Women's Views on Mode of Birth in Public Hospitals in Argentina: Inputs From a Formative Research to Optimize the Use of Caesarean Section

Carla Perrotta (✉ carla.perrotta@ucd.ie)

University College Dublin, National University of Ireland

Mariana Romero

Centro de Estudios de Estado y Sociedad (CEDES)- CONICET (Consejo Nacional de Investigaciones Científicas y Tecnológicas)

Yanina Sguassero

Centro Rosarino de Estudios Perinatales

Natalia Righetti

Centro de Estudios de Estado y Sociedad (CEDES)- CONICET (Consejo Nacional de Investigaciones Científicas y Tecnológicas)

Celia Gialdini

Centro Rosarino de Estudios Perinatales

Betrán AP

UNDP, UNFPA, UNICEF, World Health Organization

Silvina Ramos Ramos

Centro de Estudios de Estado y Sociedad (CEDES)- CONICET (Consejo Nacional de Investigaciones Científicas y Tecnológicas)

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Women's views on mode of birth in public hospitals in Argentina: inputs from a formative research to optimize the use of caesarean section

Perrotta Carla ^{1*}, Romero M², Sguassero Y³, Righetti N⁴, Gialdini C³, Betrán AP⁵, Ramos S⁴.

¹ School of Public Health, University College Dublin, National University of Ireland, Dublin, Ireland. E-mail: carla.perrotta@ucd.ie

² Centro de Estudios de Estado y Sociedad (CEDES)- CONICET (Consejo Nacional de Investigaciones Científicas y Tecnológicas), Buenos Aires, Argentina. E-mail: mromero@cedes.org

³ Centro Rosarino de Estudios Perinatales, Rosario, Argentina. E-mail: ysguassero@crep.org.ar; cgialdini@crep.org.ar.

⁴ Centro de Estudios de Estado y Sociedad (CEDES), Buenos Aires, Argentina. E-mail: natirighetti@gmail.com; silvinaramosarcoiris@gmail.com

⁵ UNDP, UNFPA, UNICEF, WHO, World Bank Special Program of Research, Development and Research Training in Human Reproduction, Department of Reproductive Health and Research, World Health Organization, Geneva, Switzerland. E-mail: betrana@who.int

*Corresponding autor

Abstract

Background: This paper reports on women's perspectives on the birth mode in five public maternity hospitals in Argentina. The study is a formative research study component aimed at tailoring interventions to reduce unnecessary caesarean section (CS) use.

Methods: Participants were postpartum women aged ≥ 15 years old in five hospitals in the provinces of Salta, Corrientes, Tucuman, Santa Fe and Buenos Aires City. Hospitals completed an institutional survey indicating the availability of obstetric services. The fieldwork was carried out from November 2018 to June 2019. Trained interviewers gathered data on obstetric history, companionship, mode of delivery preferences, and general opinion on vaginal and caesarean section births through semi-structured interviews. The interviews were coded and analysed with standard quantitative methods.

Results: The five hospitals had a CS rate between 29.2 and 45.5. Four institutions indicated limited access to epidural and other pain management strategies and a restricted antenatal education schedule.

The sample included 621 postpartum women with a mean age of 26 years ($\pm$ SD 6). 60% of them had a vaginal birth (VB). More than 90% of women in three hospitals favoured VB, and

in two, 67% ($p<0001$). CS preference was associated with giving birth in those two hospitals and the numbers of miscarriages adjusting by maternal age and previous pregnancies. The reasons for preferring a VB included faster recovery, feeling ready, and considering it more natural. Most women chose CS as the best mode of birth to avoid birth pain. CS disadvantages included post-procedure pain, dependence on others to take care of her or the baby afterwards, and prolonged time in the hospital. Six out of ten women would have liked to be asked by their providers about the MOB of choice.

Conclusions: Women giving birth in public maternity hospitals of Argentina preferred a vaginal delivery to a caesarean section. There is an ongoing need to improve access to pain management during labour and vaginal birth and include women's opinions along the decision-making process for selecting the mode of childbirth. Hospitals with a lower preference for VB will require additional efforts to understand women's needs and values.

Trial registration: IS002316

Background

During the past century, childbirth changed from being a natural and domestic experience to a medical and professional act. Progress in medical interventions and technology in childbirth led to improvements in women and children's life and health. The introduction of safe caesarean section (CS) was a critical development of that process, and, today, CS is at the centre of emergency obstetric care. However, its overuse in low-risk pregnancies is problematic, since the procedure increases the risk of short-term and long-term comorbidities (1–3). The Latin American region has rapidly adopted CS, reporting the most significant increase in CS rates during 1990-2014 (4). Studies based on Latin-American data suggested that the private healthcare sector drives CS use (5–8). However, in Argentina, public hospitals increased surgical births by 22% in 2010-2017 (9,10), exceeding the global CS rate growth (4).

A decade ago, a cross sectional study in Buenos Aires City indicated that, in overall, 92% of women preferred vaginal birth (VB) over CS with no differences between private and public facilities (11), a rate similar to Nordic countries in Europe and other developed countries (12,13). It is uncertain if women preferences have since then evolved and if we can attribute the increasing trend in public hospitals to a shift in mode of birth (MOB) preferences in the public sector. There are also uncertainties about how the contextual factors related to the limited access to obstetric care services -like pain management or antenatal education- in the public sector in Argentina may influence decision-making.

We conducted a formative research study in public hospitals in Argentina which included women, healthcare professionals and hospital administrators to understand the contributing factors related to the increase of CS rates in Argentina and the barriers and facilitators for the implementation of interventions aiming at optimizing its use (14). This research aims to contribute to the tailoring of interventions and to inform the development of protocols and

guidelines in Argentina. This paper presents the findings of semi-structured interviews (SSI) to gain understanding on women's preferences and their views and opinions on the MOB.

Methods

30 Semi-structured interviews

The detailed methodology of the formative research study carried out in maternity hospitals of Argentina has been published elsewhere (14). In brief, 19 hospitals purposely selected participated and collected data on the availability of services and resources in the facilities and health providers' views on CS determinants. In addition, five hospitals identified as
35 Hospitals A, B, C, D and E were selected among the initial 19 for a more in-depth assessment of health care professionals' views and opinions regarding CS determinants and interventions. Additionally, as part of the data collected in this subgroup of hospitals, women's views and opinions about MOB and their reasons were explored (Additional file 1)

The adopted strategy for recruitment during this formative research was selecting one woman
40 out of four who had a vaginal or CS delivery every day of the week during three consecutive months or until 130 consecutive cases in each hospital were included (whichever criterion was met first). The SSI was applied by a professional trained for this task (social worker, psychologist, or nurse) who was not a member of the OB/GYN service to prevent any bias and to preserve confidentiality. The fieldwork started in November 2018 and finished in June
45 2019, with hospitals entering the study at different months.

The inclusion criteria were (a) pregnant woman who had a delivery (vaginal or CS) at the participating hospital, (b) aged ≥ 15 old, (c) new-born not requiring hospitalisation in the neonatal intensive care unit, and (d) obtaining informed consent.

A SSI was used to facilitate data gathering and engagement in a conversation with one
50 participant at a time (15). It consisted of 21 closed questions and seven open questions. The variables included were the following: (a) reproductive history, (b) opinions and preferences

regarding vaginal and CS delivery, (c) labour and delivery process (including companionship), (d) their understanding of the reasons to perform a caesarean section, vaginal and CS delivery advantages and disadvantages, and (e) women's general opinion on MBO. Two researchers (MR and NR) independently coded the open-ended questions. Coding was compared, and disagreements were solved by discussion until consensus was reached. Data were imported into a database in a standard quantitative format respecting multiple answers when applied. The reporting of the methods and results follows the standards of reporting of cross-sectional surveys (16).

Statistical analysis

Continuous variables were expressed as mean $\pm$ standard deviation (SD) or median (range), and categorical variables as frequencies. Chi-square test was used for study group comparisons.

The preference of MOB was assessed using univariate and multivariate analyses. A logistic regression model explored the association between MOB preferences and maternal obstetric history (parity, history of miscarriage), maternal age, hospital, and delivery mode of index birth. The delivery hospital was included as a dummy variable with Hospital C as the reference and VB as the reference for delivery mode (OR=1.00) (17). Odds ratio (OR) with 95% confidence interval (CI) for binary outcomes and weighted mean difference (WMD) for continuous outcomes were estimated. All statistical tests of hypotheses were two-sided, and the criterion for statistical significance was set to $\alpha = 0.05$. Statistical analyses were carried out with Stata version 15.

Ethical approval and consent

Ethical approvals from the Independent Ethical Committee of the Centro Rosarino de Estudios Perinatales (Argentina), the Research Project Review Panel of the UNDP/UNFPA/UNICEF/WHO/World Bank Special Programme of Research, Development

and Research Training in Human Reproduction, at the Department of Sexual and Reproductive Health and Research at the World Health Organization, the Research Ethics Review Committee of the World Health Organization, and the provincial and ethical committees of each of the participating hospitals were obtained. All the procedures in this study were in accordance with the ethical standards of the mentioned research ethics committee and with the Helsinki Declaration. All women signed an informed consent, and anonymity was ensured by not including any personal data such as name, date of birth and mandatory signature. The participant hospitals are anonymized.

Results

The characteristics of the hospitals from which women were recruited are described in Table 1. Their median birth by CS was 39.5% (29.9% – 45.5%). The number of live births ranged from 1100 to 7900 per year. The hospitals are free of charge at the point of care, though they widely differed in workforce numbers and services. The total number of midwives, obstetricians and residents working in maternal care varied from 8.8 to 40.7 per 1000 live births, while the number of midwives ranged from 0 to 8 per 1000 live births. Only one hospital (Hospital C) had comprehensive pain management interventions available to women 24 hours—including access to hot water showers and epidural—and offered an extended schedule of antenatal education. The other four hospitals had limited availability to epidural or non-medical pain management interventions and provided a restrictive antenatal education schedule (e.g. one morning per week). None of the five hospitals guaranteed companionship during CS, and only two ensured 24/7 that women had someone of their choice during birth. The five hospitals reported to provide safe emergency caesarean surgeries 24/7 and to have access to emergency anaesthetists and surgeons, equipped operating rooms, blood bank, neonatal and adult Intensive Care Units. The embolization of the uterine artery was available in only one hospital (Hospital C).

Table 1. Baseline characteristics of participating hospitals.

	Hospital A	Hospital B	Hospital C	Hospital D	Hospital E
Number of live births (2017)	1220	2798	7930	2200	3467
CS rates (2017)	41.3	37.6	29.2	42.3	45.5
Number of midwives/1000 live births	13.1	0	1.6	0	7.2
Number of OB/GYNs /1000 live births	16.3	8.5	3.6	6.8	6.6
Number of trainees in OB/GYNs /1000 live births	11.4	4.6	3.5	0	0
Access to emergency CS	yes	yes	yes	yes	yes
Access to epidural 24 hours*	no	no	yes	no	no
Access to hot shower facilities during birth 24 hours*	no	no	yes	no	no
Access to massage, relaxation for pain management 24 hours	no	no	yes	no	no
Antenatal education offered daily am/pm	no	no	yes	no	no
Companionship during VB 24 hours*	yes	no	yes	no	no
Companionship during CS 24 hours*	no	no	no	no	no

CS: caesarean section; VB: vaginal birth; OB/GY: Specialist in Obstetrics and Gynaecology

* All interventions were delivered 7 days/week unless otherwise indicated.

110 The 621 participating women gave written informed consent. Their mean age sample was 26 $\pm$ SD 6 (12.4% were adolescents). Six out of ten had a VB in the index pregnancy. The median number of previous pregnancies was 1.2 (range 0 to 7). Most women who underwent a VB had someone of their choice during birth (N=314, 88.5%) compared with only a third of

those who had a CS (N=213, 34.3 %) ($p<0.00001$). In Hospitals B, C, and E most women
 115 having a CS did not have companionship during birth (Table 2).

Table 2. Characteristics of the study sample.

	Total	Hospital A	Hospital B	Hospital C	Hospital D	Hospital E
Number of women interviewed	621 (100)	130 (20.9)	127 (20.4)	129 (20.7)	101 (16.2)	134 (21.5)
Age, mean (SD)	26 $\pm$ 6	27.4 $\pm$ 5	25.4, $\pm$ 5	26 $\pm$ 6	25 $\pm$ 5	26 $\pm$ 6
Adolescents (15-19 years of age)	77 (12.4)	9 (6.9)	17 (13.3)	17 (13.1)	12 (11.8)	22 (16.8)
Parity, median (range)	1 (0-6)	2 (0-6)	1 (0-5)	1 (0-6)	1(0-6)	1 (0-5)
VB in the index pregnancy	355 (57.1)	69 (53)	74 (58.6)	68 (52)	64 (63)	80 (59.6)
Women with previous CS, N (%)	171 (40.6)	41(40.5)	30 (36.1)	31 (35.2)	20 (32.7)	49 (55.6) ¹
Preference for VB	467 (75.2)	119 (91)	87 (69) ²	108 (92)	82 (93)	71 (64) ²
Neutral	50 (8)	0	2	12 (9)	12 (11)	24 (17.9)
Was accompanied during birth by someone of her choice*	404 (65.1)	94 (72.3)	73 (57)	65 (50.4)	95 (94.1)	77 (57)
VB ³	314 (88.5)	50 (72.5)	70 (94.6)	60 (88)	63 (98.4)	71 (88)
CS ³	213 (34.3)	44 (72)	3 (5.7)	5 (8)	32 (86.5)	6 (11)

CS: caesarean section; VB: vaginal birth

N (%)

1 Compared against all the other hospitals statistically significant ($p0.0001$ chi square).

2 Compared against all other hospitals statistically significant ($p0.0001$ chi square).

3 Percentage of women that reported being accompanied during birth % over the total number of births on that MOB in that hospital or the total

*4 women (3 in Hospital B and 1 in Hospital E) did not answer this question.

Women preferred VB to a CS (N=467, 75%); however, we observed differences across hospitals. In Hospitals A, C and D, more than 90% preferred VB over CS, whereas in hospitals B and E this preference was lower, 64% and 69% respectively (p=0.001). Vaginal birth preference was associated with vaginal birth on the index pregnancy (ORa= 2.06, 95% CI 0.93 - 4.55). The variables associated to CS preference were giving birth in Hospital B (ORa 0.14, 95% CI 0.05 - 0.40) and E (ORa 0.09, 95% CI 0.03 - 0.25), and the number of previous miscarriages (ORa=0.58, 95% CI 0.34 - 0.99), (Table 3).

Table 3. Mode of birth preference. Univariate and Multivariate analysis

	Univariate analysis OR (95% CI) *	Multivariate analysis OR (95% CI) *
Woman age	1.0 (0.97-1.04)	1.02 (0.97-1.06)
Number of previous miscarriages	0.88 (0.59-1.60)	0.58 (0.34 - 0.99)
MOB in the index pregnancy**	3.96 (2.50-6.28)	2.06 (0.9- 4.55)
Number of previous pregnancies	1.08 (0.92-1.27)	Excluded
Hospital in which birth took place		
Hospital C***	0.90 (0.35-2.25)	reference
Hospital B	0.2 (.10-0.40)	0.14 (0.05-0.4)
Hospital A	1.10 (0.44-2.77)	0.70 (0.21-2.37)
Hospital D	1.08 (0.40-2.90)	0.85 (0.81-3.17)
Hospital E	0.16 (0.08-0.24)	0.09 (0.03-0.25)

MOB: mode of birth

*Vaginal birth as the reference group

** Vaginal birth as the reference group

***Hospital C as a reference for the study site.

The most frequently mentioned reasons to prefer VB (N=467, 75%) were *faster recovery* (mentioned by N=263, 56.3%) and *more natural/feeling ready* (N=137, 29.3%). Women also expressed their opposition to a surgical procedure such as a CS —*more pain after birth/ I cannot walk or move straightaway after birth/ /longer stay in the hospital* (N=152, 32%).

The most frequent reasons for a CS preference (N=104, 16.7%) fell under two domains: birth experience and safety. The former included *not having to go through contractions/not feeling*

pain during birth (N=32, 30.7%) and *faster procedure* (N=20, 18%). The latter included feeling the procedure is *safer* (N=42, 40.3%) and *the doctor controls the procedure* (N=15, 14%). Interesting, only women who gave birth at the two hospitals with the lowest preference for VB (Hospital B and Hospital E) explained their preferences using safety as the main reason (Table 4).

Table 4. Women's preference and reasons according to mode of birth

VB preference (N=467, 75%)	
VP in index pregnancy 293 (62.7%)	
CS in index pregnancy 174 (37.3 %)	
Faster recovery after birth	263 (56.3%)
CS more painful /CS limited autonomy after birth /more time in hospital	152 (32%)
More natural	137 (29.3%)
CS preference (N=104, 16.7%)	
VP in index pregnancy: 31 (29.8)	
CS in index pregnancy: 73 (70.1)	
Not feeling birth pain	32 (30.7%)
Safer procedure	42 (40.3%)
Faster procedure	20 (18%)
The doctor oversees the procedure	15 (14%)

CS: caesarean section; VB: vaginal birth

¹ Women gave more than one reason to express their preferences.

Regardless of their own preferences and/or experience, women were also asked about their general opinions on the advantages and disadvantages of both vaginal and caesarean section deliveries (Table 5). The advantages for VB were *faster recovery* (N=438, 70%), *more natural than a CS* (N=311, 49%), *less pain after birth* (N=305, 48%), *requires less time at the hospital* (N=272, 44%), *being able to move right after birth* (N=274, 43%), and *partner can be present at birth* (N=239, 38%). The advantages for CS included *no pain* (N=207, 33%), *faster procedure* (N=194, 30%), *can schedule the birth date* (N=189, 29%), *no contractions* (N=181, 29%), *safer* (N=119, 19%), *can save the baby* (N=115, 18%), and miscellaneous answers concerned to the body appearance after VB such as *it does not change your body or no perineal tears* (N=29, 4%).

Pain was the most mentioned disadvantage for VB (N=331, 53%). It is worth noting that for a third of the women, VB did not have any disadvantage (N=183, 29.4%) and a handful mentioned perineal tears and discomfort with examination. The cited burden of CS referred to the loss of independence right after CS, impacting on the ability to care for the baby –*can't look after the baby or myself*– and to the prolonged hospital stay compared to VB –*longer stay in the hospital* (N=503, 81%).

Six out of ten women responded they would have liked to be asked about their preferable MOB (N=363, 58.4%), and only 18 out of 621 answered 'I don't know'. The most common reason was *the right of women to choose and have her voice considered and valued* (N=242, 38%).

Lastly, women were asked about the circumstances in which a CS is needed. Overall, women cited medical conditions like *woman with severe disease/risk for the woman* (N=345, 55%), *baby is “seated”* (N=267, 42%), *nuchal cord* (N=239, 38%), *birth date overdue* (N=201, 32%), *prolonged labour/women exhaustion* (N=193, 31%), *or having had a previous CS* (N=142, 22%).

Table 5. Women's answers on advantages and disadvantages of vaginal and caesarean section deliveries¹ irrespective of preferable mode of birth.

VB advantages (N= 621) *	N=%
Faster recovery	438 (70%)
More natural mode of delivery	311 (49%)
Less pain after birth	305 (48%)
Less time at the hospital	272 (44%)
Regaining independence after birth	274 (43%)
Partner can be present	239 (38%)
CS advantages (N= 621)	
Not feeling birth pain	207 (33%)
Faster process	194 (34%)
Birth date predictable	189 (29%)

Not feeling uterine contractions	181 (29%)
Safe	119 (19%)
Can save the baby if an obstetrical emergency occurs	115 (18%)
No perineal tears	29 (4%)

CS: caesarean section; VB: vaginal birth

*Participants indicated more than one advantage

Discussion

165 In the context of a steady increase in CS rates in Argentina, this study explored women's birth preferences and characterised obstetric services in five public hospitals in different country regions. The services provided were comprehensive to respond to obstetric emergencies. However, they have limitations to ensure adequate antenatal education and a holistic approach to pain management during birth. Additionally, only two hospitals guaranteed
170 constant companionship in the delivery ward. The included hospitals worked under significant demand pressure with limited human resources. Only one (Hospital C) had the number of staff per live births closer to high-income countries. The characterisation of services highlights the difficulties of ensuring that women receive continuous emotional support and encouragement during birth either by trained professionals or by someone of
175 their choice with the appropriate training to provide that support. Both interventions can reduce the use of unnecessary CS as well as improve the birth experience (18).

Despite these barriers, women in this sample preferred VB over CS. In three hospitals, nine out of ten women favoured VB over a CS. This finding is similar to the only study available addressing birth preferences in Argentina conducted a decade ago and also to women's
180 preferences in European countries (11–13). Women's preference for a VB in the two other hospitals was 20% lower, which is closer to postpartum preferences in China (19) or Italy (20) but higher than Brazil (13).

Women's age or previous pregnancies did not explain these differences. However, favouring

CS was associated with giving birth in the two hospitals with higher preference for CS
185 adjusting for age, previous CS, and pregnancy type on the index pregnancy.

The difference in MOB preferences across hospitals is challenging to interpret. The two
hospitals in which women had a higher inclination for CS are in different regions of the
country and had different human resource structure (one hospital had midwives in their team,
and the other did not). They share similar features to hospitals with higher VB preferences,
190 such as CS rates higher than 37%, limited availability for pain management, and reduced
antenatal education. Women did not differ in age or number of previous pregnancies.

We did not investigate the reasons for choosing the birth hospital. Women with a higher
preference for CS may choose a hospital that may facilitate their request for CS. To the best
of our knowledge, this is the first study showing that even in hospitals with similar financing
195 structure and limited provision of pain management during birth, women have different MOB
preferences across hospitals. However, despite the observed differences between settings,
most women favour VB.

In this study, women accounted for their preference for vaginal deliveries describing a feeling
of being prepared and ready; they also value the possibility of a fast recovery and breastfeed.
200 The negatives attributes of VB ,as expected, focused on pain during birth.

The positive account for CS preference was the possibility of analgesia. Women's reports on
pain during and after birth were consistent and repetitive across all participants regardless of
their age, MOB, and previous pregnancies. It is also a frequent narrative of women across
countries and regions irrespective of their MOB preference (12,19–22) . Four of the five
205 participating hospitals had no epidural access by request, hot shower, massages, relaxation, or
hypnosis, resulting in sub-optimal pain management during labour. This lack of pain
management options is consistent with 'pain' as the recurrent reason women prefer a CS
across the world (19,24). A qualitative study by Wang (21) also discusses how limited access

to pain relief is a potential determinant of surgical birth. Given these consistent findings,
210 policymakers, managers, and healthcare teams need to be aware and address pain
management during and after birth as an essential component of obstetric care, which means
that institutions need adequate resources.

When asked about the consequences of both CS and VB, most women focused exclusively on
short-term effects. Women in this sector usually do not have additional support to look after
215 their new-borns and themselves after a surgery. We did not explore the support provided by
the obstetric services to women that just have a CS. It is also possible that women lack of
awareness of long-term risks. Our finding on women's emphasis on immediate consequences
is consistent with previous studies in other countries that show that longer-term effects are
under-reported (22,25,26).

220 In line with studies in other settings, the significant finding of our study is that six out of ten
women would have wanted to be asked about birth preference (27–29). The message
reinforces the need to tailor interventions targeting women so as to include them as an active
participant in health care decisions and confirms women's expectations for communication
and informed dialogue with healthcare providers (30).

225 There are some limitations to the study. This sample represents women who had an
uneventful pregnancy and delivered a healthy new-born; women with traumatic birth
experiences or experiences in the Intensive Care Unit may have different accounts regarding
MOB preferences, birth experience and perception of safety.

A starting point for hospitals intending to reduce unnecessary CS should include gathering
230 information on how women shape their preferences and their value when facing MOB
decisions. We have shown that women's preferences in most hospitals have remained
unchanged in 20 years. Thus, the CS rates changes cannot be attributed to change in
preferences (11). There is an urgent call to include a care model that allows women to

express their birth preferences model. Pregnant women need access to antenatal care to
235 discuss pain management options available to them (31,32).

Conclusions

This study reinforces the evidence that women prefer CS over VB even in contexts in which
the provision of services do not include a holistic approach to pain management during birth,
comprehensive antenatal education and –in some cases– companionship. Women indicated
240 they want to be asked about their birth preference calling for services to incorporate women
into the decision-making process during the antenatal period.

List of abbreviations: CS: caesarean section; MOB: mode of birth; OB/GYN: specialist in
Obstetrics and Gynaecology; SSI: semi-structured interviews; UNDP: United Nations
Development Programme; UNFPA: United Nations Fund for Population Activities; UNICEF:
United Nations International Children's Emergency Fund; VB: vaginal birth; WHO: World
Health Organization.

Declarations:

Ethics approval and consent to participate

The research study has ethical approval from the Independent Ethical Committee of the Centro
Rosarino de Estudios Perinatales (Argentina), the Research Project Review Panel (RP2) of the
UNDP/UNFPA/UNICEF/WHO/World Bank Special Programme of Research, Development and
Research Training in Human Reproduction, at the Department of Sexual and Reproductive Health and
Research at the World Health Organization, the Research Ethics Review Committee (ERC) of the
World Health Organization, and the provincial and local ethical committees of each of the
participating institutions. Women signed an informed consent, and anonymity was ensured by not
having any personal data linked to them. In line with current Argentinean laws, adolescents aged 15 to
17 were included if they agreed to participate and obtain informed consent from their parents or legal
guardians.

Consent for publication

Not applicable

Availability of data and materials

The data is stored on CEDES' server, encrypted. CEDES is the guardian of the dataset. Data is anonymised. Our data collection forms did not include any variable that could reveal the identity of the participants. The datasets generated and/or analysed during the current study are not publicly available due requests from the participating hospitals but are available from the corresponding author on reasonable demand.

Competing interests

The authors declare that they have no competing interests.

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Author contributions

SR and APB delineated the original research and research program outline. MR, SR, CP, YS have written the study protocol. APB contributed to improvements on the original protocol. MR, YS, CG coordinated the fieldwork. YS, CG, NR conducted the fieldwork. MR has coordinated the coding of the semi-structured interviews. CP conducted the data analysis and oversaw the completion of the database. CP and MR wrote the first version of the manuscript. All authors have contributed to, read and approved the final manuscript.

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Additional files

- File name: Additional file 1
- File format including the correct file extension for example .pdf, .xls, .txt, .pptx (including name and a URL of an appropriate viewer if format is unusual)
- Title of data
- Description of data

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