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Childbearing women's experiences of the maternity care system in Australia during the first wave of the COVID-19 pandemic

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ABSTRACT

Background: Substantial changes occurred in Australian healthcare provision during the COVID-19 pandemic to reduce the risk of infection transmission. Little is known about the impact of these changes on childbearing women.

Aim: To explore and describe childbearing women's experiences of receiving maternity care during the COVID-19 pandemic in Australia.

Methods: A qualitative exploratory design using semi-structured interviews was used. Women were recruited through social media and self-nominated to participate in an interview. Maximum variation sampling was used. Twenty-seven interviews were conducted with women from across Australia. Data was analysed thematically.

Findings: Three primary themes and nine sub-themes emerged: 'navigating a changing health system' (coping with constant change, altered access to care, dealing with physical distancing restrictions, and missing care), 'desiring choice and control' (experiencing poor communication, making hard decisions, and considering alternate models of care), and 'experiencing infection prevention measures' (minimising the risk of exposure and changing care plans to minimise infection risk).

Discussion: The substantial changes in care delivery for pregnant and postpartum women during the pandemic appear to have reduced woman-centred care. In most cases, care was perceived as impersonal and incomplete, resulting in a very different experience than expected; consequences included missing care. The presence of a known care provider improved women's sense of communication, choice, and control.

Conclusion: This study provides unique insight into the experiences of childbearing women across Australia. The importance of respectful woman-centred care cannot be forgotten during a pandemic. The findings may inform future service planning during pandemics and disaster situations.

Statements of significance

Problem or issue

Substantial changes occurred in the Australian health care system during the COVID-19 pandemic to reduce the risk of infection transmission. Little is known about the impact of these changes on pregnant and postpartum women.

What is already known

Pregnancy, birth, and postpartum are periods of significant transition for women, and times where they benefit from information, support, and reassurance. Preliminary studies from Australia have found that women were concerned and distressed by the impact of COVID-19 on their maternity care.

What this paper adds

The data yielded a rich description of how changed care contributed to real and potential missed care opportunities.

Many women had reduced choice and control in the constantly

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changing health system. This led to expressions of anxiety and fear and desire for continuity-of-care models.

1. Introduction

The COVID-19 pandemic has significantly changed the maternity care provided to women and newborns during pregnancy, birth, and the postpartum period, irrespective of whether they were infected with COVID-19 or not. Australia is a federalised nation comprising six states and two territories, all of which self-govern their own health systems and public health responses to pandemic situations. The independence of jurisdictions resulted in different approaches to restrictions and rules across the country, and consequently different health care practices, in response to the local number of COVID-19 cases and community transmission. Whilst initial research indicated that pregnant women are not at higher risk of COVID-19 infection or poorer clinical sequelae if infected [1,2], more recent data suggest death was more likely in pregnant women than in nonpregnant women [3]. Despite the initially unknown sequelae, maternity services in many countries have made considerable changes to minimise transmission risks [4,5]. These changes have included minimising face-to-face care (cancelled or replaced by video or phone consultations, and shortened durations), limiting women's support people during all care episodes including antenatal and ultrasound appointments, labour and childbirth, and restricting visitors when on the postnatal ward [6]. Due to uncertainties about COVID-19 transmission and pathology, the safety of common maternity care practices, such as inhaled analgesics in labour, use of water in labour, presence of birth companions, vaginal birth, breastfeeding, and skin-to-skin contact between mother and baby immediately after birth, have been widely debated [7,8].

Preliminary Australian studies have found that women were concerned and distressed by the impact of COVID-19 on their maternity care, particularly the perceived and real lack of access to health care [6,9]. An online survey completed by 2750 women in Australia between April and May 2020, found that 26% had reconsidered their place of birth venue due to fear of contracting COVID-19 in hospital, limits on support people and visitors, and restrictions on birthing options, such as homebirth or water birth [6]. Women's most common concerns related to COVID-19 included labouring and giving birth without their partner or support person present (73%), the baby's health (68%), and lack of postnatal support (59%) [6]. Other countries have reported similar findings. For example, a study conducted during the peak of the first wave of COVID-19 pandemic in Italy found high levels of concern among pregnant and postnatal women, with women expressing feelings of fear, loneliness, and anxiety in describing their birth expectations [10]. Another online survey of 211 Australian breastfeeding support volunteers found that postpartum women reported concerns about breastfeeding difficulties, milk supply, and infant weight gain [9]. These concerns were exacerbated by a lack of face-to-face contact with health professionals, which meant infants were not measured or weighed [9].

The impact of widespread changes to maternity care are likely to impact on the emotional, mental, and physical health of Australian mothers and their infants [10]. There is a need for research to better understand the perspectives of pregnant and postpartum women receiving maternity care during the pandemic. The aim of this study was to describe pregnant and postpartum women's experiences of receiving maternity care during the COVID-19 pandemic in Australia. This paper is part of a larger study exploring the experiences of key maternity stakeholders in providing and/or receiving care during COVID-19.

2. Methods

2.1. Study design

A two-phased cross-sectional design was used to explore women's experiences of receiving maternity care during the first wave of the COVID-19 pandemic in Australia, March to June 2020. A cross-sectional study was chosen due to its utility in collecting and measuring data at a discrete point in time [11]. The first phase involved a national online survey [12]. The second phase involved a qualitative descriptive study using individual in-depth interviews. This paper reports the second phase findings, focusing on women's experiences of the maternity care system during the first wave of the COVID-19 pandemic in Australia. Human research ethics committee approval was received (Curtin University HRE2020-0210).

2.2. Recruitment

Recruitment for the study was conducted through social media (FaceBook, Twitter, and Instagram), and through the researchers' professional networks. The Australian College of Midwives (ACM) and the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) also assisted with advertising the study through their online member communication systems, such that members could then choose to pass on study information to pregnant and postpartum women. Women who completed the online survey in phase one were offered the opportunity to register their interest in participating in an interview for phase two. Potential participants were able to leave their name and email address to be contacted by the research team. From the phase one survey, 953 women volunteered to be interviewed. Maximum variation sampling [13] was applied to select a variety of women for an interview. This sampling approach aimed to include women of different ethnic backgrounds, women living in varied geographical locations across all states and territories of Australia, primiparous and multiparous women, and women seeking care from a wide variety of models of care and planned places of birth. The research team contacted selected women by email, providing the participant information and consent form, and offering them the opportunity to participate in an interview. If they agreed, a date and time to be interviewed was arranged.

2.3. Data collection and management

Interviews were held using a web-based platform (Zoom) or telephone, based on the woman's preference. Verbal consent was recorded prior to commencing the interview. Interviews were conducted by four experienced researchers (LS, AW, ZB & VV), using a semi-structured interview guide (Appendix 1). All women were informed of their right to cease at any time should they become distressed and were provided contact details of support services if needed. The interviews lasted from 30 to 60 min. The demographic details of the participants are shown in Table 1. Interviews were digitally recorded with permission and transcribed verbatim by a professional secretariate. Digital audio files and typed transcripts were reviewed by a research assistant for accuracy, and any identifying information redacted.

2.4. Data analysis

Data analysis was performed with NVivo using the thematic analysis approach informed by Braun and Clarke [14]. This six-step approach involves: (i) familiarisation with the data, (ii) generation of initial codes, (iii) identification of themes, (iv) reviewing themes, (v) definition and naming of themes, (vi) producing the report [14]. Sample size was guided by the principles of data adequacy and saturation where concepts are repeated and no new ideas were apparent in subsequent interviews [13,15]. Initial coding was undertaken by a research assistant, and all codes and categories reviewed and refined by three experienced researchers (LS, AW & ZB), until consensus on the final themes was achieved. Themes and related subthemes are supported by verbatim quotes from numbered interview participants (P1-27). All verbatim quotes are italicised in text. For brevity, non-relevant portions of quotes were removed and have been indicated by an ellipsis, and words added for

Table 1
Demographic characteristics of participants (n = 27).

Characteristic	Values	N
Age in years	18–25	1
	26–30	4
	31–35	13
	36–40	9
State or Territory of residence	Queensland	5
	New South Wales	2
	Australian Capital Territory	2
	Victoria	8
	Tasmania	3
	South Australia	2
	Western Australia	4
	Northern Territory	0
Region by postcode	Very remote	2
	Remote	2
	Outer regional	2
	Inner regional	5
	Major city	16
Ethnicity	Aboriginal	2
	Torres Strait Islander	1
	Neither Aboriginal or Torres Strait Islander	24
Country of Birth	Australia	21
	Other (Belarus, Canada, Malaysia, New Zealand, Sweden, United Kingdom)	6
Living situation	Live with support person	25
	Live alone	2
Parity	0	3
	1	13
	2	8
	3	2
	4 or more	1
Pregnancy status at time of interview	Was currently pregnant	9
	Had given birth since March 2020	18
Place of birth (used or planned in this pregnancy)	Public Hospital	20
	Private Hospital	5
	Birth Centre	1
	Other	1
Childbirth education classes	No	22
	Yes	5
COVID-19 tested	Never tested	23
	Tested once (all negative)	4

context have been indicated by square brackets.

3. Results

Thirty women were approached, and 27 interviews performed in June 2020. This resulted in data saturation [16]; therefore, no further interviews were necessary. At the time of the interviews, 48% of the women were 31–35 years of age, 78% were born in Australia, 67% had given birth since the onset of the pandemic, 59% lived in a major city, 93% lived with a spouse, and 11% recognised themselves as Aboriginal or Torres Strait Islander. Table 1 demonstrates the geographical and cultural diversity achieved. These findings are similar to the most recent available national data which show the highest proportion of birthing women are aged 30–34 years, 64.1% of women were born in Australia, and over two thirds of mothers birthing in New South Wales, Victoria and Queensland [17]. The thematic analysis resulted in three primary themes and nine sub-themes as shown in Table 2.

3.1. Navigating a changing health system

The pandemic resulted in state and territory governments releasing directives about physical distancing, and limitations of social gatherings and business activities, which led to sweeping changes across the Australian healthcare system. The participants recognised this and spoke in depth about how routine care practices changed rapidly, the most prevalent being the shift from face-to-face consultations to telehealth. This resulted in the women 'coping with constant change' of health care services, experiencing 'altered access to care', 'dealing with physical distancing restrictions' within health services, and ultimately for some, 'missing care'.

Table 2
Themes and sub-themese.

Primary theme	Sub-theme
Navigating a changing health system	Coping with constant change
	Altered access to care
	Dealing with physical distancing restrictions
	Missing care
Desiring choice and control	Experiencing poor communication
	Making hard decisions
	Considering alternate models of care
Experiencing infection prevention measures	Minimising the risk of exposure
	Changing care plans to minimise infection risk

3.1.1. Coping with constant change

All participants recognised the constantly changing landscape in maternity care services. This created a level of uncertainty for them and their families. P3 reflected, *"the rules kept changing kind of minute by minute as they got more information, and it was really unsettling"*. Some participants praised the staff in managing this constant uncertainty, as P3 said, *"the midwives and health professionals … did the best that they could with the information that they had, I think they did a brilliant job, I think it was a really uncertain time*". Whilst others described disarray; *"The hospital seemed to be in complete chaos, … no one knew what the other hand was doing all the time"* P14.

The ways in which the constant changes impacted on care varied. P11 explained, "different people's adaptations of the rules or the recommendations, I found some to be quite relaxed and some to be quite extreme". One participant found minimal change in her health care experience. She was under the care of a private midwife based in the community and explained, "I went with a private midwife, I actually had really no change in care. There was stricter cleaning, so it took a little bit longer. But other than that, I didn't experience any real change in care" P6.

3.1.2. Altered access to care

For all participants, their access to care changed rapidly from face-to-face appointments to telehealth appointments. Telehealth for most was the provision of a conversation with their healthcare provider via telephone, and for a minority this involved a video call. When face-to-face consultations were available, they became time-limited. Participants quickly recognised *"we can't stay any longer than 15 minutes, [it's] as much as you can get done in* 15 minutes*"* P3. For some, the ability to have a face-to-face appointment was based on pregnancy gestation. As P26 explained, *"now because I'm over 30 weeks they'll actually get me in and check everything after that"*. Similarly, P14 said *"[telehealth was] A bit of a waste of time to be honest, but I mean they can't listen to my baby's heartbeat, can't check my blood pressure, and can't test my urine for protein"*. Whilst this was identified by all participants regardless of risk, it was a major concern for those with more complex obstetric histories, as explained by P22, *"Well my biggest concern is you can't listen to the fetal heart rate over the phone and that's sort of my early pregnancy worries because of my [miscarriage] history"*. One woman had a history of postnatal psychosis and was very aware of her mental health needs. She said staff *"didn't think about mental health … I was trying to say for me it's important to have face-to-face appointments, but like the doctor was 'you know we don't do it, we just can't'"* P20.

Telehealth was described as impersonal and incomplete. P25 said, "it's just been verbal over the phone so it's very impersonal and I just feel like another number". P8 explained, "I got sent all this information after that first telephone appointment and it was a bit overwhelming, information overload … a lot that wasn't explained to me over the

phone maybe because of the limitations of the phone". For P9, she felt the reliance on phone conversations insufficient, for example: "I'm reluctant to make phone calls for help … I find it's a lot harder over a phone to sort of initiate that conversation". The widespread change to telehealth did not meet the individual needs of most participants.

There were some positive experiences of telehealth, however, in the experience of the participants in this study, it is noteworthy that these were all in the postnatal period. P17 joined a postnatal exercise group, saying, *"the Pilates class went online which is fantastic … to just be able to put on a Zoom Pilates class at home and I can feed her immediately before"*. Similarly, P1 said *"I joined a mother's group online [which] was fine actually, … a bit more flexible"*. And P23 enjoyed the convenience of telehealth doctor appointments saying, *"Yeah, I didn't have to get dressed to go to the doctor, it was amazing, I didn't have to corral all the kids into the car"*.

Inadequate access to postnatal care was raised by all the participants who were postpartum at the time of the interview. In-home postnatal visits were minimal or not offered at all, and postnatal services such as maternal, child and family health visits or new parent classes were, in many cases, cancelled as deemed non-essential services, which disappointed participants. P15 explained, *"I really didn't get proper support from the child health nurses until week five. … I actually got a bit of post-natal depression this time as well"*. Similarly, P9 said, *"It was very [disappointing] … he hasn't been weighed in about 3 or 4 weeks, and that was just weight, he hasn't been measured or anything, not properly since birth. There's a lot of gaps in the system"*. Lactation consultants were another service deemed non-essential in some states, and as P18 said, *"breastfeeding is really tough … lactation consultants weren't able to do business which makes it harder"*. P17 concluded, *"I think the maternal child health system being disrupted is probably a huge shame, I really think that should have been considered an essential service"*.

3.1.3. Dealing with physical distancing restrictions

The pandemic brought about various government-imposed physical distancing rules which required changes in healthcare services. These resulted in limited number of people during episodes of health care, visitor restrictions (due to the small clinic rooms and postnatal wards not meeting space requirements), and attempts to limit aerosol generating behaviours, as well as direct contact between people.

For some women in state or territory border regions or rural and remote areas of the country, the restrictions required them to have permits to commute to healthcare services, and in a few cases the expectation of a two-week quarantine in each direction. P2 required a permit saying; *"I went to [the city] for my 20 week scan like dead smack in the middle of the whole COVID thing … they were called G2G passes and you had to apply to the police … that was just like another hoop to jump through, I had to get my obstetrician to write a letter to prove that I was actually pregnant and I wasn't just going on a shopping trip"*. Whilst P5, an island resident with limited local healthcare services, said *"I missed a lot of my appointments in the last part of my pregnancy due to COVID concerns, … potentially having to quarantine for 2 weeks, get the scan, come home, and quarantine for another 2 weeks"*. She decided that the restrictions were more burdensome than the potential benefit of the ultrasound scan. When close to her due date, P5 had to negotiate with the authorities to stay in short-term rental accommodation close to her place of birth venue, rather than the government approved quarantine hotel which was much further away.

Some participants were pleased they had completed their antenatal care in person before the restrictions commenced, while others spoke of attending their antenatal care by themselves, as partners and children were not permitted, resulting in distress and worry. P2 said *"quite distressing like having to go on my own"*. P9 described the impact this had on her partner saying, *"he missed a lot of it. I think it really affected the bond before baby was born, like he didn't really connect"*. This also impacted participants' sharing of experiences and became an added burden for women, as explained here, *"it would've been helpful if he'd been able to hear all that education rather than me trying to remember it all and then relay it all to him when I got home" P4*. For women admitted to hospital during their pregnancy, restrictions were more profound for example, *"I've got a friend who's in hospital at the moment and she has to stay in until her baby's born next week and she's not going to see her three year old and that's nearly three weeks by the time she'll be able to see him again which is awful" P17*.

Limitations on support people for women in labour and birth varied based on the trajectory of the pandemic at the time, health services' own policies, and government restrictions. The most described situation was being limited to only one person and that person was not able to alternate with anyone else. All the participants giving birth in hospitals described concern, fear, or disappointment about not having their support persons of choice with them in labour. P14 described how her doctor told her *"just be prepared, come June your husband may not be able to come in"* leaving her thinking she would *"face labour alone"*. P24 said, *"that's what … affected me the most and freaked me out, that I was going to be alone, because I had a bad experience previously of being in hospital and … I was like 'oh crap I'm going to have to do this all by myself' and I can't handle that"*. For a few, the imposed restrictions were advantageous, for example, *"my partner's Mum was insistent on actually being in the delivery room and I was a bit like 'yeah no! I don't think I want you to see me in that state', I'd rather just be with my partner. So, I mean it's not too bad for me really" P26*.

All participants who gave birth in a hospital experienced the visitor restrictions on the wards. P3 said, "then being alone once I had my baby … and not being able to have anyone visit me … it was really lonely and upsetting and I spent most of my time in the hospital crying". Similarly, P11 said, "the only visitors I wanted was the girls [other children] to meet their sibling, so they couldn't do that". And furthermore, P7 said, "we weren't allowed to have visitors because he [the baby] was in and out of the NICU [neonatal intensive care unit]".

For some women however, these visitor restrictions had unexpected advantages. P11 said, "the good part about no visitors in the hospital was that we got lots of lovely time with baby, it was really quiet and uninterrupted". And P24 added, "it was nice that there wasn't that sort of hustle and bustle of people constantly coming in and out of the hospital … and it was nice that I could say nobody's allowed to come, and it wasn't just me being [nasty]".

Participants spoke of following the regular daily updates on physical distancing rules from the government. This caused much frustration when the changes were not implemented in healthcare straight away. P14 said, *"when I got to the hospital, they didn't know about the restrictions having been lifted. … That was really frustrating because I was like why? Why does this hospital not know?"*.

3.1.4. Missing care

The time limited appointments and reduced physical assessments resulted in women feeling fearful of, or experiencing, missed care. Many forms of missing care were described. P2 explained *"the GP referred me for an urgent ultrasound, and the earliest I could get in was 2½ weeks [away]"*. And P22 said *"I had a UTI [urinary tract infection] and no one looked for 5 weeks for the results, I think that's just the phone calls instead of the visit"*. P25 explained *"I was a bit disappointed in my midwife-on- the-phone appointment because she didn't book me in for a 20 week scan and if I hadn't of just mentioned it in conversation with my sister-in-law I probably wouldn't have had one altogether"*. The impact of care provided only through the phone was felt as an omission with this woman explaining P14 said, *"they can't feel the baby, where it's positioned, they can't measure your fundal height or any of those things. You just think well this is a waste of time and it's just basically to make you feel like you're still being sorted when you're not really"*.

The diminished postnatal care contributed to missed identification of those who were unwell. P4 said, "I reached out to go and see the lactation consultant, … and she was like 'oh he's really jaundiced', and I thought well what if I hadn't gone to that lactation consultant. I didn't

know, they'd just said to me before, it's normal that he's jaundiced. And then his weight, so I haven't got any scales at home and he just didn't get weighed for a long, long time … he'd dropped right off his chart". Missed care also resulted from the imposed government rules, as P16 said, "I want to get his [baby] jaundice tested again to make sure it's going down but I can't go to the GP [doctor] because I have to self-isolate by law".

Many participants spoke of being asked to find ways to perform physical assessments, such as have their blood pressure assessed before telehealth appointments or weighing their baby on household scales. P19 said *"like they gave information on [how] to buy or hire a thing to take your own blood pressure before the appointment … I don't think that's ideal"*, P12 said, *"… I went to a chemist, like they don't do it [blood pressure] on you, but they had a machine you could use yourself"*, and similarly, P14 said *"I have a fetal Doppler at home, so I'd just listen myself to the heart rate"*. Having to perform their own assessments left women feeling concerned that they may miss providing relevant information, for example, *"she'd [the midwife would] give me lots of information, asked me all the questions … but it was definitely always playing at the back of my mind like, what am I missing I guess" P26*.

The changes in postnatal healthcare caused much frustration and dismay. P22 said, "I was just really worried that babies were getting dismissed [overlooked], … I know when they [the government] decided that football was going to go back on and I still hadn't had any word that I could take him to the maternal child health face-to-face at all, I was thinking 'how the hell is football more important than my baby's health, like what is going on with the world?' I was really angry at that, that everyone was prioritising getting sport back on the TV. Whereas I'm sitting here with a newborn baby who hasn't seen a doctor in 6 weeks and thinking, 'no'". Similarly, P1 said, "I wasn't told about mother's groups, I did find about them myself but I know that quite a few of the others in my mother's group had to search for themselves as well, they weren't told about it".

3.2. Desiring choice and control

Participants craved choice and control, and many experiences were void of this. They spoke about 'experiencing poor communication', 'making hard decisions' and 'considering alternate models of care', including continuity-of-care models with a provider of the woman's own choice.

3.2.1. Experiencing poor communication

The changing landscape of the pandemic and healthcare provision left women feeling ill-informed and uncertain. They experienced delays in health service policy information being transferred to their care providers, and then on to them. This created a sense of uncertainty, P14 said, *"there was utter confusion and chaos generally at the hospital, like I could never count on anything being the truth"*. This uncertainty and poor communication led to a sense of anxiety, as P3 explained, *"because everything was so busy and the midwives and doctors were so unsure of what was going on and they hadn't been given a lot of information I could sense that everyone was a little bit stressed and a bit like – 'well we don't know what's going on' they weren't outwardly trying to show that, you could sense that everyone was a little bit stressed, so it wasn't a nice feeling – it kind of made me feel a little bit like – not safe"*. However, P9 was satisfied with her providers' communication, with this example given *"they [hospital staff] were exceptional, I think they went [out of their way] to make people feel like, the women feel safe and secure and answer every question possible and everything"*. Some participants rationalised concerns about their health service, as P14 said, *"I always come back to is the fact that we are so blessed to be living in Australia, we have such a high standard of care anyway, okay so things slipped a bit, but we're still doing so much better than women in other parts of the world"*.

3.2.2. Making hard decisions

Participants described varied experiences about their decision making throughout their maternity care. Some felt supported and given choice, others felt their options were very limited. P17 said, "*it's such an evolving landscape you just have to sort of roll with the recommendations and you know if this is what it is this week that's what we're doing kind of thing"*. P4 felt empowered to advocate for herself, she said, *"I know enough about the health system that I thought I don't have to do this, I can say no. And they didn't make me feel like I was being really awkward saying no, but I think if I didn't have the knowledge I had I could quite easily have just gone yeah okay I'll have it"*. P21 found conflicting advice concerning; *"towards the end it was basically just like '[the] birth plan's out the window let's just go with the flow', because I had an obstetrician saying you absolutely have to have a c-section and when I got to the hospital and they were like "are you sure you want this c-section?"*.

Participants who had continuity of care were able to build trusting relationships which facilitated their decision making. P2 said, *"My obstetrician, I really like her, I really trust her, … I wouldn't have her if I didn't trust her. So, we will [consider] her recommendations"*. P10 said, "*I think the continuity of care that I had from my midwife, although delivered in some unusual ways because of COVID, … I think is so key to kind of getting through this and being able to have a relationship with somebody the whole way through to kind of alleviate your fears and talk about things"*.

3.2.3. Considering alternate models of care

There were mixed feelings of satisfaction with care. Those in continuity models spoke of being satisfied, and those who wanted continuity but were unable to receive it, lamented not having a consistent caregiver. P27 said, *"I really did like the group practice model it's really nice to have one person that you actually know throughout, it makes the continuity nice, so they know you, you know them, things aren't missed"*. The continuity model reassured women and gave them a line of contact. P18 said *"I was really lucky because I've established a friendship with my midwife …, so I'd message her if I had an issue"*. P4 had shared care with a doctor, and said "*that was really good because I really hunted around this pregnancy for a really good, empathetic, holistic health professional so she's been amazing, just because [last time] in the public system I never really saw the same person and I guess there's like a level of uncertainty in that"*. Participants who had agreed to a student midwife were disappointed when the restrictions limited their involvement, for example, *"We were working with a student midwife and she basically messaged me out of the blue one day and said that Hospital C is no longer taking students" P21*. P16 did not have continuity of care and said, "*there's disconnect in information, I've found the disconnect between the information that my GP [general practitioner] was getting and that the [hospital] was getting they weren't getting the same"*.

Some participants spoke about reassessing their maternity care model because of the pandemic. For some this was either out of fear of health service closures, the risk of exposure to the virus in healthcare settings, or the restrictions placed on care provision. P24 said, *"my sister's godmother is actually a … midwife, so when this all started … if things were going to get worse and the hospitals are going to shut down … I did have a chat to her that if we have to go homebirth, I need her to come over. But we'd never planned for homebirth before that"*. Similarly, P23 said, *"we did think about doing a homebirth from the start. The cost of a midwife and a second [midwife] was beyond what we could afford, … But I said to hubby … perhaps accidentally homebirth"*. P3 showed how cost was a factor for many women, for example, *"I know that I'm fortunate enough to be able to afford the 3 grand [AUD$3000] to have a homebirth, but for a lot of other women that's not even an option"*. P5 considered all her options, even preparing for a freebirth during her second trimester. She said, *"I wasn't wedded to the idea of a freebirth [birth without skilled providers], I was just trying to find the safest option … … then I started talking to a birth centre, and that worked out really well. The [private] birth centre is not allowed to take people who are high risk, so I had to really argue to get in, but I had the support of the midwife there so that was fantastic. … but it cost about 5 grand [AUD$5000]"*.

Some participants spoke of the need for increased options of care. P23 said, "I think there needs to be more options for women, home birthing for example, it needs to be funded, it needs to be normalised. … If we'd already had that in place, it would've taken a lot of stress [away], like I said those accidental home births went off the chart, it would've been safer for women, safer for families, safer for midwives". Similarly, P6 said, "I hope that because of this pandemic that governments are less strict about homebirths and choices for women. … I definitely resent the fact that Medicare [Australian public health insurance] will rebate me for all of my visits if I go to the hospital, but they won't if I have a home birth. So, I hope that this pandemic changes people's attitudes towards homebirth and having that proper care with someone one-on-one, and that proper support – at a base level". Whilst P6 was able to self-fund a private midwife, she shared her lament that others could not and had limited choice and control of their maternity experience.

3.3. Experiencing infection prevention measures

The changes to care provision experienced were undertaken with the intent to minimise the COVID-19 transmission. In addition to the changed access to care and the physical distancing measures implemented, women experienced a range of infection prevention measures for themselves, their support people, and the staff, as well as changed options for their care in labour.

3.3.1. Minimising the risk of exposure

Participants described varied awareness of their risk of exposure to COVID-19 as they received their healthcare. One woman sensed increased risk, as she explained "*from my window I could see into the COVID testing clinic … and I could see people coughing– I thought those people all had the virus and that's why they were there … I was scared to leave the hospital thinking what if I walk past someone who's infected and myself and my only baby gets sick" P3.* However, many participants noticed and appreciated measures to reduce risk of exposure. These processes reassured participants, as P4 said, "*I felt very safe, it didn't really cross my mind because you know the checks at the door were so stringent, like there was hardly anybody around, the hospital, it didn't feel like a hospital, the corridors were empty, so I didn't feel like I was crossing paths with a lot of people*". Similarly, P13 said, *"as I entered the hospital all the safety procedures were followed, temperature check, confirmation that I hadn't been in touch with anyone from overseas or COVID infected, I didn't have an issue*". The safety measures were also evident in private consulting rooms. P2 said, *"social distancing, they spaced out their appointments, so you never saw another patient whilst I was there"*.

Participants spoke of awareness of more evident hand hygiene. P16 explained, "The only visual things that I could really see were happening due to COVID was the social distancing and … everyone was sanitizing a lot". Similarly, P7 said, … we had a midwife appointment today, and the only difference was that we noticed her wash her hands and then use hand sanitizer each time she changed from doing a different thing".

The increased use of infection protection measures including personal protective equipment (PPE) was also discussed and left some women feeling bemused. The use of PPE was not only practised by staff but was expected of women and their partners. P24 was told nothing really would change for her labour, however she explained, "*she's [the midwife] wearing a full gown and mask and all of that stuff, so I'm like well it's evidently changing something, … you're wearing your full get up*". Furthermore, she said, *"and then my partner had to wear a mask pretty much the whole time, they did try and make me wear a mask for part of it and it didn't happen. I have to yell and scream, and I'm too hot, I can't handle this. So that didn't really last very long*". Similarly, P9 explained "*they told me … that during the pushing stage they would have the PPE on and that would then be removed after that stage*". P3 explained how the domiciliary midwife's practice changed overnight, "*it was really strange so I had a midwife come the day after I went home and everything was normal with that appointment and then the very next day she came in like gloves and a mask and all this PPE, and she stopped at the door and asked me all these questions before she could come in and it was completely different the day before. So I was a bit confused as to why it had changed so much in just one day*". P17 experienced increased awareness of one's personal space, as "*the lactation consultant asked permission to come and be closer to me, to be able to witness a feed rather than just assuming*". Infection prevention measures were increased during home visits as a result of the pandemic. P9 said, "*my other children and my husband had to vacate that area of the house so that the nurse didn't come in contact with anybody else [but me and the baby]*". And p17 explained how her postnatal home visit was conducted, *"She [the midwife] would call us, tell us 'I'm out the front in the car, strip the baby off naked and bring her to the front door, I'm going to leave the scales on your front doorstep, put the baby on the scales, tell me what it says, and then I'll pick the scales up and disinfect them' … it was definitely really weird"*.

Participants heeded the advice from government and health professionals about infection prevention measures in the home. P11 said, "*I said to my doctor what's your advice, and she said … have less visitors less often, … nobody visiting the baby should be unwell, … be really vigilant about that … not hold the baby or kiss the baby'*". P7 received much more restrictive advice, "*we have been told he's not to meet anybody until he's had his 6 week vaccinations*".

3.3.2. Changing care plans to minimise infection risk

As labour and birth approached, changes in women's care options became evident. These varied based on the time during the pandemic in which they gave birth. First things to be implemented were the support-person restrictions and use of PPE. Soon after, pain relief options such as nitrous oxide (gas) and water immersion were restricted. These changes caused great concern for the participants. P4 said, *"that was kind of the final straw when … they said that I wasn't able to use gas because that had been part of my plan for so much of my pregnancy. … I remember being really upset when I read that"*. Similarly, P11 said, *"the biggest worry I had of being pregnant in COVID was for whatever reason some [one] decided you can't have gas in labour"*. These changed options heightened anxiety about labour. P24 said, "*like you know they're telling us that we're not allowed to use the gas … like it definitely put a sort of fear factor towards the end for me*".

With the removal of nitrous oxide, some participants found they were being pressured to have an epidural. P4 explained, "I was induced so I wasn't in labour, but the team leader came and was kind of trying to push me to get an epidural, and I was given a leaflet at one of my appointments and it was like a [Department of] Health thing and they were saying they encourage everybody to get an epidural … it was if you needed to go and have a Caesarean you wouldn't have to have a spinal and you wouldn't need a general, because you know that would be aerosol producing".

4. Discussion

The COVID-19 pandemic has been experienced differently across the world. In 2020, Australia experienced some of the lowest transmission rates amongst high-income countries [18]. Whilst it is recognised that maternity care is fundamental to the health of society [19], the findings of this study have shown that the constant change in health care provision to meet physical distancing, restrictions and infection prevention measures, caused uncertainty and fear for women, and resulted in reduced access to care and missed care. Maternity care is underpinned by the principals of primary health care within a social model of health [20]. Working in partnership with women, providers of maternity care should not only seek to detect and prevent complications of pregnancy and childbirth, but should empower women and provide informed choice, through access, equity and respect [19–21]. The COVID-19 pandemic has threatened some of these basic principles.

Much of the public health advice and subsequent government restrictions have resulted, at least in part, from utilitarianism [22,23]. Utilitarianism is a moral theory with the aim of betterment of society as

a whole, whereby there is a maximization of utility [22]. Critique of utilitarianism identifies that it minimises the ethical principles of justice and autonomy [22]. It is clear the health system changes in Australia, and around the world, have occurred, at least partially, under the principle of utilitarianism. Social restriction measures serve to limit interactions between individuals through physical space and time exposure, protecting both the community at large and health care workers. This approach to maternity care has meant that for many women, their desired experience of childbearing has been vastly different to one they experienced during the pandemic.

As a result of the pandemic, telehealth, a form of remote care [24], was widely implemented, and was experienced by women in this study as impersonal and incomplete. The limitations of telehealth were of significant concern to women and left some women feeling unable to share difficult conversations and being unsure of what concerns they needed to raise with their care provider. An Australian survey of telehealth users in general practice during the COVID-19 pandemic similarly found telehealth to be sub-optimal compared to traditional in-person experiences for many people [25].

A key aspect of concern to the reduced access to care and implementation of telehealth was the lack of physical assessment. In our study, the inability to have a physical assessment concerned women, causing them to feel a heightened sense of responsibility about their and their baby's health. The absence of some physical assessment increased the risk of maternal and infant health problems going undetected, with examples of missed care evident. This is consistent with global evidence, that shows even a 10% reduction in service coverage can result in a significant increase in maternal and/or neonatal morbidity and mortality [26]. Moreover, a recent study has shown an increase in stillbirth rates in the United Kingdom during the pandemic, with the authors hypothesising that this may be due to reduced episodes of care [27]. Ensuring women are adequately assessed by a qualified health professional during pregnancy is of major importance [26]. The reduced access to care, particularly in the postnatal period evidenced in this study was a further concern. The maternity experience is not only about the safe arrival of a baby, but also about ensuring a physically and emotionally optimal start in life for the new parents and baby, and essential services to support this, such as maternal, child and family health services and lactation support services must remain available to all women beyond birth.

When individuals assume responsibility for their own health and well-being with or without the support of a healthcare provider it is known as self-care [24]. Whilst self-care and remote care have been proposed as potential ways to improve overall quality of pregnancy care [24], these forms of care were implemented hastily during the pandemic in Australia without the provision of self-monitoring equipment to women. A study of antenatal care including a hybrid model of face-to-face appointments and remote care with self-monitoring showed favourable results, however the participants in this study were provided the requisite equipment for their self-monitoring [28]. During the pandemic, self-monitoring equipment such as blood pressure machines where provided in some areas of the United Kingdom [29], whilst in some areas of America (as with our study participants) it was recommended women purchase these [30]. This has the potential to create inequity in health care, particularly for those women unable to afford to purchase their own equipment.

A major concern found in this study was the limitation on women's support people of choice in labour and birth. Women should not be denied the right to a companion of their choice during labour and birth [31,32]. Evidence from pre-pandemic research suggests that management of maternal expectations is a challenge [33], and that women's birth recollections are related more to choice and control than to specific details of their experience [34]. Recent research has shown that many pregnant women had a negative psychological response to the COVID-19 pandemic [10,35–37]. In the current context where so much change has occurred, and continues to occur so rapidly, ensuring women have choice and control is an important consideration. Individualised, woman-centred care must always be at the forefront of the minds of healthcare professionals providing care [38]. However, this is potentially difficult in the context of utilitarian approaches to public health, as directives are mandated at healthcare or government policy levels, further restricting women's individual choice and control.

The clear message from women in our study is that during this pandemic, they wanted to receive care from a known provider. When the rest of society was in isolation, women wanted to know that they would receive individualised care as needed. For those who did have continuity of care, reports of anxiety and isolation were fewer than those without continuity. Where maternity systems were rigid and not responsive to individual needs, women felt uncared for and "like a number". Where there was discrepancy between what different health services 'allowed' women to do (for example pain relief in labour) and the support people they were 'allowed' to have, this promoted frustration, disappointment, and fear. The evidence from research outside of pandemic times supports our findings, emphasising that when women receive care by a known provider there are improved maternal and neonatal outcomes [39], women feel more in control [40], and report positive maternity experiences [40]. The narrative from women who wanted help, support, and care from a system that has been caught unprepared and unable to meet expectations is compelling. There were recommendations from women about the need for increased maternity care options including publicly funded homebirths. As our findings suggest, when such options were not available to women they considered freebirthing, a phenomenon accelerated through the pandemic [41]. Further research is recommended to understand the agility and flexibility of various Australian models of maternity care to respond to periods of acute demand such as a pandemic.

The findings of this study showed that women mostly appreciated the efforts that health services went to in order to keep them and their families safe. Infection prevention measures were experienced as both positive and negative. The use of PPE and hand hygiene were positive experiences, whilst the limitations of support people and visitors during their health care was experienced as both a negative and a positive experience.

4.1. *Strengths and limitations*

This study was conducted during the first wave of the COVID-19 pandemic in Australia, March to June 2020, which was experienced differently across the state and territory jurisdictions. Study limitations are related to the convenience sampling technique used in phase one, which involved a non-random selection of participants. However, using maximum variation sampling with the 953 women who self-identified as willing to participate in phase two, enabled a varied sample of women across Australia which is a strength. Although women from diverse cultures and backgrounds participated, the study was conducted only in English which prohibited participation of non-English speaking women.

5. Conclusion

The Australian maternity care system has underdone radical and widespread changes due to the COVID-19 pandemic. This study explored the experiences of 27 women receiving maternity care across Australia. The women experienced a health system that was in constant change, trying to manage the challenges of government-imposed physical restrictions and increased infection prevention measures. This altered their access to care, prompted changes to their care plans, and contributed to missed care. Participants desired choice and control and spoke of the value of effective communication and continuity models of care to enhance their maternity care experience.

Author contributions

All authors contributed to research conceptualization, methodology, writing - review & editing.

LS, AW, ZB & VV contributed to data curation, formal analysis, writing - original draft, and project administration.

Ethical statement

This study was approved by Curtin University HRE2020-0210, with reciprocal approval at Deakin University and Melbourne University.

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Conflict of interest

Linda Sweet, Caroline Homer and Yvonne Hauck all have editorial duties with this journal. To reduce any real or perceived conflict of interest, none of them had a role in the processing or peer review of this paper.

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Appendix A. Supplementary data

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