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CONTRACEPTIVE METHODS IN THE INDIAN POPULATION: INDICATIONS, EASE OF USE, CONTRAINDICATIONS, AND FAILURE RATES — A NARRATIVE REVIEW

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ABSTRACT

Background: Contraceptive choice in India reflects access, counseling quality, socio-cultural factors, and method effectiveness, with limited uptake of long-acting reversible contraception despite superior efficacy.(9,10) **Objective:** To review contraceptive methods relevant to Indian practice regarding indications, ease of use, contraindications, and failure rates. **Methods:** Narrative review synthesizing Indian family planning program data, national studies on method failure/discontinuation, and international eligibility guidance.(5,7,8,1) **Results:** Long-acting reversible methods (implants, IUDs) offer lowest failure rates (~0.1%-0.8%) and minimal user burden after insertion.(4) Permanent sterilization remains widely used. Short- acting methods (pills, injectables, condoms) show higher typical-use failure (4%-13%) and discontinuation due to side effects or non-adherence.(3,8) **Conclusion:** Enhanced counseling emphasizing real-world effectiveness and side-effect management can optimize contraceptive outcomes in India.(11)

KEYWORDS: Contraception, India, family planning, failure rates, LARC, sterilization.

INTRODUCTION

Family planning remains central to maternal health and demographic goals in India. National surveys document increasing contraceptive prevalence rate (CPR) from 54% (NFHS-4, 2015-16) to 67% (NFHS-5, 2019-21), yet reliance on female sterilization (38%) far exceeds spacing methods. (9,10,11) Long-acting reversible contraception (LARC) uptake remains <3% despite superior efficacy and convenience.(9) Real-world contraceptive success depends on method effectiveness, continuation rates, and counseling quality. Indian studies

consistently show discontinuation due to side effects exceeds method failure, particularly for injectables (56%) and pills (42%).(8) This review examines major contraceptive methods used in India, focusing on clinical indications, ease of use, medical eligibility, and failure/discontinuation patterns relevant to Indian practice.(1,5)

METHODS

This narrative review synthesizes evidence from Indian National Family Health Surveys (NFHS), family planning program documents, peer-reviewed Indian studies on contraceptive dynamics, and internationally accepted eligibility criteria.(5,7,8,9) Core sources include the 2024 U.S. Medical Eligibility Criteria (U.S. MEC) for condition-specific guidance and CDC/Guttmacher effectiveness estimates validated across diverse populations.(1,3,4)

Methods were selected based on programmatic relevance (sterilization, condoms, injectables, IUDs, pills) and emerging options (implants, Centchroman).(5) Emphasis was placed on typical-use failure rates reflecting real-world adherence patterns observed in Indian settings.(3,8)

RESULTS

Long-acting Reversible Contraception (LARC)

Levonorgestrel intrauterine device (LNG-IUD): Indicated for long-term reversible contraception (5-8 years) and heavy menstrual bleeding management. Requires clinician insertion but virtually maintenance-free thereafter. Typical-use failure: 0.1%-0.4%.(4) Indian continuation superior to pills but limited by access and awareness.(8) Contraindications: pregnancy, active pelvic infection, uterine distortion (U.S. MEC Category 4).(1)

Copper intrauterine device (Cu-IUD): Hormone-free option (5-10 years duration); also emergency contraception if inserted ≤5 days post-exposure. Failure rate: 0.8%.(4) Better 12-month continuation than injectables in India (72% vs 44%).(8) Same contraindications as LNG-IUD.(1)

Subdermal implant: Etonogestrel implant (3 years). Extremely low failure (0.1%).(4) Minimal use in India (<0.1% prevalence) due to cost and provider training gaps.(9) U.S. MEC guidance applies for progestin-sensitive conditions.(1)

Short-acting Hormonal Methods

Combined oral contraceptives (COCs): Reversible contraception with cycle regulation benefits. Daily adherence required; typical-use failure 7%.(4) High discontinuation in India (42% at 12

months).(8) Contraindications: age ≥35+smoking, VTE history, severe hypertension, breast cancer (U.S. MEC 4).(1)

Progestin-only pills (POPs): Suitable for breastfeeding women, estrogen contraindications. Strict daily timing; failure ~7%.(4) Limited programmatic use in India.(5)

Injectable depot medroxyprogesterone acetate (DMPA): Spacing method (3-month intervals). Failure 4%; highest side-effect discontinuation in India (56% cite bleeding changes).(8) Bone density monitoring recommended with prolonged use.(1)

Centchroman (ormeloxifene): India-specific weekly non-steroidal contraceptive. Failure comparable to COCs; programmatic availability advantage.(5) Requires consistent weekly dosing.

Barrier Methods

Male condoms: Dual STI/pregnancy protection. Widely available free through government programs. Typical-use failure 13%; highest among reversible methods in Indian data.(3,8) No medical contraindications beyond latex allergy.

Permanent Methods

Female sterilization: Dominant method (38% CPR). Post-procedure maintenance-free. Failure

<0.5%.(4) Extensive camp-based services available.(5)

Vasectomy: Male permanent method. Failure 0.15%; requires azoospermia confirmation.(4) Low uptake (0.2% CPR) despite promotion efforts.(9)

Table 1. Contraceptive Methods in Indian Practice.

Method	Indication	Ease of Use	Key Contraindications	Typical-Use Failure	India-Specific Notes
LNG-IUD(1,4)	Long-term reversible	Very easy post-insertion	Pelvic infection (Cat 4)	0.1-0.4%	Low uptake (1.7%)
Cu-IUD(1,4)	Hormone-free spacing	Very easy post-insertion	Uterine distortion (Cat 4)	0.8%	Programmatic mainstay
Implant(4)	Long-term reversible	Very easy post-insertion	Progestin-sensitive disease	0.1%	Emerging; <0.1% use
COCs(1,4)	Cycle control	Daily adherence	Smoking ≥35y (Cat 4)	7%	42% discontinuation
DMPA(1,8)	Spacing	Quarterly	Prolonged bone risk	4%	56% side-effect

		injection	(Cat 2)		dropout
Condoms(4)	STI + pregnancy prevention	Per-coital use	None major	13%	Highest failure rate
Female sterilization(5)	Permanent	Post-procedure	Surgical fitness	<0.5%	38% CPR dominance
Vasectomy(4,5)	Male permanent	Post-procedure	None major	0.15%	0.2% CPR

DISCUSSION

India's contraceptive profile reflects programmatic success in sterilization delivery alongside persistent challenges in spacing method uptake. LARC methods demonstrate superior efficacy and continuation yet constitute <3% of use, limited by provider bias, access barriers, and side-effect fears.(9,11) Short-acting methods suffer higher real-world failure reflecting adherence patterns characteristic of typical use.(3)

Discontinuation analysis reveals side effects drive method switching more than failure itself, with injectables showing 56% dropout primarily due to menstrual disturbances.(8) Counseling must therefore emphasize realistic expectations regarding bleeding patterns while highlighting LARC's superior continuation profile.(8)

Recent policy shifts toward "informed choice" and male method promotion represent progress, though implementation gaps persist at community level.(11) Integration of implants into national programs and expanded PPIUCD services offer promise for balanced method mix.(5,9)

CONCLUSION

Contraceptive counseling in India should prioritize shared decision-making emphasizing real-world effectiveness gradients, side-effect profiles, and medical eligibility. Promoting LARC alongside condoms for STI protection while strengthening post-insertion support services can optimize outcomes across diverse Indian populations.(1,8,11)

Author Contributions

[Gitanshu]: Concept, literature synthesis, writing, critical revision, final approval, guarantor. All authors meet ICMJE criteria.

Conflicts of Interest

None declared.

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