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Healthcare-Related Predictors of Postnatal Contraception Uptake: A Cross-Sectional Study

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ABSTRACT

Background and Aims: Postnatal contraception (PNC) care is an integral element of a comprehensive public health offer in the weeks and months following a pregnancy. The aim of this cross-sectional survey study was to examine experiences of PNC care in relation to healthcare professional (HCP) engagement during and after pregnancy in an English region.

Methods: Women who had completed a pregnancy in the previous 3 years in the North East and North Cumbria Integrated Care System (ICS) were invited to complete an online survey. Main outcome measures reported in this paper are uptake of medically prescribed/administered contraception and uptake of long-acting reversible contraception (LARC) during the postnatal period, and access to preferred PNC methods, in relation to healthcare experience at various points on the pregnancy/postnatal pathway.

Results: Most PNC care was accessed in primary care, but there was variation in setting of care associated with age, parity and pregnancy intention. Uptake of the most effective PNC methods and access to preferred PNC methods were positively associated with HCP engagement. PNC counselling prior to a planned Caesarean section (aOR 2.129 [1.362–3.327]), providing PNC on the postnatal ward prior to discharge (aOR 1.745 [1.408–2.164]), offering health visitor discussions about PNC (aOR 1.255 [1.046–1.507]), and attending a specialist contraception/sexual health service during the postnatal period (aOR 3.779 [2.510–5.687]) were found to be most significantly associated with these outcomes after adjusting for potential confounders.

Conclusions: HCP engagement during and after pregnancy was associated with an increased likelihood of accessing PNC care for women in this sample. Expanding the availability of PNC counselling, and the availability of PNC provision in particular, may result in increased uptake of the most effective PNC methods.

1 | Introduction

During the postnatal period, defined by the National Institute for Health and Care Excellence (NICE) as the 8-week period following a birth, women and their babies should have multiple clinical contacts with healthcare professionals (HCPs), offering valuable opportunities for public health intervention. However,

provision of postnatal support in the UK has been described as a ‘Cinderella service’ that often falls short of meeting the needs of women and their families [1]. A National Childbirth Trust survey reported that one in eight respondents were highly critical of their postnatal care, and a study examining the experiences of pregnant women in the UK during the COVID-19 pandemic found that there was a marked decline in overall

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satisfaction with care received postnatally [2, 3]. Furthermore, 69% of UK maternal deaths in 2020–22 occurred postnatally, and almost one in six late maternal deaths were attributable to suicide [4]. The UK also has one of the highest teenage pregnancy rates in the high-income world. Providing supportive and responsive care at this critical moment in the lives of women and families remains challenging, and inequalities in how maternity care is accessed and experienced persist [5].

Supporting women to access their preferred method of postnatal family planning care is one important preventative aspect of a comprehensive postnatal support offer. Postnatal contraception (PNC) care gives women control and autonomy over their reproductive health and protects them against the biomedical and psychosocial risks associated with unplanned/unwanted pregnancies and short interpregnancy intervals [6, 7]. However, despite guidance that PNC care should be easily available in a range of clinical settings, challenges persist in providing these services in a UK context, where commissioning responsibilities for postnatal family planning care are not necessarily clear and where contact between different HCP groups is often ad hoc [8]. Previous studies have reported on some of these challenges, identifying barriers pertaining to gaps in professionals' PNC knowledge, varying understandings around role responsibility, and low prioritisation in the context of a wider package of postnatal care and support [9, 10]. Women in England come into contact with a number of HCPs during and after their pregnancies, and these often-recurrent contacts are valuable opportunities for preventative public health interventions as well as for direct clinical care. Data describing uptake of PNC across a whole UK region have not been reported previously, and while there is literature examining patient engagement with particular groups of HCPs, no previous study has reported on interactions with the full range of HCPs that women encounter across the totality of the antenatal/postnatal pathway.

A previous paper by the same authors and using the same dataset reported on the PNC experiences of women living in the North East and North Cumbria (NENC) Integrated Care System (ICS), the largest ICS in England with an annual birth population of 25,000, specifically in relation to demographic and pregnancy-related predictors of PNC uptake and satisfaction [11]. The aim of this study is to examine the same population's PNC outcomes in relation to their interactions with HCPs and healthcare providers (referring to counselling opportunities and direct provision of services), before and after completing their most recent pregnancy, in order to better understand the role that healthcare service reach and engagement plays in PNC uptake and experiences. It also considers the locations where PNC care is typically accessed, and explores the potential cumulative effect of PNC interactions with multiple providers at multiple points in the maternity pathway.

2 | Materials and Methods

This paper reports data collected as part of the North East and North Cumbria Postnatal Contraception [PoCo] Study, which explored wider experiences of pregnancy and the postnatal period in addition to PNC care. Full study methods have been

described in detail in a previous paper [11]. An online survey hosted on the *Jisc Online Surveys* platform was open to responses between 1 December 2022 and 3 April 2023, with women aged 16 or above who had completed a pregnancy in the preceding 3 years in the NENC region eligible to participate. The survey included closed and open (free text) questions in which women were asked to share information in relation to their most recent completed pregnancy as well as broader demographic and reproductive histories. Participant consent was taken at the beginning of the survey, and respondents were given the opportunity to be included in a prize draw to win a £50 shopping voucher. Ethical approval was granted by the Newcastle and North Tyneside 1 Research Ethics Committee (REC reference [12]/NE/0212), and ethical standards were maintained by requiring participants to confirm their informed consent to participate before proceeding to the survey questions, by giving participants access to summary and more detailed study information prior to accessing the survey platform, and by providing an email addresses that participants could use to contact the research team or to complain about the conduct of the research. Participant email addresses were deleted following completion of the data collection period, and no other directly identifiable participant data were collected.

Participants were recruited to the study by means of targeted social media advertising, posters and business cards placed in appropriate public spaces, and engagement with voluntary, community and social enterprise (VCSE) groups that supported study recruitment. Non-English language and paper versions of the survey were offered where requested to ensure that historically-marginalised populations were not excluded. Ten GP practices in rural locations and all eight NHS Foundation Trusts in the NENC ICS participated as participant identification centres (PICs). The design, conduct and analysis of the study was guided by a patient and public involvement (PPI) panel and by a mixed-professional steering group.

Statistical analyses were undertaken using SPSS software version 27. Possible associations between healthcare-related experiences and PNC uptake/satisfaction were investigated using odds ratios (OR), and binary logistic regression was used to generate adjusted odds ratios (aOR) that controlled for variables found to be significantly associated with the outcomes in question in a previous analysis (see footnotes to Tables 1–4) [11]. Respondents who indicated that they accessed a PNC method prior to discharge from hospital were not included in the denominator sample for analyses describing uptake of PNC in community settings post-hospital discharge. Statistical significance was set at $p < 0.05$. Although this study used a convenience sample of survey participants, a sample of 369 participants was determined to allow for estimation with a 95% confidence interval of $\pm 5\%$ assuming a PNC uptake of 40% in the sample population, under assumptions of simple random sampling.

3 | Results

A total of 3088 survey responses were received, with 2502 responses eligible for inclusion in analyses after ineligible submissions were excluded. All survey submissions were screened

TABLE 1 | Settings for postnatal contraception care among survey participants.

	Subsample of respondents who received PNC and reported location of their care (n = 1203)				At a specialist sexual health/contraception provider				In another setting	χ ² (p value)
	Full sample (n = 2502)	% (n)	% (n)	At elective LSCS	On hospital postnatal ward	In hospital (other)	At GP practice	% (n)	% (n)	
Method of PNC received/used										
Any form of PNC	71.1% (1787)	n = 1203 (total subsample)	2.5% (30)		12.0% (145)	1.9% (23)	68.6% (825)	12.4% (149)	2.6% (31)	
PNC received was a HCP prescribed or administered method	38.7% (969)	75.1% (904)	2.6% (24)		14.0% (127)	1.8% (16)	66.8% (604)	12.2% (110)	2.5% (23)	
PNC was a LARC	15.5% (389)	31.2% (375)	4.5% (17)		20.8% (78)	2.6% (10)	47.5% (178)	23.5% (88)	1.1% (4)	
Age	n = 2478	n = 1194								45.5 (<0.001)
≤ 19	1.4% (35)	2.0% (24)	0.0% (0)		20.8% (5)	0.0% (0)	37.5% (9)	33.3% (8)	8.3% (2)	
20–24	11.2% (277)	14.0% (167)	1.8% (3)		9.6% (16)	1.2% (2)	65.3% (109)	19.7% (33)	0.6% (4)	
25–29	34.0% (842)	37.8% (451)	1.8% (8)		12.4% (56)	1.1% (5)	69.8% (315)	12.6% (57)	2.2% (10)	
30–34	39.1% (968)	35.4% (423)	3.3% (14)		11.1% (47)	2.6% (11)	71.6% (303)	8.7% (37)	2.6% (11)	
35–39	12.9% (320)	10.0% (120)	4.2% (5)		14.2% (17)	4.2% (5)	64.2% (77)	10.8% (13)	2.5% (3)	
≥ 40	1.4% (36)	0.7% (9)	0.0% (0)		11.1% (1)	0.0% (0)	66.7% (6)	11.1% (1)	11.1% (1)	12.6 (0.24)
Household income	n = 2409	n = 1159								
≤ £39,999	38.6% (931)	45.4% (526)	2.8% (15)		12.0% (63)	1.5% (8)	65.4% (344)	15.4% (81)	2.8% (15)	
£40–69,999	39.6% (955)	35.3% (409)	1.7% (7)		12.2% (50)	2.7% (11)	70.4% (288)	10.5% (43)	2.4% (10)	
≥ £70,000	20.9% (523)	19.3% (224)	2.7% (6)		11.6% (26)	1.3% (3)	73.2% (164)	8.9% (20)	2.2% (5)	
Ethnicity	n = 2496	n = 1201								7.30 (0.19)
White British	95.7% (2389)	95.2% (1143)	2.3% (26)		12.2% (140)	1.9% (22)	68.7% (785)	12.5% (143)	2.4% (27)	
Other	4.3% (107)	4.8% (58)	6.9% (4)		8.6% (5)	1.7% (1)	67.2% (39)	10.3% (6)	5.2% (3)	
Parity	n = 2456	n = 1207								
1	53.1% (1304)	52.5% (634)	1.7% (11)		12.1% (77)	1.9% (12)	69.1% (438)	12.9% (82)	2.2% (14)	230.52 (<0.001)
2	34.5% (847)	34.0% (410)	2.7% (11)		8.5% (35)	1.7% (7)	71.5% (293)	11.9% (49)	3.7% (15)	
3	8.7% (213)	6.8% (82)	4.9% (4)		14.6% (12)	2.4% (2)	64.6% (53)	11.0% (9)	2.4% (2)	
4+	3.7% (92)	6.7% (81)	3.7% (3)		23.5% (19)	2.5% (2)	23.5% (19)	8.6% (7)	38.3% (31)	
Pregnancy intention	n = 2496	n = 1201								21.39 (0.02)
Planned	68.1% (1700)	62.7% (753)	2.4% (18)		10.1% (76)	2.0% (15)	72.0% (542)	11.1% (84)	2.4% (18)	
Unplanned	13.7% (343)	18.0% (216)	2.3% (5)		17.1% (37)	2.8% (6)	57.4% (124)	17.6% (38)	2.8% (6)	
Ambivalent	18.1% (453)	19.3% (232)	3.0% (7)		13.8% (32)	0.9% (2)	67.7% (157)	11.6% (27)	3.0% (7)	

Abbreviations: HCP, healthcare professional; LARC, long acting reversible contraceptive; PNC, postnatal contraception.

TABLE 2 | Significant predictors of uptake of medically prescribed or administered PNC methods.

Variable name/ description	Accessed contraception prescribed or administered by a healthcare provider in the 8-week postnatal period aOR ^b (95%CI)
Discussion about PNC prior to elective Caesarean section	
No	ref.
Yes	2.129* (1.362–3.327)
PNC discussed and offered prior to discharge from postnatal ward	
No	ref.
Yes	1.745* (1.408–2.164)
Discussion about PNC with community midwife postnatally	
No	ref.
Yes	1.327* (1.100–1.601)
Discussion about PNC with health visitor postnatally	
No	ref.
Yes	1.255* (1.046–1.507)
PNC discussed at 6–8 week postnatal check in primary care	
No	ref.
Yes	1.558* (1.233–1.969)
PNC offered at 6–8 week postnatal check in primary care	
No	ref.
Yes	2.410* (1.984–2.927)
Attended specialist contraception service during the 8-week postnatal period	
No	ref.
Yes	3.779* (2.510–5.687)
Timing of PNC discussions	
No discussion(s)	ref.
Antenatal discussion (s) only	2.135* (1.133–4.023)
Postnatal discussion (s) only	1.931* (1.249–2.987)
Antenatal and postnatal discussion(s)	2.055* (1.343–3.143)
Number of different healthcare professionals (by role) with whom PNC was discussed	
0	ref.
1	1.272 (0.901–1.796)
2	1.387 (0.990–1.944)
3+	1.677* (1.202–2.341)

^aIncludes all oral contraceptives, patches, rings, permanent contraceptive methods, intrauterine contraception, injections and implants.

^bAdjusted for age at time of pregnancy, household income, self-reported mental health, parity, mode of delivery and breastfeeding status.

**p* < 0.05.

for eligibility by at least one member of the research team. Reasons for exclusion (*n* = 586; 19.0% of all responses) included submission of a non-UK postcode, returning a response with a significant proportion of questions unanswered, duplicate

TABLE 3 | Significant predictors of uptake of postnatal LARC methods.

Variable name/ description	Accessed a LARC method in the 8-week postnatal period ^a aOR ^b (95%CI)
Discussion about PNC prior to elective Caesarean section	
No	ref.
Yes	2.022* (1.211–3.375)
PNC discussed prior to discharge from the postnatal ward	
No	ref.
Yes	1.289* (1.022–1.626)
PNC discussed and offered prior to discharge from postnatal ward	
No	ref.
Yes	2.386* (1.859–3.061)
Discussion about PNC with health visitor postnatally	
No	ref.
Yes	1.466* (1.133–1.896)
6–8 week postnatal check in primary care	
With GP	ref.
With Practice Nurse	1.738* (1.243–2.428)
Accessed any emergency/unplanned care during the 8-week postnatal period	
No	ref.
Yes	0.676* (0.486–0.940)
Attended specialist contraception service during the 8-week postnatal period	
No	ref.
Yes	8.922* (5.994–13.280)

Abbreviation: LARC, long acting reversible contraceptive.

^aIncludes all intrauterine contraception, implants and contraceptive injections.

^bAdjusted for age at time of pregnancy, self-reported mental health, self-reported physical health and pregnancy intention.

**p* < 0.05.

responses, and responses that were internally inconsistent across questions. Full sample demographic characteristics are described in a previous paper [11].

3.1 | PNC Care Settings

Among women who accessed any form of PNC care within 8 weeks of completing their previous pregnancy (71.1% [*n* = 1787]) and who indicated where that care had been received (subsample *n* = 1203), more than two thirds of respondents did so via primary care services (68.6% [*n* = 825]; see Table 1). Most remaining care was split between the postnatal ward (12.0% [*n* = 145]) and specialist contraception/sexual health providers (12.4% [*n* = 149]). Although the distribution of setting of care was broadly similar for any HCP prescribed or administered PNC method, LARC methods were less likely to be accessed via primary care contact (47.5% [*n* = 178]) and more likely to be received on the postnatal ward (20.8% [*n* = 78]) or via a specialist

TABLE 4 | Significant predictors of access to preferred PNC methods.

Variable name/description	Accessed preferred contraceptive method in the 8-week postnatal period aOR^a (95%CI)
Discussion about PNC prior to elective Caesarean section	
No	ref.
Yes	1.896* (1.080–3.326)
PNC discussed prior to discharge from postnatal ward	
No	ref.
Yes	1.386* (1.104–1.739)
Satisfied with PNC information provided prior to discharge from postnatal ward	
No	ref.
Yes	3.600* (2.586–5.011)
Not applicable (no information provided)	2.393* (1.674–3.423)
PNC offered prior to discharge from postnatal ward	
No	ref.
Yes	1.931* (1.426–2.617)
Discussion about PNC with community midwife postnatally	
No	ref.
Yes	1.952* (1.548–2.462)
Seen by midwife postnatally that was already known/had seen antenatally	
No	ref.
Yes	1.329* (1.057–1.670)
Discussion about PNC with health visitor postnatally	
No	ref.
Yes	1.287* (1.023–1.619)
Had 6-8 week postnatal check in primary care	
No	ref.
Yes	2.234* (1.598–3.123)
PNC discussed at 6–8 week postnatal check in primary care	
No	ref.
Yes	1.800* (1.365–2.373)
PNC offered at 6–8 week postnatal check in primary care	
No	ref.
Yes	1.863* (1.463–2.373)
Attended specialist contraception service during the 8-week postnatal period	
No	ref.
Yes	2.153* (1.277–3.631)
Timing of PNC discussions	
No discussion(s)	ref.
Antenatal discussion(s) only	1.610 (0.788–3.292)
Postnatal discussion(s) only	2.318* (1.424–3.774)
Antenatal and postnatal discussion(s)	2.949* (1.835–4.737)
Number of different healthcare professionals (by role) with whom PNC was discussed	
0	ref.
1	1.509* (1.016–2.241)
2	2.196* (1.484–3.251)
3+	2.707* (1.824–4.016)

^aAdjusted for sexual orientation, ethnicity, educational attainment, self-reported mental health and breastfeeding status.**p* < 0.05.

contraception/sexual health provider (23.5% [$n = 88$]). This association was found to be statistically significant ($X^2 73.13$, $p < 0.001$). Patterns of PNC uptake by setting also varied in relation to age ($X^2 45.5$, $p < 0.001$), parity ($X^2 230.52$, $p < 0.001$) and pregnancy intention ($X^2 21.39$, $p = 0.02$). Younger survey respondents were significantly more likely to receive their PNC care via a specialist sexual health/contraception provider. Higher parity (4+) women were more likely to receive their PNC on the postnatal ward or in another clinical setting. Women who reported that their index pregnancy was unplanned were more likely to access PNC via a specialist provider or on the postnatal ward. Contraception care on the postnatal ward may have been received from either a doctor or a midwife, all of whom are able to provide the progestogen-only pill in the UK and some of whom are trained to site LARCs.

3.2 | Healthcare-Related Predictors of PNC Uptake

In antenatal settings, PNC counselling prior to a planned Caesarean section ($n = 381$), typically provided by an obstetrician in a pre-op clinic and not necessarily the same surgeon who would undertake the surgery/postnatal care, was found to be significantly associated with increased uptake of any medically prescribed or administered contraception (Table 2) and/or any LARC method (Table 3) after adjusting for other variables (aOR 2.129 [1.362–3.327] and aOR 2.022 [1.211–3.375] respectively). Across the full sample ($n = 2502$), involving male partners in PNC counselling and discussing male contraceptive methods (specifically, condoms and vasectomies) were not found to be significantly associated with increased uptake of PNC.

On the postnatal ward, discussing *and offering* PNC care prior to discharge was significantly associated with higher uptake of any medically prescribed contraception and/or any LARC method after adjusting for other variables (aOR 1.745 [1.408–2.164] and aOR 2.386 [1.859–3.061] respectively). Only *discussing* PNC prior to discharge was significantly associated with higher uptake of LARC (aOR 1.289 [1.022–1.626]), but not of any medically prescribed contraception.

In community settings, speaking to a midwife (some, but not all of whom are able to prescribe PNC and/or administer LARCs) about PNC was found to be significantly associated with increased uptake of any medically prescribed PNC after adjusting for potential confounders (aOR 1.327 [1.100–1.601]), but was not associated with higher uptake of LARC methods. However, PNC conversations with a health visitor (a nurse or midwife who has undertaken additional training to deliver community public health services supporting families with children aged 0–5) were associated with significantly higher odds for both outcomes (aOR 1.255 [1.046–1.507] and aOR 1.466 [1.133–1.896] respectively). A greater number of postnatal contacts with a midwife or health visitor and seeing a midwife postnatally who had been seen antenatally were not found to be significantly associated with higher uptake of PNC, but it is not known if PNC was or was not explicitly discussed at these consultations.

Although having a 6–8 week postnatal check in primary care was not found to be associated with higher uptake of PNC, having a review with a practice nurse rather than a GP was found to be associated with higher uptake of postnatal LARC methods after adjusting for potential confounders (aOR 1.738 [1.243–2.428]). Discussing (aOR 1.558 [1.233–1.969]) and offering (aOR 2.410 [1.984–2.927]) PNC at the postnatal check with a GP or nurse was significantly associated with higher uptake of any medically prescribed PNC method.

Having a postnatal review with an obstetrician/gynaecologist was not found to be significantly associated with PNC uptake, but accessing any form of unplanned or emergency healthcare during the 8-week postnatal period was found to be associated with a significantly *lower* odds of accessing any LARC method after adjusting for other variables (aOR 0.676 [0.486–0.940]). Attending a specialist contraception/sexual health service postnatally (where a patient might be seen by a specialist doctor or specialist nurse) was associated with a significantly higher odds of accessing any medically prescribed contraception and/or any LARC method (aOR 3.779 [2.510–5.687] and aOR 8.922 [5.994–13.280] respectively).

Discussing contraception with any HCP antenatally (aOR 2.135 [1.133–4.023]), postnatally (aOR 1.931 [1.249–2.987]), or before and after delivery (aOR 2.055 [1.343–3.143]) was found to be significantly associated with higher uptake of any medically prescribed PNC method, and this association was strongest for antenatal PNC counselling. These associations were not found to be significant for uptake of postnatal LARC methods. Having discussions about PNC with three or more different HCPs was also found to be associated with a significantly higher odds of accessing any medically prescribed PNC method after adjusting for potential confounders (aOR 1.677 [1.202–2.341]), but not with uptake of LARC.

3.3 | Healthcare-Related Predictors of Accessing Preferred PNC

In addition to describing PNC uptake, survey participants were also asked to indicate if they had been able to receive their preferred method of PNC, regardless of the method(s) that they actually used (if applicable). Among women who had an elective Caesarean section, receiving antenatal PNC counselling was associated with a significantly higher odds of accessing a preferred contraception method postnatally (Table 4, aOR 1.896 [1.080–3.326]). Within the full study sample, women who were able to discuss (aOR 1.386 [1.104–1.739]) and to access (aOR 1.931 [1.426–2.617]) PNC prior to discharge from the postnatal ward were also more likely to indicate that they were able to access their preferred PNC method after adjusting for other variables. This also applied to women who said that they were satisfied with the PNC information they received in this setting from either doctors or midwives (aOR 3.600 [2.586–5.011]).

Following discharge from hospital, PNC discussions with midwives and health visitors were both found to be significantly associated with higher odds of accessing preferred PNC methods after adjusting for potential confounders (aOR 1.952 [1.548–2.462] and aOR 1.287 [1.023–1.619]). Women who saw a

midwife postnatally that they already knew from antenatal contact were also more likely to indicate that they were able to access their preferred PNC method (aOR 1.329 [1.057–1.670]). The association identified between this outcome and number of postnatal contacts with a midwife or health visitor did not reach statistical significance.

Women who had a 6–8 week postnatal review in primary care were significantly more likely to indicate that they were able to access their preferred PNC method after adjusting for other variables (aOR 2.234 [1.598–3.123]), and this association was replicated where participants indicated that PNC was discussed (aOR 1.800 [1.365–2.373]) and offered (aOR 1.863 [1.463–2.373]) at this appointment.

Attending a specialist contraception/sexual health service postnatally was associated with significantly higher odds of accessing a preferred PNC method (aOR 2.153 [1.277–3.631]), but there was no significant association between postnatal contact with an obstetrician/gynaecologist or any emergency healthcare provider providing unplanned care and this outcome.

Having postnatal discussions (aOR 2.318 [1.424–3.774]) and having discussions both before and after delivery (aOR 2.949 [1.835–4.737]) about PNC were found to be significantly associated with a higher odds of accessing a preferred PNC method after adjusting for potential confounders. This association was not present in circumstances where women indicated that they had only discussed PNC antenatally. PNC conversations with multiple HCPs was also associated with significantly higher odds of accessing preferred PNC, with evidence of increasing trend (aOR 1.509 [1.016–2.241], aOR 2.196 [1.484–3.251] and aOR 2.707 [1.824–4.016] for discussions with one, two and three or more HCPs respectively).

4 | Discussion

More than two thirds of women in this sample who accessed PNC care did so via their GP practice, with most of the remainder receiving their family planning support via the postnatal ward or via a specialist sexual health/contraception service. However, fewer than half of all LARCs were accessed in primary care, and setting of PNC care varied in relation to patient age, parity and pregnancy intention. Situations in which HCPs offered PNC counselling and/or provided access to a PNC prescription or LARC method were consistently associated with higher odds of using the most effective PNC types and of being able to access a preferred PNC method, and this was the case for all relevant professional roles and settings. PNC discussions at multiple time-points in the pregnancy/postnatal pathway, and with multiple different HCPs, were also found to be associated with higher odds of accessing a preferred PNC method and/or a medically prescribed PNC type, but not a LARC method.

The finding that around two thirds of survey respondents who accessed PNC did so via their primary care provider (GP or practice nurse) is in keeping with data describing where women in England access contraception care at any time, including outside the postnatal period [13]. However, fewer than half of

all LARCs were accessed in this setting, and PNC counselling/provision in primary care was not associated with significantly higher uptake of LARC methods. Other research has highlighted the challenges that primary care staff face in accessing LARC training, and the complexities of LARC commissioning [14–16]. Addressing barriers to the provision of LARCs in these settings may result in increased uptake postnatally. An important caveat here is the observation that provision of PNC at the 6–8 week postnatal review might be too late for many women, even though providing care at this point in the pathway allows more ample opportunity for discussion and exploration of options [11, 17].

The opportunity to provide intrauterine contraception (IUC) at Caesarean section is valuable, particularly given that 42% of deliveries in England in 2023/24 were by (elective or emergency) Caesarean [18]. Previous studies have reported that intraoperative provision of IUC is safe, acceptable to women, and has high continuation rates [19, 20]. Women in this sample who had an elective Caesarean section were more likely to use a more effective PNC method/LARC and to access their preferred PNC method if they discussed PNC with a HCP prior to their surgery. Embedding PNC counselling in antenatal conversations ahead of an operative delivery, and upskilling obstetric staff in how to site IUC intraoperatively, are likely to be important routes to more comprehensive PNC care. Providing IUC at the time of an emergency Caesarean is more ethically complex, but possibly worthy of consideration in particular circumstances. IUC may also be sited immediately following a vaginal delivery [21].

Discussing and offering PNC on the postnatal ward was found to be significantly associated with higher uptake of PNC. Immediate/early provision of PNC has been piloted extensively, and found to be associated with improved uptake [12, 22]. The qualitative literature, however, highlights the barriers that midwives in particular face in providing such care, including low awareness of PNC methods, difficulties in accessing training, and concerns about role expansion [10]. Finding ways to embed immediate PNC provision in postnatal ward settings presents challenges. Antenatal PNC counselling may be an important route to supporting women to arrive at the postnatal ward with a clear idea of their PNC preferences, which can be actioned on the ward. Qualitative accounts from women and HCPs have reported that PNC decision-making immediately post-delivery is often difficult due to exhaustion, and that PNC conversations initiated for the first time in these contexts are sometimes unwelcome, strengthening the case for earlier or later PNC counselling opportunities with known and trusted HCPs [23].

Opportunities to discuss PNC options in the community/at home, with midwives and health visitors, offer additional routes to PNC care. In this sample, PNC counselling received from both groups was associated with significantly higher odds of accessing a more effective/preferred PNC method. However, previous studies have reported that midwives in community settings face similar barriers to providing PNC to those described by colleagues in hospital settings, and a study in the North East of England found that 92% of health visitors would like to receive more PNC training [24, 25]. Developing resources

to support postnatal HCPs working in community settings would support an expanded PNC offer.

The finding that survey respondents who accessed a specialist contraception/sexual health service postnatally were more likely to use a more effective/preferred PNC method is unsurprising, as most are likely to have done so for the express purpose of accessing contraception. However, demands on sexual health services in England have grown over the last decade while funding for these services has declined in line with cuts to the public health grant [26]. Well-documented challenges in accessing appointments in specialist services are likely to be compounded during the postnatal period [27]. Bespoke clinics for new mothers, and specialist provision in postnatal settings, may offer an approach to expanding specialist contraception care provision for new mothers. The less intuitive finding that women in this sample who accessed any emergency/unplanned care postnatally were significantly *less* likely to access a postnatal LARC may reflect the difficulties faced by women in accessing LARC care even when well, let alone when they experience postnatal/medical complications that make prioritising family planning care more challenging still.

Despite the relative paucity of the wider literature around PNC uptake in high-income settings, the few analyses that exist report findings that are in keeping with some of the results reported in this study. Another UK survey-based study reported that women who received contraceptive advice during or immediately after pregnancy were more likely to initiate PNC within 2 months of childbirth, and this effect was amplified when they indicated that they were satisfied with the advice they received [28]. An Australian study that explored mostly-demographic predictors of PNC uptake also found that women with private health insurance were more likely to use contraception by 12 months postpartum than women without private health insurance, potentially speaking to the effect of longer postpartum hospital stays on uptake [29]. There are multiple opportunities in the pregnancy-postnatal pathway to provide PNC care. The results shared in this analysis suggest that when PNC care is discussed and offered it may be associated with better PNC outcomes for women, with some evidence of a possible cumulative effect when care is provided by a variety of HCPs at different stages in the pathway. While being cognisant of the risk of contraception coercion that may accompany repeated and unwelcome PNC counselling, supporting HCPs to obtain the professional knowledge and expertise to deliver evidence-based, sensitive care, and developing pathways that overcome commissioning/funding barriers and create more opportunities for inter-professional collaboration, are likely to represent important elements of more effective PNC systems.

This study reports the PNC experiences of a large, geographically-dispersed sample, and is the first UK study to describe these experiences across a UK region and across the full pregnancy-postnatal care pathway. As described in a previous paper, the study population largely reflects the demographic diversity of the background (NENC) population in relation to age and socio-economic status, but ethnic diversity was not fully representative, which is a limitation [11]. Participants submitted anonymous responses to an online survey, and as such were able to describe

diverse experiences without fear of judgement. However, participation in the study was voluntary and as such may have preferentially attracted women more likely to engage with healthcare services, introducing selection bias. Given that some respondents were asked to describe encounters that took place more than 3 years previously, there is also a possibility of recall bias, and it is noted that asking respondents to describe engagement with healthcare professionals in binary terms will not fully reflect the range of experiences likely to have occurred. Unmeasured factors, such as health-seeking behaviours, health literacy and prior contraceptive preferences, may also have influenced the observed associations reported in this paper as residual confounders. In asking participants to consider if they had been able to access their preferred PNC method, we did not ask them to indicate what their preferred PNC method would be, and this is a limitation.

Author Contributions

M.M., C.S. and J.R. acquired funding for the study. All authors conceptualised and designed the study. M.M., R.J., C.M.C. and J.R. curated the data and were responsible for formal analysis, investigation and methodology. All authors were responsible for project administration and management of resources. M.M. wrote the original draft of this paper, and all authors were responsible for reviewing and editing it. All authors have read and approved the final version of the manuscript. M.M. had full access to all of the data in this study and takes complete responsibility for the integrity of the data and the accuracy of the data analysis. M.M. affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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Ethics Statement

Ethical approval for this study was granted by the Newcastle and North Tyneside 1 Research Ethics Committee (REC reference [12]/NE/0212).

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data used in the analyses reported in this paper are available from the corresponding author (MM) upon reasonable request.

Peer Review

For transparency, the peer review documents associated with this article are available at <https://doi.org/10.1002/rfc.270104>.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.

Supporting File1: rfc270104-sup-0001-Supplementary_material_S1.docx.

Supporting File2: rfc270104-sup-0002-Supplementary_material_S2.docx.