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Exploring cultural changes about vaginal birth after caesarean section (VBAC): an Italian follow-up on the OptiBIRTH study

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To my daughter,

Sofia

Index

List of Figures

List of Tables

Abbreviations

AGENAS	National Agency for Regional Health Services
ART	Assisted reproductive techniques
BMI	Body Mass Index
CeDAP	Certificato di Assistenza al Parto
CER	Regional Ethic Committee
CS	Caesarean section
EB	Evidence Based
ECS	Elective caesarean section
ERCS	Elective repeated caesarean section
EUA	Efficient uterine action
ICSI	Intracytoplasmic sperm injection
IQR	Interquartile range
ISS	Istituto Superiore di Sanità
ISTAT	Istituto Nazionale di Statistica
IUA	Inefficient uterine action
IVF-ET	Fertilization with embryo transfer
LMICs	Low middle-income countries
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NIH	National Institutes of Health
OECD	Organization for Economic Co-operation and Development
OR	Odds Ratios
PhD	Doctor of Philosophy
QMNC	Quality of maternal and newborn care
RCOG	Royal College of Obstetricians and Gynaecologists
RCT	Randomized control trial
SAMM	Severe maternal morbidity
SDM	Shared decision making
SIGO	Società Italiana di Ostetricia e Ginecologia
TOLAC	Trail of labour after caesarean
VBAC	Vaginal birth after caesarean
WHO	World Health Organization

Short Definitions

Bishop Score	A scoring system to assess the state of the maternal cervix and position of the foetal head to determine the ease or difficulty with which labour may be induced. [Wormer *et al.,* 2023]
Childbirth trauma	A traumatic childbirth experience refers to a woman's experience of interactions and/or events directly related to childbirth that caused overwhelming distressing emotions and reactions, leading to short and/or long-term negative impacts on a woman's health and wellbeing. [Leinweber *et al*., 2022]
Foetal macrosomia	A condition in which the foetus is larger than 4,000 grams and 4,500 grams, regardless of the gestational age. [Akanmode & Mahdy, 2023]
Induction of labour	The use of medications or other methods to start (induce) labour. [Gill *et al*., 2023]
Obstetric violence	Disrespectful, abusive, or neglectful treatment during childbirth in facilities. [d'Oliveira *et al*., 2002]
Positive birth experience	A positive childbirth experience refers to a woman's experience of interactions and events directly related to childbirth that made her feel supported, in control, safe, and respected; a positive childbirth can make women feel joy, confident, and/or accomplished and may have short and/or long-term positive impacts on a woman's psychosocial well-being. [Leinweber *et al*., 2023]
Shared decision-making	A process whereby clinicians collaboratively help patients to reach evidence-informed and value-congruent medical decisions. [Grad *et al*., 2017]
Trial of labour after caesarean	Trial of labour after caesarean is a planned or attempted vaginal birth after caesarean. [ACOG, 2019b]
Vaginal birth after caesarean	A vaginal birth in a woman who has given birth via caesarean section in a previous pregnancy. [ACOG, 2019b]

Abstract

Background: Increasing the rate of vaginal births after caesarean sections (VBAC) is crucial to address the rising prevalence of caesarean sections (CS). Despite its benefits, VBAC rates remain low. Promoting VBAC is key to reducing CS rates, yet it is underutilized. Clinicians' perspectives and their evolution over time are pivotal in this context, but qualitative studies on their views are limited.

Aim: This thesis aimed to explore and interpret changes in clinicians' perspectives on VBAC since the OptiBIRTH study, which was a complex intervention aimed at increasing VBAC rates. Additionally, it sought to interpret these changes from a cultural perspective.

Methods: Study I: A meta-synthesis based on interpretative meta-ethnography, including peer-reviewed qualitative articles from various disciplines examining clinicians' perspectives on VBAC between 2016 and 2020. Study II: A national multicentre qualitative field research on current clinicians' perceptions and attitudes towards VBAC, using focus group interviews. Study III: Comparison of emerging results from Study II with previous qualitative knowledge, interpreted from a cultural perspective using a hermeneutic approach.

Results: Study I: The metaphor "*Can't save yourself alone*" encapsulates the main findings, highlighting clinicians as key influencers in VBAC decisions while recognizing the challenges they face. Themes include: "*Feeling like the playmaker*," "*Looking at women's desires with the eye of responsibility*," *"Carrying your own personal and professional stances*", and "*Is it really worth it?*". Study II: Clinicians (n=76) identified that *the " Road to VBAC*" which needs to be followed to build a system that support VBAC includes the following themes "*Effort must be shared by institutions*", "*Work as a team*", "*Provide supportive care*", "*Build women's motivation".* Study III: Cultural interpretation revealed a shift in Italy since the OptiBIRTH study from a narrow to a wider perspective, encompassing themes like: "*From working divided to working together", "From many parameters needed to providing supportive care", "Feeling supported by institution and having resources", "Addressing women's needs and build motivation".*

Conclusion: By 2023, there was a notable shift towards more collaborative, women-centred care among professionals, with increased participation compared to the OptiBIRTH study. Key themes like trauma, shared decision-making, and trust and alliance with women have become central in improving VBAC rates. The findings reflect significant, albeit slow, cultural changes influenced by Italy's socio-political context. This project represents the first

follow-up study in the same Italian sites after ten years, offering a unique perspective on the evolving VBAC care landscape.

Keywords: VBAC (Vaginal Birth After Caesarean), Caesarean Sections (CS), Clinicians' Perspectives, Qualitative Studies, OptiBIRTH Study, Shared Decision Making, Cultural Interpretation, Meta-Synthesis, Focus Group Interviews

Preface

The completion of this Doctor of Philosophy (PhD) thesis marks the culmination of a challenging but immensely rewarding journey. Titled “Exploring cultural changes about vaginal birth after caesarean section (VBAC): an Italian follow-up on the OptiBIRTH study", this research investigates the attitudes of health professionals towards vaginal birth after caesarean section (VBAC) , and their ability to assume or influence an evidence based (EB) approach when caring for women with a previous caesarean section (CS). During recent years, the World Health Organization [WHO, 2015] together with physicians at both governmental levels, and within scientific societies have renewed their concerns about the rising number of CS and their potential negative impact on maternal and child health [Betran *et al*., 2016a; Euro-Peristat 2022; Visser *et al*., 2018; Zeitlin *et al*., 2021; Zeitlin *et al*., 2015]. The incidence of CS continues to rise in both developed and developing countries [Betran *et al*., 2021; Miller *et al*., 2016; WHO, 2015]. While CS, when used appropriately, can reduce both maternal and perinatal mortality and morbidity [WHO 2015], there is no scientific evidence supporting benefits for women and children when the procedure is unnecessary [Betran *et al*., 2015; Sandall *et al*., 2018]. According to a recent survey by the National Agency for Regional Health Services [Agenas, 2023] in Italy, the frequency of primary CS has progressively decreased in recent years, from a median value of 25.3 percent in 2012 to 22 percent in 2021, with a slight increase to 23 percent in 2022. Although this reduction is significant compared to levels just under 40 percent recorded in the early 2000s, the current percentage still far exceeds the 10-15 percent threshold recommended by WHO [1985] for optimal maternal and foetal outcomes.

According to the National Institute of Clinical Excellence [NICE, 2021] significant contributors to the overall CS rate are repeat procedures. The Royal College of Obstetricians and Gynaecologists [RCOG, 2015] stated that VBAC can be offered to women who have had a previous CS for a non-recurring reason and without further complications, making it a safe and strategic option to decrease the overall CS rate. Current scientific evidence shows that 75% of women who choose VBAC will successfully have a vaginal birth [NICE, 2021]. However, in Italy, the proportion of vaginal births among women with a previous CS remains low, with only a slight increase over time [Agenas, 2023].

Between 2014 and 2015, the European OptiBIRTH Randomized Control Trial (RCT) study, "Improving the organization of maternal health service delivery and optimizing childbirth by increasing VBAC through enhanced women-centred care" (Trial registration number ISRCTN10612254), aimed to reduce CS by increasing the VBAC rate across three European countries [Clarke *et al*., 2020]. Five years later, evident changes have transformed the landscape in Italy, both in terms of outcomes and clinicians' practices and

culture. As shown by the National Outcomes Plan (*Piano Nazionale Esiti*), the number of VBACs increased from 5.5 percent in 2012 to 15.5 percent in 2021 [Mencacini *et al*., 2022] and the proportion of vaginal births among women who have previously had a CS is a recognized indicator of the quality of care provided to pregnant women, with higher values potentially reflecting more appropriate clinical practice [Agenas, 2023]. There is growing evidence about the influence that health professionals' attitudes and experiences have on women choosing the mode of birth after a CS [Kurtz *et al*., 2020; Monari *et al*., 2008; Munro *et al*., 2017; Rietveld *et al*., 2018]. These attitudes also vary geographically and internationally [Lundgren *et al*., 2015a; Lundgren *et al*., 2016; Clarke *et al*., 2020].

With this background, the idea arose to develop and conduct a national follow-up study to investigate any changes in the attitudes of health professionals towards VBAC and to interpret these changes from a cultural perspective. In fact, our study takes place in a significant historical context, where decades of efforts to humanize childbirth may have been swept away by the wave of Covid-19 [Horsh *et al*., 2020; Renfrew *et al*., 2020]. Although the experience and solitude of birthplaces do not seem to have impacted the number of CS [Lazzerini *et al*., 2022], our project emerges at a time marked by general discontent among facilities, clinicians, and women [Beňová *et al*., 2022; Del Piccolo *et al*., 2021].

This project, which is a multi-phase qualitative study, involved clinicians (obstetrician, midwives and medical residents) form the five sites, from north, central and south of Italy which took part in the European study OptiBIRTH [Clarke *et al*., 2020] (either as control or intervention sites). Investigating through a qualitative analysis provides an excellent opportunity to explore how attitudes toward CS and VBAC have changed, especially at a time when the birthing experience has become more complex and dramatic [Beňová *et al*., 2022]. The slight national increase in VBACs and women's choice to opt for this type of birth [Agenas, 2023], albeit with varying levels of compliance from doctors, highlights a possible shift in the dynamics between professionals and patients. Considering these changes, our study aimed to understand what has changed over a decade since the beginning of the OptiBIRTH study.

After a detailed analysis of the global, European, and national contexts presented in the introduction chapter, the project developed in three main phases. The first study of our research aimed to explore and interpret insights related to clinicians' views and experiences of VBAC, starting from the conclusions of OptiBIRTH RCT study in 2016 [Clarke *et al*., 2020]. In fact, the OptiBIRTH RCT study project had already thoroughly investigated the available scientific evidence at the time of the study, providing a base line for examining emerging scientific literature. The results from the first study form the theoretical framework for the current research and inform the second study, which involves a national multicentre

field investigation focused on clinicians' current perceptions and attitudes towards VBAC in Italy. In the third study, we aim to deepen the understanding of what has changed over time in clinicians' perceptions and attitudes towards VBAC and to interpret these changes from a cultural perspective, by comparing findings from the OptiBIRTH study [Lundgren *et al*., 2016] with those of the second study in the Italian context.

Gaining a greater understanding of professionals' views about VBAC may help to recognise the relevant factors of a complex public health issue that is still far from the desired improvement. Such knowledge also forms a basis for developing multiple intervention strategies, capable of combining health planning measures aimed at discouraging the excesses of medicalization.

1 Introduction

1.1 Caesarean section

1.1.1 Revisiting the optimal CS rate: insights, challenges, and implications

In 1985, the WHO established the ideal CS rate to be between 10 percent and 15 %. Since then, and particularly in recent years, there has been a growing need to reassess this benchmark, considering new scientific findings and socio-cultural changes that have occurred over time [WHO, 2015]. This reassessment is particularly relevant today, given both significant advancements in obstetric care and a global increase in the prevalence of CS [WHO, 2015].

CS performed on medical indication has been shown to reduce maternal and perinatal mortality and morbidity. However, probably because of the short- and long-term risks it carries like any surgical procedure, there is no scientific evidence to support the significance of these benefits when the procedure is performed without indication [Sandall *et al*., 2018]. Moreover, the risks to the health of the woman, the baby, and future pregnancies are further increased for women who have limited access to comprehensive obstetric care [Betran *et al*., 2016b]. Together with the need to revisit the optimal CS rate established in 1985 is necessary to focus attention not only on the CS rate value but also considering the variables that may affect the trend of the CS in a given reality. In fact, the complexity of this escalation may be explained studying and considering its underlying causes it unfolds as an intricate, multifaceted labyrinth involving health systems, healthcare providers, women, societies, and even factors related to fashion and media [Betran *et al*., 2018]. For this reason, in 2015 WHO has set two main goals [WHO, 2015]: to determine the optimal CS rate at the population level, updating the value established in 1985 and to evaluate the reliability of Robson's Classification as a means of stratifying CS.

1.1.2 The optimal CS rate

In order to achieve the first goal, the WHO promoted a systematic review of available ecological studies evaluating the association between CS rates and maternal, perinatal, and infant outcomes [Betran *et al*., 2015], and moreover a worldwide ecological study aiming to analyse the association between CS and maternal and neonatal mortality in light of the most recent data [Ye *et al*., 2016].

The systematic review [Betran *et al*., 2015] confirmed that at the population level, a CS rate of up to 10-15% is associated with a decrease in maternal, neonatal, and infant mortality. However, beyond this rate, the association between CS and mortality reduction is not observed. This relationship weakens or becomes invalid when socioeconomic factors are also considered [WHO, 2015]. The subsequent ecological study further clarified that socioeconomic factors largely explain the association found between CS and mortality. For CS rates below 10%, as CS rates increase, mortality decreases. However, when the CS rate is between 10% and 30%, this effect disappears; for CS rates greater than 30%, this association remains unclear (Figure 1.1) [Ye *et al*., 2016].

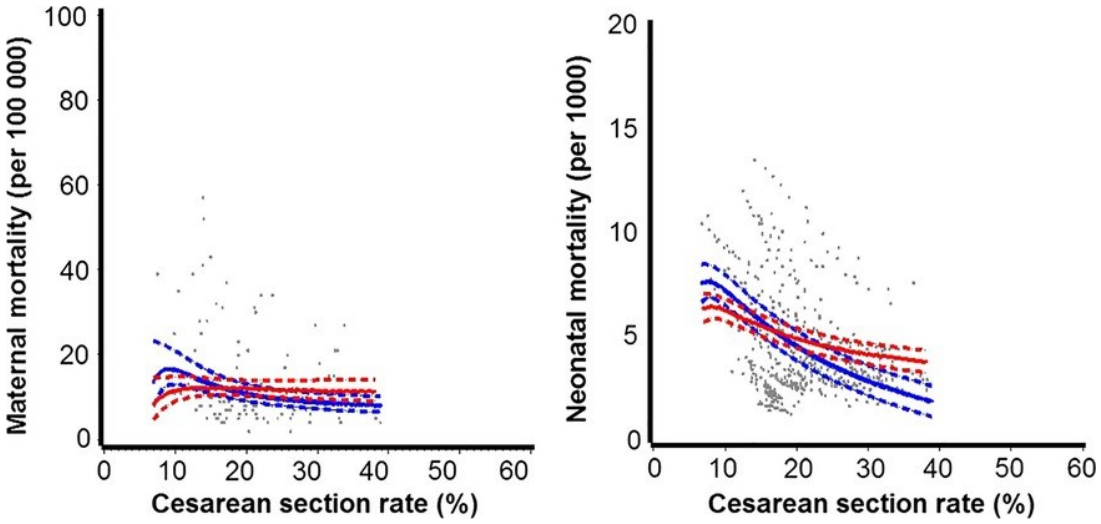

Figure 1.1 - Relationship between CS rates and maternal mortality and neonatal mortality. [Ye et al., 2016]

Among the confounding factors in analysing the association between CS and mortality, the quality of care is crucial. Insufficient facilities and/or knowledge to ensure a certain level of safety increase the risks of infection and other surgical complications [WHO, 2015]. While the WHO confirmed that at the population level, CS rates exceeding 10-15% are unlikely to enhance maternal or perinatal outcomes, some studies suggest that the lowest rates of maternal and neonatal mortality may be associated with a CS rate of approximately 19% [Molina *et al*., 2015]. Similarly, other studies have found the lowest rates of maternal and neonatal mortality at a CS rate around 19% [Sandall *et al*., 2018].

CS, like any surgical procedure, carry both short-term and long-term risks, especially in environments lacking the facilities or capacity to perform safe surgery or manage surgical complications adequately [Miller *et al*., 2016]. Additionally, challenges may arise in situations where access to proper labour care or subsequent CS in future pregnancies is not guaranteed. Conversely, insufficient access to timely CS can lead to perinatal asphyxia,

stillbirth, uterine rupture, or obstetric fistula, indicating prolonged and obstructed labour [Visser *et al*., 2018].

Therefore, a consensus has been reached between international health authorities and professional organizations recommending that efforts should be made to provide CSs to women in need rather than striving to achieve a specific rate and determining who qualifies as a woman 'in need' [Visser *et al*., 2018]. In addition, deciding who qualifies as a woman “in need” can only be determined by healthcare providers can only be determined by healthcare providers on a case-by-case basis [Visser *et al*., 2018].

1.1.3 A universal classification system

One of the obstacles to determining the optimal CS rate, and thus the minimum indicated CS rate, is the lack of possibility to uniquely classify different types of pregnancy and delivery, a process that would make comparisons between populations more reliable and allow more precise identification of the variables responsible for the increase.

Until 2014, there was no classification system universally accepted that would allow a systematic comparison of CS rates between one facility and another, but also between different cities or regions. However, WHO indicated that the ten-group classification, also known as "Robson's Classification" (Figure 1.2), was the system to be adopted for this purpose [Robson 2001]. In fact, a systematic review on CS classification systems had been conducted by WHO in 2011, the conclusions of which were in favour of the above classification, proposed by Michael Robson in 2001 [Torloni *et al*., 2011]. The classification is easily implemented, reproducible, clinically meaningful, and allows for the inclusion of all hospitalized women at once, making it easy to compare different facilities but also an analysis of trends in CS rates within and between groups [Torloni *et al*., 2011].

The system stratifies pregnancies into ten mutually exclusive groups based on obstetric characteristics that are normally recorded in maternity wards:

- Parity: nulliparous, multiparous with or without previous CS scar
- Number of foetuses: single or multiple pregnancy
- Foetal presentation: cephalic, breech, transverse
- Gestational age: preterm, term
- Mode of labour onset: spontaneous, induced, or CS before labour.

In 2014, WHO conducted a new systematic review in order to evaluate the implementation of the Robson Classification and possibly identify critical issues and

improvement actions to be implemented on the system which resulted in some recommendations:

- Robson Classification should be used in all hospital facilities,
- The starting structure of the Classification is itself very informative, however, one must keep in mind the possibility of further subdividing the ten groups, based on the characteristics and needs of the individual facility, to possibly analyse additional variables of interest,
- If possible, sharing reports on the topic would be helpful. [Betran *et al*., 2014].

Figure 1.2 - Robson's classification. [Robson 2001]

In addition, the use of Classification would help hospitals to:

- Optimize the choice of whether or not to use CS by focusing improvement actions on specific groups of women for whom the need arises,
- Evaluate the effectiveness of the improvement actions taken,
- Evaluate the quality of care for each group,
- Evaluate the quality of the data entered and raise staff awareness of the importance of analysing correct data. [Betran *et al*., 2014].

The use of a classification system by hospitals and health organizations could facilitate standardized comparisons of CS rates and involve identifying clinically distinct groups of women that are driving CS rates [Brennan *et al*., 2009]. Recently some doubts have been pointed out regarding possible limitations of this system [Robson 2018]. For example, women who had a previous CS at 37 weeks with a single cephalic foetus (group 5) constitute the most significant individual factor contributing to the overall CS rate. Notably, their contribution to the rate continues to grow, primarily due to the expanding size of the group rather than an increase in the CS rate within the group [Robson 2018]. Also, some concerns have been raised about potential misclassification of women, particularly given the substantial contribution of pre-labour CS in those with a single cephalic presentation at 37 weeks' gestation but without a previous scar (groups 2b and 4b) [Robson, 2018]. Finally, while groups 6 to 10 exhibit high CS rates, their limited size ensures that their overall contribution to the CS rate will always remain minimal [Robson, 2018].

An objective classification of indications for CS has been implemented successfully by Campbell *et al*., [2017] who collected information from the hospital's obstetric database. The classification system employed was based on the principle that CS during labour were carried out for either foetal reasons or labour dystocia (labour disorders). Moreover, it categorized dystocia into two groups: inefficient uterine action (IUA) or efficient uterine action (EUA), depending on whether cervical dilation was less than 1 cm per hour (IUA) or greater than 1 cm per hour (EUA). This model helped to focus modification of management on whichever subclassification is the biggest contributor to the rate of CS [Campbell *et al*., 2017].

The establishment and refinement of classification systems like Robson's are crucial for accurately assessing and managing CS rates. Despite some limitations, these systems provide valuable frameworks for understanding and improving obstetric care. Continuous evaluation and adaptation of these systems will help ensure they meet the evolving needs of healthcare facilities and contribute to the optimization of maternal and neonatal outcomes.

1.1.4 Indications for CS and effects on future health

The choice to perform a CS is primarily guided by what is most beneficial or lifesaving for both the mother and the child. The reasons for opting for a CS can be categorized into absolute and relative indications [Mylonas *et al*., 2015], as well as elective CS carried out solely based on the mother's preference without medical necessity (Table 1.1).

Table 1.1 - Indications for CS [Myolinas et al., 2015]

Absolute indications	Relative indications
• Absolute disproportion • Chorioamnionitis (amniotic infection syndrome) • Maternal pelvic deformity • Eclampsia and HELLP syndrome • Foetal asphyxia or foetal acidosis • Umbilical cord prolapse • Placenta previa • Abnormal lie and presentation • Uterine rupture	• Pathological cardiotocography (CTG) • Failure to progress in labour (prolonged labour, secondary arrest) • Previous CS

The decision to perform a CS should consider the risks and benefits for the mother and the infant in the given context: access to services, and the availability and level of neonatal care [NICE, 2019]. Certain conditions are unequivocal indications for CS, irrespective of circumstances, such as placenta previa, where attempting a vaginal birth can pose significant risks of morbidity or even death for both the woman and the foetus [NICE, 2019].

Clinical indications commonly cited for CS during labour include labour dystocia and concerning foetal heart rate patterns. However, these indications lack international consensus and are challenging to retrospectively validate [NICE, 2019]. Other conditions, such as breech presentation, multiple births, or a history of previous CS, may serve as indications for CS. Particularly repeated elective caesarean sections (ERCS) were historically based on concerns about the risk of uterine scar rupture, especially with the classical CS technique. However, with the transverse incision on the lower uterus now replacing the classical approach, the risk of uterine rupture has significantly decreased. VBAC is not recommended in cases of prior uterine rupture, previous longitudinal uterine incision, or in cases of three or more previous CS [NICE, 2019].

CS on maternal request, an elective caesarean section (ECS) in the absence of any medical or obstetric contraindication for attempting vaginal delivery, is frequently cited as a reason for the increasing incidence of CS [Belizán *et al*., 2007; Villar *et al*., 2007]. Numerous studies, mostly surveys of a descriptive nature, have assessed women's expectations of childbirth and the dynamics underlying their requests [Jenabi *et al*., 2020]. Women's requests for CS are often supported by the unfounded belief that CS offers a more favourable balance of benefits to harms for their and their baby's health [Jenabi *et al*., 2020]. However, there is no available evidence to support an association between the increased use of surgery and a reduction in maternal-foetal risks or improvements in perinatal outcomes. On the contrary, data report higher perinatal mortality in low-resource settings [Molina *et al*., 2015].

As stated by the American College of Obstetricians and Gynaecologists [ACOG 2019a] the excessive use of CS, especially when not related to medical reasons, leads to an increase of a range of risks for the mother and child associated with it being a surgical procedure. Severe maternal morbidity (SAMM), which includes complications such as haemorrhage necessitating hysterectomy or blood transfusion [Ramasauskaite *et al*., 2023], uterine rupture, complications related to obstetric anaesthesia, shock, cardiac arrest, acute renal failure, assisted ventilation or intubation, postpartum venous thromboembolism, significant postpartum infection, in-hospital wound disruption, and hematoma, is consistently greater following CS than vaginal birth [Sandall *et al*., 2018].

Conversely, compared to vaginal birth, CS is linked to a reduced risk of urinary incontinence [Sandall *et al*., 2018] and pelvic organ prolapse [Keag *et al*., 2018]. Long-term consequences of CS include pelvic adhesions, small bowel obstruction, menorrhagia, dysmenorrhea, chronic pain, sexual dysfunction, subfertility [Keag *et al*., 2018]. Short-term risks include altered immune development, allergies, atopy, asthma, and reduced diversity in the intestinal gut microbiome [Tita *et al*., 2009]. A 2018 meta-analysis identified increased risks of obesity up to age 5 years and asthma up to age 12 years in children born by CS [Keag *et al*., 2018].

Moreover, vaginal delivery would significantly reduce healthcare system expenditure related to hospitalization, bed occupancy, medical staff, and operating room use [ACOG, 2019a; Ramasauskaite *et al*., 2023]. The cost for the healthcare system for a CS includes short- and long-term factors such as hospitalization duration (CS involves one more day than spontaneous delivery), the risk of postpartum complications, and intensive neonatal care; long-term complications such as abnormalities of placental insertions, transfusions, hysterectomy, and intensive care [Sandall *et al*., 2018].

1.1.5 Global analysis of CS increase

CS is a major life-saving surgical intervention for women and infants when complications occur during pregnancy and/or labour. Over the past 30 years, there has been a global increase in the use of CS of 19 percentage points from 1990 to 2018 (Figure 1.3) [Betran *et al.*, 2021]. The most substantial rise occurred in less developed countries, with an increase of 22.9 percentage points, while the least developed countries experienced the smallest increase at 8.6 percentage points. Among subregions, Eastern Asia, Western Asia, and Northern Africa witnessed the most significant increases, with jumps of 44.9, 34.7, and 31.5 percentage points, respectively. Conversely, sub-Saharan Africa saw a modest increase of

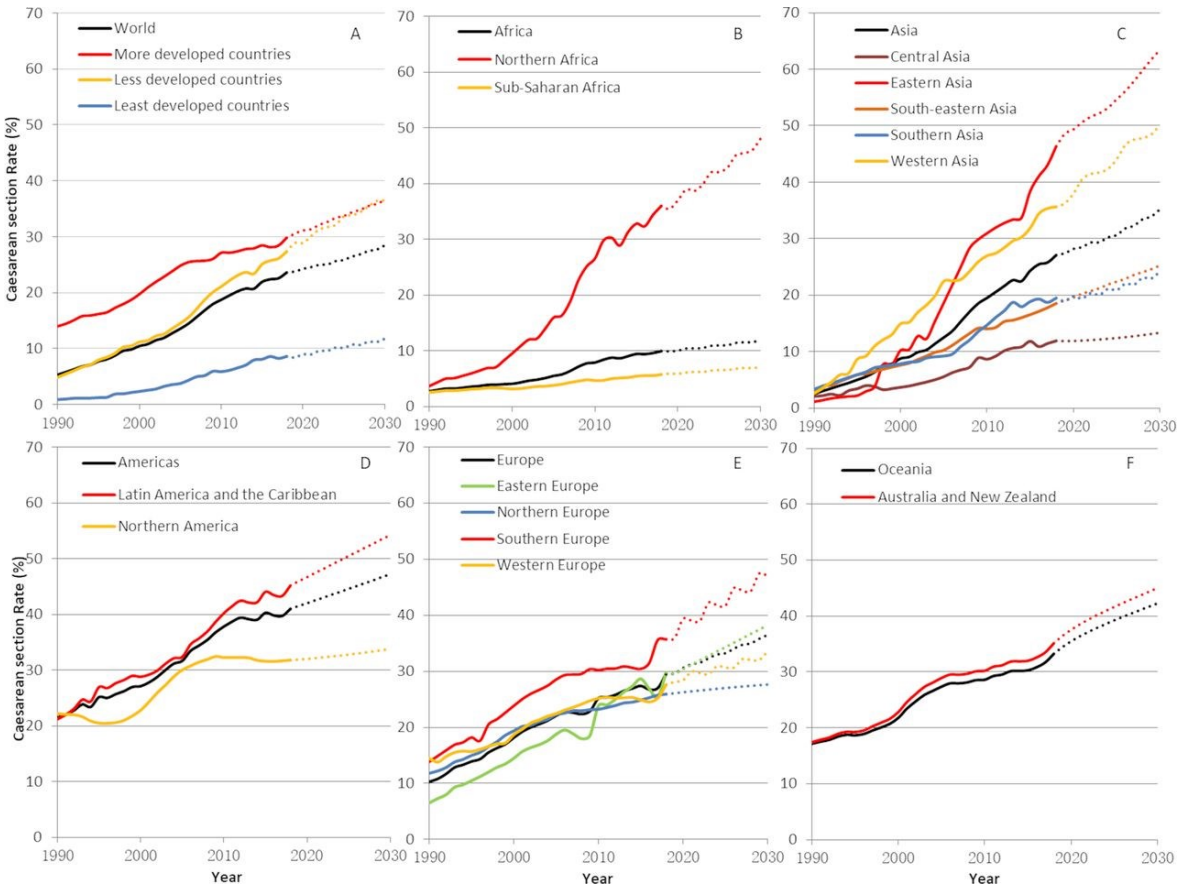

Figure 1.3 - Global and by world regions CS trend, years 1990-2014. [Betran et al., 2021]

3.6 percentage points, while Northern America experienced a slight uptick of 9.5 percentage points. Notably, the sole decrease in CS rates was observed in Northern America between 2010 and 2018, with a decline of 0.5 percentage points [Betran *et al.*, 2021]. Overall, 21.1% of women give birth by CS worldwide, with differences between geographic areas especially when characterized by different socioeconomic conditions. [Betran *et al.*, 2021]. The Latin America and the Caribbean region exhibited the highest CS rate, while the West and Central

African region reported the lowest at 4.1% (with an uncertainty range of 3.6-4.6%) [Boerma *et al*., 2018]. Recent data reveals that CS rates surpassed 15% of births in 63% of the countries examined, while 28% of countries recorded rates below 10% [Betran *et al*., 2016a] (Figure 1.4). Nationally, CS rates ranged from 0.6% in South Sudan to 58.1% in the Dominican Republic [Boerma *et al*., 2018].

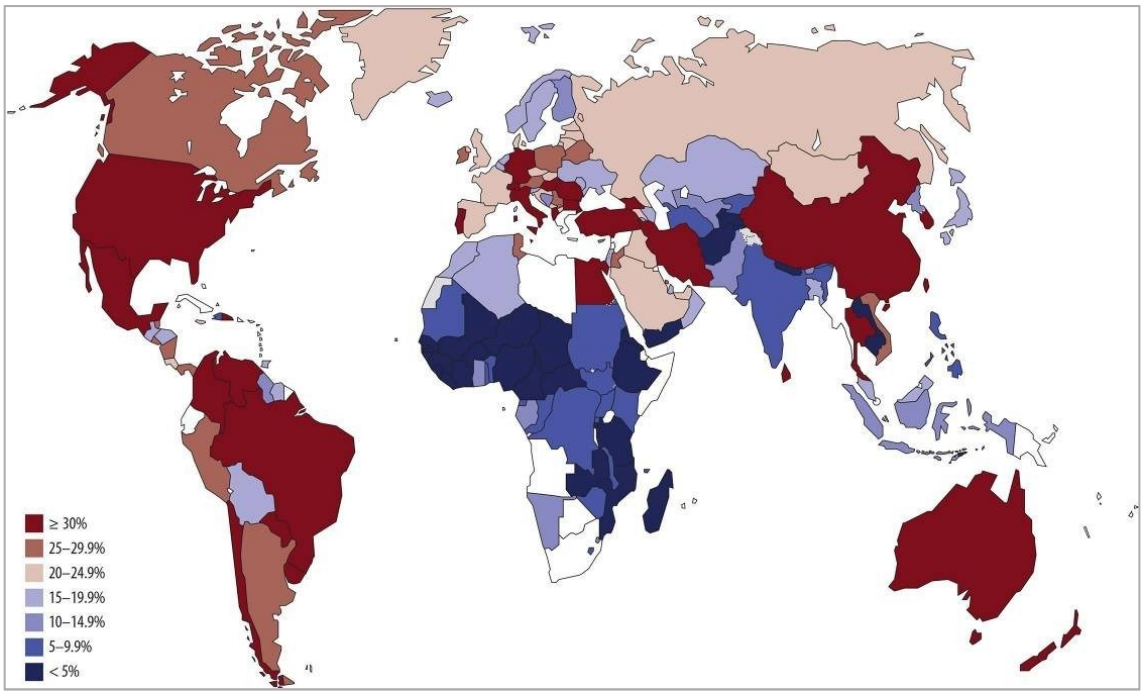

Figure 1.4 - International CS rate data by country. [Betran et al 2016]

The reasons behind this increase are multiple and multi- factorial, as well as not yet fully elucidated: social, cultural, economic, and organizational factors are probably involved, but also changes in the characteristics of women and the medical profession [Boerma *et al*., 2018]. The escalation in CS rates globally and regionally can partially be attributed to both the increased coverage of births by healthcare facilities, accounting for 66.5% of the global rise, and the heightened CS rates within these facilities, contributing to 33.5% of the increase, albeit with considerable regional variability [Boerma *et al*., 2018]. Moreover, within-country disparities in CS rates were substantial, with a sixfold difference observed between births in the wealthiest and poorest quintiles in low- and middle-income countries. Notably, there were markedly elevated CS rates among low obstetric risk births, particularly among more educated women in countries such as Brazil and China, and private facilities exhibited 1.6 times higher CS rates compared to public facilities [Boerma *et al*., 2018]. In fact, Countries exhibiting higher levels of socioeconomic development, gauged by metrics such as gross national income per capita, increased female enrolment in secondary

education, greater urbanization, higher physician density, and lower fertility rates, also showed a notably elevated CS rate [Zeitlin *et al*., 2019].

The projection of CS rates to 2021–2030 suggests that by 2030 the global CS rate will be nearing 30% with 38 million CS being performed in 2030 worldwide. Sub-Saharan Africa is expected to remain well below the 10% CS rate threshold while CS may become the most frequent mode of birth in Eastern and Western Asia, and Latin America [Betran *et al*., 2021].

With regard to Europe specifically, CS rates vary widely in participating countries, from 16% to over 40% [Zeitlin *et al*., 2019]. In contrast to overall increasing trends, evidence now points to some levelling off CS rates in parts of Northern and Western Europe [Zeitlin *et al*., 2019]. Despite their geographic and cultural proximity, European countries differ greatly in overall CS rates (16.1% in Iceland vs 56.9% in Cyprus) [Zeitlin *et al*., 2021], in CS trends, maternal characteristics, culture and healthcare policy making regional comparisons of interest for the efforts to optimise the use of CS (Figure 1.5) [Euro-Peristat, 2018].

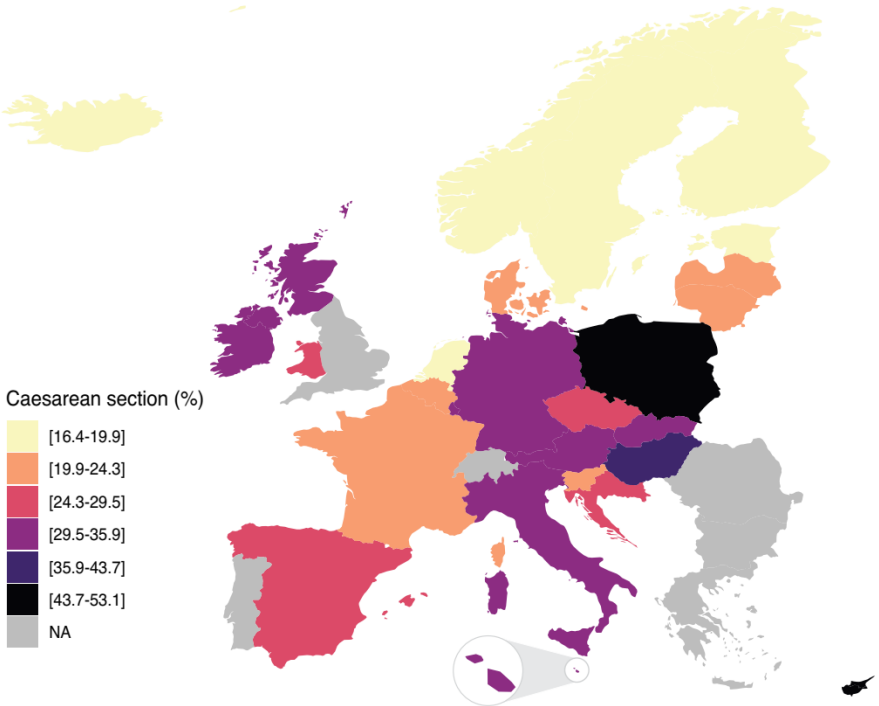

Figure 1.5 - Percentage of total CSs in Europe, 2015. [Euro Peristat 2018]

Between 2015 and 2019 CS rates varied among European countries, with decreasing rates in roughly a third of the countries, and with the lowest rates observed in

Finland (16.0% in 2015) and Norway (16.0% in 2019), and with the highest rate observed in Cyprus (55.9% in 2015 and 52.2% in 2019). [Euro-Peristat, 2018]. Trends in CS rates from 2015 to 2019 also varied, ranging from -3.7 to +4.7 percentage points, with decreasing rates in nine countries, with fairly level rates in seven countries (with a ì change of no more than ±0.2 percentage points) and with increasing rates in 12 countries [Euro-Peristat, 2018].

The different CS rates found in European countries also correspond to important differences in the various subgroups analysed (classified according to obstetrical characteristics) and probably underlie a different approach to obstetrics [MacFarlane *et al*., 2016]. In fact, the Euro Peristat Report [2018] showed for women giving birth for the first time, a median CSs' value of 27.4% with an interquartile range (IQR) of 22.2%-33.2% and a minimum and maximum of 18.3% and 57.1%. For women with a previous CS, the median was 73.9% (range: 44.6%-95.3%), with multiple pregnancies, 63.1% (range: 43.5%-98.5%), and with breech presentations, 89.4% (range: 64.3%-100%).

There is nearly unanimous agreement that the current rate of CS in many settings cannot be justified medically. Addressing underuse of CS has been a longstanding focus of medical literature, research, policy, and funding efforts as increasing access to CS is crucial for reducing maternal and perinatal mortality and morbidity [Main *et al*., 2012]. On the other hand, overuse of CS is a more recent and less understood phenomenon, which can unfortunately coexist with underuse in many countries [Boatin *et al*., 2018].

According to Boerma *et al*. [2018] if effective global interventions aren't implemented, by 2030, CS rates in low- and middle-income countries (LMICs) are expected to match those in more developed countries. Subregions like Northern Africa, Eastern Asia, Western Asia, and Latin America are projected to have CS rates at or above 50% of births. Of the predicted 38 million CSs in 2030, only 11.7% will occur in more developed regions, with approximately 33.5 million CSs happening in less and least developed countries. Under current or similar care conditions, it's hypothesized that the increased number of CSs in these regions will likely lead to a significant rise in maternal and perinatal morbidity and mortality.

1.1.6 Addressing unnecessary CS: a comprehensive approach

Reducing unnecessary CSs is a critical endeavour in contemporary obstetric care. While numerical data provides valuable insights, the emphasis on quality care cannot be overstated. This chapter delves into the multifaceted strategies aimed at addressing the complex issue of unnecessary CSs.

According to Betran *et al*., [2018], unnecessary CSs, defined as those performed without medical, including psychological, indications stem from a multitude of factors (Figure 1.6):

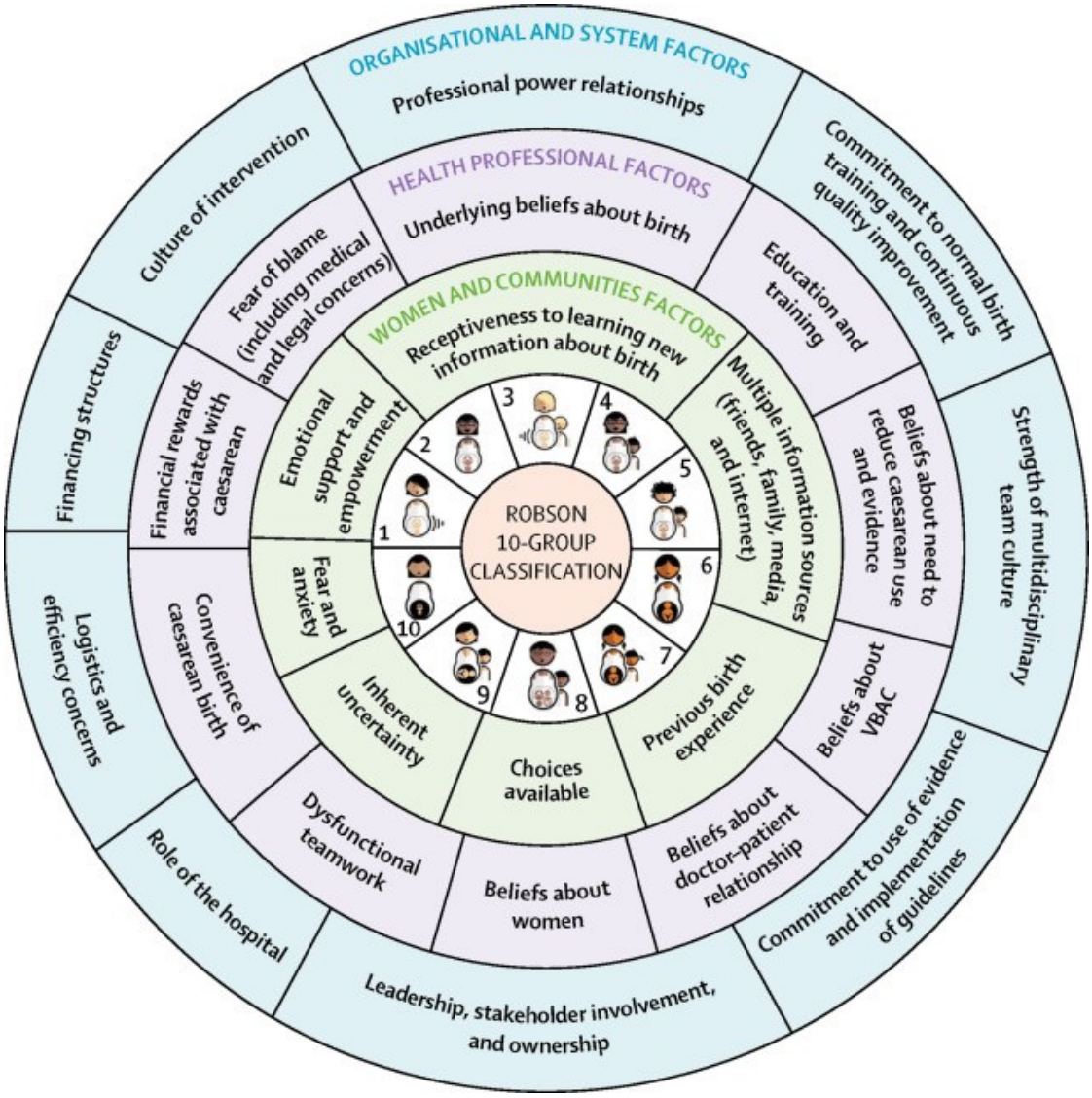

Figure 1.6 - Schematic representation of factors related to women, society, health providers, and health-care organisations that affect the frequency of CS use at the local level. [Betran et al., 2018]

- **Factors related to childbearing women, families, communities, and society**

  Women's decisions are influenced by various concerns, including fear of labour pain, concerns about pelvic floor damage and urinary incontinence, and worries about negative impacts on their sexuality or relationships [Mazzoni *et al*., 2011]. Cultural preferences for auspicious birth dates and past negative experiences with vaginal birth also play a role [Mazzoni *et al*., 2011].

- **Factors related to health professionals**

  Health professionals' attitudes, beliefs, and practices significantly influence the use of CSs [Betran *et al*., 2018].

- **Factors related to health-care systems, financial reimbursements, and organizational design and cultures**

  Healthcare systems, financial incentives, and organizational cultures also contribute to the prevalence of unnecessary CSs [Betran *et al*., 2018].

Efforts to reduce unnecessary CSs can be broadly categorized into clinical and non-clinical interventions. Clinical interventions target specific obstetric practices to promote physiological birth and reduce CS rates. Practices such as one-to-one care and midwifery-led continuous care have demonstrated efficacy [Bohren *et al*., 2017; Sandall *et al*., 2016]. Additionally, promoting VBAC represents a vital strategy in appropriate cases [Betran *et al*., 2018]. However, these may have limited impact as CSs for clinical indications represent a declining proportion of overall CS use.

Non-clinical interventions address broader systemic issues that perpetuate unnecessary CSs. These interventions, applied regardless of direct clinical encounters, are essential components of comprehensive strategies [WHO, 2018b]. They encompass initiatives targeting women, families, and communities to address fears, safety concerns, convenience, misinformation, and societal norms [WHO, 2018b]. Similarly, interventions, targeting healthcare organizations, facilities, and systems healthcare organizations focus on financing, care-provision models, and system integration, targeting and environmental and resourcing conditions [WHO, 2018b]. While intervention directed at health professionals aim to address concerns about litigation, organizational norms, financial benefits, and convenience, all of which can drive the use of CSs [Kingdon *et al*., 2018]. Finally, research by Chen *et al*. [2018] highlights the efficacy of non-clinical healthcare interventions focusing on positive human relationships, respectful teamwork, addressing beliefs and fears, and implementing EB guidelines. These include labour companionship, midwife-led care, antenatal education, and second opinions.

Comprehensive strategies that integrate both clinical and non-clinical aspects are crucial for effectively decreasing CS rates and promoting physiological birth. These strategies should be tailored to local determinants and rigorously evaluated. To this regard Betran *et al*. [2018] emphasize the importance of considering local context, culture, and existing initiatives when designing interventions. Despite the emphasis on numerical data, qualitative evidence regarding specific barriers or facilitators should not be overlooked.

Future interventions must address these gaps to achieve meaningful reductions in unnecessary CSs.

In conclusion, reducing unnecessary CSs requires a comprehensive and integrated approach that addresses clinical and non-clinical factors. Implementing EB practices and tailoring interventions to local contexts can help ensure optimal maternal and neonatal health outcomes.

1.2 Vaginal birth after caesarean section

1.2.1 The evolution and current challenges of VBAC

VBAC refers to a vaginal birth in a woman who has given birth via CS in a previous pregnancy. For much of the 20th century and even today, obstetric practice has been influenced by the belief that "*once a caesarean, always a caesarean*", [Cragin, 1916] implying that a woman with a previous caesarean should undergo repeat surgery for all subsequent pregnancies.

Even though, according to National Institute of Health (NIH), trial labour after caesarean section (TOLAC) provides an opportunity for women with a previous CS to attempt a vaginal delivery, it was not widely considered a reasonable option until the 1970s and 1980s [NIH, 2010]. Given the annual increase in CS incidence recorded from those years onward, in 1980, the NIH and the WHO convened a set of consensus conferences. The conclusion was that the CS delivery rate was too high and that VBAC was an acceptable approach to reducing it. Due to this change in recommendations, the annual incidence of VBAC increased from 5% in 1985 to 28.3% in 1996 [NIH, 2010]. At the population level, VBAC is linked to an overall decrease in the rate of CS [Dodd *et al*., 2004]. Although at the individual level, VBAC is associated with a lower risk of maternal morbidity and fewer complications for future pregnancies [ACOG, 2019b] neither ERCS nor TOLAC is risk-free. With increasing numbers of TOLACs, episodes of uterine scar dehiscence, ruptures, and associated maternal and/or neonatal morbidity and mortality have also been reported [ACOG, 2019b]. Consequently since 1996, the number of VBACs in the United States has progressively declined to an incidence of 8.5% in 2006, contributing to the overall increase in CS [NIH, 2010] (Figure 1.7).

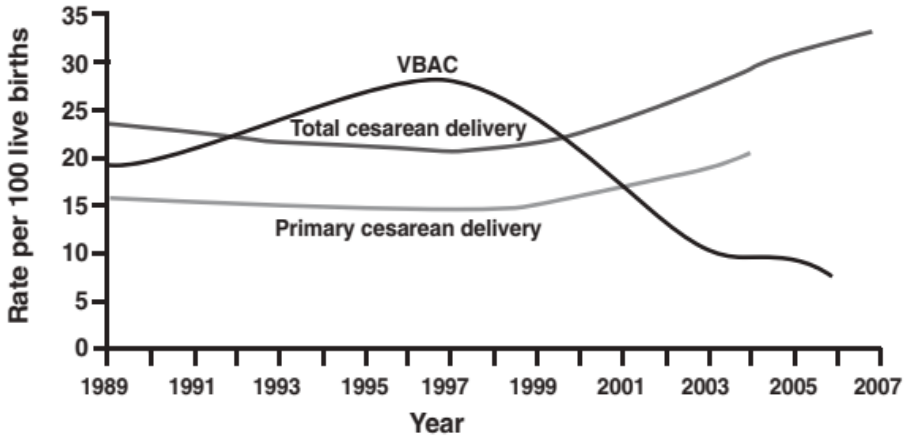

Figure 1.7 – Rates of total CS, primary CS, and VBAC, 1989 – 2007. [NIH, 2010]

Nowadays, while primary CS are the main contributors to the overall rise of this surgical practice, the impact of repeat CS on the total CS rate should not be underestimated [Zeitlin *et al.*, 2021] (Figure 1.8).

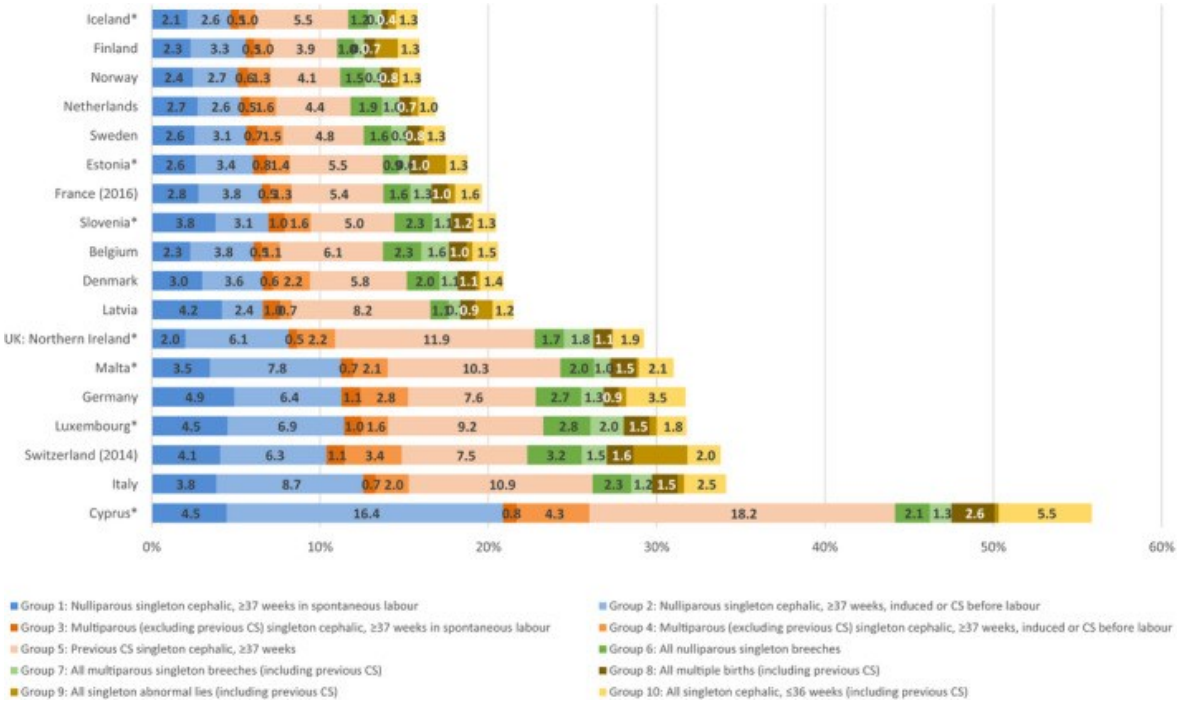

Figure 1.8 - Contribution of the ten groups to the overall CS rate by country ranked by overall CS rate in 2015. [Zeitlin et al.2021]

Gross *et al*. [2015] reports that various factors have contributed to the decrease in VBAC since the mid-1990s, which cannot be fully explained by characteristics such as age and parity. Clinical factors often cited as valid reasons for avoiding labour include concerns about the possibility of uterine rupture or an unsuccessful TOLAC leading to an urgent CS, which has a higher complication rate compared to VBAC or ERCS [Guise *et al*., 2010].

1.2.2 VBAC trends and disparities

In 2021, the overall rate of VBAC in the United States was 14.2%, confirming the increase in rates observed since 2010 [Osterman *et al*., 2023]. Many factors influence the VBAC rate, including the location of delivery (rural or urban), type of hospital (university or not), history of previous vaginal delivery (including previous VBAC), and race/ethnicity [Cheng *et al*., 2011]. An examination of 2016 US birth data found that a lack of a high school diploma and insufficient prenatal care were linked to a higher likelihood of both TOLAC and VBAC [Attanasio *et al*., 2019]. Similarly, non-Hispanic Black women were more inclined to undergo

TOLAC but were less likely to achieve a successful VBAC compared to non-Hispanic White women [Grobman *et al*., 2021].

Pineles *et al.* [2023] shows an 80% likelihood of successful VBAC among women attempting TOLAC with one previous CS and a history of previous vaginal delivery. However, only 29% of women attempt TOLAC. Therefore, the decision to undergo TOLAC is the limiting factor, even for the most suitable candidates. Even among patients with two previous CSs, more than half of those attempting TOLAC achieve a successful VBAC. In order to mitigate these disparities, a recent calculator designed to predict successful VBAC removed race and ethnicity from its predictive model [Pineles *et al*., 2023].

In Europe, the incidence of VBAC among states varies widely, reflecting different approaches to maternal and perinatal health care. For example, the rate of VBAC in Germany, Ireland, and Italy is significantly lower (29-36%) than in the Netherlands, Sweden, and Finland (45-55%) [Euro-Peristat, 2018]. An epidemiological study conducted over three decades in two of Europe's largest maternity hospitals revealed, similar to the US, that the consistent rise in the overall CS rate was significantly linked to a substantial decrease in the incidence of VBAC [Brick *et al*., 2016]. Comparing this data with the evidence and recommendations presented in the next section underscores the need to reflect on the trends in VBAC rates.

1.2.3 VBAC success rate

In scientific literature, there is consensus, supported by systematic reviews and clinical guidelines, that planning a TOLAC is a safe and appropriate mode of delivery for most women with a single prior lower segment CS, with or without a history of vaginal delivery. These women, in the absence of contraindications, should be offered individualized counselling and the option to attempt TOLAC [ACOG, 2019b; Crowther, 2012; Dood *et al*., 2004; Dodd &; Guise *et al*., 2010; NICE, 2019]. The best candidates for planning a VBAC are women for whom the balance between risk (as low as possible) and probability of success (as high as possible) is acceptable for both the woman and the physician. However, this balance may be adequate for one woman but unacceptable for another. Furthermore, assessing the woman or couple's reproductive plan is also important, as maternal morbidity increases with the number of CS [ACOG, 2019b; Dodd & Crowther, 2012; Guise *et al*., 2010; NICE, 2019].

Although there is no precise limit, several studies suggest that pre-screened women undergoing TOLAC with a probability of VBAC of at least 60-70% have a lower or equal risk of maternal morbidity compared to women undergoing ERCS. Conversely, women with a VBAC probability of less than 60% have a higher risk of maternal morbidity. Similarly, since

neonatal morbidity is higher in case of TOLAC failure compared to a trial resulting in VBAC, women with a higher probability of VBAC have a lower risk of neonatal morbidity [ACOG, 2019; Silver *et al*., 2006]. On the report of the *Società Italiana di Ostetricia e Ginecologia* [SIGO*,* 2021] among women who choose to have VBAC, delivery is successful in a high percentage of cases (70% to 87%), demonstrating that VBAC is truly an option for most women with prior CS (Figure 1.9).

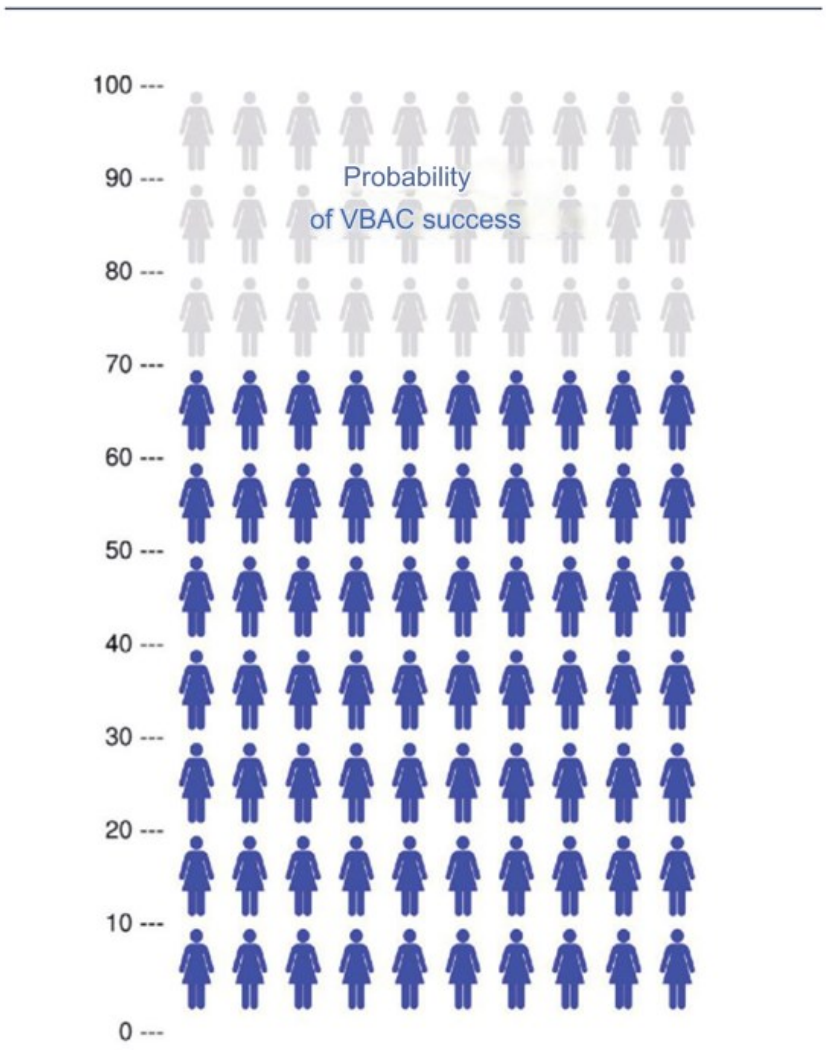

Figure 1.9 - Graphical representation of the probability of VBAC success. [SIGO, 2021]

1.2.4 Factors influencing VBAC success

The likelihood of achieving a VBAC varies depending on individual factors: demographic, obstetric, and structural.

- **Ethnicity**: According to Hollard *et al*. [2006] the best outcomes in the Caucasian population, with a 78.3% success rate. Compared to the Caucasian population, the likelihood of success for TOLAC, calculated as Odds Ratios (OR), is lower and statistically significant for two other ethnicities: for the African American population, the OR is 0.69, while for the Hispanic population, the OR is 0.65. Similarly, a meta-analysis by Wu *et al*. [2019] confirms the higher likelihood of success of TOLAC in Caucasian women compared to Hispanic and African American women (OR 0.65-0.69, respectively), emphasizing that different factors such as health insurance coverage may influence these differences.
- **Body mass index (BMI) and excessive weight gain during pregnancy**: The success of TOLAC decreases with increasing BMI (≥30 kg/m²) compared to normal-weight women (BMI≥30 OR 0.50, 95% CI 0.39-0.64). Obesity with a BMI ≥40 kg/m² is associated with the highest risk of TOLAC failure. However, obesity is not a contraindication to TOLAC, but it requires adequate counselling and personalized management of labour and delivery [Wu *et al*., 2019].
- **Maternal age**: Maternal age is associated with a reduction in TOLAC success, with a linear trend across different age groups, with a 3% increase in the probability of failure every 10 years starting from the 20s-30s. However, maternal age alone should not prevent access to TOLAC [Srinivas *et al*., 2007].
- **Suspected foetal macrosomia**: Suspected foetal macrosomia may be associated with a lower likelihood of success (OR 2.47, 95% CI 1.82-3.34); however, it is not a contraindication to TOLAC labour, and it emphasizes that third-trimester ultrasound is poorly predictive of macrosomia in supporting VBAC decision-making processes [RCOG, 2015].
- **Gestational age**: From the 39th week onwards, the success rate slightly decreases, although it remains high (failure rate 22.2% <40 weeks, 31.3% ≥40 weeks, 35.4% ≥41 weeks). There were no significant differences between the <40 and >40-week groups in the rates of uterine rupture and maternal morbidity [Coassolo *et al*., 2005]. A reassessment by an experienced obstetrician at 41 weeks to decide whether to undertake induction or ERCS is recommended [RCOG, 2015].
- **More than one previous CS:** The likelihood of TOLAC success in women with two previous CSs does not significantly differ (71%) from that reported in women with a single CS, with an increased risk of uterine rupture (1.6% vs. 0.7%) [Tahseen & Griffiths, 2010]. Data regarding the likelihood of TOLAC success with more than two previous CSs are limited [Cahill *et al*., 2010].
- **Non-recurrent indication compared to the first CS**: Significant differences in TOLAC success rates are reported in the literature related to the indication for the first CS. The

probability of success is higher in women with a previous CS performed for abnormal presentation (84%) [Guise *et al*., 2010]. Indications related to foetal well-being factors do not significantly affect the likelihood of success (VBAC probability 73%) [Guise *et al*., 2010]. A previous CS for labour arrest/dystocia is associated with a lower likelihood of success compared to other indications for the first CS, and thus dystocia is considered a potentially recurrent indication (64%) [Guise *et al*., 2010]. In women with a previous CS for dystocia, the likelihood of successful VBAC appears to be influenced by the cervical dilation reached at the time of the first CS [Guise *et al*., 2010].

- **Previous vaginal delivery**: In particular, a previous VBAC is the single best clinical predictor for successful TOLAC and is associated with a success rate of 85-90% (OR 3.9, 95% CI 3.6-4.3) [Landon *et al*., 2005]. Landon *et al*. [2005] quantifies the protective effect on uterine rupture of a previous vaginal delivery compared to no delivery (OR 0.62, 95% CI 0.43-0.90).
- **Spontaneous onset of labour**: The likelihood of TOLAC success is higher in women with spontaneous onset of labour compared to women undergoing acceleration/induction, at the same gestational age, and is associated with a lower probability of uterine rupture [Guise *et al*., 2010].
- **Favourable Bishop score**: A favourable obstetric finding at the time of admission for delivery is one of the predictive factors for TOLAC success (OR 3.77, 95% CI 2.17–-6.53; AOR 2.99, 95% CI 1.88-4.75) [Wu *et al*., 2018].

One of the greatest challenges in counselling and caring for pregnant women with previous CS concerns the decision-making process that will ultimately lead to a TOLAC or ERCS [Lundgren *et al*., 2015a; Nilsson *et al*., 2015; Uno *et al*., 2020]. In fact, all non-clinical conditions influencing the choices of professionals, women, and practice must also be considered, as discussed in section 1.1.6.

1.2.5 Outcomes of TOLAC versus ERCS

The decision-making process for subsequent deliveries in women who have previously undergone a CS involves careful consideration of various factors. The primary options available are a TOLAC leading to a VBAC, a TOLAC that converts to an urgent CS or an ERCS. Each option carries its own set of risks and benefits, which must be weighed to make an informed choice. This section examines the outcomes associated with TOLAC compared to ERCS, focusing on maternal and neonatal health.

Among the potential risks, TOLAC is associated with a slight but significant risk of uterine rupture, a rare obstetric emergency that is neither predictable nor preventable, with

a high risk of maternal and neonatal morbidity and mortality [ACOG, 2019b]. The incidence reported in the literature is 0.5% [ACOG, 2019b; SIGO, 2021]. Guidelines from major international scientific societies agree that, regardless of the therapeutic choice (TOLAC or ERCD), there is no option without risks for the woman and the newborn. Literature evidence concurs in considering the benefits of VBAC to outweigh the risks. The greatest risks of adverse outcomes occur in failed TOLAC resulting in emergency CS. Below are the risks associated with TOLAC compared with those associated with a ERCS (Table 1.2).

Table 1.2 - Maternal outcomes associated with TOLAC versus ERCS. [ACOG, 2019b]

Maternal outcomes associated with TOLAC versus ERCS			
	Favors TOLAC	**Favors ERCD**	**No difference**
Maternal mortality	✓	-	-
Uterine rupture	-	✓	-
Hysterectomy	-	-	✓
Haemorrhage and transfusion	-	-	✓
Infection	-	-	✓
Surgical wound	-	-	✓

Studies show an overall incidence of uterine rupture for both TOLAC and ERCD groups at 0.30% (95% CI 0.23%-0.40%), with 96% of ruptures occurring in the TOLAC group. The risk of uterine rupture is higher in women undergoing TOLAC, especially in those at term pregnancies [ACOG, 2019b; Guise *et al*., 2010; SIGO, 2021] (Figure 1.10). Conversely, A meta-analysis indicated a higher risk of maternal death with ERCS compared to TOLAC 13.4 per 100,000 (95% CI 4.3-41.6 per 100,000 ERCD) vs. 3.8 per 100,000 (95% CI 0.9-15.5 per 100,000 TOLAC) [Cheng *et al*., 2011].

Figure 1.10 - Graphical representation of the estimate of the probability of uterus rupture during TOLAC. [SIGO, 2021]

Other factors associated with an increased risk of uterine rupture include maternal age, previous vaginal delivery or VBAC, number of previous CSs, gestational age at delivery, short interval between pregnancies, induction of labour (with different agents), and epidural anaesthesia. However, diagnosing uterine rupture can be challenging due to the absence of a single reliable sign. Signs such as abnormalities in foetal heartbeat tracing, maternal vaginal bleeding, pain, and abnormal uterine contractions are commonly observed [ACOG, 2019b; Guise *et al*., 2010]. Regarding hysterectomy, studies show no statistically significant difference in the incidence between ERCS and TOLAC. The incidence of

hysterectomy was lowest for TOLAC after only one previous CS, followed by TOLAC after multiple CS, and highest for ERCS [Guise *et al*., 2010]. Rates of haemorrhage and transfusion were higher in ERCS compared to TOLAC, although not statistically significant [Landon *et al*., 2005]. Infections overall did not show significant differences between TOLAC and ERCS, but TOLAC was associated with a higher risk of endometritis, especially in obese women [Landon *et al*., 2005]. The incidence of febrile illness was significantly lower for TOLAC compared to ERCS [Landon *et al*., 2005]. The risk of surgical complications did not show a statistically significant difference between TOLAC and ERCS. Overall, while each mode of delivery presents its own set of risks, TOLAC appears to have certain advantages, especially in terms of maternal morbidity and mortality [Guise *et al*., 2010].

Women who choose to undergo an ERCS or those who fail to complete TOLAC will most likely have to undergo CS for all future pregnancies. Therefore, it is important that they understand the risks associated with this practice, including hysterectomy and placental abnormalities [Sandall *et al*., 2018]. Assessing individual risks and the likelihood of successful VBAC is crucial in determining who may be suitable candidates for TOLAC. Efforts have been made to identify prognostic factors associated with VBAC and develop predictive models for VBAC and associated morbidity [RCOG, 2015]. Additionally, involving patients in the decision-making process and counselling them about TOLAC/VBAC options has been linked to increased TOLAC choices and patient satisfaction. Early personalized counselling is important because many women with a history of CS make decisions about future TOLAC before becoming pregnant again [RCOG, 2015]. According to NICE [2019] the key to facilitating a woman's decision about undergoing TOLAC is providing personalized counselling regarding her chances of success, the risk of uterine rupture, and the potential consequences for herself and the foetus in case of uterine rupture. Informed consent for any woman considering TOLAC should address four specific questions:

(1) What is her chance of having a successful VBAC?
(2) What is the risk of uterine rupture if she attempts a VBAC?
(3) What are the potential harms or risks to her baby if uterine rupture occurs?
(4) What are the risks associated with undergoing a repeat CS?

Additionally, considering future fertility and family plans is crucial, as multiple CS increase the risk of future pregnancy complications such as placenta previa, accreta, and hysterectomy. Clinicians should discuss future pregnancy and family plans with the patient and incorporate them into the decision-making process [NICE, 2019].

In conclusion, the decision between TOLAC and ERCD for women with a previous CS is complex and multifaceted. Each option presents distinct risks and benefits that must

be carefully weighed by both the patient and the clinician. The literature suggests that, for many women, the benefits of attempting a VBAC may outweigh the risks, particularly in terms of maternal morbidity and mortality. However, individualized counselling and a thorough assessment of each woman's specific circumstances are essential to making an informed decision. By addressing key factors such as the likelihood of success, the risk of uterine rupture, and future reproductive plans, clinicians can support women in making the best choice for their health and their families.

1.3 Study setting

1.3.1 The Italian country

Italy is a Republic located in Southern and Western Europe. Positioned in the heart of the Mediterranean Sea, it comprises a peninsula encircled by the Alps and various islands, including Sicily and Sardinia. Italy shares its boundaries with France, Switzerland, Austria, Slovenia, as well as two enclaves: Vatican City and San Marino. The regions of Italy, represent the primary administrative divisions of the Italian Republic, forming its second NUTS administrative tier. There are twenty regions (Figure 1.11) in total, which are

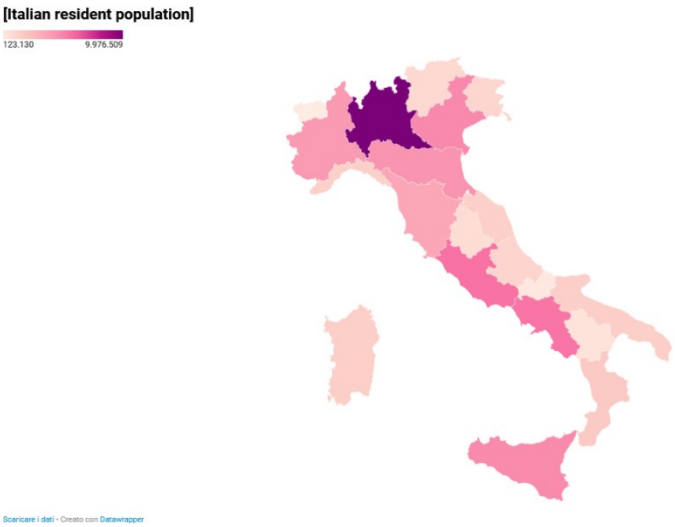

Figure 1.11 - Map of regions in Italy according to resident population. Create with Datawrapper

extremely varied, differing in size, population, and levels of economic development.

Each region functions as an independent entity with specified authorities. With the exclusion of Aosta Valley and Friuli-Venezia Giulia every region is further subdivided into several provinces, [European Commission, 2020] which are made up of municipalities (*comuni*). Italy has about 8100 municipalities, which range in size from small villages to large cities such as Rome. In 2023 the population was estimated 58,9 million with a density of 195 people for km2.

According to the latest census, the main population group in Italy is Italian (91.3%) while the largest foreign community is that coming from Romania with 21.0% of all foreigners present in the territory, followed by Albania (8.1%) and Morocco (8.1%). Italy was ranked by the World Bank as a high-income country in 2022 [World Bank, accessed 01/02/2024]. In Italy, in 2021, the employment rate of 25–64-year-old graduates stands at

82.1%, which is 4.3 percentage points lower than the European average; the gap increases to 6.8% among 30–34-year-olds (81.1%), while it is 17.4 percentage points among those under 35 who obtained their degree one to three years prior (67.5%). The disparity between Italy and the European Union is significant regarding the percentage of graduates aged 30-34: 41.6% compared to 26.8%. In the North and Central regions, this percentage reaches 30%, while in the South, it stops at 20.7%. There is a noticeable gender gap: despite higher levels of education among women, female employment rates are significantly lower (55.7% compared to 75.8% for men). The *Istituto Nazionale di Statistica* [Istat 2022a] confirmed that the family background continues to strongly influence school dropout rates and the attainment of tertiary qualifications. Life expectancy at birth in 2022 is estimated at 80.5 years for men and 84.8 years for women [Istat, 2024]. Notable regional disparities exist for both men and women, mirroring the economic and social divide between the northern and southern regions of the country. For instance, there is a 2.8-year difference in life expectancy between the regions with the highest and lowest longevity, regardless of gender. The primary health concerns among the population include circulatory diseases, malignant tumours, and respiratory illnesses. Additionally, smoking and the increasing prevalence of obesity, particularly among young individuals, pose significant health challenges [Ferrè *et al*., 2014].

1.3.2 Health care system in Italy

Italy's healthcare system operates under a regionally structured National Health Service (NHS), offering comprehensive coverage predominantly free of charge, largely funded through national and regional taxes, supplemented by co-payments for pharmaceuticals and outpatient care. At the national level, the Ministry of Health, supported by various specialized agencies (Figure 1.12), establishes the fundamental principles and objectives of the healthcare system, defines the essential benefit package of healthcare services available nationwide, and distributes national funding to the regions. The regions, in turn, are tasked with organizing and delivering healthcare services [Ferrè *et al*., 2014]. Locally, geographically defined Local Health Authorities (*Aziende Sanitarie Locali*) directly provide public health, community health services, and primary care, while also offering secondary and specialized care either directly or through public hospitals or accredited private providers [Ferrè *et al*., 2014].

Patient empowerment and rights are not governed by a single law but are addressed in several legislative acts, including the Italian Constitution and the foundational law of the national health system. Over the past two decades, various tools have been introduced to facilitate public participation at all levels, although a systematic strategy is lacking, and implementation varies across the country, as does citizen satisfaction with healthcare

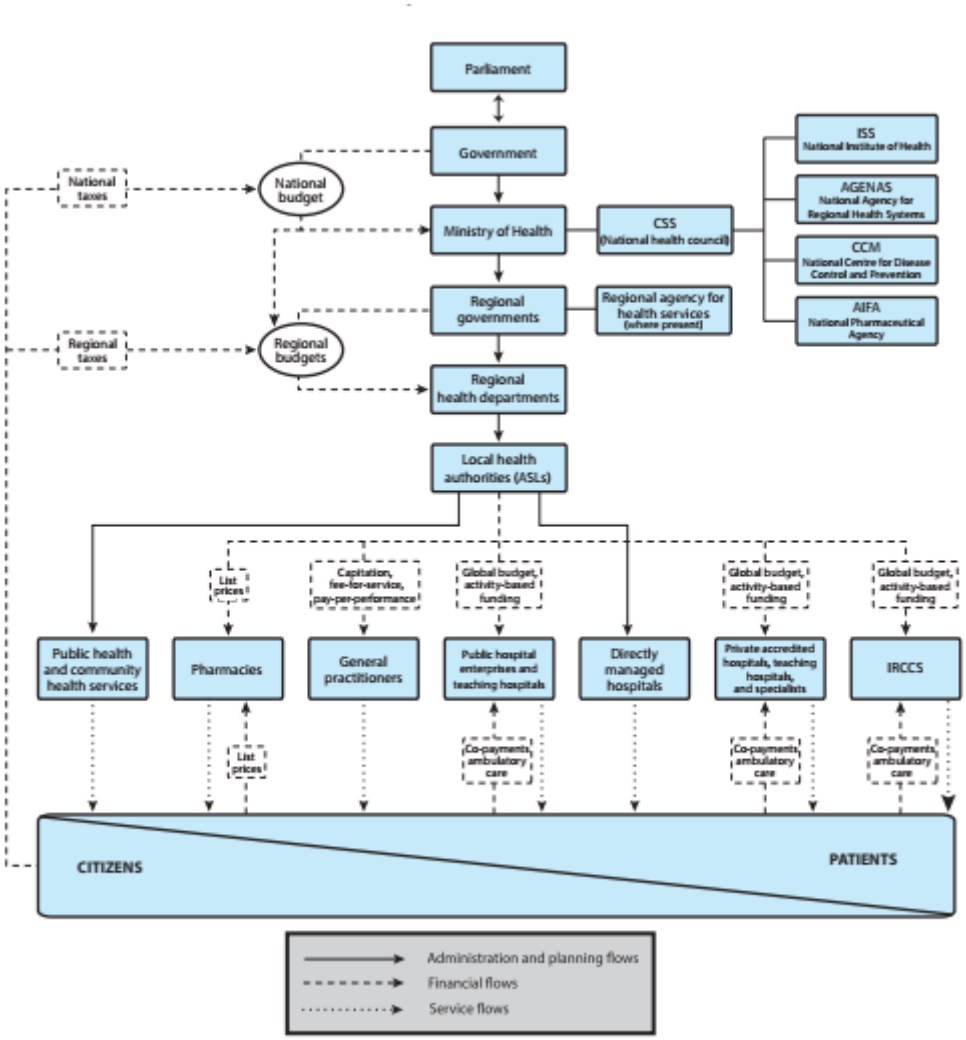

Figure 1.12 - Overview of the Italian health- care system. [Ferré et al., 2014]

quality. Efforts have also been made in recent years to address the excessive use of legal action against doctors and to prevent defensive medical practices [Ferrè *et al*., 2014].

In the year 2021, the staff employed by the NHS amounted to 617,246 individuals, of which 69.1% were women and 30.9% were men. Compared to the year 2020, the staff decreased by 220 units, representing 0.03%. At the national level, the composition by role is structured as follows: 72.5% is represented by healthcare roles, 17.7% by technical roles,

9.6% by administrative roles, and the remaining 0.2% by professional roles. Nursing staff units constitute 59.2% of the total healthcare roles, while doctors and dentists make up 22.9%, and 17.9% is represented by other healthcare professional figures such as: other graduate personnel; healthcare professional managers; technical healthcare personnel; rehabilitation function personnel; surveillance and inspection personnel [Ministero della Salute, 2023]. In summary, Italy's demographics and healthcare system reflect a complex interplay of regional diversity, socioeconomic factors, and ongoing efforts to address healthcare needs and ensure equitable access to services.

1.3.3 National demographic context: understanding trends in birth rates and fertility dynamics in Italy

The chapter aims to provide a detailed analysis of the demographic situation related to birth rates in Italy, examining various aspects such as the historical trend of birth rates, the average age of mothers at childbirth, and the trend of birth rates in relation to the citizenship and marital status of mothers.

The Italian Birth Registry, established by Istat since 1999 and computerized since 2001 (*Certificato di Assistenza al Parto* – CeDAP), provides comprehensive insights into the main demographic characteristics of births and their parents, enabling a detailed examination of changes in birth rates and fertility among the resident population [Istat, 2022b]. It allows for the calculation of key fertility indicators, such as the average number of children per woman and the average age of mothers at childbirth, down to the municipal level, and across different demographic groups based on citizenship or marital status. In 2022, the registry recorded 393,333 births, marking a decrease of about 6,916 births compared to the previous year (-1.7%), setting a new negative record for natality. This decline can be partly attributed to structural changes in the female population of childbearing age, particularly among women aged 15 to 49, where a decrease in numbers compared to previous generations is observed. The transition from the baby boom generation (from the second half of the 1960s to the first half of the 1970s, with 1,035,207 births in 1964) to the subsequent generation, characterized by fewer women within reproductive age, contributes to this decline [Istat, 2022b]. Since its peak in 2008, where the number of live births reached its highest value since the early 2000s, there has been a consistent decrease in births among residents in Italy. This decline amounts to over 183,000 fewer births compared to 2008, representing a decrease of 31.8% (Figure 1.13) [Istat, 2022b].

The increase in births observed nationwide between 1995 and 2008 was primarily driven by opposing spatial dynamics: while births increased in the Central and Northern

regions, the South and Islands experienced a continued decline in birth rates. However, since 2009, the trend has shifted, with a significant decline in births across Italy, except for minor increases in certain regions [Istat, 2008]. The positive effect on births driven by the foreign population, which began in the early 2000s, has also diminished in recent years.

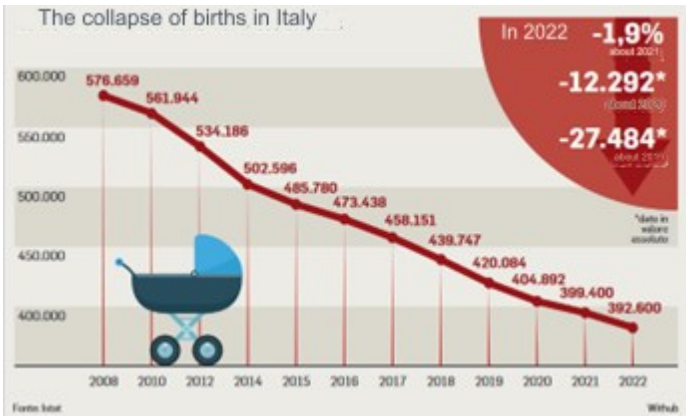

Figure 1.13 - Falling birth rate in Itali [ISTAT, 2008]

Despite the growing presence of foreign residents and integration processes, the contribution of foreign women to overall fertility has declined. However, this decrease is mainly attributed to a decline in births among couples where both parents are Italian [Istat, 2022b].

The analysis also reveals a trend towards increasing maternal age at childbirth. While the average age remains stable compared to the previous year, standing at 32.4 years, there has been a significant increase compared to 1995, particularly among Italian women. Fertility rates by age (Figure 1.14) show a trend towards delayed maternity, with

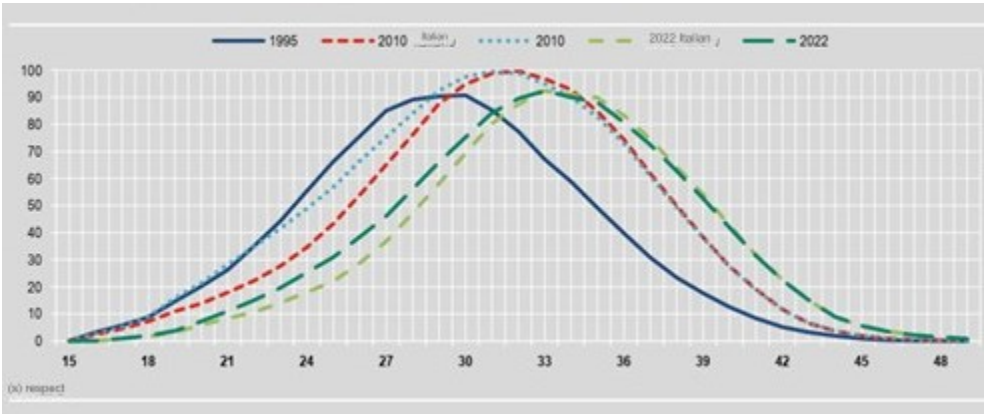

Figure 1.14 - Specific fertility rates by mother's age. Values per 1000 women [Istat, 2022b]

increases observed among women over 30 and decreases among younger women [Istat, 2022b].

The average number of children per woman (Figure 1.15) between the ages of 15

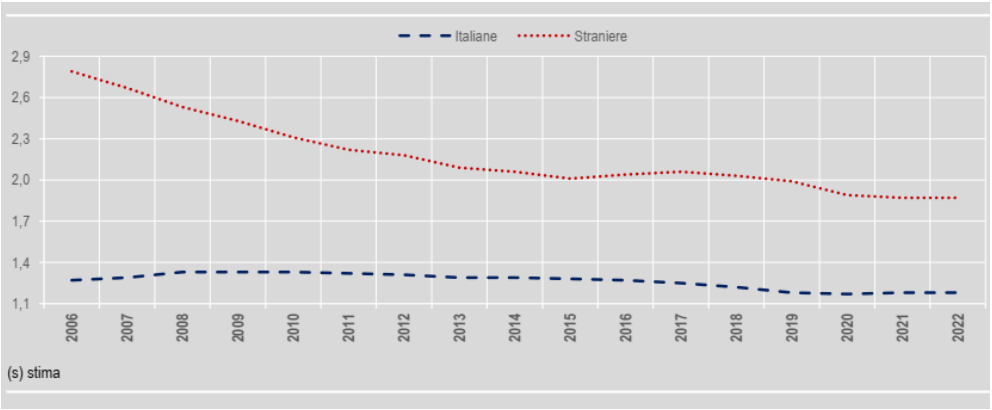

Figure 1.15 - Average number of children per woman by citizenship. Years 2006-2022 [Istat, 2022b]

and 49 stood at 1.24 in 2022, showing a slight decrease compared to the previous year, consistent with the declining trend observed since 2010 [Istat, 2022b]. Challenges influencing couples' decisions regarding procreation include prolonged periods of education, difficulties in securing stable employment, low economic growth, and problematic access to the housing market. These factors contribute to a decline in first-born births in the country, with nearly one in two births being a firstborn in 2022 [Istat, 2022b].

The percentage of births outside of marriage has consistently increased over the years, reaching 41.5% of the total in 2022, with significant regional variations [Istat, 2022b]. The birth of children from couples with at least one foreign partner continues to decrease, stabilizing at 20.9% of total births in 2022. However, the increasing "maturity" level of immigration in the country complicates measuring the family behaviours of foreign-origin citizens [Istat, 2022b]. Overall, the analysis underscores the complex demographic and social dynamics shaping birth rates and fertility in Italy, highlighting the need for continued monitoring, and understanding of these trends.

1.3.4 Analysis of maternal and perinatal healthcare in Italy

The chapter on prenatal care and childbirth statistics offers a comprehensive overview of maternal healthcare practices in Italy, providing valuable insights into the nation's healthcare system and maternal well-being.

At the national level, 91.9% of pregnancies included more than four prenatal visits, while 0.7% had no visits at all. The timing of the first visit shows significant correlations with mothers' socio-demographic characteristics, such as citizenship, education level, and age. Foreign women missed prenatal visits in 1.3% of cases compared to 0.7% of Italian women, and 10.5% of foreign women had their first visit after the 11th week of gestation, compared to 1.9% of Italian women. Additionally, 11.3% of women with elementary education or no degree had their first visit after the 11th week, compared to only 2.9% of women with higher education. Young mothers, particularly those under 20, also had higher rates of missed (2.4%) or delayed (12.4%) visits. Marital status did not significantly affect the timing of prenatal visits. The course of pregnancy did not influence the number of check-up visits conducted [Ministero della Salute, 2022]. In 2022, an average of 5.7 ultrasounds per birth were conducted nationally, with regional variations ranging from 4.1 in Piedmont to 7.7 in Sardinia. In 76.7% of pregnancies, more than three ultrasounds were recorded, exceeding the Ministry of Health's recommendations. The number of ultrasounds did not correlate with the course of pregnancy. Amniocentesis was the most common invasive prenatal diagnostic technique, followed by chorionic villus sampling (1.5%) and cordocentesis (0.3%). On average, 2.1 amniocentesis procedures were conducted per 100 births, with regional variations and a notable decrease in usage among mothers over 40 in recent years [Ministero della Salute, 2022]. Assisted reproductive techniques (ART) were used in about 3.7 pregnancies per 100. The most common method was in vitro fertilization with embryo transfer (IVF-ET), followed by intracytoplasmic sperm injection (ICSI) [Ministero della Salute, 2022].

In 2022, 89.0% of births occurred in public healthcare facilities, 10.8% in private clinics, and 0.15% elsewhere (e.g., other healthcare facilities, homes). Regions with significant numbers of accredited private facilities showed different percentages. The reorganization of hospital networks, guided by the "Guidelines for the promotion and improvement of quality, safety, and appropriateness of care in the childbirth pathway and for the reduction of CS rates" [Accordo ai sensi dell’art. 4 del decreto legislativo 28 agosto 1997, 2010] established a target of at least 1,000 deliveries per year for birthing centres. In 2022, 62.2% of births occurred in such centres, with notable regional differences. For example, in Lombardy, Emilia Romagna, and the Autonomous Province of Trento, over 70% of births occurred in large-scale birthing centres, while in Southern regions, over 35% of births occurred in centres with fewer than 1,000 births per year. In Molise, all birthing centres managed fewer than 1,000 births in 2022. There were 137 birthing centres handling at least 1,000 births per year, representing 34.7% of all birthing centres [Ministero della Salute, 2022].

The number of multiple births was 6,096, representing 1.6% of total births. There were no significant regional differences, with percentages ranging from 0.1% in Molise to 2.7% in Sardinia. Multiple births were more prevalent in pregnancies conceived through ART (8.9%) and among mothers over 40 [Ministero della Salute, 2022]. The percentage of preterm births was 6.3%, with 75.3% being late preterm births (4.7% of total births). Extremely preterm and very preterm births accounted for 0.9%, while 93.7% of births occurred between 37 and 42 weeks [Ministero della Salute, 2022].

While the presence of healthcare professionals at delivery included midwives (95.77%), gynaecologists (87.36%), anaesthetists (44.03%), and paediatricians/neonatologists (69.66%). This data encompasses both natural and caesarean deliveries [Ministero della Salute, 2022].

1.3.5 Mode of birth in Italy

In Italy until the 1950s, labouring at home was the normal childbirth scenario, and midwives were the historical dedicated professionals [Spina, 2022]. However, towards the end of the 1950s, the scenario changed with a growing medicalization of childbirth, partly due to the introduction and use of new technologies that marked an unprecedented scientific development and increased public trust in medicine [Spina, 2022]. The publicly funded care model started being predominantly supervised by medical professionals, who mostly carry

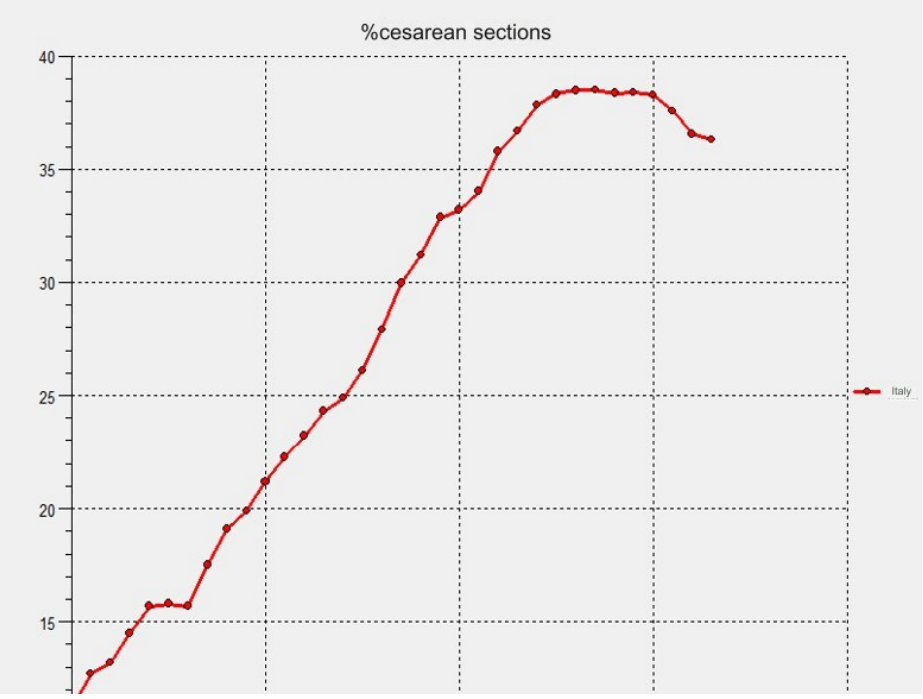

Figure 1.16 - CS increase in Italy between 1980 and 2008. [ISTAT, 2008]

out the care during pregnancy, and childbirth typically occurs in a hospital setting. [WHO 2014]. CS rate in the country doubled from 1980 to 1991, increasing from 11.2% in 1980 to 22.4% in 1991 and 27.9% in 1996. By the 2000s, it reached 33.2% and 38% in 2008, placing Italy at the top in Europe for CS (Figure 1.16) [Istat, 1980; Istat 2008].

In 1995, a multicentre study revealed that, apart from the well-known medical indications, the procedure was widely performed for non-medical reasons. The clinical practice habits of individual obstetricians were an important determinant of the wide variation in CS rates. Additionally, Italian obstetricians routinely used CS for breech presentations and after a previous CS; vacuum extraction was preferred over forceps due to concerns about complications for the baby [Bertollini *et al*., 1987; Signorelli *et al*.,1995].

Although latest data show a tendency towards a CSs' decrease in line with national guidelines from the *Istituto Superiore di Sanità* [ISS, 2010, ISS 2012] and recommendations [Ministero della Salute, 2022] In 2022, 31.0% of births occurred via CS, with significant regional variations (Figure 1.17) indicating still an excessive recourse to surgical procedure in the country [Ministero della Salute, 2022].

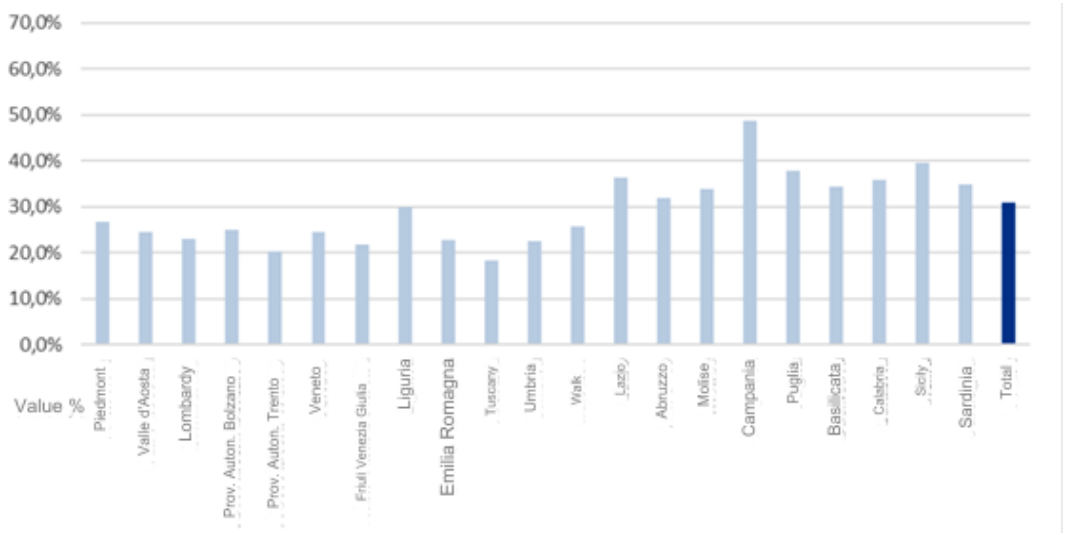

Figure 1.17 - Regional distribution of the percentage of CS on the total number of deliveries. Year 2022. [Ministero della Salute, 2022]

CSs are more common among women with Italian citizenship compared to foreign women: CS are performed in 27.4% of births to foreign mothers and 31.8% of births to Italian mothers [Ministero della Salute, 2022]. Regarding VBAC, the national percentage in 2022 is 15.5% [Ministero della Salute, 2022]. Even though an overall trait of the childbirth pathway in Italy is the excessive medicalization, what stands out most are the marked

differences between various areas of the country, suggesting the existence of different models [Spina, 2022]. For example, comparing the regional distribution regarding the rate of pregnant women attending antenatal classes with the CS rate confirms the correlation that attending antenatal classes reduces the incidence of CS [Spina, 2022]. In southern Italy, the percentage of women, assisted by Community Centres (*Consultori Familiari*) and/or by midwives is lower (15%) than women that choose an Obstetrician (85%) [ISS, 2022], in line with literature data associating this variable with more frequent participation in antenatal classes and obtaining more information about pregnancy and birth options [Spina, 2022].

Regarding place of birth there is a high propensity for the use of CS in private facilities funded by NHS where this procedure is observed in 44.5% of births compared to 29.3% in public hospitals [Ministero della Salute, 2022] (Figure 1.18). The incidence of CS

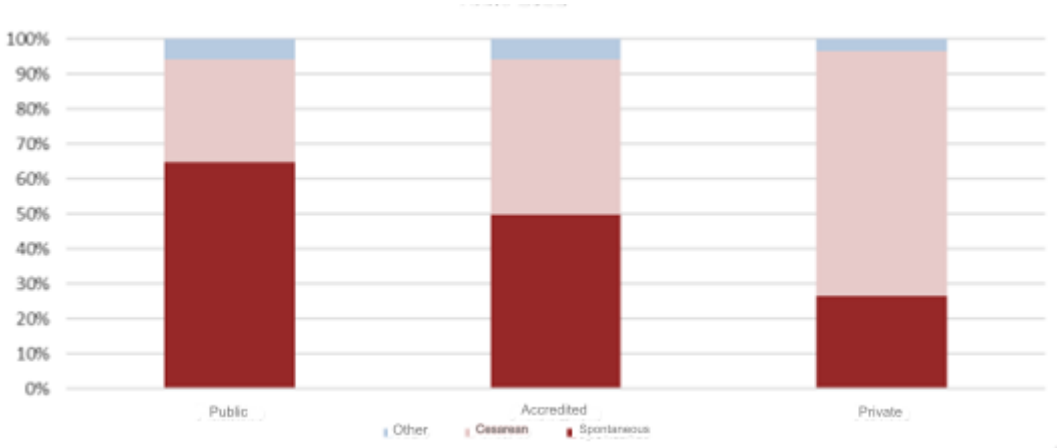

Figure 1.18 - Distribution of births according to the mode of birth and the structure where it takes place. Year 2022. [CeDap 2022]

in relation to facility the births/year volume (Figure 1.19) shows that in facilities with fewer than 800 births per year the incidence of CS is significantly higher than the national average of 30.97%: in those with a birth rate lower than 500/year , CSs are performed in 33.75% of cases; in facilities with a birth rate of 500-800/year , the CS rate is 31%. This phenomenon is also correlated with the fact that the majority of the private facilities are also birthing units with a lower birth rate [Ministero della Salute, 2022].

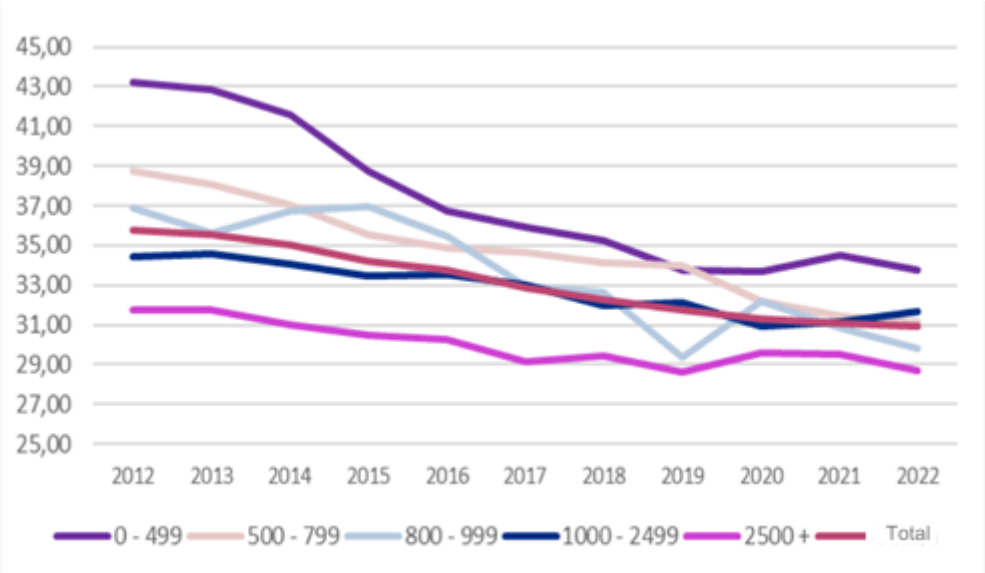

Figure 1.19 - Percentage of CS according to the size of the birth unit. Years 2012-2022. [Cedap 2022]

Using the information provided by CeDAP [Ministero della Salute, 2022] it is possible to examine births according to the classification proposed by Robson. Births classifiable according to Robson amount to a total of 346,719 nationally, corresponding to 98.6% of the total births occurring in public maternity units and private facilities (which total 351,492 births). For data analysis, it was necessary to exclude the Lazio region as one of the variables required for Robson's classification was not captured in the regional dataset. The distribution of births that occurred in 2022 in public maternity units, and private facilities, according to the 12 modified Robson classes, is illustrated in Table 1.3.

The most represented classes are those with at term primiparous women with cephalic presentation (class 1) and at term multiparous women with cephalic presentation who have not had previous CS (class 3); these two classes together account for 49.7% of the classified births that occurred nationwide in 2022. Furthermore, it is noted that births in class 5, related to mothers with a history of CS, represent 11.5% of the total classified births nationally [Ministero della Salute, 2022].

Table 1.3 - Birth distribution according to Robson's classification [Ministero della Salute, 2022]

Class	Previous birth		Number of foetuses		Foetal presentation			Gestational age		Onset of labour/mode of birth			Previous CS		Number of births according to Robson classification	
	0	≥1	single	multiple	cephalic	podalic	others	at term	preterm	spontaneous	induced	elective CS	yes	no		
1	✓		✓		✓			✓		✓					88,382	25,5%
2a	✓		✓		✓			✓			✓				51,935	15,0%
2b	✓		✓		✓			✓				✓			14,822	4,3%
3		✓	✓		✓			✓		✓				✓	83,903	24,2%
4a		✓	✓		✓			✓			✓			✓	26,416	7,6%
4b		✓	✓		✓			✓				✓		✓	4,633	1,3%
5		✓	✓		✓			✓					✓		39,907	11.5%
6	✓		✓			✓									8,334	2.4%
7		✓	✓			✓									4,954	1.4%
8				✓											5,420	1.6%
9			✓				✓								1,719	0.5%
10			✓		✓				✓						16,292	4.7%
Total															346,719	100%

Analysis of the CS rate in Robson classes reveals that, excluding classes 2b and 4b where the CS rate is 100% by definition, the highest CS rate is found in class 5 with a value of 83.1%, as well as in classes 6, 7, 8, and 9, which involve more complex cases. Particularly, class 5 has the most significant weight in absolute terms (33,176), in the whole CS births classification (105,062). For this class, the lowest CS rate occurs in the Autonomous Province of Bolzano (61.8%), while the higher CS rate occurs in the Molise region (97.4%) [Ministero della Salute, 2022]. Regarding class 1, there is considerable regional variability in the rate of CS. Generally, northern regions have CS rates lower than the national average, while some southern regions exhibit rates higher than 25%. In class 3, southern regions show a CS rate higher than the national average (2.5%), with particularly notable values in the Calabria and Campania regions at 5.2% and 4.8%, respectively, and in Molise at 4.2% [Ministero della Salute, 2022].

The significant interregional heterogeneity remains in 2022, with a clear North-South gradient (Figure 1.20) [Mencacini *et al*., 2022], as well as intra-regional variability, indicating an underestimation of the benefits and risks associated with different surgical mode of births and a lack of attention to guidelines [ISS, 2010; ISS, 2012]. For example, in some southern regions, alongside median values higher than the standards, there are still facilities in 2022 with CS rates above 40% (in Campania, Sicily, Lombardy, Puglia, and Lazio), while most facilities in Trento, Emilia-Romagna, Piedmont, and Friuli Venezia Giulia have proportions below 20% [Agenas, 2023].

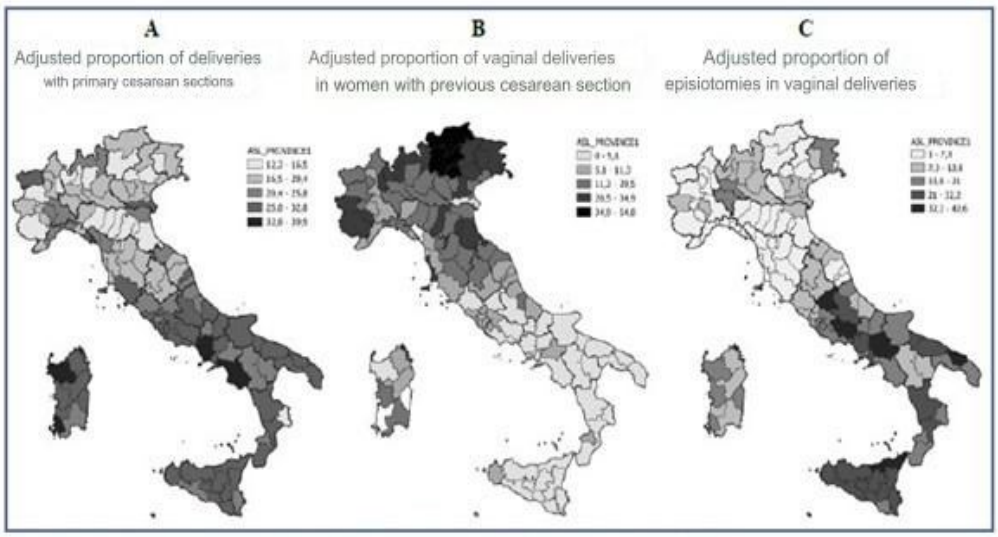

Figure 1.20 - Process indicators by territorial area (Province or ASL). Italy 2020. [Mencacini et al 2022]

The proportion of VBAC is another indicator used to evaluate the quality of perinatal care [Mencacini *et al*., 2022]. In Italy, the proportion of VBAC (Figure 1.21) remains low

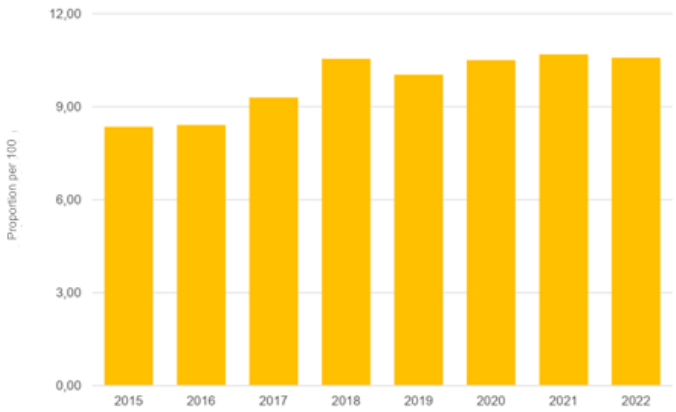

Figure 1.21 - Proportion of VBAC in Italy. Years 2015-2022. [Mencacini et al., 2022]

overall, with minimal increase over time. In 2022, the average proportion was 10%, slightly lower than in 2021, contrary to the positive trend seen in previous years [Mencacini *et al.*, 2022].

Additionally, there is significant inter and intra-regional variability, with a North-South gradient characterized by median values equal to or higher than 30% in the Autonomous Provinces of Bolzano and Trento and in Friuli Venezia Giulia, and values below 10% in many regions of Central-Southern Italy [Agenas, 2023].

1.3.6 The Role and Evolution of Midwifery in Italy

Midwifery in Italy has evolved significantly in recent decades, influenced by changing laws, professional identity, and healthcare policies. Midwives play an essential role in providing care for women during pregnancy, childbirth, and the postpartum period, with a growing recognition of their autonomy, especially in non-hospital settings. However, this autonomy exists within a framework defined by legal, ethical, and educational standards that continue to shape their practice.

In Italy, as in many other countries, midwifery initially developed as a community-based practice, often outside the formal medical establishment. Midwives provided care to women during pregnancy, labour, and the postpartum period based on experience and traditional knowledge passed down through generations. However, with the medicalization of childbirth in the 19th and 20th centuries, midwives' roles became more formalized and regulated, but still under the oversight of obstetricians [Spina, 2022].

The relationship between midwifery and obstetrics has indeed been shaped by a complex set of policies and laws over time. For many years, midwives were largely considered subordinates to obstetricians, with obstetricians holding legal authority over the management of childbirth. This dynamic stemmed from historical and institutional frameworks that positioned obstetricians as the primary medical professionals responsible for birth, particularly in hospital settings.

Throughout the 20th century, the legal and professional boundaries between obstetricians and midwives began to shift. Despite this, obstetricians continued to maintain overall responsibility for births in hospitals, especially in cases of complications or high-risk pregnancies. Midwives, on the other hand, were often relegated to assisting obstetricians or working in roles that limited their professional autonomy [Spina, 2022].

In recent years, important legislative reforms have contributed to a clearer definition of the roles and responsibilities of midwives, especially in relation to normal pregnancy and childbirth. Specific statutory measures, such as D.Lgs 15/2016, L.3/2018, and L.24/2017, have been instrumental in defining clearer professional boundaries and enhancing

midwives' autonomy, particularly in areas such as antenatal care, labor support, and low-risk deliveries. These legislative shifts have also been accompanied by national guidelines and standards issued by the Ministry of Health [Ministero della Salute, 2017], which have reinforced midwives' responsibilities in managing uncomplicated births both inside and outside hospitals. Moreover, in recent years, both the Code of Ethics (*Codice Deontologico*) [Federazione Nazionale degli Ordini della Professione di Ostetrica [FNOPO], 2021) and the educational framework for midwifery in Italy [Ministero dell'Istruzione, dell'Università e della Ricerca, 2009] have undergone revisions to better align with international standards and the evolving needs of the healthcare system.

Today, midwives in Italy occupy a central role in the care of women during pregnancy, childbirth, and the postpartum period. They are responsible for managing normal pregnancies and deliveries, providing continuous care during labour, and offering postpartum support, including breastfeeding counselling and newborn care [FNOPO, 2021]. While midwives in Italy are granted professional autonomy in these areas, they are not fully independent in hospital environments. Obstetricians, in fact, retain ultimate legal responsibility for childbirth in hospitals, particularly when complications arise.

However, outside the hospital context, midwives have greater autonomy. They are legally allowed to manage low-risk pregnancies and home births autonomously, providing comprehensive care for women throughout their pregnancy and delivery. This independent practice outside the hospital setting underscores the growing recognition of midwifery as an essential and independent profession, capable of providing high-quality care for women with uncomplicated pregnancies.

The ongoing shifts highlighted by Spina [2022] show that midwifery care is becoming increasingly recognized as a key element of Italy's healthcare system. This growing recognition is not just a result of changes in the law but also reflects broader societal changes that favour more woman-centred, holistic approaches to childbirth. These changes represent a paradigm shift in the way maternity care is conceptualized, with midwives assuming a more prominent role in the management of normal births, while still collaborating with obstetricians in high-risk cases.

1.3.7 The European OptiBIRTH study

In response to the significant concern related to the high rate of CS, the European OptiBIRTH study, initiated in 2014, aimed to reduce CS by increasing the rates of VBAC. This section discusses the design, implementation, and outcomes of the OptiBIRTH project, which focused on a woman-centred intervention to promote VBAC in maternity units across Germany, Ireland, and Italy. The OptiBIRTH project investigated the impact of a woman-

centred intervention aimed at increasing VBAC rates through an unblinded cluster randomized trial. This trial was conducted in 15 maternity units with VBAC rates below 35% across Germany, Ireland, and Italy. Maternity units were paired or grouped in triplets based on their annual birth numbers and VBAC rates, then randomized in a 1:1 or 2:1 ratio into intervention and control groups after trial registration [Clarke *et al*., 2020].

As part of the OptiBIRTH project, prior the beginning of the trial, clinicians' views on factors important for improving VBAC rates in high and low VBAC rate countries were explored [Lundgren *et al*., 2015b; Lundgren *et al*., 2016]. The intervention consisted of evidence-based education for clinicians and women with one previous CS, designation of opinion leaders, audit/peer review, and joint discussions involving women and clinicians. Control sites provided standard care. The primary outcome measured was the annual hospital-level VBAC rates before the trial (2012) compared to the final year of the trial (2016). Between April 2014 and October 2015, a total of 2002 women were recruited (1195 in the intervention group, 807 in the control group), with data on the mode of birth available for 1940 women [Clarke *et al*., 2020].

Results showed that the OptiBIRTH intervention was feasible and safe across hospital settings in three countries. There was no statistically significant difference in the change in the proportion of women having a VBAC between intervention sites (25.6% in 2012 to 25.1% in 2016) and control sites (18.3% to 22.3%). The odds ratio adjusted for differences between intervention and control groups in 2012, and for the homogeneity in VBAC rates at sites in the countries, was 0.87 (95% CI: 0.67, 1.14, p = 0.32), based on 5674 women in 2012 and 5284 in 2016 with outcome data. Among recruited women with birth data, there were four perinatal deaths >24 weeks gestation in the intervention group (0.34%) and four in the control group (0.51%), and two uterine ruptures (one per group), resulting in a rate of 1:1000 [Clarke *et al*., 2020].

Although non-statistically significant differences were found in Italy, both control (10.71%) and intervention (11.29%) sites showed an increase in VBAC rates, with intervention sites demonstrating better improvements (Figure 1.22).

Particularly, the largest improvement and reduction in VBAC proportions occurred in intervention sites, with a 21.64% increase in Italy. In Italy, where VBAC rates in both intervention and control sites were lower before the trial (8.3% and 10.6%, respectively) compared to Ireland and Germany (32.1% and 22.2%, and 33.7% and 27.3%, respectively), there was a more significant increase in VBAC rates. The overall VBAC rate in intervention sites in Italy increased from 8.3% in 2012 to 19.6% in 2016, the year following the trial. This suggests that in countries or sites with very low VBAC rates, the OptiBIRTH intervention

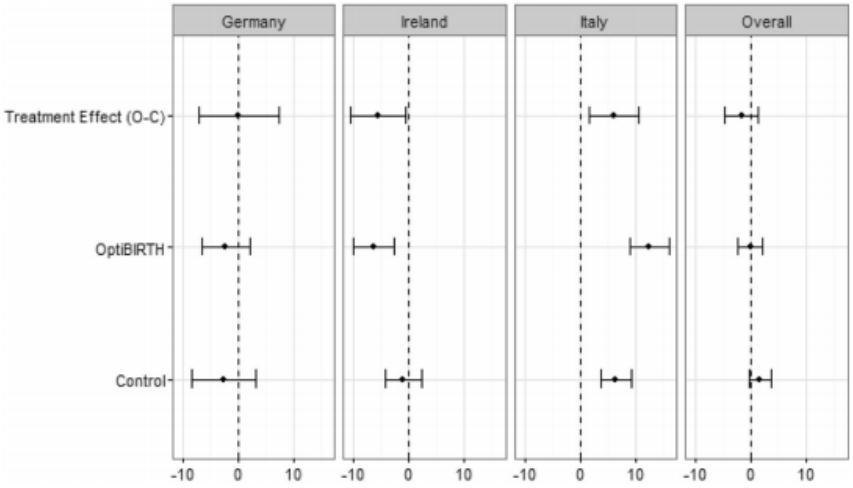

Figure 1.22 OptiBIRTH study results. [Clarke et al., 2020]

may be more effective within a relatively short timeframe. Additionally, in the control sites in Italy, the VBAC rate increased from 10.6% to 21.3% during the same period, possibly due to the Hawthorne effect, where participation in the study, even in the control group, may have prompted clinicians to review their practices and offer VBAC instead of ERCS [Clarke *et al*., 2020]. Moreover, the control sites were provided with the intervention in 2016, after the trial was completed, which could have helped facilitate the change [Clarke *et al*., 2020]. A possible explanation for the outcome of this study is that change in clinical practice is notoriously slow, and both clinicians and women need time to adjust to new care approaches. Particularly, complex interventions like OptiBIRTH require time and motivation to be engaged with to ensure adoption, and a continuation of slow change over the next few years is expected [Clarke *et al*., 2020].

The OptiBIRTH study highlights the challenges and potential of increasing VBAC rates through structured interventions. Although the overall increase in VBAC rates was not

statistically significant across all sites, the study demonstrated feasibility and safety, with notable improvements in Italy. These findings suggest that woman-centred interventions, coupled with clinician education and peer support, can influence VBAC rates, particularly in settings with initially low VBAC rates. The study underscores the importance of time and continuous engagement for the successful adoption of new clinical practices.

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1.4 Aim of the thesis

Overall aim

The aim of the research is to explore and interpret changes in clinicians' attitudes and perspectives on VBAC since the OptiBIRTH study. Additionally, it sought to interpret these changes from a cultural perspective.

Study aims

Study I) Aim to explore and interpret recent insights related to clinicians' views and experiences regarding VBAC.

Study II) Aim to understand the attitudes and experience of clinicians that influence an evidence-based approach to VBAC in the Italian NHS, focusing on key themes related to professionals' views on VBAC.

Study III) Aim to deepen the understanding of what has changed over time in clinicians' perceptions and attitudes towards VBAC and to interpret these changes from a cultural perspective, by comparing findings from the OptiBIRTH study with those of Study II in the Italian context.

2 Research project

2.1 Study I

"*Can't save yourself alone*": a meta synthesis of clinicians' experiences on Vaginal birth after Caesarean Section.

2.1.1 Rational

As discussed in the previous section when used appropriately, CS can be lifesaving; however, it is also associated with increased morbidity [WHO, 2015]. CS rates continue to rise steadily, representing a significant public health issue. It is estimated that without a global effective intervention, the worldwide CS rate will reach 28.5% by 2030 [Betran *et al*., 2021]. A significant contributor to the overall CS rate is ERCS [NICE, 2021]. To help reduce this rate, promoting VBAC is offered and seen as the safest option for women who have had one prior CS for a non-repeating cause and who have no other complications [RCOG, 2015]. Statistics show that the majority of women (75%) who attempt a VBAC will achieve a vaginal birth [RCOG, 2015; Queensland Clinical Guidelines, 2020]. Section 1.2 explored how, recently, VBAC rate has been recognized as an important qualitative standard for maternity care, even in countries where it was not previously emphasized [Agenas, 2023]. However, the proportion of VBAC among women with a history of a previous CS varies widely between countries [Euro-Peristat, 2022], remaining low overall, with minimal increase over time. The lack of uptake of planned VBAC may be partly due to non-clinical factors such as cultural, organizational, and health professional-related factors [Betran *et al*., 2018].

As introduced in chapter 1.3.7 Between 2012 and 2016, the European OptiBIRTH Study (Trial registration number ISRCTN10612254) designed and tested a complex intervention to reduce CS rates while increasing VBAC rates in low VBAC countries (Italy, Germany, and Ireland) [Clarke *et al*., 2020]. As part of the OptiBIRTH project, clinicians' views on factors important for improving VBAC rates in high and low VBAC rate countries were explored [Lundgren *et al*., 2015b; Lundgren *et al*., 2016]. Results highlighted differences and similarities and confirmed that obtaining more in-depth knowledge of clinicians' views on VBAC can help understand important the factors for increasing VBAC rates [Lundgren *et al*., 2020].

Study I corresponds to the first phase of the Italian follow-up of the OptiBIRTH study, which aims to explore and interpret changes in clinicians' perspectives on VBAC in the Italian setting, since the original OptiBIRTH study. Despite having one of the highest CS

rates (as well as ERCS) Italy achieved the best results in terms of VBAC rate during the OptiBIRTH European Trial [Clarke *et al*., 2020], making it an interesting context for investigation. To build a theoretical framework before the project's initiation, Study I aimed to explore and interpret recent insights into clinicians' views and experiences regarding VBAC. Using data from the OptiBIRTH project on clinicians' views about factors important for improving VBAC rates in both high and low VBAC rate countries [Lundgren *et al.,* 2015b; Lundgren *et al*., 2016] as a baseline, and examining more recent literature, it was recognized that only a few studies have examined clinicians' perspectives since 2016. Therefore, Study I conducted a meta-synthesis of qualitative studies on clinicians' perspectives regarding VBAC.

2.1.2 Methods

A meta-synthesis was conducted using the interpretative meta-ethnography method described by Noblit and Hare [1988]. Meta-ethnography is an inductive, interpretative approach to qualitative research synthesis aimed at discovering new interpretations through the experiences and perspectives of individuals. Noblit and Hare [1988] articulated a seven-phase process to guide the conduct of a meta-ethnographic synthesis:

1. Getting started
2. Deciding what is relevant to the initial interest
3. Reading the studies
4. Determining how the studies are related
5. Translating the studies into one another
6. Synthesizing translations
7. Expressing the synthesis

Search method

The inclusion criteria for the studies were peer-reviewed empirical qualitative studies about clinicians' perspectives on VBAC, derived from different disciplines and written in English. The databases searched were PubMed, Embase, Cochrane, Scopus, and Medline. Search terms included: “vaginal birth after caesarean,” “VBAC,” “TOLAC,” “trial of labour after caesarean,” “attitude,” “belief,” “behaviour,” “interview,” “questionnaire,” “qualitative,” “survey,” “midwife,” “midwives,” “obstetric,” “health personnel,” and “health-care personnel.” The search was limited to studies published between 2016 and 2022, subsequent to the OptiBIRTH study. The specific search string used was: (vaginal birth after caesarean OR VBAC OR TOLAC OR trial of labour after caesarean OR (vaginal birth AND caesarean))

AND (attitude OR belief OR behaviour OR interview OR questionnaire OR qualitative OR survey) AND (midwife OR midwives OR obstetric OR health personnel OR health-care personnel).

Exclusion criteria included studies that used quantitative methodology, reviews, opinion papers, medical reports, and non-English language research. Studies included in the review used qualitative approaches and provided full-text articles accessible to the researchers. The reference lists of previous papers were also searched for additional references.

Search outcome

A total of 970 papers were identified. Of these, 944 were excluded for not meeting the inclusion criteria. The remaining 26 papers were obtained and reviewed in full text by two authors. Nineteen were excluded at this stage due to a lack of qualitative data, a focus not on clinicians' experiences, or a focus solely on experiences of CS [Sattar *et al*., 2021].

Quality appraisal

A quality appraisal of the final seven included studies was undertaken using the Critical Appraisal Skills Programme (CASP) tool [CASP, 2018]. The CASP checklist provides detailed instructions and decision rules on how to interpret the criteria [Sattar *et al*., 2021]. This checklist contains several questions that help the reviewer assess the rigor, credibility, and relevance of each study. All studies were critically appraised, and each was assigned a numerical score out of ten, with higher scores indicating higher quality.

Data abstraction

Each study was characterized according to authors, aim, method, and data collection (Table 2.1). Meta-ethnography differs from other qualitative synthesis approaches in that the reviewer re-interprets the conceptual data (themes, concepts, or metaphors) created by the authors of the primary study while considering the primary data. This is done using a unique translation synthesis method to transcend the findings of individual study accounts, create higher-order themes, and translate them into each other in a new way by using metaphors [Noblit and Hare, 1988]. In the synthesis process, both the theme names and the descriptive text from the included studies were incorporated into the analysis to ensure a comprehensive understanding of the data and capture the depth and nuances of the findings.

To consider the relationship between concepts from different studies, common and recurring concepts were identified by examining the studies and creating a list of themes (Table 2.2).

Table 2.1 - Study's I selected studies

Author	Aim	Methodology	Quality assessment
Firoozi *et al.* (2020a) Iran	To explore the clinician's and women's perceptions of individual barriers to achieve VBAC	Descriptive qualitative methodology Semi-structured individual interviews/1 focus 6 gynaecologists,13 midwives and 2 family physicians	10
Firoozi *et al.* (2020b) Iran	The aim of this study was to explore barriers to VBAC in health care system.	Descriptive qualitative methodology Semi-structured individual interviews/1 focus 5 obstetricians and 14 midwives	10
Foureur *et al*. (2017) Australia	To explore the views and experiences of providers in caring for women considering VBAC	Descriptive interpretive method Four focus groups 3 obstetricians and 15 midwife	9
Jimenez-Zambrano *et al.* (2022) Guatemala	To understand the perspective of obstetricians regarding factors influencing mode of birth for women with a history of prior CS.	Descriptive qualitative methodology In-depth interviews Physicians (n=10)	7
Kurtz Landy *et al*. (2020) Canada	To explore factors maternity care providers, consider when counselling pregnant women with a previous CS, eligible for a TOLAC, about delivery method,	Descriptive qualitative methodology Semi-structured, one-to-one in-depth interviews 12 obstetricians, 13 family physicians and 14 midwives	9
Munro *et al*. (2017) Canada	To explore maternity care providers' and decision makers' attitudes toward and experiences with providing and planning services for women with a previous CS.	Descriptive qualitative methodology (semi-structured, one-to-one in-depth interviews) Midwives (n = 4), obstetricians (n = 4), family physicians (n = 3), general practitioners (n = 3), nurses (n = 7), anaesthetists (n=1), decision makers (n=13)	8
Rietveld *et al*. (2018) Netherlands	To increase understanding of gynaecologists' decision-making during trial of labour	Constructivist grounded theory study. 9 gynaecologists	10

Table 2.2 - Study's I list of themes

Author	Themes
Firoozi *et al*. (2020a)	1. "Sense of danger" 2. "Financial displeasure" 3. "Negative attitude" 4. "Barriers to decision making" 5. "Indolence" 6. "Obstacles to acceptance and committed actions"
Firoozi *et al*. (2020b)	1. "Defective access to specialized services" 2. "Insufficient encouragement system" 3. "Modelling in CS" 4. "Physician-centeredness in VBAC" 5. "Fear of legal responsibilities" 6. "Imposed policies" 7. "The marginalization of midwives" 8. "Unsupportive birth team"
Foureur *et al*. (2016)	1. The impact of past professional experiences 2. Continuity and relationships 3. Weighing up risks versus benefits 4. Work as a team 5. Communication and language 6. 'Navigating the system' 7. 'Optimising support'
Jimenez-Zambrano *et al*. (2022)	1. TOLAC was considered the safer option but not the more common one 2. Lack of skilled prenatal care not allowing for a good assessment of risk factors 3. Patient's preference 4. Medical concerns related to not knowing patients' medical histories 5. Patient health literacy constraints as a reason for high rates of repeat CS 6. A culture accepting of CS 7. Physicians haven't been trained
Kurtz Landy *et al*., (2020)	1. Women's choice…with conditions 2. Provider perceptions of women's risk tolerance 3. Provider assessment of potential for TOLAC success 4. Provider perceptions of women's beliefs and attitudes about childbirth 5. Colleague and facility support for TOLAC 6. Time to emergency CS 7. Provider preference for a primary CS or TOLAC 8. Scope of practices 9. Financial incentives and convenience related to primary CS

	10. Past experiences with TOLAC and primary CS 11. Providers' perspectives on risk of TOLAC
Munro *et al*. (2017)	1. Supporting women to make a choice 2. Being an "information provider" 3. Listening to the woman's voice 4. "Making it work" in the midst of limited access to services
Rietvield *et al*. (2018)	1. Weighing the chance of a successful outcome of trial of labour against the likelihood of adversities 2. Patients' opinions 3. Aspects of progress of labour and gynaecologists' personal stances (training, intuition) regarding trial of labour played a role in the decision-making process 4. Organisational affordances and culture influence the balance between these factors

From this list, the themes from the different studies were clustered into relevant categories, grouping common concepts. After this, the themes were juxtaposed to examine the relationships between key concepts and to identify the metaphor they reflect. This process highlights the similarities and differences between the concepts and metaphors and allows the researcher to organize them into further conceptual categories, resulting in the development of higher third-order constructs [Noblit and Hare, 1988]. The analysis was carried out by the author of this thesis and the main supervisor, both with extensive experience in birth care. Their professional backgrounds provided valuable insights into the topic, while their expertise ensured a nuanced and informed interpretation of the data. To maintain reflexivity, the researchers acknowledged that their pre-understanding, shaped by their professional roles and past experiences, could potentially influence their perceptions of the findings. To mitigate this, they engaged in regular discussions throughout the analysis process, critically reflecting on their interpretations and ensuring that these were grounded in the data rather than pre-existing assumptions. Additionally, a collaborative approach was employed, involving peer review and cross-checking, to ensure a more objective and balanced interpretation of the results.

2.1.3 Results

The results show that two studies are from Canada [Kurtz Landy *et al*., 2020; Munro *et al*., 2017], two from Iran [Firoozi *et al*., 2020a; Firoozi *et al*., 2020b], one from Australia [Foureur *et al*., 2016], one from Guatemala [Jimenez-Zambrano *et al*., 2022], and one from the Netherlands [Rietvield *et al*., 2018].

Clinicians' attitudes towards VBAC were explored through various aspects of the following phenomena:

- Experiences of counselling [Kurtz Landy *et al*., 2020] and caring for women considering VBAC [Foureur *et al*., 2016; Munro *et al*., 2017], including gynaecologists' decision-making process during the trial of labour [Rietvield *et al*., 2018].
- Perceptions of individual [Firoozi *et al*., 2020a; Jimenez-Zambrano *et al*., 2022].
- Healthcare system barriers to achieving VBAC [Firoozi *et al*., 2020b; Munro *et al*., 2017].

A total of 161 clinicians participated in the studies, including 70 midwives, 49 gynaecologists, 21 family physicians, 13 decision-makers, seven nurses, and one anaesthetist.

The overarching theme from this meta-ethnographic synthesis is *"Can't save yourself alone*." This metaphor represents the inner and collective conflict arising from the opposition between the ideal and the reality or between the individual and the collective. It describes clinicians' experiences of recognizing themselves as the main drivers during women's journeys of choosing and attempting a VBAC, while also acknowledging their own difficulties and need for support and resources to commit to this role in a complex context. "*Can't save yourself alone*" implies that difficulties can be overcome by remaining united. Remaining united means that clinicians, pregnant women, policymakers, and communities need to establish positive and respectful relationships, aim for good communication, show compassion towards each other, and share responsibilities and commitments. In particular, clinicians need to feel supported by healthcare system organizations.

Four main themes emerged from the synthesis:

A. *Feeling like the playmaker*
B. *Looking at women's desires with the eye of responsibility*
C. *Carrying your own personal and professional stances*
D. *Is it really worth it?*

These four themes are presented with sub-themes (Table 2.3).

A. Feeling like the playmaker

Balancing chances of success and adversities

Balancing the chances of success and adversities was reported as the costly process of weighing the likelihood of having a successful VBAC against the likelihood of adverse

events. This continuous process involved constant comparative assessment [Firoozi *et al*., 2020a; Firoozi *et al*., 2020b; Foureur *et al*., 2016; Kurtz Landy *et al*., 2020; Jimenez-Zambrano *et al*., 2022; Munro *et al*., 2017; Rietvield *et al*., 2018]. Clinicians described a variable threshold for performing a CS. They reported that their perception of a particular situation was often influenced by how they viewed the patient's potential for vaginal delivery as well as their willingness to avoid "pushing the limits."

"The bar to perform a caesarean is set really low. [...] Normally you would step on the gas if you saw an orange traffic light, but if the patient had a caesarean before, you hit the brakes." [Rietvield *et al*., 2018]

Table 2.3 - Study's I themes and sub-themes

Theme	Sub themes	Articles
Feeling like the play maker	Balancing chances of success and adversities Key instruments for support	Rietvield *et al*. (2018) Munro *et al*. (2017) Jimenez-Zambrano *et al*. (2022) Firoozi *et al*. (2020a) Firoozi *et al*.(2020b) Foureur *et al*. (2016) Kurtz Landy *et al*. (2020)
Looking at women's desires with the eye of responsibility	Women's needs are important Working together with women…if possible	Rietvield *et al*. (2018) Munro *et al*. (2017) Jimenez-Zambrano *et al*. (2022) Firoozi *et al*. (2020b) Foureur *et al*. (2016) Kurtz Landy *et al*. (2020)
Carrying your own personal and professional stances	Fear Training Intuition Incentives Meanings	Rietvield *et al*. (2018) Munro *et al*. (2017) Jimenez-Zambrano *et al*. (2022) Firoozi *et al*. (2020a) Firoozi *et al*. (2020b) Foureur *et al*. (2016) Kurtz Landy *et al*. (2020)
Is it really worth it?	Real life real resources The normalization of caesarean section	Rietvield *et al*. (2018) Munro *et al*. (2017) Jimenez-Zambrano *et al*. (2022) Firoozi *et al*. (2020a) Firoozi *et al*. (2020b)

	Team matters	Foureur *et al*. (2016) Kurtz Landy *et al*. (2020)

Key instruments for support

Key instruments for support refer to the health care providers' recognition of their role as key informants in supporting women's autonomous decisions and identifying the most important instruments of their care. They agreed that their role in the decision-making process was to "support" women and their families in making informed decisions [Firoozi *et al*., 2020a; Firoozi *et al*., 2020b; Foureur *et al*., 2016; Kurtz Landy *et al*., 2020; Jimenez-Zambrano *et al*., 2022; ; Munro *et al*., 2017; Rietvield *et al*., 2018].

Participants also emphasized that continuity of care and strong relationships between healthcare providers and women were key components of quality care to support VBAC. Additionally, models of care such as one-on-one midwifery care were reported to better support women.

"I think a lot [of] positive reinforcement is the way to go. And look, I think that continuity of care too. I know that the one-on-one midwifery care certainly helps a fair bit too." [Foureur *et al*., 2016]

B. Looking at women's desires with the eye of responsibility

Women's needs are important

Providers reported that a woman's preferred delivery method was one of the most important factors considered, as they shared the belief that the method of delivery was the woman's choice [Firoozi *et al*., 2020a; Foureur *et al*., 2016; Kurtz Landy *et al*., 2020; Jimenez-Zambrano *et al*., 2022; ; Munro *et al*., 2017; Rietvield *et al*., 2018].

"It's about supporting women to make choices that are right for them." [Kurtz Landy *et al*., 2020]

Particularly when caring for women with one or more previous CS, clinicians considered factors such as women's previous experiences and motivation for vaginal birth [Jimenez-Zambrano *et al*., 2022; ; Munro *et al*., 2017; Rietvield *et al*., 2018].

Working together with women… if possible

For some maternity care providers, support for eligible women's choice for a VBAC came with 'conditions' [Firoozi *et al*., 2020a; Foureur *et al*., 2016; Kurtz Landy *et al*., 2020; Jimenez-Zambrano *et al*., 2022; ; Munro *et al*., 2017; Rietvield *et al*., 2018].
For example, providers stipulated that their support for women's choice regarding VBAC was dependent on the 'condition' that women were making what providers considered a 'good' choice. For providers, a good choice was related to their perceptions of women's risk comprehension and tolerance, beliefs and attitudes about childbirth, and assessment of potential for VBAC success [Firoozi *et al*., 2020a Foureur *et al*., 2016; Kurtz Landy *et al*., 2020; Jimenez-Zambrano *et al*., 2022 Rietvield *et al*., 2018].

"It depends on her education; apart from prenatal care, I think it depends on how much the patient can understand." [Firoozi *et al*., 2020a]

C. Carrying your own personal and professional stances

Fear

Fear and a sense of danger were reported by clinicians [Firoozi *et al*., 2020a; Firoozi *et al*., 2020b; Foureur *et al*., 2016; Kurtz Landy *et al*., 2020; Jimenez-Zambrano *et al*., 2022; Munro *et al*., 2017; Rietvield *et al*., 2018]. Particularly, participants stated that fear of complications from VBAC section, fear of legal accountability, and fear of uterine rupture were seen as barriers to choosing VBAC [Firoozi *et al*., 2020b; Firoozi *et al*., 2020a; Foureur *et al*., 2016; Kurtz Landy *et al*., 2020; Jimenez-Zambrano *et al*., 2022; Munro *et al*., 2017; Rietvield *et al*., 2018].

Past professional experiences, as well as age, seemed to play a role in clinicians' fear [Foureur *et al*., 2016; Munro *et al*., 2017; Rietvield *et al*., 2018].

"I'd hope for a VBAC I think. But I get a lot more nervous... Knowing what I know." [Foureur *et al*., 2016]

"One of the barriers for VBAC is the acceptance of legal liability for VBAC. However, the doctors know that the occurrence of any uterine rupture causes the mother to lose her uterus and/or baby." [Firoozi *et al*., 2020a]

Training

The way in which clinicians, particularly obstetricians, are trained has an effect on their confidence in supporting VBAC [Jimenez-Zambrano *et al*., 2022; Munro *et al*., 2017; Rietvield *et al*., 2018]. Some clinicians reported a lack of obstetric skills to provide alternatives to CS such as external cephalic version or operative vaginal delivery

(forceps/vacuum). Interviewees noted that they were not trained in these options, with some older providers mentioning past training but no current practice of these skills.

"We received the training many years ago, but what is not practiced is also forgotten." [Jimenez-Zambrano *et al*., 2022]

Intuition

Another, rather intangible factor that influenced clinicians was described as 'the doctor's gut feeling.' Participants stated that they learned to follow their intuition [Rietvield *et al*., 2018].

"It [the advice given] will always be to some extent the personal taste of the gynaecologist, and that's not necessarily a bad thing." [Rietvield *et al*., 2018]

Incentives

Lack of financial motivation for physicians in supporting VBAC, as well as lack of financial encouragement for midwives' participation in the care of mothers, were considered barriers to VBAC [Firoozi *et al*., 2020a; Firoozi *et al*., 2020b; Foureur *et al*., 2016].

"For me, as a midwife who is working in the health care system, what does it matter that mother has a caesarean or vaginal delivery? Regardless of the decrease or increase in vaginal delivery statistics, I get feedback only to the extent that the statistics have gone up or down. If I can increase the percentage of vaginal delivery after caesarean, how will I be encouraged?! There is neither written nor financial encouragement." [Firoozi *et al*., 2020a].

Meanings

Many clinicians interviewed preferred VBAC to ERCS. This preference was partly due to their scope of practice, which did not include CS [Firoozi *et al*., 2020b; Foureur *et al*., 2016; Kurtz Landy *et al*., 2020]. As a family doctor noted:

"I'm a family doctor, a CS is never good for me, just selfishly, right? It's no easier for me. CS is never to my advantage." [Kurtz Landy *et al*., 2020]

All participants identified the method of delivery as the patient's choice, and many expressed that they tried hard not to let their own preferences for ERCS or VBAC influence their counselling. However, some participants admitted that they were not entirely able to keep their preferences from influencing their counselling.

D. Is it really worth it?

Real life, real resources

Clinicians faced numerous challenges regarding the accessibility of VBAC, including medical staff characteristics, local facilities, and organizational culture [Firoozi *et al*., 2020a; Firoozi *et al*., 2020b; Foureur *et al*., 2016; Kurtz Landy *et al*., 2020; Jimenez-Zambrano *et al*., 2022; Munro *et al*., 2017; Rietvield *et al*., 2018]. The physical working environment influenced the threshold for performing a CS, such as the availability of a surgical team, including an anaesthetist, and the presence of uniform policies. Constraints like the impossibility of providing one-to-one midwifery care due to high workload restricted mothers' access to VBAC. Additionally, clinicians felt that women's health tended to be a low priority when setting healthcare priorities [Munro *et al*., 2017].

"For example, if no one will augment labour during a trial of labour anymore, then I'm also not going to do that. Or if women who've had a previous caesarean are not allowed to have pain relief anymore, then who am I to still give it?" [Rietvield *et al*., 2018]

"When you get very powerful surgeons, such as an orthopaedic surgeon or a physician that's doing cataract surgeries and that sort of thing, and they really own it. I don't see them as really giving up any of that time or space" [Munro *et al*., 2017]

The normalization of CS

Participants noted that CS is increasingly accepted as a form of delivery and described changes in delivery that are considered 'normal' [Firoozi *et al*., 2020a; Foureur *et al*., 2016; Jimenez-Zambrano *et al*., 2022). Pregnant women are influenced by societal norms, including social media, and birthing staff when choosing delivery methods. The choice of CS as the first choice for childbirth by medical groups and higher socioeconomic groups has led to the perception that CS is a safer and more accepted method of delivery.

"The soul of the population saw that everyone wants deliveries now by caesarean because they do not take time, they want to leave quickly… everything is shortened, without pain… our culture has made caesareans for the entire population the wrong option." [Jimenez-Zambrano *et al*., 2022]

Team matters

In many cases, clinicians had negative attitudes toward VBAC and reported an "unsupportive birthing team" that influenced mothers' choices by influencing their attitudes [Firoozi *et al*., 2020a; Firoozi *et al*., 2020b]. Participants recognized the need to work as a team and acknowledged that women distrusted clinicians when information they received was unnecessarily negative or did not follow guidelines [Foureur *et al*., 2016].

“Women know that they may not see the face that is familiar. . . but they will hear all the same information through every single visit...” [Foureur *et al*., 2016]

Some midwives noted that their role was limited to providing care during labour and referring mothers with previous caesarean sections to physicians for delivery options, and team cooperation in this regard was limited [Firoozi *et al*., 2020b].

2.1.4 Discussion

This meta-ethnography offers qualitative insights from clinician views and experiences of VBAC, enriching empirical studies in the field. Exploring clinicians’ perspectives across disciplines and countries presents challenges in merging studies while preserving their uniqueness. Endeavouring to maintain significance, the analysis closely aligned with each included study, ensuring fidelity to their primary findings [Noblit and Hare, 1988]. The overarching theme, *"Can’t save yourself alone,"* encapsulates the inner and collective conflict clinicians face. They recognize themselves as pivotal in women’s VBAC journeys yet acknowledge their own difficulties and the need for support and resources in a complex context. Overcoming these challenges requires unity. Collaboration among clinicians, policymakers, pregnant women, and communities fosters positive relationships, effective communication, shared responsibilities, and supportive health system organizations.

These findings resonate with Lundgren *et al*. [2015b], who emphasized a common approach as essential for VBAC support. Our review underscores the interplay between internal professional factors and external environments; feelings, beliefs, experiences, and training intersect with real-life resources, culture, and work environments, influencing each other positively or negatively. Betran *et al*. [2018] similarly highlighted interactions between clinical and non-clinical factors driving the global rise in CS rates. Positive, respectful relationships across various stakeholders require time, effective communication, and understanding [Betran *et al*., 2021]. Panda *et al*. [2018] identified interprofessional conflict and differences in attitudes as influencing factors in CS decisions versus aiming for VBAC. Further research should explore local contexts, considering the maternity care system and cultural nuances, as interventions to improve VBAC rates must be dynamic and partly context-specific [Betran *et al*., 2018]. Notably, our search did not yield studies from the low VBAC rate countries (Germany, Ireland, Italy) included in the European OptiBIRTH Study [Clarke *et al*., 2020].

Limitations include the possibility of missing studies due to restricting the journal search to English language publications. Additionally, two studies referenced the same

dataset. While qualitative research synthesis involves re-presenting representations, effort was made to maintain fidelity to the primary findings [Sandelowski & Barroso, 2007].

In conclusion, this meta-ethnography contributes to a deeper understanding of clinician perspectives on VBAC and provides actionable insights for improving VBAC support and promoting optimal maternity care practices.

2.2 Study II

The Road to VBAC: follow up on clinicians' views five years after the OptiBIRTH study.

2.2.1 Rational

In line with what has already been described, in recent years, concerns about the rising number of CS and their potential negative impact on maternal and child health have been voiced by physicians, governments, and scientific societies (Figure 2.1) [Betran *et al*., 2016a; Euro-Peristat, 2022; Visser *et al*., 2018; WHO, 2015; Zeitlin *et al*., 2019; Zeitlin *et al*., 2021].

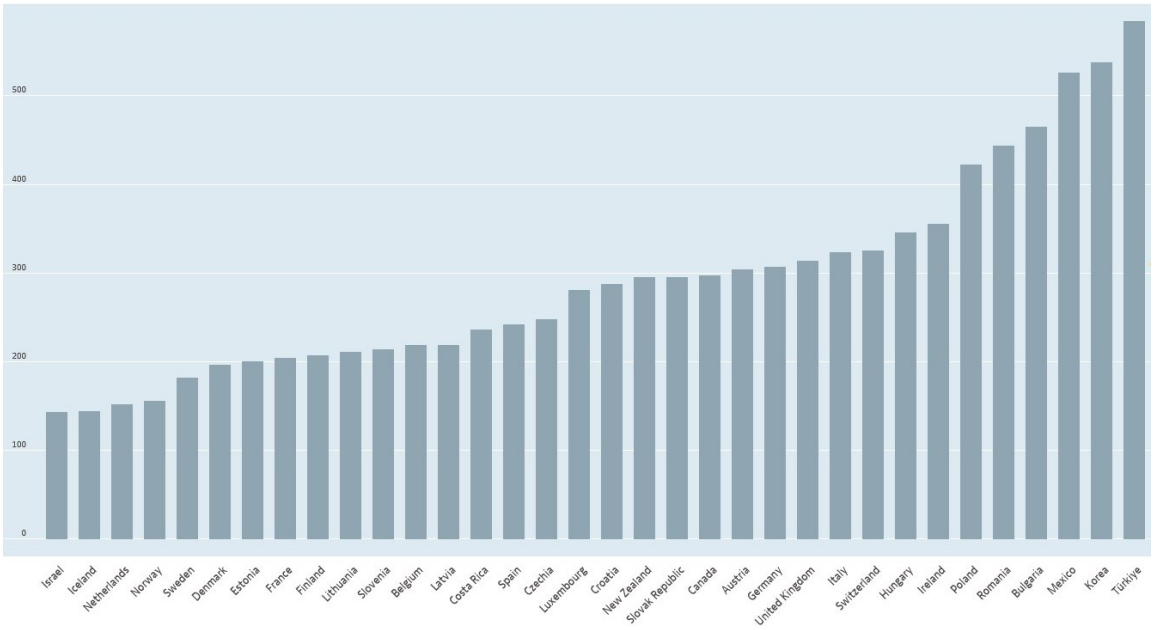

Figure 2.1 - Caesarean section Total per 1000 live births. [OECD, accessed 02/12/2024.]

While CS can reduce maternal and perinatal mortality and morbidity when used appropriately [NICE, 2021; WHO, 2015], there is no evidence of benefits for women and children when the procedure is unnecessary [Betran *et al*., 2015; Sandall *et al*., 2018] as CS, like any surgery, carry both short- and long-term risks that can affect the health of the woman, the baby, and future pregnancies [Sandall *et al*., 2018].

In Italy, the frequency of primary CS has decreased from a median value of 25.3% in 2012 to 22% in 2021, with a slight increase to 23% in 2022 [Agenas, 2023]. Although this reduction is significant compared to levels of nearly 40% in the early 2000s, the current percentage still exceeds the 10-15% threshold recommended by the WHO for optimal

maternal and foetal outcomes [WHO ,1985]. The Ministry of Health's Decree No. 70 (April 2, 2015) sets a maximum rate of 25% for primary CS in maternities with over 1,000 annual deliveries and 15% for those with lower volumes [DM, 70/2015].

A significant portion of CS are repeat procedures [Agenas, 2023]. Section 1.2.5 introduced that VBAC is a safe and strategic option to reduce the overall CS rate for women who have had a previous CS for a non-recurring reason and without further complications [ISS, 2012; RCOG, 2015]. Even though evidence shows that 75% of women who attempt a VBAC will achieve a vaginal birth [NICE, 2021] in Italy, the proportion of VBACs remains low with minimal increase over time [Agenas, 2023].

As previously presented the European OptiBIRTH study aimed to reduce CS rates by increasing VBAC rates in low VBAC countries between 2012 and 2015 (Italy, Germany, and Ireland) [Clarke *et al*., 2020]. Five years after the end of the project, significant changes in outcomes and clinician practices have emerged in Italy, as indicated by the *Piano Nazionale Esiti*, a report on national outcomes, which shows an increase in VBAC rates from 5.5% in 2012 to 15.5% in 2021 [Mencacini *et al*., 2022]. Higher VBAC rates are an indicator of quality care, as they may reflect more appropriate clinical practices [Agenas, 2023]. Facilities with higher VBAC rates tend to report lower primary CS rates, suggesting cultural and non-clinical factors play a role in the decision-making process [WHO, 2018b].

Health professionals' attitudes and experiences significantly influence the type of support women receive when choosing their mode of delivery after a CS [Kurtz *et al*., 2020; Monari *et al*., 2008; Munro *et al*., 2017; Rietveld *et al*., 2018]. These attitudes vary geographically and internationally [Clarke *et al*., 2020; Lundgren *et al*., 2015; Lundgren *et al*., 2016]. Therefore, understanding these perspectives is crucial for addressing the complex public health issue of increasing VBAC rates and developing intervention strategies to reduce unnecessary medicalization.

The purpose of study II is to understand the attitudes and experience of clinicians that influence an evidence-based approach to VBAC in the Italian NHS, focusing on key themes related to professionals' views on VBAC.

2.2.2 Methods

For this study, a qualitative method was utilized, particularly beneficial in situations where limited information exists regarding the phenomenon under investigation [Morse & Field, 2002]. One technique for gathering qualitative data involves conducting focus group interviews, a method with origins in social science and psychology. This approach allows to obtain insights from a group of individuals about their values, attitudes, and the intricate phenomena stemming from social interaction [Barbour, 2010].

In this study, the term **"**clinicians**"** was consistently used to maintain alignment with the methodology and framework of the European study OptiBIRTH [Lundgren *et al* 2016]. This inclusive term refers collectively to obstetricians, midwives and medical residents, highlighting the integrated, team-based approach. Moreover, to maintain consistency with the European study OptiBIRTH, researchers agreed to use the same five questions that were originally included in the study [Lundgren *et al* 2016]. Given the significant impact of the Covid-19 pandemic on Italy's healthcare system [Del Piccolo *et al.,* 2021; Lazzerini *et al.*, 2022], the research team included an additional question in the focus group discussions to explore how healthcare providers experienced cultural, clinical, and educational changes during this period. This allowed participants to reflect on key themes relevant to the study's aims.

The six questions would be asked in the same order, to participants of in each site:

(1) What factors are important for VBAC?
(2) What are the barriers to VBAC?
(3) What is important to you as a professional?
(4) What are your views on shared decision making (SDM) with women?
(5) How can women be supported to be confident with VBAC? [Lundgren *et al.,*2016]
(6) The last three years have been strongly affected by the pandemic. From your point of view, what is it like to give birth in a hospital today?

Setting

Data were collected using focus group interviews in the five sites, from north, central and south of Italy which took part in the European study OptiBIRTH [Clarke *et al*, 2020] (either as control or intervention sites). As previously described the OptiBIRTH study was a cluster-randomized trial involving 15 maternity units of various sizes in Germany, Ireland, and Italy, all with VBAC rates of 35% or lower. Units assigned to the intervention group received a comprehensive, innovative program consisting of evidence-based antenatal strategies. The primary outcome measured was the annual VBAC rates at the hospital level before and after the trial. The results indicated that there was no significant difference in the change of VBAC rates between the intervention sites, which saw a decrease from 25.6% in 2012 to 25.1% in 2016, and the control sites, which experienced an increase from 18.3% to 22.3% [Clarke *et al*, 2020].

However, Italy saw increases in both control (from 10.71% to 11.29%) and intervention sites. Notably, the intervention sites in Italy showed the most substantial improvement in VBAC rates across the entire study, with an increase of 21.64%. Moreover,

the control sites were provided with the intervention in 2016, after the trial was completed, which could have helped facilitate the change [Clarke *et al*., 2020]. Since the end of the OpitBIRTH study both Italian control and intervention sites have implemented VBAC clinics, specific VBAC counselling and antenatal classes dedicated to VBAC.

As described in section 1.3 Italy's NHS works in a highly decentralized manner, with each region responsible for organizing and providing healthcare services to its population. The central government sets up the national benefits package and distributes funding to support the regional health systems [Ferrè *et al*., 2014].

Maternity care is offered without direct charges through the public healthcare system, but simultaneously, private maternity care models also exist. Notably, the publicly funded care model is primarily overseen by medical professionals, and childbirth typically occurs within a hospital setting. As presented in section 1.3.6 midwives have their own autonomy and areas of competence, but they are not completely independent in hospitals, where the obstetrician holds the primary legal responsibility for the birth. Even though some national guidelines and practice recommendations are available [ISS 2010; ISS 2012; SIGO, 2021] substantial disparities in CS rates have been seen at regional as well as at facility level, contingent on whether a woman seeks care within the public system or opts for private obstetrician services [Osservatorio Nazionale sulla Salute nelle Regioni Italiane, 2022].

Ethics

Ethics approval was given by The Regional (Ligurian) Ethic Committee (CER), unique reference number CER Liguria: 764/2021 - DB id 12046 to the Coordinating Centre of the project. To comply with ethics and data protection regulations, information and descriptions that could reveal the identity of the participants, or the research site have not been used in this article. All participants mentioned in this article have been given pseudonyms.

Data collection and participants

A total of 5 focus group with clinicians, one for each site, were conducted between January and June 2023. To organize and plan focus groups gatekeepers for each site were contacted by email and by telephone. In this occasion, the aims of the research were explained and information about the procedures of data collection, inclusion criteria and logistic details were given. Gatekeepers played a role of intermediaries between the researcher and the potential participants as well as provided preliminary information regarding the site.

For participant recruitment, convenience sampling—a non-probability sampling method—was used, relying on selecting participants based on their easy accessibility and

availability. This method is commonly applied in situations where time constraints, limited resources, or logistical challenges make other sampling techniques impractical [Maestripieri *et al*., 2019].

Despite its practical benefits, convenience sampling carries the risk of introducing selection bias, as the resulting sample may not fully reflect the diversity of the broader population [Maestripieri *et al*., 2019]. To limit the risk of bias as much as possible, participants with different demographic and professional characteristics were included [Maestripieri *et al*., 2019]. Inclusion criteria were being either an obstetrician, a midwife, or a medical resident, being actively involved in labour care, and be employed at least for a year. Clinicians who met inclusion criteria and who showed interest in joining the study were provided with an informational leaflet and consent form. The interviews were held at the local site by the author of this thesis and the main supervisor, who are both experienced in birth care and were recorded on a handheld recording device. All interviews were undertaken in Italian and lasted a maximum of 90 minutes.

In total, 76 clinicians participated: 28 midwives, 23 obstetricians (4 of which consultant obstetricians) and 25 medical residents. Data were derived from 5 focus group as shown in Table 2.4.

The 78% were female and 21% were male, the mean age was 48.7 years and the mean of years of professional experience was 18.9 years (Table 2.5).

Table 2.4 - Focus Group (study II)

FG1	16 (3 obstetricians, including consultant obstetrician, 5 medical residents, 8 midwives)
FG2	15 (5 obstetricians, including consultant obstetrician, 5 medical residents, 5 midwives)
FG3	15 (5 obstetricians, including consultant obstetrician, 5 medical residents, 5 midwives)
FG4	15 (4 obstetricians, 5 medical residents, 6 midwives
FG5	15 (6 obstetricians, including consultant obstetrician, 5 medical residents, 4 midwives

Table 2.5 - Socio-Demographic Variables

	Obstetricians	Medical residents	Midwives	N(%)/M± [1]
Gender				
Female	13	19	28	60 (78%)
Male	10	6		16 (21%)
Age (mean)				
Female	47.9	29.3	44.7	40.5 ± 11.5
Male	49.8	30		42.4 ±12.4
Total	48.7	29.4	44.7	40.9 ± 11.6
Years of experience (mean)				
Female	16.4	3.5	19.6	13.9 ± 12.1
Male	22.3	2.8		15.4 ± 11.4
Total	18.9	3.3	19.6	14.1 ± 11.5

[1] *Number of answers (N) and percentage (%), Means and standard deviations (M±)*

Data analysis

After recording focus group interviews were transcribed verbatim, translated in English and analysed. The following steps were used during analysis: preparation phase, obtain a sense of whole [Elo & Kyngas, 2008], inductive content analysis. Data analysis was conducted by the author of this thesis and the main supervisor. The material was read multiple times to become immersed in the data and obtain a sense of a whole [Burnard 1991]. Units of analysis, consisting of segments of the interview texts that addressed the five key questions, were then selected. In this study, only the manifest content was analysed [Elo & Kyngas, 2008].

After making sense of the data, the analysis was conducted using an inductive approach (Figure 2.2) [Elo & Kyngas, 2008]-

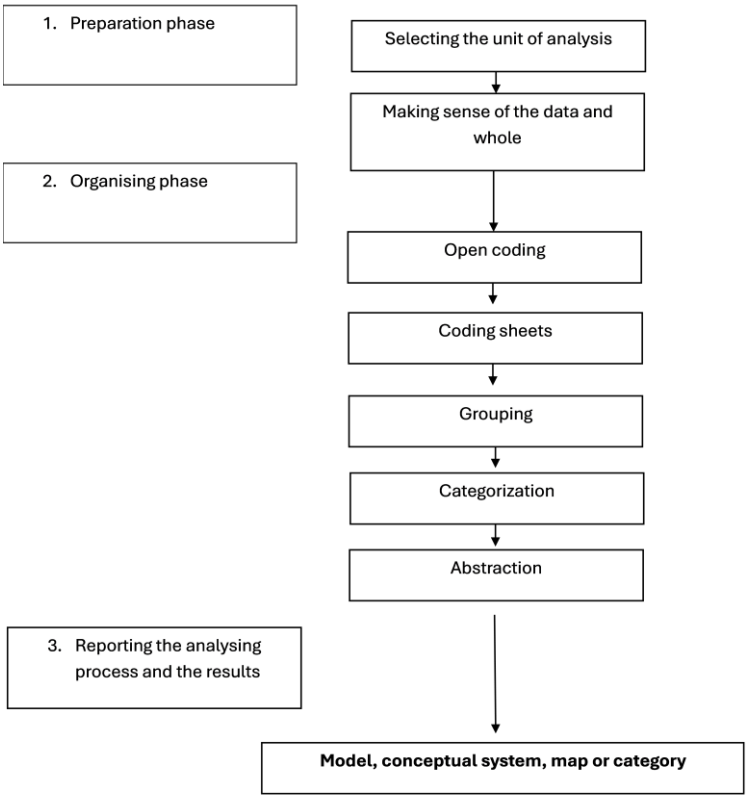

Figure 2.2 - Preparation, organizing and resulting phases in the content analysis process Inductive approach [Elo & Kyngas 2008]

Inductive content analysis was chosen as the most appropriate method to explore data obtained. In fact, inductive content analysis is a qualitative research approach that involves deriving themes, categories, or patterns directly from the data without predefined categories or theoretical frameworks. This method is flexible and pragmatic, serving as an effective approach to enhance understanding and knowledge of the human experience related to health and illness [Hsieh & Shannon, 2005].

Qualitative content analysis, in this context, seeks to construct a conceptual model describing a phenomenon based on the data [Elo & Kyngas, 2008]. This process includes open coding, creating categories and abstraction. In open coding, notes and headings are generated in the text during the reading process. Subsequently, the written material undergoes another round of reading, during which headings are transcribed in the margins to comprehensively depict all sides of the content. The headings from the margins are gathered onto coding sheets, and categories are generated without constraints at this phase. Following this open coding, the lists of categories are organized under overarching

headings [Elo & Kyngas, 2008]. The objective of data grouping was to minimize the number of categories by consolidating similar or dissimilar ones into broader higher-order categories. Establishing categories is not merely the act of assembling similar or related observations. Rather, it involves classifying data as 'belonging' to a specific group, thereby necessitating a comparison between these data and other observations that fall outside the same category [Elo & Kyngas, 2008]. The objective of category creation is to offer a framework for describing the phenomenon. In formulating categories through inductive content analysis, the researcher, through interpretation, makes decisions about grouping similar elements together. Abstraction, in this context, involves crafting a comprehensive description of the research topic by generating categories [Elo & Kyngas, 2008]. To ensure trustworthiness and validity, the analysis stayed close to the data, and results were discussed among researchers. An example of the coding process is reported in Table 2.6.

Table 2.6 Coding process

Unit of analysis	Code	Sub-categories	Main category
"If we want to work with the "unsure" patients…with the motivated one is easier... They need to be recruited asap, adequately informed and involved, they need to feel clearly that they access an existing pathway of care which has been shared (among professionals)." *"Women do not make choices on their own, nor can we choose for them. Instead, together we should follow a path that is based on updated, real knowledge, not influenced by emotions or fears that operators might have about potential outcomes. "* *"If I (as the clinician) provide the woman with the information and share my expertise, why does the woman need to sign consent? Should we then also ask for consent from women who choose to give birth vaginally, especially for a first child? I'm not sure; I have some doubts, because it seems like we might be putting the weight of responsibility on the woman in case something goes wrong."* *"There's a problem with shared decision-making when it comes to the delivery room, and this ties into obstetric violence to some extent. What is the limit? When the woman says, 'Do the caesarean, I'm in pain, etc.', where do we draw the line with shared decision-making? Do we perform the procedure or not?* *"Women without a family member present tended to trust the midwife more and reported a more positive experience, as we were able to create an empathetic environment and relationship compared to when relatives or other caregivers were present."*	Continuity of care Early antenatal recruitment Support from clinicians Clear information Agreement with women Trust towards the institution Relationship Decision making Therapeutic alliance	***Deliver quality care*** ***Trust and alliance with women***	**Provide supportive care**

2.2.3 Results

Four main categories emerged from the analysis as follows:

A. *Effort must be shared by the institutions*
B. *Work as a team*
C. *Provide supportive care*
D. *Build women's motivation*

Each category contains subcategories and is presented with supporting quotes from the research participants. The coding going with each participant's comment specifies their role.

A. Effort must be shared by institutions

Professionals agreed that to promote VBAC, the effort must be shared by institutions which means that a coordinated intervention to implement laws, policies, resources, communication is needed, at national, regional, and local level. This was considered essential to address current challenges where professionals feel unarmed and often left alone. The theme includes the flowing sub themes: *address cultural challenges, having adequate resources, feeling protected*.

Address cultural challenges

Difficulties related to culture and the local context, although with some regional differences, were often linked to the influence of social media, family ascendancy on women, and conflicts of interest arising from private healthcare. A challenging relationship with private healthcare professionals, such as private obstetricians, stemmed from the fact that sometimes private doctors do not offer VBAC as a choice or do not to refer women to public hospitals that promote VBAC.

"Sometimes women decide to give birth in specific hospitals to be followed by their private obstetrician, but in those hospitals, they may not offer VBAC." (Midwife)

Another cultural challenge is the impact that social media has on women. Women can access incorrect information without the proper tools to assess the credibility of what they read. On the other hand, the power of social media is not exploited, as VBAC is not sufficiently promoted on internet by institutions and mass media.

"It is time to use social media to educate and provide scientific/non-profit information. As an institution, if we continue not to use these channels, we allow others to use them to spread incorrect information." (Medical resident)

Moreover, both women and professionals feel the pressure that relatives of women put on them to avoid VBAC (and normal birth) as this is seen dangerous compared to ECS or ERCS.

"Many times, women were considered crazy by their families because they wanted to make this type of choice, which was hard for them to accept." (Midwife)

Participants reported that these phenomena often impact the promotion of VBAC. They believe that only institutional communication, coherent policies (including governance over private care practices), and evidence-based public campaigns to counteract misinformation and false beliefs can change these trends and, ultimately, shift the culture.

"The involvement of the community is essential. We have community services and private clinics that sometimes don't help or even work against us... and then we have to work hard to achieve just a few VBACs..." (Obstetrician)

Having adequate resources

Professionals referred that to implement VBAC a prerequisite is that organization should provide appropriate training, sufficient staff, facilities, and technologies to allow appropriate care. Medical residents reported how important it would be to receive appropriate training and supervision, particularly emphasizing the importance of following women throughout their pregnancy.

“The experience of the residents is limited because they only see women at the end of pregnancy.” (Medical resident)

For clinicians appropriate training include being able to provide extra labour care for VBAC (more support than in normal labour, extra involvement of staff, closer monitoring), being comfortable in performing an emergency CS, being up to date with scientific evidence.

“Staff need to be trained both to assist with birth and to perform ECS. Monitoring the labour of a woman with a previous CS follows different criteria than for a normal labour, so it is important to delay or anticipate certain decisions." (Obstetrician)

Clinicians reported the importance of working in appropriate facilities (i.e., access to a surgical theatre), having clear protocols, and ensuring a full, well-trained staff.

“We can support VBAC because we know that we are in a hospital where we can provide midwifery care, monitor labour, and perform a caesarean section in a relatively short amount of time." (Obstetrician)

Feeling protected

To avoid malpractice, including defensive medicine, participants, particularly obstetricians, believe that the organization should share the responsibility with them, and that the law should provide greater protection for medical professionals, as litigation occurs frequently..

“Being covered by the organization from a medical-legal point of view is important. As a single professional, I won’t expose myself.” (Obstetrician)

B. Work as a team

Working as a team is considered a key component in promoting VBAC as well as improving maternal and newborn health. This theme comprises embrace mission, evolve together and share practice.

Embrace mission

Embrace mission means that the whole team must have predisposition toward VBAC and in general toward avoiding unnecessary CS. Professionals need to be aware of current evidence and acknowledge their fundamental role in preventing short- and long-term consequences due to malpractice and future health. An example reported by professionals was related to the OptiBIRTH study where they felt they worked as a team and could feel the mission.

“After OptiBIRTH, there was a core team that wanted to move the project forward. Things were not left to individual people, because individual efforts don't always push things forward. ” (Obstetrician)

Evolve together

Participants reported the need for good communication within the team, as well as with colleagues from other specialities or from the private sector. They stated that sharing doubts, fears and debrief can help overcome negative experiences, prevent decisions

based on negative emotions, and challenge false beliefs and obsolete practices. Moreover, clinicians believe that identifying an expert to lead the team would encourage best practices.

“Understanding where we place ourselves in relation to our fears and to the work we do. We need to understand if we are crossing a certain line because of our fears, or if we can work on ourselves and, of course, consider a balanced approach, taking into account a series of risk factors, while continuing to observe the woman without a superficial attitude and trying to fulfil a desire." (Midwife)

Share practice

Sharing protocols and ensuring homogeneity in certain areas, such as clear exclusion criteria, induction of labour, and augmentation, without leaving decisions to individual doctors, will help provide clear communication with women. Moreover, it will also support medical residents and young doctors in learning and gaining more confidence. Clinicians also reported the importance of clear delineation of professional roles between midwives and obstetricians.

"Some doctors use oxytocin, while others do not. Some use it at a high dose, while others use it at a low dose. There is still some fog around it." (Medical resident)

C. Provide supportive care

Providing supportive care means that professionals agreed on the necessity of offering a type of care that genuinely supports women to promote VBAC. Moreover, they elaborate on which aspects of care are necessary to provide supportive care for women in order to increase the VBAC rate. This theme comprises the following: deliver quality care and trust and alliance with women.

Deliver quality care

The delivery of quality care was stated as fundamental to promoting VBAC. Many aspects of care were reported by clinicians as important to the quality of care, ranging from timely access and referral to care, to continuity of care and evidence-based information. This was particularly important for women who are uncertain about what they would like to do and can benefit from a supportive and informative approach.

“If we want to work with the "unsure" patients…with the motivated one is easier... They need to be recruited asap, adequately informed and involved, they need to feel clearly that they

access an existing pathway of care which has been shared (among professionals).” (Obstetrician)

Even though participants recognized the necessity of specific pathways such as VBAC clinics or dedicated antenatal classes, not all professionals agreed on the need for extra care for women. For example, while some residents reported that sharing an informed consent with patients helped clarify communication and improve transparency, some midwives felt that its use could create ambiguity and a sense of coercion. As midwives reported that women would feel the weight of responsibility in case something goes wrong.

"If I (as the clinician) provide the woman with the information and share my expertise, why does the woman need to sign consent? Should we then also ask for consent from women who choose to give birth vaginally, especially for a first child? I’m not sure; I have some doubts, because it seems like we might be putting the weight of responsibility on the woman in case something goes wrong." (Midwife)

Trust and alliance with women

Participants highlighted the importance of building a relationship of trust between women and clinicians/hospitals. Professionals shared the belief that this therapeutic alliance should be grounded in respect, clear and honest communication, coherence, and professional ethics.

“Women do not make choices on their own, nor can we choose for them. Instead, together we should follow a path that is based on updated, real knowledge, not influenced by emotions or fears that operators might have about potential outcomes.” (Obstetrician)

Many clinicians believe that it is a woman's right to make her own choice regarding childbirth. Although shared decision-making (SDM) does not appear to be a structured process, some clinicians reported using a similar approach to facilitate women's choices.

"I've observed shared decision-making to some extent. Very often, patients express their doubts and share their wishes. On our side, both as medical residents and obstetricians, we present our reasoning. Often, we consider both perspectives, engage in an exchange, and then defer the decision-making process to the next appointment." (Medical resident)

Although there are some different opinions about the usefulness of SDM and its risks, particularly about having an equal relationship between women and professionals within the

decision-making process, including legal consequences. Some clinicians, mainly obstetricians have raised doubts regarding SDM limits.

"There's a problem with shared decision-making when it comes to the delivery room, and this ties into obstetric violence to some extent. What is the limit? When the woman says, 'Do the caesarean, I'm in pain, etc.', where do we draw the line with shared decision-making? Do we perform the procedure or not? " (Obstetrician)

The Covid-19 pandemic represented a unique opportunity in relation to this theme, as some professionals reported a stronger alliance with women who were alone during labour. For some clinicians, particularly midwives (those who spent most of the time with women in labour), this had pros, such as the ability to offer more support to the woman, and cons, as women without their partner were more exposed to medicalization.

"Women without a family member present tended to trust the midwife more and reported a more positive experience, as we were able to create an empathetic environment and relationship compared to when relatives or other caregivers were present." (Midwife)

"Both women and professionals felt isolated, and loneliness can make you more likely to accept someone telling you what to do, as there's no one to discuss or share decisions with. Women didn't have their partners with them and had to rely on those present to guide them." (Midwife)

D. Build women's motivation

Building women's motivation has been reported by all groups as one of the main factors in achieving VBAC. This theme includes past experience risks and opportunities, making a conscious choice, and feeling safe.

Past experience risks and opportunities

All clinicians agreed on the importance of a woman's past birth experience. For example, the reasons for the previous CS, whether it was an urgent or emergency CS, and the maternal and neonatal outcomes can affect women's future choices. Experience is also crucial when a woman has had an inappropriate CS, as it will be necessary to address the false beliefs instilled by other healthcare professionals.

“When the first caesarean section was unnecessary, it becomes even harder to change their mindset, as it reinforces the belief that they are incapable of giving birth naturally.” (Midwife)

Clinicians reported the effect of previous childbirth trauma and the necessity of reworking the birth experience, with specific care such as providing prompt information immediately after the first CS and offering appropriate care during the postpartum period. Midwives noted that women who feel defeated by their previous CS are often the most motivated to attempt a VBAC, while others who had a negative experience of labour, such as a long labour, may not want to face labour again.

“If women have had a 'traumatic' experience in the past, such as a long labour, they often fear going through labour again.” (Midwife)

Making conscious choice

Participants reported that women need to make a conscious choice, and to do so, they need to receive appropriate care and support to build trust in themselves. Clinicians feel that sometimes women don’t have the chance to acknowledge their own needs, as they are pushed into decisions by healthcare professionals or family, without time for reflection or awareness. While some clinicians believe that women's motivation must be intrinsic, others feel that it is possible to build women's motivation through care.

“In my opinion, the woman should be informed about this possibility from the first visit, be properly supported throughout the nine months, and gain confidence in herself to face this type of birth. Many women arrive without even knowing about it, often just hearing about it from others.” (Midwife)

Feeling safe

Feeling safe has been reported as a fundamental need for women, which must be met. Women need to feel safe in order to choose a VBAC. In fact, fear often drives women's choices, and the apparent sense of control provided by an ECS helps them feel less uncertain and more comfortable.

"Women think that a CS is better for the baby because there is no urgency. The idea of planning it makes them think that nothing bad can happen." (Obstetrician)

2.2.4 Discussion

Interpretation

The findings from this study are based on focus group interviews in five sites, from north, central, and south of Italy which took part in the European study OptiBIRTH [Clarke *et al*., 2020].

As the OptiBIRTH study showed no statistically significant difference in the change in the proportion of women having a VBAC between intervention site and control sites, its main conclusion was that “changing clinical practice takes time” [Clarke *et al*., 2020]. For this reason, a decision was made to return to the Italian sites that took part in the study after 5 years, with the aim of gaining a deeper understanding of the attitudes and experiences of clinicians that influence an evidence-based approach to VBAC.

The results of the study presented here show that, for professionals, the important factors for improving the VBAC rate are that effort must be shared by institutions as well as to work as a team, to provide supportive care for women and to build women motivation. These themes are clearly in line with some of conclusions, deriving from the qualitative part of the OptiBIRTH study, which showed that a national culture that supports VBAC, and care in pregnancy and labour from confident and supportive clinicians are essential for success [Lundgren *et al*., 2019].

Interestingly the main findings of this project can be considered not only as individual themes but also as consecutive elements of a whole process that needs to work in order to improve VBAC rate. Those emerging themes represent the “*Road to VBAC*” that needs to be followed to build a system that support VBAC (Figure 2.3).

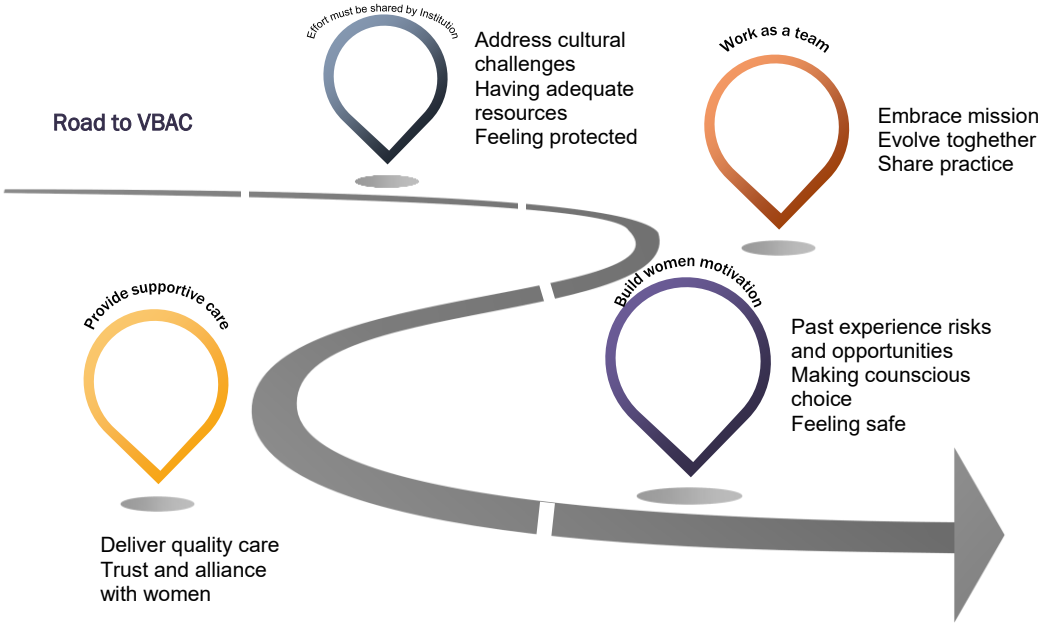

Figure 2.3 - Road to VBAC visual representation of results. (study II)

One of the main results from this study is that efforts must be shared by the institutions. To have Institutions that share the effort with professionals to promote VBAC means that a concerted effort with politics and public interventions at the national, regional, and local levels are needed to address cultural challenges and therefore to encourage VBAC effectively. Such collaboration is crucial to effectively tackle the existing challenges wherein professionals often find themselves unequipped and isolated. As Lundgren *et al.* [2015b] suggested a common approach is nothing that an obstetrician or midwife could have as an individual, since it must be related to the structure of the maternity care system. This becomes even more essential when considering the national context and the structure of the maternity care system in the country [Lundgren *et al*., 2015b].

Another cultural challenge related to the Italian context is that women can choose to have a CS, if they have had a previous one. As it was shown the impact of maternal requests for CS for non-medical reasons on CS rates is a matter of ongoing debate [Lavender *et al*., 2012; NIH, 2006] also within the country [Indraccolo *et al*., 2015].

The cultural challenge of the normalization of CS is widely reported in literature [Firoozi *et al*., 2020b; Foureur *et al*.,2016 Jimenez-Zambrano *et al*., 2022]. Within the Italian country, especially in private care, women often choose to have a primary CS. Considering that, in some regions, private care accounts for more deliveries than public hospitals [Ministero della salute, 2022], the majority of which are CS, and the fact that primary CS has become a major driver of the overall CS rate [Cegolon *et al*., 2021], it is easy to

understand how the normalization of CS, driven in part by incorrect information on the internet and social media, may surpass the scope of action that professionals in public hospitals feel they have [Hadjigeorgiou *et al.,* 2018].

A sub-category of the main theme is having adequate resource. Professionals referred that to implement VBAC a prerequisite is that organization should provide appropriate training, sufficient staff, facilities, and technologies to allow appropriate care and that they tend to favour opting for a ERCS when there is limited experience with VBAC among available staff. Clinicians and in particular medical residents expressed the importance of receiving specific training in pregnancy and labour management for VBAC, as well as the need for an expert to lead the team. These aspects have been previously highlighted in existing research [Chen *et al*., 2018; Monari *et al*., 2022] and prompt a reconsideration of the current national training and educational requirements for young doctors.

Work as a team was another main category in this study. It is reported by professional as a fundamental aspect, including that the whole equipe must have predisposition toward VBAC, that the team is able evolve together and share the same practice. Overall midwives were more often considered more motivated about supporting VBAC while obstetricians expressed more concerned related to shared decision-making process and its limits, professional responsibility, and fear of medico legal action. As described in section 1.3.6, it is important to remember that in Italy, midwives have their own autonomy in managing normal pregnancies and deliveries, providing continuous care during labour, and offering postpartum support, including breastfeeding counselling and newborn care, but in hospital the obstetrician still holds primary legal responsibility for childbirth.

Also, Italy is a country with a high rate of litigation [Buzzacchi *et al*., 2016] which has been recognized as central reason for obstetricians and midwives to avoid attending VBAC [Cox, 2011]. Regarding teamwork it is remarkable how professionals in this study who took part in the OptiBIRTH study reported it as a fundamental experience that allowed them to work as a team and to share the same mission.

The above findings are in line with Panda *et al*. [2018] that highlighted interprofessional conflict, variances in attitudes, and insufficient cooperation as key elements impacting the choice between opting for a CS or pursuing a VBAC. According to Verteramo this occurs especially in absence of hospital policies and protocols [Verteramo *et al*., 2019].

Provide supportive care was also a finding from this study. Professionals concurred on the imperative of delivering appropriate, timely and comprehensive career. Many aspects of care were reported by clinicians as important to the quality of care (Figure 2.4).

Figure 2.4 - Wordscloud Quality Care. (study II)

Several clinicians emphasized the pivotal role of trust and alliance as fundamental elements in providing care, aligning with findings reported in other studies [Lundgren *et al*., 2015b]. This consensus among professionals underscores the importance of establishing and maintaining a strong bond between healthcare providers and women, emphasizing the significance of fostering trust and collaboration to ensure optimal care outcomes.

Build women's motivation was the last main category in this study. Several clinicians expressed the view that the initiation of appropriate actions to enhance women's motivation should commence promptly after the first CS, particularly in case of previous childbirth trauma. Participants noted that maternal preferences for ECS often stemmed from insufficient information about VBAC and a woman's apprehension about the childbirth process. Previous research indicated that decision-making process regarding the choice of

birth mode after a prior CS is complex and multi-faceted for both women and healthcare [Lundgren *et al.,* 2012; Nilsson *et al*., 2015]

This study confirmed that Covid-19 has heavily impacted quality of maternal and newborn care (QMNC) in Italy, [Lazzerini *et al*., 2022] and professionals described widely their experience during the three years of the pandemic. As for the purpose of this study, only the aspects related to the study's aim were reported. For example, a higher workload, less staff, and continuously changing protocols, also reported in other studies [Del Piccolo *et al*., 2021] impacted the possibility to provide one to one care. For some professionals Covid-19 pandemic represented a particular opportunity to build stronger alliance with women as they were alone in labour while other referred that women without their partner were more exposed to medicalization.

The results of this study suggest a relationship between VBAC rates and the organizational structure of the maternity care system in a given country, the level of collaboration between midwives and obstetricians, and the quality of care provided during both pregnancy and childbirth. This is in line with the finding of the meta-synthesis about Clinicians' perspectives of VBAC that underpin this study which showed that to overcome challenges and promote VBAC require clinicians, policymakers, pregnant women, and communities to establish positive and respectful relationships. This involves promoting good communication, approaching each other with compassion, sharing responsibilities and commitments (Study I).

Strength and Limitation

This study's strength lies in its utilization of a qualitative approach, enabling a deep exploration of clinicians' perspectives on VBAC [Elo & Kyngas, 2008]. The choice of a qualitative method was deemed appropriate due to the intricate nature of the phenomenon under investigation [Elo & Kyngas, 2008].

Moreover, employing a focus group provided a distinct advantage as participants could engage in discussions and collaboratively articulate their views on the studied phenomenon [Elo & Kyngas, 2008]. In our study, this collective perspective was derived from three distinct professions—midwives, obstetricians, and medical residents. Nonetheless, it's important to acknowledge a limitation of this study as the use of the term "clinicians" to collectively describe obstetricians, midwives and medical residents . Although this terminology aligns with the original OptiBIRTH study [Lundgren *et al.,* 2016], it may obscure the unique contributions and perspectives of each group. To mitigate this, the specific contribution of each profession was highlighted where applicable, offering a more nuanced representation of their distinct insights. Another key limitation is the potential marginalization of certain participants, as some individuals may exert more influence within

the group dynamic. To address this bias, several strategies were implemented: efforts were made to actively involve all participants in the discussion, and the perspectives of all professional groups were ensured to be represented.

Like all qualitative studies, it is crucial to interpret the findings within the study's specific context [Elo & Kyngas, 2008]. To enhance the transferability of the results to other settings, the researcher should meticulously describe the study's context, participant selection and characteristics, the methods of data collection, and the analytical process [Elo & Kyngas, 2008] a goal actively pursued in this study.

During the focus group and the analysis, the main researcher, who was a midwife herself, look to maintain a reflexive awareness of her position as a researcher and the potential impact of her perspectives on the analysis. Part of this reflective work included recording her thoughts, biases, and decisions to improve transparency and rigor [Francisco *et al*., 2023].

2.3 Study III

Cultural perspectives on vaginal birth after caesarean section in Italy: a secondary analysis.

2.3.1 Rational

In a global scenario which sees CS prevalence that continues to increase, constituting more than one-fifth (21%) of all childbirths [Boerma *et al*., 2018]. Subsequent CS following a prior CS birth significantly contributes to the overall rise in CS rates, representing approximately 28% of CS in the UK, and the primary indication of a repeated CS [Rayn *et al*., 2018]. As presented in chapter 1.2.1 women who have undergone a previous CS for an unrepeated cause and without additional complications can be offered a VBAC. This approach is deemed safe and strategic, contributing to a reduction in the overall CS rate [NICE, 2021; RCOG, 2015]. Even though according to recent scientific evidence, 75% of women opting for childbirth after a CS are successful in achieving a VBAC [NICE, 2021], across Europe, VBAC rates exhibit substantial variation rates that are notably lower in Cyprus and Italy (6.5 - 15.5%) compared to Norway, the Netherlands, and Finland (45.8 - 52.4%) [Euro-Peristat 2022; Ministero della salute 2022].

Strategies aimed at decreasing the utilization of CS, including repeated CS have been targeted to various clinical and non-clinical factors, including changes in maternal characteristics, professional practices, and economic, organizational, social, and cultural influences, which have been shown to influence its use [Betran *et al*., 2018; Chen *et al*., 2018; Lundgren *et al*., 2015]. Research has investigated elements able to affect the decision-making process for CS revealing that clinicians' individual beliefs exert a substantial influence [Healy *et al*., 2016; Monari *et al*., 2008; Panda *et al*., 2018]. As showed in study I this is possibly compounded by cultural factors such as healthcare system factors, including litigation and private health insurance, alongside clinicians' personal convenience or lack in clinical expertise (study I).

In 2015, as part of the OptiBIRTH study [Clarke *et al*., 2020], which designed and evaluated an intervention to increase the VBAC rate in three countries with low rates (Italy, Germany, and Ireland), the perspectives of clinicians regarding VBAC were explored [Lundgren *et al.,* 2016]. A few years later, a national follow-up project (study II) on clinician views was undertaken in Italy, involving the same five sites that participated in OptiBIRTH. As part of the follow-up project, study II revealed both similarities and differences between the two studies (Lundgren *et al*., 2016 and study II) regarding clinicians' beliefs that influence an evidence-based approach to VBAC.

The aim of study III is to deepen the understanding of what has changed over time in clinicians' perceptions and attitudes towards VBAC and to interpret these changes from a cultural perspective, by comparing findings from the OptiBIRTH study [Lundgren *et al*., 2016] with those of Study II in the Italian context.

2.3.2 Methods

In Study III, a cultural analysis was conducted using a hermeneutic approach, grounded in the concept of the hermeneutic circle. The roots of the term lie within the Greek word hermeneutic, with different meanings including 'to explain', 'to describe', 'to translate' and 'to clarify', and it entails different ways of interpreting written content [Lueger and Vettori, 2014]. Central to the hermeneutic approach is the importance placed on context and interaction. Hermeneutics focuses on deciphering and deducing meaning structures that emerge from the contextual connections through which they are unveiled [Lueger and Vettori, 2014]. In the hermeneutic paradigm, language and action stem from socially taken-for-granted meanings ingrained in our existence alongside others [Gadamer, 2004]. This method involves an iterative, dialogic process of interpretation, where the researcher continuously moves back and forth between the individual parts (specific data segments) and the whole context of the study [Gadamer, 2004]

This method was selected to align with the analytical framework used in the OptiBIRTH study [Lundgren *et al*., 2020], ensuring methodological consistency. Additionally, to maintain methodological alignment with the OptiBIRTH study [Clarke *et al.,* 2020; Lundgren *et al.,* 2016] clinicians (obstetricians, midwives and medical residents) were examined as a collective, focusing on the shared culture within the group unless explicitly stated otherwise. New insights in clinical settings can be developed through the hermeneutic tradition, which emphasizes understanding the experiences of individual patients and healthcare professionals while considering the cultural context of hospitals and healthcare systems [Thorne, 2008]. Data in this study consisted of findings from study II and data from a previous qualitative study focusing on clinicians' views about VBAC in low VBAC rate countries [Lundgren *et al*., 2016]. All studies had received ethical approval from the coordinating University and all clinical sites.

Setting

The original papers included in this hermeneutic analysis are based on focus group interviews with clinicians, in 2012-2013 [Lundgren *et al*., 2016] and-in 2023 (study II). While the 2016 OptiBIRTH publication included data from three countries (Ireland, Germany, and

Italy), the setting for this study focused specifically on Italy, in line with its aim to interpret cultural perspectives on VBAC within the Italian context.

As previously introduced Italy's NHS functions in a decentralized manner, where individual regions are tasked with organizing and delivering healthcare services to their populations. The central government defines the national benefits package and allocates funds to support regional health systems [Ferrè *et al.,* 2014].

Maternity care is offered at no direct cost through the public healthcare system, while private maternity care models coexist [Ferrè *et al*., 2014]. Notably, the publicly funded care model is predominantly supervised by medical professionals, who mostly carry out the care during pregnancy, and childbirth typically occurs in a hospital setting [Ferrè *et al.,* 2014].

As outlined in subsection 1.3.6 midwives in Italy are responsible for managing normal pregnancies and deliveries, providing continuous support during labour, and offering postpartum care, including breastfeeding counselling and newborn care. While midwives have professional autonomy in these areas, they are not fully independent in hospital settings, where obstetricians retain ultimate legal responsibility for childbirth, especially when complications arise. However, outside the hospital environment, midwives enjoy greater autonomy. They are legally authorized to independently manage low-risk pregnancies and home births, offering comprehensive care throughout pregnancy and delivery. Consequently, the options available, such as homebirth or giving birth in Birth Centres, hinge on the specific policies, regulations, or facilities of each region.

Despite the presence of some national guideline recommendations [ISS 2010; ISS 2012], substantial variations in CS rates have been observed at both regional and facility levels. Particularly regarding the place of childbirth, there is a high tendency towards the use of CS in accredited clinics, compared to public hospitals [Osservatorio Nazionale sulla Salute nelle Regioni Italiane, 2022].

Similarly practice regarding VBAC vary significantly from one region to another and frequently differ between hospitals. As described in section 1.3.3 from a demographic perspective, Italy in 2022 experienced a new negative record in low birthrate, totalling 393 thousand [Istat, 2023]. The fertility rate of the resident population has rebounded to an average of 1.24 children but remains below pre-pandemic levels (1.27 in 2019). The sustained low fertility is a characteristic feature of Italy's demographic trends, leading to a continuous decrease in the number of potential parents over recent decades, consequently contributing to the significant decline in observed births today. The trend in the average number of children per woman in Italy continues to be shaped by the delayed age of childbearing. The average age at first childbirth for women residing in Italy increased by 12 months from 2010 to 2020, and it remained steady in 2021 and 2022, at 32.4 years [Istat, 2023].

Data analysis

The data analysis conducted was a secondary analysis [Heaton 2004] based on one previous qualitative study focused on clinician's perspectives regarding VBAC [Lundgren *et al*., 2016] and findings from study II. Comprehensive details regarding data collection, methodology, and analysis from the included papers are provided in Table 2.7, while the summarized findings can be referenced in Table 2.8.

In secondary analysis, the potential of re-using previously gained data has been recognized. Secondary analysis allows amplification of the analysis providing the opportunity to expand a sample size and to compare variations across the data [Heaton 2004]. The analysis in this study focused on cultural perspectives on VBAC shared by the clinicians and was carried out by the author of this thesis and the main supervisor, both with extensive experience in birth care. Both the theme names and the descriptive text from the included studies were incorporated into the analysis process. As researchers worked with secondary data from the Lundgren *et al.* [2016] study, which reported findings collectively across three countries (Ireland, Germany, and Italy), they considered data from low VBAC countries overall. This may have influenced the interpretation of findings by blending experiences and perspectives from different cultural and healthcare contexts. To mitigate this potential bias, researchers focused the analysis on quotes and data derived from Italian professionals, ensuring that the findings presented in this study more accurately reflect the Italian context.

The analysis began with a preliminary reading of the data, including interview to gain an initial understanding of the main themes and context—referred to as the **"**original whole**"** Following this, researchers engaged in a detailed examination of specific elements, such as professional beliefs, cultural norms, and values, expressed by the participants. The process of interpretation relied heavily on the hermeneutic circle, where the researcher repeatedly revisited the data, comparing initial interpretations with new insights gained from a deeper analysis [Heaton, 2004]. This back-and-forth movement allowed for a continuous dialogue between the text (data) and the broader cultural context, facilitating the identification of shared cultural perspectives and deeper, underlying meanings that might not be apparent through surface-level analysis. As emerging themes were identified, they were compared and contrasted not only within the data but also against existing literature, allowing to refine the interpretations and move towards a new, integrated understanding (a "new whole") [Heaton, 2004].

This process involved collaborative efforts and ongoing discussions among the authors until a consensus was reached regarding the comprehensive structure of the presented findings, incorporating themes and main interpretation.

Table 2.7 - Methods of the included studies

Authors/ref	Lundgren *et al*. (2016)	Study II (2024)
Aim	To explore the views of clinicians from countries with low VBAC rates on factors of importance for improving VBAC rate	The purpose of the research is to understand attitudes of health professionals that influence an evidence-based approach to VBAC
Participants	71 clinicians, 36 midwives and 35 doctors (mainly obstetricians but some others) from Italy, Ireland and Germany	76 clinicians participated: 28 midwives, 23 obstetricians and 25 medical residents form north, central and south Italy.
Data collection	Focus group interviews, 2012–2013	Focus group interviews, 2023
Data analysis	Qualitative content analysis	Qualitative content analysis

Table 2.8 - Findings of the included studies

Authors/ref	Lundgren *et al*. (2016)	Study II (2024)
Findings **Main categories**	Parameters for VBAC Organisational support and resources for women undergoing a VBAC Fear as a key inhibitor of successful VBAC Shared decision-making – rapport, knowledge and confidence.	Effort must be shared by the institutions *Work as a team* *Provide supportive care* Build women motivation
Findings **Sub-categories**	Importance of the obstetric history Present obstetric circumstances Positive attitude to VBAC in all who are centrally involved Early follow-up and antenatal classes VBAC requires clinical expertise VBAC requires resources during labour Understanding women's fear of childbirth Understanding clinicians' fear of VBAC Clinicians' fear can be transferred to women Providing consistent, realistic and unbiased information Trust within the clinician–woman relationship.	Address cultural challenges Having adequate resources Feeling protected Embrace mission Evolve together Share practice. Deliver quality care Trust and alliance with women Past experience risks and opportunities Making conscious choice Feeling safe

2.3.3 Results

The interpretation of the changes among the two studies (Lundgren *et al*., 2016 and study II) in professional views on VBAC from a cultural perspective is presented in four themes and a main interpretation.

A. From working divided to working together

Between 2012 and 2023, a shift occurred in how clinicians approached teamwork and collaboration in the context of VBAC. In the earlier study by Lundgren *et al.* [2016], a division of roles and a fragmented approach were more apparent, with clinicians acknowledging the challenges of managing individual anxieties, particularly in the context of VBAC. By 2023, this culture evolved towards a more cohesive, team-oriented approach where clinicians emphasized collaboration, mutual support, and the shared mission of ensuring the best care for women seeking VBAC.

In 2012, midwives pointed out that obstetricians' fears and anxieties were major obstacles to VBAC, which created a barrier to effective teamwork. Midwives, for example, often felt the weight of "triple anxiety" – their own, the obstetrician's, and the woman's. This anxiety made it difficult to manage complex situations impartially, affecting both the care of the woman and the ability to work effectively with colleagues:

*"A midwife is the link between the woman and the doctor, and if [the midwife] often normally is a little bit anxious, you can imagine if the woman has had a previous CS. The anxiety of the midwife is double; they [the ob*stetrician] *will enter the room and ask: 'Is there progress? Only 1 cm?' It is a kind of anxiety that is difficult to manage: it is difficult to work impartially while dealing with the woman's anxiety, the obstetrician's anxiety, and your own anxiety!"* [Lundgren *et al.,* 2016]

This fragmented approach highlighted the need for improved collaboration, as clinicians noted that both obstetric and midwifery personnel had to believe in the feasibility of VBAC for carefully selected women. Success was seen as highly dependent on the collaboration and confidence of the entire team. However, in some cases, professionals found themselves at odds, with some obstetricians not fully supporting VBAC, which created tension and confusion for the women involved:

"A woman was sure she wanted to give birth with a VBAC, but the obstetrician wanted her to sign an informed consent where he wrote that, despite his having explained all the risks of VBAC, the woman wanted to deliver vaginally and that he was available for CS any time

during labour. The woman's husband was shocked. After all this, the woman started saying: 'Perhaps a CS would be better!' Everything went well, but the woman spent the whole time wondering if she was doing the right thing." [Lundgren *et al*., 2016]

By 2023, the focus had shifted toward a more unified and supportive approach, as presented in study II. Professionals began to view themselves as part of a team working together toward the same goal: to support women who desire a VBAC. The importance of embracing a shared mission and evolving together was highlighted, with greater emphasis on supporting each other through challenges and building a positive working environment. Clinicians recognized the value of effective communication, sharing concerns, and debriefing to ensure that decisions were not based on fear or outdated practices:

"Understanding where we place ourselves in relation to our fears and to the work we do. We need to understand if we are crossing a certain line because of our fears, or if we can work on ourselves and, of course, consider a balanced approach, taking into account a series of risk factors, while continuing to observe the woman without a superficial attitude and trying to fulfil her desire." (Midwife) (Study II)

B. From many parameters needed to providing supportive care

The theme from many parameters needed to providing supportive care significantly evolved between 2012 and 2023. In 2012, clinicians emphasized a range of specific criteria that determined a woman's suitability for VBAC, with a focus on the patient's obstetric history and the clinical characteristics of the current pregnancy [Lundgren *et al.,* 2016]. By 2023 (study II), the focus expanded to include a more holistic approach to care that not only emphasized clinical criteria but also placed greater importance on establishing trust and communication between clinicians and women, as well as maintaining continuity of care.

In 2012, clinicians highlighted that VBAC success depended on several key parameters. These included the previous obstetric history, especially the progress of any prior labour, and factors such as the current pregnancy's characteristics, including body mass index (BMI) [Lundgren *et al*., 2016]. The need for pro-VBAC clinicians was also emphasized, as having an obstetrician who supported VBAC was considered crucial for success. In the absence of a supportive clinician, the chances of VBAC success were significantly reduced:

"If a colleague and I believe in VBAC, when a woman wants to have a VBAC, we have to be on duty when that woman is in labour; otherwise, it will be a total failure." [Lundgren *et al*., 2016]

Moreover, clinicians agreed that women should be informed about the potential risks and benefits of VBAC, but also emphasized that opting for a repeat CS could be a valid outcome. However, not all clinicians believed women should have the inherent right to choose VBAC. Many argued that a thorough assessment of a woman's suitability for VBAC should be conducted, with the final decision often made later in pregnancy:

"I think that women shouldn't have a right to choose a VBAC. The decision should be the result of an overall evaluation, which can't exclude vaginal birth. A process of assessment of suitability is necessary, leaving flexibility for the clinician." [Lundgren *et al.*, 2016]

In study II, the importance of providing supportive care to promote VBAC was even more pronounced. Clinicians emphasized the need for quality care, trust, and a strong therapeutic alliance with women. High-quality care was seen as essential for promoting VBAC, and this encompassed timely referrals, maintaining continuity of care, and providing EB information to patients. Clinicians also emphasized the importance of recruiting women who were motivated and adequately informed about their options:

"If we want to work with the 'unsure' patients… with the motivated ones, it is easier... They need to be recruited as soon as possible, adequately informed, and involved. They need to feel clearly that they access an existing pathway of care that has been shared (among professionals)." (Obstetrician) (Study II)

Furthermore, study II participants stressed the significance of establishing a trustful, respectful, and honest relationship between women and clinicians. This relationship should be grounded in clear communication and professional ethics, with clinicians acknowledging the SDM process:

"Women do not make choices on their own, nor can we choose for them. Instead, together we should follow a path that is based on updated, real knowledge, not influenced by emotions or fears that operators might have about potential outcomes." (Obstetrician) (Study II)

Although SDM was recognized as vital in the VBAC process there were mixed views on its practical application. Some clinicians were concerned about the limitations of SDM, particularly in the context of obstetric violence and its legal implications. The difficulty arose when a woman expressed a desire for a CS due to pain or fear, challenging the boundaries of SDM:

"There ' s a problem with shared decision-making when it comes to the delivery room, and this ties into obstetric violence to some extent. What is the limit? When the woman says, 'Do the caesarean, I ' m in pain, etc.', where do we draw the line with shared decision-making? Do we perform the procedure or not?" (Obstetrician) (Study II)

C. Feeling supported by institution and having resources

Although the theme of feeling supported by institution and having resources was present in both studies, the approach to it shifted between 2012 and 2023. In 2012, the primary concern was the growing number of clinicians opting to specialize in areas outside of labour ward management, which was perceived as contributing to insufficient clinical expertise in managing VBAC [Lundgren *et al*., 2016]. By 2023, however, the conversation evolved to emphasize the necessity of comprehensive training and institutional support to ensure adequate care for women pursuing VBAC, alongside addressing the impact of cultural and organizational challenges.

In 2012, clinicians expressed concerns that modifications to obstetric training had led to a reduction in the number of professionals specializing in labour ward management. As a result, many obstetricians transitioned to other specialties, such as fertility and endoscopic surgery, driven by the appeal of more favourable working hours and higher compensation packages [Lundgren *et al*., 2016]. This shift led to a growing challenge in maintaining clinical expertise in VBAC management, as many medical residents were not trained to consider VBAC as a viable option:

"Nowadays we can see how the culture has affected the training of residents. For residents, a previous CS means another CS. They have to be told that a woman can have a VBAC." [Lundgren *et al.,* 2016]

In addition, many professionals expressing concerns about their ability to manage a TOLAC safely, especially when staff were overworked or underprepared:

"Nobody can tell what will happen during a trial of labour, so we should say that a TOLAC is possible, but only if we have staff who are not overworked and exhausted." [Lundgren *et al.,* 2016]

By 2023, the conversation had shifted to a broader focus on training and institutional support. In study II, clinicians emphasized the need for organizations to provide adequate training, staffing, facilities, and technologies to support VBAC. Proper training now included not only the ability to provide additional labour care for VBAC, which requires more support

and closer monitoring compared to normal labour, but also proficiency in performing ECS and staying updated with the latest scientific evidence:

"Staff need to be trained both to assist with birth and to perform ECS. Monitoring the labour of a woman with a previous CS follows different criteria than for normal labour, so it is important to delay or anticipate certain decisions." (Obstetrician) (Study II)

Medical residents also stressed the importance of receiving proper training and supervision to ensure safe VBAC management. Furthermore, to prevent malpractice and defensive medicine, participants, especially obstetricians, advocated for organizations to share the burden of responsibilities with clinicians and provide greater medico-legal protection, particularly in environments where legal actions against healthcare professionals were common:

"Being covered by the organization from a medical-legal point of view is important. As a single professional, I won't expose myself." (Obstetrician) (Study II)

Challenges related to culture and local context, though with regional variations, also emerged as significant factors affecting VBAC practice. These challenges were often rooted in the influence of social media, familial pressure, and conflicts of interest originating from private healthcare. In study II, clinicians highlighted how private healthcare providers sometimes did not present VBAC as an option or failed to refer women to public hospitals that supported VBAC. This created an additional barrier to women's access to VBAC:

"It is time to use social media to educate and provide scientific/non-profit information. As an institution, if we continue not to use these channels, we allow others to use them to spread incorrect information." (Medical resident) (Study II)

Moreover, clinicians noted that women's families often discouraged VBAC attempts, sometimes labelling them as unreasonable or even "crazy," particularly when cultural perceptions about childbirth and medical interventions were at play:

"Many times, women were considered crazy by their families because they wanted to make this type of choice, which was hard for them to accept." (Midwife) (Study II)

D. Addressing women's needs and build motivation

Although the theme of addressing women's needs and building motivation was already present in both studies, the approach to it evolved significantly between 2012 and 2023. In 2012, the focus was primarily on initiating discussions about the possibility of VBAC soon after the first CS and providing information to build confidence [Lundgren *et al*., 2016]. By 2023, however, the conversation expanded to consider the psychological and emotional aspects of childbirth, particularly in women who had experienced negative or traumatic previous births.

In 2012, clinicians emphasized the importance of early discussions about VBAC, aiming to "sow the seeds" for future pregnancies. Providing information about the reasons behind the previous CS and introducing VBAC as a viable option was seen as a way to empower women and boost their confidence. Professionals in Lundgren *et al*. [2016] highlighted the value of specialized antenatal education sessions that focused on promoting VBAC, offering women consistent, evidence-based information. In the Italian context, clinicians underlined that women desiring a VBAC should be cared for by obstetricians who are supportive of VBAC, ensuring continuity of care during labour:

"Continuity of care is of fundamental importance. If a colleague and I believe in VBAC, when a woman wants to have a VBAC, we have to be on duty when that woman is in labour; otherwise, it will be a total failure." [Lundgren *et al*., 2016]

By 2023, professionals not only continued to emphasize early information but also highlighted the significance of addressing the emotional impact of childbirth, especially for women who had experienced traumatic labours or unnecessary CS. In study II, clinicians discussed the lasting effects of negative birth experiences and the importance of offering targeted care to address these issues, particularly in the postpartum period. They stressed the need for a comprehensive approach that considers both physical and emotional recovery, with an increased focus on women’s mental well-being:

"If women have had a 'traumatic' experience in the past, such as a long labour, they often fear going through labour again." (Midwife) (Study II)

"When the first caesarean section was unnecessary, it becomes even harder to change their mindset, as it reinforces the belief that they are incapable of giving birth naturally." (Midwife) (Study II)

Midwives in study II observed that women who felt disheartened by their first CS were often the most motivated to pursue a VBAC, while those who had negative labour experiences,

such as prolonged labour, were more hesitant to attempt vaginal birth again. Furthermore, the study revealed that for clinicians, women need comprehensive support to make informed choices and build self-trust. For clinicians, women need to feel safe and supported, in order to feel empowered in their decisions, as fear often played a significant role in shaping their choices. The perceived control provided by ECS was seen as a way to reduce uncertainty and increase comfort for many women:

"Women think that a CS is better for the baby because there is no urgency. The idea of planning it makes them think that nothing bad can happen." (Obstetrician) (Study II)

Main interpretation

The findings from this study highlight a clear shift in the VBAC culture in Italy from 2012 to 2023, reflecting a transition from a "narrow" culture to a "wide" culture. This shift can be seen in several key areas, underpinned by changes in attitudes, practices, and the broader context in which clinicians operate.

In 2012, the focus of healthcare professionals involved in VBAC was largely individualistic. Clinicians were preoccupied with their own expertise, individual responsibilities, and concerns regarding VBAC. This "narrow" culture, more medical-centred, saw clinicians working in silos and feeling a heightened sense of individual responsibility. Their focus was on clinical parameters, risk management, and ensuring safety through individual knowledge and clinical competence. This is indicative of a culture where fears and individual responsibilities hindered effective teamwork and communication.

However, by 2023, there was a noticeable shift in perspective. Clinicians began to see themselves as part of a collective, women-centred process rather than isolated decision-makers. Over time, the understanding of VBAC moved from a focus solely on individual clinical competence to a broader, team-oriented approach involving multiple professionals, including obstetricians, midwives, and other healthcare providers. This change allowed clinicians to embrace a more collaborative, women-centred care model. They recognized that VBAC care was not simply about managing clinical risk but also about supporting women’s autonomy, empowering them to make informed choices about their care. This approach reflects the "wide" culture, which incorporates SDM, patient empowerment, and holistic care in VBAC practices.

The shift from the "narrow" culture (2012) to the "wide" culture (2023) can also be illustrated through the metaphor of a "staircase." In 2012, clinicians were positioned on the lower step, focused inwardly on their own responsibilities, anxieties, and clinical parameters. From this vantage point, they were isolated and struggled to see the broader

picture. By 2023, clinicians had moved to a higher step, where they could see the entire VBAC process from a wider perspective. They became more aware of their roles within a larger team, the importance of communication, and the value of collaboration in delivering comprehensive care to women. This reflects a deeper awareness of both individual and collective roles in VBAC care and the necessity of teamwork and collaboration to ensure the best outcomes for women.

Another notable change between 2012 and 2023 was the approach to safety. In 2012, the emphasis was primarily on meeting clinical parameters or guidelines for VBAC, often framed in a medical risk-focused, clinical terms. This is indicative of the "narrow" culture, where safety was largely understood in clinical, technical terms, and clinicians' personal beliefs and individual responsibilities played a significant role in decision-making.

In contrast, by 2023, the VBAC culture had evolved to encompass a more patient-centred, holistic approach. Clinicians no longer saw safety as solely about adhering to clinical guidelines, but rather about fostering a trusting, supportive relationship with women. They began to view safety through a broader lens that included emotional and psychological support. This shift highlights the growing recognition that VBAC care is not just about managing physical risks but also about addressing the psychological and emotional needs of women.

Furthermore, in 2012, there were concerns about a lack of specialized training and resources for VBAC management, leading many professionals to move away from labour ward work. The "narrow" culture was characterized by an individualistic focus on clinical expertise, often without sufficient institutional support or resources.

By 2023, the conversation shifted to include the importance of institutional support, adequate training, and resources. Clinicians recognized that to ensure the safe and effective management of VBAC, there needed to be a systemic approach that involved institutional backing, ongoing professional development, and adequate resources. This represents the "wide" culture, where the focus expanded to include institutional responsibility, comprehensive training, and an integrated approach to VBAC care.

The approach to addressing women’s needs also evolved between 2012 and 2023. In 2012, clinicians emphasized the importance of continuity of care and building trust through early discussions and debriefing after previous births, believing this would lead to successful VBAC outcomes. The "narrow" culture emphasized the need for information and continuity, with a focus on the clinical aspect of care.

By 2023, the focus expanded to recognize the emotional and psychological needs of women, particularly those who had experienced traumatic births. Clinicians began to realize the importance of addressing women’s fears, motivations, and emotional well-being. The "wide" culture expanded the focus from simply providing clinical information to actively

addressing women’s emotional needs and helping them navigate their fears, empowering them to make informed, confident choices about their care.

In summary, the shift from a "narrow" to a "wide" culture of VBAC care in Italy between 2012 and 2023 reflects a transformation in attitudes, practices, and the broader healthcare context. Clinicians have moved from an individualistic, medical-centric approach to a more collaborative, women-centred model of care that takes into account not only clinical safety but also the psychological and emotional needs of women. This cultural shift highlights the growing recognition that VBAC care is a dynamic, multifaceted process that involves both technical expertise and compassionate, holistic support.

2.3.4 Discussion

The results of our study reveal both similarities and differences between the two time points [Lundgren *et al.,* 2016; Study II], specifically in relation to clinicians' beliefs that shape evidence-based approaches to VBAC. These findings underscore a notable cultural shift regarding VBAC in Italy between 2012 and 2023, which can be characterized by a move from a narrow, individual-centred approach in 2012 to a wider, women-centred culture in 2023. In 2012, clinicians’ focus was largely medical and individualistic, while in 2023, professionals view themselves as contributors to a collective, process-oriented model that embraces women-centred care.

This shift aligns with findings by Lundgren *et al.* [2019], which highlight the cultural differences surrounding VBAC in countries with high and low VBAC rates, encompassing both structural and individual levels. These differences influence the professional role, the woman's role, and the decision-making process. In countries with high VBAC rates, the VBAC culture is 'pro-VBAC' at a structural level, supported by national guidelines and practices. In contrast, low VBAC rate countries exhibit a heterogeneous culture, where personal attitudes towards VBAC vary widely, often reflecting different individual and institutional approaches [Lundgren *et al.,* 2019]. Our study echoes these differences, as Italy’s VBAC culture evolved from clinician-centred, risk-driven care in 2012 to a more holistic, collaborative approach in 2023.

The complexity of decision-making around CS was confirmed by our findings, which suggest that the choice to undergo a CS may occur at different points in a woman's pregnancy from preconception to labour. Similarly, Chen *et al*. [2018] observed that this decision is often influenced by physicians and the woman's preferences, along with a range of external factors. Our study similarly underscores that VBAC-related decisions are multifaceted and involve both the medical team and the patient.

One significant change identified is the shift from the “midwife vs obstetrician” perspective to a more team-oriented approach. Clinicians in 2023 emphasized the importance of interprofessional collaboration, acknowledging the need for all professionals involved to embrace a shared mission and evolve together. This reflects a significant cultural change where communication, trust, and debriefing play a vital role in fostering a positive work environment and ensuring that decisions are not based on negative emotions or outdated practices.

These findings are consistent with earlier research suggesting that clear professional roles and effective communication between midwives and obstetricians contribute to better team collaboration [Lundgren *et al.,* 2015b]. As discussed in Chapter 1, in Italy, VBAC is typically the responsibility of obstetricians, but recent policy changes and laws [D.Lgs 15/2016; L. 3/2018; L.24/2017; Ministero della salute 2017; ISS 2012] have allowed for more independent roles for midwives, promoting a more collaborative approach. When talking about interprofessional collaboration it is important to remember that different professional cultures and discrepancies in mutual perceptions can be a barrier for effective interprofessional collaboration [Romijn *et al*., 2018]. In Italy in recent years this topic has been approached also at educational and training level. For example, through the promotion of pilot experiences of shared academic curricula between obstetricians and midwives [Morano *et al*., 2018b] and transversal strengthening of soft skills that can facilitate not only relationships with women but also between colleagues [Morano *et al*., 2018a].

Another key finding is that professionals have shifted from focusing on meeting specific clinical parameters to understanding that supportive care is central to VBAC success. Clinicians in 2023 emphasized the need for quality care, trust, and a supportive relationship with women, which according to Keedle *et al*. [2022] is integral to promoting VBAC. They discussed how the balance of the clinician-patient relationship, particularly whether it is balanced or unbalanced, can significantly impact the VBAC experience. Clinicians in our study pointed out various elements contributing to the quality of care, encompassing timely access/referral, maintaining continuity of care, and delivering EB information. Participants also reported the importance of fostering a trustworthy relationship between women and clinicians, grounded in respect, transparent, honest, and coherent communication, along with a commitment to professional ethics.

These results echo findings from Nilsson *et al*. [2017], who noted that guidance and support from clinicians, as well as be listened to and SDM, were key factors in improving VBAC rates. Similarly, McKelvin *et al*. [2021] highlighted that the that quality of care, support and the relationship built during labour and birth can potentially shape the birth experience [McKelvin et al., 2021] regardless of the mode of birth, influencing therefore other subsequent important mechanism [Gabbianelli *et al.,* 2020; Garthus-Niegel, *et al*., 2017].

Importantly, there was a clear shift in how the need of institutional support and resources was reported by clinicians. From concerns over a lack of training and expertise to a broader focus on systemic support for VBAC, which includes proper clinical training, organizational infrastructure, and medico-legal protection. This evolution reflects a move from a narrow, individual-based perspective to a more expansive, collaborative model, which considers the multifaceted challenges, both clinical and cultural, that affect the successful management of VBAC. These findings are consistent with study I that showed that the way in which clinicians, particularly obstetricians, are trained influences their confidence in supporting VBAC. Furthermore, systematic review on clinician-centred interventions to increase VBAC confirmed that an educational strategy delivered by an opinion leader significantly increased VBAC rates [Lundgren *et al*., 2015a].

In Italy individual regions are tasked with organizing and delivering healthcare services to their populations. This autonomy increased disparities between regions and contributed to the increase in the supply of private healthcare services. Moreover, Covid - 19 pandemic heavily impacted the country stretching and overwhelming the health systems while health care workers on the front line often felt the brunt of the emergency response [Wilson *et al*., 2021]. This context conducted to the exacerbation of some challenges associated with culture, including influence of social media, familiar influence on women, and conflicts of interest originating from private healthcare (where often VBAC are not presented as an option). On the other hand, some positive experiences showed significant increase of VBAC rate at local level [Monari *et al*., 2022] and at a national level a reduction in CS rates despite experiencing a marked increases in the percentage of childbearing women over 40 years of age [Euro-Peristat 2022].

Finally, between 2012 and 2023, there was a significant shift in how women's needs were addressed in the context of VBAC. What began as a focus on providing information to build confidence evolved into a broader, more holistic approach that included addressing emotional and psychological aspects of childbirth. This evolution reflects a cultural shift from a narrow, information-based approach to a more comprehensive model that emphasizes the importance of women's mental and emotional well-being in the decision-making process. Particularly, participants noted the importance of recognizing childbirth trauma and offering specific postpartum care to address these experiences. The recognition of obstetric violence and the growing awareness of the need for a positive birth experience aligns with international trends and contributes to the ongoing cultural change in Italy [d'Oliveira *et al.,* 2002; Parliamentary Assembly, 2019; Seefeld *et al.,* 2019; Webb *et al.,* 2021; WHO, 2018a].

For this study a qualitative approach was deemed appropriate due to the intricate nature of the phenomena being examined [Heaton, 2004]. Unique to our study is the focus

on clinicians' views about VBAC in the same setting after a decade. Utilizing data from prior studies allowed for the simultaneous gathering of information from multiple individuals, facilitating comparisons, contrasts, and discussions of cultural practices. Our interpretation of the change between the two periods (2012 and 2023) reflects a significant shift: an evolution from a more individualistic and clinically centred perspective to a more collective and systemic one. This shift is at the core of hermeneutics, which interprets how the culture of medicine and professional practices evolve not only through direct practices but also through language, emotions, and the relationships between professionals. In this sense, the shift from an individualistic (2012) to a more collective (2023) approach is not just a change in practices, but also a change in how "support" and "safety" have been reinterpreted and reorganized over time.

However, a notable limitation is that studies based on previous research can be somewhat detached from the participants' current experiences, precluding follow-up questions. [Sandelowski, & Barroso, 2007]. On the other hand, some researchers contributed to the OptiBIRTH study to varying degrees, providing a beneficial openness to the phenomena under study. Nonetheless, there is a potential limitation in that the researchers' familiarity with the original studies might hinder objectivity [Gadamer,2004; Thorne, 2008]. Moreover, it was not possible to isolate Italian results, as the results were reported collectively across Germany, Ireland and Italy. Instead, data from low VBAC countries were considered overall, which may have influenced the interpretation of findings by blending the experiences and perspectives from different cultural and healthcare contexts.

To mitigate this potential bias, several steps were taken in the analysis. First, a detailed description of the Italian healthcare setting was provided, highlighting specific cultural and professional characteristics that might affect attitudes towards VBAC and maternity care practices. Additionally, the analysis focused on quotes and data from Italian professionals, ensuring that the insights presented reflect the Italian context more accurately.

Overall, our findings show a shift in the VBAC culture in Italy from 2012 to 2023, moving from an individualistic, medical-centred approach to a more collaborative, women-centred model. This change highlights the complex interplay of factors, including professional roles, institutional support, and the clinician-patient relationship, that influence VBAC success. Moving forward, interprofessional collaboration, quality care, and women's empowerment will be key to further improving VBAC outcomes.

3 Conclusion

The objective of this doctoral research was to investigate and interpret changes in the attitudes of clinicians towards VBAC in Italy five years after the completion of the OptiBIRTH RCT study [Clarke *et al*., 2020]. To achieve this, we developed a national follow-up project on the OptiBIRTH study through a multi-phase approach. Specifically related to Italy, our project aimed to explore how and to what extent changes have occurred over time regarding clinicians' views, practices, and behaviours on VBAC and to interpret these changes from a cultural perspective. Considering the passage of time and its influence on health workers' attitudes, behaviours, and culture, our purpose was to analyse the key themes related to clinicians' views on VBAC. In this study, we chose to use the term “clinicians” consistently throughout, aligning with the methodology and framework of the original OptiBIRTH study Lundgren *et al.,* 2016]. This collective term was applied to encompass both midwives, obstetricians and medical residents, reflecting the integrated, team-based approach observed in our cultural analysis. By examining the group of clinicians as a whole, we aimed to capture shared cultural aspects and collaborative dynamics central to the Italian maternity care context. Where necessary, specific distinctions between professional roles were made to highlight differences in attitudes and practices.

The first step of this project involved a meta-synthesis to identify emerging themes related to clinicians’ perspective of VBAC from the OptiBIRTH conclusions. The findings of this study are encapsulated in the theme "*Can't save yourself alone*," a metaphor that highlights the challenges clinicians face. They recognize themselves as the main drivers during women's journeys of choosing and attempting a VBAC, while simultaneously experiencing inner and environmental pressures and a lack of resources. The study highlighted the need for effective communication, shared responsibility, and institutional support to overcome these barriers and improve VBAC outcomes. (study I).

Study II expanded on this foundation through a multicentre qualitative investigation into Italian perinatal professionals' views on VBAC. The five sites that took part in OptiBIRTH study (either as intervention or control site) were involved and material and methods were maintained coherent to the original OptiBIRTH study [Lundgren *et al*., 2016]. The findings revealed the importance of institutional support, work as a team , provide supportive care, and motivate women (study II) to improve VBAC rates. Study III further explored these themes using hermeneutic cultural analysis, uncovering a notable cultural shift between 2012 and 2023, moving from an individualistic, medical-centred approach [Lundgren *et al.,*2016; Clarke *et al*., 2020] to a more collaborative, women-centred model (study II). This change highlights the complex interplay of factors, including professional roles, institutional support, and the clinician-patient relationship, that influence VBAC success.

By 2023 the researchers met broader, more collaborative professionals with a women-centred care perspective. A practical focus on of these aspects emerged from the high participation in the meetings compared to that observed during OptiBIRTH [Lundgren *et al*., 2016], with nearly double the clinicians' attendance, the majority of whom were women, including medical residents and four out of five consultants obstetrician.

In our research, themes such as childbirth trauma, SDM, and trust and alliance with women clearly emerged from participants as essential factors for improving VBAC rate. The same concepts were only marginally discussed before the OptiBIRTH study [Lundgren *et al*., 2016]. Particularly, the concept of perinatal trauma has become evident not only through the insights gained from the OptiBIRTH study, but also after the pandemic. Our findings confirmed that the Covid-19 pandemic significantly affected the quality of maternal and newborn care in Italy, influencing VBAC practices and professionals described widely their experience during the three years of the pandemic. As for the purpose of this study we reported only the aspects that were related to study's aim but we acknowledge that future research could investigate the different phases of the pandemic more thoroughly. In line with Lazzerini *et al*. [2022] and Del Piccolo *et al*. [2021] our clinicians reported how higher workloads, reduced staff, and constantly changing protocols hindered the ability to provide one-to-one care. Conversely, some professionals found the pandemic as an opportunity to strengthen alliances with women in labour, while others observed that the absence of partners increased medicalization. Previous research [van den Berg *et al*., 2022] had shown how the pandemic represented an opportunity to rediscover valuable health assistance, compassionate care , and finally the importance of clinician's education regarding emotions, empathy and SDM.

Furthermore, clinicians acknowledged that SDM between healthcare professionals and patients is vital. This approach ensures that women are fully informed about their options and involved in the decision-making process, which can lead to more positive outcomes and a higher rate of VBAC. According to the consultants' comments, the OptiBIRTH study highlighted the importance of healthcare professionals working together as a team, acknowledging, and addressing the potential trauma experienced by women, as well as actively engaging them in discussions about their birth choices and providing compassionate care.

Collectively, these findings offer a comprehensive understanding of current clinicians' views on VBAC, as well as the cultural changes, albeit slow, that have taken place since the OptiBIRTH study, influenced by the context in which it occurred. This follow-up project on clinicians' views about VBAC does represent so far, the first "second look" focus in the same Italian sites after a decade and offers an interesting perspective. It also focuses

on the economic and non-economic political choices that have characterized Italian health service policies in the last decade.

The strength of this study lies in achieving a deeper understanding of clinicians' views and their evolutions during years about VBAC feasibility through a qualitative approach, suitable for the complexity of the phenomena.

However, some limitations must be acknowledged. In study I, potential biases include missing studies due to language limitations. In study II, one of the key limitations of this study is the use of the broader term **"**clinicians**"** to collectively refer to both midwives and obstetricians. While this terminology was chosen for consistency with the methodology and framework of the original OptiBIRTH study [Lundgren *et al.,* 2016], it may risk overlooking the distinct contributions and perspectives of each professional group. To address this, we revised sections of the analysis and conclusions to explicitly reference midwives and obstetricians where relevant, aiming to provide a clearer depiction of their individual roles and insights, as described in section 2.2.4.

We also recognize that potential group dynamics during focus group may have led to marginalize some of the participants, although the researcher's attention to including all participants and letting each one free to express own proper opinion. Additionally, the researchers carefully analysed the data to identify quotes and themes specific to each professional group, ensuring that everyone's perspectives were captured and presented. Furthermore, we emphasized the context of the Italian maternity care setting, where interdisciplinary collaboration is vital but may still reflect power imbalances between professional groups. Despite these efforts, we acknowledge that our approach may not fully eliminate the influence of dominant perspectives.

In study III, we acknowledge as significant limitation the inability to isolate findings specific to Italy of Lundgren *et al.* study [2016] is, as the results were reported collectively across Germany, Ireland and Italy. Instead, we considered data from low VBAC countries overall, which may have influenced the interpretation of our findings by blending the experiences and perspectives from different cultural and healthcare contexts. To mitigate this potential bias, we took several steps in our analysis, as presented in section 2.3.2.

Despite these limitations, the findings provide valuable context-specific insights that can inform practices in other settings, considering new contexts, times, and historical factors in a hermeneutic process. Our research confirms a relationship between VBAC rates and the organizational structure of maternity care, the level of collaboration between midwives and obstetricians, and the quality of care during pregnancy and childbirth.

In terms of clinical practice implications, insights from this study underscore the need for personalized counselling for women considering VBAC. Such counselling should address not only physical health concerns but also psychological aspects, including trauma

from previous CS, which has been shown to influence the decision-making process in subsequent births [Nilsson *et al.,* 2015; Nilsson *et al*., 2017]. In Italy, where VBAC rates remain relatively low, healthcare providers can support women more effectively by recognizing and addressing the multifaceted concerns that arise from previous experiences. These concerns can be particularly pronounced in a country where cultural attitudes toward VBAC may influence women's decision-making, thus emphasizing the importance of offering tailored, culturally sensitive support to empower women in making informed choices about their birth options.

Furthermore, the incorporation of trauma-informed care is crucial. A trauma-informed approach helps create a supportive environment for women who have experienced trauma [Vogel & Coffin, 2021]. In addition, emphasizing SDM enables clinicians to give women more control and involvement in their birth plans, reducing decisional conflict and regret associated with feeling uninformed [Megregian *et al*., 2020]. This is especially important in the Italian healthcare context, where CS are relatively high and VBAC is sometimes viewed with hesitation. Emphasizing SDM would ensure that women are not only informed but actively engaged in the decision-making process about their future pregnancies.

Moreover, the study highlights the need to enhance clinicians' confidence in supporting VBACs.. This could be achieved through targeted education and training programs that emphasize the safety and benefits of VBAC. Additionally, fostering interdisciplinary collaboration between obstetricians and midwives is essential for providing well-rounded, supportive care. This collaborative approach can help reduce the barriers that currently exist in Italy, ensuring a more unified and supportive care environment for women considering VBAC.

On a systemic level, the study highlights the need for policy interventions that aim to standardize VBAC counselling practices across the country. In Italy, where there are notable regional differences in maternity care, these policies could help ensure that all women, regardless of where they give birth, have access to the same level of information and support regarding VBAC. Standardizing care would also improve access to resources for clinicians and patients alike, making VBAC a more accessible option. Policies should also promote respectful maternity care and reduce systemic barriers to VBAC access.

Finally, ongoing education and training for healthcare providers, particularly obstetricians and gynaecologists, are essential for ensuring they remain up to date with EB practices and VBAC care guidelines. Continuous education can help address knowledge gaps and shifting attitudes regarding VBAC. Training programs should emphasize SDM, compassionate care, and the importance of supporting women in their childbirth decisions, regardless of their previous birth experiences.

In conclusion, the clinical implications of this study provide a comprehensive framework for improving care for women considering VBAC, especially within the Italian context. By addressing the emotional, psychological, and professional challenges involved, this study advocates for a more collaborative, informed, and supportive clinical environment. Ultimately, these changes could improve VBAC success rates, maternal satisfaction, and overall maternal health outcomes across Italy, through a combination of cultural shift, policy reforms, and continued professional education.

Looking ahead, future research could build on these insights by examining midwives and obstetricians as distinct categories, allowing for a more detailed exploration of their individual contributions and cultural perspectives. This approach could provide deeper insights into the unique cultural and professional dynamics of each group, enhancing the understanding of their specific contributions to maternity care practices.

Moreover, other areas for exploration include conducting in-depth qualitative studies to delve deeper into specific themes or sub-themes identified, examining the role of contextual factors in shaping clinicians' attitudes and practices related to VBAC, as well as focusing research efforts on women. Additionally, future research should consider replicating this study model in Ireland and Germany. This would allow researchers to observe potential changes in these countries following the OptiBIRTH intervention, providing a clearer understanding of its impact across different cultural and healthcare environments.

Lastly, knowledge translation efforts may involve developing educational resources for clinicians, policymakers, and pregnant women that highlight the importance of VBAC and provide EB guidance on supporting VBAC decision-making. Collaborative efforts involving stakeholders from diverse backgrounds could facilitate the implementation of VBAC-supportive practices and policies at both local and national levels.

Addressing local contexts is crucial for developing effective interventions to improve VBAC rates. Both maternity care settings and individual professionals must reflect on and adapt their VBAC culture to foster a pro-VBAC environment. Developing a pro-VBAC culture requires dynamic, context-specific strategies that integrate health planning measures to reduce medicalization. It is paramount to stress the importance of interdisciplinary collaboration and stakeholder engagement in addressing the multifaceted challenges surrounding VBAC. In addition to clinicians, involving policymakers, healthcare administrators, community leaders, and women themselves in the discourse and implementation of strategies to promote VBAC can yield comprehensive solutions.

The conclusions of this study provide a comprehensive summary of the main findings, offering a clear view of the research path undertaken. The results not only meet the initial objectives but also open new perspectives for further investigations and practical

applications in the field. In particular, the analysis of clinicians' views on VBAC and the cultural changes observed from OptiBIRTH to the present constitute a significant contribution to the existing literature and suggest important implications for future clinical practice.

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[1] All links were verified on 01/06/2024

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"*Coming together is a beginning. Keeping together is progress. Working together is success." Henry Ford*