

Healthcare professionals' perceptions of caesarean section decision-making and the implementation of Audit&Feedback strategies in the Calabria Region: a qualitative study

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Abstract

Introduction. Calabria Region has one of the highest caesarean section (CS) rate in Italy. To encourage the implementation of Audit&Feedback strategies, this study aimed to explore factors influencing CS decision-making from healthcare professionals' perspectives.

Method. A descriptive qualitative study was conducted through focus groups (FGs) with healthcare professionals (HPs) from 11 Maternity Units and 3 Community Health Services for Families of Calabria, from February to April 2021.

Results. Six FGs were carried out, involving 92 HPs. Main determinants influencing high CS rates included medicalization of birth, reported women's fear of childbirth, family pressure, cultural beliefs, organizational issues, and medico-legal concerns. HPs emphasized teamwork, midwifery-led low-risk pathways, training, and audits to reduce CS rates and improve quality of care.

Conclusions. This study identified determinants influencing CS decision-making in Calabria highlighting opportunities to reduce CS through empowering education, shared protocols, and women's active involvement in decision-making process. Audit&Feedback strategies could improve health outcomes.

Key words

- caesarean section
- audit and feedback
- qualitative study

INTRODUCTION

In the last decades, caesarean section (CS) rates have increased steadily worldwide [1], and these trends are expected to continue [2]. The ideal CS rate was stated

to be around 10-15% by the World Health Organization (WHO) [3], with a rate over 19% not associated with benefits in reducing maternal and neonatal morbidity [4].

In 2019, in Europe, the median CS rate was 26%, showing stability or even a decrease in some countries [5]. In Italy, although the CS rate gradually decreased from 38.0% in 2009 to 30.3% in 2023 [6], it remains one of the highest in Europe [7], with significant regional variations, ranging from 17.0% in Tuscany to 46.5% in Campania [6]. Substantial differences also exist within the same regions, as highlighted by the Italian National Outcomes Evaluation Program (Programma Nazionale Esiti, PNE) [8]. In 2023, Calabria reported a CS rate of 35.8% [6], and despite its reduction over the years, the Region still shows high rates of both primary CS [9].

An increased CS rate is often observed when the procedure is performed without clear clinical indications, driven by multiple factors [10]. Health professionals' (HPs) attitudes play a key role in CS decision-making with frequent ambiguity regarding what they consider clinical indications [11]. Gaining a deeper understanding of HPs' views, values, and concerns is crucial for effective change management [11]. Exploring their perceptions of the factors influencing the decision to perform CS provides valuable insights into the decision-making process. A qualitative approach is commonly used to investigate these aspects, allowing researchers to examine the *what, why, how* and *where* of the factors influencing CS decision-making [12-14].

In 2019, the Calabria Region joined the EASY-NET program (NET-2016-02364191-6), a project funded by the Italian National Ministry of Health and the participating regions (<https://easy-net.info/about/>) and focused on implementing Audit&Feedback (A&F) strategies to improve the quality of care. As part of this initiative, the Work Package 6 in the Calabria Region aimed to evaluate the appropriateness of CS and healthcare practices in different clinical and organizational settings and to assess the effectiveness of A&F strategies in modifying professional behaviour and improving adherence to evidence-based practices in CS decision-making [15, 16]. The Work Package 6 specifically focused on engaging HPs, evaluating their perceptions and attitudes, and identifying potential barriers and facilitators to the adoption of A&F strategies in CS reduction [17]. Given the concerns about rising CS rates and the lack of clarity regarding the factors influencing CS decision-making, understanding the perspectives of those directly involved in these decisions is essential.

The aim of this study is to explore the factors influencing CS decision-making from the perspectives of HPs in Calabria Region, within the EASY-NET program, to support the implementation of A&F strategies in the Region.

METHODS

Design

A descriptive qualitative design was selected to gain a deeper understanding of the factors influencing the decision-making process in the context of CS [14, 18]. This research design aligns with a constructivist paradigm, guiding appropriate actions based on the findings [19].

Six focus groups (FGs) were conducted to explore HPs' perceptions of the determinants related to CS decision-making [20, 21]. The study was designed and

reported following the Standards for Reporting Qualitative Research (SRQR) checklist [22].

Healthcare setting

In Calabria and across Italy, maternal and child public healthcare services is free of charge for all women. The Italian National Health System (NHS) follows a *Hub and Spoke* model, where *Hubs* handle high-complexity cases and *Spokes* manage low- to medium-complexity ones, referring high-risk patients when needed. The Maternity Units network in Calabria consists of three *Hub* hospitals and eight *Spoke* hospitals, including one private facility. The Calabria Region has also implemented dedicated pathways for managing low-risk pregnancies, ensuring integration between hospitals and territorial services. The Community Health Services for Families are primary care services dedicated to family and women's health, ensuring access in both urban and rural areas. They play a key role in promoting maternal health strategies, offering antenatal and postnatal care, antenatal group meetings, and structured specific support for low-risk pregnancies.

Participants

All 11 Maternity Units were invited to participate. Furthermore, the three Community Health Services for Families involved in the low-risk care pathway were also included in the study. Participants were recruited through purposeful, theoretically driven sampling, selecting HPs actively involved in maternity and neonatal care at the time of the study. They were contacted via email and invited to participate in the study. Specifically, the sample included a diverse mix of professionals involved in the birth pathway (obstetricians, midwives, anaesthesiologists, and paediatricians), working in various healthcare settings, including both hospital and community-based. Participants held different roles and levels of experience, reflecting the diversity of healthcare professionals involved in maternity care across the Calabria Region, as well as the structure and composition of local healthcare teams.

Data collection and analysis

Socio-demographic data were collected anonymously through a structured online form, shared with participants the day before the FGs, alongside an informed consent form to authorize audio recording and anonymous transcription of discussions. FGs were conducted online, in compliance with COVID-19 regulations, and facilitated by expert researchers from the Italian National Institute of Health (Istituto Superiore di Sanità, ISS). A semi-structured interview guide (*available online as Supplementary material*) was used, developed collaboratively by the research team, in conjunction with expert HPs and local specialists. An observer from the research team attended each FG, lasting 60 to 90 minutes. Full transcripts were independently read and coded by two researchers, who then discussed the themes and categories to define the coding tree. In case of disagreement, a third researcher was consulted. A categorical data analysis approach was applied, combining deductive and inductive approach [19]. Deductive cat-

egories were pre-defined based on the primary research questions, while inductive categories emerged during the coding process. The analysis was conducted using NVivo 12 Plus software. Data saturation was reached when no new categories emerged.

Ethical approval and data protection

Ethical approval was granted by the Research Ethics Committee of “Pugliese Ciaccio” Hospital in Catanzaro, which served as the coordinating centre for the project (Record 55, CdA-INIH of 30.03.2022). Informed consent was obtained from all participants before the focus group interviews. Anonymity was ensured, and recordings were transcribed using assigned codes and general professional roles (e.g., midwife, obstetrician) for confidentiality.

RESULTS

Six FGs were conducted from February to April 2021, involving a total of 92 participants, with a mean age of 44.8 years ($SD \pm 10.9$). The participants were HPs from 10 out of 11 Maternity Units and three of the Community Health Services for Families of Calabria Region. The represented professions were midwives (45%), obstetricians (35%), anaesthesiologists (11%) and paediatricians (9%). The main socio-demographics characteristics are shown in Table 1.

The themes and categories emerging from the deductive and inductive categorial qualitative data analysis are described below and presented in Table 2.

Theme 1. Determinants of CS perceived by HPs

The first theme explores HPs' perceptions of the key determinants influencing CS rates, categorized into external influences, organizational factors of the healthcare system and HPs' personal influences.

1.1 External influences on HPs

External determinants arise mainly from women's belief and their social context, which professionals perceive as influencing the choice of delivery mode.

Table 1
Socio-demographic characteristics of participants (N=92)

Participants' data	N (%)
Mean age in years	44.8 ($SD \pm 10.9$)
Women	74 (80.4)
Men	18 (19.6)
Professions	
Obstetrician	29 (31.5)
Obstetrician resident	4 (4.4)
Midwife	35 (38)
Midwife coordinator	6 (6.5)
Anaesthesiologist	10 (10.9)
Paediatrician	8 (8.7)
Working experience in childbirth care	
Mean working years ($\pm SD$)	18 ($SD \pm 11.3$)
Working place	
Maternity Unit	85 (92.3)
Community Health Services for Families	7 (7.6)

SD: standard deviation

• General perspectives on CS rate

HPs recognized the high CS rate as a global issue, not limited to Calabria, as well as the need for change in current clinical practice.

Obstetrician: *“It is widely acknowledged that the CS rate is too high”*.

Paediatrician/Anaesthesiologist: *“We know this is a shared problem, not just in Calabria”*.

• Beliefs about normal birth

HPs reported a cultural shift has led many women to view childbirth as a medicalized event rather than a physiological process. The misconception that CS is safer and more convenient than vaginal birth (VB) reflects a lack of awareness about associated risks and benefits:

Midwife: *“...Women believe that, with new techniques, a planned CS is safer than VB and therefore they have fewer medical complications”*.

Although most HPs supported CS only when medically necessary, some perceived it as a safer option, especially for advanced maternal age or Assisted Reproductive Technology pregnancies conceived.

• Women's request for CS

HPs noted that some women request a CS early in pregnancy, primarily due to fear of labour:

Obstetrician/Midwife: *“There are not a few women who, from the moment they see the first foetal heartbeat, ask for a CS due to fear of labour”*.

During labour, requests for CS often stem from pain, fatigue, or fear. While some HPs acknowledge these requests, many believe that self-determination in birth mode should not be an option without medical indication:

Obstetrician: *“Self-determination during labour should not exist because 99% of women in labour would ask for a CS”*.

However, in non-emergency cases, HPs sometimes consider women's persistent requests, which may influence final decisions:

Obstetrician: *“Certainly, if the woman repeats continuously in the ears, “I want CS, I want CS” it often comes to that in the end. But I do not agree with the woman's self-determination”*.

• Women's expectation and preparedness for childbirth

A cross-cutting concern in all FGs was women expectations and preparation to childbirth. HPs emphasized the importance of prenatal information to set realistic expectations and reduce fear.

Midwives, in particular, stressed the role of preparation in birth outcomes, advocating for antenatal group meetings to help women manage labour fears and build confidence. However, HPs noted challenges in organizing such meetings, particularly in Calabria's remote areas, where attendance is low due to cultural resistance and logistical barriers. As a result, birth experiences shared by family members or peers can strongly influence women's perception of childbirth.

Obstetrician: *“We know that in certain remote areas, there is resistance to physiological birth pathways. Antenatal*

Table 2
Themes, categories, nodes

Themes	Categories	Nodes
1. Determinants of CS perceived by HPs	1.1 External influences on HPs	<ul style="list-style-type: none"> • General perspectives on CS rate • Beliefs about normal birth • Women's request for CS • Women's expectations and preparedness for childbirth • Fear of childbirth • Pressure from relative
	1.2 Organizational influences of the healthcare system	<ul style="list-style-type: none"> • Insufficient staffing and working alone during shifts • Challenges in emergency transfers • Influence of private healthcare • Fragmented care pathway • Clinical shared protocols, standardized language, and procedures • Vaginal Birth After Caesarean • Bureaucratic burden • Impact of COVID-19 on healthcare organization • Sense of abandonment by institutions
	1.3 HPs' personal influences	<ul style="list-style-type: none"> • Adherence to delivery's physiological timing • Clinicians' experience • Fear of legal consequences
2. Enablers of quality birth care	2.1 Staff commitment 2.2 Teamwork 2.3 Midwifery-led pathways 2.4 Audit&Feedback	
Suggestions for continuity of care improvement	<ul style="list-style-type: none"> • Simulated training courses on obstetric topics • Periodic clinical audits • Development, sharing, and regular updating of clinical protocols • Cultivating a climate of trust within the team, supporting low-risk labor and delivery under midwifery-led care • Promoting continuous professional development • Facilitating effective networking between hospital and community services • Utilizing management units and regional data streams • Implementing the Audit&Feedback strategy 	

CS: Cesarean section; HP: Healthcare professional.

group meetings are not part of the cultural background, but they could be a good starting point!"

Midwife: "During labour we understand if women have attended antenatal group meetings because they bear the pain better, they are stronger and more confident".

Obstetrician: "When there is no proper education about pregnancy, women often rely more on family members or neighbours' experience than on professionals, unfortunately, making counselling more difficult".

• Fear of childbirth

Closely linked to self-confidence and preparedness, HPs identified fear of labour pain as a major factor influencing women's preference for CS:

Obstetrician: "We are seeing increasing difficulty among women in their approach to labour and pain... many ask for a CS because they are often afraid of pain, they can't handle pain, so it is the main cause".

Limited access to epidural analgesia in some hospitals, further exacerbates this fear, influencing women's birth choices:

Anaesthesiologist: "Pain management has now entered woman's mindset...analgesia plays an important role in the childbirth experience".

Obstetrician: "When labour is so long and it lasts many hours, women could be helped by analgesia".

• Pressure from relatives

The social perception that CS is safer than VB extends beyond women, influencing family members, who often exert strong pressure on the decision-making process, in addition to cultural beliefs.

Anaesthesiologist: "...relatives are often behind the door, and the pressure is very strong".

Obstetrician: "Culturally, you have 30-40 people waiting outside the delivery block and they ask you 'And when is the baby going to born?', 'Why hasn't the baby been born yet?', 'Why don't you just do a CS?'...so in the end it becomes an instrumental delivery or a CS".

1.2 Organizational influences of the healthcare system

The second category of *Determinants of CS perceived by HPs* theme focuses on how the organization of the healthcare system influences CS decision-making.

• Insufficient staffing and working alone during shifts

Staff shortages emerged as a recurring concern across all FGs, particularly related to shift scheduling. HPs expressed concern about being required to work in multiple settings simultaneously, which can compromise the quality of care:

Midwife: "We are few, with no dedicated schedule, especially in the morning... at the same time, a midwife, who

has to follow labour, has to take care of the CS surgery. We do it with great effort, because there are no staff, not just the midwives, all the staff".

Professionals recognized that staff shortages are not unique to Calabria but represent a broader issue within Italy's public NHS:

Obstetrician: *"It's a common problem, not just in Calabria, but probably across Italy. You can't provide good care if professionals keep decreasing instead of increasing"*.

The reorganization of the NHS has exacerbated staff shortages, particularly after the closure of smaller Maternity Units performing fewer than 500 deliveries per year. A neonatologist noted:

Paediatrician: *"Since the NHS reorganization and the closure of smaller Maternity Units, births have increased in larger centres, but with the same number of staff"*.

HPs emphasized the importance of increasing personnel to provide high-quality care:

Midwife: *"You need to have staff; you need to have midwives"*.

Staff shortage and working alone during shifts were critical factors that led HPs to make quicker decisions in situations where labour safety was in question, often opting for a CS pre-emptively to avoid complications:

Obstetrician: *"I wouldn't say it's the main reason, but it definitely plays a role in deciding to do a CS half an hour earlier rather than later. Personally, it does"*.

Obstetricians expressed frustration over having no colleagues to discuss clinical cases with during solo shifts:

Obstetrician: *"What do I do? Send the CTG (cardiotocography) to my colleague? If something is wrong, like an abnormal CTG or prolonged dilation, you're alone. In the end, probably the simplest decision is to decide for a CS"*.

In urgent cases, on-call colleagues could be contacted, but it's perceived that they were called primarily to perform a CS, rather than for collaborative decision-making:

Obstetrician: *"If the doctor is alone on shift, they have to call the on-call doctor, who usually responds, 'You called me to avoid legal problems, let's just do the CS'"*.

• Challenges in emergency transfers

The connection between *Spoke* and *Hub* hospitals was highlighted as a concern in urgent or emergency situations, particularly regarding the availability of blood bags, and the timing of patient transfers to Neonatal Intensive Care Units (NICU).

• Influence of private healthcare

Many women preferred private obstetric care, relying on a private obstetrician, who determined the mode of birth, rather than using public antenatal healthcare services:

Midwife: *"Many women are followed privately, and in the end, the doctor decides the mode of birth"*.

Some professionals raised concerns about other medical specialists certifying that women were unable to handle labour for VB due to non-obstetric health problems, a practice with potential legal implications. Additionally, HPs criticized the previous system, where private maternity care facilities performed excessive CS

procedures due to financial incentives, with the subsequent increase in repeat C-section as well:

Obstetrician: *"In the past, private hospitals performed a lot of CS to receive higher reimbursements. Now, we are dealing with more repeat CS cases"*.

• Fragmented care pathway

HPs reported low levels of integration within the birth care pathway, as well as a lack of collaboration and trust between different healthcare providers, including Community Health Services for Families, Hospital-based professionals, freelance obstetricians and midwives, general practitioners (GPs) and family paediatricians. In some areas, the integration process for managing low-risk pregnancies was still in its early stages, facing many challenges. Resistance to new care modalities and fluid collaboration between hospital and community services were noted, with the reorganization of work and the creation of integrated clinical tools seen as essential for progress:

Midwife: *"Improving communication would help us achieve better outcomes"*.

• Clinical shared protocols, standardized language, and procedures

Only few centres reported having defined, regularly updated protocols. In contrast, in centres without standardized protocols, HPs frequently raised concerns about the lack of consistency in clinical management.

Obstetrician resident: *"We have protocols that we all follow, and we update them monthly, discussing our clinical cases in light of these protocols"*.

Obstetrician: *"If we had shared protocols on induction timing and criteria, we might wait the proper time than inducing labour a week early. That could help reduce the primary CS rate and working better"*.

HPs reported a substantial variation in timing of birth, depending on the clinician, so the implementation of shared protocols could uniform the management (e.g., a uniform approach to CTG interpretation) and reduce primary CS.

Midwife: *"For minor decelerations, guidelines suggest trying maternal position changes first. If we followed protocols instead of rushing decisions, we could prevent some early CS procedures"*.

• Vaginal birth after caesarean

The planned elective repeat CS was another cross-cutting topic. HPs were aware that the low rate of Vaginal Birth After Caesarean (VBAC) contribute to the high overall CS rate. Factors limiting VBAC include lack of women's and relatives' awareness, limited support from HPs, insufficient staff and protocols, structural barriers (e.g., no blood bank in some *Spoke* hospitals):

Midwife: *"We perform repeat CS often, and that increases the total CS rate"*.

Obstetrician: *"Women assume that after one CS, they will automatically need another CS because obstetricians don't support VBAC. We simply don't have the structures to manage these cases"*.

Obstetrician: *"The absence of a second doctor and a blood transfusion centre makes VBAC even more difficult"*.

- **Bureaucratic burden**

Some HPs complained about excessive bureaucracy and the lack of an integrated IT system to facilitate lab test requests, specialist referrals, and medical record sharing:

Obstetrician: *"Everything is still done on paper, there's no software system to quickly view test results or submit requests electronically. Documents are still physically carried between departments!"*

- **Impact of COVID-19 on healthcare organization**

The COVID-19 pandemic severely disrupted maternal care services, particularly the suspension of antenatal group meetings and the absence of a person of woman's choice to support her during pre-natal and postnatal visits. COVID restrictions also affected organisation, leading to the sudden suspension of periodic audits and meetings where clinicians discussed clinical cases and protocols.

Obstetrician: *"Women preparation has worsened, probably because antenatal group meetings were no longer usable, due to the COVID-19 emergency".*

Midwife: *"The absence of fathers or a support person during childbirth had a huge impact. Women were frightened".*

- **Sense of abandonment by institutions**

Some HPs felt that the CS rate couldn't be reduced without the help of healthcare institutions, and felt unsupported, especially when requesting additional staff or resources.

Obstetrician: *"We are alone. We've never received answers from the institutions".*

1.3 HPs' personal influences

The third category focuses on internal factors influencing HPs in CS decision-making.

- **Adherence to delivery's physiological timing**

When discussing excellence in maternity care, obstetricians highlighted the autonomy of midwives as a key factor in ensuring quality care.

Obstetrician: *"Midwives guide physiological childbirth!"*

Although midwives were recognized for their crucial role in promoting VB, HPs reported the system's strong focus on medicalised care, prioritising pathology pathways over the natural timing of childbirth, impacting both labour management and CS rates.

Obstetrician: *"Perhaps we need to have more confidence in our midwifery team".*

Obstetrician: *"We should probably leave more space for midwives".*

Obstetricians acknowledged that their presence in the delivery room, even during uncomplicated labours, could put pressure on midwives.

Obstetrician: *"Obstetricians often intervene even during physiological labour; their constant presence in the delivery room isn't helpful".*

Midwives also highlighted inappropriate birth practices, such as not respecting the physiological timing of labour or neglecting to encourage women to adopt comfortable birthing positions.

Midwife: *"We do not respect the time of labour times, the physiological time!"*

Midwife: *"During labour, we should respect the transition period instead of treating it as a stage where contractions stop and oxytocin must be administered".*

- **Clinicians' experience**

Experience significantly influenced decision-making. Less experienced obstetricians and midwives tended to opt for CS earlier than their more experienced colleagues:

Obstetrician: *"Younger midwives, even more than younger doctors, fear reaching the so-called 'point of no return'".*

The tendency to act pre-emptively was also noted by neonatologists, who shared the concern of avoiding potential complication:

Paediatrician: *"Sometimes, performing a CS is a way to resolve a situation before it takes a negative turn".*

- **Fear of legal consequences**

The fear of legal repercussions was another cross-cutting issue across all FGs, affecting all's HPs, particularly among obstetricians, and strongly influencing their clinical decision with a significant role in the high CS rate:

Obstetrician/Midwife: *"Another factor is defensive medicine. Unfortunately, with the increasing risk of legal complaints, our approach is inevitably influenced".*

Theme 2. Enablers of quality birth care

The second theme focuses on perceived facilitating factors in maternity care, as dedication of staff to their work, teamwork, and midwifery-led pathways.

2.1 Staff commitment

In all FGs, HPs dedication to their work was evident, with participants describing their passion for their profession as their greatest strength:

Paediatrician: *"Our strength is definitely us, the whole team! We often work with limited staff, juggling multiple responsibilities, yet we manage to make things work thanks to our dedication as doctors, midwives, and nurses".*

Obstetricians particularly acknowledged midwives' commitment:

Obstetrician: *"They are truly exceptional. They don't watch the clock, and they work beyond their shifts when needed".*

2.2 Teamwork

Teamwork and interprofessional collaboration were consistently mentioned in all FGs as key factors for success.

Obstetrician: *"In difficult moments, communication is as simple as looking each other in the eye".*

Despite staff shortages, professionals described their teamwork as "one big family" dedicated to providing the best care:

Midwife/Obstetrician: *"If the obstetrician and midwife work in harmony, the birth will be fine".*

This collaborative approach was reflected in case discussions. While obstetricians made the final decision, midwives played a key role in the decision-making process.

Obstetrician: *"In the delivery room, a simple glance, a piece of advice, or a word exchanged between the midwife and obstetrician can be decisive. If I have to choose between vacuum extraction or a CS, I need the full support of the midwife".*

The generational shift among obstetric staff was seen as beneficial, balancing senior experience with the skills of younger colleagues.

2.3 Midwifery-led pathways

Midwives highlighted the growing implementation of dedicated antenatal care services for low-risk pregnancies, managed exclusively by midwives in Community Health Services for Families or Birth Centres (BRO Pathway – *Basso Rischio Ostetrico* – Midwifery-Led Obstetric Low-Risk Pathway).

HPs perceived this model as highly effective, noting its continuity of care, allowing midwives to support women both before and after birth. Some midwives reported that although this model is still relatively new, demand is growing rapidly.

Midwife: *"Initially, we thought there wouldn't be enough women interested, but word of mouth has filled these clinics, and we are still expanding".*

Their work was widely appreciated by both women and other HPs. Obstetricians noted that women were highly satisfied with the care received.

Obstetrician: *"No woman who has gone through the BRO pathway has ever said she was dissatisfied or uncared for. This encourages us to refer women to this model before and after birth, reinforcing the continuity of care".*

Although collaboration between Community Health Services for Families and other territorial services (such as GPs and freelance obstetricians) still needs improvement, participants acknowledged progress.

Midwife: *"A dialogue is emerging between community services, professionals working at community level, and the hospital. This must become a cornerstone of cooperation".*

One of the strongest takeaways from the FGs was the collective awareness among HPs that improving care for women is a shared goal.

Obstetrician: *"All the professionals involved in this project have a strong desire to improve and grow. You can feel it; there's a willingness to embrace new challenges and collaborations".*

2.4 Audit&Feedback

The exploration of HPs' knowledge and opinions on the A&F intervention and the use of data collection in clinical practice revealed that, although A&F strategies were not yet implemented in any Maternity Unit, some centres regularly conducted clinical audits as a structured tool.

Obstetrician: *"We conduct audits weekly. All of us, obstetricians and midwives, participate, especially when dealing with complex cases. The goal is to analyse them together and find ways to improve management".*

Professionals were familiar with clinical audits, though most were not well-acquainted with A&F. Clinical audits were viewed positively, as opportunities for learning and improvement and, in some centres, as an opportunity to update protocols. However, in a few

cases, case discussions were seen negatively, reflecting a lack of open communication in some settings.

Obstetrician: *"Unfortunately, in our reality, there is no real professional dialogue".*

Midwife: *"Sometimes, these meetings lead us to revise and improve some clinical protocols".*

Participants reported difficulties accessing data at both hospital and regional levels, such as the Hospital discharge records (Schede di dimissione ospedaliera, SDO) and the Birth certifications (Certificato di Assistenza al Parto, CeDAP). Only one centre used the Robson Classification to monitor CS rates. Despite these challenges, all professionals recognised the value of data-driven approaches and saw A&F as a potential tool for improvement.

Suggestions for continuity of care improvement

During FGs, several suggestions for improving continuous care were raised. HPs proposed improving their work and reducing CS rates through enhanced training and professional development focusing on team-based courses covering obstetric emergencies, labour induction, and CTG interpretation to ensure shared best practices. The importance of periodic clinical audits was widely acknowledged, along with the need to develop, share, and update clinical protocols for standardised care. Professionals highlighted fostering a culture of trust to support low-risk labour in midwifery-led care models, allowing midwives greater autonomy in physiological births. Strengthening hospital-community collaboration was a priority, with joint protocols integrating maternity care levels to align decisions and interventions. Additionally, regional data streams were seen as essential for monitoring trends and adapting practices, implementing an A&F strategy was considered key to improving clinical outcomes through structured reflection and continuous improvement.

DISCUSSION

One of the main objectives of the EASY-NET program was to reduce the CS rate in the Calabria Region. This qualitative study explored the perspectives of HPs on the determinants of CS and the potential opportunities for optimising decision-making.

The findings highlight a complex interplay of cultural, social, and clinical factors influencing CS rates, aligning closely with the multifaceted framework outlined in *The Lancet Series on Optimising Caesarean Use* [11], which emphasizes the need to consider clinical, organizational, and sociocultural drivers.

The optimal CS rate remains a topic of debate among HPs [23]. In our study, HPs acknowledged the elevated CS rate and recognised the reduction of unnecessary CS as a global concern.

Regarding cultural and social beliefs, HPs observed that CS has become "normalized", altering perceptions of what constitutes a *normal (vaginal) birth*. Although the relative risks of complications in case of CS are higher than VB, recent studies have shown that perceiving CS as a standard, safe mode of delivery contributes to its prevalence [24, 25]. Women reported that it was no longer necessary to suffer the *double pain* of labour,

and the perception of CS as a safe or even safer alternative to labour and VB aligns with findings from other studies [26]. However, in contrast, two Italian surveys conducted in 2003 and 2013 showed that over 80% of women preferred VB [27, 28].

From a social context perspective, family pressure plays a role in influencing decision-making, and our study confirms previous findings that it can increase the risk of CS [29]. Given the critical role of HPs in decision-making processes, fostering a shared philosophy around normal birth, embraced by professionals, women, and their families, could reduce CS rates [25, 28]. In our study, HPs also identified CS on maternal request as a significant concern. Among the reasons why women request CS, HPs reported a lack of preparation for childbirth, fear of pain and previous negative experiences, in line with previous studies [25, 30]. From HP's perspective, many clinicians opposed self-determination, particularly during labour, though some were more accepting, as reported also in the literature [10]. Furthermore, private healthcare influenced birth timing and planning, with the perception that private obstetricians often contributing to higher CS rates compared to public care, as reported in other studies [31] and confirmed by the higher CS rates observed in accredited private maternity units compared to public ones in Italy [8]. HPs noted that other specialists sometimes certified women as unable to undergo labour, leading to CS authorization.

A shared, informed care plan between women and HPs could enhance awareness, trust in normal birth, and supporting women fearing of childbirth to manage anxieties and transition into motherhood, as supported by the literature [32]. HPs recognized the need to encourage women and partners to attend antenatal group meetings to increase couple's awareness and women's preference for spontaneous labour and VB. It confirms that participation in the antenatal group meetings is associated with better health outcomes during pregnancy, childbirth and postpartum [33, 34].

Most participants, particularly midwives, emphasized the lack of respect for physiological delivery timing and the overuse of labour induction. HPs reported non-evidence-based inductions, without respecting childbirth timelines as key factors transforming physiological labour into a non-physiological process, increasing CS rates, consistent with literature findings [35]. The lack of shared clinical protocols, as reported in this study, also contributes to unnecessary interventions during labour [35]. In response to this, following this study, the EASY-NET WORKING GROUP collaborated with representatives of all Maternity Units of Obstetrics and Gynecology in Calabria to develop shared guidance on labour induction, adopted across the Region to promote evidence-based practices [36].

HPs highlighted the impact of legal concerns on CS decision-making, with defensive medicine driving the preference for CS to avoid litigation risks associated to VB. This aligns with literature, which connects higher medical liability judgments to delays or omissions in performing a CS [10, 37].

The FGs showed that obstetricians' decision-making was influenced by age, experience, confidence, and

skills in managing complex VBs, often linked to fear of legal consequences. Limited expertise in operative vaginal delivery may lead to a preference for CS in urgent cases, as seen in other obstetric units [38]. HPs suggested that improving junior staff education could help address this issue, as noted in a recent Irish study [25]. While younger obstetricians may have higher CS rates, HPs noted that generational staff changes have strengthened team collaboration. Consistent with literature, CS decision-making was a shared process, with obstetricians as the final decision-makers [10], supported by experienced midwives.

Healthcare system organization also emerged as a key factor, with a common issue being staff shortages across all HPs, limiting the provision of professional support and continuous, one-to-one intrapartum care, a recognized measure in reducing CS rates [39-41]. Furthermore, HPs consistently highlighted that insufficient staff availability for emergency CS often led to performing the procedure prematurely, rather than waiting for the optimal moment [10]. In addition, the presence of Blood Transfusion Centres and NICUs within the Maternity Units was perceived as enhancing HPs' sense of security during childbirth.

Moreover, the absence of a companion of the woman's choice during labour, as was the case during the FGs due to COVID-19 pandemic restrictions [42], was identified as a significant factor influencing mothers' requests for CS. The right to have a chosen companion during childbirth is endorsed by WHO recommendations [41] and is widely recognized in the literature as a positive determinant of health outcomes [39].

Previous CS is a prominent driver of CS use, as recently highlighted by a recent systematic review [43]. Despite VBAC being recommended by guidelines, only 16.6% of women in Italy and 6.2% in Calabria, had it in 2023 [6]. The high contribution of previous CS (Robson group 5) to overall European CS rates, particularly in Southern Europe (up to 95.0%), raises concerns about what some authors call the "domino effect" of primary CS [43]. This highlights how total CS rates are also strongly influenced by the increasing number of primary CS, underlining the critical importance of implementing strategies to reduce them. Meanwhile, the overall CS rate in Calabria decreased from 38.5% in 2021 to 35.8% in 2023 [6], with the greatest reduction observed in Robson group 2a (nulliparous with induced labour) and group 3 (multiparous without previous CS, spontaneous labour), aligning with the A&F meetings and training courses organizing by EASY-NET program, focused primarily on the appropriateness of labour induction and physiological pregnancy management [16].

In this study, the effect of labour analgesia on pain management and delivery mode was debated among HPs during FGs. A recent Cochrane review confirmed no differences in CS rate between women with or without epidural analgesia; an increased risk of instrumental VB has also been reported but with limitations [44]. The WHO recommendations for a positive childbirth experience state that epidural analgesia is recommended for healthy pregnant women requesting pain relief during labour, according to the woman's preferences [41].

Teamwork and continuity of care result from a joint effort in which all HPs are involved, along with women and couples, in a shared care plan. An important step forward in maternity care is the recent implementation of the Midwifery-Led Obstetric Low-Risk Pathway in the Calabria Region [45]. This care pathway provides midwives with a framework for managing pregnancy within Community Health Services for Families and Birth Centres, in accordance with the guidelines set by the Ministry of Health's Birth Pathway Committee [46]. Additionally, in a context where maternity care is strongly led by private obstetricians, the introduction of the Midwifery-Led Obstetric Low-Risk Pathway represents a shift toward a more generalised adoption of midwifery-led care, ensuring broader access to evidence-based maternity services.

HPs demonstrated familiarity with clinical audits, which were regularly conducted in some Maternity Units. However, A&F strategies had not yet been implemented, and most professionals were unaware of their potential benefits. This challenge was compounded by limited access to current data, particularly at hospital and regional levels (e.g., SDOs and CEDAP), which emerged as another key barrier. Evidence shows that the implementation of A&F strategies, combined with clinical guidelines, could be a viable approach to improving clinical outcomes [47-49] and reducing CS rates [16, 34]. Current data allows for real-time trend identification, personalized interventions, and greater engagement from HPs. Therefore, moving from a clinical audit to A&F using current data enables timely and data-driven feedback that enhances the effectiveness of improvement strategies [48].

Therefore, the study highlighted CS determinants from HPs' perspectives, contributing to a topic for which qualitative literature is still scarce in Italy. The multidisciplinary nature of the FGs and the participatory approach played a significant role in shaping the research process, especially for designing action-oriented initiatives. Furthermore, the findings were later used to develop a quantitative study aimed at further exploring the determinants that emerged from the qualitative phase.

Among the concrete actions implemented, the findings also helped to identify learning needs, leading to the organisation of targeted training sessions aligned with HPs' expectations, as well as a structured series of A&F meetings. This structured engagement ultimately contributed to the development of shared protocols across all Maternity Units, including clinical practice recommendations for labour induction [36] and the implementation of the Midwifery-Led Obstetric Low-Risk Pathway [45]. The Calabria Region formally approved both initiatives, marking an important step toward evidence-based maternity care.

A study limitation is that it only explored the perspectives of HPs. Gathering insights from expectant mothers and couples would provide a more comprehensive understanding.

CONCLUSIONS

This study highlighted factors influencing delivery mode decisions from HPs' perspective. In the Cal-

abria Region, the CS rate is influenced by a complex interaction of cultural, social and clinical factors. HPs highlighted key challenges, such as the normalization of CS, social and family pressures, and concerns over legal consequences. Several opportunities to reduce CS rate emerged, including HPs' enhanced education and training, implementing evidence-based clinical protocols, and promoting greater involvement of women in making informed decisions about their mode of delivery. In this context, integrating A&F could further strengthen these efforts by providing timely, current data to monitor progress and refine strategies. A&F may also help reinforce best practices, improve adherence to guidelines, and promote a culture of continuous improvement. Addressing this challenge will clearly require a multidisciplinary and collaborative approach, involving HPs, government institutions, and local communities. Only through a collective effort will it be possible to improve maternal and child health and ensure safe and evidence-based childbirth care.

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