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Bridging Gaps in Preconception Care: A Comprehensive Framework for Health Systems

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Introduction

Preconception care (PCC) refers to the provision of biomedical, behavioural, and social health interventions for women and couples before conception occurs[1]. The importnce of integrating PCC into existing government health programmes is underscored by evidence that shows the first conception in India typically occurs within the first two years of marriage.[2,3] Deeply entrenched gender norms and strong societal pressure to conceive soon after marriage reduce women's reproductive autonomy as well everyday decision-making around food choices, preparation and consumption. Further, the transition into marital homes coupled with minimal spousal communication, intensifies vulnerability, as newly married women must learn to adjust to unfamiliar environments, navigate restrictive social hierarchies, eat last and learn to accommodate their needs as per family expectations, with impacts on nutrition.[3]

Median age at marriage and first birth in India: Insights from NFHS-5

Typically Within the first two years of marriage

Median age at first marriage: **19.2** Years

Median age at first birth: **21.2** Years

Significant burden of care work, and compulsions to contribute to physically demanding paid labour, even during advanced stages of pregnancy and post-partum period limits women's self-care routines, hygiene practices, food intake, and health-seeking behaviours.[3,6]

Low literacy, limited awareness and access to preconception care exacerbate these challenges, as most interventions begin only after pregnancy, leaving a critical prevention gap.

Summary

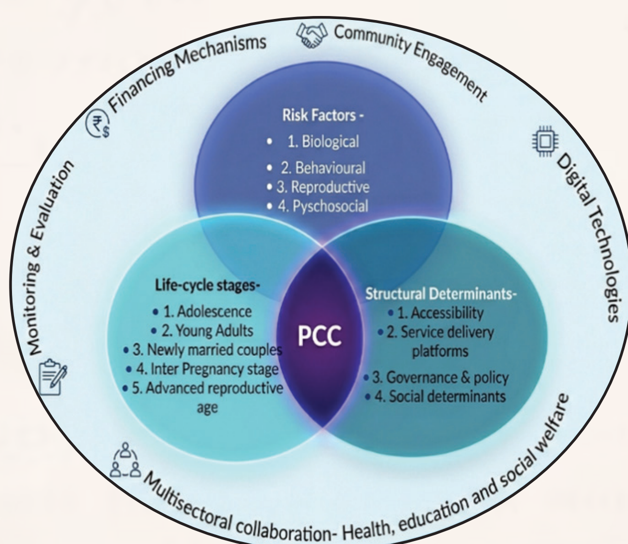
1. PCC remains an **under-addressed component of maternal health,** despite increasing acknowledgment of its importance.
2. Discussions around PCC predominantly target populations ready for, or with the intention to conceive. However, a broader life course approach to **PCC must acknowledge the importance of SRHR for adolescents, women and men to ensure the continuum of care.**
3. **Services for PCC largely adopt a biomedical focus, and are fragmented across multiple programmes** (maternal, adolescent, nutrition, family planning) leading to the absence of a comprehensive PCC framework.
4. **Weak inter-sectoral convergence** between health, nutrition (e.g., ICDS), and education systems results in opportunistic service delivery rather than systematic assistance.
5. At the individual level, **cultural norms, social barriers, low male involvement, and lack of autonomy over reproductive decision making for women limit prioritization of preconception health.**
6. **Standardized preconception care guidelines and service packages**-including screening, counselling, and referral must be institutionalized within national and state health systems across both public and private sectors.
7. **Digital technologies** can be leveraged to track eligible couples, enable behavior change communication and mental/physical health support.
8. **Community engagement** must be prioritized to improve awareness, male/family participation and continuity of care during PCC.

The focus on preconception and pregnancy also largely remains biomedical with limited attention to behavioural, social, and community-level determinants. Existing programmes are often vertical and concentrated on antenatal, delivery, and postnatal care, addressing only select components of the continuum. With a rise in conditions such as substance use, HIV[4], triple burden of malnutrition[5,6] and non-communicable diseases[7], there is a growing need to broaden approaches to PCC and integrate it within both public and private health systems.

A Framework for Planning Preconception Care: Key Risk Factors and Structural Determinants

While the timing of preconception care is associated with target populations with the intention to conceive, we argue for the importance of preparing adolescents, women and men through a life course approach to ensure the continuum of care. A comprehensive framework for planning PCC linking key risk factors across life stages with underlying structural determinants and outlining targeted strategies to address these risks is urgently required. Interventions must begin right from ***adolescence,*** to address the challenges of anaemia and undernutrition, substance abuse, multiple sexual partners and unmet need for contraceptives. PCC interventions for adolescents must develop their understanding of reproductive health, including the importance of adequate nutrition for healthy pregnancy and birth outcomes, improve psychosocial support and must offer comprehensive sexuality education to empower them to make informed choices in relation to their body, sexuality, marriage and conception. This must further be complemented by interventions for **newly married couples and during the inter-pregnancy period,** with services for genetic screening and screening for STIs and HIV to identify potential risks for conception. Newly married couples must be empowered to undertake planned pregnancy and adopt birth spacing. Interpersonal issues such as intimate partner violence (IPV), gender norms or other mental health stressors within intimate relationships must also be addressed through counselling, to improve pregnancy and birth outcomes. For couples within **advanced reproductive ages,** PCC interventions must also include screening for non-communicable diseases (NCDs), and genetic diseases, infertility due to reduced ovarian reserve/declining sperm or ovum quality and delayed diagnosis for high-risk pregnancies to which may further contribute to adverse outcomes for mother and child.

Framework for planning preconception care (PCC)



Implementation Barriers to be Overcome

- **Identifying clear target group and timing** for Preconception care (i.e., whether from adolescence, or pre- /post-marriage).
- **Overcoming resistance** from communities, schools, and policymakers towards quality Comprehensive Sexuality Education (CSE), restricting timely awareness of reproductive and preconception health.
- **Prioritization of funds, guidelines, and accountability mechanisms** to integrate and implement PCC through existing programmes and platforms
- **Plugging data gaps, identifying standardized monitoring indicators to** track coverage, quality, and outcomes of PCC interventions.

Across all stages, interventions must also focus on structural determinants such as poverty, affordability, geographical proximity, health literacy, gender norms and cultural appropriateness in planning responsive services[8]. PCC must be delivered through multiple platforms such as schools, primary health centres, community health workers, digital health technologies and premarital counselling services[9] to make it widely accessible to all. PCC coverage, regulation and governance must further be strengthened through integration with maternal, adolescent and reproductive health programmes[10], while sustainable financing, multisectoral collaboration, digital innovations and robust monitoring and evaluation systems can ensure effective implementation.

A comprehensive and convergent PCC model in India needs to move beyond focusing solely on eligible couples to also include families and key stakeholders in the community, **adopting a holistic, multi-level approach.** Male engagement will be key, along with community monitoring and ownership, gender messaging around female foeticide, fetal sex determination and gender based violence, multisectoral convergence, adequate capacity building of frontline workers, and strengthened healthcare referral linkages to address early signs of risk and prevent pregnancy complications.

Photo credit : KHPT

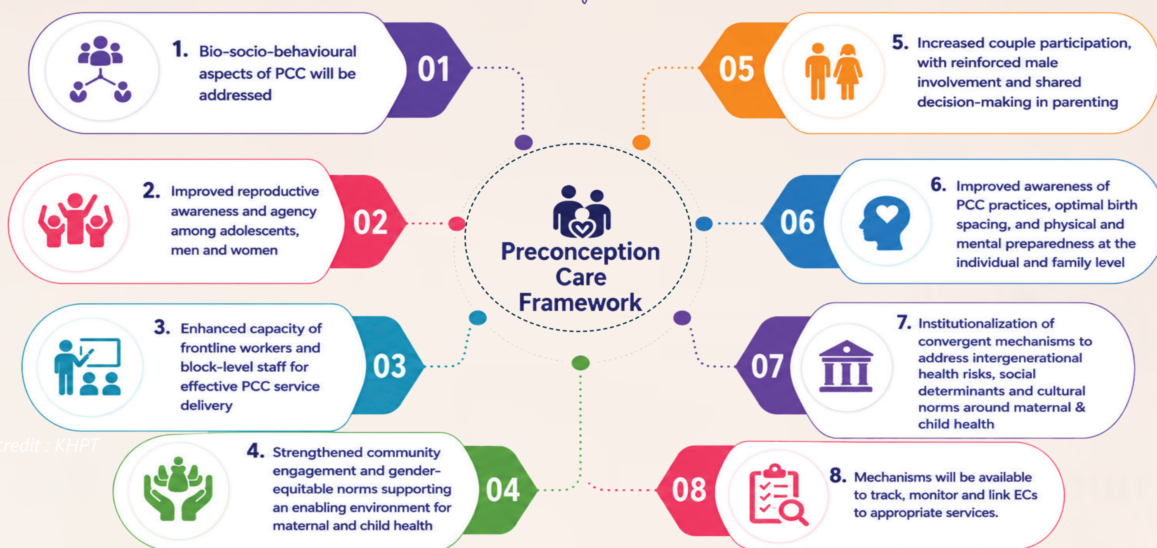


Photo credit : KHPT

Conclusion

Advancing preconception care in India requires innovative models that adopt a life-course approach and address behavioural, social, structural and community-level determinants that are barriers to improved maternal and child health outcomes. More evidence-based interventions that can be integrated into existing health systems while strengthening convergence across sectors are urgently required.

Our pilot interventions on PCC in two sites of Karnataka offer some directions for program that can be explored further: institutionalization of EC days at the community level to ensure early registration and tracking in the preconception period and first trimester, to improve nutrition, reduce risks and enhance male engagement. A second model adopts a life course approach to address preconception knowledge and awareness, empowering girls and women from the adolescent ages, to the newly married period, and continues support up to early childhood for the women, while also engaging fathers, male partners, families, and frontline workers.

These pilot experiences highlight the importance of organizations designing and testing models that are responsive to the specific needs, socio-cultural contexts, local epidemiological and vulnerabilities of their own communities, supported by robust Monitoring, Evaluation, Research, and Learning (MERL) frameworks to generate evidence for scale-up and sustainability.

Further evidence generation is required around such diverse models to understand the potential effects of adopting a comprehensive, life course approach, multi-stakeholder, convergent models for PCC. Regular rigorous evidence and documentation, pilot testing cost-effective solutions must be prioritized to inform policy advocacy, enabling stronger national commitment, resource allocation, and the creation of supportive, gender-sensitive environments for mothers and healthier future generations.

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