









# Rising caesarean section rates and factors affecting women's decision-making about mode of birth in Indonesia: a longitudinal qualitative study

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## ABSTRACT

**Introduction** Caesarean section (CS) rates in Indonesia are increasing rapidly. Understanding women's preferences about mode of birth is important to help contextualise these rising rates and can help develop interventions to optimise CS. This study aimed to explore Indonesian women's preferences and decision-making about mode of birth, and how their preferences may change throughout pregnancy and birth.

**Methods** We conducted a longitudinal qualitative study using in-depth interviews with 28 women accessing private and public health facilities in Jakarta, the region with the highest CS rates. Interviews were conducted two times: during the woman's third trimester of pregnancy and in the postpartum period, between October 2022 and March 2023. We used a reflexive thematic approach for analysis.

**Results** We generated three themes: (1) preferences about the mode of birth, (2) decision-making about the mode of birth and (3) regrets about the actual mode of birth. Most women preferred vaginal birth. However, they were influenced by advertisements promoting enhanced recovery after CS (ERACS) as an 'advanced technique' of CS, promising a comfortable, painless and faster recovery birth. This messaging influenced women to perceive CS as equivalent or even superior to vaginal birth. Where women's preferences for mode of birth shifted around the time of birth, this was primarily due to the obstetricians' discretion. Women felt they did not receive adequate information from obstetricians on the benefits and risks of CS and vaginal birth and felt disappointed when their actual mode of birth was not aligned with their preferences.

**Conclusion** Our study shows that despite rising CS rates, Indonesian women prefer vaginal birth. This highlights the need for better communication strategies and evidence-based information from healthcare providers. Given the rising popularity of ERACS, more work is urgently needed to standardise and regulate its use.

## INTRODUCTION

Similar to global trends, the rate of caesarean section (CS) in Indonesia has increased rapidly

## WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Rates of caesarean section (CS) are rapidly increasing in Indonesia, contributing to high costs and inequalities in healthcare and health outcomes.
- ⇒ The potential drivers of rising CS rates have not yet been explored in Indonesia.
- ⇒ Understanding women's preferences and decision-making about mode of birth will help to understand drivers and develop potential interventions to optimise CS use.

from 1.6% in 1991 to 17.6% in 2017.<sup>1–3</sup> While more recent statistics are not yet available, the Indonesia Social Security Administrator for Health (*BPJS Kesehatan*) reported that CS contributed to the largest national insurance expenditure in 2019.<sup>4</sup> The highest CS rates were observed in Western Indonesia, the most affluent and developed regions.<sup>1</sup> Increases in prelabour CS have been observed as women's socioeconomic status increased, especially in Western Indonesia.<sup>1</sup> High CS rates may result in unmet needs and unsafe provision of CS, with potential harm to women and babies.<sup>5</sup> CS also exposes women and babies to short and long-term risks.<sup>6</sup> Women may experience surgical complications, chronic pain, subfertility and adverse outcomes on future pregnancies.<sup>7,8</sup> Surgical lacerations and increased risks of altered immune development, allergy and asthma may also affect babies.<sup>7</sup> Therefore, optimising use of CS is imperative to minimise risks for women and babies.

Enhanced recovery after CS (ERACS)—peri-operative care ostensibly to improve women's comfort and recovery from CS—is also increasingly popular in Indonesia. There are no standardised ERACS clinical protocols nor consensus on the most effective ERACS components.<sup>9,10</sup> However, what is advertised as

### WHAT THIS STUDY ADDS

- ⇒ This study shows that most women preferred vaginal birth over CS. However, women were influenced by advertisements promoting enhanced recovery after CS (ERACS), which influences their preferences, particularly later in pregnancy.
- ⇒ ERACS was seen as an 'advanced technique' of CS, resulting in 'painless' birth and faster recovery, meaning that the CS notion was no longer seen as an emergency and live-saving procedure. Some women, however, felt ERACS did not deliver what it promised.
- ⇒ There was a strong influence of healthcare providers on women's actual mode of birth.
- ⇒ The information shared on the mode of birth during antenatal care and at the time of birth is often imbalanced, delivering fear-based instead of evidence-based information to women.

### HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ Women are possibly targeted by advertisements that are not evidence-based recommendations for childbirth care and may be influenced by perverse financial incentives.
- ⇒ The rise of inaccurate information about ERACS will likely result in a further increase in CS rates in Indonesia.
- ⇒ This study highlights the need for better communication, evidence-based information and more opportunities for women to discuss the mode of birth collaboratively with healthcare providers.
- ⇒ As the profile of ERACS is rising in Indonesia, there is a need to standardise and regulate its use in the country.

ERACS are typically recommended evidence-based practices that should be implemented for all women receiving CS, including antenatal education, breastfeeding preparation, reduced fasting time, prophylactic antibiotics, long-acting anaesthesia intrasurgery and postsurgery, delayed cord clamping and skin-to-skin contact.<sup>9 11</sup> In Indonesia, however, ERACS is actively advertised on social media by private health facilities and healthcare providers as an advanced method of CS that is painless, comfortable and results in faster recovery within 24 hours postsurgery.<sup>12</sup> The spread of misinformation on ERACS may influence Indonesian women's preferences over CS and further increase the rates in the country.

Decision-making around CS is complex and includes interconnected clinical and non-clinical factors from women, communities, healthcare providers and system.<sup>8 13–15</sup> Women may prefer CS over vaginal birth due to fears of labour pain or perceived vaginal birth complications and see CS as safer, quick and more convenient.<sup>8 13 15</sup> They may also be influenced by the news and social media, where CS is presented as 'convenient, fashionable and modern'<sup>8 14</sup> and ERACS is advertised as a good alternative to vaginal birth or more fashionable than CS without ERACS.<sup>12</sup> Healthcare providers may influence women to have a CS due to fear of litigation, perceptions that a CS is the best and 'a protective procedure', low confidence to perform assisted vaginal birth and convenience in scheduling birth.<sup>8 13</sup> Finally, the health system may influence decisions about CS by giving

higher financial incentives for healthcare providers to undertake CS.<sup>8 13 14</sup>

Given this complexity, the WHO emphasises the importance of understanding the major drivers influencing preferences and decision-making for CS before undertaking any intervention in any setting or country.<sup>16</sup> Previous research in other settings has explored how women's preferences around mode of birth change throughout pregnancy<sup>8 17–19</sup>; however, most studies using a longitudinal design have only focused on women with previous CS.<sup>17 19 20</sup> There remain gaps in understanding how women's preferences for mode of birth may change throughout pregnancy and birth—regardless of their parity and CS history. Furthermore, despite rising CS rates and calls from Indonesian health authorities to optimise the use of CS, to our knowledge, there are no studies about women's perceptions and decision-making processes about mode of birth in Indonesia. Therefore, the aim of this study is to explore Indonesian women's preferences and decision-making about the mode of birth, and how mode of birth preferences may change throughout pregnancy and birth.

### METHODS

We conducted a longitudinal qualitative study using semistructured in-depth interviews, interviewing women two times: during pregnancy and after birth. This manuscript is reported according to COnsolidated criteria for REporting Qualitative research Checklist (online supplemental appendix 1).<sup>21</sup>

### Study sites

The study was conducted in the Special Capital Region of Jakarta, the wealthiest and most metropolitan region in Western Indonesia with the highest CS rates: 31.3% in 2017 (most recent data).<sup>1</sup> In Indonesia, the healthcare system is a combination of public and private services. The national health insurance—*Jaminan Kesehatan Nasional (JKN)*—covers all procedures in both public and private facilities during labour and birth, including both vaginal and CS births, as long as the CS is medically necessary.<sup>22</sup> Women who want to have a CS at higher level health facilities or hospitals with JKN coverage must obtain referrals from primary health centres, as primary health centres do not provide CS. Under the JKN scheme, health facilities receive higher reimbursements for CS compared with vaginal births.<sup>23</sup> To explore perspectives of women with different socioeconomic status, we recruited women accessing private health facilities in any districts of Jakarta and women accessing primary health centres (*Pusat Kesehatan Masyarakat; Puskesmas*) in two districts: (1) Johar Baru, the poorest and most populated district in Jakarta<sup>24</sup> and (2) Cempaka Putih, the richest district and most urbanised municipality in Central Jakarta.<sup>24</sup>

### Participants and data collection procedure

We adopted purposive sampling.<sup>25</sup> Women were eligible if they were at least 18 years old, accessing public or private

health facilities in Jakarta, and in their third trimester of pregnancy (27–40 weeks; reported by women). We recruited women regardless of their parity and previous CS history to understand if preferences about the mode of birth differed across different groups of women. We interviewed the same woman two times, in their third trimester of pregnancy and postpartum (4–8 weeks after birth), to understand how preferences for mode of birth may change from pregnancy to the time of birth. We did not interview women in the first and second trimesters because previous research has shown that birth preferences are typically not firmly established in early pregnancy, and there is also uncertainty regarding the preferred mode of birth during the first two trimesters.<sup>17 20</sup>

We recruited pregnant women through posters circulated by researchers at primary health centres, WhatsApp groups hosted by the primary health centres for pregnant women and social media (Facebook, WhatsApp, Instagram) for women accessing private facilities. We informed women about the two interviews at the time of the recruitment. Potential participants were asked to contact the first author (RIZ) to receive more details and confirm eligibility. Based on women's convenience, they were interviewed by WhatsApp, phone, Zoom or in person at their homes or primary health centres.

All interviews were conducted by the first author (RIZ) in Bahasa Indonesia and took approximately 45–60 min. Another researcher (AH/MADM) was present during the interviews as an observer and note-taker to ensure that any challenges could be addressed before future interviews and to engage in participatory reflection (please see our Reflexivity Statement in online supplemental appendix 2). Field notes were written to collect information on settings, behaviour, actions and interviewer's reflections.<sup>26</sup> All interviews were audio recorded. Participants referred researchers to other potentially eligible pregnant women to participate. We continued recruitment until data saturation was reached, decided through discussion within the research team and defined as no new information discussed in the interviews.<sup>27 28</sup>

Four weeks after each woman's expected due date, the first author contacted them to confirm that they had given birth and if they would like to schedule a second interview. We followed similar procedures from the first interview for the follow-up interview. One woman's baby died, and she was offered the opportunity for the second interview, noting that there would be no negative impacts if she declined. We determined a loss to follow-up if interviews could not be arranged after three attempts.

### Study instruments

We created the interview guides (online supplemental appendix 3) based on the Betrán *et al*'s ecological framework<sup>8</sup> and Bohren *et al*'s formative protocol for CS intervention preparation.<sup>29</sup> The first interview asked about women's preferences for different modes of birth across the pregnancy and factors considered when deciding the

mode of birth. The second interview focused on women's birth journey, and for those women whose actual mode of birth is different from their preferred ones, we explored factors influencing this change. Before data collection, we conducted four pilot interviews with pregnant and non-pregnant women to test and finalise the guide.

### Data analysis

Audio recordings were manually transcribed verbatim in Bahasa Indonesia, and a sample was reviewed by the second author (AH) for accuracy. Written field notes were integrated into the transcripts. We analysed the qualitative data in Bahasa Indonesia to maintain language nuance throughout the analysis. The first author (RIZ) translated the final themes and relevant quotes into English at the time of writing and were double checked by the second author (AH).

We conducted a reflexive thematic analysis.<sup>30</sup> The analysis began with an initial analysis of 16 transcripts where researchers (RIZ, AH, MADM) collaboratively coded line-by-line text and organised codes into hierarchical groups by grouping related codes into overarching themes. Based on the discussions from the initial analysis, the first author (RIZ) then iteratively analysed the data through data familiarisation, coding, initial theme generation, theme development, theme refining, defining, naming and writing up. We defined women's 'preferred mode of birth' as women's desired mode of birth, and women's 'actual mode of birth' as the mode of birth she ultimately had, irrespective of initial preferences. We used NVivo V.12<sup>31</sup> to manage qualitative data. Member checking was conducted when clarity was needed from the participants.

### Ethical considerations

We gave women 3 days to consider participation after sharing these forms. Once informed consent was obtained, we scheduled the interview at a mutually convenient time and place based on women's preferences. At the end of each interview, the participants received a shopping voucher of 100 000 Rupiah (approximately \$US 6) to compensate for their contribution and time.<sup>32</sup> We used pseudonyms in direct quotations to protect participants' confidentiality and humanise findings.

### RESULTS

We conducted 54 interviews with 28 women. Two women were lost to follow-up at the second interview, with one woman's mode of birth unknown. One woman was unavailable to join the second interview, and the other did not respond. Eighteen women were recruited from the primary health centre, and 10 were recruited online (accessing private facilities). Seventeen women were multiparous, with four women having a previous CS. **Table 1** shows women's characteristics.

At the time of the first interview, 26 out of 28 women preferred vaginal birth (**table 2**). However, by the second interview, 13 women ultimately had CS, including eight

**Table 1** Women’s characteristics

Characteristic	n (%) n=28
<b>Age</b>	
<20	1 (4)
20–24	1 (4)
25–29	12 (43)
30–34	10 (36)
≥35	4 (14)
<b>Parity and CS history</b>	
Nulliparous	11 (39)
Multiparous without previous CS	13 (46)
Multiparous with previous CS	4 (14)
<b>Residence</b>	
Central Jakarta	16 (57)
South Jakarta	4 (14)
East Jakarta	3 (11)
North Jakarta	2 (7)
Tangerang	2 (7)
West Jakarta	1 (4)
<b>Highest education</b>	
Elementary school	1 (4)
Junior high school	1 (4)
Senior high school	9 (32)
Diploma degree	3 (11)
Bachelor’s degree	12 (43)
Master’s degree	2 (7)
<b>Profession</b>	
Private employee	11 (39)
Housewife	8 (29)
Healthcare provider	4 (14)
Public officer	2 (7)
Waitress	1 (4)
Housekeeper	1 (4)
Public health practitioner	1 (4)
<b>Recruitment source</b>	
Online (private facility)	10 (36)
Johar Baru Primary Health Centre	10 (36)
Cempaka Putih Primary Health Centre	8 (29)
CS, caesarean section.	

with ERACS. All CSs were conducted before the onset of labour, with six conducted at <39 weeks’ gestation and seven conducted at ≥39 weeks’ gestation. All four women with previous CS had a repeat CS.

We generated three themes from the interviews: (1) preferences about mode of birth, (2) decision-making about mode of birth and (3) regrets about the actual

**Table 2** Women’s birth preference and actual mode of birth

Characteristics	n (%) n=28
<b>Preferred mode of birth</b>	
Vaginal birth	26 (93%)
CS	2 (7%)
<b>Actual mode of birth</b>	
Vaginal birth	14 (50%)
CS	13 (46%; 8 using ERACS)
Unknown	1 (4%)
<b>Gestational age when CS conducted (n=13)</b>	
37 weeks	2 (15%)
38 weeks	4 (21%)
39 weeks	4 (21%)
40 weeks	3 (23%)
<b>Place of birth</b>	
Public facility	17 (61%; 6 CS—2 with ERACS— and 11 vaginal birth)
Private facility	10 (36%; 7 CS—6 with ERACS— and 3 vaginal birth)
Unknown	1 (4%)
<b>Mode of birth preference for future birth</b>	
Vaginal birth	20 (71%)
CS	6 (21%; 5 using ERACS)
Unknown	2 (7%)
CS, caesarean section.	

mode of birth. Each theme is comprised of subthemes, detailed below.

**Preferences about mode of birth**

**Desire to have a vaginal birth**

During pregnancy, almost all women in our study expressed desire to have vaginal birth, as they felt experiencing labour contractions made them a ‘complete woman’. Some perceived vaginal birth as *kodrat* referring to the destiny that women have in their lives.

My mindset is that [vaginal birth] is “kodrat” for a woman, as a mother-to-be. God has created a birth canal in her body, so I am sure that baby will be born through the birth canal that has been created by God—Seruni, 40 years old, 1st interview, vaginal birth.

In addition to these gendered beliefs, some women preferred vaginal birth as they felt the benefits outweighed its risks.

First, [vaginal birth] process is really painful, but it will be much easier to heal than CS because CS seems riskier due to stitches and others. Secondly, vaginal birth can stimulate the baby. If the baby passed through the vagina, the baby received stimulation, so they were more active; that’s what some research said. Then thirdly, vaginal birth stimulates

breast milk. So, I think those are three benefits for giving birth vaginally better than CS—Alamanda, 30 years old, 1st-interview, CS.

Some women felt that CS was painful, expensive, had a slow recovery and required greater birth spacing. Women also believed that ‘once CS; forever CS’ for future births. Therefore, they saw CS as the last resort when vaginal birth was not possible.

If there are already complications, like it or not, we will choose CS—Anggrek, 28 years old, 1st-interview, vaginal birth.

Out of 28, only two women preferred to have CS at the first interviews: one woman with a previous CS preferred to have repeat CS and one due to existing medical conditions. Neither wanted to take risks for themselves or their babies; thus, they preferred CS.

### ERACS to address inconveniences of CS

When discussing CS risks at the first interview, despite no prompts, many women mentioned ERACS. Despite still preferring vaginal birth, some women stated that many of the CS risks are not applicable anymore as there is ERACS. Women referred to ERACS as an improved or modern method of CS. Women believed that ERACS was superior compared with ‘regular CS’ (CS without ERACS) as it used improved pain management, had a shorter duration of presurgical fasting and had different approaches to tissue opening, which were perceived to result in different and smaller cuts on women’s uterus.

The type of surgery knife used [in ERACS] is said to be smaller, so the incision may not hurt too much. And using different kinds of painkillers. And before the surgery, normally fasting is 12 hours, but with ERACS, as I remember, it’s 6 or 8 hours before the surgery—Melati, 37-year old, 1st-interview, CS.

Women perceived that ERACS would make their birth less painful, more comfortable and faster recovery. Women highly valued ERACS, despite never experiencing it themselves, as they believed it would address inconveniences and negative aspects of CS without ERACS. Women equalised ERACS with vaginal birth as a mode of birth with faster recovery, but more comfortable as women do not have contractions.

Now there is ERACS, the process is much more comfortable, so it’s like vaginal birth, after the operation, you can do anything right away [...] With ERACS you can return to regular activity within 6 hours after surgery. It is painless, the price is a little bit more expensive, but I think it will be more comfortable—Alamanda, 28-year old, 1st-interview, CS.

Women learnt about ERACS from posters posted around the hospitals, obstetricians, midwives, families and friends, with majority first knew it from social media.

I first knew about ERACS from celebrities in Instagram. ERACS is really booming. They said women can recover really fast. Few hours after the surgery, they can stand, walk,

sit. Even the celebrities can move around and do TikTok right away—Seroja, 30-year old, 1<sup>st</sup> interview, vaginal birth.

### Decision-making on mode of birth

#### Differences between preferred and actual mode of birth

Despite only two women who preferred CS at the first interview, 13 ultimately had CS. The inconsistency between women’s preferred and their actual mode of birth was mainly due to the influence of obstetricians. Some women who planned to have a vaginal birth at the time of the first interview reported that they started to change their minds about having CS after consultation with obstetricians around the time of birth. Nulliparous and multiparous women without previous CS reported that their obstetricians recommended them to have CS due to medical indications, like having anaemia, haemorrhoids, being overweight, having a big placenta, baby being mature at 38 weeks of age, having no signs of labour in the 40th week, reduced movement, fetal heart rate and amniotic fluid. All women who had a previous CS ended up having CS, despite three of them desiring vaginal birth. Women reported the reasons for this were that the birth spacing should be more than 5 years for them to be eligible for vaginal birth after CS (VBAC) and vaginal birth would not be covered at the private hospital for women arriving with referral from primary health centres due to previous history of CS. Women’s reported reasons for CS are seen in [table 3](#).

It is important to note that while some women met their obstetricians directly at private facilities, women who went to primary health centres typically met obstetricians at higher level facilities via referral from primary health centres. Some referrals had limits on the time or number of visits. For example, women with referrals for ultrasound scans were expected to return to primary health centres for follow-up. Therefore, midwives and doctors at primary health centres often did not discuss mode of birth before referral. Thus, women were informed about having CS by obstetricians at hospitals unexpectedly during these referral visits—with some urging women to undergo CS within the next 24 hours. This made women feel that they were blindsided by the decision and lacked appropriate communication about the decision. Women likewise believed that obstetricians preferred them to have a CS rather than trying for induction of labour.

I thought I only needed to have an ultrasound. I didn’t bring anything, just documents. After the ultrasound, the obstetrician said it’s useless to have induction: ‘You will only feel pain, and the baby would not want to be born because the baby is too big, and the amniotic fluid has also started to decrease’. I’m confused because I am scared—Krisan, 30-year old, 2nd-interview, CS.

For women accessing private facilities, the decision to have CS was often made after consultation with obstetricians during the regular schedule for antenatal visits. For example:

**Table 3** Women reported reasons for having CS

Women-related	Baby-related	Labour and childbirth-related	Non-medical
Women suggested to have CS by obstetricians and ended up with CS			
<ul style="list-style-type: none"> <li>▶ Haemorrhoids and overweight</li> <li>▶ Anaemia</li> <li>▶ Repeat CS as the birth gap was less than 2 years</li> <li>▶ Not eligible for VBAC as the previous CS birth gap was &lt;5 years</li> <li>▶ Woman has congenital condition</li> </ul>	<ul style="list-style-type: none"> <li>▶ Baby ‘ready to be born’ at 38 week gestation</li> <li>▶ Reduced movement and fetal heart rate</li> <li>▶ No signs of labour in 40th week, so healthcare providers asked woman to choose induction or CS</li> </ul>	<ul style="list-style-type: none"> <li>▶ Big placenta</li> <li>▶ Water broke and amniotic fluid was green</li> <li>▶ Big baby and low volume of amniotic fluid</li> </ul>	<ul style="list-style-type: none"> <li>▶ Vaginal birth is not covered by national insurance (woman already referred to private hospital from primary health centres due to previous CS)</li> <li>▶ Repeat CS due to preference for CS</li> </ul>
Women recommended to have CS by obstetrician, but had vaginal birth			
<ul style="list-style-type: none"> <li>▶ Young age (19 years old)</li> </ul>	<ul style="list-style-type: none"> <li>▶ 37 weeks’ gestation and baby had not entered pelvis</li> <li>▶ 41 weeks’ gestation and presence of nuchal cord</li> <li>▶ 40 weeks’ gestation with no labour onset, and low amniotic fluid—obstetrician told woman that baby should be born in the next 24 hours and suggested CS</li> </ul>	n/a	n/a

CS, caesarean section; VBAC, vaginal birth after caesarean.

The doctor said that if I want to have CS, it is possible, as the baby is mature already [38 weeks], but the decision is up to me. Then it turned out that right after the antenatal clinic, my husband needs to go on a business trip, so I contacted the doctor again, to inform that’s my plan [to have CS]—Lili, 26-year old, 2nd-interview, CS.

**Trust in healthcare providers versus autonomy**

Women’s decision-making on mode of birth was also influenced by trust in healthcare providers. Some women put immense trust in their obstetricians and midwives to guide them in choosing their mode of birth. They felt healthcare providers were the ones who knew the best about the baby’s condition, and they would comply with the obstetrician’s advice.

As the obstetrician is the one doing the work, let’s just follow his [suggestion], instead we force what we want but actually it’s hard to do, it’s scary too. Because this isn’t just a matter of ‘ouch I am wounded, should it be bandaged or not’, it’s not that simple, because there is a human being inside us, there is a living creature that we also don’t know what the condition is inside us—Melati, 37-year old, 1st-interview, CS.

However, there were also some women who were suggested to have a CS during their antenatal care yet persisted by looking for a second opinion and were able to give birth vaginally (table 3). Women felt glad and relieved that they waited until labour contractions came instead of going for CS immediately. One woman said:

Originally, I couldn’t have vaginal birth [suggested to have CS] because I was still young. They fear complications. But I ended up having labour contraction first, so it didn’t turn into CS. [...] The doctor said there are a lot of risks as I am still young. He’s afraid the child won’t survive or what. But thank God I can give birth vaginally—Magnolia, 19-year old, 2nd-interview, vaginal birth.

**The role of social networks in influencing women’s preferences**

We found that women’s social networks influence their preferences and decision-making regarding the mode of birth. For women who had a vaginal birth as preferred, their preferences were strongly influenced by family and people around them. Women often sought opinions from their husbands, mothers and mothers-in-law. Some women discussed strong encouragement from their families to have a vaginal birth, not only due to the benefits of a vaginal birth but also due to the family expectations to continue birthing traditions.

My husband supports [to have vaginal birth] 100%. Because my mother-in-law has nine children and all were born through vaginal birth, all nine of them (laugh), they compare [her with me]. My mom also said if I can have a vaginal birth, that’s better, so that I recover quickly. So, my parents and in-laws really support me to have a vaginal birth—Anggrek, 28-year old, 1st-interview, vaginal birth.

Some women were also encouraged to have a CS, specifically ERACS, after the family received information from healthcare providers, friends and social media. Husbands

particularly encourage women to have ERACS as it was perceived as an ‘easy way’ to give birth.

He [husband] said something like ‘Yeah, I’m also sure you can have vaginal birth, but if there’s an easy way, why not?’ (laugh)—Alamanda, 30 years old, 1st-interview, CS.

Women were also influenced by their friends and colleagues.

I was 40 weeks, and it turned out that I didn’t have any signs of labour. No rupture of membranes, no contractions. There is no dilation yet, no spots yet. So, the due date is over, the choices are whether I want to have an induction or CS. So far that time, the information we got from friends was not to go for induction, as the pain is twice. My older sibling had also been induced but ended up with CS. So, in the end [woman decided to] directly had ERACS without induction—Kenanga, 30 years old, 2nd-interview, CS.

### Regrets about the actual mode of birth

#### Desire for evidence-based instead of fear-based information

After birth, some women who had a CS despite preferring vaginal birth questioned whether the CS was really needed and felt disappointed and upset. These negative feelings were attributed to limited communication and fear that obstetricians instilled in them about the poor outcomes if they did not follow the recommendation to have CS.

After I gave birth, I joined Facebook group where women talk about babies. There is a woman who had experiences like mine. Her amniotic fluid was decreasing, etc. It’s the same case but she had vaginal birth. [Instead of CS] she was waiting for the contraction to come for about two weeks, and she had vaginal birth. So why then did I end up with CS? Actually, [the obstetrician] said ‘I really don’t want to take risks, but it’s up to you, everything is up to you’. But it’s just that I was feeling scared [hearing that], aren’t you? It just seems that the obstetrician is pro-CS, so he doesn’t want to try for me to have vaginal birth—Krisan, 30 years old, 2nd-interview, CS.

Women desired emotional support instead of an emphasis on the impossibility of having a vaginal birth. Women felt that obstetricians should transparently provide them with evidence-based information on the risks and benefits of choosing CS instead of vaginal birth and vice versa, so they can make decisions based on how their bodies feel and prepare for any risks, instead of feeling persuaded.

Like, it’s unforgivable for doctors who are not giving women the option to choose, I mean, it’s not like pre-eclampsia, the point is, there aren’t any complications, so I can give birth vaginally. But then why should it be suggested for ‘Oh you should have CS’, without educating about the pro and cons of CS, vaginal birth, and why should I be given CS?—Kamelia, 29-year old, 1st-interview, CS.

At the time of deciding the mode of birth, I wish I could get more explanation [from the obstetrician] on the process [of CS with ERACS], how I would feel physically, and how I should prepare. If I could turn back time, I would ask

for more information. So, I am not shocked, can prepare myself in advance for any side effects, and learn to manage them appropriately—Melati, 37-year old, 2nd interview, CS.

Women also felt that stakeholders should stop advertising birth as something painless and comfortable—referring to ERACS advertisements posted on social media accounts of health facilities and healthcare providers. Rather, women preferred to focus more on motivating and supporting women to go through labour and vaginal birth instead of taking a ‘so-called’ easy way.

As I am an ordinary woman, I want more information on how to encourage and motivate pregnant women to give birth vaginally, rather than having CS. Now, there’s a lot more information that encourages how to give birth comfortably, easily, with minimal injuries and so on, so people now tend to prefer ERACS—Seruni, 40-year old, 1st-interview, vaginal birth.

#### Unexpected experiences and effects after ERACS

Despite women valuing the presence of ERACS, in the second interview, women who had ERACS reported mixed experiences. Some women reported they were satisfied with ERACS as they believed that they had faster recovery compared with if they had a vaginal birth. However, other women felt that ERACS did not deliver what it is promised: that is, they did feel pain and did not recover within 24 hours as advertised.

I thought like ‘Okay, well, with ERACS doesn’t look like it’s going to be painful, it’s just going to be so-so, it’s going to be normal’. But the reality, it really hurts. I’m actually really surprised that it hurts. I can tilt left, tilt right, then stand up, walking slowly, but it really hurts, the pain turns out to be really painful. I didn’t think it [ERACS] will be too bad compared to vaginal birth. But it turns out that it hurts—Kamelia, 29-year old, 2nd-interview, CS.

Some women also reported side effects that they experienced with ERACS, such as vomiting, pain, itchiness, dizziness, spasms and delayed breast feeding—which are similar side effects with CS.

During the surgery, I felt my shoulder become heavy, like there was a sudden heavy weight. And [felt] nausea, vomiting all over. So, the process of operation doesn’t feel good. After it’s done, I feel dizzy, nauseous. I think this is just a personal assumption; maybe I was not suitable with the anaesthetic—Melati, 37-year old, 2nd-interview, CS.

#### Woman-centred care

Regardless of the mode of birth, some women felt they were being rushed due to midwives and obstetricians being impatient while they were in labour. Participants’ negative experiences of vaginal birth were attributed to labour induction, episiotomy and medications. Women were unclear about the purposes of medications and other interventions, perceiving them as unnecessary and only used to expedite labour and birth due to midwives’ impatience. Women desired more woman-centred care

by midwives since they felt the midwives prioritised clinical procedures over their feelings and comfort.

Um, I feel a bit [disappointed] about the induction. I was like, why are we in such a hurry, I still can try to give birth [without induction]. And the [cervical] dilatation is not stuck, it keeps dilating, from 4 to 6 to 8 centimetres, why do the midwife have to take the action [induction] so quickly?—Angrek, 28 years old, 2nd-interview, vaginal birth.

Some women who had negative CS experiences attributed experiences to obstetricians' lack of communication, pain and reduced mobility after CS.

What's not good is the [CS wound] stitching and the bottom area, it's uncomfortable, until now. I can't move much. It was swollen too on the right side, but after a long time it went away, but then it hurts again, [keep going on and off] like that—Krisan, 30-year old, 2nd-interview, CS.

## DISCUSSION

Our study explored Indonesian women's preferences about mode of birth, and to understand how preferences about mode of birth may change from pregnancy to birth. We found that during pregnancy, most women preferred to have a vaginal birth. With the rise of ERACS, however, women saw ERACS as a new method of birth similar, even superior, to vaginal birth. Despite most women desiring a vaginal birth, we found that more women had CS than planned. Our findings suggest that this change was primarily due to the influence of obstetricians around the time of birth. Women felt they lacked adequate information from obstetricians and felt disappointed with the change to CS. Women desired emotional and transparent information and better communication from healthcare providers.

We found that most pregnant women preferred vaginal birth, which is similar to previous studies conducted in countries with high CS rates,<sup>8</sup> such as Brazil and Chile.<sup>5</sup> Our study found that preferences for vaginal birth are influenced by sociocultural factors, rooted in gendered beliefs, perceived benefits of vaginal birth and strongly influenced by social networks. This is aligned with previous studies<sup>13–15</sup> and the ecological framework by Betrán *et al* that depicts factors influencing mode of birth across different levels, such as women, family, community and healthcare providers.<sup>8</sup> Our study's findings are consistent with other longitudinal studies that track women who previously had CS.<sup>17 19</sup> These studies suggest that a history of CS, coupled with healthcare providers recommending repeat CS instead of attempting VBAC, is the primary factor influencing whether women with previous CS have repeat CS.<sup>17 19</sup> Similar to Chen *et al*, our study also found that many women complied with healthcare providers' suggestions for repeat CS without being informed of alternatives.<sup>19</sup> Importantly, in our study, some healthcare providers suggested repeating CS despite the gap between births being over 18 months, as recommended by clinical guidelines.<sup>33–35</sup> This highlights that

healthcare providers need to deliver complete, reliable and evidence-based information to women regarding the mode of birth.

The rise of ERACS in Indonesia, however, is alarming. A search on Google Trends on the term 'ERACS' showed that an overwhelming majority of search interest for the term came from Indonesia in the context of birth and CS (with a peak *circa* November 2021); while in the United Kingdom and the USA, it appears sporadically, although in the contexts of software and cardiac surgery (Google's estimated search interest 'score' for the latter is 1/100th compared with Indonesia).<sup>36</sup> Women appear to be targeted in ERACS promotion for financial gain by mainly promoting its benefits through social media, health facilities and healthcare providers.<sup>12</sup> A recent social media analysis study found pervasive CS advertisements, including ERACS, mostly coming from Jakarta,<sup>12</sup> which is also our study site. The social media analysis findings aligned with our study in which women in Jakarta described learning about ERACS through celebrities and healthcare providers on social media, sharing the benefits of ERACS that can help women recover within 24 hours post-CS. CS in Indonesia is covered by national health insurance, both in private and public health facilities, with higher reimbursements for CS compared with vaginal birth for the facilities.<sup>23</sup> Global studies have revealed this financial incentive as one of the major drivers influencing healthcare providers' preference towards CS.<sup>37–39</sup> Therefore, the popularity of ERACS may further incentivise facilities and healthcare providers to actively advertise ERACS for profit-making, especially since ERACS costs have been reported to be higher than the regular CS.<sup>40</sup> Despite this pervasive promotion of ERACS, the experiences of women having ERACS in our study, however, were varied, with some women believing it met advertised expectations, but some experienced adverse effects after undergoing ERACS. The negative experience with ERACS highlights the need for balanced, evidence-based, transparent and free-from-financial incentive information on not only benefits but also risks being disseminated to women.

We found that, in this study, obstetricians were key drivers of women's actual mode of birth. Women placed substantial trust in obstetricians, viewing them as the most knowledgeable and, therefore, happy to follow their advice. Beyond clinical expertise, this might be due to the hierarchical status of the woman–doctor relationship. Previous research revealed that doctors in Indonesia used paternalistic and unidirectional communication styles with patients, where the doctor leads and dictates consultation with little attention given to patients' concerns.<sup>41</sup> This communication style means conversations mostly deliver medical content and direction instead of providing psychoemotional support.<sup>41</sup> This paternalistic style is also observed in the context of the mode of birth preferences, where healthcare providers felt frustrated when they could not influence women—desired to retain control and felt it was not always possible to communicate



the risks and benefits of birth mode.<sup>42</sup> Unfortunately, some women who underwent CS in our study regretted their actual mode of birth. Some studies reported that regret postbirth was associated with perceived loss of control, inability to advocate themselves, poor communication and lack of trust in healthcare providers.<sup>43–45</sup> This is similar to what we observed in our study, where women experienced regret because they felt they could have had a vaginal birth if they persevered and were disappointed with the healthcare providers' communication with them.

Our study shows women desired meaningful conversation and evidence-based information on risks and benefits from their healthcare providers. Promoting two-way communication between health providers and women is imperative to ensure that women feel well-informed and participate in decision-making around birth. Furthermore, more information is also needed surrounding emergencies during birth to ensure women can be prepared for any arising circumstances during labour and make an informed decision if they need a CS. Providing evidence-based information and meaningful conversation also aligns with the factors influencing success in interventions targeting women to optimise the CS.<sup>46</sup> These factors include providing educational materials to women, support from family, peer support, and adequate time and opportunities to interact with healthcare providers.<sup>46 47</sup> All this support provides not only informational but also emotional support, which is important because emotional support may reduce the likelihood of experiencing regret over birth decisions.<sup>44</sup> Thus, ensuring the provision of these four types of support is imperative to facilitate women's participation and women-centred care.

This is the first study exploring women's preferences in Indonesia and uses a longitudinal design, enabling the understanding of drivers to change across time. We explored the perspectives of women across different socioeconomic backgrounds and public–private facilities. Findings from our study may not be transferable to women in settings that are different from Jakarta. Furthermore, we only interviewed women in their third trimester of pregnancy, which means we may miss important factors regarding the mode of birth preference early in the pregnancy. Women self-selected for participation, and women who chose to participate may have a particular interest, experience or perspective that influenced their decision. Our study also does not include perspectives from healthcare providers (doctors, midwives, obstetricians, etc), facility managers and policymakers, which will be important to explore. More studies are needed to understand if CS use in Indonesia is clinically indicated. Intervention studies are pivotal to be implemented to optimise CS use in Indonesia.

## CONCLUSION

Our study revealed potentially alarming ERACS promotion impact on women and the strong influence of

healthcare providers on women's mode of birth. The pervasive ERACS advertisement and substantial power imbalances between healthcare providers and women open a loophole that can result in a continuous increase in CS in Indonesia. This study highlights that there is a need for better communication, evidence-based information, space for women's autonomy and more opportunities for women to discuss the mode of birth collaboratively with healthcare providers. There is also a need to standardise and regulate ERACS use in the country.

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