

Product development has tended to be evolutionary, rather than revolutionary. Contraception is no different. Despite high rates of unplanned pregnancy in many parts of the world, current contraceptive methods do not satisfactorily meet the needs of many end users.

This project leveraged Human-Centered Design (HCD) methodologies to facilitate insight-driven ideation, which generated new product ideas in women's contraceptive technology.

Our research took place in two countries – **Kenya and India** – selected to approximate the range of geographic, socio-cultural, and service delivery contexts encountered by contraceptive users in low-income countries of interest to BMGF. In each country, we:

- visited a variety of urban, peri-urban and rural locations and went to homes, hospitals, schools, markets, agricultural and dairy farms, etc. to meet and observe people in their daily lives;
- conducted interviews, group discussions, and co-creation workshops with women, their partners and other influencers such as doctors, nurses, teachers, community leaders and youth group heads to understand better the the varying influence they had on our key users, i.e., the women we are designing for;
- brought this knowledge to multiple ideation workshops attended by a diverse set of local and international experts, where it was leveraged to create ideas relevant for the far/near future of women's contraception.

What We Learned

- At a cultural level, even though social norms and practices are changing, traditional roles for women persist. Women's need to be able to demonstrate and protect 'fertility' is paramount.
- Sex and sexuality remain taboo topics in many settings. This means that for some groups, such as young unmarried women, even when contraception is available, it is not accessible because of the stigma attached.
- Family planning is often child-centric rather than woman-centric, meaning that methods are difficult to access prior to their having a child and that decision-making around contraception is influenced by several others in a woman's social network.
- Being able to use contraception discreetly can be critical, especially when a woman is not in an equal relationship. While the need for discretion remains important across different life stages, the circumstances requiring discretion will vary.

Life Stages and User Profiles

Aside from the findings, we have introduced four life stages which illustrate the journey that women take from menarche to menopause. These are:

Discovering: This is the onset of a woman's sexual journey as she familiarizes herself with relationships and sex.

Adjusting: This next phase is about navigating new roles and responsibilities. There is a growing awareness and an ambition to provide the best for her children.

Balancing: After having children, she begins to seek some autonomy for herself. With growing children, she is able to build on her foundation and support structures.

Continuing: Reduced familial responsibilities allow her to become more engaged in her personal aspirations which could extend beyond the family.

EXECUTIVE SUMMARY

In the course of our research we learnt that there is no one contraceptive product that suits all women and that needs vary as women's aspirations and motivations change across their life stages. We have created a set of 14 user profiles that synthesize and present the range of women we met and their key unmet needs. Some of these varying needs are presented here:

- Young women are often less interested in long-term planning and may perceive some methods as too serious.
- Women who are balancing motherhood and financial obligations may prefer methods they can place and forget about.
- Some women prefer methods that ensure predictable return to fertility, while others are more concerned about using methods that are more natural and perhaps do not negatively affect fertility.

Considerations for Contraception Design

We identified seven key design considerations, distilled from user needs and presented through some representative concepts that were generated in ideation workshops. Design considerations present a range of guidelines that should influence the design and development of products. Some of these are:

- An ideal product should not negatively affect fertility.
- A good product should not require planning or regimen; when it does, then it should fit in existing routines of the user.
- Products could have added features such as dual protection or improve desirable features such as added benefits or to enable shared contraceptive responsibilities with one's partner.

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A note to the reader

This report is split into four main sections. We encourage readers to dip in and out of this document using this table of contents as a guide. Clicking on the <u>underlined text in the table of contents</u> will take you to specific sections and <u>clicking on the slide number</u> on any page will bring you back to the table of contents.

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Context Setting

Context Setting > Project Partners

The project was conducted by multiple partners:

FHI 360, a non-profit organization dedicated to improving lives in lasting ways by advancing integrated, locally driven solutions.

Quicksand, a design-thinking and innovation consultancy based in India and working across the global south.

Pabla van Heck, a freelance social intrapreneur who helps organizations navigate the fuzzy front end of social innovation for (women in) emerging markets.

This work was funded by **The Bill & Melinda Gates Foundation** whose goal is to give people the tools to lead healthy productive lives.

Leveraging human-centered design methodologies to facilitate insight-driven ideation, for generating new product ideas in women's contraceptive technology.

Context Setting

What you can use this document for?

Develop new contraceptives that fully meet the needs of users

Design programs based on user perspectives

Replicate the process

Why Contraceptive Ideation?

The unmet need for contraception among women is high, which has led to a global commitment by governments and non-governmental organizations to add 120 million modern contraceptive users by 2020.

Barriers to contraceptive use result in:

- discontinuation / non-use of existing contraceptive products owing to dissatisfaction and side effects;
- dissatisfaction / switching among users of existing products;
- incremental modifications or improvements of existing drugs and delivery systems with limited new-to-the-world products in the pipeline.

All of the above ladder to a BIG OPPORTUNITY to look for disruptive technologies that add to the contraceptive product pipeline.

Why Human-Centered Design?

We wanted to take a new approach to contraceptive development - one that started with a deep understanding of user needs and allowed for divergent, disruptive thinking. So, we adopted a human-centered design (HCD) methodology. HCD is new to the contraceptive field. It involves:

- starting with user insights and needs;
- bringing together a diverse set of experts;
- using methodologies designed to stimulate out-of-the-box solutions to address user needs.

Our goal was to create a large volume of product concepts that explore novel options for new drugs, mechanisms of action and delivery systems that can ultimately provide products that users will demand.

Driving ideation for a future world with unknown contours is challenging. HCD seeks to create a shared understanding of the context, needs, perspectives of the people (as users) we are designing for.

It allows us to go from the existing conditions of 'what is' to the future-making potential of 'what if'.

Why Kenya + India?

In seeking to develop new contraceptive technologies that address the needs of women in low-resource settings, the team aligned on Kenya and India as regional 'bellwethers' for (East) Africa and (South) Asia. Selection criteria included a number of factors ranging from economic access to cultural norms and healthcare provision. Kenya and India were strategically selected to generate insights that when compared and contrasted would help represent the broad needs of women in developing contexts and result in technologies that will resonate beyond geographic borders.

Kenya and India as regional 'bellwethers' for (East) Africa and (South) Asia.

Kenya and India were chosen as representing two very different contexts in scale, median age, economic realities, epidemiological profiles, socio-cultural contexts, access to information, health sectors and access to contraception.



Scale

K ~ 47 million | **In** ~ 1.3 billion

Kenya is less than 1/5 the size of India (224,081 cubic miles compared with 1.3 million cubic miles)

Average HH size (ArcGIS) - **K** - 4.4 members (2015) **In** - 4.9 members (2016)

under 24, 27% is under 15.

K - Median age is 20, 60% of the population is under 24, 40% is under 15.In - Median age is 28, 45% of the population is



Access to information

Both countries are considered 'innovators' in their respective regions, have high levels of mobile phone penetration and relatively high internet usage, especially when compared with their regional neighbors. Access to multiple information sources, from TV to radio and newspapers, is also high.

% Pop Using:

Internet: **K** ~ 26%, **In** ~ 29.5% (CIA Worldbook) Mobile phones : **K** ~ 83%, **In** ~ 89% (CIA Worldbook, est.2016)



Economic Realities

Per capita Income¹: **K** ~ \$1380, **In** ~ \$1680

Unemployment Rates²: **K** 2013 ~ 40%, **In** 2015 ~ 8.5%

% Pop below poverty line:K 2012 ~ 43.4%, In 2011 ~ 21.9%

- 1. GNI, US \$ Atlas World Bank; est. 2016
- Informal sector/'grey' economy work is challenging to capture

Socio-cultural Contexts

Societal factors, from the importance/influence of extended families and prevalence of early marriage in India to pronatalism, female-headed households and normalization of multiple partners in Kenya, have all had an enormous impact.

K - Three predominant religions- Christian 83%,
Muslim 11.2%, Traditionalists 1.7% (2009 est.)
In - Four predominant religions- Hindu 79.8%,
Muslim 14.2%, Christian 2.3%, Sikh 1.7%

K for Kenya / **In** for India



Health

Most Kenyans receive healthcare through public sector dispensaries or health centers as well as private for-profit clinics, chemists and missionary hospitals.

India's health system is relatively well-developed with several efforts made to also strengthen frontline staff, from public-sector ASHAs and ANMs to private sector RMPs and chemists.

Total Health Expenditures:

K ~ 6.8% of GDP (2012-13)

The private sector supports 2/5th of Kenya's health sector.

In ~ 4.02% of GDP (2013-14)

Govt. expenditures on health is only 1.15% of GDP>

Physician Density:

K ~ 0.2 /1000 population (est. 2013)

In ~ 0.6 /1000 population (est. 2014)



Epidemiological Profile

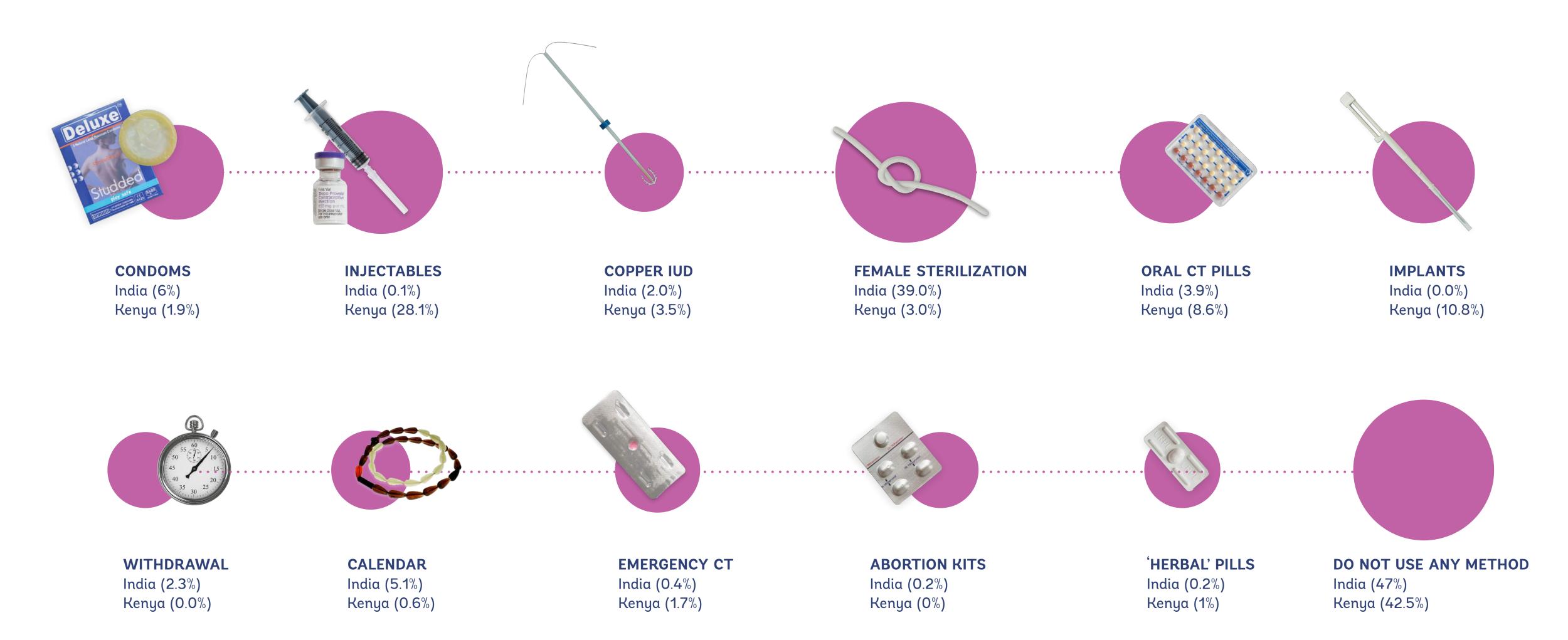
The visibility and threat of HIV is greater in the Kenyan context. This has had an important impact on SRH campaigns targeting dual prevention of pregnancy and HIV, and it has helped shape perceptions around partner fidelity and the appropriateness of certain contraceptive methods, all of which are less apparent in India.



Access to Contraception

In Kenya, contraceptive use is common (56% use a modern method) and a range of contraceptive methods, from LARCs to short-acting, are available, with injectables the most commonly used (28%).

For Indian women, a limited contraceptive portfolio is a greater barrier than access to methods. Historically, sterilization has been the main method, but it does not address delaying or spacing needs.



Percentages here represent the estimates of contraceptive prevalence of these methods among married or in-union women aged 15-49. Source: United Nations, Department of Economic and Social Affairs, Population Division (2015) - Trends in Contraceptive Use Worldwide 2015, NFHS 4

KENYA

pros : easily

available, low cost,

no side effects, on-

pros : discreet,

cons:

quick application

pros : hassle free,

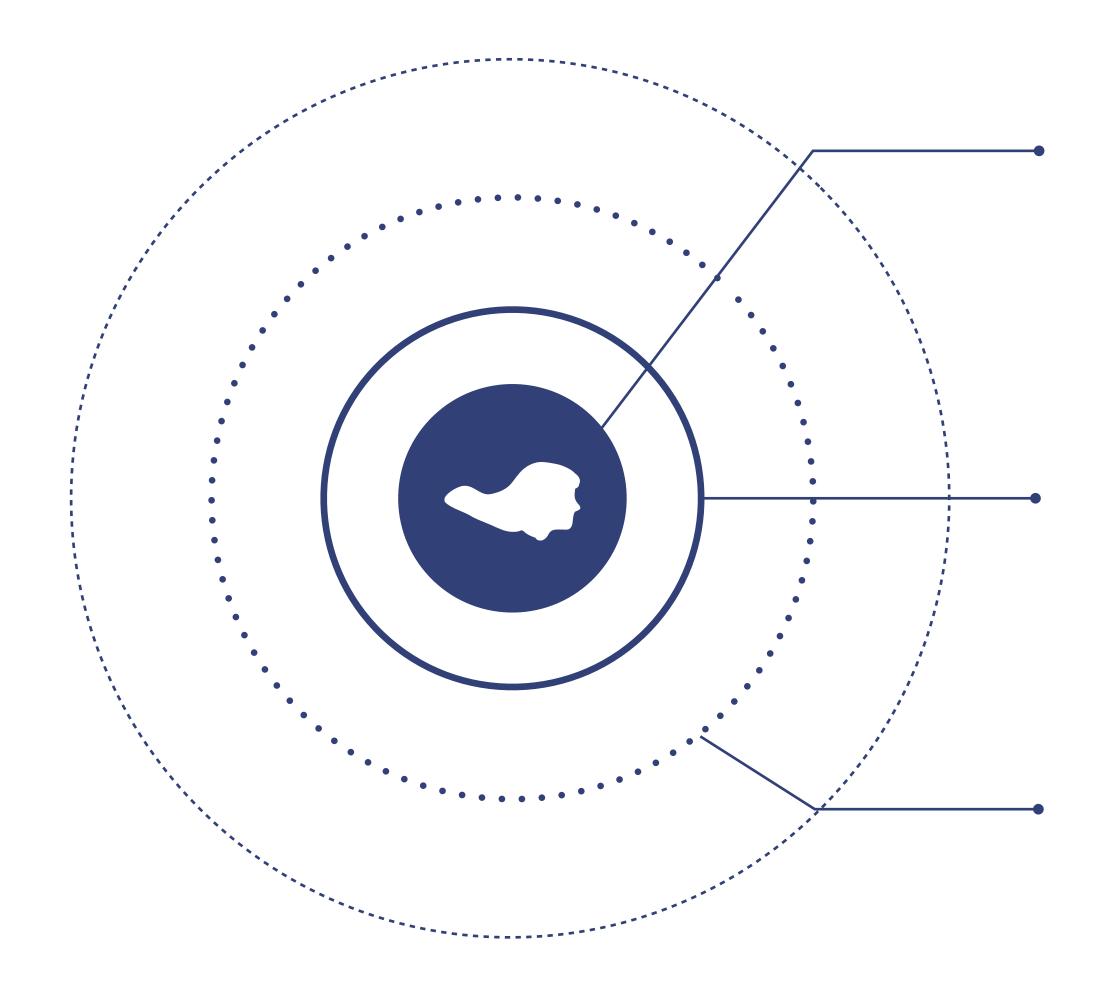
long acting

<pre>pros : easily available cons : easy to forget, nausea, headaches</pre>	amenorrhoea, heavy menses, easy to forget follow-up dosage	cons: low libido weight gain/loss, irregular menses, invasive, dizziness	cons : vaginal insertion	cons : very invasive	not available in Kenya	pros : natural cons : difficult to calculate, easy to forget			cons: expensive, can be misused
									0
ОСР	Injectable	Implant	IUD	Female Sterilization	Abortion Kit	Calendar	Withdrawal	Vaginal Suppository	EC Pill
adhere to (might forget to take daily), initial side effects - nausea and	Not available to a majority of the population. Steps are taken by the govt. to make it available through govt. channels	Not available in India	pros: long-term spacing cons: heavy bleeding & pain, fear of it traveling in the body, white discharge, against religious beliefs, backache,	beliefs,	Easily available over the counter	Preferred by women/ couples who do not like using modern methods	Preferred by couples who do not like using modern methods pros: natural (no harm to body/ feeling / no side effects)	pros : easily available	pros : easily available
	cons: easy to forget, nausea, headaches OCP One of the commonly used methods pros: easily available, regulates periods cons: difficult to adhere to (might forget to take daily), initial side effects - nausea and	pros : easily available cons : easy to forget, nausea, headaches heavy menses, easy to forget follow-up dosage OCP Injectαble One of the commonly used methods pros : easily available, regulates periods cons : difficult to adhere to (might forget to take daily), initial side effects - nausea and Not available to a majority of the population. Steps are taken by the govt. to make it available through govt. channels	pros : easily available cons : easy to forget, nausea, headaches heavy menses, easy to forget follow-up dosage weight gain/loss, irregular menses, invasive, dizziness OCP Injectable Implant One of the commonly used methods pros : easily available, regulates periods Not available to a majority of the population. Not available in India cons : difficult to adhere to (might forget to take daily), initial side effects - nausea and Steps are taken through govt. channels	pros : easily available cons : easy to forget, nausea, headaches heavy menses, easy to forget follow-up dosage weight gain/loss, irregular menses, invasive, dizziness cons : vaginal insertion OCP Injectable Implant IUD One of the commonly used methods pros : easily available, regulates periods cons : difficult to adhere to (might adhere to (might forget to take daily), initial side effects - Not available to amajority of the available to and the cons : difficult to to adhere to channels Not available in India pros : long-term spacing cons : heavy bleeding & pain, fear of it traveling in the body, white discharge, against religious beliefs,	pros : easily available cons : easy to forget, nausea, headaches follow-up dosage invasive, dizziness insertion cons : very invasive Dock	pros : easyl valiable cons : easy to forget, nausea, headaches follow-up dosage invasive, dizziness insertion follow-up dosage invasive, dizziness insertion forget, nausea, headaches follow-up dosage invasive, dizziness insertion forget invasive insertion forget, nausea and forget, nausea and the leavy menses, easy to forget invasive, dizziness insertion forget invasive insertion forget forget invasive insertion forget invasive insertion forget forget invasive insertion forget forget forget forget forget forget forget forget of take daily), initial side effects and forget forget to take daily), initial side effects forget fo	pros : easily available cons : easy to forget, nausea, headaches follow-up dosage invasive, dizziness insertion follow-up dosage invasive, dizziness insertion follow-up dosage invasive, dizziness insertion in Kenya follow-up dosage invasive, dizziness insertion follow-up dizziness invasive in Kenya in Kenya dosage asy to forget to calculate, easy to forget in Kenya in Kenya dosage asy to forget in Kenya in Kenya in Kenya dosage asy to forget invasive in Kenya dosage asy to forget invasive in Kenya dosage asy to forget in Kenya dosage asy to forget in Kenya dosage asy to forget invasive in Kenya dosage asy to forget invasive invasive in Kenya dosage asy to forget invasive	pros : easily available cons : easy to forget, nausea, headaches follow-up dosage invasive, dizziness insertion invasive invasive invasive in Kenya easy to forget follow-up dosage invasive, dizziness insertion invasive invasive in Kenya easy to forget easy to forget invasive, dizziness insertion invasive in Kenya easy to forget invasive easy to forget invasive easy to forget invasive in Kenya easy to forget invasive easy to forget invasive easy to forget invasive easy to forget invasive in Kenya easy to forget invasive easy to forget invasive easy to forget invasive in Kenya easy to forget easy to forget invasive easy to forget invasive in Kenya easy to forget easy to forget invasive easy to forget eas	pros : easily available cons : easy to forget, nausea, headaches Cons : easy to forget, nausea, headaches follow-up dosage follow-up dosage

pros : easy

on-demand

to access,



Who Did We Research?

WOMEN (Age 16 and upwards)

Spanning users, non-users and discontinuers of contraceptive technology, across various types of demographic profiles, primarily in lower socio-economic segments.

ECOSYSTEM OF INFLUENCERS

Spanning **social** (family, relatives, friends, co-workers); **cultural** (community heads, spiritual leaders, markets); **institutional** (teachers, family planning clinics); **health** (health centers, pharmacists, midwives) and related influencers in their immediate ecosystem.

CONTRACEPTIVE VALUE CHAIN

Macro ecosystem of providers who contribute to the last mile delivery of contraceptive technology, communication and support systems - from women empowerment programs; family planning and contraceptive health agencies; to different supply chains (clinics, pharmacies).

29 **104** in 25 groups 22 31 **KENYA** In-depth Interviews Stakeholder Interviews Focus Group Discussions Intercepts INDIA 96 in 22 groups **27** 29 20





















Younger women > Age 16-24*

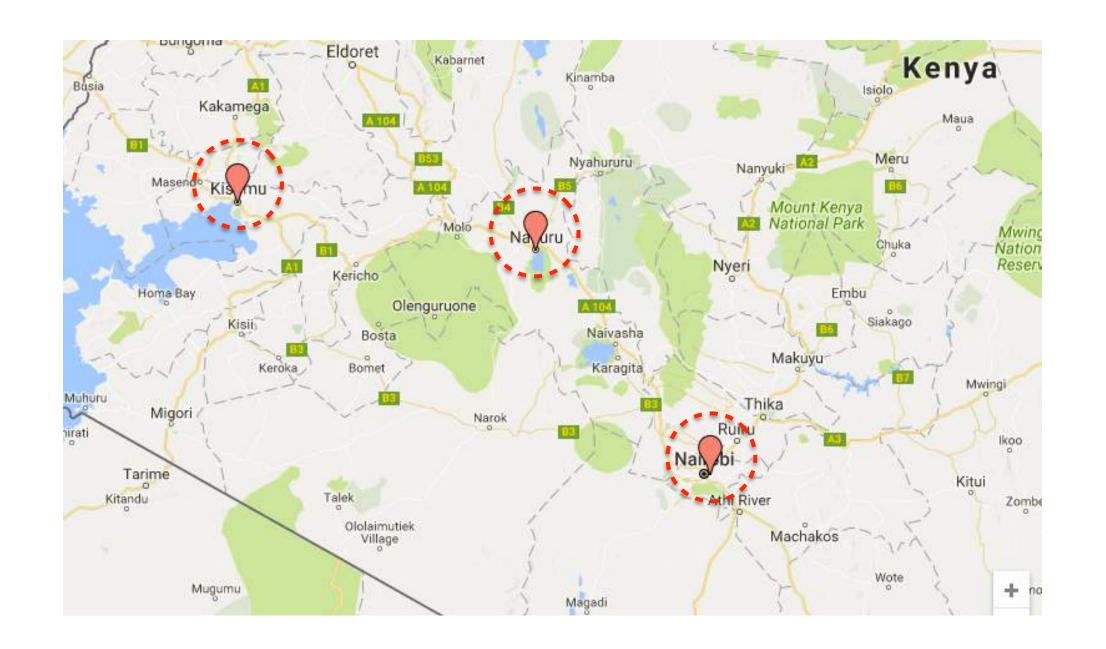
Women in the midst of family planning > Age 25-34

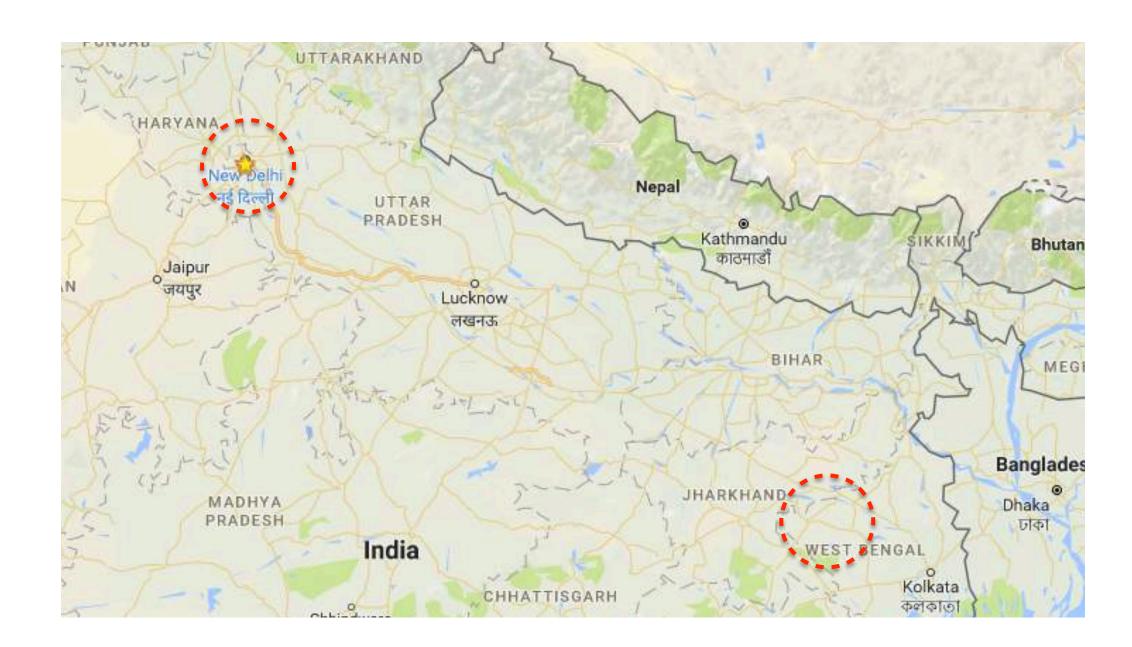
Women limiting their family size > Age 35-50

Our research primarily focused on women whose needs are not fulfilled by the current portfolio of contraceptive technologies. We also spoke to women who were already informed about family planning and had agency over their contraceptive use, as a way to get a glimpse into the future.

In addition to end users, we met partners, other family members and healthcare providers for their perspectives.

* In India, under the research protocols we only spoke with women under the age of 18 if they were married.





In Kenya, we conducted research in Nairobi, Nakuru and Kisumu. In India, the locations included New Delhi along with Kolkata and Shantiniketan in West Bengal.

In both the countries, the locations were picked to allow us access to a range of contexts - across factors such as city size, development stages, occupations, access to healthcare and cultural practices. Nairobi and New Delhi, for example, for the big city perspective, whereas Kisumu and Shantiniketan are smaller towns that gave us access to people from rural areas.

Ethics and Consent

IRB Approvals – To conduct research in Kenya and India, we sought both FHI and local Institutional Review Board (IRB) approvals (e.g., FHI - OIRE, Kenya - KEMRI, and India - Sigma) to ensure our approach met local guidelines for the protection of respondents.

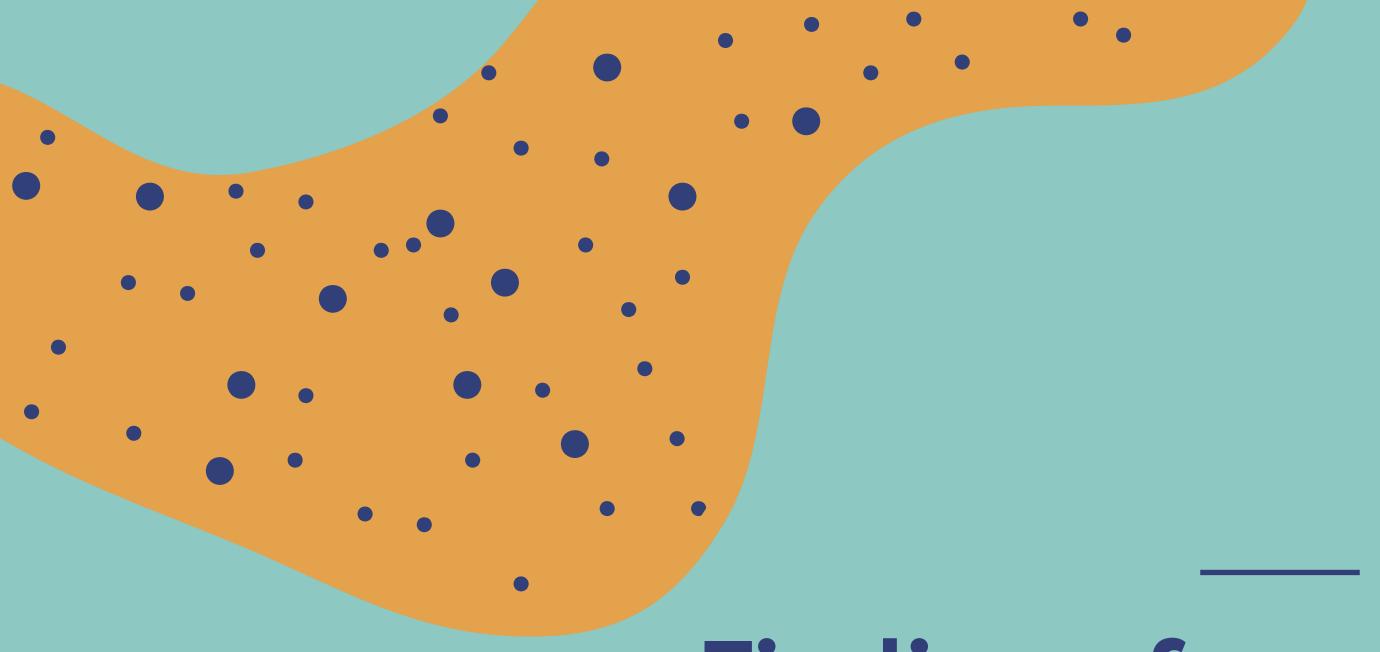
In India, the IRB strictly limited our use of identifiable participant imagery to the ideation workshop. As a result, neither this report nor any other materials disseminated outside of the ideation workshops contain photographs of the actual participants we met in India.

Ethics Training – Prior to the research, our team of international and local researchers underwent research ethics training and certification.

Consent Process – Before each interview and focus group discussion we made sure that we allocated enough time to walk respondents through the consent forms and ensure signed permission. This helped orient respondents to the research, engender trust and empower the respondents to opt out at any point.

For many respondents, the research was a positive experience, and they were happy to participate. There was a sense of contributing to something greater than themselves and an opportunity to further women's empowerment.

All photographs used in this report are anonymized and are of users who have given full consent or are of other representative users who were not part of our research.



Findings from Research

Findings from Research

Our field research generated a collection of findings, ranging from socio-cultural trends and macro shifts that will affect the use of CT to insights specific to contraceptive experiences. Findings are supported with observations, voices from a range of stakeholders and in some cases statistics as well.

1. Macro Social, Community and Familial Trends

Social norms and practices are changing, including women's roles.

Despite empowerment, norms around marriage and fertility persist.

Shifting patterns of familial and community support in child-rearing influence family planning.

2. Role of Influencers

Regardless of relationship quality, husbands have an influence on contraceptive decision-making.

Providers are often the most trusted source for

contraceptive information and purchase.

Discretion in contraceptive use is important as support structures and belief systems vary.

3. Health System Dependencies

While healthcare quality and access are improving, women's contraceptive experience remains unsatisfactory.

Family planning is often positioned as being child-centric rather than womancentric.

Traditional methods and medicine systems are still valued.

4. Sexual Behaviors and Patterns

Sexual behaviors and patterns are highly varied.

Open and frank discussions around sexuality and sexual health are lacking.

5. Fertility is Crucial

For women who have not had children, fear of infertility is a deterrent to contraceptive use.

6. External Factors Around Contraceptive Methods

Contraception is not just about unit price, but rather the cost of use.

Modern contraceptive methods are available but not accessible.

7. Methods, Experiences and Beliefs

Over their reproductive cycle, women experiment with many methods.

Perceptions and biases around the appropriateness of methods vary across life stages.

Long-term methods are both a blessing and a curse.

The safe and non-medical nature of traditional methods outweighs the risks and challenges associated with use.

8. Method-Use Barriers

Women do not feel in control of the methods they use.

Familiar formats increase acceptability but do not necessarily guarantee adherence.

Despite awareness, most methods are not relatable.

Findings from Research

Macro Social, Community and Familial Trends



Social norms and practices are changing, including women's roles.

Economic realities are transforming ideas about gender roles, relationships and ideal family size. Rising costs and shifting social norms are having a marked effect on perceptions about when and whether to get married, when and how many children to have, and who is involved in such decisions. Increasingly, women play an important role both in and out of the home, with traditionally gendered roles of 'provider' and 'caregiver' becoming ever more blurred.

Mass and social media consumption is increasing and together with education and urbanization constitute a powerful modernizing influence that has helped form a more liberal and progressive younger generation.

- Large family sizes are no longer the dominant ideal. The average number of children decreased by 20% overall in India between 2005 and 2013 and in Kenya between 2003 and 2014. DHS
- 2. In India, 63% watch television at least once a week, with access to over 700 cable and satellite channels. Open Society, 2014
 - Almost 90% of Kenyan households have a mobile phone, while 68% have a radio and 35% have a television. Kenya DHS, 2014
- 3. In Kenya, three-quarters of married women aged 15-49 reported employment in the previous year, but 20% of those received no compensation for their work. Kenya DHS, 2014

Social norms and practices are changing, including women's roles.

In India, while marriage remains the norm, subtle shifts in power dynamics are reflected in delaying marriage and pregnancy to pursue educational and/or professional goals. Earlier, while having more children was a sign of prosperity and stability, women, especially in India, are increasingly seeking to have smaller families. Public health campaigns that discourage marriage before 18 and childbirth before 21 have also driven this shift.

Attitudes are shifting towards a more inclusive gender mix. In India, this is reflected in shifting family structures that are being spurred by a more liberal younger generation. There is growing recognition that girls should also be educated. Government schemes are promoting this, which has led to decreased gender bias.

"He wants me to be at home, but I want to work. My money is mine. It feels good to have an income so you don't have to ask your husband for money."

Rani, 30, West Bengal

Social norms and practices are changing, including women's roles.

Women now play an important role in both the home and the outside. In Kenya, a large number of women express the need and desire to be self reliant owing to the fast-changing roles of men and women within the community. In India, women also express the need to supplement household income, but are more likely to work in the informal sectors. Most women want better lives, primarily to safeguard the health and welfare of their children.

The perception that men are less responsible than in previous generations has reinforced the desire for self-sufficiency amongst Kenyan women. Women raising children on their own without the obligations of marriage is becoming more prevalent. Furthermore, having multiple sex partners - even in marriage - is becoming common. The economic volatility that most people experience is also leading to the rise of new kinds of plural relationships. Many of these might have a functional or transactional ambit.

"In African culture the man is the head of the family, but in this generation it's just a title. It is the woman who controls everything and holds it all together."

Lilly, 26, Nairobi





Despite empowerment, norms around marriage and fertility persist.

Despite increasing empowerment, traditional roles still represent the future for many women. For many, the pressure to marry and conceive young remains the norm. In both contexts, women are expected to assure family lineage, and demonstrating the ability to conceive remains a key responsibility associated with the role of a wife. This empowerment, therefore, has not led to a change in the norms around fertility and its understanding, the preservation of which remains sacrosanct for both men and women.

- 1. In Kenya, current employment has increased among women from 57% to 61% since 2008-09. At the same time, 29% of women in the ages 25-49 were married by age 18, and 48% by age 20, while 25% of Kenyan women in the ages 25-49 had given birth by age 18 and 47% by age 20. Kenya DHS, 2014
- 2. In India, 26% of married girls in the ages 20-24 got married before the age of 18. NFHS 2016
- 3. More girls are being educated, but they are not working. In rural India, 67% of female graduates do not work; in more urban settings, 68.3% female graduates do not have a paid job. UNDP 2015

Despite empowerment, norms around marriage and fertility persist.

Marriage and motherhood are the reality for most women in India, irrespective of their level of education and employment, as the family has to be their first priority. Despite some young empowered girls going against the grain to delay marriage, the pressure to settle down persists even for them. For many Indian women, (re)entering the workforce is only possible when children are of school age or grown, and women's negotiating power within the family increases as they - and their children grow older.

The need to demonstrate one's fertility immediately after marriage was called out as important by women in both India and Kenya. Moreover, in Kenya, the need to remain fertile continued even in the later years of a woman's life, in case she is remarried or her husband desires more children. In Kenya, many men desire large families and equate their having many children as a sign of masculinity. In India, this perception is steadily shifting given the multiple government programs aimed at promoting smaller families.

"You get married to have children. If you aren't fertile, your husband will find another wife."

Sheila, 25, Nakuru





Shifting patterns of familial and community support in child-rearing influence family planning.

In Kenya, the community's role in child-rearing appears to be reducing owing to changing social and economic structures. Traditionally, the community was responsible for ensuring that a child is inducted into all the spheres of community life. However, changing value systems, aspirations and realities are leading to a fragmentation of community ties. This has a direct impact on fertility aspirations as well as the sociocultural upbringing of children.

On the contrary, in India, family planning has mostly been an extended family affair - women's and even couple's preferences may take into account opinions of elders, particularly the mother-in-law.

- 1. A 2013 study conducted largely in urban Kenya found that 23% of men and 30% of women reported their never discussing family planning with their partner. Tumlinson et al., 2013
- 2. In India, despite a progressive increase in nuclear family structures, extended families still play a critical decision-making role in almost all aspects of life including career choice, mate selection and marriage. Chadda and Deb. 2013

Shifting patterns of familial and community support in child-rearing influence family planning.

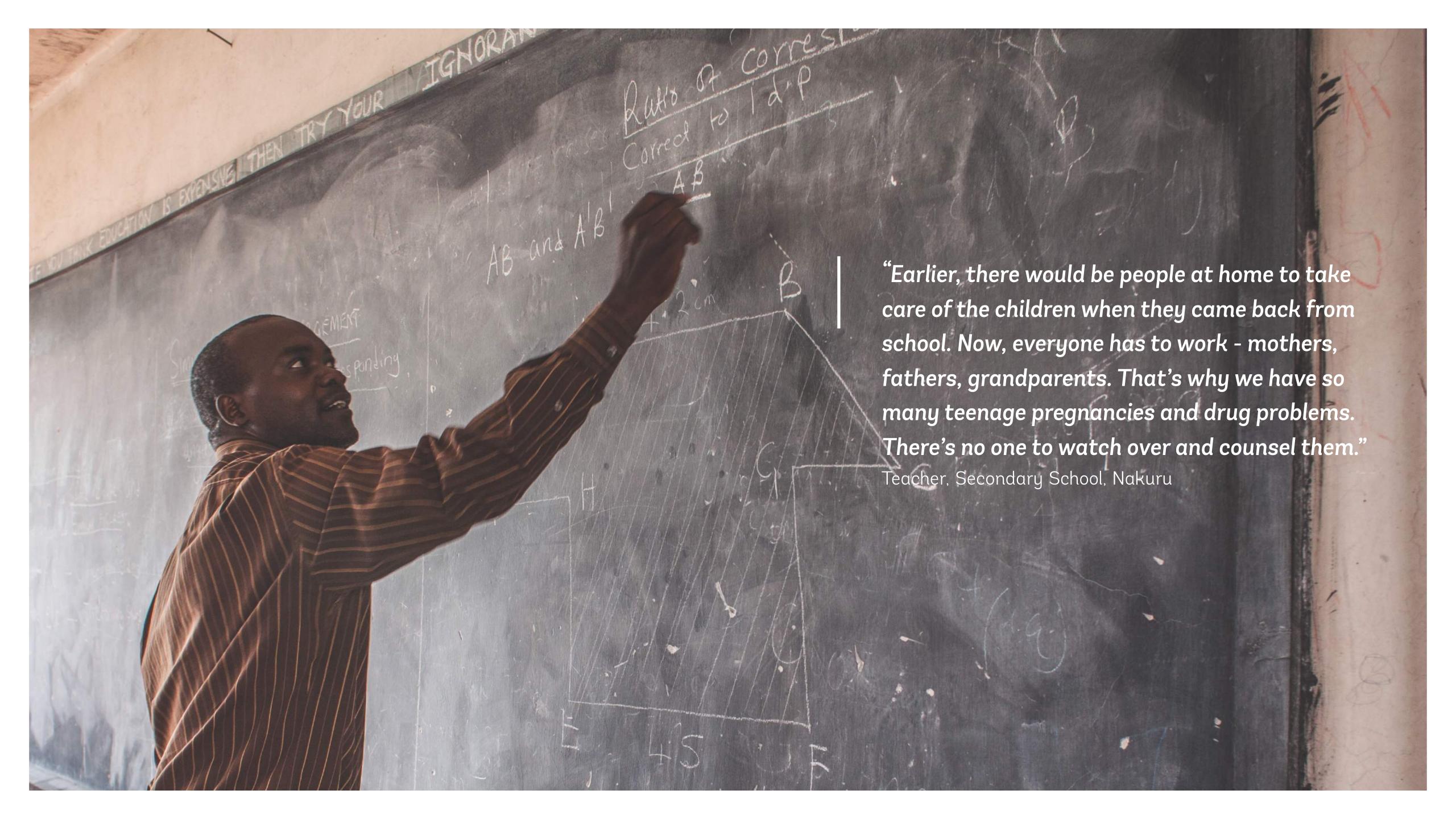
In Kenya, traditional family structures are becoming less apparent. Women - whether single or married - bear the burden of managing their families primarily by themselves. Husbands or male partners are mostly excluded from decision-making around family planning, especially if they are perceived as unable or unwilling to provide financially.

In both countries, newly married couples are expected to have a first child immediately after marriage. Women also rely on the wisdom, experience and aspirations of their extended families and community circles to help with raising their children.

In India, decisions around child-rearing and family planning are not made solely by the husband and wife, but involve opinions of and permissions from other family members. But increasingly, some younger couples may deviate from their family's wishes and seek more autonomy in planning and managing their family.

"After my second daughter was born, my husband and I decided I should get the operation. My mother-in-law was against it as she wanted us to try for a son. But, my husband took my side, because he knew we couldn't afford another child."

Maya, 25, West Bengal



Role of Influencers



Regardless of relationship quality, husbands have an influence on contraceptive decision-making.

Women's decisions around contraceptive use are often made collectively, in consultation with different stakeholders.

In India, we found that women felt it was essential to take into account their husband's preferences, evident or perceived, while choosing a CT for themselves. Even providers, when talking to women about contraception, discuss the partner's involvement. Women also usually informed their partners about their CT choice and use. For methods like tubal ligation, active partner consent was a must.

Also, given that sex is still a taboo topic, husbands are often the ones procuring contraceptives from the market for their wives; they might even play a role in ensuring compliance.

In cases where families were living jointly, contraceptive decisions were affected by other family members and relatives. Since knowledge around contraception usually occurs only after marriage, the husband, mother-in-law and sisters in-law are often the first points of awareness around sex and fertility.

"My husband and I talked about it and decided we don't want another child for 7-8 years. I don't know much about these things but when our son is a little older, we will go to the doctor and decide what to use. If my husband doesn't agree to something, I will not use it."

Aarti, 18, Delhi





Providers are often the most trusted source for contraceptive information and purchase.

There is always some anxiety around proper method use or managing side effects; thus, many women prefer to obtain methods at the clinic, where they feel they have access to more accurate information. Even if a method is self-administered, women might prefer to first get it at the clinic, so they can understand how to use it correctly.

Clinics are also trusted to provide authentic products in contrast to counterfeit or fake products that might be given in the open market. When providers communicate the right information about methods, including side effects, even troubling ones such as changes in menstrual cycles, it is better accepted by women.

In spite of this crucial role that providers play within the reproductive health ecosystem, there is often lack of information and adequate training among different providers and facilities. This implies that women may receive inadequate information and are sometimes even left to themselves to understand and manage contraceptives.

"The family planning clinic is the only place one woman can talk to another behind a closed door about things that are usually not discussed."

Nurse, Family Planning clinic, Nakuru





Discretion in contraceptive use is important as support structures and belief systems vary.

In Kenya, contraception is often seen as a sanction for wayward behavior; using it could signify a 'weak bond' in the relationship. Even women with multiple partners often chose not to use contraception at all, owing to a fear of judgment and lack of support from their partners.

Adolescents, especially in urban areas, may have relationships with multiple partners - in which contraception may or may not be used. Lack of support from partners and other community members often leads to non-use of contraception in both countries.

Being regarded as a private matter, contraceptive methods like injectables are extremely popular in Kenya, even amongst women in stable relationships, because they may be used without partners or families finding out. Conversely, in India, because contraception is not a private matter, women desire discretion in order to have more control over their choice and use.

"It's usually men who come to buy the pills for their wives. They won't know the names, but they will carry the previous packet to show me which one they want."

Chemist, Delhi



Health System Dependencies



While healthcare quality and access are improving, women's contraceptive experience remains unsatisfactory.

Both Kenya and India have made important strides to reduce maternal and child morbidity and mortality. However, disparities exist across geographic contexts. While urban populations have access to a wider range of public, private and faith-based options for healthcare, in rural areas, services are primarily delivered through public sector and community-based services. However, across the spectrum, family planning services are lower in priority.

Although access is improving, the quality of services continues to be uneven and unreliable across different settings with stretched systems and overburdened health workers. Contraceptive methods are gradually becoming more accessible, but still do not fulfill the needs of many women.

- 1. [In Kenya] six in ten live births were delivered in a health facility, 46% in the public sector and 15% in the private sector. Still, more than one-third of births (37%) took place at home. Kenya DHS, 2014
- 2. Around 900,000 public-sector ASHAs in India are improving last mile access to healthcare and nutrition.

 NHM, 2013
- 3. **85% of the Indian family planning budget is allocated for female sterilizations.** PFI 2016
 - 77% women had not used any other method of contraception before accepting sterilization. NFHS-3 2006

While healthcare quality and access are improving, women's contraceptive experience remains unsatisfactory.

In both countries, most women - urban and rural - access maternal and child health (MCH) and family planning (FP) services through the public sector, with community health workers being frontline providers. Despite this, some women (unmarried, adolescent, religious minorities) find these services hard to access. Women may also prefer private sector chemists, registered medical practitioners (India) or other providers, as they are perceived to be faster to access with less hassle involved. Yet, some health officials worry that the private sector is less regulated.

Even though access to FP services has increased in India, estimates of modern contraceptive use indicate a decline over the last decade. Uptake of reversible modern methods remains low, with female sterilization accounting for 76% of method use. But high sales of emergency contraception and abortion kits suggest that the demand for spacing methods exists.

In Kenya, contraceptive use is prevalent, but FP needs remain unfulfilled for many. Shorter-term methods, including injectables, pills and condoms are being used, while multiple barriers to long-acting and permanent contraception continue to exist.

"We only have two nurses who are trained to insert IUDs. Sometimes when women come asking for an IUD and those nurses aren't available, we just have to give them injectables instead."

Nurse, Local Dispensary, Nakuru





Family planning is often positioned as being child-centric rather than woman-centric.

Family planning services are often bundled under maternal and child health services, which means many women get counseling only after they have had at least one child. Many regret their lack of knowledge about contraception and wish they had better knowledge and protection at the time they started having sex.

In Kenya, we heard providers say they would caution nulliparous married women against using hormonal methods such as OCPs and injectables, as they felt it would make them infertile (a perception fueled by variable rates of return to fertility, especially with injectables). In India, we saw ASHAs position contraceptives as a means for postpartum spacing and child development, which might exclude couples who wish to delay starting a family as well as unmarried women.

"I go to new mothers to counsel them about contraception so they can wait before having their next child. I do not talk to young girls; if I do, then people will say I am promoting premarital sex."

ASHA, West Bengal





Traditional methods and medicine systems are still valued.

While Western medicine has made significant in-roads in both urban and rural areas, it is common in both countries for people to complement this with traditional remedies. Western medicine is deemed to be reactionary rather than preventative. Traditional medicine, however, is seen by many as providing holistic solutions that take into account more than just the presenting ailment or disease.

- In India, about 70% of rural population depends on the traditional Ayurvedic system of medicine. Most practitioners of traditional systems of medicine prepare formulations with their own recipes and dispense such preparations to the patients. Pandey et al., 2013
- In Kenya, regulation of traditional medicine and practitioners can be problematic, and there is tension between conventional providers and those they perceive as 'quacks'. Africa Research Institute
- 3. In Kenya, traditional healers are both common and popular, particularly among rural populations where access to 'Western' medical services and/or financial constraints may constitute barriers to such care. Africa Research Institute

Traditional methods and medicine systems are still valued.

In India, many people use Ayurvedic medicine exclusively or combined with conventional Western medicine. Its guiding principles on health and disease promote individualized treatments, including herbal compounds together with diet, exercise and lifestyle recommendations. This is in contrast to Western medicine, which is seen as more disruptive to the body.

In Kenya as well, there is a preference for 'natural'/herbal and holistic treatment systems versus the 'chemical' nature ascribed to 'Western' medicine. Herbalists and local healers in Kenya are also more trusted than Western medicine providers, who offer unfamiliar solutions with little explanation.

Traditional contraceptive methods, like fertility awareness, withdrawal, lactational amenorrhea, continue to be used by women despite the availability of modern methods. They are championed as being all-natural and offering more user control. However, these often require careful use, partner compliance and body literacy (and numeracy).

"What's the point in using a contraceptive if you still get pregnant while using it? I would rather use a natural method instead of going through this."

Rose, 34, Nairobi



Sexual Behaviors and Patterns



Sexual behaviors and patterns are highly varied.

People exhibit a wide range of sexual behaviors - spontaneous vs planned, infrequent vs often. Current contraceptive methods do not always match these patterns of sexual frequency and spontaneity.

Sometimes sex is seen as something that panders to men's desires, with their being the initiators. Women may not be able to refuse, believing that it is their duty to make their partners happy. However, some women also derive pleasure from and are also the ones to initiate sex. No matter what the context, sex most often is not planned and predictable.

While the unplanned nature of sex made it difficult to use on-demand methods, many women felt it was needless to use 'continuously acting contraceptives' given the varying frequency of sex. They felt that this caused them to unnecessarily have a lot of medicines in their body, which would cause harm in the long term.

"People think a husband and wife have sex everyday, but when you see each other all the time you don't even feel like it."

Community Health Worker, Nakuru

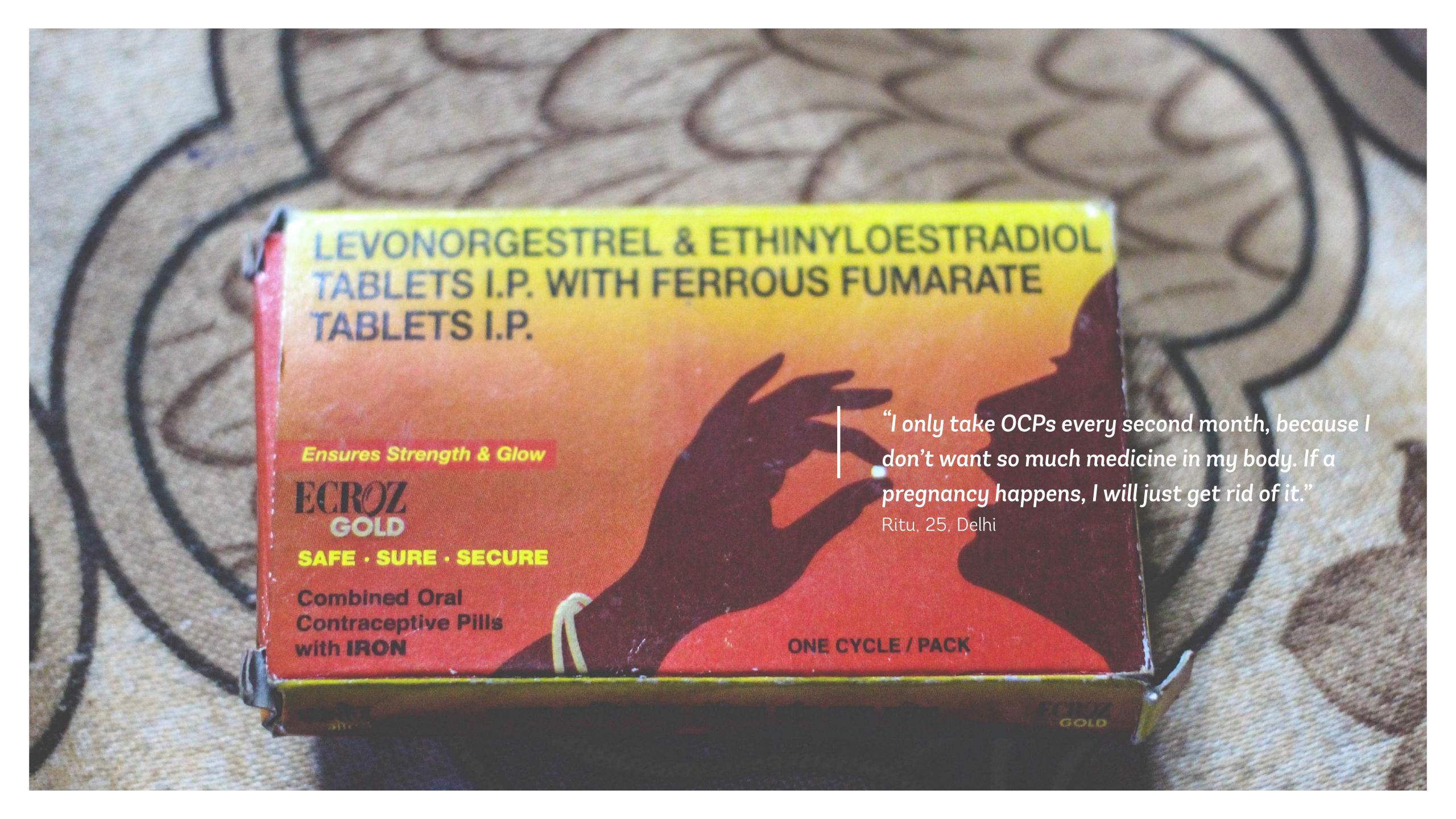
Sexual behaviors and patterns are highly varied.

CT perceptions and behaviors of young adults, in particular, mirror their spontaneous and unplanned sexual frequency and patterns, whereas most existing methods require a long-term planning mindset. In both India and Kenya, we found that time or procedure-intensive methods do not fit 'youth lifestyles' and are perceived to be more relevant for 'serious' married audiences. They preferred methods that did not involve long waiting times or elaborate screening and procedures, and their perceptions around contraception tend to be reactive, not preventative.

Continuous protection is not necessary for everyone and can be perceived as too much exposure to 'medicine'. Many women prefer to minimize their risk of side effects by using on-demand, emergency or short-acting methods and prefer not to contracept continuously when sex is infrequent. Some women have used abortion kits multiple times as a 'backup' CT when other methods were unavailable or unsuitable.

"The youth club promotes LARCs, but the client wants 'right now' methods like injectables and e-pills. Stuff that is very quick."

Counsellor, Youth Club, Kisumu





Open and frank discussions around sexuality and sexual health are lacking.

Whether in India or Kenya, talking about sex is taboo for unmarried adolescents.

Among adult women and men, even for those in equitable relationships, many topics remain unspoken - especially when it comes to intimacy, sex and relationships.

While conversations around sex are limited, the younger generations are pushing back, exploring and expressing themselves more. In Kenya, Sheng, a popular youth slang is fast becoming the language for youth to discuss intimacy, sex and other previously taboo topics. In India, young people are increasingly choosing their own partners, as against the arranged marriage norm.

- 1. In India, only 15% of young men and women in ages 15–24 had received family life or sex education. National Study, 2006-07
- 2. In Kenya, one in four adolescent girls in ages 15–19 in the lowest wealth quintile has begun childbearing. Even among the wealthiest, one in ten girls in ages 15–19 has begun childbearing. DHS 2014
- 3. There is support for sexuality education from the Kenyan government, but education-sector policies have largely promoted an abstinence-only approach. Guttmacher 2017

Open and frank discussions around sexuality and sexual health are lacking.

Family members are often the first source of information about sex, but the information itself may be superficial and may arrive later than needed. Sexual and reproductive health (SRH) education and awareness continue to be limited in both countries.

In India, women arrive in their husband's home with little information about sex, pregnancy or contraception. They must rely on their mother-in-law or sisters-in-law for such information. The first pregnancy for women - whether married or unmarried, often comes as a surprise and brings with it an understanding of the link between sex and reproduction. Many women express regret about their not being better informed or prepared.

"Both my husband and I didn't know anything (about sex). When I went back home, my sisters asked me about it and I said we didn't do anything. Then she explained it to me, and said when he comes into the room at night, I should give him my permission."

Aafiya, 25, Delhi

Open and frank discussions around sexuality and sexual health are lacking.

Both in India and Kenya, socio-cultural biases prevent young girls and women from getting the information and services they need. In Kenya, young girls may be cautioned by family and elders, who inflate the fear of contracting HIV or other sexually transmitted diseases as a way to get them to abstain from sex. But, several strategies are being implemented to bridge these information gaps. They include the use of youth friendly spaces and adolescent friendly clinics in Kenya and the engagement of ASHAs in India who are trained to use humor as an ice breaker.

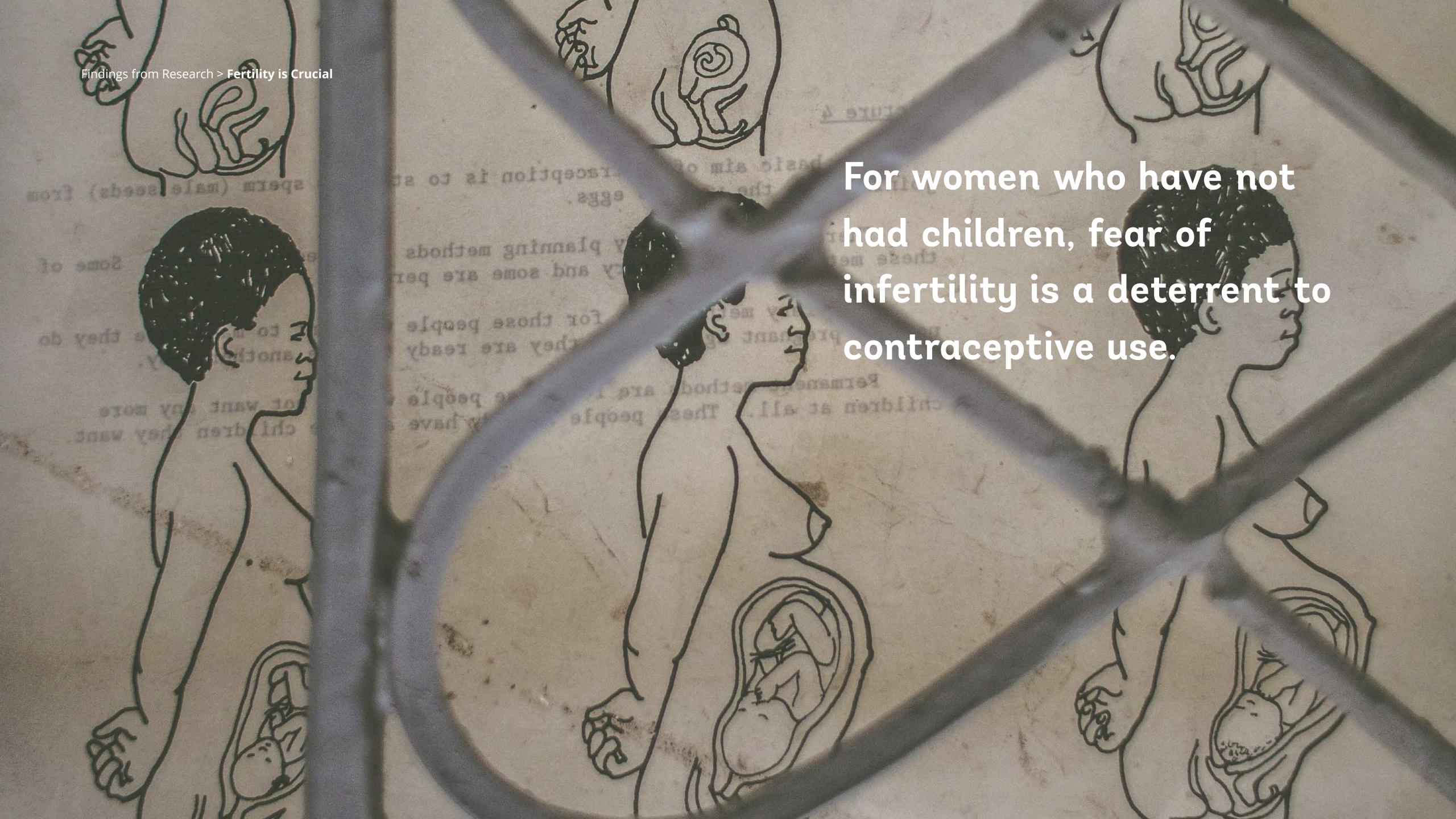
Older women also lack safe spaces to talk about sex. They may rely on trusted 'others' to discuss issues that arise within their relationships. In Kenya, this was sometimes the mother, a pastor or even a family planning provider, as their partners would often not participate in conversations around sex and relationships.

"We have a health club at school, but they only teach us about sexual violence or diseases. Nobody wants to have a real conversation with us, so we go to the internet. But even that can have wrong information."

Mercy, 17, Nakuru



Fertility is Crucial



For women who have not had children, fear of infertility is a deterrent to contraceptive use.

Many of the myths, misconceptions and urban legends around modern contraceptive technologies arise from a desire to protect future fertility and pregnancy aspirations. In both India and Kenya, women consider irregular menstruation and amenorrhea to be abnormal and menstruation to be a natural indicator of fertility. Because hormonal methods are closely associated with undesirable side effects, including menstrual cycle changes, they are less popular among some women.

An unpredictable return to fertility can cause anxieties, even within families that already have children. In both India and Kenya, a woman's childbearing ability is considered paramount, irrespective of how many children she has. There is a fear of partner and community rejection if you are not fertile.

Amenorrhea can be more acceptable in later stages of life. Women do not mind the absence of periods after achieving their desired family size, which makes hormonal methods more acceptable. Nevertheless, in Kenya, women ruled out the use of permanent methods in case their situation changed, and instead opted for long-acting hormonal methods like implants.

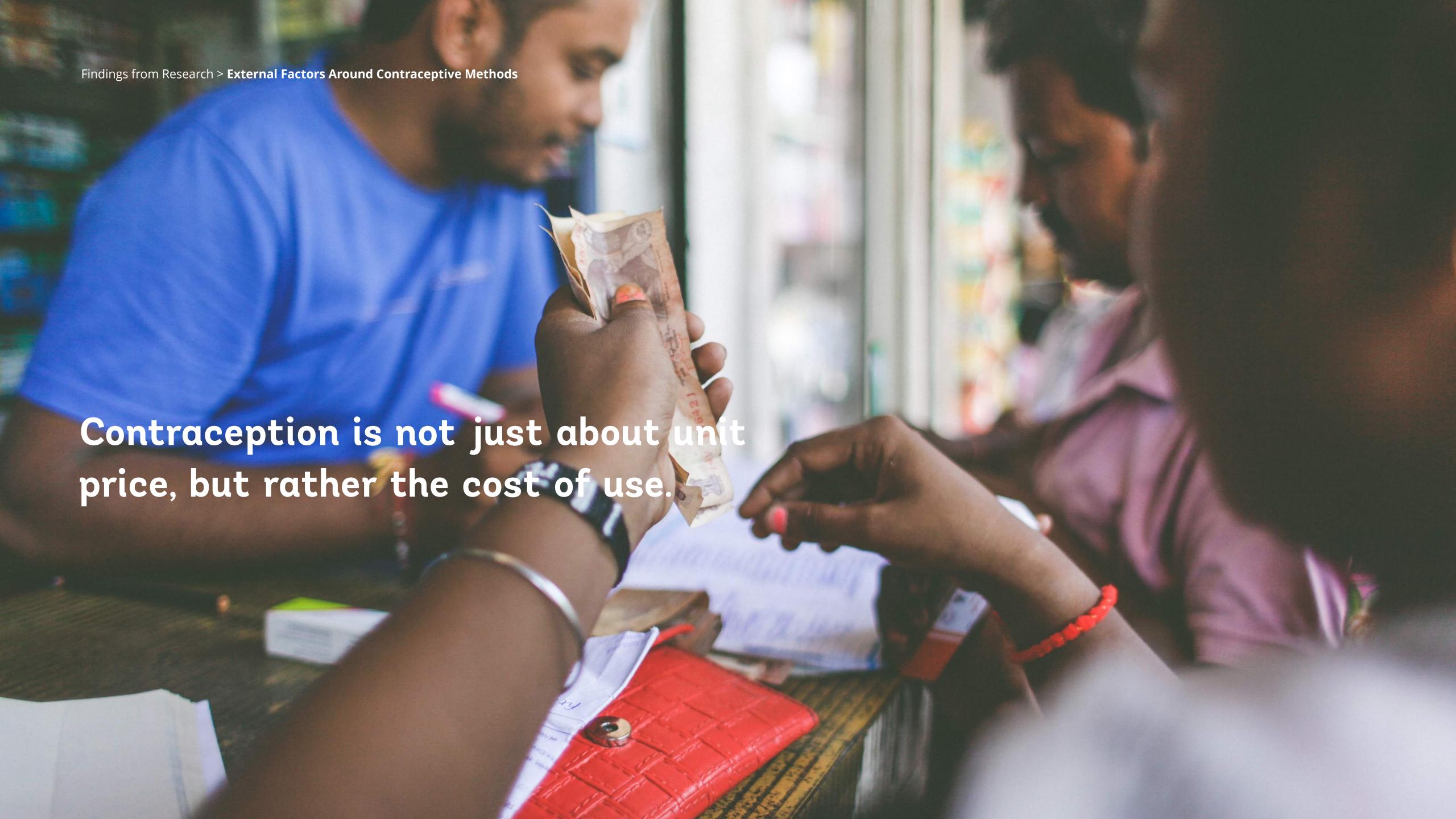
"After five years of using Norplant, it takes another three years to get a baby. If this individual has to wait three more years, there will be suspicion from the community about why she is not getting pregnant."

Margaret, 30, Nakuru



Findings from Research

External Factors Around Contraceptive Methods



Contraception is not just about unit price, but rather the cost of use.

In India, female sterilization remains the most common method, but it also requires sufficient recuperation time to avoid infections and complications. However, many women delay it till they can afford to take the time off for aftercare and may use traditional methods in the meanwhile, which may fail and lead to unplanned pregnancies. In Kenya, implants are provided free of cost but removal may require a substantial fee.

The opportunity cost of missing work days because of side effects becomes a barrier to adoption and use. In both India and Kenya, we found not only that aftercare recommendations were difficult and costly to follow through, but also that the physical side effects. and possible complications had financial implications for women who had to miss work or travel far to receive treatment.

In affecting women's libidos, contraceptive use may cause problems between married couples, which thus makes side effects a cause for physical as well as emotional distress. Also, side effects like heavy bleeding that limited sexual activity put a stress on relationships.

"I need a permanent solution, but I don't want the operation right now because I have just started work and can't afford the three-month bed rest that it requires."

Lata, 32, West Bengal





Modern contraceptive methods are available, but not accessible.

Providers' perceptions and biases around the appropriateness of methods for women at different reproductive stages can impact access and method choice. In India, stigma around premarital sex acts as a barrier for unmarried women to access contraception, especially at public health clinics. In Kenya, many adolescents called out 'overcounseling' or 'asking too many questions' as a reason for preferring chemists over youth clinics, even though the latter provides free-of-charge products and services. Even community health workers who stock oral contraceptives are only allowed to give it to clients once they have obtained a prescription from the local clinics. Thus, girls would resort to using emergency contraceptives when they have had sex, often bought by their boyfriends from a private chemist.

"It is very difficult to get condoms from government hospitals. They will ask questions like 'Who is your boyfriend? Where do you live?' Most girls will send their boyfriends, because they are too scared to go themselves."

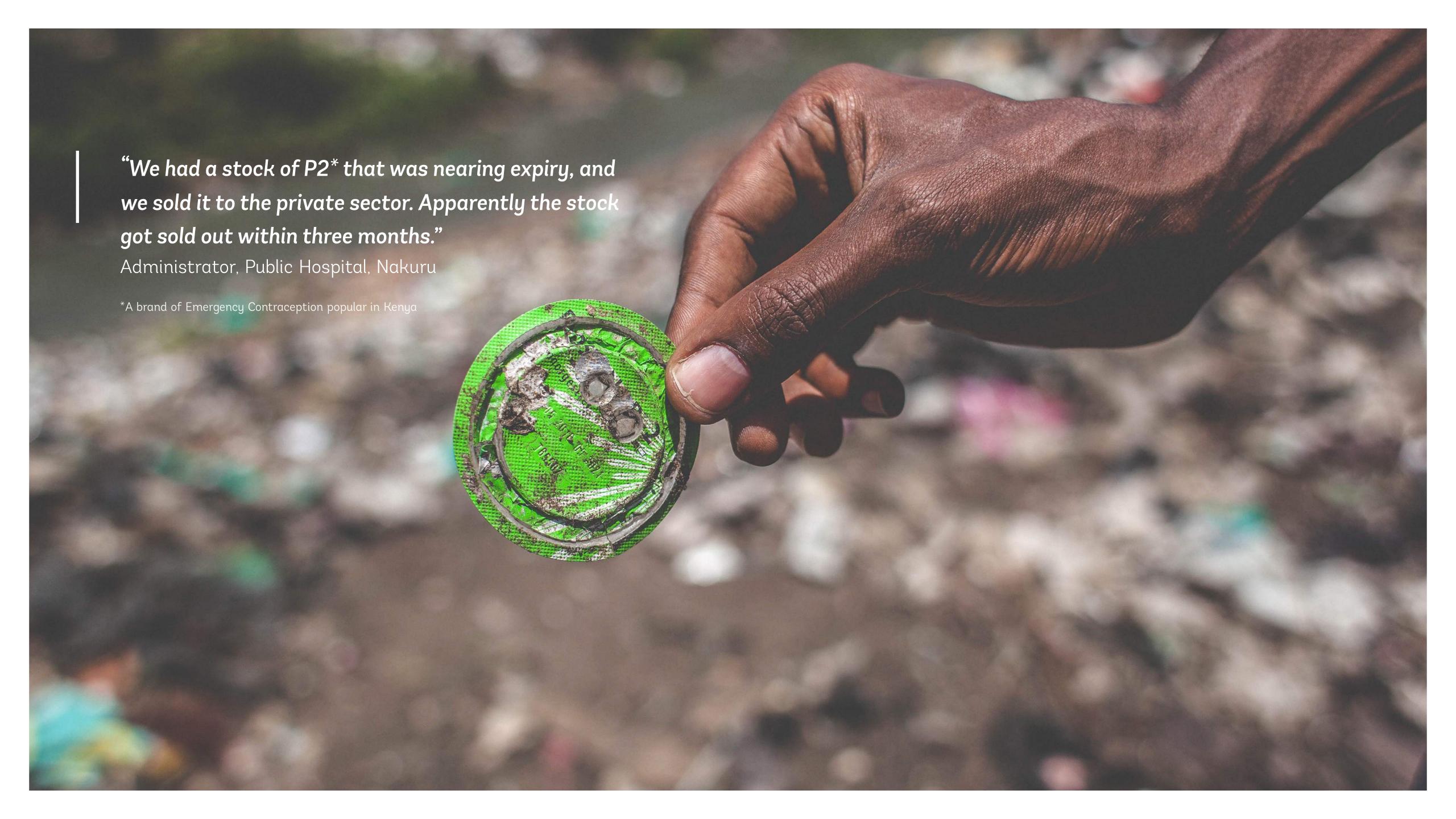
Pinky, 20, Delhi

Modern contraceptive methods are available, but not accessible.

Barriers to access are felt even by older women. In Kenya, older women felt embarrassed or self-conscious of going to public clinics or chemists, as they did not want people to know they were sexually active. Many women also missed their recurring injectable shots because they could not afford transport to the clinic. In India, as sterilization is the method of choice to limit, most middle-aged and older women did not really access other forms of CT. Those who did not opt for sterilization had to find convoluted ways to access contraception- through ASHAs or their husbands- and sometimes even by refusing to have sex.

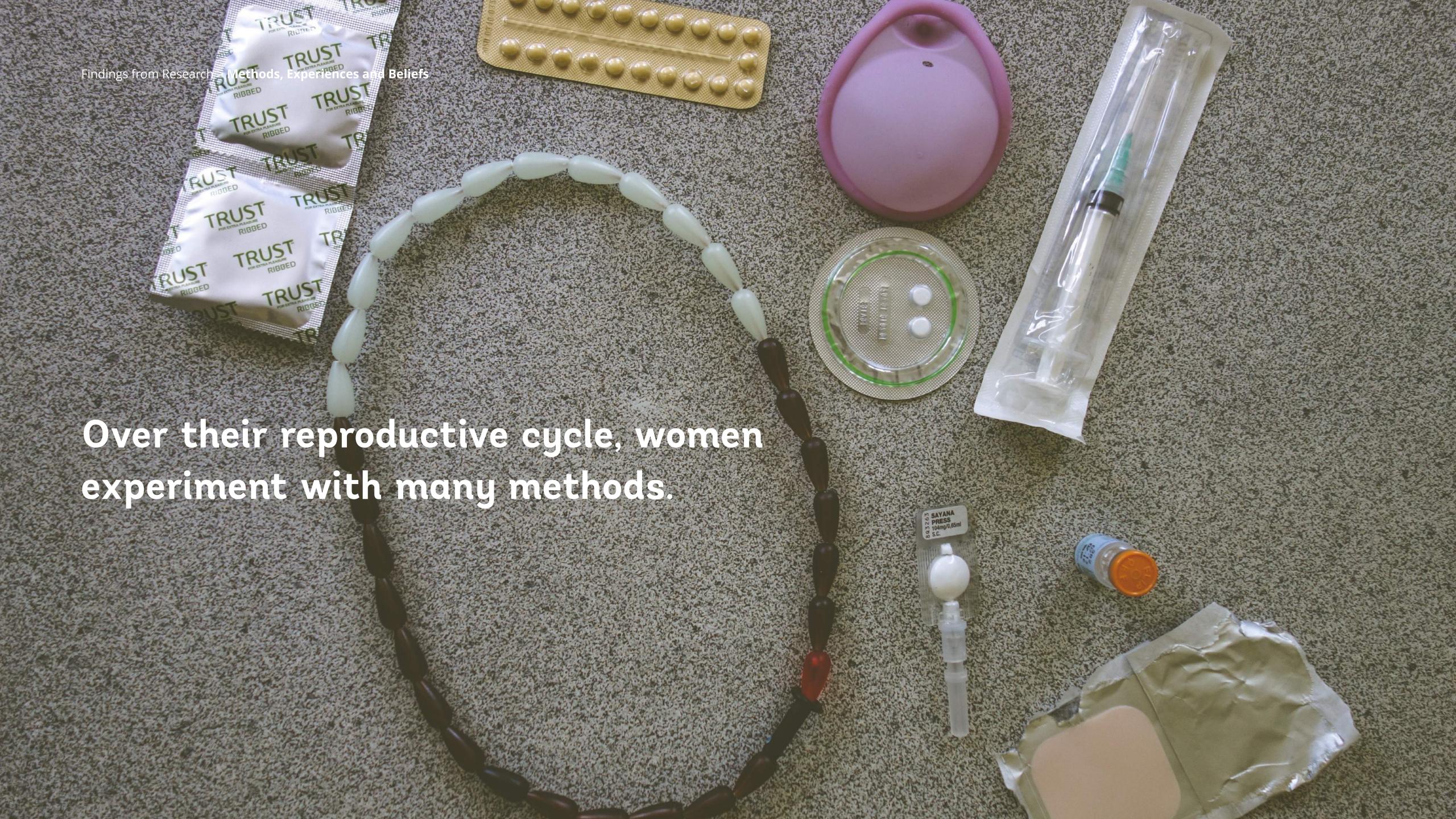
"If an older client comes to the clinic, I will make sure I make her sit in a separate section, as they get embarrassed to sit in a room with young-young girls."

Nurse, Private Clinic, Nakuru



Findings from Research

Methods, Experiences and Beliefs



Over their reproductive cycle, women experiment with many methods.

Each time a method proves to be 'ineffective' (i.e., they fall pregnant) or 'intolerable' because of side effects, women look for a new method. Hormonal methods are the least popular amongst women because of their side effects. However, accidents or method failures that cause them to seek abortions have also been triggers for women to adopt methods previously deemed too invasive or ridden with side effects.

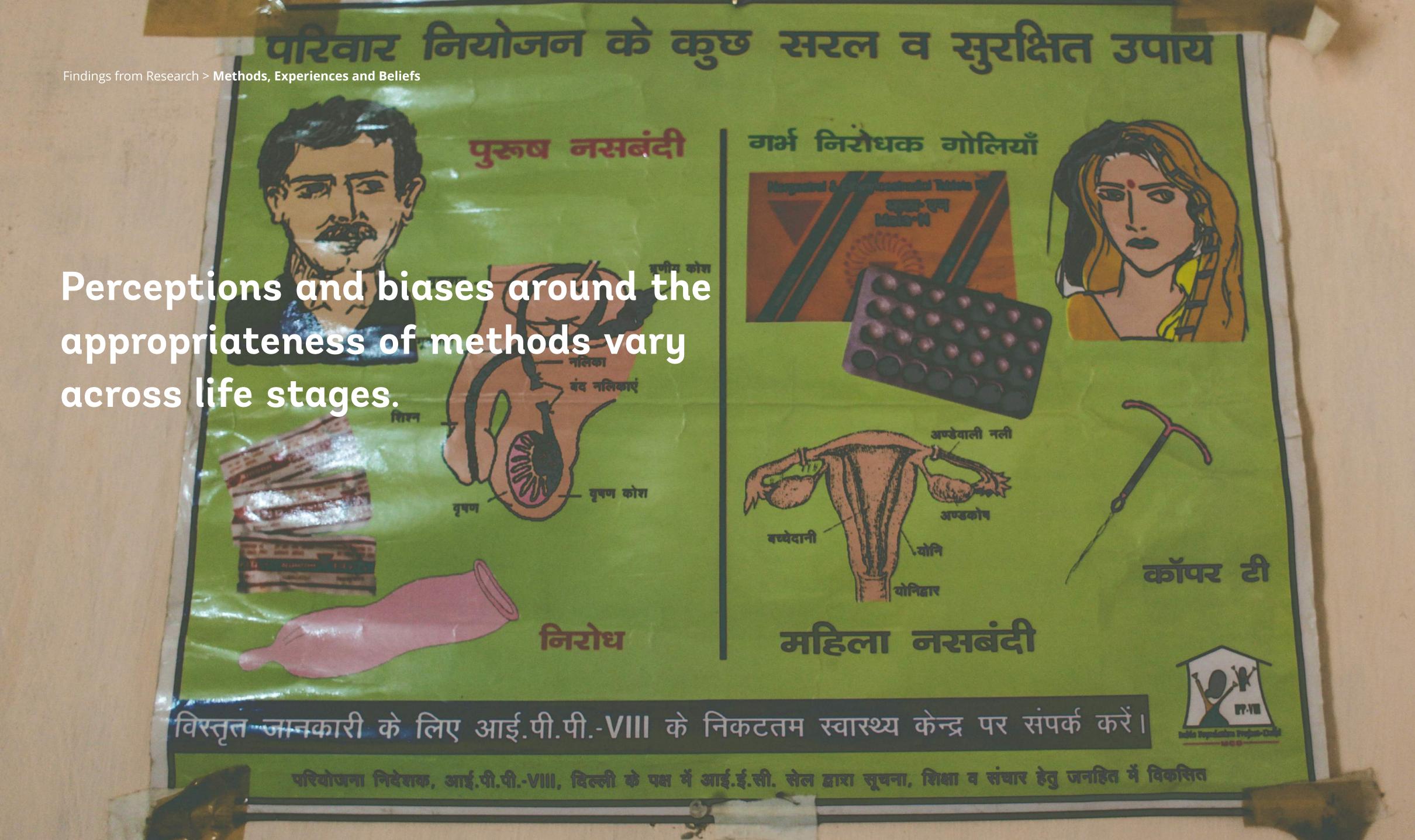
Women who have used multiple methods and suffered a lot because of side effects are willing to pay for a method that does not affect their body. In both Kenya and India, we found some women to have a strong preference for herbal and natural methods, which are also well-branded and actively promoted around the 'natural' angle.

In Kenya, we heard about the once-a-month 'Chinese pill', which was available through herbalists. In India, we found an Ayurvedic pill (B Gap), meant to be taken once in six months, that women spoke about positively.

"I started using the pills after my first baby was born, but I would feel very dizzy. The doctor recommended another pill, but I just didn't want to use medicine. That's when I tried the IUD, but that gave me intense pains in my stomach. After that I decided it's just better to use control."

Neelam, 27, Delhi





Perceptions and biases around the appropriateness of methods vary across life stages.

The stigma around premarital sex acts as a barrier for unmarried women to access contraception. Providers prescribe very specific methods based on generalizations around a client's life stage, parity, and gender composition of their children.

Providers also perpetuate biases against hormonal methods. For nulliparous women, the fear of infertility is a deterrent to contraceptive use. Providers themselves often worry that hormonal methods could affect a woman's fertility, thus leaving nulliparous women intent on delaying childbirth with few CT options. Even in India, where women tend to marry young, the pressure to have children immediately is beginning to ease, with husbands and mothers-in-law favoring delaying childbirth until the woman seems ready for motherhood. However they do not condone use of hormonal contraception.

"I don't recommend IUDs to just any women. If she's a young woman with one baby and wants to wait before having another one, she can get the IUD — so she can put it and forget about it. But if she hasn't had a baby, I can't put something in her stomach."

FP Nurse, Local Dispensary, Nairobi





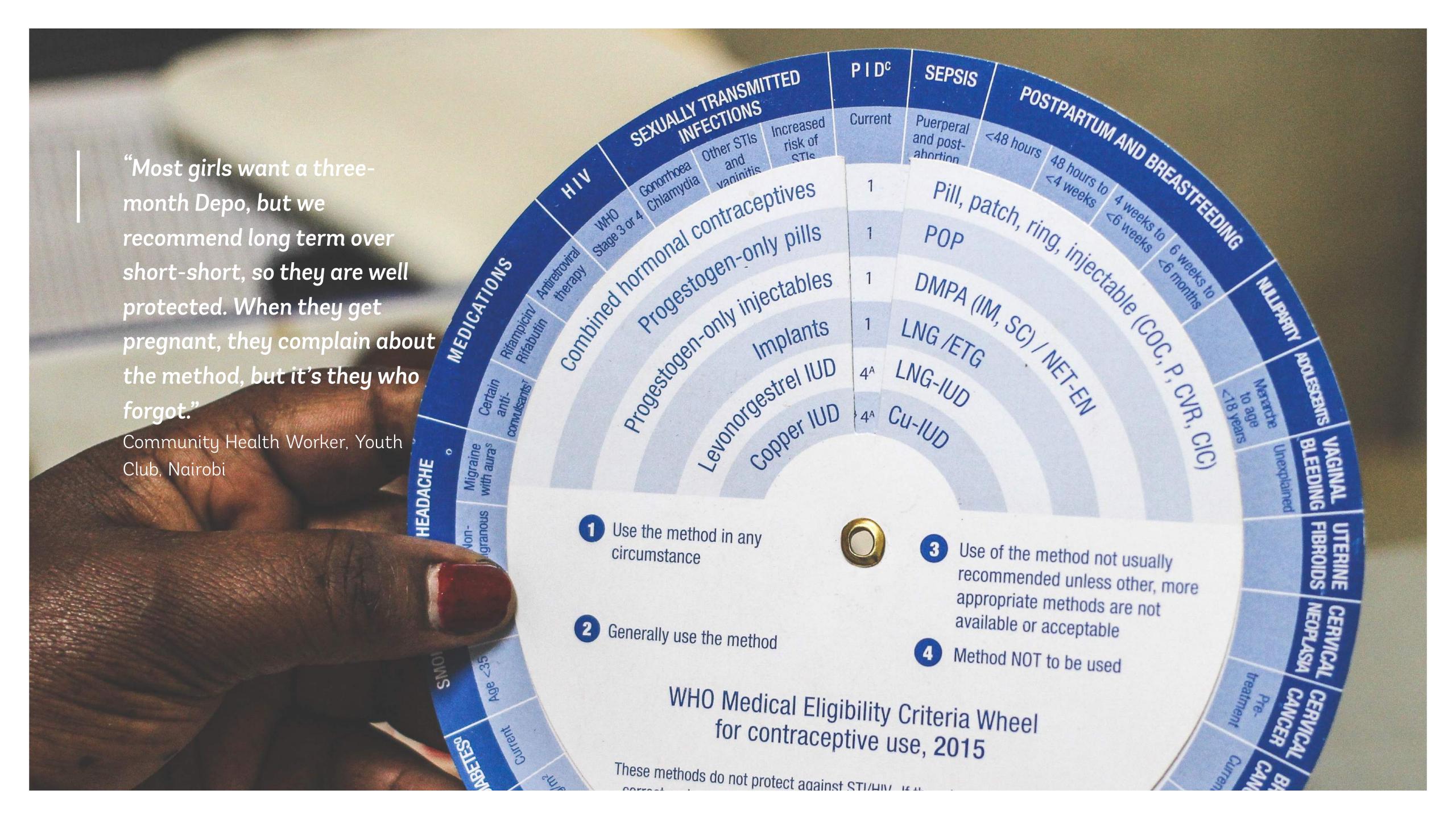
Long-term methods are both a blessing and a curse.

Long-acting methods are perceived as highly effective by both providers and users, but since appropriate screening may not always take place, users are wary of being tied to a method in case they experience side effects.

While many providers endorse long-acting methods like IUDs and implants as being cost effective and 'foolproof', short-term methods like injectables are preferred (even though they have some of the same side effects as LARCs), because they allow users to 'take a break' from side effects, are not as invasive to insert and do not require a highly trained healthcare provider to access or to remove.

"My neighbor tells me you get backaches and pain 'down there' for many days (after getting IUD). And even then, it might not fit your body and you need medicines to feel better. I find it too scary - condoms might be risky, but at least it is outside."

Sunita, 35, Delhi





The safe and non-medical nature of traditional methods outweighs the risks and challenges associated with use.

External applications are preferred and perceived as less interfering than invasive methods. The idea of having objects that 'don't belong in the body' is a cause for concern for many. It is seen as being disruptive to the body's natural processes. For Muslim women, in particular, surgical interventions that alter a woman's physiology are considered to be prohibited on religious grounds.

Those in equal relationships who are apprehensive of modern methods or have had failed experiences prefer their partner uses natural methods such as 'control'.

Fertility awareness methods (FAMs) are desirable, but seen as more appropriate for 'educated' people. Women felt they needed to have basic numeracy and body literacy to understand their ovulation cycles - something they did not have.

"I got the implant after my first baby, but it made me bleed a lot. I became very weak and skinny. Anything that goes into your body and stays there for so long will effect your blood. After that I started using natural FP."

Miliscent, 32, Nairobi



Findings from Research

Method-Use Barriers



Women do not feel in control of the methods they use.

Even though multiple products are available, women feel there is a lack of options when it comes to finding a contraceptive which combines their preferred delivery mechanism and duration.

Women feel that they have little or no control - especially with longer-term methods, as fertility is unpredictable, and they are unable to opt out in case of side effects.

Women will accept certain trade-offs for higher assurance and control. Accidents with short-term and daily use methods that lead to abortions might trigger women to adopt more invasive methods such as IUDs.

In India, women often choose sterilization over other methods and tolerate the pain and discomfort of the procedure, so that they can be 'tension-free'. It provides reliable and permanent contraception and does not require experimenting with long-acting reversible but 'medical' methods. Thus, the trade-offs are worthwhile to limit fertility reliably and without 'medicine'.

"Women who are fed up with the heavy bleeding and pain from IUDs come to get ligations. I try to counsel them against it, because once you get it you can't change your mind, but they don't want to deal with side effects anymore."

OBGYN, Private Clinic, Delhi





Familiar formats increase acceptability, but do not necessarily guarantee adherence.

The familiarity of pill-based medicines as a format makes it easier to adopt oral contraceptive pills (OCPs). In Kenya, injectables are commonly used because the injection format is familiar. However, women sometimes find it difficult to adhere to the strict regimen.

While women are aware that the IUD provides reliable long-term reversible contraception, the unfamiliar physical format as well as the procedure for placement appears to be disconcerting and has led to myths and misconceptions that make IUDs fairly unpopular.

"My sister told me not to get Depo, because it is easy to forget to get the next shot. I went to get the implant, but when I went to the clinic I found it too scary and decided to choose the injection instead."

Nancy, 24, Nairobi





Despite awareness, most methods are not relatable.

The 'medicalized' vocabulary around contraception is alienating to most users. Many women spoke about how the medical terminology around contraceptive products made them feel like patients and made them wary of putting unfamiliar and unnecessary medicines into their bodies. This also led to a preference for methods that were seen as herbal or natural.

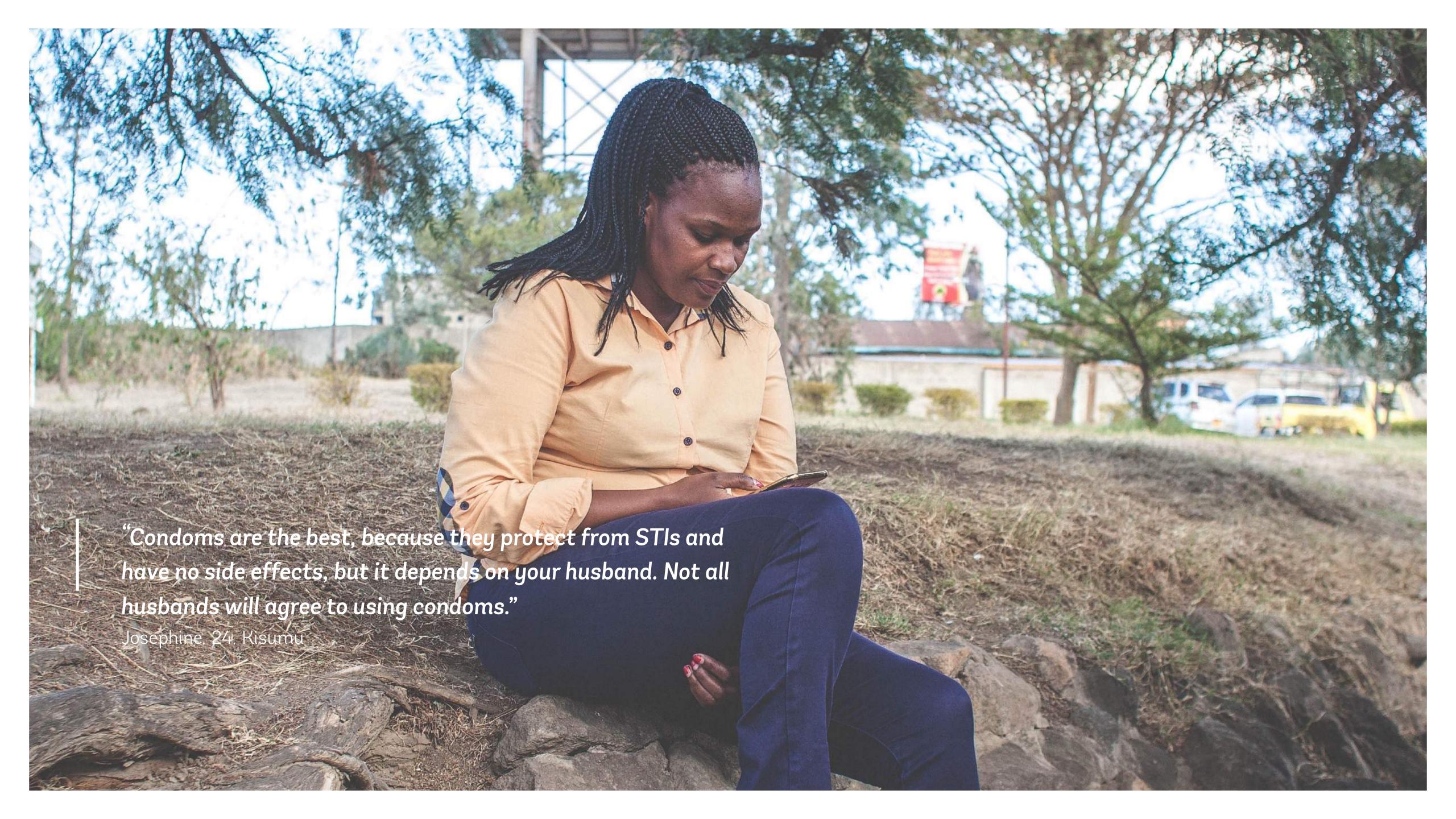
In India, most of the knowledge around contraception is passed on from other women relatives and peers and is often biased. Many women stated that currently available methods were targeting 'other' women at different life stages.

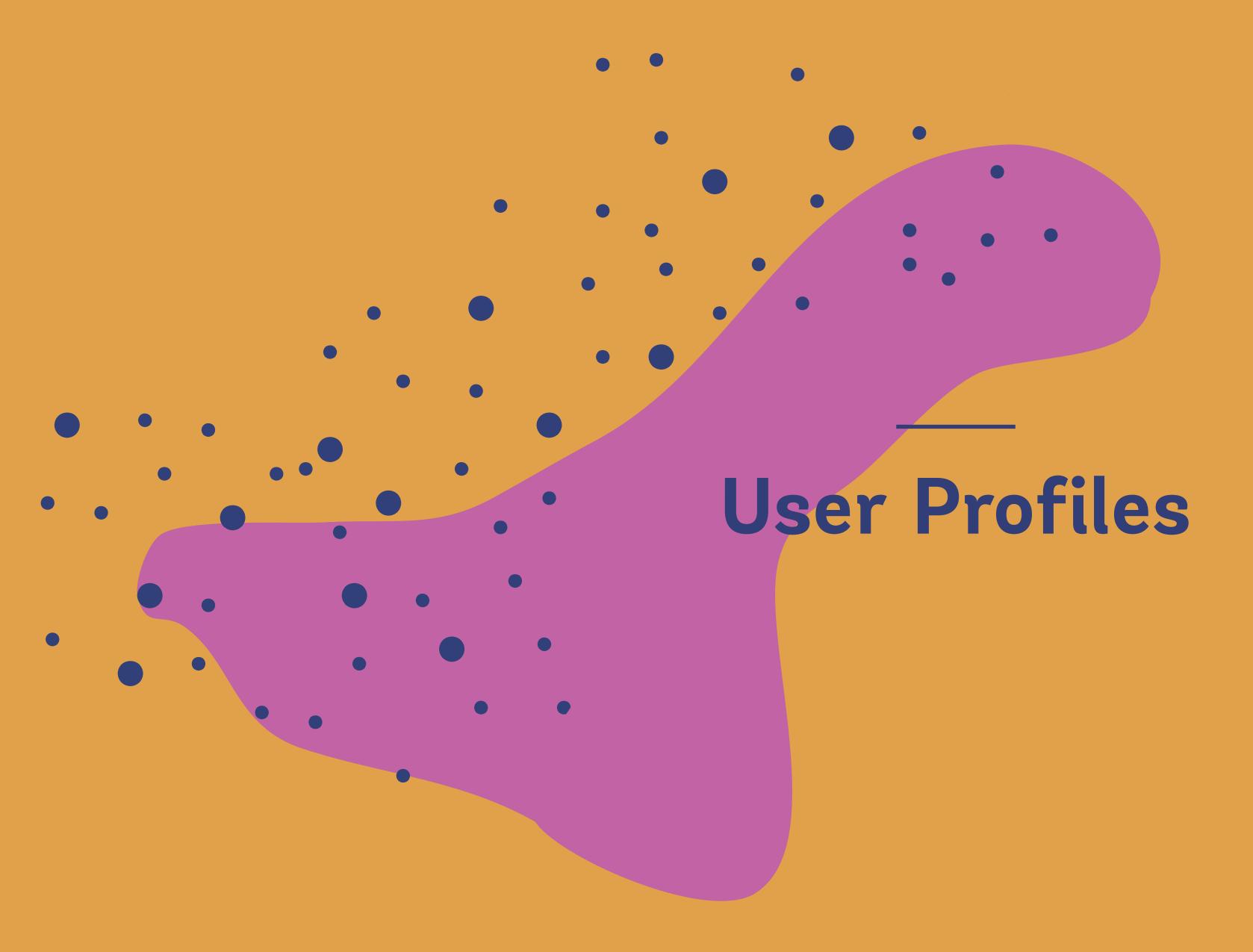
In Kenya, protection against sexually transmitted infections (STIs) was emphasized, particularly by women whose partners might be in multiple relationships. Similarly, in India, some unmarried girls with higher levels of awareness also considered STI protection to be important. They felt that few methods provided the kind of protection that condoms did, but also concluded that its use is not always easy to negotiate with partners.

"I took Mala-N* for five years. It was fine initially, but then I got intense pain around my navel. The doctor told me all the pills had accumulated in my stomach."

Ramya, 29, Delhi

^{*} Mala-N is a brand of OCPs popular in India







These milestones can be summarized into four key phases that represent her changing roles across her life. Each phase thus presents a set of distinct needs that affect her contraceptive decision-making.

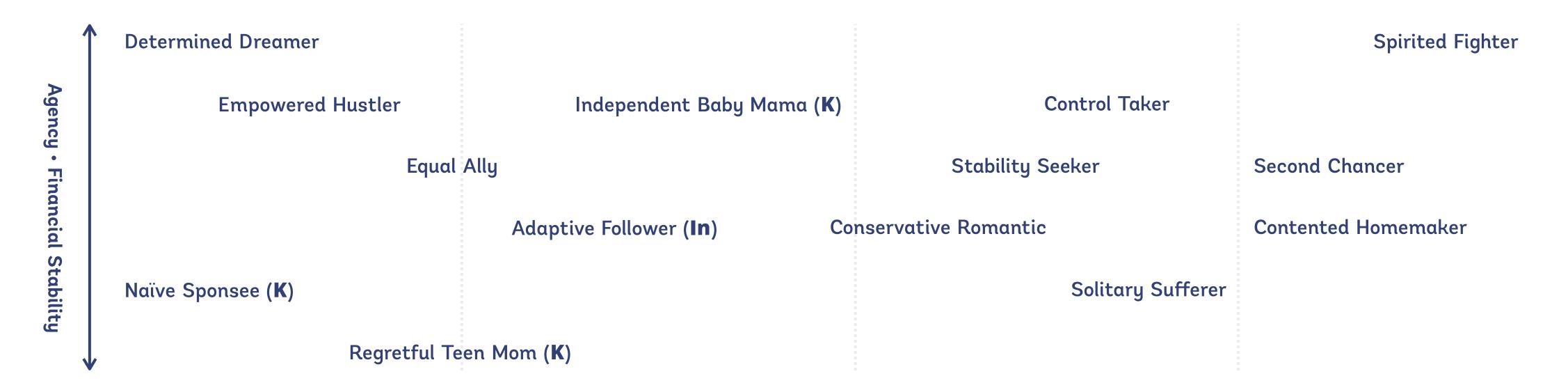
Within each phase, aspects such as agency, motivations, perceptions and barriers contribute towards further diversifying the needs of different women. We have captured this uniqueness through a set of user profiles.

Menarche

Discovering	Adjusting	Balancing	Continuing
This is the onset of a woman's sexual and reproductive health journey as she familiarizes herself with her body, relationships, and sex.	This next phase is about navigating new roles and responsibilities. There is a growing awareness and an ambition to provide the best for her children.	After having children, she begins to seek some autonomy for herself. With growing children, she is able to build on her foundation and support structures.	Reduced familial responsibilities allow her to become more engaged in her personal aspirations, which could extend beyond the family.

The user profiles illustrated here represent the range of women that we met during our research. While these are constructed from women in Kenya and India, they represent a robust range of women with aspects recognizable across most cultures.

In mapping the user profiles across this journey, we have chosen to focus on key inflection points. While these profiles are not exhaustive, they present a set of unique needs that should drive the design of their ideal contraceptive methods.



Discovering Adjusting Balancing Continuing

Menarche

Profiles unique to country. **K** for Kenya / **In** for India

Menopause

Discovering =

	Determined Dreamer	Empowered Hustler	Naïve Sponsee
	A spirit of determined independence defines this modern woman: she is ambitious and will not settle down before achieving her dreams. She is prudent about her sexual choices, as she wants to focus on her future.	She is an empowered feminist seeking a balance between fun and risk. Progressive and liberated, she seeks to enjoy what life has to offer before eventually 'settling down'.	Disempowered and dependent, she is young, susceptible to peer pressure and driven into risky relationships. Her situation is exacerbated by low-income realities.
	"I want to live my own life. I have slowly removed all my shackles and tried to explain that to my parents as well."	"Settling down means no more fun, no more side guys. It is a lot of responsibility. For now, I want to explore and have fun."	"I met him at the local shop, and he started buying me sanitary napkins and hair oil - things my family could not provide because they are poor."
Enablers	She has a strong group of friends and peers who encourage and support her and provide a safe space for self-expression.	She has access to alternative spaces and providers like a youth friendly clinic, where she gets comprehensive and positive information on sex and protection.	She aspires for the good things in life. Since her own family cannot support her, she hopes that her sponsor/ partner will provide for her.
Barriers	She gets her information through peers and school activities (health clubs / faith-based sermons), which can be fairly biased and limited to abstinence-only messages.	She is dependent on family for support, as she is still figuring out her plans for the future. Despite her high awareness, she still faces provider biases and disfavor when accessing CT, given her age and marital status.	Due to very low awareness and mobility, she might have had an unintended pregnancy after her first few sexual experiences. She is at her partner's or sponsor's mercy to not get pregnant.



Adjusting .

	Independent Baby Mama	Equal Ally	Adaptive Follower	Regretful Teen Mom
	Independent, empowered and self-sufficient, she benefits from a strong support system, and sees herself as both caregiver and provider for her child.	With the support of her husband, she ambitiously vows to overcome their financial insecurity in order to provide a better future for their children while enjoying life together.	From a traditional background, she has sacrificed personal pursuits for family interests and is still settling into a largely new environment. She is disempowered and relies on her new family to provide direction and purpose.	A single woman who mothered a child out of wedlock whilst still young, she is attempting to realign her life after a temporary loss of hope and sense of regret for disappointing her family and community.
	"I am everything to my son - caregiver and provider, mother and father."	"It would be nice to have a TV but it's not essential. We are together and happy, that's all that matters."	"My parents chose him from some photos and then went to meet his family. We met at our wedding for the first time."	"I had only one boyfriend, and it was a 'time-pass' relationship. I didn't love him. I only did it because all the girls around me had boyfriends."
Enablers .	Her peers who have faced similar circumstances are her strength, and she likes spending time with them when she is not working. She looks up to older women in her family or community and often goes to them for financial and emotional advice.	Her husband is her confidante and is extremely supportive of her. During their free time they talk about the life they would like to create for themselves and their children. She might also hope to finish her education someday, after her children can take care of themselves.	She is at the brink of her journey to creating her own family. After having lived a sheltered life, this is her first experience of independence from her own family, and she is making sense of many 'firsts' (relationship, sex, domestic responsibilities) with anxiety and excitement.	Her awareness increases during antenatal care visits and she relies on providers to give her further information on contraception and safeguarding herself.
Barriers .	She cannot afford to have anymore children in the near future until she is financially stable. She might have partners (dating or in union) whom she does not yet trust fully, and hence wants to be in control of contraception and family planning.	While they are independent, they are also inexperienced in matters pertaining to domestic life. They are learning through trial and error and might not have time to proactively manage things, as they are both busy working and taking care of their children.	She has lost the security blanket of her social network and is starting from scratch. She is dependent on older women in the household (mother-in-law and sisters-in-law) for advice and guidance, but they might not necessarily look out for her best interests.	She is managing motherhood alone and her sexual partners may not always be cooperative of her using contraception.

Independent Baby Mama

"I don't want to get pregnant but I also don't want any bad side effects"

Equal Ally

"After our last child we decided to wait. This is our mutual decision and we are happy to share the responsibility."

Adaptive Follower

"We are just getting to know each other and so I want something that is hidden from my mother in law."

Regretful Teen Mom

"I don't foresee having sex in the near future, I still would like to get a method just in case."







Balancing •

	Control Taker	Stability Seeker	Conservative Romantic	Solitary Sufferer
	She is an ambitious risk-taker who has reached some stability in her family life. She seeks to become more independent financially and wants to focus on expanding her own business.	She is aspiring towards independence and is hardworking and committed to building a better future, though additional children at this stage could negatively affect these plans.	She is in a stable relationship and seeks support and guidance from her partner, whom she is financially dependent upon. She has traditional values and dreams and seeks stability through achieving family goals.	Completely subservient to her husband and inlaws, her future is uncertain. Because her husband's work is unreliable, she takes on whatever menial jobs she can find to contribute to household income. Her singular desire is to provide her children a better life than her own.
	"It's never too late to have children. I had my fourth kid when I was 37, and I would like to have more children if we have the resources to support them."	"Though things aren't great for us right now, I am hopeful that things will change for the better."	"A woman's role is that of a homemaker. She should support her husband and help her children. This is how our society has always been."	"I don't have any dreams for myself, they're all for my kids. If I had a supportive husband and family, I could have dreamt for myself."
Enablers	She enjoys working, particularly because of inspirational women who have employed her. Her employers have supported her transition into an entrepreneur and even assisted her financially.	She is socially savvy and always looking for advice and interesting information that she can use to uplift her life. Her husband is supportive of her endeavors and tries to enable her to the best of his capabilities.	She has a caring husband, who earns enough to take care of the family and feels she need only manage the household.	She is in survival mode, and tries not to provoke her husband and in-laws. Being employed and seeking refuge in religion provides her with some respite.
Barriers	Struggling to balance work and family, she is stressed, which ultimately takes a toll on her health. Her busy life might also affect her relationship with her partner, who wants more time with her.	She has used several methods but is struggling to find the right fit. Any additional children at this stage could negatively affect her plans.	Owing to her unfinished education, she feels unconfident of her own abilities and relies on her husband or other 'knowledgeable' people (like health providers) to make decisions for her.	She is extremely vulnerable and has no decision- making capabilities. Her husband or in-laws dictate her fertility management and the number of children she should have.

Control Taker

"I want a no-fuss 100% effective method, so I can focus on growing my business. But if we change our mind, I want to be able to conceive quickly."

Stability Seeker

"I don't want another child before my son is old enough to take care of himself, but I am scared of another accident. I wish I had something that was more sure."

Conservative Romantic

"Only natural methods which do not require planning ahead will work for us, as my husband has a strong aversion to modern medicine."

Solitary Sufferer

"When he found out I was using the implant, he came home and threatened to cut it out with a knife. I need something that he won't find out about."



Continuing ____

	Spirited Fighter	Second Chancer	Contented Homemaker
	Traditional constraints forced this ambitious woman to abandon many of her aspirations in order to fulfill her role as wife and mother. However, she has now gained independence and even plays an active role in the community.	Despite a difficult start to her married life and a domineering mother-in-law, her passive husband has come around to be more supportive of her now. This, along with some new social networks she has formed, has enabled her to become more independent.	She has been through challenging relationships and unreliable partners, but is now in a position where things are looking positive. Her role is to ensure her husband's and children's success.
	"I was so stupid, I didn't know anything. I could barely talk to anyone. Now people call me whenever they need any issue resolved. It feels good to be needed by my community."	"I can't forget the way my mother-in-law mistreated me after my last child was born. I couldn't take it anymore, I decided I have to move away."	"My husband and I decided not to have anymore children after we had our fourth kid."
Enablers	In the absence of an engaged partner and supportive family ecosystem, she has sought inspiration from strong women role models in her community. This has also inspired her to become an advocate for others who have suffered a similar fate.	New social networks and relationships she has formed with women in her community have given her more confidence to voice her concerns and seek more autonomy.	Having met some of her family goals, she likes to spend time with her community groups (faith or self-help), which are her primary support system. Women from her family are still important role models and also help her with decisions relating to domestic or financial matters.
Barriers .	Even though she has become self-sufficient, she cannot abandon her duties as a mother and often struggles to find time for her kids. Her husband's and in-law's lack of appreciation is very disheartening; she can not help but feel demoralized at times.	Her husband tries to be supportive, but also feels beholden to his family and the need to be respectful of their wishes.	She does not want to have any more children, but does not feel comfortable going for an invasive method. Her female friends advise her to follow traditional methods, and she is unsure of which extreme to pick.

Spirited Fighter

"I tried many methods in the past, but they gave me bad side effects. We hardly have sex now, so I don't want to go through all that unnecessary trouble anymore."

Second Chancer

"I'm done with having children, but what if I change my mind? How can I get anything permanent? You never know what lies in the future."

Contented Homemaker

"I don't want more children, but I am scared of getting the surgery, where anything can go wrong. I wish there was another way to stop."

CT Design Considerations

CT Design Considerations

These design considerations are distilled from distinct needs and are not meant to be exhaustive or mutually exclusive, but are guiding factors that should influence the design and development of compelling contraceptive products.

Presented as a series of briefs and ideas*, the considerations are meant to be used as a springboard for future ideation.

Power to the User

Fertility Friendly

On Demand

Peace of Mind

Tangible Benefits

Biological Milestones

Shared Contraception

^{*} Please note that the ideas presented here are examples from the longer list of ideas generated during the two ideation workshops in Kenya and India; they are only illustrative and not final or recommended.

Power to the User

For many women, the use of contraceptives has to be on their own terms, when they want to use them and with limited reliance on service providers.



1. Can contraception come in formats that reduce the dependency on usual systems?

Currently, women seeking contraception have to rely on multiple stakeholders to get to a product: these include, amongst others, providers such as doctors, nurses and pharmacists, even husbands and relatives, who may be biased or may provide incomplete information or even misinformation. A good CT would reduce or remove the dependency on these stakeholders.

2. Can contraception fit more discreetly into the everyday lifestyle of the women who use it?

Using contraception can invite a lot of scrutiny from providers and partners, and this makes it difficult for women to obtain and use certain methods. A CT that is discreet in how it may be used or where it may be procured or purchased would allow for better uptake amongst women.

3. Can contraception become more relatable to specific stages of women's lives?

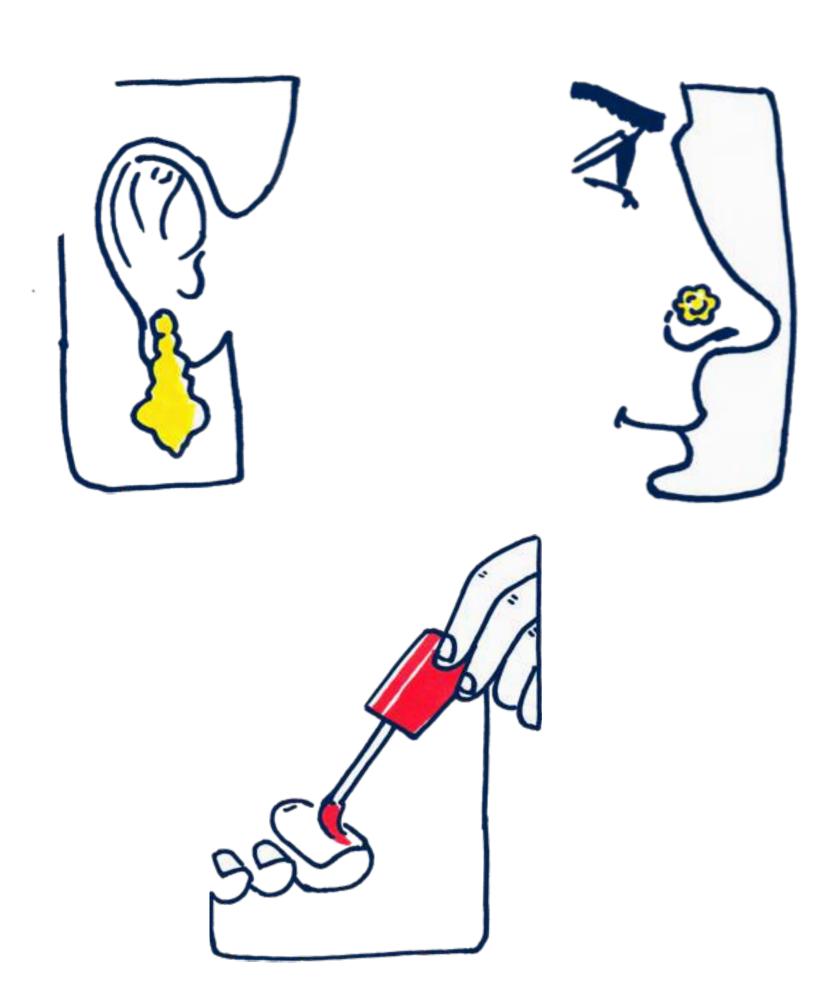
The medical format and communication around contraceptive methods is alienating to most users, making it a challenge to seek appropriate and relevant information. CTs which relate to products and routines that women use and perform in their everyday lives will have better uptake and adherence.

Contraceptive Jewelry > Accessory product line equipped with a mechanism to release contraceptive compounds under the user's skin at the user's discretion.

Bio-Degradable Diaphragm > A diaphragm that dissolves at the beginning of the menstrual cycle.

Contraceptive Nail Paint > An easily available contraceptive nail paint that can be applied by the woman or at a salon and does not require a service provider.

IUCD Pen> A self-administered hydrogel device, which is reversed with a calcium ion solution inserted with the same applicator.



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Fertility Friendly

Uncertainty regarding return to fertility post-CT use has become a strong pain-point for women currently using contraception. Despite changing norms and patterns around motherhood, any product that is seen as interfering with fertility (at least until they have achieved their desired family size) would be hard to adopt.



1. Can contraception ensure a reliable return to fertility?

Women are anxious to protect their fertility for future pregnancy aspirations. Any unpredictable change in fertility adversely affects usage of contraception. An ideal contraceptive product would be one that does not negatively affect fertility.

2. Can contraception offer easier ways to track one's fertility?

As hormonal methods are perceived not to provide a reliable and swift return to fertility, many women turn to natural birth control such as withdrawal and rhythm method. However, these are not always reliable, as they depend on partner comfort or basic numeracy and body literacy in order to keep track. A good contraception would allow for women to easily and reliably predict their return to fertility.

3. Can contraception be designed to closely match women's own sexual routines?

A prominent fear concerning hormonal methods is around the accumulation of chemicals within the body and their adverse effects - especially on fertility - causing women to seek out methods that more closely fit their needs and routines. A suitable product would be one that provides contraception only when needed.

It's Me / Meio Meio > A drug administered at puberty to stop development of eggs and sperm, making contraception the default state. Women and men can turn on their fertility when they want and with whom they want, as the drug is reversible without the need for a healthcare provider.

I-Birth > A rechargeable fertility tracker along with a CT dispenser worn on the hand or ankle, which is connected to a mobile phone that uses heat technology / fingerprint to recognize the user and constantly modifies and creates real-time adjustments to the hormonal drug delivery.

Bio Autonomy Method > A smart implant that is customized to the woman's body to eliminate side effects and can include supplements for energy and health, biodegrading after five years but which can also be removed earlier if desired.



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On Demand

Current contraception does not match the varied sexual behaviors of most users. Even when products are easily available, they still require some amount of pre-planning to work correctly. There is value in designing contraceptive solutions that provide users control.



1. Can contraception suit users' varying sexual frequency?

Women's sexual behaviors vary widely and can change as they go through different life stages. A good method for contraceptive delivery would be one that closely matches the user's sexual frequency.

2. Can contraception be made to better suit the impromptu nature of sex that some users experience?

Current contraceptive methods require some form of planning, which therefore makes it difficult to be adopted. This is especially true for young people, as their sexual and contraceptive behaviors tend to be reactive and not pre-emptive. A good contraceptive would be one that does not require planning on how one procures it or uses it.

3. Can contraception be made to fit in the user's current lifestyle?

For most users, using continuous methods means that there is medicine in the body even when it is not needed, and this may adversely affect the body and fertility. A good contraceptive should give users control, so that they can turn it on only when they need it. This girl thinks ahead > A series of last-minute contraceptive solutions for women who have irregular sex to protect them from STIs and unwanted pregnancy at the last minute.

Skin based lotion > A comfortable lotion / oil solution that can be applied up to 24 hours prior to intercourse and has contraceptive and STI-prevention capabilities.

Fallopian Flush > A tube-like device that connects to the fallopian tubes and flushes out the resident egg the morning after.

The Booty Call > A non-invasive nerve stimulant that thickens the cervical mucus. The contraceptive is activated by making a phone call to a special number by the husband that the wife can accept.



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Peace of Mind

Inability to confirm that a contraceptive method is working and forgetting when long-term methods are due for replacement are seen as limiting factors by many users and key barriers to LARC uptake.



1. Can the effectiveness of contraceptive methods be more easily monitored?

Unexpected pregnancies can cause strain in families that have decided to limit. An ideal contraception would be one that lets a user know when it is working and when it is due for replacement.

2. Can contraception help women limit more effectively?

Until the intended family size is reached, fertility is very important for married couples. Women using methods to space strongly desire a reliable return to fertility even after months or years of contraceptive use. An ideal contraception would provide a fool-proof solution that may be permanent or long term but is reversible in case a woman changes her mind.

3. Can contraceptive methods come with easier monitoring for effectiveness?

Concerns about fake or ineffective products are omnipresent. Contraceptive-related side effects (even unpleasant ones) are often the only confirmation that the method is working and can become a source of relief. A good contraceptive would leverage side effects as a way for women to monitor their contraception.

Nαishi > CT implant that enables users to self-monitor its effectiveness and better track side effects.

Onα > Self-reliant kit allows users to test their pee to see if their current CT method is active.

One + Done > A dissolvable pellet that releases a foam that blocks the fallopian tubes, applied 24 hours in advance to solidify, and to reverse the effect, the woman can use a solvent pill to dilute and return to fertility.

Falloplug > A temporary balloon plug for the fallopian tubes that is endoscopically inserted and can be removed by deflating, when ready to conceive.



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Biological Milestones

Key life milestones like menarche or having a a first child are most often the times in which users gain awareness of their options or are reminded to explore new ones.



1. Can contraception be designed around existing reproductive milestones?

Many young women's knowledge of family planning solutions only starts after their first child, thus limiting their ability to have a say in their family planning when the time comes. An ideal contraceptive would be one that is accessible to women early on, even if a woman has not had her first child.

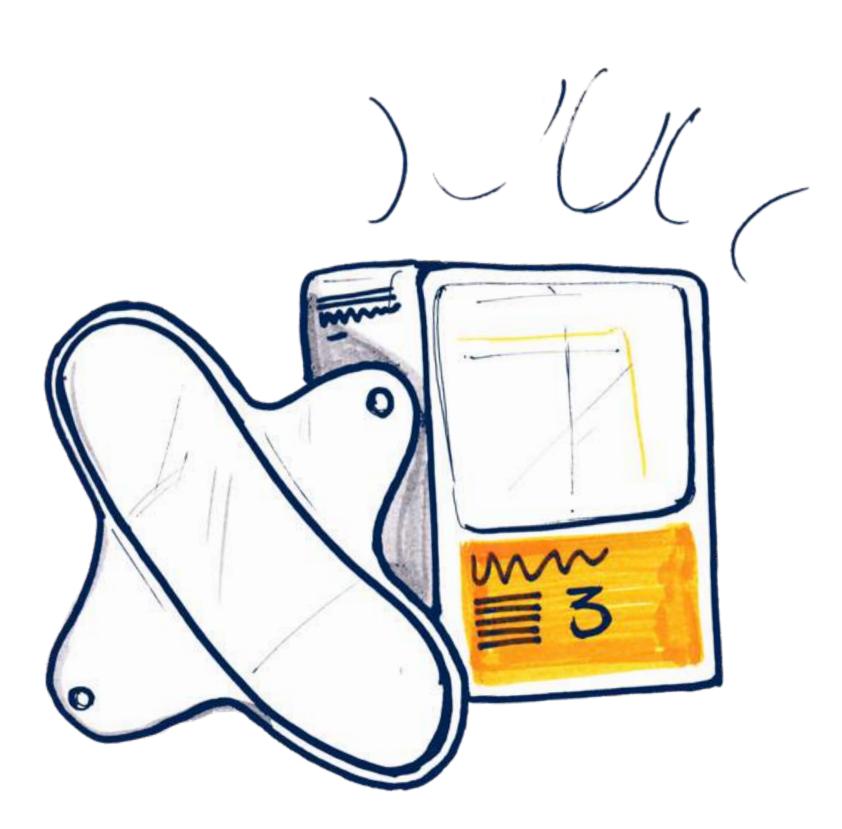
2. Can contraceptive methods better match women's existing routines?

Remembering to take self-administered methods or track safe days can be a challenge for many women who lead busy lives. On the other hand, women follow some routines that are recurring and cyclical in nature, such as their routine around menstrual cycles. For adherence to be effective, a good contraceptive should leverage women's routine around their biological milestones.

MHM / HM > A disposable underwear/sanitary napkin that delivers contraception via optogenetics/waveform/gel activation via absorption.

Non-invasive Laser Ultrasonic Sterilization > A non-invasive ultrasound non-surgical sterilization method, that reduces risk of infection and recovery period.

Post Pad > A dual protection pad that is worn for 1-2 days after the period with microbicide.



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Tangible Benefits

The financial and medical benefits of contraceptive use are clear, but may not be enough when they affect libido and cause other unpleasant side effects.



1. Can contraceptives provide added benefits for better uptake?

Many women are looking for contraceptive products that can also provide them protection from HIV and STIs. Similarly, women are looking for products that keep them fit and in shape for having a healthy child when they decide to. A good contraceptive would keep women's need to be healthy and safe in mind while contracepting.

2. Can contraceptives come with new side effects to increase uptake?

When it comes to contraception, side effects can range from weight gain, to loss of libido, to excessive bleeding. These hidden costs to contraception can become strong deterrents to adoption and sustained use. However, sometimes, side effects like amenorrhea can also be seen as beneficial. A good CT would provide added benefits that women want, so as to encourage sustained use of products.

3. Can contraceptives reliably offer non-hormonal solutions?

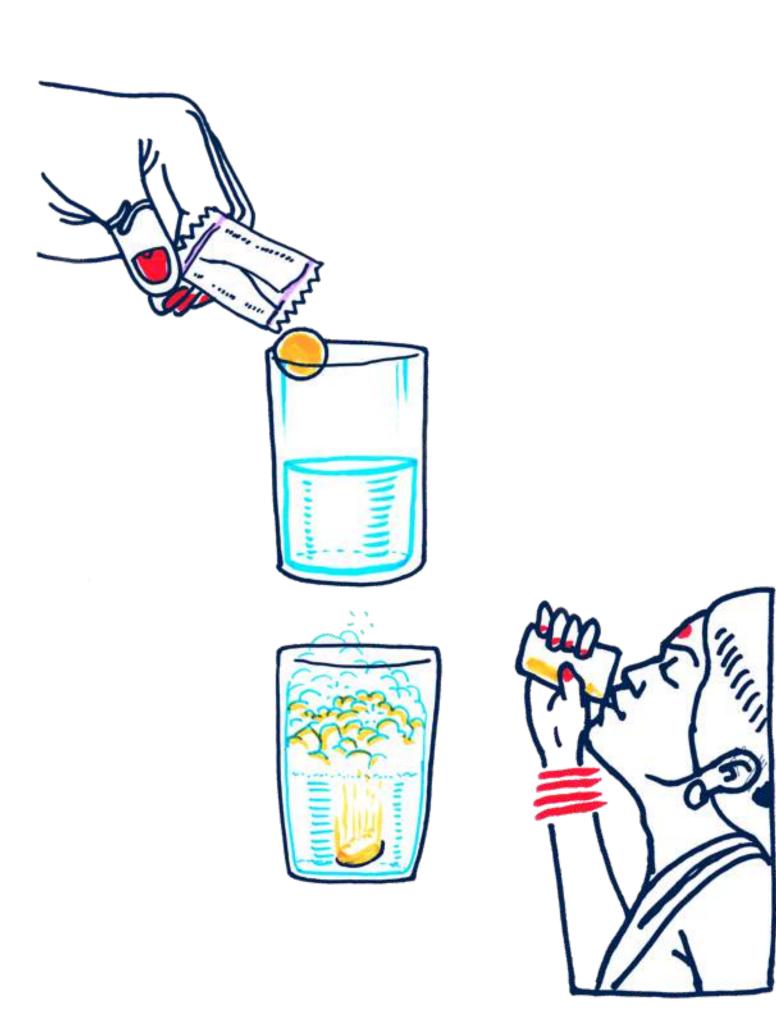
In order to avoid harmful side effects that severely impact their lives, some women opt for solutions marketed as natural. An ideal CT would leverage natural ingredients that provide benefits that can help women uptake new products.

Algotastic > An IoT(Internet of Things) patch within a wearable to track unique side effects for each user.

Zapper Blaster > A private booth or stall with a scanner that also dispenses a thin film-like edible strip with a contraceptive dose that can provide immediate or short-term protection without causing harmful side effects.

Nutro-Val > A contraceptive pill with nutritional supplements that releases an implant in the intestine that releases the drug to stop ovulation.

Organic Magical Pill > A short-term natural pill with coconut, ginseng, turmeric that enhances sexual pleasure, provides supplements for energy and improves skin.



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Shared Contraception

Addressing contraceptive needs and responsibilities between partners is a challenging task that would benefit from new solutions that are trustworthy and enable sharing the burden of contraception.



1. Can contraceptive methods be designed to encourage partner involvement?

For many women, the partner plays an important role in method choice, whether it is through voicing their preferred method, their biases or their role in obtaining methods for their partner. A contraceptive that encourages men to participate in contracepting can have better uptake for women in equal relationships.

2. Can contraceptive methods facilitate the involvement of male partners in family planning?

Since men are seen as unreliable or less motivated to contracept, women often feel that they have to carry the whole burden of family planning. A good CT is one that reduced the stress on women by having the man share some of the responsibility.

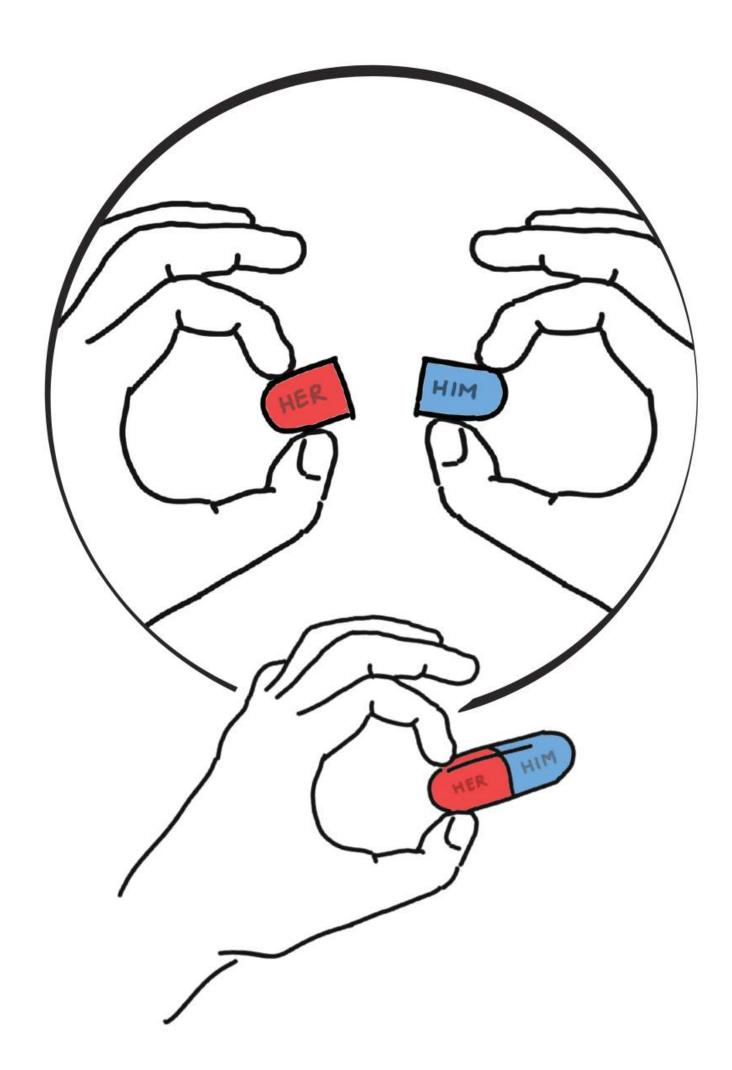
3. Can contraceptive methods actively improve the sexual experience?

A large concern related to contraceptives is a possible loss of libido over time, which causes certain couples to resort to more temporary solutions. An ideal CT would enhance or improve sexual experience for the couple so as to encourage continuous sustained use.

Hot Dirty Boy > A shared pre-coital cream that tightens the woman's vagina and is both spermicidal in its effect and arousing for the man.

Peepee Spray > A contraceptive spray applied to the penis right at the time of intercourse.

Bio Sensor > An internal biosensor that through an app tracks ovulation and palpable changes in structure during non-safe days and also causes temporary occlusion of vas during non-safe days. This will also enable shared decision-making.



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Next Steps

We hope that this foundational work forms the basis for continued efforts in the space - to focus on continuously innovating on revolutionary products that are rooted in user needs and that can dramatically improve their contraceptive experience.

We imagine a few ways in which this will go ahead -

- Strategically inform the work that we and other groups are already conducting, but sharpening our focus on user contexts, and how that information can drive potential solutions.
- Additional requests for proposals (RFPs) or other mechanisms may be used to move promising concepts through early stage and/or clinical development.



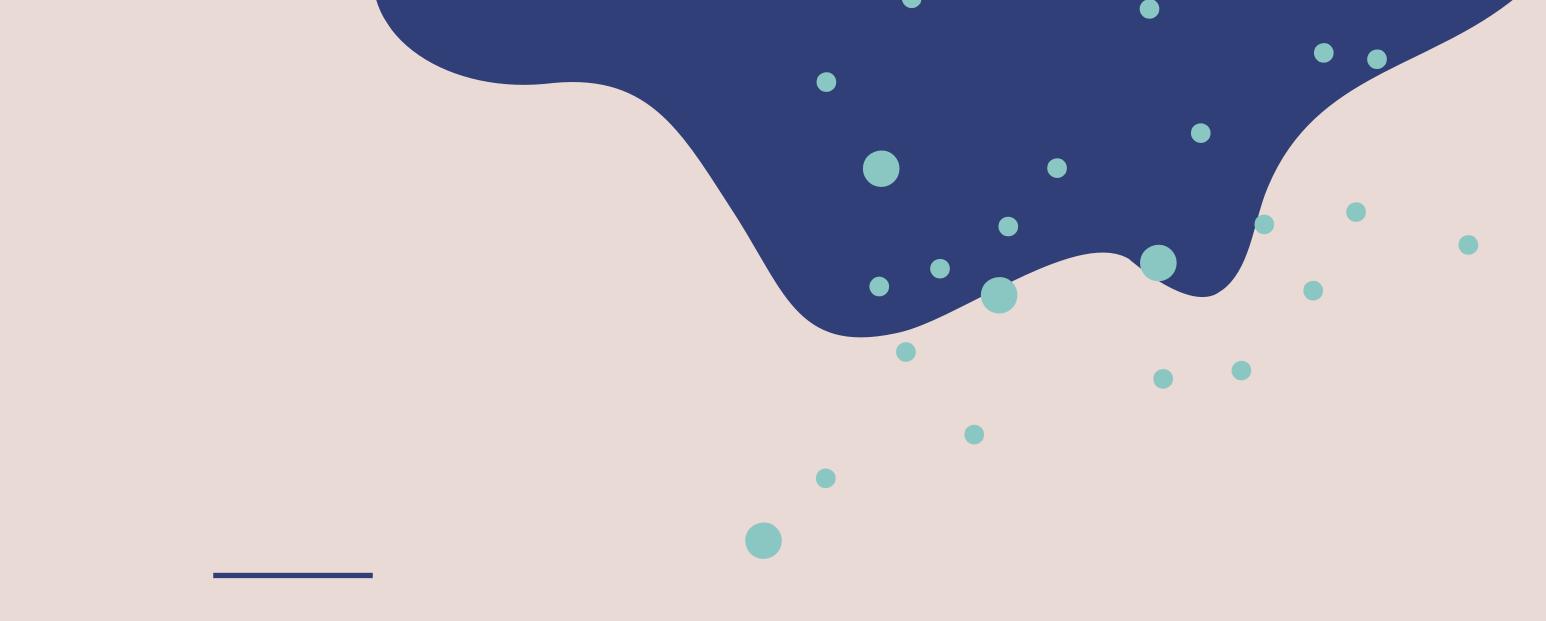
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Glossary

Abbreviations and Terminology

ANM - Auxiliary Nurse Midwives are village-level female health workers in India who are the first point of contact between the community and the health services and oversee the ASHA workers.

ASHA - Accredited Social Health Activists are community health workers instituted by the Government of India's Ministry of Health and Family Welfare as part of the National Rural Health Mission, responsible for counseling married women around family planning. **Ayurveda** - Ayurveda is a system of medicine with historical roots in the Indian subcontinent, which continues to be popular amongst both rural and urban audiences who often use it along with allopathic medicine.

B Gap - An Ayurvedic pill marketed as providing six months of contraception, popular in India.

Calendar - A calendar-based method of contraception by keeping track of the fertile days based on the length of previous menstrual cycles.

Chinese Pill - A 'herbal Chinese pill' marketed as providing one month of contraception, popular in Kenya.

Counseling - Outreach, guidance and advice given to women around sex, reproduction and contraception by different kinds of providers (community health workers, nurses, doctors, youth outreach volunteers) depending on which life stage they are at.

CT - Contraceptive technology covers the breadth of products and practices that aid in birth control.

Depo - Depo Provera is a brand of injectable contraception that lasts for three months and is popular in Kenya.

EC - Emergency contraceptive is an oral pill used within 72 hours after sex that provides a higher dose of the same hormone as other oral pills and prevents ovulation.

FP - Family planning is the practice of controlling the number of children in a family and the intervals between their births.

HH - Household or a family unit.

Implant - A thin rod inserted under the skin in the upper arm that releases hormones into the body. Can include one or two rods and lasts from 3-5 years.

Injectable - A form of contraception that is injected into a muscle (usually buttock or upper arm) to stop pregnancy for a limited period of time by releasing progestogen into the

Abbreviations and Terminology

LARC - Long-acting reversible contraceptives are methods of birth control that provide contraception for an extended period without requiring user action and can be reversed or discontinued after a period of time.

Mala-D/ Mala-N - A brand of oral contraceptive pills available in India and is the colloquial term to refer to OCPs in general.

Norplant - A brand of contraceptive implants, popular in Kenya and is the colloquial term to refer to implants in general.

OBGYN - Obstetrician-Gynecologists are doctors who specialize in women's health and are often the ones providing contraceptive products, services and guidance, particularly in private clinics.

OCP - Oral contraceptive pills containing two hormones that work together to prevent ovulation, to be taken daily, ideally at the same time.

P2 - A brand of emergency contraception popular in Kenya and is the colloquial term to refer to emergency contraceptives in general.

RMP - Registered Medical Practitioners are healthcare providers who have undergone some degree of medical training and dispense medical services in rural and peri-urban areas, but are not qualified doctors.

RFP - Request for proposals, usually where the request requires technical expertise, specialized capability, or where the product or service being requested does not yet exist, and the proposal may require research and development to create whatever is being requested.

Side effects - The negative impact on the physical and mental health and well-being of users caused by contraceptive use.

SRH - Sexual and reproductive health is the comprehensive understanding of mental, physical and social well-being related to the reproductive system.

STD/STI - Sexually transmitted diseases/ Infections that are a huge concern for women with multiple sexual partners, protection from which is lacking in most current CT products.

Sterilization - A surgical or non-surgical method of permanent contraception that exists for both males and females, commonly including the ligation of the fallopian tubes, which prevents the sperm from meeting the ovum.

Vaginal suppository - A pill inserted deep in the vagina, 4-5 minutes before intercourse that dissolves and releases spermicide which destroys sperms on contact, preventing conception.

Withdrawal - A way to prevent pregnancy by keeping semen away from the vagina by

Contraceptive Vocabulary

Baby Mama - The mother of your child/ usually a single mother

Bio-dad - The biological father of your child, with whom you may or may not be currently in a relationship

Chama - Women's savings group

Coil - IUD

Seeing blood - Getting your period

Side chick/guy - Someone with whom you have a romantic relationship aside from your primary partner Sponsee - A woman who is sponsored by an older man who pays for her in exchange for sex/ a romantic relationship

Sponsor - Older man who pays for necessities and desirables in exchange for sex/ a romantic relationship
 Trust - A brand of condoms, which is a term used to refer to condoms in general

India

Baccha daani - Uterus

Darwaza band hain - Door is closed for sex

Doorbin waala operation, Jisme taake nahi lagte hain -

Laparoscopic sterilization

Enjoy korbo - Having sex (from a male point of view)

Goli - Tablets/OCPs

Husband ka paani - Semen

Jadi - Herbal medicine

Mahine chadna - Getting your period

Meethi dard - Slight discomforting pain that one feels in the weeks following IUD insertion

Nallon mein dard - Pain in the vaginal canal (*nal* means tap)

Nirodh - The government-provided brand of condoms, which is a term often used to refer to condoms in general

Operation - Sterilization

Safai Karna - Abortion

Sambandh rakhna/ Relationship banana - Having sex,

quite literally means 'maintaining relations'

Sayyam/ Control - Withdrawal

Shigra patan - Premature ejaculation

Upar upar se karna - Dry humping, usually done with

clothes on



CT Innovation Lab

Imagining the future of women's contraception