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Understanding barriers to using Long-Acting Reversible Contraceptives (LARCs) in primary care: a qualitative evidence synthesis.

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Abstract:	Background Long-acting reversible contraceptives (LARCs) are highly effective. LARCs are prescribed less frequently than user-dependent contraceptives despite higher efficacy rates. Unplanned pregnancies are rising in the UK, and LARCs may have a role in reducing these and redressing inequitable contraceptive access. To provide contraceptive services that offer maximal choice and patient benefit, we must understand what contraception users and healthcare providers think about LARCs and uncover barriers to their use. Methods A systematic search using CINAHL, MEDLINE via Ovid, PsycINFO, Web of Science and EMBASE identified research about LARC use for pregnancy prevention in primary care. The approach adhered to the 'Preferred Reporting Items for Systematic Reviews and Meta-Analyses' (PRISMA) methodology, critically appraised the literature, and used NVivo™ software to organise data and perform thematic analysis to determine key themes. Results Sixteen studies met our inclusion criteria. Three themes were identified: 1) trustworthiness (where and from whom participants obtained information regarding LARCs), 2) control (whether LARCs detract from personal autonomy), 3) systems (how healthcare providers influenced LARC access). Misgivings about LARCs frequently arose from social networks and fears of surrendering control over fertility were prominent. Healthcare practitioners perceived access issues and lack of familiarity or training as the main barriers to prescribing LARCs. Conclusions Barriers to LARC use may be modified by addressing misconceptions and improving healthcare worker training. Barriers relating to personal autonomy are different: these need to be understood and brought into

	the personalised conversations surrounding contraceptive choice.

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Understanding barriers to using Long-Acting Reversible Contraceptives (LARCs) in primary care: a qualitative evidence synthesis.

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Abstract

Background

Long-acting reversible contraceptives (LARCs) are highly effective. LARCs are prescribed less frequently than user-dependent contraceptives despite higher efficacy rates. Unplanned pregnancies are rising in the UK, and LARCs may have a role in reducing these through and redressing inequitable contraceptive access. To provide contraceptive services that offer maximal choice and patient benefit, we must understand what contraception users and healthcare professionals (HCP) think about LARCs and uncover barriers to their use.

Methods

A systematic search using CINAHL, MEDLINE via Ovid, PsycINFO, Web of Science and EMBASE identified research about LARC use for pregnancy prevention in primary care. The approach adhered to the 'Preferred Reporting Items for Systematic Reviews and Meta-Analyses' (PRISMA) methodology, critically appraised the literature, and used NVivo™ software to organise data and perform thematic analysis to determine key themes.

Results

Sixteen studies met our inclusion criteria. Three themes were identified: 1) trustworthiness (where and from whom participants obtained information regarding LARCs), 2) control (whether LARCs detract from personal autonomy), 3) systems (how HCPs influenced LARC access). Misgivings about LARCs frequently arose from social networks and fears of surrendering control over fertility were prominent. HCPs perceived access issues and lack of familiarity or training as the main barriers to prescribing LARCs.

Conclusions

Barriers to LARC use may be modified by addressing misconceptions and improving primary care training. Barriers relating to personal autonomy are different, these need to be understood and brought into the personalised conversations surrounding contraceptive choice.

Key Points

1. LARCs offer an effective method of pregnancy prevention, yet their provision in primary care lags behind short acting alternatives. Insight about the barriers to use of LARC in primary care not previously explored and may help develop strategies to increase uptake.
2. Misunderstanding and myth associated with LARC use which is present amongst the public and healthcare professionals alike.
3. Easy access to LARC services is necessary to increase uptake, but prompt access to removal services is also needed to enable a person's autonomy and sense of control. This helps prevent perceived reproductive coercion and empower contraceptive users.

Take-home messages

- LARCs were viewed by potential users as more 'mysterious' than other forms of contraception. Individuals report relying on their social networks to gather information about contraception which may lead to misconceptions and misinformation.
- Health professionals can be a barrier to LARC access and knowledge gaps can perpetuate myths. There must be a focus on training opportunities and identifying personal belief systems which prevent the offer of LARC to patients.

Background

Access to contraception is a human right and UN sustainable development goal(1,2). Unintended pregnancies cause excess maternal and neonatal morbidity. Accessible contraception can empower individuals through expanded educational and economic opportunities(3). In the United Kingdom (UK), contraceptive methods are free at the point of use, yet 45% of pregnancies in England are unplanned, and abortion rates are increasing(4,5). Contraception is least accessible to socioeconomically deprived and vulnerable groups(6).

Long-acting reversible contraceptives (LARCs) have been hailed as a solution to an unmet contraceptive need(7,8). LARCs are classed as 'non-user dependent' because they continue to prevent pregnancy until removed or their period of action is exceeded(9). Examples include implants, injectables such as *depo provera,* and intrauterine devices and systems (coils). The effectiveness of LARCs is similar to sterilisation(9). LARC use lags behind 'user-dependent' contraceptive methods(10) despite these advantages.

Approximately 80% of contraception in the UK is prescribed in primary care. However, published research in the area, particularly regarding LARC use, is lacking(11). LARC prescriptions in sexual and reproductive health services have increased, but not in primary care(5,6). Financial incentives in general practice helped to increase LARC use and reduce unintended pregnancy(12–14), when these were removed rates fell(15). There were 100,000 additional prescriptions for LARC in the 3 years after the financial incentive was introduced via Quality of Framework in primary care(15). Even though the incentive was a success, the funding was rescinded in 2014 as the sexual and reproductive health budget was reduced(16). Primary care in the UK is freely available to all and is the conduit by which most people access healthcare and contraception. Predominantly, this includes prescription of short acting contraception despite LARCs being more cost effective and reliable(11).

This synthesis offers a timely understanding of LARC hesitancy, which is important in the current post-covid landscape. An ongoing study by the UCL and UCLH (CAP-Covid) team has shown that the number of unplanned pregnancies in the UK almost doubled in the first COVID-19 lockdown(17). The proportion of people reporting issues getting contraception rose from 0.6% pre-lockdown to 6.5% post-lockdown(17). NHS Digital data shows that the COVID-19 pandemic has led to a fall

in LARC prescriptions in GP surgeries(18). The number of LARC prescriptions is now 17% lower than in 2019.

Understanding why there is low utilisation of LARCs may help to ensure that services and contraception users' needs are aligned(6). Our aim is not to set an agenda towards LARC use but rather to identify common concerns in patients and health care providers that act as barriers to LARC use and offer potential to increase LARC uptake if appropriately addressed. This qualitative evidence synthesis will draw together studies that have asked individuals and/or providers about their views on LARC use in primary care. The objective is to understand barriers and facilitators to LARC use among both groups, thus addressing a research goal identified by the UK National Institute for Health and Care Excellence (NICE)(19).

Methods

A systematic review of qualitative studies was selected to investigate contraceptive users' and healthcare providers' (HCP) perspectives of LARC use in primary care. Cochrane guidance was used for quality evidence synthesis and followed the Preferred Reporting Items for Systematic Review and Metanalysis (PRISMA) checklist(20)(21). The protocol for this review is PROSPERO registered (156610): https://www.crd.york.ac.uk/prospero/

Selection criteria

Included studies used qualitative or mixed research methods to assess contraception users or HCP's attitudes toward LARCs. The review included studies in primary care settings in countries defined by the United Nations as 'developed economies'(22). To be included, participants within studies must have been recruited from primary care. Studies seeking views of HCPs from any member of primary care team were included. Studies in hospital or secondary care settings were excluded. Studies were excluded that addressed the use of LARCs for reasons other than contraception or that investigated early LARC removal and immediate postpartum or 'post-placental' use of LARCs. Case reports and conference abstracts were excluded.

Search strategy

The following databases were searched: CINAHL, MEDLINE via Ovid, PsycINFO, Web of Science and EMBASE, including papers published between January 2009 and March 2021. The search included synonyms and MeSH terms associated with 'LARC' and 'General Practice'. The search was updated in January 2022. Results were compiled using the reference manager, Mendeley® and imported into systematic review management software, Covidence®(23). EL and RM independently screened abstracts and conducted full-text reviews according to the inclusion and exclusion criteria. Conflicts were resolved through discussion (EL, RM, VH, CM).

Quality summary

The Critical Appraisal Skills Programme (CASP) tool for qualitative studies was used to assess methodological rigour and risk of bias in the included papers(24). EL assessed each study against these criteria, assigning 'yes', 'no' or 'can't tell' to each domain. VH independently evaluated 30% of papers to reduce bias. EL and VH resolved disagreements through discussion. In keeping with Cochrane guidance for qualitative reviews, studies were not assigned an overall quality score or excluded studies based on quality assessment(21).

All the papers were judged to have taken steps to reduce bias, and most were assessed as being of high quality. However, some did not give sufficient detail to be considered against all CASP domains. This was particularly applicable to the 'consideration of ethical issues' and 'rigour of analysis' assessment domains. Several papers did not evidence that they had considered the relationship between the researcher and participants. There was consistency of scoring between EL and VH ratings. Identified themes were not undermined by excluding the least methodologically robust papers.

Charting the data: summary and synthesis

Two approaches were used to chart the data, summary, and synthesis. Firstly, data

was extracted from the background and methodological information using criteria adapted from Cochrane guidance(25)(26). The results/findings sections of included papers were assessed for their suitability to be extracted as data. Secondly, EL and VH independently extracted representative sections of text and all verbatim quotes for line-by-line coding. Verbatim quotes were prioritised to reduce the potential for personal inference to bias our findings. Using QSR NVivo™, a computer-assisted qualitative analysis software, thematic data analysis(25,26) was undertaken. EL and VH independently assigned a code to each line of extracted data and used inductive coding: once all papers were coded and a 'bank' of codes collated, each was independently re-coded. In the second analysis stage, EL and VH discussed similarities and differences in the codes to produce a hierarchy and assigned 'Umbrella' codes encompassing related themes. In the third stage of analysis EL, VH, CM and RM developed emergent concepts and grouped the final codes, drawing the themes pertaining to the research question.

Results

The database search identified 2241 results. 441 were duplicates, leaving 1800 papers for screening. 1703 papers were excluded after reviewing their title and abstract, obtaining 96 studies for full-text review. Sixteen studies were suitable for inclusion and formed the basis of our synthesis. Seven included studies were conducted in the USA(27–33). The remaining studies were conducted in Australia (n=3) (34–36), New Zealand (n=2)(37,38), UK (n=2)(39,40), France (n=1)(41), and the Republic of Ireland (n=1)(42). Eight studies focussed on the views of HCPs, six on contraceptive users and two on both groups. All studies were either based in primary care or involved primary care clinicians.

Of the eight studies which included users or members of the public, one study purposively recruited women from African American groups(27), four papers included detailed ethnicity of participants(28,30,31,40) and three studies had no mention of ethnicity(34,41,42). The papers that did not include ethnicity did mention purposive sampling for socio-economic groups or various urban/rural locations(34,41,42). Intrauterine devices were the predominant topic of the papers

with subdermal contraceptive implants underrepresented.

192 Table 1 summarises the studies include in the synthesis

Reference	Country	Setting	Aims	Study design	Study population (n)	Analysis
Blackstock, O. 2010 (27)	USA	Comprehensive Health Care Centre	Compare the contraceptive information that urban-dwelling low-income African American women acquire from their social network compared to that obtained from their primary care provider	Semi-structured interviews	Women aged 18-39 who were heterosexual and self-identified as being African-American or Black (20)	Thematic analysis
Ding, J. 2021 (36)	Australia	Primary care	Requesting early removal of long-acting reversible contraception: a qualitative study exploring the experiences of doctors working in primary care	Semi-structured interviews	Healthcare professionals working in primary care (13)	Thematic analysis
Duncan, C. 2019 (37)	New Zealand	General Practice	Seek the views of General Practitioners (GP) to gauge whether LARCs and their proactive promotion for use in adolescents may be acceptable to GPs	Semi-structured interviews	General Practitioners (9)	Thematic analysis

Fournier, D. 2015 (41)	France	General Practice	Explore women's knowledge and representations of IUDs	Semi-structured interviews	Women aged 18-50 (14)	Thematic analysis
Garrett, B. 2015 (34)	Australia	Community health centres, online advertising at women's health organisations and University. Health care professionals recruited through clinic websites and snowballing	Investigate barriers to young women's use of LARC in Australia and identify possible approaches for increasing LARC knowledge and access	Focus groups and semi-structured interviews	Health care professionals (15) and women aged 16-25 (27)	Thematic analysis

Hoopes, A. 2016 (31)	USA	Urban school-based primary care centres	To explore attitudes to pregnancy and contraception in female adolescents to inform the development of LARC counselling strategies in primary care	One – one interview	Women aged 14 – 18 (30)	Grounded theory
Kang, I. 2019 (33)	USA	Authors purposively recruited primary care physicians	Identify potential best practices to guide primary care physicians in providing contraception and contraceptive counselling for women with medical conditions	Semi-structured interviews	Primary Care Physicians (10)	Template coding method (Crabtree and Miller)
Lodge, G. 2017 (35)	Australia	Primary care practice-based research network	Investigate barriers faced by Australian General Practitioners in the prescription of IUCDs	Semi-structured interviews	General Practitioners (17)	Thematic analysis
Lunniss, E. 2016 (39)	UK	General Practice	Explore how General Practitioners view their role in delivering postpartum contraception at the 6	Semi-structured interviews	General Practitioners (13)	Thematic analysis

			week visit and on providing LARC at this time			
McGinn, N. 2019 (38)	New Zealand	General Practice	Determine some of the barriers faced by general practitioners in New Zealand who wish to offer LARCs to their patient's	Open question interviews	General Practitioners who have an interest in women's health and contraception (17)	Thematic analysis
Murphy, H. 2016 (32)	USA	Variety of recruitment strategies involving email and recruitment through federally qualified health centres	Identify the context specific barriers to providing adolescents with LARC that are experienced by health care professionals	Semi-structured interviews	Family physicians (5), paediatricians (5) and advanced nurse practitioners (6)	Modified grounded theory approach
Potter, O. 2014 (30)	USA	Community and School-Based Health Centres	Explore the attitudes, knowledge and beliefs of urban female adolescents towards IUDs and identify barriers to IUD use.	Semi-structured interviews	Adolescents aged 14-21 years who had heard of, but not used an IUD (21)	Line by line analysis

Rubin, S. 2013 (29)	USA	Primary care clinical sites	Explore primary care physicians' experiences, attitudes and beliefs about counselling and provision of LARCs to adolescents with a focus on barriers and enablers to access	Interviews using an interview guide based on an implementation science theoretical framework	Family physicians (9), Paediatricians (10), Obstetrician-Gynaecologists (9)	Thematic analysis and coding scheme development
Rubin, S. 2010 (28)	USA	Family medicine practices	Understand patient beliefs that may act as a barrier to acceptance or use of an IUD	Semi-structured interviews	Female patients aged 18-45	Iterative analysis
Sweeny, L. 2015 (42)	Ireland	University, community-based programmes, snowballing techniques for recruitment	Explore the experiences of, and attitudes towards prescription contraception amongst samples of contraception users, General Practitioners and pharmacists	Semi-structured interviews	Contraceptive users (18), General Practitioners (18) and pharmacists (9)	Thematic analysis
Walker, S. 2018 (40)	UK	General Practice	To explore, in a general practice setting, the concerns, beliefs and attitudes about intrauterine contraception reported by women who had never used the method	Mixed methods approach	Qualitative: Women aged 18-45 who had never used IUC (30). Quantitative: Women aged 18-49 (1195)	Thematic analysis

Following the analysis of the selected papers, the results were organised into three overarching themes presented in table 2.

Table 2 Summary of overarching themes regarding barriers to LARC use in primary care.

1. Trustworthiness
    a. Sources of information
    b. 'Friend of a friend' reports
    c. LARC vs contraceptive pill
    d. Understanding how LARC works
2. Control
    a. Personal autonomy
    b. Insertion/removal process
    c. Duration
    d. Periods
3. Systems
    a. Access barriers
    b. Healthcare professional factors
    c. Critical mass of LARC users/providers
    d. Attitudes towards LARC use in adolescents

1. Trustworthiness

This theme relates to how participants rely on different sources of information to make decisions about contraception. Familiarity was also a factor that emerged within this theme with the ubiquity of the oral contraceptive pill making it widely preferred.

Table 3 – Trustworthiness quotes

1. Trustworthiness	
a. Sources of information	*I still feel [talking to my doctor about contraception] is good because it's confidential. Your business will never be known. So I am very happy and open and calmed about [talking to my doctor about contraception]" Female aged 18-37* (27) *"Friends tell me [about types of birth control]. But I never really asked the doctor like what it was for because if I don't look it up and or if don't ask, you know, a parent, somebody who could tell me what it is, it's not something that I think I would ever use. Because I'm not going use something that I don't know about." Female aged 18-37* (27) *"I ask them if they've tried anything [as a contraceptive] in the past or if they know of anything that friends, family members or relatives have used that they're particularly keen on" General Practitioner*(37)
b. Friend of a friend' reports	*"My friend who has [an IUD] … said that it hurt a lot when they put it in, and that felt like she had been lied to." 15-year-old female* (31) *"Yeah, and she has ballooned, she has put on so much weight and stuff. So she put me off that." Female student* (42) *"I have a friend that had one for about 5 years and when she had it removed it was like ripping out her womb lining, and that sounds horrific. And also I've heard of like a friend of a friend who had really bad endometriosis and she basically contracted out her coil in the toilets of a nightclub, and I just don't want that." Female aged 18-46* (40) *"My sister went to the doctor and [the IUD] had messed up her walls or something in her vagina… something caused her not to have kids anymore." 17-year-old female* (31)
c. LARC vs contraceptive pill	*"I think a lotta younger kids also don't know too much about the rest of the contraceptives, so they just go to the doctor and say 'I want the pill'. That's what they get." Female aged 16-25* (34) *"As the pill is what's most widely used, people will say that I did just like everyone else, it was something normal" 25-year-old female* (41) *"If everybody were using the coil, perhaps I would try". 31-year-old female* (41)
d. Understanding how LARCs work	*"What happens if I take it and it messes up my ovaries and I can never get pregnant? Or like, my body goes through early menopause if I took it? You know what I'm saying? People think about those things." Female aged 14-21* (30) *"It's imagining what the coil is doing, so you sort of visualise it just scraping away at your, the wall of your uterus. [Laughter] And it just makes me think of a little bottle brush in there just scraping off all your, the wall of the uterus to prevent any ovary embedding and I suppose the image in your mind is it's sort of like some little metal spring around scratching away at your uterus." Female aged 18-49* (40) *"I know they say that it can't come out or anything…. I don't know, I find that weird. I just have a feeling it will fall out or something and then something will happen, pregnancy or something." Female aged 14-21* (30)

a. Sources of information

Many papers investigated where individuals obtained information about contraception(27,31,41,42). For some, this was their doctor, whom they viewed to be knowledgeable and objective. However, the proportion of interviewees expressing reliance on their healthcare practitioner to provide information about contraception was dwarfed by those describing reliance on social networks.

Some participants reported reliance on their social network for information as they found discussing contraception with healthcare professionals *'embarrassing'* or worried they would be *'judged'*(42). Often individuals reported using their peers to gather information and corroborate this with a healthcare professional(27). Several of the interviewed HCPs reported being aware of this and used it to frame contraceptive consultations.

b. 'Friend of a friend' reports

The reliance on the social network for information and their unfamiliarity compared to contraceptive pills, has resulted in LARCs becoming subject of anecdotal or 'friend of friend' reports. Negative reports and 'horror stories' featured heavily in most included

studies(27,31,33,40–42). Interviewees appeared to be heavily influenced by these testimonies; some reflected typical side effects of LARCs whilst others referred to rare complications or effects seldom reported in scientific literature.

c. LARC vs contraceptive pill

Several papers described a lack of awareness about LARCs(27,28,35). This contrasts with views expressed about the contraceptive pill, with which individuals were much more familiar. One GP described the oral contraceptive pill as a *"euphemism for contraception"*(42). A view supported by several interviewees. The pill was seen as a social 'norm' for contraception, somewhat marginalising LARCs.

d. Understanding how LARCs work

Most studies found a lack of understanding about the mechanism of action of LARCs, particularly concerning IUDs. Several participants were unsure about where IUDs are fitted, hypothesising that they "*enter[s] the tubes"*, "*obstruct[s] the ovaries*"(41) or "*seals the uterus"*(31). There were several instances of a lack of understanding, leading to fear of possible complications.

Several papers referenced the 'T' shape of IUDs. However, other terms seemingly associated with the word 'coil' (a colloquial term for the IUD) were also used, including "*giant spring*" (40) and '*piece of scrap iron*'(41). Many participants reported unease at the prospect of having a *'foreign body'* inside them. One GP referred to the " *icky factor*"(35) of IUDs and expressed concerns about internal damage, fear of expulsion and the need for it to be "*cleaned regularly*"(40). LARC uptake appeared to be contingent upon sources of information and what is socially acceptable (largely through familiarity with contraceptive method).

2. Control

Themes related to control, or lack of it, were pervasive in this review.

Table 4 – Control quotes

2. Control	
a. Personal autonomy	*"I'd probably use the pill just because I would be the one responsible for it." 15-year-old female* (31) *"I used to take the pill, and if something goes wrong, I know that I don't have to take the pill anymore. I can stop taking it" 32-year-old female* (28) *I mean I think you have to be very conscious of the power dynamic that exists between the patient and the doctor. I might personally feel that it's not in line with best practice…I think it's important that women feel that they are completely in control of that decision [of early removal] female, GP for five years* (36) *"I do find that you can usually, I wouldn't say persuade but if people have all the information and say that this is likely to pass and settle, they'll often just bear with it" female, GP for 40 years* (36)
b. Insertion/removal process	*"… that you have to put a contraption in your body and you can't get it out and something goes wrong, or it doesn't act right, then what? You are standing there panicking. … You have to wait for them to take it out. You could not just take it out. I would have been screaming." 33-year-old female* (28) *"Friends had told me it really hurt. As a result, I made a big production of it. I said to myself that I was going to suffer. Finally, there were two small contractions as it was being put in, and it was all over almost before I knew it" 35-year-old female* (41)
c. Duration	*"I wanted something that I would have for a while and not have to worry. Because I don't want to end up accidentally getting pregnant, during my college years." 17-year-old female* (31) "The only thing I think maybe 10 years seem a bit long.[…], Female aged 18-49 (40)
d. Periods	*"The COC [combined oral contraceptive pill] is the only option for good period control: everything else is not great" General Practitioner* (37)

a. Personal autonomy

Participants frequently reported that they felt less control and autonomy with LARCs compared to other forms of contraception. This featured heavily in decision making. Comparisons between LARCs and pills were commonplace. Individuals felt more like active decision-makers in their choices by taking a pill every day(28,31).

GPs perceived a concept of control concerning the removal of LARC and a shift in power dynamic between the clinician and patient. With GPs reporting a need to persuade or coerce patients into keeping LARC when they come to ask for removal(36).

b. Insertion / removal procedure

Expressed feelings of lack of control extended to the procedures involved with inserting, and where applicable, removing LARC. For some, this involved fear and

anxiety about the procedure. Misconception about what was entailed was common. Some participants spoke about *'surgical procedures'*(28), '*operations'* or *'being put to sleep'*(40). For others, the reliance on a health care professional to both insert and remove their contraceptive was a cause for hesitation. Some participants reported their anxieties not materialising, being pleasantly surprised by insertions(41).

c. Duration

Several papers referenced the length of time that LARCs are in situ(28,34,40). This longer timeframe was appealing for some whilst representing a significant barrier to others by increasing perceived lack of control. There were frequent misapprehensions about the fact that LARCs, including IUDs, can be removed 'early', some feared they had to remain for their entire advertised lifespan(40).

d. Periods

The effect that LARCs had on menstruation was a significant factor in decision making for many. However, similarly to the duration of action, the topic divided opinion about whether it was a barrier or facilitator to LARC use. Some participants explained how the potential ability of some LARCs to cease menstruation was a considerable appeal, with one 17-year-old user of an IUD describing it as "*awesome*"(31). Others, however, described finding the unpredictable effect that LARCs can have on bleeding patterns as challenging. This was frequently noted by health professionals, several of whom contrasted the effect of LARCs with the control gained by the pill(37).

Some participants referenced finding having regular periods reassuring, discussing that it was natural and "*normal*"(41) to menstruate; that regular periods acted as a *"friendly reminder like, Hey, you're not pregnant, by the way"*(31).

3. Systems

The final theme 'systems' addresses factors associated with primary healthcare

organisations and those working within them.

Table 5 – Systems quotes

3. Systems	
a. Access barriers	*"If your parents don't know you've gotta catch buses and stuff like that, and sometimes that can be a bit hard with appointment times." Female aged 17-25* (34)
b. Healthcare professional factors	*"It's very frustrating —it just feels insurmountable to get some training for something that should be fairly basic and well within my scope of practice." General Practitioner* (38) *"You know, if you're not going to get funded for something, there's no major incentive for you to start doing it, do you know what I mean. Yeah. And it's exactly like that for me. I've 10-minute consultations do you know what I mean. So if I'm not getting incentivised in payment for it, if there isn't a huge demand, if they can get it elsewhere, it's not going to happen" General Practitioner* (42)
c. Critical mass of LARC users/providers	*"I've been trained, but I haven't done it enough to actually do [an IUD insertion]. So I feel like I need to be trained again." Advanced nurse practitioner* (32)
d. Attitudes towards LARC use in adolescents	*"I don't know much about that. I don't think either of those things [implants or IUDs] would be top of the list of things to consider as first line options for adolescents. . . I don't know enough about the safety, tolerability, acceptability, effectiveness in that group." General Practitioner* (37) *"They're protected from their worst fear, which is having a baby. I think it gives [adolescents] license to do whatever they want without protection" Family Physician* (29) *"[I] was trained at a time when we didn't use IUDs in adolescents or nulliparous women because we were concerned about PID [pelvic inflammatory disease] and infertility.... I learned the new evidence from [Champion] and the reproductive health team. It was a jolt to my way of thinking. I was open to changing because it was a great new option.... So the barrier was knowledge.... I [asked] but what about infection? [Champion] said the evidence does not show an increased rate of infection with IUDs. ...I worked in an office with other people, [who were] using a lot of IUDs.... It was, for whatever reason, something I believed and then changed my practice...because I really believe in teenagers not getting pregnant and offering them what I can." Family Physician* (29)

a. Access barriers

Several studies reported access as a significant barrier to LARC usage. This manifested in different ways, depending on the study's country. Papers concluded that access to LARCs trailed other forms of contraception. Some studies noted the longer time frame from contraceptive consult to contraceptive efficacy for LARCs. To get an IUD fitted, GPs reported wait times varying from two(39) to five months(35). Others noted geographical barriers; individuals were asked to travel to get LARCs fitted if the service was not available locally. On top of logistical challenges, this presented concerns regarding confidentiality for some(34).

Other, country-specific barriers to LARCs were discussed. Differing healthcare systems mean that some individuals must pay for their contraception. Patients and health care professionals alike spoke of costs being considerably higher for LARCS than other short-acting forms of contraception(34,35,39).

b. Healthcare professional factors

A significant number of healthcare professionals cited training, or lack of it, affecting their ability to provide a comprehensive LARC service(38,42). Professionals spoke of scarce opportunities to train in LARC, specifically IUD fittings. Whilst others noted a lack of financial incentives(42).

c. Sufficient volume of LARC requests

Several papers stated that sufficient volume of LARC insertions and removals are required to maintain professional competencies(32). It is hypothesised that more LARC fittings would lead to improved confidence and training experience for providers, further increasing the capacity to get LARCs inserted locally. One GP felt that *"more GPs inserting them is really the only solution to the problem of access*"(35).

d. Attitudes towards LARC use in adolescents

Several included papers sought to understand adolescents' views about LARCs. Whilst many were receptive to LARC use in adolescence, others expressed that they would be more willing to consider LARCs at a different stage in their lives or *"once I have had my children*"(41). For some, this was related to a lack of confidence in using LARCs in this age group(37). Other professionals discussed perceived technical difficulties relating to inserting IUDs in nulliparous women. Some practitioners expressed concerns that LARCs would increase the risks of sexually transmitted infections amongst young users(29).

Health professionals' hesitancy in offering adolescents LARCs was not universally the case. Some practitioners were advocates of LARCs in this age group(29). The use of an advocate or 'champion' helps to address misinformation and healthcare professional knowledge updates.

Discussion

This systematic review is the first to synthesise primary care related barriers to LARC use. Three themes were identified: Trustworthiness, Control and Systems. LARCs are highly effective at reducing unplanned pregnancy and abortion, making them popular with HCPs and reducing health inequalities(7,8). Yet, primary care and patients continue to favour short-acting methods. Exploring these key themes helps us to understand how to rebalance the provision of LARC.

The theme 'Trustworthiness' relates to the sources of information and trust in a particular method. Normalisation of LARC is essential but the primary care preference for short-acting methods contradicts this. Trust in an HCP has been shown to impact contraception choices(43). Previous studies have consistently reported reliance on friends and social networks(44)(45). Reasons for turning to friends rather than HCPs included fears of judgement and embarrassment, further perpetuating misinformation(46,47). By understanding where people access contraceptive information, HCPs have an opportunity not only to address misconceptions, but also direct patients to reliable sources.

'Control' refers to issues of personal autonomy and the impact that LARC might have on this. Concerns have been raised about HCPs selecting LARCs for individuals deemed high-risk or unfit for motherhood, leading to reproductive coercion and racial discrimination (48). A US survey of LARC users found that 5.8% of users wanting removal were unable to due to provider discouragement(49). Removal of LARC for reasons other than wanting to become pregnant can lead to unplanned pregnancy and unsafe abortion(44)(1,6). This leads to HCP hesitancy to remove LARC and instead encourage patients to persist with side effects(50–52). This alters the power dynamic within consultations and disempowers individuals in reproductive choice(52). In the UK, financial incentives in general practice dramatically increased the provision of LARC. A critique of this was that GPs were getting ‘paid’ to coerce people into LARC. The importance of clear and accessible removal protocols has been highlighted previously(52).

The theme 'Systems' relates to access issues and healthcare worker associated factors. There is repeated evidence in the literature of HCP knowledge gaps and insufficient training opportunities which negative impact LARC uptake(53)(52,54,55). LARC use among adolescents proved to be an area of uncertainty for healthcare workers, with fears about the practicalities of insertion coupled with concerns regarding consent and ethical issues (54,56)(46). Effective contraception consultations require adequate medical knowledge combined with communication skills to empower patient choice(57–59). Educational programs for general practice have had a significant impact on improving provision(12,53)(60)(61). Practice champions can provide efficient ways of dispelling myths and disseminating up to date information to colleagues.

Commonly reported barriers to LARC prescribing include limited access to training and the opportunity to maintain skills(62). In the current NHS workforce crisis, the training needs of the work force can be deprioritised against service delivery. Maintaining LARC insertion rates to sustain professional competence can depend on practice size. In the UK, new Primary Care Networks might redress this by pooling LARC requests(63). By pooling LARC requests within a network allows for sustainable provision of LARC by primary care as well as equity across areas.

LARC provision in the UK was deemed non-essential in the COVID-19 pandemic with many areas offering no service in primary care(64). This has not recovered post-pandemic and in system straining under the weight of demand, rewarding practice innovation is key to delivering better contraceptive care. Using practice champions to tailor services for their community, accounting for ethnicity, deprivation, health literacy and sociocultural barriers to LARC.

Strengths and limitations

A strength of this synthesis is the rigorous critical appraisal throughout; it adhered to PRISMA guidelines and provides an international perspective to help better understand LARC hesitancy. The review drew on studies from disparate high-income settings, encompassing countries where contraceptive services are free to the user (such as the UK) or subsidised privately (US). The search strategy was able to identify primary care

settings across different nations regardless of disparate nomenclature for example 'federal funded clinics, 'family medicine'.

Potential weaknesses and gaps in the evidence base include the predominance of studies set in the USA, focused on intrauterine devices and on adolescents. Barriers from one setting may not be generalisable to another. Although the overarching themes offer transferability between countries and ages groups, the predominance of USA based studies may have skewed our findings. It is unclear why the topic of IUDs was more prevalent than SDIs. The authors acknowledge the positionality of the study team, who are Caucasian cis women. Every effort was made to let the data guide our synthesis, and emergent themes were subject to critical interpretive challenges within the research team. However, the risk of bringing our inherent biases to the process must be considered.

Conclusions

It is essential that primary care take ownership of the barriers to LARC access to allow equality of reproductive empowerment. Where barriers are founded on misconceptions, education for contraception users and clinicians may play a role. Improved understanding of what LARCs are, how they work, and their safety might empower those who would otherwise discount them to benefit from additional contraceptive choices. Similarly, enhanced training for healthcare workers will facilitate a broader and more comprehensive contraceptive conversation. Contraceptive users should be offered information about LARC in language they understand and through social media like TikTok and Instagram, which enables them to make coercion free and empowered decisions.

Starting or stopping a LARC is achieved by engagement with a HCP. Increasing the availability of appointments to both insert and remove LARCs may increase a woman's reproductive autonomy. Reports of the relative inaccessibility of LARCs should be a siren call to bodies such as NHS England and NICE (and their equivalents in other nations), particularly if we consider rising rates of unplanned pregnancy to signal a failure of current contraceptive service delivery. Further research to understand contraception hesitancy, especially among those with worse reproductive outcomes is essential.

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1. Trustworthiness	
a. Sources of information	*I still feel [talking to my doctor about contraception] is good because it's confidential. Your business will never be known. So I am very happy and open and calmed about [talking to my doctor about contraception]" Female aged 18-37* (27) *"Friends tell me [about types of birth control]. But I never really asked the doctor like what it was for because if I don't look it up and or if don't ask, you know, a parent, somebody who could tell me what it is, it's not something that I think I would ever use. Because I'm not going use something that I don't know about." Female aged 18-37* (27) *"I ask them if they've tried anything [as a contraceptive] in the past or if they know of anything that friends, family members or relatives have used that they're particularly keen on" General Practitioner* (37)
b. Friend of a friend' reports	*"My friend who has [an IUD] … said that it hurt a lot when they put it in, and that felt like she had been lied to." 15-year-old female* (31) *"Yeah, and she has ballooned, she has put on so much weight and stuff. So she put me off that." Female student* (42) *"I have a friend that had one for about 5 years and when she had it removed it was like ripping out her womb lining, and that sounds horrific. And also I've heard of like a friend of a friend who had really bad endometriosis and she basically contracted out her coil in the toilets of a nightclub, and I just don't want that." Female aged 18-46* (40) *"My sister went to the doctor and [the IUD] had messed up her walls or something in her vagina… something caused her not to have kids anymore." 17-year-old female* (31)
c. LARC vs contraceptive pill	*"I think a lotta younger kids also don't know too much about the rest of the contraceptives, so they just go to the doctor and say 'I want the pill'. That's what they get." Female aged 16-25* (34) *"As the pill is what's most widely used, people will say that I did just like everyone else, it was something normal" 25-year-old female* (41) *"If everybody were using the coil, perhaps I would try". 31-year-old female* (41)
d. Understanding how LARCs work	*"What happens if I take it and it messes up my ovaries and I can never get pregnant? Or like, my body goes through early menopause if I took it? You know what I'm saying? People think about those things." Female aged 14-21* (30) *"It's imagining what the coil is doing, so you sort of visualise it just scraping away at your, the wall of your uterus. [Laughter] And it just makes me think of a little bottle brush in there just scraping off all your, the wall of the uterus to prevent any ovary embedding and I suppose the image in your mind is it's sort of like some little metal spring around scratching away at your uterus." Female aged 18-49* (40) *"I know they say that it can't come out or anything.... I don't know, I find that weird. I just have a feeling it will fall out or something and then something will happen, pregnancy or something." Female aged 14-21* (30)

2. Control	
a. Personal autonomy	*"I'd probably use the pill just because I would be the one responsible for it." 15-year-old female* (31) *"I used to take the pill, and if something goes wrong, I know that I don't have to take the pill anymore. I can stop taking it" 32-year-old female* (28) *I mean I think you have to be very conscious of the power dynamic that exists between the patient and the doctor. I might personally feel that it's not in line with best practice…I think it's important that women feel that they are completely in control of that decision [of early removal] female, GP for five years* (36) *"I do find that you can usually, I wouldn't say persuade but if people have all the information and say that this is likely to pass and settle, they'll often just bear with it" female, GP for 40 years* (36)
b. Insertion/removal process	*"... that you have to put a contraption in your body and you can't get it out and something goes wrong, or it doesn't act right, then what? You are standing there panicking. ... You have to wait for them to take it out. You could not just take it out. I would have been screaming." 33-year-old female* (28) *"Friends had told me it really hurt. As a result, I made a big production of it. I said to myself that I was going to suffer. Finally, there were two small contractions as it was being put in, and it was all over almost before I knew it" 35-year-old female* (41)
c. Duration	*"I wanted something that I would have for a while and not have to worry. Because I don't want to end up accidentally getting pregnant, during my college years." 17-year-old female* (31) "The only thing I think maybe 10 years seem a bit long.[...], Female aged 18-49 (40)
d. Periods	*"The COC [combined oral contraceptive pill] is the only option for good period control: everything else is not great" General Practitioner* (37)

3. Systems	
a. Access barriers	*“If your parents don’t know you’ve gotta catch buses and stuff like that, and sometimes that can be a bit hard with appointment times.” Female aged 17-25* (34)
b. Healthcare professional factors	*“It’s very frustrating —it just feels insurmountable to get some training for something that should be fairly basic and well within my scope of practice.” General Practitioner* (38) *"You know, if you're not going to get funded for something, there's no major incentive for you to start doing it, do you know what I mean. Yeah. And it's exactly like that for me. I've 10-minute consultations do you know what I mean. So if I’m not getting incentivised in payment for it, if there isn’t a huge demand, if they can get it elsewhere, it’s not going to happen” General Practitioner* (42)
c. Critical mass of LARC users/providers	*“I've been trained, but I haven't done it enough to actually do [an IUD insertion]. So I feel like I need to be trained again.” Advanced nurse practitioner* (32)
d. Attitudes towards LARC use in adolescents	*"I don't know much about that. I don't think either of those things [implants or IUDs] would be top of the list of things to consider as first line options for adolescents. . . I don’t know enough about the safety, tolerability, acceptability, effectiveness in that group.” General Practitioner* (37) *"They're protected from their worst fear, which is having a baby. I think it gives [adolescents] license to do whatever they want without protection" Family Physician* (29) *"[I] was trained at a time when we didn't use IUDs in adolescents or nulliparous women because we were concerned about PID [pelvic inflammatory disease] and infertility…. I learned the new evidence from [Champion] and the reproductive health team. It was a jolt to my way of thinking. I was open to changing because it was a great new option…. So the barrier was knowledge…. I [asked] but what about infection? [Champion] said the evidence does not show an increased rate of infection with IUDs. …I worked in an office with other people, [who were] using a lot of IUDs…. It was, for whatever reason, something I believed and then changed my practice…because I really believe in teenagers not getting pregnant and offering them what I can.” Family Physician* (29)