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Determinants of vaginal birth after caesarean (VBAC) decisions in rural and resource-limited settings: A systematic literature review

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Abstract

Vaginal birth after caesarean (VBAC) is a pivotal strategy to reduce unnecessary repeat caesarean sections and improve maternal neonatal outcomes. Yet in rural and resource-limited settings, the decision to attempt a trial of labour after caesarean (TOLAC) is shaped by a complex interplay of clinical, interpersonal, systemic, and socio-cultural forces. This systematic literature review synthesised 31 Scopus-indexed studies (2021-2025) following PRISMA procedures. Searches combined the terms "VBAC", "decisionmaking", and "rural/resource-limited" contexts. Inclusion criteria were peer-reviewed, empirical studies in English; both qualitative and quantitative designs were eligible. Data were extracted and thematically synthesised across a priori domains. Automated and manual coding mapped studies to four domains: individual (n = 19), interpersonal/professional (n = 16), healthcare system/policy (n = 13), and sociocultural (n = 14), with frequent cross-domain overlap. Individual determinants included obstetric history (parity, prior vaginal birth, inter-delivery interval), clinical risk markers, psychological readiness, and health literacy. Interpersonal dynamics centred on provider counselling quality, continuity of midwifery or family-physician care, and respectful maternity care; conversely, medico-legal defensiveness and discriminatory encounters reduced VBAC advocacy. System capacity 24/7 theatre and anaesthesia availability, blood products, referral/transport reliability, induction protocols, and post-placental contraception access predicted whether facilities confidently offered VBAC. Policy signals (e.g., user-fees, early discharge norms) altered care-seeking, observation time, and emergency preparedness. Socio-cultural norms around motherhood, pain, and bodily integrity, plus community narratives (including effects of female genital cutting and antibiotic beliefs), shaped trust in facility guidance and willingness to pursue VBAC. Across contexts, "safe VBAC" required four co-conditions: culturally sensitive counselling, credible emergency readiness, respectful woman-centred care, and community engagement. Priority actions include haemoglobin optimisation, targeted screening, stillbirth risk stratification, removal of financial/logistical barriers, appropriate length-of-stay, and integration of post-placental contraception. VBAC thus functions as both a clinical option and a systems indicator of equity, dignity, and reproductive autonomy.

Keywords: VBAC, rural maternal health, decision-making, health systems, socio-cultural

Introduction

Vaginal birth after caesarean (VBAC) has emerged as a critical component of contemporary obstetric practice, particularly in reducing unnecessary repeat caesarean sections and improving maternal and neonatal outcomes. Globally, the World Health Organization (WHO) recommends that caesarean delivery rates should not exceed 10-15%, yet the prevalence continues to rise, especially in developing countries where the rate of repeat caesarean delivery remains high. In rural and resource-limited settings, the decision to attempt VBAC is complex, shaped by a combination of individual, clinical, systemic, and socio-cultural determinants. Understanding these factors is essential to improving maternal health outcomes and reducing disparities in access to safe and respectful maternity care [1].

From an individual perspective, maternal preferences, medical history, and psychological readiness play significant roles in shaping VBAC decisions. Women's personal values, prior birthing experiences, and previous successful VBACs often determine their willingness to attempt a vaginal delivery following a caesarean ^[2]. Physiological determinants such as parity, gravidity, cervical dilation, and prior vaginal births have also been found to predict successful VBAC (Senturk *et al.*, 2015). However, women's fears concerning uterine rupture, pain, or

Corresponding Author: Siti Fathiyah Sapsuha Waitina Community Health Centre, Department of Health, Kepulauan Sula Regency, North Maluku, Indonesia potential adverse outcomes remain prominent psychological barriers ^[3]. The interplay between medical eligibility and personal preference thus requires sensitive communication and shared decision-making between clinicians and mothers.

Interpersonal relationships, particularly between healthcare providers and women, also influence VBAC decisions. The support and confidence of doctors, midwives, and nurses substantially affect maternal trust in the safety of VBAC ^[4]. Studies indicate that clinicians' positive attitudes and professional self-efficacy encourage women to choose VBAC, while paternalistic counselling styles or lack of communication often discourage them ^[5]. Moreover, social support from spouses, family members, and community networks strengthens women's confidence in opting for VBAC, underscoring the need for collective involvement in maternal decision-making ^[2].

The healthcare system represents another crucial determinant, particularly in rural contexts where structural constraints limit access to quality maternal services. Distance to hospitals, scarcity of skilled birth attendants, limited anaesthetic or surgical facilities, and delays in emergency referral systems pose major barriers to implementing safe VBAC in rural areas [6]. Many rural hospitals lack the capacity to perform immediate caesarean sections should complications arise, leading healthcare providers to discourage VBAC in favour of perceived safety through repeat caesarean [7]. Furthermore, inadequate intrapartum monitoring and the absence of continuous foetal technologies surveillance compromise patient Consequently, healthcare infrastructure and workforce distribution play decisive roles in shaping VBAC feasibility and success in these settings [5].

Beyond systemic issues, social and cultural factors exert a profound influence on VBAC decision-making. Cultural norms, ethnicity, and local beliefs about childbirth shape attitudes towards vaginal delivery and medical intervention. In the United States, for instance, racialised women in rural areas frequently report less respectful maternity care and implicit bias, which in turn affect their trust and willingness to attempt VBAC ^[1]. Similarly, policy environments and national birth strategies can influence VBAC uptake. In China, implementation of the two-child policy and public campaigns to reduce caesarean rates have significantly increased VBAC attempts ^[8]. These findings highlight that broader legal and policy frameworks can either constrain or facilitate women's reproductive choices.

Nevertheless, unique challenges persist in rural contexts. Long travel times to healthcare facilities and inadequate emergency obstetric readiness remain persistent barriers. Women often choose repeat caesarean delivery due to fear of labouring far from a hospital equipped for emergency intervention ^[6]. In addition, shortages of obstetricians, midwives, and doulas combined with inconsistent referral systems further reduce VBAC access ^[9]. For racial and ethnic minorities, experiences of discrimination and lack of respectful maternity care exacerbate inequities ^[1]. Addressing these disparities requires systemic interventions rather than relying solely on individual choices.

To enhance VBAC accessibility in rural settings, scholars and

practitioners propose several strategic approaches. Strengthening rural healthcare infrastructure and ensuring the availability of trained birth attendants and anaesthesiologists are fundamental steps [7]. Education programmes aimed at informing women about VBAC benefits and risks initiated soon after a primary caesarean are effective in improving confidence and informed decision-making [6]. Moreover, policies that promote respectful maternity care, reduce caesarean overuse, and empower healthcare providers to offer evidence-based counselling can help achieve balanced decision-making [10], he primary objective of this study is to systematically identify and analyse the key factors influencing women's decisions to pursue vaginal birth after caesarean (VBAC) in rural and resource-limited settings. By synthesising empirical evidence from multidisciplinary research published between 2020 and 2025, this study seeks to provide a comprehensive understanding of how individual, interpersonal, healthcare system, and socio-cultural determinants interact to shape maternal decision-making regarding VBAC. The review further aims to explore the barriers and facilitators that affect the implementation and acceptance of VBAC within rural healthcare infrastructures, where access to emergency obstetric services and skilled birth attendants is often constrained. In doing so, the study intends to contribute to evidence-based policy and practice by informing strategies that can improve equitable access to safe childbirth options, strengthen respectful maternity care, and ultimately reduce unnecessary repeat caesarean deliveries. Moreover, the findings are expected to support healthcare providers, policymakers, and community stakeholders in designing context-specific interventions that enhance maternal autonomy, safety, and satisfaction during childbirth.

Methods

This study employed a Systematic Literature Review (SLR) method to synthesise empirical evidence on factors influencing VBAC decisions in rural areas. The SLR approach was selected to ensure a rigorous, transparent, and reproducible process for identifying, appraising, and integrating existing research. A systematic search was conducted using the Scopus database using the keywords "Vaginal Birth After Caesarean," "VBAC," "decision-making," "rural areas," and "maternal healthcare access." Inclusion criteria were peer-reviewed journal articles published between 2021 and 2025 focusing on VBAC decision factors in rural or resource-limited contexts. A total of 31 studies met the inclusion criteria, encompassing both qualitative and quantitative designs from diverse geographical settings such as the United States, Bangladesh, Ethiopia, India, Sweden, United Kingdom, Iran, Australia, and China. Data extraction focused on identifying themes related to individual, interpersonal, healthcare system, and socio-cultural factors. Thematic synthesis was applied to categorise and interpret findings across studies, ensuring coherence and depth in analysis. The methodological process adheres to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to maintain validity and reliability.

Stage	Description	Number of Records (n)
Identification	Records identified through Scopus (2021-2025)	456
	Additional records from manual search/citation chaining	32
	Total records identified	488
	Duplicates removed	77
Screening	Records screened by title and abstract	411
	Records excluded (non-VBAC, urban-only, opinion pieces)	279
Eligibility	Full-text articles assessed for eligibility	132

	Full-text excluded (not VBAC-related, non-empirical, non-English)	101
Included	Qualitative thematic synthesis	20
	Quantitative/mixed-method synthesis	11
	Total studies included in final SLR	31

Results

Study selection and characteristics Thematic distribution

Automated keyword/abstract tagging mapped each record to the a-priori SLR framework. Theme frequencies were: Individual (n=19), Interpersonal (n=16), Healthcare system (n=13), and Socio-cultural (n=14). Many studies addressed multiple domains, reflecting the layered nature of VBAC decision-making in rural settings.

Individual factors (n=19)

Across quantitative cohorts and clinical audits, obstetric historymparticularly prior vaginal birth, spontaneous labour onset, and favourable cervical dilation at admission was repeatedly associated with higher VBAC success and greater willingness to attempt TOLAC (trial of labour after caesarean). Countervailing clinical risks (e.g., obesity, hypertensive disorders, short inter-pregnancy interval) skewed decisions toward repeat CS. Risk perception and fear of uterine rupture remained salient in abstracts/keywords, mirroring qualitative work where women's psychological readiness and sense of safety guided choice more than eligibility per se-consistent with high-income reports.

Interpersonal/professional influences (n=16)

Interpersonal dynamics were prominent in South Asia and East Africa, where spousal and elder family preferences frequently shaped the final decision, sometimes overriding maternal intent. Provider patient relationships also featured strongly: midwifery continuity and respectful, non-directive counselling were linked to greater VBAC consideration, aligning with Australian/UK evidence. Conversely, in the US the abstracts signalled medicolegal caution and institutional risk aversion as barriers to offering TOLAC, especially where 24/7 surgical cover was lacking.

Healthcare system and policy (n=13)

Health-system capacity was a defining constraint in rural hospitals: limited emergency obstetric readiness (blood bank, anaesthesia teams, operating theatre standby), workforce shortages, and variable referral pathways reduced provider confidence to support TOLAC even among clinically eligible women. Where national/organisational protocols existed (e.g., NICE NG192; Australian regionalised care), abstracts highlighted standardised counselling and clear eligibility criteria, facilitating equitable offers of VBAC. Insurance/financing signals e.g., Medicaid vs private in the US were echoed as structural determinants of access.

Socio-cultural norms (n=14)

Terms reflecting stigma, religion, norms, and community beliefs were common, particularly in Bangladesh, Ethiopia, and Iran. In several abstracts, vaginal birth was framed as restoring maternal honour/strength; elsewhere, repeat CS aligned with ideas of modernity and safety a duality also reported in China and South Asia. In high-income settings, autonomy, empowerment, and recovery from previous birth trauma appeared as motivators to pursue VBAC. Mentions of social media and online communities signalled both supportive peer networks and

pathways for misinformation underscoring the need for targeted digital health communication.

Discussion

The findings from this Systematic Literature Review (SLR), comprising thirty-one Scopus-indexed studies published between 2021 and 2025, illuminate the multifaceted determinants influencing decisions regarding Vaginal Birth After Caesarean (VBAC) in rural or resource-limited settings. The synthesis demonstrates that the decision to attempt a VBAC is not solely a medical judgment but an outcome of intersecting clinical, psychological, relational, systemic, and cultural factors. These are best understood through four dominant analytical domains individual, interpersonal, healthcare system, and sociocultural each interwoven within the contextual realities of rural maternity care.

Individual Determinants

Women's physiological profile (parity, prior vaginal birth, interdelivery interval, and obstetric history) and perceived vulnerability strongly condition VBAC willingness. Evidence on predictors of labour outcomes, such as cerebroplacental ratio at term, liver transaminases in cholestasis, maternal haemoglobin and low-birth-weight risks, and stillbirth correlates, collectively influence risk appraisal in pregnancy after caesarean [11-15]. In Ethiopia and Eastern Africa, clinical predictors for TOLAC success are complemented by context-specific case control evidence that cautions against universal algorithms detached from local morbidity patterns [16, 17]. Women's psychological state including fear of childbirth and lingering anxieties from prior pregnancies can tilt choices toward repeat caesarean where analgesia, counselling, or continuity of care are limited [18, 19]. Health literacy illustrated by gaps in essential newborn care knowledge affects comprehension of VBAC benefits/risks and consent quality [20]. Breastfeeding and early postnatal trajectories (exclusive breastfeeding uptake; postnatal care utilisation) serve as downstream indicators of antenatal decision quality and supportive care culture; where these are weak, women may infer poorer intrapartum safety for VBAC [21-23].

Interpersonal and Professional Influences

Relationships between pregnant women and healthcare providers form the primary conduit through which risk information, emotional reassurance, and clinical recommendations are transmitted. Within this dynamic, the quality, timing, and tone of professional counselling determine whether decision-making becomes shared and empowering or directive and risk-averse. Evidence indicates that when healthcare providers adopt defensive practices often rooted in fear of litigation or institutional scrutiny they tend to favour elective repeat caesarean sections over trial of labour after caesarean (TOLAC) [24, 25]. Such tendencies are particularly evident in facilities operating under high throughput pressures or early discharge policies, where efficiency and medico-legal protection outweigh patient autonomy. These patterns demonstrate that the clinical environment, rather than solely medical indication, can steer childbirth options. Conversely, models that prioritise continuity of care and respectful maternity practices have been shown to enhance women's confidence in pursuing VBAC. When

midwives or family physicians maintain ongoing relationships throughout pregnancy, labour, and postnatal care, women report a stronger sense of agency and trust in the birth process [1, 19]. Respectful maternity care, characterised by empathetic communication, privacy, and non-discrimination, cultivates mutual respect and supports informed consent. In these contexts, women perceive VBAC not as a risky alternative but as a collaborative and achievable choice grounded in shared understanding of both medical and emotional needs.

However, disparities within professional interactions persist. Studies from the United States highlight that racial and socioeconomic biases can erode trust, particularly among minority and low-income women, leading to diminished advocacy for VBAC or pressure towards repeat caesarean delivery [1]. Discriminatory or paternalistic behaviours undermine the principle of autonomy, producing a climate where women's preferences are devalued or dismissed. In contrast, inclusive communication and cultural sensitivity can restore balance, enabling marginalised women to participate equitably in decision-making processes.

Interprofessional collaboration also plays an important role. The involvement of family physicians in rural maternity care, for example, contributes to more integrated and continuous service delivery, facilitating safe VBAC programmes when supported by effective referral networks and emergency backup systems (26). Their dual capacity to manage both primary care and obstetric emergencies bridges service gaps common in rural areas, creating conditions where VBAC is clinically feasible and logistically supported. Beyond the clinical setting, interpersonal influences extend into the social sphere. Population-based analyses from Bangladesh illustrate that community norms and peer discourse shape women's attitudes toward childbirth options [27]. Where caesarean birth is socially valorised as modern and safe, women may internalise this perception and resist VBAC. Conversely, in communities where vaginal birth is framed as a marker of resilience or maternal strength, women are more receptive to VBAC. This indicates that professional guidance interacts continuously with collective beliefs, and that both must be addressed to achieve sustainable change in childbirth practices.

Healthcare System Capacity and Accessibility

Successful implementation of Trial of Labour After Caesarean (TOLAC) requires not only favourable maternal and foetal conditions but also an enabling environment comprising timely access to operating theatres, blood transfusion services, emergency obstetric care, and skilled multidisciplinary personnel. In many low- and middle-income countries, these system-level prerequisites are inconsistently available, resulting in variable outcomes and uneven confidence among healthcare providers when offering VBAC. Evidence from multi-country analyses demonstrates that even seemingly peripheral policy changes such as the introduction or removal of user-fees for transport and delivery can have far-reaching implications for maternal behaviour, care-seeking patterns, and the preparedness of facilities to manage obstetric emergencies [24, 25, 28]. For example, when fees were introduced in Tanzanian hospitals, reductions in emergency referrals and prolonged delays in arrival times were observed, indirectly lowering the likelihood of safe TOLAC attempts. Conversely, early discharge policies implemented to maximise hospital efficiency have been associated with shorter postpartum observation periods, potentially compromising early detection of post-caesarean complications. Such systemic dynamics underscore that VBAC

is not merely a clinical decision but a reflection of broader institutional governance, financing, and logistical coordination. Markers of system capacity including induction practices, the availability of post-placental contraception, and coverage of postnatal care also serve as proxies for managerial commitment and resource reliability. High-performing facilities, often those with consistent supply chains and effective supervision, demonstrate greater willingness to provide VBAC as a standard option, reflecting institutional confidence and preparedness [22, 29, ^{30]}. Integrated primary-level teams that combine the skills of midwives and family physicians enhance the quality of intrapartum care, ensuring continuous monitoring, effective escalation, and evidence-based decision-making [26]. Such configurations not only reduce unnecessary repeat caesareans but also mitigate preventable morbidities, improving maternal satisfaction and safety outcomes. However, in fragile systems burdened by comorbidities such as anaemia, intrahepatic cholestasis of pregnancy, infections, and obstetric fistula, a preference for planned repeat caesarean often emerges as a pragmatic response to resource scarcity [12, 15, 31]. In these environments, the predictability of surgical birth is perceived as more controllable than the uncertainties of labour progression without guaranteed emergency backup. Similarly, at the population level, high rates of stillbirth and neonatal asphyxia foster clinical conservatism, discouraging VBAC where escalation capacity remains limited or transport delays are frequent [14, 32, 33]

Socio-Cultural Contexts

Cultural norms surrounding motherhood, bodily integrity. endurance, and the social meaning of childbirth shape how women, their families, and wider communities interpret both the risks and the legitimacy of attempting VBAC. In many societies, childbirth is not viewed solely as a medical event but as a moral and social milestone bound by communal expectations of femininity, strength, and obedience to family elders or health professionals. These expectations can either empower or constrain women's autonomy in making informed reproductive decisions. Community embedded health interventions demonstrate how culturally sensitive engagement can modify entrenched beliefs and behaviours. The Mamás del Río programme in the Peruvian Amazon exemplifies how participatory, community-based approaches to maternal and neonatal care can build trust in local health systems, enhance knowledge of safe childbirth practices, and reduce reliance on informal or traditional attendants [34]. Such initiatives illustrate the potential for similarly structured programmes to normalise VBAC counselling, integrate respectful risk communication, and strengthen community confidence in emergency preparedness. By aligning biomedical advice with local values and language, these interventions make facility-based vaginal birth a socially acceptable and safe choice rather than an alien or imposed practice.

Conversely, cultural practices and gender norms may also perpetuate medicalised or conservative preferences. The persistence of female genital cutting (FGC) in certain communities alters obstetric anatomy and heightens perceptions of labour difficulty and danger. Studies indicate that women with FGC histories may prefer elective caesarean sections, often without access to tailored counselling or reconstructive support, due to anticipated pain or stigma associated with vaginal delivery [35]. Without culturally competent care and respectful dialogue, such women remain excluded from VBAC opportunities that could otherwise be safe and empowering.

Everyday explanatory models beliefs about medication, infection, and postpartum recovery further influence women's responsiveness to medical guidance. In Laos, for instance, attitudes towards antibiotic use during and after pregnancy reveal that traditional understandings of illness causation continue to shape compliance with professional advice [36]. Similar dynamics operate around childbirth, where community narratives about labour duration, contamination, or "bad blood" may determine whether families perceive prolonged labour as normal or life-threatening. In regions burdened by infection or puerperal sepsis, prolonged labour is frequently equated with impending harm, prompting families to advocate for pre-emptive caesarean delivery unless health systems demonstrably ensure rapid, competent intervention [17]. Overall, socio-cultural contexts mediate how biomedical information is interpreted, trusted, and acted upon. Promoting VBAC in such settings requires more than clinical readiness; it demands cultural literacy, engagement with community leaders, and respectful integration of traditional beliefs into modern obstetric practice. Only by bridging these cultural and institutional divides can VBAC become both a medically safe and socially legitimate pathway to childbirth.

Integrative implications

Evidence across domains implies that "safe VBAC" is a composite of (1) informed and culturally sensitive counselling; (2) reliable emergency readiness; (3) supportive, respectful care; and (4) community engagement that addresses myths and aligns expectations with system capabilities. Where these preconditions co-exist, VBAC can reduce avoidable repeat caesareans without outcomes. Strengthening compromising haemoglobin management, screening for cholestasis, and risk-stratifying stillbirth factors can personalise VBAC counselling [12-14]. Organisationally, removing financial and logistical barriers, extending length-of-stay where clinically appropriate, and embedding post-placental contraception can signal system confidence and continuity that indirectly legitimise VBAC offers [24, 28, 30]. Finally, continuity models and respectful care documented to mitigate disparities are central to restoring trust, the crucial currency for shared decisions in pregnancy after caesarean [1, 19, 26, 34]

Conclusion

This Systematic Literature Review (SLR) synthesising thirty-one Scopus-indexed studies (2021-2025) demonstrates that decisions regarding Vaginal Birth After Caesarean (VBAC) in rural or resource-limited settings are the product of a multidimensional interplay between individual, interpersonal, systemic, and sociocultural determinants. The evidence establishes that VBAC is not solely a clinical decision but one deeply embedded in the realities of healthcare infrastructure, social hierarchies, and cultural meanings of childbirth. Individual-level factors, including prior obstetric history, health literacy, psychological readiness, interact with interpersonal dynamics such as provider communication, trust, and community influence. Meanwhile, systemic capacity reflected in the availability of emergency obstetric resources, trained personnel, and coherent policies either enables or constrains women's options. Socio-cultural contexts further mediate these factors, framing VBAC as either a safe, empowering act or a culturally incongruent risk. Overall, the findings affirm that achieving equitable access to safe VBAC in resource-limited settings requires integrated strategies that align clinical preparedness with sociocultural sensitivity. Programmes fostering respectful maternity care, context-specific counselling, and community-based education can collectively enhance autonomy and safety. VBAC, therefore, should be viewed not merely as an obstetric choice but as a marker of health system maturity and a reflection of women's reproductive rights to informed, dignified, and evidence-based care.

Recommendations

Policymakers and healthcare leaders should strengthen institutional readiness for VBAC by improving referral networks, ensuring 24-hour emergency capacity, and enhancing the competence of maternity teams through continuing professional education. Health systems should embed culturally sensitive VBAC counselling within antenatal care pathways, prioritising shared decision-making and risk communication. Integrating midwives and family physicians in rural obstetric care can improve continuity, monitoring, and trust. Furthermore, community-level interventions such as participatory education and engagement with local leaders are essential to dismantle myths surrounding vaginal birth after caesarean and to normalise it as a safe, medically supported option. Finally, collaborative research between clinical, social, and policy disciplines should be advanced to generate context-specific guidelines that align biomedical evidence with cultural and infrastructural realities.

Limitations

This review acknowledges several limitations. First, the analysis relied exclusively on Scopus-indexed and English-language publications, potentially excluding relevant local or non-English research. Second, the heterogeneity of study designs and data reporting limited quantitative comparison across studies. Third, variations in terminology and outcome measurement may have influenced thematic classification. Additionally, many studies were concentrated in a small number of countries such as Ethiopia, Bangladesh, and the United Kingdom leaving other low-resource regions underrepresented. The reliance on published literature also introduces a risk of publication bias, as studies reporting positive or significant findings are more likely to appear in indexed databases. Despite these limitations, this review provides a robust synthesis of empirical trends and thematic patterns, offering valuable insights into multifactorial determinants of VBAC decision-making in rural settings and identifying key areas for policy and research development.

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