Women's decision-making about mode of birth after a previous caesarean section

Abstract

Background Evidence on the safety and appropriateness of vaginal birth after caesarean (VBAC) appears clear, but knowledge about women's choice towards this mode of birth is limited. Aims To identify variables related to women's decision-making about whether to try for VBAC. Method and findings Cross-sectional study was conducted. Feelings of

Nethod and findings Cross-sectional study was conducted. Feelings of body failure towards the previous birth and the desire to have a vaginal birth were associated with maternal choice of VBAC. Women who perceived a repeated section as being dangerous for them opted for a VBAC (p=0.030). Opinion of women with the same experience and information found online were implicated into maternal decision-making. Conclusion This is the first Italian study to confirm that maternal choice is complex and involves many factors. Midwives and obstetricians should strive to provide an evidence-based midwifery care, in order to offer a VBAC as a safe birth option.

Keywords

Vaginal birth after caesarean | Caesarean section | Maternal decisionmaking | Midwifery care | Antenatal counselling

Simona Fumagalli

Principal lecturer at the midwifery degree course, University of Milano – Bicocca

Elisabetta Colciago (corresponding author) PhD student in public health, University of Milano – Bicocca

Laura Antolini

Associate professor, University of Milano – Bicocca

Sofia Perego

Registered midwife, University of Milano – Bicocca

Micaela Fiorasi Registered midwife, University of Milano – Bicocca

Valeria Fossati

Registered midwife, University of Milano - Bicocca and Fondazione MBBM

Antonella Nespoli

Research midwife, University of Milano – Bicocca

Patrizia Vergani

Medical doctor; associate professor, University of Milano – Bicocca and Fondazione $\ensuremath{\mathsf{MBBM}}$

espite the World Health Organization ([WHO], 2015) consensus that rate of caesarean section (c-section) should be between 10%–15%, because higher percentages are not associated with a tion in maternal and neonatal mortality that rate

reduction in maternal and neonatal mortality, that rate has staidly risen in Italy from 11.2% in 1980 to 34.9% in 2015 (Basili et al, 2018).

An important factor contributing to the rising rates of c-sections is a repeated surgical birth following a previous c-section, although the risks are considered higher than with vaginal birth (Tan et al, 2007). In order to promote a reduction of c-section rate, it is essential to prevent primary caesarean birth (American College of Obstetricians and Gynecologists, 2014) and to promote vaginal birth after caesarean (VBAC), supporting women who opt for it (National Institute of Health and Care Excellence [NICE], 2011; Royal College of Obstetricians and Gynaecologists, 2015).

National (Istituto Superiore di Sanità [ISS] and Sistema Nazionale Linee Guida [SNLG], 2010) and international (NICE, 2011) guidelines recommend vaginal birth to the majority of women with a singleton pregnancy of cephalic presentation at 37^{+0} weeks or beyond who have had a single previous lower segment caesarean delivery with or without a history of previous vaginal birth. Evidence reported that the success rate for women opting VBAC is around 75% (Bais et al, 2001; Landon et al, 2004), increasing to 90% for women who already had a vaginal birth or a VBAC (Gyamfi et al, 2004).

Despite the recommendations and evidence on the high rates of VBAC, Italy has one of the lowest rates of VBAC at 11.3%, with 88.6% of women who had a prior c-section choosing to repeat it (Euro-Peristat Project, 2018). Evidence on the safety and appropriateness of VBAC appears clear, but knowledge about women's choice towards this mode of birth is limited (Lundgren et al, 2012). The NICE (2011) guidelines recommend that decision-making on mode of birth after a c-section should consider maternal preferences and priorities, as well as risks and benefits of both mode of birth. A Cochrane systematic review evaluated any decision support

	Variables	Overall (n=76)		VBAC (<i>n</i> =48)		ERCS (<i>n</i> =28)		p-value	Minimum delta (%)
		Mean	SD	Mean	SD	Mean	SD		
	Maternal age (years)	35.6	5.0	35.6	4.8	35.5	5.3	0.9418	3.4
	BMI (kg/m²)	24.2	5.2	24.1	5.9	24.5	3.7	0.7136	3.1
Socio-		n	%	n	%	n	%		
demographic	University degree	47	61.0	27	56.2	20	69.0	0.268	29.2
	Employed (yes)	55	72.4	40	83.3	15	53.6	0.005	
	Married (yes)	62	80.6	44	91.7	18	62.1	0.001	
		n	%	n	%	n	%		
Previous	Parity (primiparous)	69	90.8	44	91.7	25	89.3	0.729	27.7
obstetric history	Only one previous c-section (yes)	66	86.8	44	91.7	22	78.6	0.103	27.7
	Stillbirth (yes)	2	2.6	1	2.1	1	3.6	0.696	23.1
Current obstetric history	MAP (yes)	3	3.9	1	2.1	2	6.90	0.290	23.1
	Continuity of care (yes)	50	65.8	29	60.4	21	75.0	0.196	28.0
	Complication in pregnancy (yes)	36	46.7	20	41.7	16	55.2	0.250	32.1

Table 1. Socio-demographic variables, previous and current obstetric history according to maternal

VBAC = vaginal birth after caesarean; ERCS = elective repeated caesarean section; c-section = caesarean section; BMI = body mass index

intervention that could affect mother's decision-making on mode of birth after a c-section (Horey et al, 2012). None of the interventions considered appeared to influence women's decision.

Other studies examined which variables are implicated in this choice and highlighted the complexity of factors influencing women's decision-making (Lundgren et al, 2012). Given the limited evidence on this issue and the need to understand the elements that would support women during their choice, we conducted a study with the aim of identifying variables related to women's decision-making about whether to choose VBAC.

Method Design

Cross-sectional study.

Setting

The research site is an obstetric unit, level two, Italian maternity hospital, with approximately 2600 births per year and aVBAC rate of 52.3%, as per an internal report conducted by the research setting. Pregnant women who experienced one previous c-section are booked into a dedicated clinic at 34 weeks' gestation. Here, they received evidenced-based information about birth after a previous c-section from an obstetrician.

Women who were looked after by an obstetrician working at the research site or women who get in contact with the research site's clinics with the aim to attempt a VBAC, attended the meeting at 34 weeks. Among them, we selected participants who met the inclusion criteria. At the time of the study, women with a previous c-section could only have obstetrician-led care during pregnancy.

Research

Table 2. Wome	Table 2. Women's perception on previous c-section according to maternal choice on mode of birth									
	Variables	Overall	(<i>n</i> =76)	VBAC ((n=48)	ERCS	(<i>n</i> =28)	p-value	Minimum delta (%)	
	Type of previous c-section	N	%	N	%	N	%			
	Elective c-section	19	24.7	14	29.2	5	17.9		23.9	
	Emergency (antenatal)	16	20.8	10	20.8	6	21.4	0.425		
	Emergency in labour	40	51.9	24	50.0	16	57.1			
Outcomes	Don't remember	1	1.30	0	0.00	1	3.6			
	Considered as needed by women (yes)	69	90.8	43.0	89.6	26.0	92.9	0.634	28.7	
	Breasfeeding (exclusive)	40	53.3	26.0	54.2	14.0	51.8	0.847	29.8	
		Mean	SD	Mean	SD	Mean	SD			
	Recovery	5.2	2.8	4.5	2.55	5.18	2.8	0.254	1.8	
		N	%	N	%	N	%			
	My body failed (4–5)	20	26.3	18	37.5	2	7.1	0.004		
	l lost control (4–5)	14	18.4	11	22.9	3	10.7	0.186	32.1	
Personal characteristics	l wasn't able (4–5)	22	28.9	14	29.2	8	28.6	0.956	32.6	
	Maternal satisfaction (4–5)	15	19.7	5	10.4	10	35.7	0.008		
	Maternal satisfaction with feeding (4-5)	46	61.3	27	56.2	19	70.4	0.228	29.2	
Other	Partner involved in decision- making (4–5)	12	16.0	7	14.9	5.18	17.9	0.735	30.4	
Julei	Healthcare professionals failed (4–5)	9	11.8	5	10.4	4	14.3	0.615	28.7	

VBAC = vaginal birth after caesarean; ERCS = elective repeated caesarean section; c-section = caesarean section; BMI = body mass index

Sample

Through a convenient sampling method, participants were recruited from women with a previous c-section who were booked to attend the meeting at 34 weeks. Exclusion criteria: more than two previous c-sections, previous longitudinal segment c-section; women with other obstetric or medical reasons that would preclude a vaginal birth; women unable to read and speak Italian sufficiently to understand the information leaflet, and to read and complete the questionnaire; women who did not return a signed consent form. The study included 76 women, who were divided into two groups based on their choice about the mode of birth; an elective repeated c-section (ERCS) or a VBAC.

Recruitment

The recruitment process lasted five months, from February to July 2018. Women were approached to participate in the research during the third trimester of pregnancy by the obstetrician involved in their antenatal care.

The obstetricians were informed about the study and were asked to provide the information sheet to the women, where they could find the research midwife's contact details. Otherwise, the women could ask to be phoned back by the researcher. When the researcher could speak with the women, she explained their involvement in the study, asked if they agreed to participate in the study, and if they were available to sign the consent form.

Data collection tools

Data were collected using a questionnaire, developed following a review of the existing literature. Participants completed the questionnaire immediately before the appointment with the obstetrician at 34 weeks. They returned the questionnaire to the researcher as soon as they finished it. The questionnaire contained 38 closed questions and was divided into two sections: information on previous pregnancy and previous c-section; information of current pregnancy.

The questionnaire included items with different response options: six multiple choices questions addressing memories about the type and the reason of the previous c-section; whether they had the perception that the c-section was needed; choice about infant feeding during the previous experience; healthcare suggestion on mode of birth after c-section; maternal wishes on mode of birth.

Five numeric rating scales measured how quickly women recovered from c-section, ranging from 'very slow' (=0) to 'very quick' (=10), and to evaluate mother's risk perception regarding an ERCS and a VBAC, both on women's and baby's health, ranging from 'very low' (=0) to 'very high' (=10); 17 responses using a five-point Likert (1932) scale to assess the agreement level with some statements.

These types of questions addressed information received during the previous pregnancy, eg 'I was well informed about the pregnancy or labour potential complications and when a c-section could be needed'; information regarding the previous experience, eg 'My partner was involved during the decision-making about c-section', 'I got the perception that my body failed to give birth' or 'I am satisfied with the previous birth experience'; questions on professional and informal information sources that could influence women's decision-making on mode of birth after c-section, eg 'My partner influenced my decision on mode of birth' or 'The information found online influenced my decision on mode of birth'; maternal expectations, eg 'Having a VBAC is important to me'. The response categories on the five-point Likert (1932) scales ranged from 'do not agree at all' (=1) to 'totally agree' (=5).

Socio-demographic variables and outcomes of current labour and birth were collected by the researcher from the medical electronic records and the birth register.

Statistical analysis

Data were analysed using Stata/MP version 15.0. Descriptive analysis of socio-demographic characteristics, previous and current obstetric history, and intrapartum outcomes variables were obtained by means and standard deviations (continuous variables), and by percentages (categorical variables). The five-point Likert scale questions' score was dichotomised between 'no agreement' (score from 1–3) and a 'high agreement' (score from 4–5) with the statement. The numeric rating scales to evaluate mother's risk perception regarding an ERCS and aVBAC, both on women's and baby's health was also dichotomised between 'perception of low risk' (score from 0–6) and 'perception of high risk' (score from 7–10).

A descriptive analysis was performed separately on ERCS and VBAC groups. In addition, a comparison between groups was performed using a T-student test for continuous variables and a Chi-Square test for dichotomous variables with a 5% significance level to evaluate the *p*-values. To improve understanding of nonsignificant *p*-values, we calculated the minimum distance between the population average (for continuous variables) or population percentage (for categorical variables), such as the power of the hypothesis testing is equal to 80%. In case of dichotomous variables, the percentage observed into the VBAC group was considered the reference number to calculate the minimum distance.

A logistic regression model was performed to relate variables considered into the questionnaire to women's choice on mode of birth. A p-value (<0.05) was considered statistically significant.

Results

A total of 115 women with a previous c-section were screened for the eligibility criteria (*Figure 1*). A total of 76 women were included in the study, among them 48 (63.16%) chose a VBAC and 28 (36.84%) opted for a c-section. *Table 1* shows socio-demographic variables, previous and current obstetric history according to maternal choice on mode of birth.

A significant difference between groups was found only for the marital status (p=0.001) and the employment status (p=0.005). None of the variables considered in the previous or current obstetric history showed to be significant to this study.

Table 3. Factors related to the current pregnancy according to maternal choice on mode of birth										
	Variables	Overall (n=76)		VBAC (<i>n</i> =48)		ERCS (<i>n</i> =28)		p-value	Minimum delta (%)	
		N	%	N	%	N	%			
	Recommended ERCS (yes)	57	82.6	42	95.5	15	60.0	0.000		
Information/ counselling	Involvement in decision-making	30	41.1	17	37.8	13	46.4	0.465	32.5	
councerning	Enough information/ counselling	43	58.1	25	54.4	18	64.3	0.401	29.7	
	Maternal wishes	N	%	N	%	N	%			
	Vaginal birth experience (4–5)	45	62.5	39	84.8	6	23.1	0.000		
	Early bonding and feeding (4–5)	59	81.9	41	89.1	18	69.2	0.035		
Personal expectations	Quick recovery after birth (4–5)	70	94.6	45	97.8	25	89.3	0.115	23.2	
	Risk perception	N	%	N	%	N	%			
	VBAC for mother	25	32.9	13	27.1	12	42.9	0.158	32.5	
	VBAC for baby	18	23.7	9	18.7	9	32.2	0.185	31.4	
	ERCS for mother	34	44.7	26	54.2	8	28.6	0.030		
	ERCS for baby	12	15.8	10	20.8	2	7.1	0.114	31.8	
		N	%	N	%	N	%			
Influencing	Partner (4–5)	10	13.2	7	14.6	3	10.7	0.630	30.3	
	Family (4–5)	9	11.8	7	14.6	2	7.1	0.333	30.3	
	Midwife (4-5)	19	25.7	14	29.2	5	19.2	0.350	32.6	
factors	Obstetrician (4–5)	18	24.0	12	25.5	6	21.4	0.687	32.4	
	Women with same experience (4–5)	14	18.7	14	29.2	0	0.0	0.002		
	Online (4–5)	13	17.3	13	27.1	0	0.0	0.003		

VBA C= vaginal birth after caesarean; ERCS = elective repeated caesarean section; c-section = caesarean section; BMI = body mass index

Women's perception on previous c-section according to maternal choice on mode of birth is reported in *Table 2*. There was no relationship between the type of previous c-section and current maternal choice on mode of birth. The majority of the participants (90.79%) perceived that their previous c-section was needed, therefore there was a clinical reason for it.

A small number of women, 19.7% (*Table 2*), expressed their high satisfaction with the previous birth experience with a score between 4-5 (high

agreement with the statement into the questionnaire). Among them, women who were satisfied with their previous c-section chose to repeat it. Maternal personal characteristics as the feelings of body failure towards the previous birth (p=0.004) and maternal satisfaction with the previous experience (p=0.008) were two influencing factors of women's choices.

Another interesting variable evaluated into the questionnaire was the lack of control during the previous experience. Although findings did not show significance, 18.4% of women expressed a sense of loss of control during the previous birth. Among them, 22.9% opted for a VBAC, on the contrary only 10.7% planned an ERCS.

Factors related to the current pregnancy according to maternal choice on mode of birth are reported in *Table 3*. Most participants (82.6%) perceived that an ERCS was recommended by their obstetrician during pregnancy, with a statistically significant difference between the two groups (95.4% vs 60.0%; p=0.000), a higher percentage was observed in the VBAC group. Women with a greater desire to have a vaginal birth and the participants who considered an early bonding and feeding to be important were more likely to choose a VBAC (p=0.000; p=0.035, respectively).

The four items assessing women's risk perception of both mode of birth in relation to their health and the wellbeing of their baby showed interesting findings. Women perceiving an ERCS as being dangerous for them, more often opted for aVBAC (p=0.030).The three remaining rating scales did not reach significance, however, we could observe that maternal choice on mode of birth followed a trend associated with the risk perception expressed for the baby's health.

When women perceive VBAC to be a risky option for their baby, they more often opt for a ERCS (18.7% vs 32.1%, respectively). On the contrary, women who expressed a high risk for their baby in case of ERCS were more likely to try for a VBAC to avoid another c-section (20.8% vs 7.1%, respectively).

Finally, other factors, such as the opinion of other women with the same birth experience and information found online, appeared to be significantly implicated into maternal decision-making. Participants who reported that these two variables influenced their choice were found only in the VBAC group (women with the same experience: p=0.002; information found online: p=0.003).

Findings emerged from the logistic regression model about factors related to maternal request of VBAC and are reported in *Table 4*. Women's perception of previous c-section as the feelings of body failure towards the previous birth was an independent factor associated with maternal choice of VBAC (OR= 5.76; CI 95%: 1.175-28.244 in *Table 4*). Among the variables related to the current pregnancy, the logistic regression model showed that a maternal desire to have a vaginal birth was the only one to remain independently associated with the maternal request of VBAC (OR= 8.82; CI 95%: 2.147-36.205 in *Table 4*).

Among the 76 participants, 30 (39.5%) women had a spontaneous labour, 13 (17.1%) had an induction of labour and 33 (43.4%) performed an ERCS (*Figure 2*). Intrapartum outcomes are reported in *Table 5*, according to mode of onset of labour. No clinical or subclinical uterine ruptures occurred among participants.

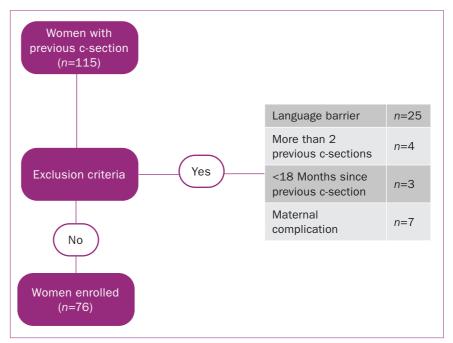


Figure 1. Sample size flow chart

Discussion

To our knowledge, this is the first Italian study to confirm that maternal choice of mode of birth after c-section is complex and involves many factors. Items included in the questionnaire were linked to women's socio-demographic characteristics, previous and current obstetric history, women's perception on previous c-section, and current pregnancy experience.

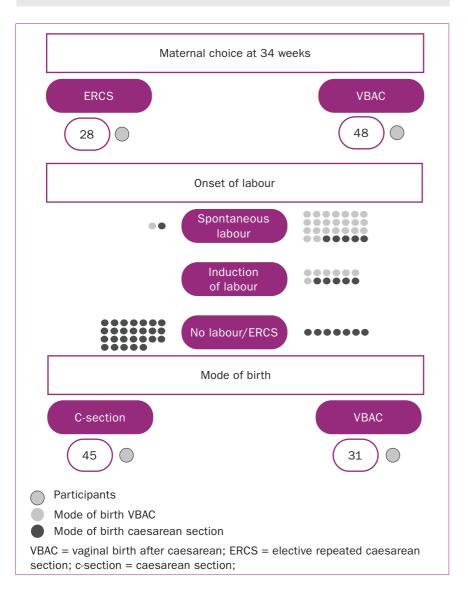
Our findings showed that the clinical aspects of previous c-section (ie previous emergency or elective c-section) were not involved in maternal decision-making, while women's feelings regarding the previous experience played an important role in maternal choice. Moreover, women's desire to have a VBAC could be explained as the maternal willingness to 'heal' physically and emotionally from a previous experience (Dahlen and Homer, 2013; Bonzon et al, 2017; Chen et al, 2017). Mothers who express a strong desire to achieve a natural birth view this experience as a significant aspect of their femininity and a major life event for a woman (Phillips et al, 2010).

It is acknowledged that women's childbirth experience could influence future reproductive choices (Gottvall and Waldenström, 2002; Waldenström et al, 2004; Britton, 2006; Larkin et al, 2012). Although our study did not investigate this particular aspect, literature suggests that birth interventions may cause physical and emotional trauma that can have a significant impact on some women (Keedle et al, 2015; Hollander et al, 2017), perhaps in such case, leaving them with a strong wish in attempting a VBAC during a following pregnancy (Dahlen and Homer, 2013; Bonzon et al, 2017; Chen et al, 2017).

Table 4. Logistic regression model relating maternal choice on mode of birth on a) women's perception on previous c-section, b) current pregnancy

	Variables	Odds ratio	95%	% CI	p-value
	My body failed (4–5)	5.76	1.17	28.24	0.031
a)	Maternal satisfaction (4–5)	0.32	0.09	1.11	0.072
	Recommended ERCS (yes)	4.08	0.62	26.78	0.143
b)	Vaginal birth experience (4–5)	8.82	2.15	36.20	0.003
	Early bonding and feeding (4–5)	2.01	0.39	10.43	0.406
	ERCS for mother	2.19	0.54	8.88	0.272

C-section = caesarean section; ERCS = elective repeated caesarean section



Our research showed that women with a lower birth satisfaction in regard to the previous experience prefer to attempt a VBAC. Although our results did not reach significance, there is a trend towards a relationship between a high perception of loss of control and a lower birth satisfaction as amply demonstrated by the literature (Bayes et al, 2008; Brodrick, 2008; Goldbort, 2009; DeLuca and Lobel, 2014; Hildingsson, 2015; Hollander et al, 2017; Downe et al, 2018).

A feeling to have lost control over the previous birth process and a previous negative birth experience could potentially be implicated with maternal desire to have a vaginal birth which, in this study, is the only independent factor influencing maternal decision-making to opt for a VBAC. The same could be observed when considering the variable linked to the previous infant feeding experience.

This was not as relevant as the maternal desire to live the opportunity of an early bonding and feeding with the baby during this pregnancy. This study finds the research setting, such as the majority of the Italian maternity units, do not provide skin-to-skin contact when a c-section occurs. The absence of this important practice could lead participants to choose a VBAC in order to meet their baby immediately after birth.

Our study is the first exploring women's risk perception towards two different mode of birth after a previous c-section (VBAC vs ERCS), both with respect to the mother's and baby's health. The four numeric rating scales adopted to measure maternal risk perception, namely the risk of VBAC for the mother; the risk of VBAC for the baby; the risk of ERCS for the mother; the risk of ERCS for the baby, showed that the participants feel there could be a risk in both mode of birth for themselves and their baby.

Women expressed to feel a higher risk for their wellbeing when compared to the risk perceived for their baby in relation to both the VBAC and the ERCS. It is reasonable to assume that this risk perception could be due to thoughts and feelings women have regarding their previous child at home, as all participants were multiparous.

Women who perceived an ERCS as a riskier option for their health were more likely to opt for a VBAC this remained the factor independently associated with maternal choice of mode of birth. Although findings are not significant, it seems data showed that there is a sort of 'protection' toward the baby. When participants perceive a high risk for either the VBAC or ERCS in relation to the baby's health, they tend to choose the birth option they feel safer for the baby.

Although, attitude and support from healthcare professionals, continuity of care, and information received during pregnancy – especially when evidence-based –

	Spontaneous labour (<i>n</i> =30	Overall (<i>n</i> =76)		IOL (<i>n</i> =13)		ERCS (n=33)		p-value
	Mode of birth	n	%	n	%	n	%	
	Vaginal	23	76.7	8	61.5	N/A	N/A	0.310
	C-section in labour	7	23.3	5	38.5	N/A	N/A	
Outcomes	Epidural analgesia (yes)	14	46.7	6	46.2	N/A	N/A	0.975
	PPH \geq 500 mL (yes)	14	46.7	2	15.4	14	42–4	0.051
	Apgar <7 at 5 min	1	3.3	0	0.0	0	0.0	0.505

IOL = induction of labour; ERCS = elective repeated caesarean section; c-section = caesarean section; PPH = postpartum haemorrhage

could play a significant role in maternal decision to opt for aVBAC, our study showed different results (McGrath et al, 2010; Flannagan and Reid, 2012; Lundgren et al, 2012; Dahlen and Homer, 2013; Martin et al, 2014; Nilsson et al, 2015).

Even though participants were not influenced by their obstetrician's opinion, more than 82% of them reported that their doctor recommended to have an ERCS which is in contrast to the evidence (Dahlen and Homer, 2013; Nilsson et al, 2015). Previous studies (Godden et al, 2012; Lundgren et al, 2012; Dahlen and Homer, 2013) reported that often the communication with caregivers could be highly risk-oriented, leading to a lack of trust expressed by the woman with feelings of decisional conflicts and insecurity, generating fear in women who want to make the right choice for them (Godden et al, 2012; Lundgren et al, 2012; Dahlen and Homer, 2013).

This could be the reason why women choose the research site as their birth place, as it is known as a maternity unit in favour of VBAC. Participants most likely want to seek professional information about the mode of birth after a c-section in a supportive environment (Godden et al, 2012; Lundgren et al, 2012; Dahlen and Homer, 2013).

In contrast with the prior evidence, family and friends' opinion were not implicated in maternal choice (Lundgren et al, 2012; Dexter et al, 2014; Scaffidi et al, 2014; Nilsson et al, 2015; Munro et al, 2017). Women rated as important the experience of other women (ISS and SNLG, 2010; Konheim-Kalkstein et al, 2014) and information found online (Frost et al, 2009; Dexter et al, 2014), both these factors in accordance with other research, appeared to be implicated into maternal decision-making.

An unsupportive system could lead women who would prefer a VBAC to seek information about it themselves by, for example, searching the online and by meeting women who had experienced VBAC (Godden et al, 2012; Dahlen and Homer, 2013; Nilsson et al, 2015). Although this information sources lead women to opt for a VBAC offering them the opportunity to share their experiences, our findings invite healthcare professionals to recognise VBAC as a valid birth choice. Evidencebased information should be provided during counselling and women should be supported in their choice with the aim to offer a positive experience of birth (WHO, 2018).

The small sample size didn't allow to observe a high number of significant data, nonetheless we could confirm the findings of previous studies regarding the factors involved in maternal decision-making on mode of birth after a c-section. The questionnaire adopted is not without limitation. It consists of closed questions which could evoke ideas that the respondents would not otherwise have or it could comprise answers that would not be the first choice for the participants.

Further research is recommended to strengthen the results in this study; this is especially important when considering the Italian context where there is a high-risk culture surrounding childbirth (Rota et al, 2017; Euro-Peristat Project, 2018) and where very few women with a previous c-section are supported and informed to opt for a VBAC.

From our findings, the majority of women perceived their previous c-section as being appropriate, however, maternal desire to experience a vaginal birth remains their focus. This could be lived as a redemption from a previous feeling of failure. Data showed that skin-toskin contact appeared to be relevant for the mothers in this study.

Women should make their choice based on evidencebased information that recommend to offer a VBAC when there are no other risk factors to preclude a vaginal birth, rather than on a previous negative experience. Midwives and obstetricians should strive to provide

Key points

- Women's feelings of failure regarding the previous birth and the maternal desire to have a vaginal birth were independent factors associated with maternal choice of vaginal birth after caesarean (VBAC). This could be explained as the maternal willingness to 'heal' physically and emotionally from a previous experience
- Maternal choice of VBAC is related to the desire to experience an early bond with the baby during the pregnancy
- It seems that women are aware only about risks related to an elective repeated caesarean c-section (ERCS) for themselves, without considering that there are disadvantages also for their baby
- Despite participants not being influenced by their obstetrician's opinion, more than 82% of them reported that their doctor recommended having an ERCS, which is in contrast to the evidence

an evidence-based midwifery care to every women and child without differences based on previous mode of birth. Furthermore, healthcare professional should improve their individualised counselling in order to offer aVBAC as a safe birth option for women and babies. BJM

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- American College of Obstetricians and Gynecologists. Obstetric care consensus. Safe prevention of the primary cesarean delivery. 2014; 210(3):179–193. https://doi.org/10.1016/j. ajog.2014.01.026
- Bais JM, van der Borden DM, Pel M, Bonsel GJ, Eskes M, van der Slikke HJ, Bleker OP.Vaginal birth after caesarean section in a population with a low overall caesarean section rate. European Journal of Obstetrics and Gynecology and Reproductive Biology. 2001; 96(2):158–162. https://doi.org/10.1016/S0301-2115(00)00416-4
- Basili, Messia, Montorio, Tamburini. Certificato di assistenza al parto (CeDAP) Analisi dell'evento nascita – Anno 2015. 2018. http://www.salute.gov.it/portale/documentazione/p6_2_2_1. jsp?lingua=italiano&id=2766 (accessed 21 September 2018)
- Bayes S, Fenwick J, Hauck Y.A qualitative analysis of women's short accounts of labour and birth in a western Australian public tertiary hospital. Journal of Midwifery and Women's Health. 2008; 53(1):53–61. https://doi.org/10.1016/j. jmwh.2007.07.021

- Bonzon M, Gross MM, Karch A, Grylka-Baeschlin S. Deciding on the mode of birth after a previous caesarean section – an online survey investigating women's preferences in western Switzerland. Midwifery. 2017; 50:219–227. https://doi. org/10.1016/j.midw.2017.04.005
- Britton JR. Global satisfaction with perinatal hospital care: stability and relationship to anxiety, depression, and stressful medical events. American Journal of Medical Quality. 2006; 21(3):200–205. https://doi. org/10.1177/1062860606287191
- Brodrick A. Exploring women's pre-birth expectations of labour and the role of the midwife. Evidence-Based Midwifery. 2008; 6(2):65–70
- Chen M-M, McKellar L, Pincombe J. Influences on vaginal birth after caesarean section: a qualitative study of Taiwanese women. Women and Birth. 2017; 30(2):e132–e139. https:// doi.org/10.1016/j.wombi.2016.10.009
- Dahlen HG, Homer CSE. 'Motherbirth or childbirth'? A prospective analysis of vaginal birth after caesarean blogs. Midwifery. 2013; 29(2):167–173. https://doi.org/10.1016/j. midw.2011.11.007
- DeLuca RS, Lobel M. Diminished control and unmet expectations: testing a model of adjustment to unplanned cesarean delivery: adjustment to cesarean delivery. Analyses of Social Issues and Public Policy. 2014; 14(1):183–204. https://doi.org/10.1111/asap.12040
- Dexter S, Windsor S, Watkinson S. Meeting the challenge of maternal choice in mode of delivery with vaginal birth after caesarean section: a medical, legal and ethical commentary. BJOG. 2014; 121(2):133–140. https://doi. org/10.1111/1471-0528.12409
- Downe S, Finlayson K, Oladapo O, Bonet M, Gülmezoglu AM. In: Norhayati MN (ed). What matters to women during childbirth: a systematic qualitative review. PLOS ONE. 2018; 13(4):e0194906. https://doi.org/10.1371/journal. pone.0194906
- Euro-Peristat Project. European Perinatal Health Report. Core indicators of the health and care of pregnant women and babies in Europe in 2015. 2018. https://www.europeristat. com/images/EPHR2015_Euro-Peristat.pdf accessed 12 February 2019)
- Flannagan C, Reid B. Repeat CS or VBAC? A systematic review of the factors influencing pregnant women's decision-making processes. 2012; 10(3):80–86
- Frost J, Shaw A, Montgomery A, Murphy D. Women's views on the use of decision aids for decision making about the method of delivery following a previous caesarean section: qualitative interview study. BJOG. 2009; 116(7):896–905. https://doi.org/10.1111/j.1471-0528.2009.02120.x
- Godden B, Hauck Y, Hardwick T, Bayes S. Women's perceptions of contributory factors for successful Vaginal Birth After Cesarean. International Journal of Childbirth. 2012; 2(2):96–106. https://doi.org/10.1891/2156-5287.2.2.96
- Goldbort JG. Women's lived experience of their unexpected birthing process. MCN. 2009; 34(1). https://doi. org/10.1097/01.NMC.0000343867.95108.b3
- Gottvall K, Waldenström U. Does a traumatic birth experience have an impact on future reproduction? BJOG. 2002; 109(3):254– 260. https://doi.org/10.1111/j.1471-0528.2002.01200.x
 Gyamfi C, Juhasz G, Gyamfi P, Stone J. Increased success of
- trial of labor after previous vaginal birth after cesarean.

Obstetrics and Gynecology. 2004; 104(4):715–719. https:// doi.org/10.1097/01.AOG.0000139516.43748.1b

- Hildingsson I. Women's birth expectations, are they fulfilled? Findings from a longitudinal Swedish cohort study. Women and Birth. 2015; 28(2):e7–e13. https://doi.org/10.1016/j. wombi.2015.01.011
- Hollander MH, van Hastenberg E, van Dillen J, van Pampus MG, de Miranda E, Stramrood CAI. Preventing traumatic childbirth experiences: 2192 women's perceptions and views. Archives of Women's Mental Health. 2017; 20(4):515– 523. https://doi.org/10.1007/s00737-017-0729-6
- Horey D, Davey M-A, Small R, Kealy M, Crowther CA. Interventions for supporting women with decisions about mode of birth in a pregnancy after caesarean birth. Cochrane Database of Systematic Reviews. 2012. http:// doi.wiley.com/10.1002/14651858.CD010041
- Istituto Superiore di Sanità and Sistema Nazionale Linee Guida. Taglio cesareo: una scelta appropriata e consapevole. LINEA GUIDA 19. 2010. http://www.salute.gov.it/ imgs/C_17_pubblicazioni_1330_allegato.pdf (accessed 12 February 2019)
- Keedle H, Schmied V, Burns E, Dahlen HG. Women's reasons for, and experiences of, choosing a homebirth following a caesarean section. BMC Pregnancy and Childbirth. 2015; 15(1). https://doi.org/10.1186/s12884-015-0639-4
- Konheim-Kalkstein Y, Barry MM, Galotti K. Examining influences on women's decision to try labour after previous caesarean section. Journal of Reproductive and Infant Psychology. 2014; 32(2):137–147. https://doi.org/10.1080/ 02646838.2013.875133
- Landon MB, Hauth JC, Leveno KJ, Spong CY, Leindecker S, Varner MW, Moawad AH, Caritis SN, Harper M, Wapner RJ, Sorokin Y, Miodovnik M, Carpenter M, Peaceman AM, O'Sullivan MJ, Sibai B, Langer O, Thorp JM, Ramin SM, Mercer BM, Gabbe SG. Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery. New England Journal of Medicine. 2004; 351(25):2581– 2589. https://doi.org/10.1056/NEJMoa040405
- Larkin P, Begley CM, Devane D. 'Not enough people to look after you': an exploration of women's experiences of childbirth in the Republic of Ireland. Midwifery. 2012; 28(1):98–105. https://doi.org/10.1016/j.midw.2010.11.007
- Likert, R.A technique for the measurement of attitudes. Archives of Psychology. 1932; 140:1–55
- Lundgren I, Begley C, Gross MM, Bondas T. 'Groping through the fog': a metasynthesis of women's experiences on VBAC (vaginal birth after caesarean section). BMC Pregnancy and Childbirth. 2012; (12)85. https://doi.org/10.1186/1471-2393-12-85
- Martin T, Hauck Y, Fenwick J, Butt J, Wood J. Evaluation of a next birth after caesarean antenatal clinic on women's birth intention and outcomes, knowledge, confidence, fear. Evidence Based Midwifery. 2014; 12(1):11–15
- McGrath P, Phillips E, Vaughan G. Vaginal birth after Caesarean risk decision-making: Australian findings on the mothers' perspective. International Journal of Nursing Practice. 2010; 16(3):274–281. https://doi.org/10.1111/j.1440-172X.2010.01841.x

Munro S, Janssen P, Corbett K, Wilcox E, Bansback N, Kornelsen J. Seeking control in the midst of uncertainty: Women's experiences of choosing mode of birth after

CPD reflective questions

- Could previous childbirth experience influence future reproductive choices?
- Could a previous caesarean birth experience be implicated into women's choice for future births?
- Do midwives provide evidence-based information to women, in order to support them in their choice?
- Are women aware of potential risks and benefits of a repeated caesarean section for both themselves and their baby?
- How could healthcare professionals support women and family during their decision-making process?

caesarean. Women and Birth. 2017; 30(2):129–136. https://doi.org/10.1016/j.wombi.2016.10.005

- National Institute of Health and Care Excellence. Caesarean section: clinical guideline [CG132]. 2011. https://www.nice. org.uk/guidance/cg132 (accessed 1 August 2019)
- Nilsson C, Lundgren I, Smith V, Vehvilainen-Julkunen K, Nicoletti J, Devane D, Bernloehr A, van Limbeek E, Lalor J, Begley C. Women-centred interventions to increase vaginal birth after caesarean section (VBAC): a systematic review. Midwifery. 2015; 31(7):657–663. https://doi.org/10.1016/j. midw.2015.04.003
- Phillips E, McGrath P,Vaughan G. 'I wanted desperately to have a natural birth': mothers' insights on Vaginal Birth After Caesarean (VBAC). Contemporary Nurse. 2010; 34(1):77– 84. https://doi.org/10.5172/conu.2009.34.1.077
- Rota A, Antolini L, Colciago E, Nespoli A, Borrelli SE, Fumagalli S. Timing of hospital admission in labour: latent versus active phase, mode of birth and intrapartum interventions. A correlational study. Women and Birth. 2017; 31(4):313–318. https://doi.org/10.1016/j. wombi.2017.10.001
- Royal College of Obstetricians and Gynaecologists. Birth after previous caesarean birth: green-top guideline no. 45. 2015. https://www.rcog.org.uk/globalassets/documents/ guidelines/gtg_45.pdf (accessed 1 October 2019)
- Scaffidi RM, Posmontier B, Bloch JR, Wittmann-Price R. The relationship between personal knowledge and decision self-efficacy in choosing trial of labor after cesarean. Journal of Midwifery and Women's Health. 2014; 59(3):246–253. https://doi.org/10.1111/jmwh.12173
- Tan PC, Subramaniam RN, Omar SZ. Labour and perinatal outcome in women at term with one previous lowersegment caesarean: a review of 1000 consecutive cases. Australian and New Zealand Journal of Obstetrics and Gynaecology. 2007; 47(1):31–36. https://doi.org/10.1111/ j.1479-828X.2006.00675.x
- Waldenström U, Hildingsson I, Rubertsson C, Radestad I. A negative birth experience: prevalence and risk factors in a national sample. Birth. 2004; 31(1):17–27. https://doi.org/10.1111/j.0730-7659.2004.0270.x
- World Health Organization. WHO statement on caesarean section rates. 2015
- World Health Organization. WHO recommendations intrapartum care for a positive childbirth experience. 2018