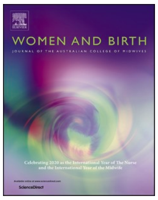
Women and Birth 36 (2023) 460–468

Contents lists available at ScienceDirect

Women and Birth

journal homepage: www.sciencedirect.com/journal/women-and-birth



A longitudinal qualitative study of women's experiences of postnatal care following hypertensive disorders of pregnancy

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ARTICLE INFO

Keywords:
Postnatal
Maternal Morbidity
Hypertensive Disorders
Clinicians
Primary Care
Secondary Care

ABSTRACT

Problem: There has been little focus on women's views of care and recovery following pregnancy complicated by hypertensive disorders of pregnancy [HDP] despite long-term implications for maternal health.

Background: Increasingly in clinical research, areas of interest include the extent to which women are involved in postnatal care planning, perceived value of routine postnatal contacts, lifestyle behaviour advice, and extent to which ongoing concerns about HDP could be discussed with healthcare professionals.

Aim: This study explored women's experiences of birth-recovery up to 12 months following HDP.

Methods: A longitudinal qualitative study using semi-structured interviews at four and 12 months postpartum. Twenty-four women who each had a form of HDP, were recruited using a maximum variation, purposive sampling strategy from four National Health Service maternity units in London, 21 of whom were interviewed at both time points. Data were collected and analysed by timepoint following a recurrent, cross-sectional cohort approach using template analysis methodology.

Findings: Four main themes and ten sub-themes were identified. Main themes included: assumptions about blood pressure; perinatal experiences; postnatal care pathways; and managing complex health conditions.

Discussion: Postnatal care needs to be tailored to women's individual needs following HDP, with ongoing review by relevant clinicians during and beyond the first six weeks. Many women with HDP have ongoing information needs about hypertensive status, treatment and prognoses, and future birth planning.

Conclusion: Policy makers, health providers and funders cannot continue to ignore the need to ensure postnatal services meet the needs of women who have experienced medically complex pregnancies.

Abbreviations: CVA, Cerebral Vascular Accident; CVD, Cardiovascular Disease; GP, General Practitioner (a.k.a. Family Doctor); HDP, Hypertensive Disorders of Pregnancy; HELLP, Hemolysis, Elevated Liver enzymes and Low Platelets; IDP, Individual Participant Data; NHS, National Health Service.

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https://doi.org/10.1016/j.wombi.2023.03.004
Received 27 June 2022; Received in revised form 6 March 2023; Accepted 8 March 2023

Statement of significance

Problem or issue

Provision of routine postnatal care by healthcare professionals in many countries usually ends at between 6 and 8 weeks, despite any medical complexities associated with pregnancy and birth. There has been little research attention on women’s views of their recovery after a pregnancy complicated by a hypertensive disorder of pregnancy.

What is already known

Hypertensive disorders of pregnancy remain a leading cause of maternal death globally, yet women are frequently discharged from maternity care at 6–8 weeks postpartum with no ongoing assessments of their hypertensive disorders despite their health status and risk of future health problems.

What this paper adds

By exploring the recovery experiences of postnatal women who had a pregnancy complicated by a hypertensive disorder we provide evidence for improved provision of more targeted postnatal care to be offered further into the first postpartum year, and between current and subsequent pregnancies.

1. Introduction

Hypertensive disorders of pregnancy [HDP] are experienced by around 10% of women giving birth [1] and are among the most severe health problems affecting women during, and in some cases, following pregnancy. Several conditions are classified as HDP, including gestational hypertension, chronic hypertension, pre-eclampsia, eclampsia, and pre-eclampsia imposed on chronic hypertension.’[2] Rates of HDP increase among women who are older, who live with obesity, and who have type 1 or type 2 diabetes, [2,3] and experience depression or anxiety in pregnancy [4] HDP remains a leading cause of maternal death globally [1,2].

Symptoms of HDP can persist in the weeks and months following birth, with potential to impact on women’s longer-term health [5]. As a result, attention is turning to the need to ensure postnatal care reflects appropriate planning and management from hospital to home to minimise morbidity and promote interventions to improve longer-term health, but this aspect of maternity care has consistently been neglected by healthcare funders and providers, with little evidence of views of women who have experienced serious health problems.

Provision of routine postnatal care in many countries includes a final contact with a healthcare professional at around 6–8 weeks after the birth, a contact subject to minimal revision despite numbers of women experiencing more complex pregnancies globally [6]. In the UK, all women, including those with more complex health needs, will be discharged following birth to routine contacts with a range of clinicians including midwives (for the first 10–14 days postnatally) and primary care clinicians, including the woman’s general practitioner (GP; family doctor). Following a routine 6–8-week appointment with their GP, women are discharged from maternity care, regardless of their health status following the index pregnancy. Some women may be offered a follow-up consultation with their obstetrician and/or another member of the medical team, but this will depend on local clinical arrangements and capacity [7].

Current postnatal services in the UK have been described as ‘not fit for purpose’ [8] as planning and content rarely take account of the need for effective postnatal management to prevent longer-term morbidity [9–11]. That women need appropriate follow-up following HDP reflects a recent individual participant data [IPD] meta-analysis which identified an HDP recurrence rate of 21% based on 22 cohort studies included in the analysis [12]. Adverse maternal and infant outcomes are not only restricted to the outcomes of the index pregnancy. Large observational studies and systematic reviews show that HDP can increase a woman’s lifetime risk of cardiovascular disease [CVD] two-to-five-fold compared with women who were normotensive during pregnancy [13–15] and significantly increase the odds of a fatal or diagnosed cerebral vascular accident [CVA] and hypertension in later life [16].

Much of the literature to date has focused on clinical management [9,17] and few studies have considered women’s experiences of postnatal care or views of recovery following pregnancy or early postnatal diagnosis of HDP. Previous research with women has highlighted several important factors that will affect women’s ability to make lifestyle changes following a diagnosis of HDP, including psychosocial factors and a lack of knowledge on the elevated health risks, with women often wanting clinicians to provide more information on the long-term health implications [18–20]. The present study is part of a wider project called PEONY: Postnatal care following high blood pressure in pregnancy. The qualitative aspect of PEONY involved one-off interviews with healthcare professionals caring for women who had hypertensive disorders of pregnancy and interviews with women at 4- and 12-months postpartum having had hypertensive disorders of pregnancy. Findings from healthcare professional data has been published elsewhere [21]. The present analysis complements what is already known and extends our previous work with clinicians [21] to explore women’s experiences of postnatal care in the UK and birth-recovery up to 12 months following HDP. Areas of interest included extent to which women were involved in the planning of their care, the perceived value of healthcare contacts, health and lifestyle behaviour advice, extent to which women could discuss any health concerns with clinicians, and if services could be improved to better meet women’s needs following HDP.

2. Participants, ethics, and methods

2.1. *The present study and ethics*

We employed a longitudinal qualitative research design comprising semi-structured interviews with women (N = 21) conducted at two timepoints (four and twelve months postpartum). Data were collected and analysed by timepoint following a recurrent, cross-sectional cohort approach [22] using template analysis methodology [23,24]. Results were interpreted accounting for chronological changes. Ethics approval was obtained from West Midlands-Solihull Research Ethics Committee on 26 January 2017 (ref:- 17/WM/0054).

2.2. *The Study Team and Reflexivity*

The authorship team is a multi-disciplinary one, with training in Midwifery [DB], Psychology [SAS, AB, RH], and the Social and Health Sciences [Y-SC, SAS, OC]. Data were collected by part of the team who also conducted preliminary analyses [AB, Y-SC], before the final analysis was conducted by a Psychologist, experienced in qualitative analyses of women’s lifecourse health [SAS], who also oversaw two other analysts [RH, OC]. Regular discussions were had between the analysts [SAS, RH, OC] and with the Chief Investigator [DB], to discuss themes and check the template, and each stage of the analysis was discussed to meet the varied disciplinary perspectives.

2.3. *Recruitment, setting, and participants*

Women were invited to take part in two postpartum interviews for this longitudinal study if they met the following inclusion criteria: had a live birth at one of four selected South London NHS Foundation Trusts at least four months prior to invitation to participate in the study; diagnosed with HDP during the index pregnancy preceding participation in the study; did not suffer a stillbirth or neonatal death; their infant was not still in a Neonatal Intensive Care Unit (NICU); were aged 18 yrs and over; were able to read and speak English; had no current history of severe mental health problems; and received postnatal care in London.

Eligible women were identified and initially approached by research collaborators (e.g. research midwives) at the selected NHS maternity units. Research collaborators contacted eligible women to explain the study, provide them with the participant information sheet and sought permission to share their contact details with the research team, following which a member of the research team contacted women directly. Participants were recruited using a maximum variation, purposive sampling strategy [25–27] to ensure data were collected on the experiences from women with a wide range of pregnancy-related hypertensive disorders.

In total, 24 women were invited to take part, with varying HDP diagnoses from chronic and pregnancy-induced hypertension (gestational hypertension) to pre-eclampsia. All 24 completed a four-month interview, and 21 completed interviews at four and 12-months postpartum. The analysis presented in this paper only focuses on the 21 women interviewed at both timepoints. Women were predominantly white (n = 16; 76%), born in the UK (n = 10; 48%), with English as their first language (n = 14; 67%). Most women were married or co-habiting (n = 18; 86%), educated to degree-level or above (n = 15; 71%), and had taken full-time maternity leave (n = 14; 67%). Women described that their pregnancies were mostly planned (n = 16; 76%); with just under half of babies born prematurely (n = 9; 43%), and a similar number being admitted to the neonatal ward (n = 8; 38%). The range of HDP women experienced are shown in Table 1 next to the participant IDs.

2.4. 2.4 Data collection

Interviews took place between August 2017 and September 2018 and were conducted via telephone or face-to-face at a time and place convenient to the women by one of the authors [AB]. All women provided informed, written consent for the interviews to take place, be recorded, and for their data to be used for research purposes. Interviews were semi-structured, but conversational in style, which allowed for common questions to be addressed across all interviews, enabling women to raise additional topics which could be followed-up by the interviewer and expanded upon [28]. This added important context and detail to the experiences about which women spoke, which was useful to contextualise our analysis. Interviews were audio recorded and were anonymised whilst being transcribed.

Table 1
Participant IDs and Diagnoses.

ID	Diagnosis
1	Chronic hypertension
2	Chronic hypertension/ pre-eclampsia
3 *	Chronic hypertension
4	Chronic hypertension
5	Pregnancy induced hypertension
6 *	Pregnancy induced hypertension/postnatal pre-eclampsia
7	Pre-eclampsia
8	Pregnancy induced hypertension
9	Pre-eclampsia
10	Pregnancy induced hypertension
11	Pre-eclampsia
12 *	Pre-eclampsia
13	Chronic hypertension
14 *	Pre-eclampsia
17 *	Pre-eclampsia
18 *	Chronic hypertension
19	Pre-eclampsia
20	Pre-eclampsia
21 *	Pregnancy-induced hypertension
22 *	Chronic hypertension/ pre-eclampsia
24 *	Pre-eclampsia/HELLP

N/B. Participants 15, 16, and 23 only took part in 4-month interviews and so were excluded from analysis.
An asterisk (*) on the Participant ID indicates no co-morbid health condition outside of the hypertensive disorder of pregnancy.

2.5. Data analysis

We employed a template analysis [23,24] to analyse these data according to previous work undertaken with healthcare professionals who deliver postnatal care following HDP [23]. Template analysis follows a methodical six-step process including: Familiarisation with the data; preliminary coding; organisation of themes; defining an initial coding template; application of the initial template; finalisation of the template and application to the full dataset [29]. Three members of the research team were involved in coding the 4-month data [AB, Y-SC, SAS] and three in coding the 12-month data [SAS, RH, OC]. Coding and themes were reviewed by Chief Investigator [DB].

Regular discussions were held between analysts to interrogate and revise the analysis, which in turn aided analytical rigour. Discrepancies in analytical findings and conclusions were debated between researchers to ensure all coding and analysis satisfied all perspectives from the multi-disciplinary health research team which covered clinical, social, and psychological perspectives [30]. We applied the following principles to ensure sample size sufficiency: usable data (for quality); [31] theme saturation; [32] and data adequacy [33]. With regard to useable data, [31] we were satisfied with the number of participants due to the local recruitment area and scope of the study, including the nature of the topic of HDP being nuanced with women recounting their own experiences (and not relying on shadow data, [31] i.e., where the participant is discussing events which happened to others and not themselves). In terms of theme saturation, [32] the initial template was derived from previous work in the field, [21] and adjusted accordingly with each theme and sub-theme being sufficiently supported by data from across the dataset, giving us confidence in the final template, themes, and sub-themes. We further agreed the high quality of well-saturated themes allowed us to evaluate the data as adequate for the study; [33] and therefore, each measure of sample size sufficiency was deemed excellent.

3. Results

The initial coding template revolved around themes abstracted from previous work conducted with healthcare professionals who provided postnatal care for women with HDP [21]. Adopting an iterative approach [29] to data coding and selection of quotations, meant data were read and re-read and the template was modified accordingly, to include four themes each with sub-themes (Table 2). These themes were then re-applied across the whole dataset – first to the four-month data, and then to the twelve-month data.

Themes are reported upon, data are presented, and analysis is interpreted considering chronological changes, in-line with a recurrent, cross-sectional cohort design, [22] whereby four-month data are presented first, followed by twelve-month data and any relevant changes are discussed. Analysis is presented with only the most illustrative quotations, accompanied by participant IDs and interview timepoints for reference (Table 3 *&* *4*).

3.1. Assumptions about blood pressure

The first theme in the template addressed women's assumptions about blood pressure. This comprised two sub-themes – the first how women understood hypertensive symptomatology and the second about hypertensive diagnoses. Women often reported their understanding of hypertensive symptomatology and high blood pressure more generally

Table 2
Template of Themes and Sub-Themes.

THEMES	Assumptions about Blood Pressure	Perinatal Experiences	Postnatal Care Pathways	Managing Complex Health Conditions
SUB-THEMES	Women's Understanding of Hypertensive Symptoms and High Blood Pressure	(Generally) Poor Postnatal Experiences of Clinicians	Hospital Admissions and Outpatient Management	Managing Co-morbidity
	Misinformation and Clarity around Hypertension Diagnosis	Emotional Wellbeing	Primary and Community Care	Medication Needs and Requirements
			Postnatal Counselling	Priority in Care

came from friends, colleagues, and family members who had themselves hypertensive diagnoses. Over the course of the postnatal period, many women reflected on their future with hypertensive diagnoses. Within this theme, women reported a lot of misinformation about hypertension diagnoses, and also stated where they attempted to seek clarity. For many women in the early postnatal period, issues with hypertension were not regularly discussed with, or raised by the clinicians they had contact with, with much of the postnatal care being directed to the baby's health and wellbeing instead. Clarity about hypertensive diagnoses did not improve as the postnatal period continued, and many women continued to report lack of information and confusion about their hypertensive status, treatment, or prognoses.

3.2. *Perinatal experiences*

Next, our template analysis addressed women's perinatal experiences, including again two sub-themes. The first of these reports women's generally poor postnatal experience of interacting with clinicians and the second elucidates emotional wellbeing during the perinatal period for women with HDP. Women often reflected on the number of clinicians they had seen during their postnatal period and how ill-prepared they were for having to interact with so many clinicians, especially if this was their first baby and they were unfamiliar with the maternity care processes. In later interviews, women reflected that interaction with clinicians was often paternalistic, unhelpful, or even rude – increasingly so if they wished to discuss future pregnancies after a difficult pregnancy, labour, and birth. The latter sub-theme often centred around emotive responses to babies being admitted to NICU or about breastfeeding practices. After a year of motherhood, women's reflections were often refocused to successes and milestones in the first postpartum year, despite time spent in special or intensive care or the feeding difficulties they faced.

3.3. *Postnatal care pathways*

Theme three included three sub-themes addressing women's experiences of postnatal care pathways in terms of hospital admissions and outpatient management, primary care and care in the community, and postnatal counselling. Women initially reported the transition of postnatal care from hospital and outpatient management to community and primary care services as generally insufficient – with some going as far as saying their experiences of monitoring before discharge increased their distress and possibly affected their blood pressure further. In later interviews, women often reported aftercare and postnatal follow-up after the routine six week postnatal check was almost non-existent. The second sub-theme addressed women's experiences of primary care services and their perceptions of both community midwifery and health visitor roles in postnatal care after a HDP diagnosis. In a similar vein to the first sub-theme, women often reported negative experiences of primary and community care services throughout their pregnancy. These were often mirrored long into the postnatal period as well, with only rare examples of GP practices providing care which was described favourably. Finally, this theme covered postnatal counselling, especially in relation to future pregnancies and associated risks with HDP. In the first round of interviews, at four months postpartum, many women reported having conversations with clinicians offering postnatal care which discussed options for future pregnancies directly in relation to the negative experiences they had only a few months earlier with their births. In later interviews, women reported having reflected more on family planning, but often remained unsure about the best course of action for postnatal contraception or future pregnancies.

3.4. *Managing complex health conditions*

The final theme in our analysis addressed how women managed complex and often co-morbid health conditions during the postnatal period, how they managed medications for their HDP, and their perception of how postnatal women were or were not prioritised by healthcare services. With regard to managing co-morbid conditions, women often discussed wanting to have their conditions controlled before wanting to get pregnant again. In later interviews – at 12 months – women often reported having gone back to their usual (pre-pregnancy) management of their conditions.

With HDP and other co-morbid conditions, there was a level of medicines management which was discussed by women at both timepoints. In earlier interviews, this sub-theme was often discussed in relation to adjusting to taking new medications for the HDP, whereas later interviews revealed negotiations women had had with clinicians providing their postnatal care about the dosage, frequency, or medication they were initially instructed to take. Often, this resulted in women augmenting their medications to better suit them – sometimes in discussion with a healthcare profession, and other times on the basis of how they felt physically. Finally, this theme in the template captured women's perceptions of the order of priority in care. Here, there was no difference between interviews given at four months as compared to twelve months, with women at both timepoints stating the focus of the clinical care was more often than not focused solely on the newborn in the postnatal period with little regard given to the mother, no matter the ordeal she had experienced with her HDP Table 4.

4. Discussion

Findings from this research on women with HDP differ, but reflect directly on qualitative results from previous, linked, research undertaken using interviews with healthcare professionals, within the broader overall study [21]. The first theme identified as part of this analysis discusses women's assumptions about their blood pressure and blood pressure more broadly, with analyses of these data suggesting women had limited access to accurate and timely information – in an easily digestible format – about their own condition or what it meant for future reproductive and longer-term health. Second, the theme on perinatal experiences suggests women were somewhat overwhelmed with information in the postnatal period, which may further obfuscate the information they required about their experiences. Our third theme captured more of this confusion about future reproductive and longer-term health given women's reports on the postnatal care pathways being fragmented and relatively short-term into the first postpartum year. Finally, our theme on the management of complex health conditions suggested many women returned to their pre-pregnancy management of their conditions (with the associated healthcare professionals for those conditions),

Table 3

Illustrative Quotations for Themes 1 and 2 and associated Sub-Themes.

Themes	Assumptions about blood pressure		Perinatal experiences	
Sub-Themes	Women's Understanding of Hypertensive Symptoms and High Blood Pressure	Misinformation and Clarity around Hypertension Diagnosis	(Generally) Poor Postnatal Experiences of Clinicians	Emotional Wellbeing
4 Months	"…I was reading through one of the things that normally gets sent to me weekly, 'How your baby grows' and everything. So, I read about the post-natal care and going through it I was like oh my God some of these things are happening to me." (Participant 3)	"I mean, I was there for a week, so we tried - because he didn't really latch on to my breast really well, that was always the problem, so we talked about feeding a lot, but anything related to the blood pressure, I think they just said I should take the medication and then double-check with the GP because they take over the care." (Participant 9)	"Definitely, but also, I think everyone in any profession takes information for granted that the layman understands when they don't, and with first babies I think it would be a good idea. They give you that huge, huge packet full of information to read through but none of it says who is the cast of characters that you're going to encounter and what are their responsibilities. I think that would have been nice because then you would know who to ask the appropriate questions to and you'd be prepared for the different groups." (Participant 7)	"…when I came to the Postnatal Unit I was just sometimes in tears. Not only am I on a ward where I don't have my baby, at first, I was supposed to have my own room but obviously they had to move me to a bay. Then people had their babies on that ward, and they moved me straight away and they made a ward that only people that didn't have their babies were on. That was fine once I got there." (Participant 2) "Oh, I felt terrible, yes, I felt dreadful, and so we used to go to the consultant, we used to see the consultant for her every single morning, and he said would I consent to her having donor milk, and I thought, marvellous, yes, yes I will! Like who did I think I was, I've never felt - five days, so I'd done nothing really in this five days, just cried, feel sorry for myself, and go visit her. Then after five days they came to me and they said, 'The donor milk's running out, what do you want to do?' I said, 'Well get some more,' that's a stupid question!" (Participant 24)
12 Months	"I think the concern about the effect of having long-term chronic hypertension does concern me but then on the flipside, I think, well, at least I've been aware of that from a young age, so it's been managed. It's been controlled but, yes, I'm definitely conscious of that……… I think the thing that's really helpful to me like I think one of the problems with having hypertension is I guess one of the reasons why they call it the silent killer is because you don't always have side effects from it, so you can quickly forget that it's quite a serious condition." (Participant 22)	"…normally I'm quite with it, but I was so - I was delusional, I was chatting nonsense apparently by that point, and that's another thing. They said that I had really low potassium and the hospital had said that they will write my GP a letter about it. The doctor there, he said, 'Oh yes, I'll write the letter'. I didn't think to say, 'What figure is it?' Because I'm not a medical - I don't have a medical background, so when I went to the GP, she asked me, 'What figure was it?' I said, 'I don't bloody have a clue!' She said, 'We've got a letter, but it doesn't say any figure.'……… So, there's no gauging points. She didn't check my blood pressure, no……… I'm bored of forever being told, 'You've got high blood pressure' or 'You're low in potassium.' Well, what does this mean? Yes, I don't really know." (Participant 6)	"I think the doctor when they were discharging me, they didn't ask but he told me, which I didn't like the way he put it… He said, 'You'd better not have any more children because of your health'." (Participant 5)	"They tried to help me in the special care unit, and I tried to pump some out and that, but it was just so painful, and I just couldn't and then there wasn't loads of milk flow either and I was trying to do it with this tiny little syringe, oh it was a nightmare because the nipple wasn't - yes, so no. I tried for a few days, but the one boob was all right and the other one wasn't. So, in the end I just thought, I can't put myself… We were in hospital for nearly two weeks, so I just thought, no I'm just going to… Yes, I just thought, I'm going through enough and he was, then he went jaundiced and then, oh, so it was just this whole thing……… but this time was the only time that actually somebody showed me properly and I didn't feel like a, you know, when they, 'Oh do you breastfeed, do it.' These ones in the special care unit, they actually sat with me and showed me how to, even though it still didn't work, but they did help me." (Participant 4)

Table 4
Illustrative Quotations for Themes 3 and 4 and associated Sub-Themes.

Themes	Postnatal care pathways			Managing complex health conditions		
Sub-Themes	Hospital Admissions and Outpatient Management	Primary and Community Care	Postnatal Counselling	Managing Co-morbidity	Medication Needs and Requirements	Priority in Care
4 Months	“I felt like I was going insane, to be honest. I felt like it was almost like torture, and then I think, at that point, they kept saying to me, ’If your blood pressure goes down tonight, you can go home’, and it was like, oh, my god, like I have a test. It felt like a test to pass, and sometimes it would be a bit higher, then it would be an okay reading, ’Oh, that’s not enough’, and that’s what was difficult.” (Participant 21)	“My understanding was that they would come to me and then they would obviously monitor the blood pressure and then recommend what the next step was. I didn’t realise that they would come on such a regular basis. They were coming every single day for the first week. It’s not like I had a conversation, and it wasn’t completely explained to me about how it works. I was just told that, there would be a midwife that would come check me and the baby and there would be a health visitor as well.” (Participant 18)“The care I received in the community to my mind was appalling, if I hadn’t have paid for that growth scan, I think I’d be dead, I think she’d be dead, I think I would have just had some sort of a stroke on the sofa and that would have been it……… I felt like I was in some sort of Kafka novel, where wherever I went nobody would do anything.” (Participant 24)	“ Not very clearly no, so when I went for my check with the blood pressure team at six weeks, the doctor I saw then said that I should wait before I get pregnant again. She said at least a year, I said that probably wouldn’t be a problem! Yes, but she didn’t really talk in any detail I don’t think. I think she said it is possible that there will be long-term kidney problems, because my kidneys took a bit of a hammering, but she didn’t really go into any detail about what that might look like or what that actually means.” (Participant 12)	“I would like to have more children, but I would like to make sure that my diabetes is completely under control, that I’m stable, because the nurses did tell me that it wasn’t actually him who was causing me the problems, it was my body couldn’t control having him in me. That’s why all the complications came up and the pre-eclampsia started, because my body couldn’t control it because I wasn’t prepared before I fell pregnant. So, I would like to, but I would like to make sure everything’s completely under control.” (Participant 11)	“I keep my medication by my bed. I always keep water by my bed, so it’s always there first thing in the morning and last thing at night. I used to only take medication in the morning, so it was just part of my morning ritual. It just became like cleaning my teeth, and because it was always out, but that was just a prompt really. If I hide it away in drawers, I forget all the time. When I was pregnant and taking a lunchtime dose, that was really difficult. I found it really difficult to remember taking that, and I would even do things like setting alarms on my phone, but then I wouldn’t hear it because I’d be out and about. That was really difficult, but I think taking it in the morning and night and keeping it by my bed, it’s… Now because I have quite a fixed routine, having a baby, it’s not like I’m out late and I forget. I’m always in bed early” (Participant 22)	“It’s just that it’s very focussed on the baby rather than on the mum. The only thing that everybody is worried about yourself is if you have any sort of postnatal depression and that’s it, nothing else. Everything it’s about the baby. I would say at my six weeks’ check-up, the GP didn’t even ask me any question, how am I’m doing, just it was all about the baby. It’s very focussed on the baby, not on the mum, which is fine, I guess, if you don’t have any medical history, but if you have a problem, I feel that it’s you have to ask and I don’t know, get help, nobody comes to ask you, ’How are you doing?’” (Participant 1)
12 Months	“[Postnatal Care Offer] It’s fairly poor, I suppose. I don’t know if I can say it’s poor, it’s been non-existent apart from the six-weeks check, that’s it, you never see anybody again.” (Participant 24)	“Obviously, it’s not as good as the specialist care that you receive while you’re pregnant which I was absolutely amazed by. It felt like one-on-one private healthcare. It was absolutely amazing, and I guess when you then go back to see the GP, you’re not monitored as regularly. It doesn’t feel like the first-class care that you receive when you’re pregnant but there’s no need to because I’m not at much risk any more as when I was pregnant.” (Participant 22)	“They were asking about contraception……… I basically said to them, ’Well, long term, I will probably want to get my tubes tied because I don’t want to have to take the pill or get a coil or an implant unnecessarily when I don’t need to, when it’s not my intention to get pregnant again at all.’……… they don’t delve into it and that’s what I’m assuming. So, I don’t know whether they do with people who seem a bit more confused about it. I’m not entirely sure, but I haven’t had it massively explained to me.” (Participant 20)	“I think when I was pregnant, I was relatively well. The lupus was relatively under control, so I think the pregnancy helped to make it under control. Now that my body’s going back to normal, maybe that’s - and they usually say you have flare ups afterwards, but I assumed that it was straight afterwards but the last month or so, I’ve found that I’ve just had flare ups, lost my hair and just things like that, but it’s just mostly that. Besides that, everything, I don’t have any heart problems or organ problems, any high blood pressure or anything like that.” (Participant 2)“When I was pregnant, you really had to keep your blood sugar levels really low, but I was almost taking my blood sugar every two hours just to make sure it’s not going over. I don’t know, I think it was 2.5 or	“I was discharged with my blood pressure medication and told to follow up with a GP, which I did do the following week. He told me to take twice-daily blood pressures over five days, which I did do and let him know the results. Then, he told me to stay on it, basically, for about six months and call in six months and do the thing again, which I knew was a bit excessive. So, when I had my six-week check, I’d, myself, gradually been reducing the dose because it was perfect, and I just thought I’d see how it was going when I reduced it and it stayed perfect. So, when I had my six-week check, the doctor who I saw, she was a bit more informed……… she had a bit more sense. She checked my blood pressure and said, ’No, you don’t need to stay on it for six months. Normally, it’s about six weeks post, and because your blood pressure is	“Yes, postnatally, because you, once the child arrives, I really didn’t think of myself, it was all about her, but he reminded me, ’You were carrying her and though she is out of your body you still need to check that your blood pressure is fine.’” (Participant 14)

(*continued on next page*)

Table 4 (*continued*)

Themes	Postnatal care pathways			Managing complex health conditions		
Sub-Themes	Hospital Admissions and Outpatient Management	Primary and Community Care	Postnatal Counselling	Managing Co-morbidity	Medication Needs and Requirements	Priority in Care
				so, which was already like, you shouldn't be really in that area and I was always freaking out if I had a ten or something like that. That is not the same anymore, so I'm not checking my blood sugar as often anymore. Yes, if you don't check it that often, you just can't react all the time. I think it's still okay but obviously, the doctors always said it should be back to pregnancy level. Yes, it's a lot of work involved to really keep it that low." (Participant 9)	absolutely fine.' She said, 'Just continue what you're doing over the next week. Just reduce and stop,' which I did do." (Participant 20)	

rather than seeking specific postnatal, inter-pregnancy, or preconception advice or counselling. With regard to the difference between four and twelve months, many women came to accept the state of postnatal care in the UK over time, instead drawing on other resources (usually relating to pre-existing conditions) for the management of their postnatal and future reproductive and longer-term health.

4.1. Strengths, limitations, and future research

This study employed a rigorous qualitative method of data collection and methodology for data analysis. The large sample size, and high rate of retention of participants longitudinally (N = 21/24; 88%) allowed for sufficient data to reach thematic saturation, meaning our results can be presented with confidence. Our sample, whilst relatively diverse in terms of country of birth and English as a first language, was skewed rather when it came to ethnicity, educational level, marital status. Future research should redress the balance by targeting recruitment towards more diverse ethnic groups, with a wider range of educational attainment and socio-economic status; whilst being aware of the data poverty and high levels of social complexity which exists, especially in inner-city areas which may prevent women's engagement with research [34]. Furthermore, recruitment took place in the geographically-bounded area of London, which although has high levels of ethnic and socio-economic diversity, has a specific demographic make-up unlike other cities and towns, which could limit the generalisability of our results, as has been noted in similar research undertaken in this geographical area [21,35–40]. Future research should look to undertake national or international recruitment to assess any pertinent differences. Whilst Template Analysis is a useful and versatile, rigorous qualitative methodology, it is not without its flaws. Namely it has an innate inability to document a comparison of the range of experiences or to pin-point the origin of particular experiences or perspectives. That being said, Template Analysis is useful for organising data in relation to previously published works, which allows analysis of women's data, based on a previous analysis from this project on healthcare professionals [21].

4.2. Implications for practice and policy

Evidence is accruing of the impacts on women's shorter and longer-term physical health of experiencing HDP. This study supports findings of other groups who have explored women's experiences in relation to aspects of HDP, including pregnancy management, [41] self-monitoring of blood pressure during pregnancy, [42] and women's information and education needs [43]. There are common themes across these studies which our findings confirm, most notably the need for better, timely information on HDP and its consequences, to ensure women are fully involved in any decision making about their care, and importance of addressing ongoing health concerns.

Women we interviewed were clear later in their birth recovery that information sharing following HDP needed to extend beyond the traditional 6–8 week postnatal period, at a time when most would be considering future pregnancies, reflecting on implications of HDP for their longer-term health and getting to grips with understanding what had happened. Lack of understanding about HDP in a large study from the USA [43] reflect responses from individuals who answered an open-ended question included on the US Preeclampsia Registry which asked individuals about information that would have been helpful at the time of their pregnancy. Analysis of responses from over 800 women collated from July 2013 to March 2017 highlighted that participant's baseline understanding of HDP including symptom onset, management and postpartum complications was 'demonstrably' (*sic*) lacking.

Evidence of how best to clinically manage women with HDP is accruing. A UK trial which evaluated the feasibility and effects on blood pressure of self-management of blood pressure among women who had gestational hypertension or pre-eclampsia who required postnatal hypertension management, found women randomised to self-management had better diastolic blood pressure control to six months postpartum [44]. An ongoing trial in the UK will assess if improved blood pressure control following birth results in lower blood pressure at six months and improvement in a woman's cardiovascular and cerebrovascular phenotypes [45]. In this trial, 200 women with a diagnosis of pre-eclampsia or gestational hypertension who need antihypertensive medication following inpatient discharge will be randomised to physician-optimised self-management of postpartum blood pressure or usual care [45]. Women in the intervention arm will upload their blood pressure readings into a smart phone application which will provide an algorithm driven individualised medication-titration. The primary outcome is women's 24-hour average ambulatory diastolic blood pressure at 6–9 months postnatally.

Alongside advances in clinical management, more is needed to ensure women receive holistic, timely and safe care from clinicians with appropriate skills and competencies. It was sad to note that some women in our study described clinicians they had seen during the postnatal period as unhelpful, rude, or paternalistic, particularly when women raised the issue of a future pregnancy. Women in our sample felt that their needs were ignored, with the focus of postnatal contacts placed on the well-being of their infants. With recent reports into poor quality of care and failing NHS maternity services in England, resulting in adverse outcomes including avoidable maternal and infant deaths, failure to listen to women is an issue which must be urgently addressed [46,47]. Direct policy support for postnatal care to provide and prioritise appropriate resources for local maternity services should be a priority for NHS England, if women's health needs are to be met.

Our findings showed that not only do women require better information at the outset but require regular updates on the implications of their HDP prognosis from time of diagnosis to beyond the six-week postnatal period. This needs to be accompanied by equal focus placed on a woman's health and recovery as well as that of her infant. If greater priority and resources are not accorded to postnatal services, [8,21] improvements in women's longer-term health outcomes following HDP are unlikely to be achieved.

5. Conclusions

Postnatal care needs to be tailored to individual women's needs following HDP, with ongoing review by relevant clinicians during and beyond the first six weeks. Many women with HDP have ongoing information needs about hypertensive status, treatment and prognoses, and future birth planning. Policy makers, health providers and funders cannot continue to ignore the need to revise postnatal services to meet the needs of women who have medically complex pregnancies.

Funding

This research was supported by the National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care South London [NIHR CLAHRC South London] at King's College Hospital NHS Foundation Trust. The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

Ethical statement

Ethics approval was obtained from West Midlands-Solihull Research Ethics Committee on 26 January 2017 (ref:-17/WM/0054). Participants consented for their anonymised data to be published as part of the informed consent process. Data are not publicly available due to the potentially identifiable nature of interview transcripts, but will be made available upon reasonable request to the corresponding author.

CRediT authorship contribution statement

Conceptualization: [DB, Y-SC]; Methodology: [SAS]; Software: [SAS; RH, OC]; Validation: [DB, RH, OC]; Formal analysis: [SAS, AB, Y-SC]; Investigation: [SAS]; Resources: [DB, Y-SC, AB]; Data curation: [AB, SAS]; Writing – original draft: [SAS]; Writing – review & editing: [DB, AB, Y-SC, RH, OC]; Visualization: [SAS, DB]; Supervision: [DB]; Project administration: [AB]; Funding acquisition: [DB].

Conflict of Interest

The authors declare no conflicts of interest with the submission of this manuscript.

Acknowledgements

The authors would like to express their sincere thanks to all of the women who agreed to participate in interviews. They would also like to thank members of their steering group: Jane Sandall, Cath Taylor, Lucy Chappell, Kate Bramham, Pippa Oakeshott, and Nick Anim. They also thank the women who had experienced hypertensive disorders of pregnancy who participated in the patient and public involvement and engagement activities which informed our study processes and outcomes and Mary Newburn for her support with this.

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