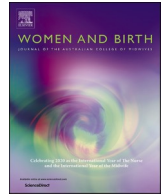




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Making good care essential: The impact of increased obstetric interventions and decreased services during the COVID-19 pandemic

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ABSTRACT

Problem & background: Since the onset of the COVID-19 pandemic in Canada, policies have been implemented to limit interpersonal contact in clinical and community settings. The impacts of pandemic-related policies on experiences of pregnancy and birth are crucial to investigate and learn from.

Aim: To examine the impact of pandemic policy changes on experiences of pregnancy and birth, thereby identifying barriers to good care; to inform understandings of medicalization, care, pregnancy, and subjectivity during times of crisis; and to critically examine the assumptions about pregnancy and birth that are sustained and produced through policy.

Methods: Qualitative descriptive study drawing on 67 in-depth interviews with people who were pregnant and/or gave birth in Canada during the pandemic. The study took a social constructionist standpoint and employed thematic analysis to derive meaning from study data.

Findings: The pandemic has resulted in an overall scaling back of perinatal care alongside the heavy use of interventions (e.g., induction of labour, cesarian section) in response to pandemic stresses and uncertainties. Intervention use here is an outcome of negotiation and collaboration between pregnant people and their care providers as they navigate pregnancy and birth in stressful, uncertain conditions.

Discussion: Continuity of care throughout pregnancy and postpartum, labour support persons, and non-clinical services and interventions for pain management are all essential components of safe maternal healthcare. However, pandemic perinatal care demonstrates that they are not viewed as such.

Conclusion: The pandemic has provided an opportunity to restructure Canadian reproductive health care to better support and encourage out-of-hospital births – including midwife-assisted births – for low-risk pregnancies.

Statement of significance

Issue

In Canada, the COVID-19 pandemic has exposed a tension between the prevailing view that pregnancy and childbirth should entail close, regular monitoring and quick access to medical personnel and technology, and impetus to control disease outbreaks. Much remains unknown about the impacts of pandemic-related policies on experiences of pregnancy and birth.

What is already known

Perinatal mental health has declined during the pandemic. Support during pregnancy and childbirth is important for many

reasons, including birth outcomes and perinatal mental health. Overuse of interventions is a problem globally and is strongly discouraged by health regulatory bodies. Limited evidence from Europe suggests that intervention use has increased during the COVID-19 pandemic.

What this paper adds

In Canada the pandemic has led to a reduction in hands-on prenatal care and to the increased use of biomedical interventions. This increase in intervention use is an outcome of negotiation and collaboration between pregnant people and their care providers as they navigate pregnancy and birth in stressful and uncertain conditions.

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1. Introduction

Pregnancy and childbirth occupy a complex position within the landscape of pandemic healthcare in Canada. Both are heavily medicalized, with 92 percent of pregnancies followed by physicians and 98 percent of births occurring in hospital [1]. Maternal mortality rates are relatively low in Canada; at 8.7 deaths per 100,000 people, Canada's maternal mortality rate is higher than most European countries but remains much lower than in the neighbouring United States [2]. Nevertheless, as in all countries where hospital births are the norm, in Canada pregnancy and birth are generally conceptualized as uncertain and risky events that can only be managed safely by biomedical professionals in clinical settings [3,4]. This sense of uncertainty and potential hazard has increased with evidence that pregnant people face elevated risk of severe illness and death in the event of COVID-19 infection [5,6]. Pandemic perinatal care in Canada is thus subject to system-wide pressures to limit interpersonal contact in clinical settings. As such, the pandemic has exposed a tension between the prevailing view that pregnancy and childbirth should entail close, regular monitoring and quick access to medical personnel and technology, and impetus to control outbreaks of a highly infectious disease. Pregnant people and healthcare providers now navigate this tension daily. The impact of pandemic-related policies and practices on perinatal care, however, remains largely unexplored both in Canada and globally. This article addresses this lacuna by drawing on 67 qualitative interviews with people who have been pregnant and/or given birth in Canada during the COVID-19 pandemic.

In the year prior to the COVID-19 pandemic, Canada's total fertility rate (TFR) had reached an all-time low of 1.47 births over a person's reproductive lifetime [7]. The average age of first birth has been rising for decades up to that point; in 2019 women 30–34 years of age were more likely to give birth than any other demographic [7]. Emergent data suggests that COVID-19 has had an impact of Canada's TFR, and that people may be delaying plans to become pregnant due to COVID-related fears and concerns [8]. For those who have given birth in Canada during the pandemic, much remains unknown about the experience of pandemic pregnancy. What is known that perinatal mental health has declined during the pandemic [9,10], and satisfaction about birth and postpartum care has decreased [11,12]. This is unsurprising given longstanding evidence showing that isolation and lack of support has negative implications for childbirth and for postpartum wellbeing. For instance, a Cochrane review [13] found that continuous support through labour and birth resulted in reduced duration of labour, less need for pain relief, higher rates of vaginal childbirth, and greater satisfaction overall. More broadly, a review of social support in pregnancy, birth, and postpartum concluded that "support is an important concept, with clear implications, for health and general well-being and highly relevant to maternity care" [14 p. 206]. Furthermore, research has consistently found that the participation of doulas in hospital births lowers c-section rates and reduces serious complications, leading to better birth outcomes and increased breastfeeding success [15,16,17]. Additionally, birthing support persons, such as family members and doulas, are particularly important for good birth outcomes for visible minorities [18,19]. In the interest of limiting viral spread of COVID-19, these forms of support have been restricted across the country, to varying degrees [20,21,22]. This paper contributes towards understanding the impact of removing these supports.

Emerging data from Europe and Canada suggests that the COVID-19 pandemic has led to increased technological intervention into childbirth. Canadian obstetricians have recently reported that early epidurals are being encouraged to compensate for the additional time needed to don protective equipment in the event of obstetric emergency [23]. Furthermore, the European Centre for Disease Prevention reports "over-medicalisation" of pandemic childbirth in several countries, including rising c-section rates [24]. These reports are concerning, especially given that obstetric interventions were already widely

overused in many countries prior to the pandemic [25,26], leading health governance organizations to implement policies designed to discourage over-medicalization of childbirth in order to improve maternal and infant outcomes [27]. The World Health Organization (WHO), for instance, remarks that "the prevailing model of intrapartum care in many parts of the world, which enables the health care provider to control the birthing process, may expose apparently healthy pregnant women to unnecessary medical interventions that interfere with the physiological process of childbirth" (28, p. 1), and labels the overuse of cesarian sections a "major public health concern" (29, p. 1).

These early reports of increased technological interventions during the pandemic are all either brief or anecdotal. The existing evidence does not allow us to distinguish clinical factors, such as the possibility that COVID-19 leads to medical complications necessitating c-section surgeries, from human factors, like the phenomenon of healthcare providers augmenting or inducing labour as a means of controlling workload. Our study builds on and contributes towards this emergent understanding of the increased medicalization of pregnancy and childbirth during the COVID-19 pandemic.

2. Methodology

2.1. Study design

This study captures birthing parents' concerns about pregnancy and birth during a global pandemic, and traces how they impact decision-making around birth location, uptake of birth interventions, and other elements of maternal healthcare. We examine the impact of pandemic policy changes on experiences of pregnancy and birth, identifying barriers to good care. Broadly, we aim to inform understandings of medicalization, care, pregnancy, and subjectivity, and to critically examine the assumptions about pregnancy and birth that are sustained and produced through policy.

This project is guided by a qualitative descriptive methodology [30, 31] – an approach to qualitative research which aims to gain in-depth descriptive insights from participants. It is an ideal approach when the objective is to generate findings and make recommendations based on the experiences and perspectives of study participants. [30,31]. We take a social constructivist standpoint, meaning the forms of knowledge that inform and that we have generated through the study are socially produced and embedded in context [30]. As many scholars have demonstrated [e.g., 32,33], birth is a physiological process that is always socially mediated. We view pregnancy and childbirth as "sociocultural, discursive, and political events in which multiple forms of power coalesce" [34, p. 490]. Likewise, we approach biomedicine as a cultural system that is effective in addressing particular kinds of problems but entails power structures that privilege certain perspectives and forms of knowledge, and which can cause harm [35].

2.2. Participants and recruitment

Participants were recruited through online social media platforms (Facebook and Twitter). All recruitment messaging was designed to be trans and non-binary inclusive – that is, worded to recruit pregnant people and/or new parents as opposed to women and mothers – however all respondents were cisgender women. Response exceeded our expectations; we conducted 67 semi-structured phone interviews with women who were pregnant and/or had given birth in Canada between March 2020 and January 2021. This large number of interviews were collected to capture broad representation in terms of geography, ethnicity, and socio-economic status, and to ensure that all interested respondents were included. No participants have withdrawn from the study.

Interviews ranged between 25 and 75 min in length, and were recorded, transcribed, and anonymized at the point of transcription. All interviews were collected by KR. Demographic information about participants can be found in the accompanying Table 1.

Table 1
Demographics.

Demographic characteristics	
Age range	22–43 years
Average age:	34 years
Ethnic or gender minority	12 (of which 2 Indigenous)
Birth date range	March 19th, 2020–January 4th, 2021
Primiparous/Para I	32
Multiparous/Para II)	24
Para III	8
Para IV	1
Para V	2
Twin pregnancies	4
Birth location	
Academic hospital	30
Community hospital	25
Home	3
Birth centre	1
Not yet given birth	8
Perinatal care provider:	
Obstetrician	42
Family Physician	12
Midwife	11
Mode of birth	
Vaginal/physiological	39
Emergency caesarean	10
Scheduled caesarean	7
Not yet given birth	8
Province or territory	
Ontario	26
Newfoundland & Labrador	14
British Columbia	10
Northwest Territories	5
Quebec	4
New Brunswick	3
Manitoba	2
Nova Scotia	2
Alberta	1
Community size	
Large (pop. 100,000+)	45
Medium-sized (pop. 30,000–99,999)	5
Small (pop. 1000–29,999)	16
Remote (pop. < 1000)	1

2.3. Ethics and confidentiality

All participants signed a consent form, which clarified their rights to confidentiality and to withdraw at any time. All study materials received ethical approval from McGill University. All study data are encrypted and are stored behind institutional firewalls and will be destroyed after seven years.

2.4. Data analysis

Both authors are PhD medical anthropologists with extensive research experience in the areas of pregnancy, childbirth, midwifery, gender, biomedicine and power, and clinical ethnography. We are white, cis-gendered women in our thirties who live in Canada (KR) and the United States (SW). KR is a mother who gave birth in Canada 2019, and SW has extensive skills and experience assisting and supporting home and institutional births. This combined expertise and positionality informed all stages of the research project. As with all qualitative research, our analysis reflects the informed decisions that we made about the interpretations of our data. This decision-making process was iterative, entailing back and forth between the raw data and our interpretations, which were determined using the approach of thematic analysis [36]. This approach is ideal for projects like ours, as it is flexible enough to accommodate large data sets while permitting balance between predetermined areas of focus as reflected in study objectives and planned interview questions, and unanticipated topics that developed through the data collection process.

We began our analysis through a process of data familiarization

whereby we read transcripts in full and took notes on topics that struck us relevant to our study aims and were shared by a multiplicity of participants. Then, we employed a hierarchical coding approach [37] whereby sections of data were identified and initially coded according to characteristics with high specificity and then developed into broader, “higher order” codes. For example, we began with coding material which responded directly to the research questions that we posed – a question like “Could you please describe your ideal birth experience?” might elicit comments such as “I want a fast hospital birth with an epidural, and I want my husband to be there,” and would initially be grouped thematically under the headings “hospital birth,” “epidural,” and “partner present.” These would be codes with high specificity. Higher order codes that might follow from these initial codes would be “medicated childbirth” or “fear of giving birth without partner” Then, by bringing together similar ideas, concepts, and experiences from across the data as identified through the initial coding process, we developed key overarching “themes” – the three that we discuss in this paper are “reduced care,” “increased medicalization,” and “medical intervention in response to pandemic pressures.”

Preliminary findings were shared with colleagues and with the broader research community both informally and via conference presentations and seminars, and their feedback also informed our analysis. Furthermore, many participants exercised self-reflection and critical thinking during the interviews; the data that follows contains some long quotes because participants undertook their own analysis of pandemic pregnancy and childbirth, and we have aimed to capture and honour that in our treatment of this data. Data were shared with six study participants who were either acquaintances of KR or were women who followed up to inquire about the study, as participants were invited to do. The feedback from these informal member-checking sessions solidified confidence in our analysis. However, we did not conduct comprehensive member-checking. Given the logistical challenges of following up remotely with nearly 70 women across four time zones and that participants were new mothers whose schedules were heavily shaped by their newborns’ care needs during a pandemic, we decided that selective member-checking would be sufficient so as not to impose an undue burden. NVIVO 12 software was used for data management.

3. Findings

All participants felt that their pregnancy and birth were impacted by the COVID-19 pandemic in some way. Some reported positive birth experiences despite the challenges of the pandemic and found the experience of giving birth in challenging times to be an empowering experience. Moreover, three participants (all second or third-time mothers who had smooth and uncomplicated vaginal births) welcomed the uninterrupted time with their newborns that hospital visitor restrictions enabled, but otherwise, the impact of the pandemic on participants’ experiences of pregnancy, childbirth, and early postpartum was overwhelmingly negative. We have grouped our findings around the themes of (1) reduced care (2) increased medicalization (3) medical intervention in response to pandemic pressures.

3.1. Theme 1: Reduced care

Pressures on the healthcare system combined with impetus to limit close interpersonal contact led to a reduction in hands-on perinatal care. The following demonstrates this at various stages along the perinatal trajectory, and documents some effects:

3.1.1. Scaled-back prenatal care

For most participants, most prenatal care appointments took place virtually. This meant that much of the routine monitoring (e.g., blood pressure, fetal growth, and weight) that would ordinarily have been carried out by their physician or midwife became their own responsibility to manage at home. This description, provided by Vivian (a

pseudonym) from Toronto, is indicative of many women's experiences:

At least two thirds, maybe three-quarters of my visits until the third trimester were virtual, which is okay for answering questions and stuff, but I noticed that I wasn't gaining weight myself. I wasn't going into the clinic and weighing every time, they weren't checking fundal height [a measurement of fetal growth]. I remember there being a lot more checks, a lot more physical exam stuff during my first pregnancy. [This time around] I felt a little bit like the onus would have been on me to identify anything weird going on.

In Vivian's case, as a second-time mother and Nurse Practitioner she had professional and experiential knowledge that gave her confidence in monitoring her pregnancy, and in speaking up when she realized that her weight gain was low. But, as she pointed out, first-time childbearers would lack this experience, and most pregnant people would lack her professional expertise.

While some interviewees felt that the quality of care that they received was not impacted by the pandemic, most shared Vivian's perspective that their prenatal care suffered. For most this was inconvenient and stressful, and it left some feeling abandoned by their care providers:

There wasn't much care towards the end at all. As your appointments were supposed to get closer together, they were actually getting further apart as complications were kind of increasing on my end (Cecilia, Petawawa).

Cecilia developed severe anemia towards the end of her pregnancy (her third) and was fainting and vomiting blood. Though she is a nurse, she reported being unable to get treatment despite repeated trips to the emergency department. She described how emergency department personnel repeatedly passed her off to obstetricians who claimed responsibility only for the health of the fetus and rejected the notion that they had an obligation to care for her. Although this level of non-support was uncommon among study, Cecilia's experience is like Vivian's in that she received less hands-on prenatal care than she would have prior to the pandemic, even with potentially serious complications.

3.1.2. Scaled-back postpartum care in hospital

Many women who gave birth in hospital reported that the postpartum care they received there was either reduced compared with their previous experience(s) or was inadequate. For instance, some, like Rebecca, a second-time mother from Toronto, were discharged from hospital unexpectedly soon after giving birth:

I felt a little like they were rushing us out of the hospital. I'm not saying that to complain because I was okay with leaving sooner (...). It still felt like we were sort of pushed out the door quickly from the hospital.

Furthermore, many interviewees who remained longer in hospital struggled to get care, especially if their birth partners had been required to leave shortly after the birth:

I felt like I was put in a room with a baby and I was forgotten about. (...) I think that there needed to be more compassion, especially where I was alone without my support person. (Amanda, first-time mother, St John's).

Amanda's call for compassion and for more attentive postpartum care in hospital was widely echoed. Many participants recounted feeling abandoned, crying alone and in pain while trying to care for newborns in an unfamiliar and stressful environment. In some cases, this lack of attention was dangerous; one participant who gave birth without her partner due to a hospital-wide ban on all birth support persons nearly bled to death in her postpartum room after her calls for nursing support were not responded to.

3.1.3. Scaled-back postpartum care at home

The scaling-back of in-person care extended into the postnatal period as well:

My two-week follow-up with the OB was over the phone. They would not see me in-person, which I was really upset about because I would rather have a doctor see if everything is healing properly. And then, with my daughter, I just wanted to make sure she was gaining weight, and for the doctor just to check her and make sure there is no jaundice or anything (...) I think she was three weeks, and then they finally agreed to see her in-person (Chloe, Winnipeg).

In some cases, new mothers had to push hard to access care even when they experienced postpartum health problems. For example, Moira, a first-time mother from New Brunswick whose childbirth experience entailed an episiotomy and broken tailbone, recounted the following at twelve weeks postpartum:

I'm still not that healthy, and the follow up isn't great. My six-week postpartum check-up for stitches was a phone call. I thought I had an infection, so I called the OB office like once every couple of days for about four weeks and they kept saying "We'll get back to you, we'll get back to you, we'll get back to you." So, I finally was able to get a hold of my family doctor who gave me a prescription because I ended up having a uterine infection. (...). Finally, after calling every two days for four weeks, hospital personnel said, "Instead of a phone call at eight weeks postpartum we can look at your stitches real quick." So, I did get somebody finally to look at them and they were fine... And since then, I'm still trying to get blood work done. I'm on a waitlist to get blood work done because for some reason I still can't get up holding [my daughter]. I just have zero strength, zero energy.

As we have demonstrated, many women across Canada received reduced hands-on prenatal and postpartum care during the pandemic due to COVID-19 policies and practices, even in regions with few or no COVID-19 cases. In some instances, such as with the participant who nearly died of a postpartum hemorrhage in hospital, neglect posed far more immediate risk than possible COVID-19 infection.

3.2. Theme 2: Increased medicalization

Despite reduced hands-on perinatal care overall, participants' narratives show a heavy reliance on medical intervention and technology to manage childbirth during the pandemic. This was due to several factors, including reduced opportunities to proactively avoid intervention, and reduced access to alternatives to medical technologies for managing labour and childbirth. For example, restrictions on face-to-face contact limited participants' opportunities to take advantage of pregnancy-oriented therapies and activities. This was disappointing for women who had planned to manage stress and prepare for childbirth using strategies such as massage and prenatal yoga. However, for women who hoped to prevent biomedical intervention through the use of prenatal therapies, lack of access posed more significant challenges. For these women, the inaccessibility of these therapies meant that biomedical technologies were their only option for managing complications. For example, Molly in Victoria had intended to access professional support to flip her breech-presenting baby. While attempting to flip the baby would have been a priority regardless of the pandemic, the risks posed by surgery and longer-term hospitalization during the pandemic made avoiding a c-section even more pressing. Although her doctor had initially given her hope that a flip might be possible, her options for achieving this soon dwindled:

I reached out to an acupuncturist and he started protocols to encourage the baby to turn. I only got one appointment with him and then his clinic had to shut down...I reached out to my chiropractor because I had heard really good evidence about chiropractic and helping with breech babies. I got to see her once and then her clinic had to shut down. (...) I had been

going to the pool and swimming quite a bit. I had been told it could be really helpful to encourage the baby, but the pool shut down. Suddenly all of these options that I had were just gone and I felt quite frustrated and helpless. (...) I really wanted to do whatever I could to try to have a vaginal birth. Like, COVID sort of changed the world and it felt like it changed the control that we had over our pregnancy and the birth of our child as well.

In Molly's case, her son never flipped, and she gave birth via scheduled c-section. While Molly was aware that this may have been unavoidable, she reflected that she would have felt better about the birth had she been able to do everything possible to encourage her son to flip.

The reduction in non-surgical, non-pharmaceutical options to facilitate an uncomplicated pregnancy, labour, and birth extended to the hospital setting as well, as pandemic policies limited the pain management options available in hospital. For example, baths were closed in many hospitals to reduce sterilization duties for staff, and opportunities to advance labour and manage pain through movement were limited by policies restricting labouring women to their birthing rooms. Furthermore, policies limiting the number of support persons meant that doulas were not present, depriving labouring people of coaching and support. Finally, nitrous oxide, which many women viewed as a milder form of pain relief compared to epidurals and narcotics, was prohibited in most hospitals due to fears of aerosol transmission of COVID-19. This left only epidurals and opioid narcotics for pain control. Carla (first-time mom, Kingston) describes this predicament:

Given the lack of availability of any other kind of pain management, I had to have an epidural. I'm grateful that exists, it's just not what I had hoped for. I had hoped to use other types of measures (...). I'd hoped to sit in a tub with warm water and take showers and be able to walk up and down the hall. But you're confined to your room, so you can't really walk around.

3.3. Theme 3: Medical intervention in response to pandemic pressures

We found heavy reliance on medical interventions in response to pandemic pressures, both from the standpoint of pregnant women and their healthcare providers. Of course, some people had intervention-heavy births during the pandemic out of medical necessity, due to complications such as preeclampsia and vasa previa. However, some shared experiences of being offered medically unnecessary inductions or c-sections. Their decisions to choose these interventions were often bound up with concerns about the pandemic, as per the following quote by Adriana (first-time mother, Toronto):

My obstetrician said "FYI, it just so happens that I've got a spot for an induction. If you would like to go on Saturday, you can go Saturday." I was like, "You know what, let's do it," because with COVID-19, I just wanted to get him and make sure we were home safe (...). I think I was just so tired, so over it at the end, and so sad of being kind of isolated, that probably didn't help my decision. But the doctor had said "Listen, I have this spot if you want an induction, and we want to get him out. It's up to you." (...), I think that mothering instinct kicked in, and I thought if I can just get him out and get him here with us, I can keep him safe. Whereas, if I had to wait another week or two weeks, and the numbers were outrageous and the hospital was inundated with COVID-19 patients, would I want to be there at that time? Probably not, so I thought I would just take that [induction spot]. [My obstetrician] said that the baby was healthy enough, he was term enough, that he could be out and managed without a NICU stay.

Adriana was thrilled with her care and was glad that she opted for induction. Yet she also acknowledged that the stress and uncertainty posed by the pandemic may have weakened her resolve when faced with the prospect of giving birth sooner. Similarly, Elena (first-time mother, St John's) clearly stated that she had wanted "a natural birth, without any

epidural (...) to experience it the way it is." However, she ultimately took her obstetrician's suggestion of induction due to concern that if she waited to go into labour naturally, the pandemic might escalate:

I was overdue. My doctor was fine giving us however much time we wanted to wait, as long as [my son] looked good with his vitals and stuff. But my partner and I felt pressure to just get it over with and have him delivered before it got too bad, because at that point, already, [my partner] couldn't go into the hospital with me for all of my check-ups. I guess the main impact [of the pandemic on my pregnancy] was that I never waited long enough to let [my son] come on his own.

As Elena explains, her doctor did not pressure her to choose induction. Although she may have ultimately been induced even if she had waited for spontaneous labour, she eventually gave birth via c-section after the induction failed. Elena was left feeling disappointed with herself for choosing induction due to pandemic fears.

In Elena's case, it is clear why her doctor offered the option of induction: she was past her due date. In contrast, with Adriana it is unclear why her physician offered induction. While motivations likely vary among obstetricians, the reflections of interviewees such as Olivia (second-time mom, Halifax) suggest that some physicians may be offering interventions due to their own COVID-19-related concerns. Consider the following:

I sometimes wonder if [the obstetricians] were like, "Okay he's big enough, he's healthy, we could just put her up in a room but we could also just take the baby out now." (...) There were discussions amongst the nurses, and people were talking about it in the hospital that things were going to change quickly. As soon as we got home things started to lock-down, borders started closing. So, preparations were already being made as to how us as a community and the medical community would deal with this pandemic. So, I've wondered... I say, "emergency C-section," it wasn't an emergency like if they don't get him out, he's not going to survive and there was no harm to me either. They were like, "Okay, we could take him now or we could wait, but we might as well just take him now, we know he's big." I sometimes wonder if that was a consideration because they knew things were about to change.

As implied in the account above, Olivia suspected that she was urged to choose a cesarian quickly as a means of controlling workflow in the hospital, in anticipation of an upsurge in patients due to COVID-19. While Olivia reflected that she would likely have had a cesarian eventually due to complications with her pregnancy, she expressed regret that she "Wasn't given a choice." Her tone was wistful when she remarked: "Maybe I didn't question it enough. COVID was probably on my mind too at that point. I had put my faith in the doctors and the surgeons."

With looming concerns about COVID-19, many study participants wanted to give birth quickly. Many feared that if infection rates escalated their partners would be banned from entering the hospital or might contract COVID-19 themselves in the interim. Many interviewees took what limited action they could to mitigate that possibility, some by attempting to initiate labour themselves by "Walking, sex, [and] howling at the moon" (Claire, Petawawa), and others by quarantining their households leading up to their due dates. One third-time mother even made a contingency plan to give birth with her husband in her car in the hospital parking lot. Three interviewees switched from hospital births to planned home births to ensure that their partners could be present. Most women, however, planned to give birth in hospital and worried helplessly about labouring unsupported.

However, for some interviewees the fear of labouring in hospital without their partners was itself a motivation to choose increased medical intervention. For example, Wendy from Mississauga opted for a scheduled induction despite having had a fast and uncomplicated childbirth with her first child. Her reasoning was thus:

I believe if I'm induced and we're in hospital, my husband can be there from the time I'm induced until one hour after delivery, then he has to

leave. And then he can't return to the hospital until the baby and I are ready to leave the hospital. If I naturally go into labour, I actually have to go into triage into the hospital alone, so he can't come in with me. I have to go in alone and get assessed. If I'm in labour, then he's allowed to enter the hospital only when I'm actually ready to deliver. So, he can't actually be there supporting me until they're ready to put me into the delivery room.

Similarly, Rachel (second-time mom, Toronto), was explicit that her anxiety over the potential to go through childbirth and a postpartum hospital stay without her husband prompted her obstetrician to offer a scheduled induction:

I was very, very anxious leading up to the birth. Just because everything was changing, you didn't know what was happening, the hospital policies kept changing. At one point the hospital I was delivering at said your partner could only stay for two hours after the delivery. That made me really upset and I didn't know if I could end up having a c-section or what would happen. And then, I also saw what was happening in other places like in New York and Montreal where they had no partners at delivery. I was worried that it was going to get worse and that was what was going to happen. I ended up being induced, (...) [and] that definitely was partially pandemic related. I think my doctor saw that I was really anxious. I saw her for that 36-week checkup in person and she offered it. She said "I'm on call. When you're over 38 weeks, if you want an induction, I will put you on the list."

4. Discussion

This study shows that during the COVID-19 pandemic hospitals in Canada have scaled back hands-on perinatal care before birth, during labour, and postpartum. Many people have been expected to take a more active role in monitoring their pregnancies, even performing prenatal monitoring and testing on themselves that would normally be managed by healthcare practitioners. Moreover, the more complicated a person's pregnancy and birth experience, the more important self-advocacy appears to be within healthcare systems focused on providing only those services and supports deemed essential. Our study indicates that comprehensive perinatal care has been deprioritized.

These circumstances place a heavy responsibility on individuals to ensure their own wellbeing and that of their babies. While a few participants found pandemic childbirth empowering, these were uniformly people whose pregnancies and births were complication-free, and who exercised choice in how their births unfolded (e.g., those who switched from hospital births under obstetric care to a midwifery-assisted home births). However, very few participants expressed feelings of empowerment and control, and troublingly, the stakes of effectively exercising responsibility over childbirth are highest for the people who need the most care. Moreover, pregnant people are expected to take on additional responsibility for their health, the health of their babies, and the outcome of their birth while their access to clinical and psychosocial birth supports has been reduced. The responsabilisation of pregnant and birthing people for poor birth outcomes, especially in relation to their decision to resist over-medicalization of birth or to deny consent for unnecessary birth interventions, is longstanding and well-documented [38,39]. While this shift has been concerning enough in scenarios where biomedical care and constant monitoring are nominally accessible, our study shows that this has amplified during the pandemic, as withdrawal of perinatal care has redistributed even more responsibility on childbearing people for safely managing their pregnancies, births, and postpartum periods.

The issue of increased responsibility alongside a reduction in resources also impacts people who were offered interventions that may not have been medically necessary. Certainly, some participants who were offered interventions felt positively about it and felt free to decline them. Other participants, like Elena and Molly, experienced more ambiguous

feelings and their perceptions of opportunity to exercise choice were complicated. In their cases, factors such as fetal positioning and advanced stage of pregnancy meant that interventions may have eventually become necessary for the safety of themselves and their babies. But pandemic policies, restrictions, and stresses came together to make them feel pressured towards induction or surgery. This is in keeping with research which has found that induction is typically experienced as a "nondecision" [39, p. 400]. Importantly, these participants drew clear links between their disappointment with intervention-heavy births, and the pandemic's impact on access to non-clinical forms of support and on their own personal stress levels and resiliency. Despite articulating this connection, their narratives suggest that they nevertheless felt personal responsibility for how their births unfolded.

The possibility of being denied the presence of a birth companion was terrifying for most participants, motivating some toward non-medically necessary interventions as a pre-emptive mitigation strategy. Labouring people should never be in this position. Indeed, the denial of a birth companion is widely recognized as a violation of human rights and a form of obstetric violence [40]. The importance of support persons is especially critical given the widespread abuses against some minority communities (e.g., Indigenous and Black birthing people) in hospital settings, for whom the presence of a trusted birthing partner and labour support team can be a matter of life or death [41]. To uphold human rights and medical best practices during childbirth, other solutions to the risk of COVID-19 transmission during labour must be found.

Overall, our study suggests that for some people in Canada, giving birth during the COVID-19 pandemic is an event characterized by stress and the heavy medicalization and implementation of non-medically necessary interventions, alongside self-blame and regret about experiences over which they have little control and limited access to support. While much of this has long been documented in obstetric care, study participants who had childbirth experience prior to the pandemic clearly articulate a greater medicalization during their pandemic childbirths, indicating that the pandemic has indeed amplified pre-existing problems. This is troubling because lack of control and non-consented birth interventions are key factors in negative birth experiences [42,43], and negative birth experiences are strongly linked to postpartum depression [43]. Given research showing that postpartum mental health has declined significantly during the pandemic [9,10], women like Elena and Molly likely face elevated risk of depression. This raises additional apprehension given that our study shows that many women have found postpartum care inadequate and difficult to access. Many new parents with postpartum depression will not get the support they need.

This study reports on interviews with people who have been pregnant and given birth during the pandemic, meaning the perspectives of healthcare providers are absent. A second, ongoing phase of our study examines the experiences and perspectives of perinatal healthcare providers during this time, but at this stage we cannot provide data and analysis that draws on their experiences of pandemic perinatal care. Nevertheless, it is known that the COVID-19 pandemic has had a negative impact on the mental health of healthcare providers as well [44,45]. It follows that some may attempt to manage their stress and workload by making health care provision more efficient, and by trying to gain control of a situation that feels overwhelming. This study suggests that the uncertainties posed by the pandemic give some physicians impetus to manage a situation that is stressful for everyone – labour and childbirth during a global pandemic – by using medically-unnecessary interventions. Building on emergent literature indicating increased medicalization of childbirth during the pandemic [23,24], our study supports the possibility that this increased medicalization may be at least partially the result of physicians' workload management strategies.

Some might argue that the use of interventions to accelerate childbirth is a prudent response to the uncertainties of pandemic healthcare. Indeed, many interviewees gave birth at a time when the media was reporting on healthcare systems on the verge of collapse in Italy and California, and Canadians feared that their hospitals would soon face

similar pressures. If those fears had materialized, expediting patient turnover in labour and birthing wards could have been lifesaving. However, the cautions against the overuse of interventions raised by bodies like the WHO are evidence-based. Cesarean births, for example, entail higher likelihood of placental problems and stillbirth in future pregnancies [46,47]. They are also major abdominal surgery requiring weeks of reduced activities and increased social and medical support – support that may not be available during the pandemic. Similarly, the use of synthetic oxytocin to augment labour is associated with reduced likelihood of vaginal birth, and increased likelihood of forceps use, vacuum extraction, and C-section [48,49]. Furthermore, while health system pressures have varied greatly from region to region during the pandemic, the themes that we have identified here are uniform across Canada. Women like Elena and Olivia, for example, gave birth in Atlantic Canada, which is recognized among the global success stories of the pandemic for consistently keeping COVID-19 cases low [50]. This suggests that increased intervention use has been less a response to genuine system pressures, and more a reflection of what healthcare providers and administrators view as a reasonable, common-sense, and proactive response to potential pressure that, in most Canadian regions, never actually materialized.

Avoiding unnecessary risks is particularly important given the reduction in postpartum care that study participants reported. If healthcare systems are increasing interventions at the same time that the “safety net” intended to catch the complications from those interventions is reduced, then birthing people are being exposed to extra risk precisely when it is most important to minimize it. Our study data indicates that many people who gave birth in Canada during the COVID-19 pandemic were likely uninformed of these risks. Not only did no participants raise concerns about the potential risks of the interventions that they were offered, the reduced opportunity for hands-on care also means that conversations to establish informed consent are less likely to have occurred. This supports the findings of other studies of perinatal care during the pandemic, which have identified the lack of discussions between obstetric care providers and patients about the risks and potential outcomes of obstetric interventions as a major area of concern [51].

The inclination towards intervention use in response to pandemic stresses is concerning for the reasons outlined above. We emphasize, however, that it would be misguided to view this as simple opportunism on the part of healthcare providers. Our study shows that intervention use is welcomed by some women as a strategy for addressing their pandemic-related concerns. The problem, rather, is the limited toolkit available to physicians within the scope of standard obstetric practice. As with so many inadequacies within the healthcare system, the pandemic has rendered these limitations stark, as institutions have pared down healthcare to what is viewed as essential to maintaining health and safety – surgical and pharmaceutical interventions. That “essential care” in labour and birthing wards does not include labour support and family members or low-risk interventions and strategies such as walking, bathing, or moving during labour adds further credence to arguments that good obstetric care is too often conflated with heavy use of technology and monitoring – practices that have themselves been identified as increasing the risk of poor outcomes [52,53].

This inclination towards more interventions in response to pandemic stresses also raises the question of whether hospital environments are the appropriate location for straightforward, low-risk births. Indeed, maintaining hospitals as the near-sole setting for birth in Canada requires sufficient and sufficiently *healthy* staff to provide full-spectrum reproductive healthcare, regardless of external circumstances such as infectious disease outbreaks, and it requires expensive and labour-intensive protocols to ensure that pregnant and birthing people do not contract infectious disease while utilizing healthcare services. That pandemic perinatal care in Canada entails heavy intervention use, limited non-medical support of any kind, and scaled-back prenatal and postpartum care despite strong evidence that *all* of these are harmful,

implies that holistic care and essential services have been deemed impossible to safely provide in clinical settings during the pandemic. However, the midwifery model of care promoted by the Canadian Association of Midwives provides a model for honoring the multi-faceted essential forms of care required by pregnant and birthing people, even during a pandemic [54]. The seven core principles, which include framing the relationship between midwife and client as one of partnership, the right to continuity of care provider, the right to informed choice, the right to choice of birth place, and the focus on evidence-based practice together illuminate a path forward that would have honored this study’s participants’ physiologic *and* emotional, cultural, and psychological needs while reducing strains on the healthcare system.

Therefore, we echo the recent call by maternal health researchers and clinical practitioners in the United States to use the failings of perinatal healthcare provision during the pandemic as a springboard for overhauling how maternal health care is structured and staffed [55]. As for what that might look like in Canada, the experiences of the women who participated in our study highlight the imperative of increasing capacity for out-of-hospital births and perinatal care while also decentering monitoring and intervention as cornerstones of perinatal care for uncomplicated pregnancies. Indeed, while midwives’ scope of practice was reduced in many Canadian provinces during the pandemic (e.g., birth centres closed in many regions, and some provinces banned home births and midwife-supported hospital births), study participants who gave birth during the pandemic under midwifery care did not experience increased intervention use. Increasing the capacity for out-of-hospital births could be achieved by training and equipping more midwives, establishing more freestanding birth centres, and reframing out-of-hospital birth in the public and political consciousness as safe, desirable, and accessible. Indeed, implementing such changes would bring Canada more in line with other countries with similar healthcare systems. The UK and the Netherlands, for instance, both of which have robust midwifery systems, have continued to demonstrate that during the pandemic continuity of care is easier to provide at home and that home remains the safest location for uncomplicated births—both countries have lower rates of maternal mortality than Canada [56,57].

5. Conclusion

In Canada, the COVID-19 pandemic has led to both a reduction in hands-on prenatal care *and* to heavy use of biomedical interventions during perinatal care in reaction to the pandemic. The COVID-19 pandemic has thus exposed the drawbacks of a maternal healthcare system that is dependent on hospitals and hospital staff for nearly every prenatal appointment, birth, and postpartum appointment in the country. At a time when health system priorities are oriented towards infection control and the treatment of acute viral illness, perinatal healthcare services have been delayed, disrupted, or removed for some pregnant and birthing people. In order to ensure the continuity of essential perinatal healthcare services and practices, which include the participation of labour support persons, access to non-surgical and non-pharmacological options for pain management and labour augmentation, as well as the full spectrum of prenatal and postpartum care, healthcare systems could reorient themselves to a reproductive healthcare model that incorporates non-hospital birth centres, home births, and midwives as critical services. This is imperative both to strengthen the capacity of reproductive healthcare in Canada, and to fortify the overall healthcare system against COVID-19 and future epidemics.

In this analysis, we approach the COVID-19 pandemic as an opportunity to identify long-standing weak points in the Canadian maternal healthcare system. The changes that we propose are not merely a temporary accommodation of pandemic-generated needs, but adjustments that have the potential to correct long-established lacunas in Canadian reproductive healthcare and contribute to strengthening the overall capacity of hospitals and clinical staff. This will ensure that there are

sufficient staff and services for true obstetric emergencies. Furthermore, we assert that, contrary to current practices, times of exception and emergency are the times when non-surgical and non-pharmaceutical perinatal services and supports are the most essential for reducing risk of complications and necessity of higher-risk interventions. Full-spectrum perinatal healthcare is always essential and should be prioritized as such.

As a final note, as with all qualitative research, these results are not necessarily generalizable. Nevertheless, the themes that were developed were reflective of common findings across a large number of interviews, wide variation in terms of age, geographical location, and ethnicity, thus strengthening the trustworthiness of our findings.

Author contributions

We hereby confirm that this manuscript is an original contribution to research, has not been previously published, and is not under consideration for publication elsewhere.

The study was developed collaboratively by both authors. KR collected all study data, and KR and SW analysed the data together and wrote the manuscript collaboratively.

Ethical statement

The study received ethical approval from the McGill University Faculty of Medicine Institutional Review Board on June 6th 2020 (IRB Study Number A06-B39-20A).

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Conflict of interest

None declared.

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