update the current. birth certificate to include the options of CM, Certified Professional Midwives (CPM), and Uncertified/Unlicensed Midwife. Each state would offer these options, as this would create the sense of consistency and unity the healthcare profession requires. The need for more research on uncertified midwives should prompt researchers to explore the practices and practicality of this sub-classification of maternity care providers.

Conclusion

This review discusses the expected benefits of up-scaling midwifery in rural Texas and the barriers to accessing midwives. One of this review's strengths is the utilization and synthesizing of current, high-quality literature studies. This review incorporates retrospective studies and literature reviews that explored U.S. populations published within the past six years to yield its conclusions.

One of this review's limitations is the risk of selection bias and a lack of comprehensiveness. The risk is due to the fact that this review deliberately avoided discussing articles on the midwife-physician relationship and the expansion of midwifery education because they did not contribute to this review's primary objectives. This review may have a publication bias since only published academic findings were analyzed.

This article serves as a comprehensive review of the improved patient outcomes of midwifery and the institutionalized barriers to increasing access to midwives, and it applies these two concepts to current-day rural Texas. Midwife-attended births cost, on average, significantly less than physician-attended births because midwife-led care has a decreased risk of experiencing

birthing interventions and complications, which increases the final bill. The decreased cost and risk of interventions or complications and the unique relationship between a midwife and their patient contribute to increased patient satisfaction and empowerment. Studies reviewed showed that states that regulated midwifery practices through collaborative or supervisory practice agreements result in fewer midwife-attended births and increased incidence of CD, preterm birth, low birth weight, and dissatisfied patient care.

Implementing changes to increase access to midwifery services in rural Texas could result in increased incidence of physiological, vaginal birth for low-risk pregnancies and increased time and resources for moderate- to high-risk pregnancies. The midwifery model of care is a sustainable, confidence-building avenue of maternal care that should be expanded into rural communities. As there's a lack of available physicians and maternity units, midwives resolve this issue due to their mobile and nonpharmaceutical-oriented style of practice. Bringing awareness to the benefits of midwifery in rural communities and dissolving barriers to practice could improve maternal-infant health outcomes in rural Texas and the US as a whole.

Conflicts of Interest

The authors have no conflicts of interest to declare.

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