

“Good News Doesn’t Spread, but Bad News Spreads Immediately”: Exploring DMPA Uptake, User Experiences, and Community Influences in an Urban Resettlement Colony of Delhi, A Mixed Method Study

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Abstract

Background

Depot medroxyprogesterone acetate (DMPA), marketed as Antara, joined India's family planning programme in 2017. It is free at public facilities yet national uptake remains low. Recent data (NFHS-6) show a shift away from modern methods. Evidence on DMPA-specific uptake and user experience is scarce in urban resettlement colonies. These colonies carry high unmet family planning need and they are under-represented in routine statistics. This study examined DMPA-specific uptake and user experience among eligible couples in an urban resettlement colony of Delhi, and explored community and provider perspectives that help explain these patterns.

Methods

A mixed-methods cross-sectional study was conducted in Dakshinpuri Extension, an urban resettlement colony in South-East Delhi, from August to September 2025. The quantitative component enrolled 306 eligible couples (married women aged 18–45 years) by simple random sampling, surveyed using a dedicated DMPA module in the questionnaire. The qualitative component comprised four focus group discussions, with women, husbands, mothers-in-law, and ASHA workers, and in-depth interviews with DMPA users, mothers-in-law, and healthcare providers. Thematic analysis followed a mixed inductive-deductive approach, with triangulation across groups. Ethical clearance was obtained from the AIIMS, New Delhi, Institutional Ethics Committee.

Results

DMPA awareness was 164 of 306 (53.6%). Current use was 14 of 306 (4.6%). Among 16 ever-users, privacy (13/16; 81.3%) and long-acting nature (11/16; 68.8%) were the leading initiation motivators. Headache (9/16; 56.3%) and irregular bleeding (7/16; 43.8%) were the top discontinuation reasons. 6 of 14 (42.9%) current users intended definite continuation. Thematic analysis generated six themes. Facilitators included ASHA-led engagement and DMPA's discreet, low-maintenance profile versus daily or provider-inserted methods. Barriers centred on near-absent pre-initiation counselling, which turned manageable side effects into alarming experiences amplified through peer networks. Male-dominated decision-making, misinformation, and religious preferences compounded these barriers. Participants and providers converged on recommendations for structured counselling, couple-inclusive engagement, and continuous inter-state supply.

Conclusions

DMPA's practical advantages are offset by unanticipated menstrual side effects and near-absent pre-initiation counselling. Social contagion of adverse experiences through peer networks and male-dominated decision-making compound the problem. Structured pre-initiation counselling, couple-inclusive ASHA engagement, and inter-state supply continuity are needed to close the gap between awareness and use of this underutilised reversible method.

Background

Depot medroxyprogesterone acetate (DMPA) is a progestin-only injectable contraceptive. It provides three months of pregnancy protection per dose. DMPA is highly effective (0.1–0.3% perfect use failure rate) and it is suitable for lactating women. It carries none of the oestrogen-related contraindications of combined methods^{1,2}. Its quarterly dosing needs fewer healthcare contacts than daily oral methods. This is valuable where sustained daily adherence is hard to achieve^{1,3}. Despite these advantages, DMPA remains underused in India (0.6%) relative to its programmatic potential^{4,5}.

India added DMPA to its national family planning programme in October 2017. It is given as a 150 mg intramuscular injection, at 12–13 weekly intervals⁶. It is marketed under the brand name Antara. The programme launched first in 18 high-focus states, then nationwide. DMPA is available free of cost through government sub-centres, primary health centres, urban health centres, and maternal and child health clinics. Accredited Social Health Activists (ASHAs) receive financial incentives for linking eligible women to injection services. A dedicated family planning management information system and an injection card track programme beneficiaries^{1,6}. Despite this infrastructure, the National Family Health Survey-5 (NFHS-5, 2019-21) recorded injectable contraceptive use of only 0.6% among currently married women nationally. This is well below uptake in comparably resourced settings in sub-Saharan Africa and South-East Asia where the usage was reported between 34.6–54.5%^{5,7,8}. The recently released National Family Health Survey-6 (NFHS-6, 2023-24) shows overall contraceptive prevalence rising from 66.7% to 69.1%. This national gain has coincided with a reported shift away from modern methods and toward traditional ones over the same period⁹. Method mix data from NFHS-6 also show continuing concentration in a single, largely irreversible method: female sterilisation accounted for 36.5% of currently married women, only marginally down from 37.9% in NFHS-5, while male sterilisation remained negligible at 0.5%^{4,9}. A separate, method-specific NFHS-6 figure for injectable contraceptives had not been published in any source we could access at the time of writing; the national injectable-specific estimate of 0.6% therefore still refers to NFHS-5. A free, effective, modern method that is not translating awareness into use, within a programme still dominated by a single permanent method, deserves closer attention now, not less.

Uptake figures alone cannot explain why a free and effective method goes unused. The reason usually lies in what happens after the injection, not before it. DMPA's most consistently reported drawback is disruption to the menstrual cycle: irregular bleeding, prolonged bleeding, or amenorrhoea^{2,3}. These changes are physiologically expected and generally not medically dangerous. But when a woman is not

told to expect them, an ordinary side effect can feel like a frightening, unexplained illness. A study of DMPA-SC continuation among urban Nigerian women found that counselling quality and side-effect preparedness were the strongest predictors of whether a woman continued the method¹⁰. A recent Indian comparative study at a tertiary hospital in New Delhi followed women choosing DMPA or a copper intrauterine device (Cu IUD) for twelve months. Twelve-month continuation was markedly lower with DMPA than with the Cu IUD, 32 of 81 (39.5%) versus 60 of 81 (74.0%), and overall satisfaction was also lower with DMPA, 38 of 81 (46.9%) versus 62 of 81 (76.5%). Bleeding disturbance was the leading adverse event with both methods. The authors concluded that better counselling on anticipated bleeding patterns could improve DMPA continuation¹¹. These findings point to a specific, addressable problem. The problem is not the drug. The problem is what women are, and are not, told about it. This makes qualitative inquiry into user experience, not just quantitative uptake, essential to understanding DMPA's underperformance in programmes like India's.

Urban resettlement colonies add a further layer that uptake statistics do not capture. These colonies are formed when residents are relocated from slum clearance or unauthorised settlements. They occupy an ambiguous position in India's health system. They are administratively urban, but they often resemble slums in infrastructure, migration turnover, and health-seeking behaviour. Studies from urban slums elsewhere in India report a similar pattern: high contraceptive awareness alongside a persistent awareness-to-practice gap. That gap is attributed more to fear of side effects and thin health-education contact than to ignorance of contraception itself¹². Interventions that intentionally strengthen frontline community health worker engagement in comparable urban populations have raised modern contraceptive uptake¹³. Qualitative work in urban slum settings continues to find that informal peer and family networks, more than formal health services, are often the primary channel through which women receive reproductive health information¹⁴. Dakshinpuri Extension, the setting for this study, shares these features. It has a migrant-heavy population. It relies on a single Urban Primary Health Centre and ASHA network. It has limited separate representation in city- or state-level statistics that do not disaggregate resettlement colonies from the wider urban population.

An earlier companion paper from this study¹⁵ reported the overall contraceptive picture in this community. Current contraceptive use was 179 of 306 (58.5%), with condoms and female sterilisation dominating the method mix. DMPA contributed 14 of 306 (4.6%) of current use, despite a DMPA awareness level of 164 of 306 (53.6%). That paper characterised sociodemographic, reproductive, and service-related determinants of overall contraceptive use using multivariable logistic regression. It answered what the method mix looked like, and which women were more likely to be using some form of contraception. It did not explain why DMPA specifically was so rarely chosen, or what using it actually felt like for the women who tried it. The present paper addresses exactly that gap. It reports the DMPA-specific quantitative findings and the qualitative findings on DMPA user experience, adoption, and barriers to continuation, neither of which appeared in the companion paper.

This paper has two objectives. The first is to describe DMPA-specific uptake among eligible couples: awareness, use, influencers, initiation motivators, the side-effect profile, partner support, and continuation intentions. The second is to explore, through qualitative inquiry across multiple stakeholder groups, how women and their families actually experience DMPA. This includes what they are told before starting it, what happens to their bodies afterward, and how that experience is shared, or not shared, within their community. Together, these two objectives are intended to explain not just how many women use DMPA, but why, and what using it is actually like.

Methods

Study design and setting

This was a mixed-methods cross-sectional study conducted in Dakshinpuri Extension, an urban resettlement colony in South-East Delhi that serves as the Urban Field Practice Area of the Centre for Community Medicine, AIIMS, New Delhi¹⁶. The study was conducted between August and September 2025. The area has an estimated population of approximately 35,618 individuals and is served by an Urban Primary Health Centre, a Maternal and Child Health dispensary, and a network of ASHA and auxiliary nurse midwife (ANM) workers. The full details of the study design, setting, population eligibility criteria, sample size calculation, and overall contraceptive findings are reported in the companion paper¹⁵.

Quantitative component: DMPA-specific module

Eligible couple (married women aged 18–45 years, residing in the study area for at least six months, not currently pregnant, and without prior hysterectomy) were enrolled through simple random sampling of households from a Health Management Information System (HMIS)-based sampling frame (N = 306). Data were collected through face-to-face interviews conducted at participants' homes by trained investigators using a pre-tested semi-structured questionnaire adapted from the NFHS-5⁴.

The questionnaire included a dedicated DMPA module (Section E). It was designed to capture the following domains:

- awareness of injectable contraception
- ever use and current use
- key influencers at method initiation
- reasons for choosing DMPA
- partner support for DMPA
- type and pattern of side effects experienced
- reasons for discontinuation

- willingness to continue among current users.

Multiple responses were allowed for items on influencers, initiation reasons, and side effects. Data was collected on EpiCollect V5 and analysed using SPSS version 26.0 (IBM Corp., Armonk, NY, USA). Frequencies and proportions were computed for all DMPA-specific variables. This quantitative component adheres to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist for cross-sectional studies.

Qualitative component

Participant selection and sampling

Purposive sampling was employed to recruit qualitative participants with direct relevance to DMPA use and contraceptive decision-making. Four FGDs were conducted with:

1. women of reproductive age
2. husbands or male partners of eligible women
3. mothers-in-law
4. ASHA/Urban Social Health Activist (USHA) workers.

In-depth interviews were conducted with: DMPA users (current and past) identified during quantitative data collection; and healthcare providers comprising two doctors (one from the MCH dispensary and one from the Urban Health Centre), two ANMs, and two health educators, all attached to facilities serving the study area. Separate, purpose-designed interview guides were developed for each participant group, focusing on contraceptive awareness, method perceptions, DMPA-specific experiences, decision-making dynamics, and service improvement suggestions.

Data collection

FGDs and IDIs were conducted in the local language in private settings to ensure privacy and confidentiality. Written informed consent was obtained from all participants before each session, including consent for audio recording. The sessions were conducted by trained members of the research team using semi-structured discussion and interview guides. Each session lasted approximately 45–60 minutes and was audio-recorded using a password-protected digital device. Audio recordings were transcribed verbatim in the original language and subsequently translated into English for analysis. Transcripts were checked against the audio recordings for completeness and accuracy.

Data analysis

Thematic analysis was conducted using a combined inductive and deductive approach. Following familiarisation with the transcripts, an initial codebook was developed based on the study objectives,

interview guides, and concepts emerging from the data. Transcripts were coded systematically in ATLAS.ti by SB. Codes were iteratively reviewed, refined, and consolidated into broader categories, which were subsequently organised into candidate themes. The coding framework and emerging themes were reviewed and verified through discussion with SR, KY, and BN, with disagreements or ambiguities resolved through consensus. Six major themes were identified and organised under three overarching domains: Domain A, facilitators of contraceptive use and DMPA adoption; Domain B, barriers and sociocultural influences; and Domain C, recommendations for service improvement (Fig. 1). Findings were triangulated across FGDs, IDIs, and participant groups to identify convergent and divergent perspectives and enhance the credibility of the findings. The qualitative component was reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist.

Ethical considerations

Ethical clearance was obtained from the Institutional Ethics Committee of AIIMS, New Delhi (Ref: AIIMSA2177/26.09.2024; RT-18/24.10.2024). Written informed consent was obtained from all participants before data collection. No identifying information appears in participant quotations.

Results

Quantitative DMPA-specific findings

Table 1 presents data on DMPA awareness, utilisation, influencers, initiation motivators, side effects, partner support, and continuation intentions among study participants (N = 306). Overall contraceptive prevalence and the full method mix in this population are described in the companion paper¹⁵.

Table 1
Awareness, utilisation, and user-related factors associated with DMPA (Antara) among study participants (N = 306)

Variable	Category	n (%)	Base (N)
Awareness of DMPA	Aware	164 (53.6)	306
	Not aware	142 (46.4)	306
Current DMPA use	Yes	14 (4.6)	306
	No	292 (95.4)	306
History of DMPA use	Yes	16 (5.2)	306
	No	290 (94.8)	306
Key influencers (among ever users)*	Friends / relatives	10 (62.5)	16
	ASHA / USHA	4 (25.0)	16
	ANM / health educator	1 (6.3)	16
	Husband / partner	1 (6.3)	16
Reported reasons at initiation (among ever users)*	Privacy	13 (81.3)	16
	Long-acting nature	11 (68.8)	16
	No daily action required	7 (43.8)	16
	Convenient (3-monthly injection)	5 (31.3)	16
	Provider recommendation	2 (12.5)	16
	Perceived effectiveness	1 (6.3)	16
Partner support (among ever users)	Yes	14 (87.5)	16
	No	2 (12.5)	16
Reported discontinuation reasons (among ever users)*	Headache	9 (56.3)	16
	Irregular bleeding	7 (43.8)	16
	Heavy bleeding	6 (37.5)	16
	Weight gain	5 (31.3)	16

Variable	Category	n (%)	Base (N)
	Amenorrhea (no periods)	2 (12.5)	16
	Weight loss	2 (12.5)	16
	Mood changes	1 (6.3)	16
Willingness to continue (among current users)	Yes	6 (42.9)	14
	No	4 (28.6)	14
	Maybe (undecided)	4 (28.6)	14

* Multiple responses permitted. DMPA: depot medroxyprogesterone acetate; ASHA: Accredited Social Health Activist; USHA: Urban Social Health Activist; ANM: auxiliary nurse midwife.

DMPA awareness was reported by 164 of 306 participants (53.6%). Current DMPA use was reported by 14 of 306 participants (4.6%). Ever use of DMPA was reported by 16 of 306 participants (5.2%). The gap between awareness and current use was 49 percentage points. Because the ever-user group is small (n = 16), every proportion below is reported with its exact numerator and denominator rather than as a percentage alone.

Among 16 ever users, friends or relatives were the most commonly reported influencers at initiation, 10 of 16 (62.5%). ASHA or USHA workers were reported by 4 of 16 (25.0%). Husband or partner influence was reported by 1 of 16 (6.3%). ANM or health educator recommendation was also reported by 1 of 16 (6.3%).

Motivators at initiation centred on privacy, 13 of 16 (81.3%). The long-acting nature of the method was cited by 11 of 16 (68.8%). No daily action being required was cited by 7 of 16 (43.8%). Convenience of three-monthly dosing was cited by 5 of 16 (31.3%). Provider recommendation was cited by 2 of 16 (12.5%). Perceived effectiveness was cited by 1 of 16 (6.3%).

Partner support for DMPA use was reported by 14 of 16 ever users (87.5%). Lack of partner support was reported by 2 of 16 (12.5%). Among the same 16 ever users, reported discontinuation reasons were: headache, 9 of 16 (56.3%); irregular bleeding, 7 of 16 (43.8%); heavy bleeding, 6 of 16 (37.5%); weight gain, 5 of 16 (31.3%); amenorrhea, 2 of 16 (12.5%); weight loss, 2 of 16 (12.5%); and mood changes, 1 of 16 (6.3%). Several participants reported more than one reason.

Among the 14 current DMPA users, willingness to continue the method was expressed by 6 of 14 (42.9%). Unwillingness to continue was reported by 4 of 14 (28.6%). The remaining 4 of 14 (28.6%) were undecided.

Qualitative findings: thematic analysis

Six themes were identified from the thematic analysis of FGDs and IDIs, arranged across three overarching domains (Fig. 1). Each theme is presented as a short analytical paragraph, followed by illustrative quotations. Quotations are drawn from across the different participant groups wherever possible, so the cross-group triangulation underlying each theme is visible to the reader. Attributions are reproduced exactly as recorded in the original transcripts.

Domain A: Facilitators of Contraceptive Use and DMPA Adoption

Theme 1: Motivations and Context for Contraceptive Adoption

Across all participant groups, the primary motivations for contraception were protecting women's health, avoiding closely spaced pregnancies, and managing household economic pressures. Women spoke most strongly about the physical toll of rapid sequential pregnancies. Some women and ASHA linked smaller family size to rising living costs and limited employment. A generational shift in social attitudes was also evident. Older ASHA workers compared today's openness about family planning to the stigma of previous decades. Younger women said public campaigns and media had normalised contraceptive discussion.

Having a gap between children is very important because if another child comes quickly after one, the mother's health completely deteriorates. Look at my neighbour, she has three children and there was only a one-year gap between all of them. Now her health always remains poor, she feels weak, and she got typhoid 3 times in 6 months.

– P1, FGD Women

The economy is so bad, cost for everything has increased so much that raising too many children is difficult. My husband himself says that just two children are fine, whether it is a son or a daughter.

– P3, FGD Women

People don't want to expand their families much because nowadays, cost is so high. Because of such high rate, they are scared of expenses and there aren't many jobs, so they think two children are enough.

– P9, ASHA FGD

Oh no, earlier condoms... Oh my God, we used to feel ashamed ourselves. We ourselves felt ashamed about this, that 'No, what will we say to a man?' So from then on, we felt that condoms are not something to be ashamed of.

– ASHA 5, FGD ASHA

I remember when I was young, no one even talked about these things. It was considered a matter of great shame. Now look, ASHA didi openly goes door-to-door and talks, camps are held, advertisements also come on TV. The Government is also promoting it a lot.

– P2, FGD Women

Theme 2: Health System Engagement and Information Access

ASHA workers were the primary channel for contraceptive information in the community. They conducted door-to-door visits and facilitated facility referral. Counselling, however, was directed almost exclusively at women. Male partners were rarely present during ASHA home visits or at facility encounters. Healthcare providers noted structural barriers of their own: time constraints, limited privacy within facility settings, and incomplete linkage between field workers and the facility itself. Awareness of injectable contraception was present across participant groups, but it was often incomplete. Some participants could not name the method specifically.

ASHA Didi has told us the most. ASHA didi goes door-to-door, right? She explains everything.

– P2, FGD Women

(On probing do they get to interact with ASHA) They only go with the women.

– P1, FGD Husbands

It is usually better if both of them are available because I might be telling something about contraceptives to the wife and the husband is not willing to avail the same, then it becomes pointless... but they don't come together most of the time.

– Doctor IDI2

There is also a gap, we don't know how actively ASHAs, or field workers are convincing people or bringing them here. So there is some disconnect in that aspect.

– Doctor IDI 1

(After moderator's question regarding awareness of injectables) Yes, I have heard about injections, but I don't really know the names properly.

– P1, Mother-in-Law IDI

Theme 3: Method-Specific Advantages of DMPA

Women who had used DMPA described it as simple and convenient. It needed no daily attention and no ongoing household visibility. Privacy, free availability at government facilities, and the quarterly schedule were all consistently valued. Women who found intrauterine device insertion intimidating, or daily pill regimens hard to sustain, tended to prefer DMPA. Misinformation about IUD safety, including fears of

device migration or cancer, reinforced DMPA's relative appeal further. Healthcare providers likewise endorsed DMPA as practical for women who struggled with daily adherence.

Look, the biggest factor is that it is easy. You just have to go to the dispensary once every three months, get it administered, and come home. You don't have to take pills every day, nor is there any daily hassle.

– P6, FGD Women

My husband also doesn't know much about it (DMPA). Got it administered quietly, and it's done.

– P4, FGD Women

Getting Copper-T inserted feels scary, right? It feels like some sort of surgery. So, the injection seems like a good option.

– P6, FGD Women

For women who are not very educated, or who forget to take pills daily, the injection is the best. Because if a pill is missed even for one day, the effect reduces. There is no such tension with the injection.

– P2, FGD Women

Yes, because although there are some side effects, every other contraceptive option also has similar concerns. DMPA actually deserves emphasis because it's very difficult for patients to take pills regularly in their daily life.

– Doctor IDI 2

"Because it (DMPA) is injectable and easy to take. Women feel it's convenient, and the supply is reliable here, so they prefer it. In comparison, CopperT has many myths – people say the thread will break or it will disappear inside the body."

– Health Worker IDI

Domain B: Barriers to DMPA Adoption and Continuation

Theme 4: Adverse Experiences and the Consequences of Inadequate Counselling

Menstrual disturbance was the barrier to DMPA continuation reported most widely, across every participant group. Irregular bleeding, prolonged bleeding, heavy bleeding, and amenorrhea were described as the leading causes of discontinuation. Women, ASHAs, and providers all agreed on one point: many of these side effects could have been managed, had women been forewarned. A critical compounding factor was the near-universal absence of structured pre-initiation counselling. Women consistently said nobody had told them what to expect: not the likely menstrual changes, not the follow-up timing, not what to do if a problem arose. This gap turned manageable physiological changes into alarming experiences. The social consequences then spread through peer networks. One woman's

severe adverse experience, shared within her close social circle, was often enough to discourage many other potential users.

(regarding uptake of DMPA in the community) About 10–15 doses per month. But there are many dropouts mainly because of side effects like excessive bleeding or absence of periods. Some women discontinue and don't return.

– Health Worker IDI (dup: abstract ?)

Bleeding is the major issue. For most women, it doesn't suit them. Only a small proportion continue happily. When women miss their periods, they often think it's a pregnancy, and they become afraid.

– Health Worker IDI

I'm facing a lot of problems. When I breastfeed my child, I have a lot of pain in my chest. It's very difficult to even express milk. There's pain in the chest, and pain in the stomach. It's also very painful when my periods come.

– DMPA User IDI1

This injection is worse. I had two people get it, and they had such heavy bleeding – so heavy, that they have now told their friends not to get this injection.

– ASHA 5, ASHA FGD

(Regarding counselling) No, not at all. They didn't tell me anything. ASHA didi just said, 'Let's go to the dispensary, let's get the injection administered.' We went, filled the form, and directly gave the injection. They only asked how many children I have, and when the last child was born. After that, there was no counseling. They didn't explain what changes might happen to periods, what difference might come in weight, when to come back, or what to do if there is a problem.

– P7, FGD Women (WRA)

I was also not given any detailed counseling. They just gave the injection and told me to come back after three months. They didn't tell me what to do if there was a problem, or where to go. When I myself asked if there were any side effects, the nurse said, 'No, no, it's completely safe, no tension.' But that wasn't the whole truth, was it? Side effects can happen.

– P6, FGD Women (WRA)

Good news doesn't spread, but bad news spreads immediately, they discuss "Ohh, you got injection and a lot bleeding, I won't get it by any chance" This kind of thing spreads very quickly in the area. They even exaggerate it, not just one or two things, but more.

–ASHA 4, ASHA FGD

Theme 5: Sociocultural, Gendered, and Religious Barriers

Contraceptive decision-making sat within household power structures, not individual choice. Male dominance in reproductive decisions was acknowledged by husbands themselves, openly. Mothers-in-

law shaped family size targets, particularly through son-preference narratives. Religious belief moderated method choice in Muslim households. Sterilisation there was seen as religiously impermissible: it was believed to invalidate prayers and preclude entry to paradise. Concerns about male weakness or impotence formed a parallel barrier to male method acceptance.

If you calculate the average, out of 100, 99% of the hold will be the man's. Only where there are very well-educated people, it might be 50–50 somewhere. Otherwise, the ratio will remain 90 – 10%. So, in my opinion, making men aware is very important.

– P2 FGD Husbands

(Regarding influence of MIL) What happens, sir, is from what I have seen, the mother-in-law... suppose a child is born in a house. They say, 'Look, they have two sons, and you have two daughters.' This is how most people are influenced.

– P8, FGD Husbands

I have a muslim area. those people don't get operations. they say they won't get a family planning operation because their stomach will be cut, and then their namaz will not be valid; they won't go to jannat (paradise).

– ASHA 5, FGD ASHA

Abortion is a sin in our religion. it is better to go for sterilization than to kill the unborn child. that is a big sin. so we agreed this was the right way.

– Mother-in-Law IDI

Their wives say, 'no, our husband, how will he work? he will become weak, he will have weakness, he will become impotent.' men don't come forward easily because their wives or mothers fear their son or husband will lose their masculinity or whatever.

– ASHA 8, ASHA FGD

Domain C: Recommendations for Service Improvement

Theme 6: Participant and Provider Recommendations for Strengthening Family Planning Services

Participants across all groups converged on the same recommendations. The strongest and most universal call was for structured pre-initiation counselling, covering benefits, side effects, expected menstrual changes, follow-up timing, and management pathways. This should happen before method administration, not after it. Including male partners and extended family members in counselling was also strongly advocated. Providers and field workers highlighted the need for inter-state supply continuity, to serve the area's mobile migrant population. Better training for frontline workers, active community awareness activities, and stronger promotion of DMPA were consistently named as the necessary next steps.

Look, the doctor should explain everything beforehand. There should be a proper session where the doctor or nurse sits down and explains what this method is like, what happens in it, how long it will last, what the benefits are, what side effects can occur. Everything should be clearly explained. Then the patient should be given a chance to decide. It shouldn't be like, 'come, administer it, and go.'

– P3, FGD Women (WRA)

People should be clearly informed. They must be told through meetings or visits by health workers about all the available methods. If they are explained properly, they will understand and maybe use it.

– Mother-in-Law IDI

The most important thing is availability in all states. Right now, DMPA is available in Delhi, but if women return to their villages in other states, they cannot continue. This discontinuity leads to high dropouts. If the government ensures uniform supply across states, it will help a lot.

– Health Worker IDI

We need to endorse it more vigorously. DMPA is an even better upgrade but we are not advertising it enough. We are not convincing people sufficiently about why this is better according to their needs.

– Doctor IDI2

What I feel is that awareness should be given more to men than to women. For men, I think there is nothing available anywhere.

– P2, FGD Husbands

The Government should look at whether the services they are providing are being provided properly or not. Just administering the injection is not enough; counseling along with it is also necessary. Only then will people use it confidently, and there will be satisfaction.

– P1, FGD Women (WRA)

Discussion

This mixed-methods study gives a triangulated account of DMPA uptake and DMPA user experience in an urban resettlement community in Delhi. It integrates quantitative data from 306 eligible couples with qualitative inquiry across five stakeholder groups. Figure 2 summarises where the qualitative themes plausibly account for four of the central quantitative findings. Several key findings warrant discussion.

The knowledge-to-use gap for DMPA

DMPA awareness was 164 of 306 (53.6%). Current use was 14 of 306 (4.6%). That is a gap of nearly 49 percentage points. This gap cannot be explained by programme unavailability. The Antara programme was operational in this setting, with dedicated ASHA incentives and reliable facility supply. The qualitative evidence points elsewhere. The gap looks mainly behavioural and structural. It was generated by the interplay of side-effect concerns, counselling deficits, and social deterrence through peer networks (Fig. 2). A comparable awareness-to-practice gap has been documented in an urban slum

population in Punjab. There too, the gap was attributed more to fear of side effects than to a lack of knowledge¹². This suggests the pattern found here is not unique to Delhi's resettlement colonies.

DMPA uptake and user experience in comparative perspective

Current DMPA use in this study, 14 of 306 (4.6%), is well above the national NFHS-5 estimate of 0.6% and the Delhi-specific estimate of 0.7%⁴. Active Antara programme implementation in the study catchment area plausibly explains this higher-than-national prevalence. This is consistent with the qualitative finding that free availability and ASHA-motivated referral were key facilitators. The finding closely parallels Solanki et al. (2025), who reported a period prevalence of 4.6% in a tribal setting of Dadra and Nagar Haveli¹⁷. Bairagya et al. (2021) reported DMPA use of 5.3% in rural West Bengal. They too attributed uptake to ASHA-mediated community engagement¹⁸. Gupta et al. (2020), from Southern Haryana, reported DMPA use of 3.1%. They identified education and ASHA contact as key determinants, paralleling findings from the companion paper of this study^{15,19}.

Beyond uptake, the user-experience evidence tells a consistent story. Studies from facility-based settings in Karnataka and Kashmir report high early attrition, with discontinuation rates exceeding 50% after the first injection, driven predominantly by menstrual irregularities^{20,21}. The present study's own discontinuation data fit this pattern closely. Among 16 ever users, headache was reported by 9 (56.3%) and irregular bleeding by 7 (43.8%) as reasons for stopping. A retrospective study from a tertiary hospital in Eastern India similarly found that fear of side effects, not lack of access, was the dominant reason for DMPA discontinuation among women of lower socioeconomic status²². A prospective comparative study at a tertiary hospital in New Delhi followed women choosing DMPA or a copper IUD for twelve months. Continuation was markedly lower with DMPA, 32 of 81 (39.5%), than with the IUD, 60 of 81 (74.0%). Satisfaction followed the same pattern: 38 of 81 (46.9%) for DMPA versus 62 of 81 (76.5%) for the IUD. Bleeding disturbance was the leading adverse event with both methods, and the authors specifically recommended better counselling on anticipated bleeding as the fix¹¹. Three separate settings, one hospital-based, one facility-based, and this community-based study, converge on the same conclusion. Fear of side effects, not lack of access or lack of awareness, is what actually drives women away from DMPA in India.

This has real consequences for national policy. The recently released NFHS-6 shows a national shift away from modern contraceptive methods, toward traditional ones⁹. It also shows that method mix nationally remains concentrated in female sterilisation, 36.5%, against a negligible 0.5% for male sterilisation. A method-specific NFHS-6 figure for injectables was not available in any source we could access at the time of writing, so the national injectable estimate used throughout this paper is still the NFHS-5 figure of 0.6%; this should be read as a ceiling on how current that specific comparison is. Understanding and fixing DMPA-specific barriers nonetheless carries added urgency. A free, effective, modern method that women are not choosing to continue is a missed opportunity. It sits within a

national contraceptive landscape that is, on current evidence, both narrowly concentrated in one permanent method and moving toward traditional methods overall.

The counselling deficit and its consequences

The most clinically significant qualitative finding is the near-universal absence of structured pre-initiation counselling. Women consistently reported not being informed about expected menstrual changes, management pathways, or return schedules before their first injection. This finding replicates a pattern documented in Nigeria by Liu et al. (2018). They identified counselling quality and side-effect preparedness as the strongest predictors of DMPA continuation¹⁰. Khadilkar (2018) likewise argued that counselling quality is foundational to injectable acceptability in Indian settings³. In Fonseca et al.'s study from Mumbai and Aman et al.'s study from Kashmir, inadequate counselling was the primary reported determinant of early discontinuation^{21,23}.

The counselling deficit does more than leave individual women unprepared. It generates social contagion of adverse DMPA experiences. ASHA workers in this study described single cases of severe menstrual disruption that became deterrent narratives. These narratives circulated through peer networks, discouraging adoption among women who had never themselves used the method. This mechanism is documented in Nigeria and Ghana, where peer experience was a more powerful driver of contraceptive decisions than formal health education^{24,25}. Pre-initiation counselling that anticipates and normalises menstrual change, gives explicit management steps, and takes women's experiences seriously rather than dismissing them, is therefore both a clinical priority and a public health one. Structured, community-health-worker-delivered counselling models, piloted for other underserved urban populations in India, have already shown measurable gains in modern contraceptive uptake when frontline worker engagement is deliberately strengthened¹³. This gives the ASHA-mediated counselling model recommended by participants in this study (Theme 6) some precedent for feasibility.

Sociocultural and gendered barriers

The qualitative data revealed a layered set of sociocultural constraints. Male dominance in reproductive decision-making was acknowledged by husbands themselves. One participant in the husband FGD put male decisional control at 90% or higher in most households. Counselling that is directed only at women, in this context, excludes the primary household decision-maker from the informed consent process. Mothers-in-law shaped family size targets through son-preference narratives, consistent with a study from rural Maharashtra^{26–28}. Misinformation about IUD safety and DMPA's long-term effects circulated freely, competing with, and often overriding, formal health messaging. Dehlendorf et al. (2010) describe structural power differentials and social norms as primary determinants of family planning inequities across settings²⁹. The present findings give granular, local detail to how those mechanisms actually operate in one Indian urban resettlement community. A concurrent mixed-methods study among women in Chandigarh found a similar pattern. Decision-making roles held by husbands and in-laws, together with religious belief, were the dominant constraints on reproductive autonomy, independent of how much

a woman knew³⁰. This corroborates that the sociocultural architecture found here is not specific to this one resettlement colony.

Religious belief shaped method choice specifically around sterilisation. ASHA workers from Muslim-majority sub-areas reported consistent refusal of operative sterilisation on religious grounds. This contrasts with greater acceptance of temporary, non-operative methods, including injectables. DMPA may therefore be preferentially positioned in these communities, if counselling adequately addresses menstrual concerns. Acceptability of DMPA where sterilisation is culturally constrained is an underexplored programmatic opportunity.

Peer networks as influential channels

Among DMPA ever users, friends and relatives were the most commonly cited influencers, 10 of 16 (62.5%). This is well above ASHA workers, 4 of 16 (25.0%), and healthcare providers, 1 of 16 (6.3%). Informal social networks, not formal health-system contact, primarily shape initial method adoption in this setting. A peer-champion strategy, where satisfied DMPA users are supported to share accurate information within their own networks, is an underused complement to ASHA-mediated promotion. Social network analysis of community-based injectable contraceptive uptake in Nigeria found that dense, closely connected networks accelerate adoption once a critical mass of users exists within them. Opinion leaders within these networks can be identified and engaged on purpose³¹. The same network structure that, in this study, spread fear after a single adverse case (Theme 4) is, in principle, just as capable of spreading accurate reassurance, if peer champions are identified and supported. Ali et al. (2023) similarly highlighted provider trust and community health worker accessibility. They also noted informal peer endorsement as a factor shaping DMPA acceptance among adolescents in Malawi³².

Continuation intentions and the programme fragility risk

Among current DMPA users, only 6 of 14 (42.9%) expressed definite willingness to continue the method. This signals fragile retention in this setting. DMPA's effectiveness depends on consistent three-monthly re-injection. This figure implies that a substantial share of current users are at risk of unintended discontinuation in the very next cycle. Improving continuation likely needs proactive follow-up. ASHA home visits should be scheduled before each injection cycle is due, not after it is missed. Accessible pathways for side-effect queries are also needed, rather than passive facility-based waiting. Priyanti et al. (2018), from Indonesia, showed that inadequate follow-up and side-effect experience were the primary drivers of three-month injectable discontinuation³³.

Inter-state supply discontinuity

Providers and health workers identified a distinctive barrier: DMPA supply is interrupted when women return to home states where the Antara programme supply chain is unavailable or differently organised. This is especially acute in urban resettlement settings, which serve migrant populations with regular seasonal or emergency return to home states. A woman who misses one injection cycle because of

supply discontinuity effectively becomes an unintended-pregnancy risk. Closing this structural gap needs coordination between state health authorities under the National Health Mission framework.

Self-injectable DMPA as an emerging option

Since 2023, India's family planning programme has begun a phased introduction of a subcutaneous, self-injectable formulation of DMPA (DMPA-SC). This is currently limited to a small number of states, alongside a single-rod subdermal implant, as part of an expanding contraceptive basket³⁴. Self-injection had not reached this study setting and was not part of the DMPA module used here. But the barriers identified in this study make it a plausible complement worth monitoring as it scales. Self-administration could directly address the privacy motivation that drove initiation in this population (Theme 3). It could also reduce the facility-visit burden that currently concentrates counselling into a single brief encounter (Theme 4). It would not, on its own, fix the counselling deficit found here. If anything, structured counselling becomes more essential, not less, once a provider is no longer present to observe or manage a side effect at the point of administration.

Strengths and limitations

The principal methodological strength of this study is its mixed-methods design. It pairs quantitative measurement of DMPA-specific patterns with qualitative depth from five distinct stakeholder groups, a combination that is rare in the published Indian evidence base on injectable contraception. Consistent triangulation across data sources strengthen the credibility of the findings.

Important limitations should be acknowledged. The cross-sectional design cannot support causal inference. Associations reported here should be read as descriptive, not causal. The DMPA module was administered to all 306 participants, but the ever-user denominator is small, 16 of 306. This produces wide, imprecise proportions for several outcomes. We have reported the exact numerator and denominator alongside every such proportion in this paper for that reason, and these findings are best read as indicative and hypothesis-generating, not as precise population estimates. Social desirability bias cannot be excluded for self-reported DMPA use or partner support. The study was conducted in a single urban resettlement colony, which limits how far the findings can be generalised. Women were the primary quantitative respondents. Male perspectives are captured only through qualitative FGDs. A longitudinal cohort, tracking initiation, side-effect occurrence, and continuation over six months or more, would substantially strengthen the evidence base for this setting.

Conclusions

DMPA's practical attributes as a reversible, low-maintenance, covert contraceptive are recognised and valued by the women who have used it in this urban resettlement setting. The method's free availability, quarterly schedule, and privacy advantages are real and are cited consistently. However, these advantages are substantially negated by menstrual disturbances that are neither anticipated by users nor communicated by providers, by counselling encounters that are brief and non-informative, and by a

social environment in which adverse experiences propagate rapidly through informal networks while corrective information is absent.

The difference between DMPA awareness (53.6%) and current use (4.6%) should not be interpreted as a programme failure or as an uptake gap that should be closed, since awareness of a contraceptive method does not imply intention or need to use that method. Rather, the findings suggest that awareness alone has not translated into substantial DMPA adoption and highlight the need to strengthen the quality of information and support available to women who consider DMPA as a contraceptive option. Structured pre-initiation counselling should explicitly address expected menstrual changes, their likely time course, management options, and clear return pathways, using simple and comprehensible language. Where acceptable to the woman, couple-inclusive counselling may help address partner-related decision-making. Appropriate ASHA-mediated follow-up before subsequent injection cycles, community-level IEC addressing specific DMPA misinformation, and improved continuity of services for mobile and migrant populations may further support informed initiation and continuation. Inter-state coordination of contraceptive supply and service records may be particularly relevant in urban resettlement settings with population mobility. These measures are feasible within the existing National Health Mission framework and may help strengthen informed, voluntary contraceptive choice and continuity of care rather than promoting DMPA uptake as an end in itself. This study provides contextual evidence to inform such service-strengthening efforts in similar urban resettlement settings.

Abbreviations

ANM

Auxiliary Nurse Midwife

ASHA

Accredited Social Health Activist

COREQ

Consolidated Criteria for Reporting Qualitative Research

DMPA

Depot Medroxyprogesterone Acetate

DMPA-SC

Subcutaneous Depot Medroxyprogesterone Acetate

FGD

Focus Group Discussion

HMIS

Health Management Information System

IDI

In-Depth Interview

IEC

Information, Education and Communication

IUD

Intrauterine Device
MCH
Maternal and Child Health
MIL
Mother-in-Law
NFHS
National Family Health Survey
SPSS
Statistical Package for the Social Sciences
STROBE
Strengthening the Reporting of Observational Studies in Epidemiology
USHA
Urban Social Health Activist
WRA
Women of Reproductive Age.

Declarations

Funding

No funding was received for this study.

Ethics approval and consent to participate

The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki and was approved by the Institutional Ethics Committee of the All India Institute of Medical Sciences, New Delhi (Ref: AIIMSA2177/26.09.2024; RT-18/24.10.2024). Written informed consent was obtained from all participants before data collection, including before each focus group discussion and in-depth interview.

Consent for publication

Written informed consent for the use of anonymised direct quotations was obtained from all qualitative study participants as part of the informed consent process described in the Methods. No names or other identifying information are reported alongside any quotation.

Competing interests

The authors declare that they have no competing interests.

Author Contribution

SB: conceptualisation, methodology, investigation, formal analysis, writing – original draft. SR, KY, BN: supervision, methodology review, writing – review and editing. All authors read and approved the final manuscript.

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Data Availability

The data generated and analysed during the current study are available from the corresponding author on reasonable request, subject to ethical and confidentiality restrictions.

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Figures

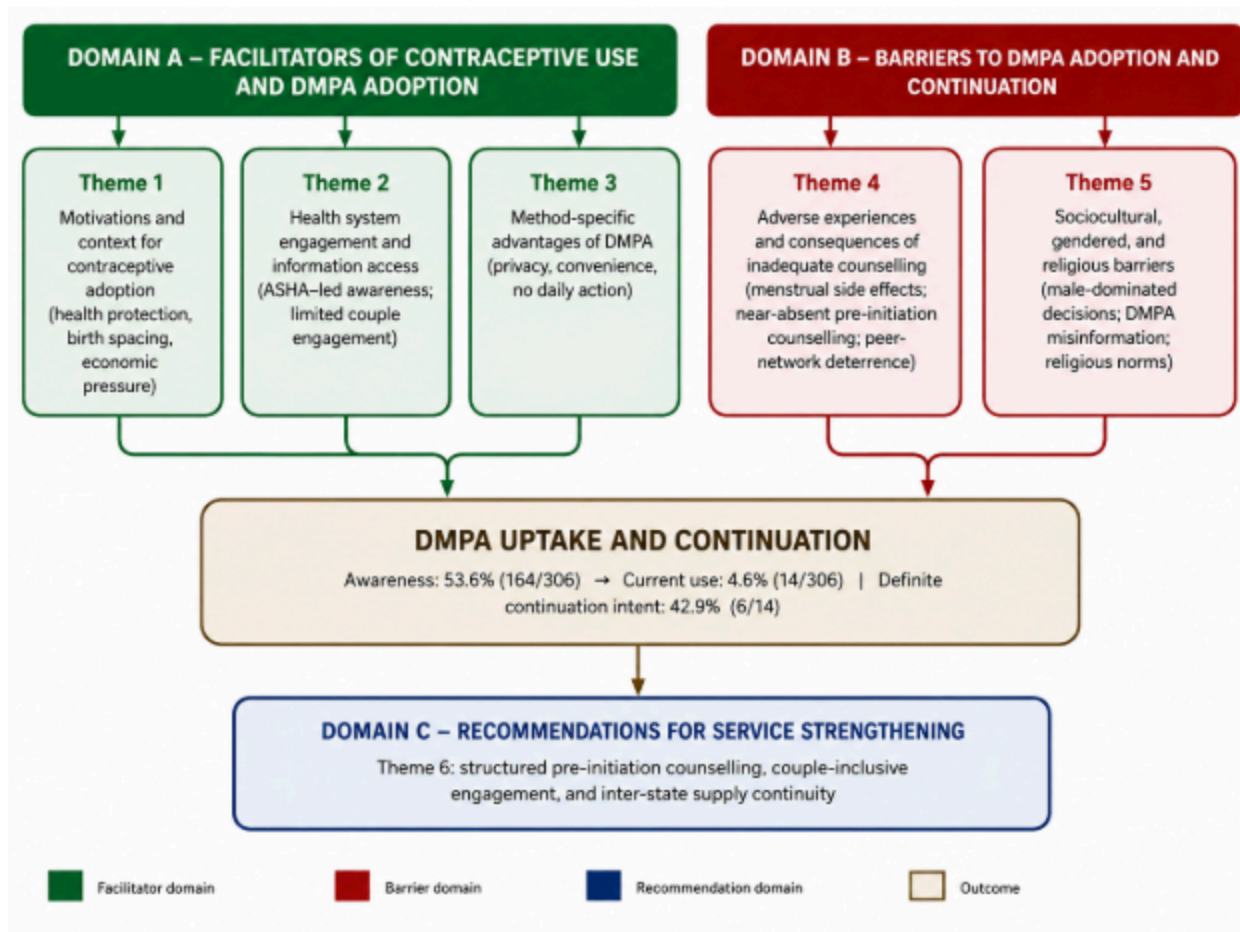


Figure 1

Conceptual framework of the three domains and six themes shaping DMPA adoption and continuation.

MIXED-METHODS JOINT DISPLAY	
QUANTITATIVE FINDING (N = 306)	QUALITATIVE EXPLANATION (THEME)
A 49-percentage-point gap: DMPA awareness 164/306 (53.6%) vs. current use 14/306 (4.6%)	Theme 4 — counselling deficit and peer-network social contagion turn manageable side effects into deterrents
Leading discontinuation reasons (of 16 ever-users): headache 9/16 (56.3%); irregular bleeding 7/16 (43.8%); heavy bleeding 6/16 (37.5%)	Theme 4 — near-absent pre-initiation counselling on expected menstrual change and management
Key influencers among 16 ever-users: friends/relatives 10/16 (62.5%) vs. ASHA/USHA 4/16 (25.0%) vs. provider 1/16 (6.3%)	Theme 3 + Theme 4 — informal peer networks outweigh formal health-system contact
Only 6/14 (42.9%) of current users express definite intent to continue	Theme 4 + Theme 6 — unresolved side-effect concerns and absent follow-up erode retention

Interpretation-stage joint display: each qualitative theme is matched to the quantitative result it plausibly explains (Methods: mixed-methods integration). All proportions use N = 306 unless otherwise stated.

Figure 2

Joint display integrating quantitative results with the qualitative themes that plausibly explain them.

Supplementary Files

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