

**TITLE**

Contraceptive Concordance

**SHORT RUNNING HEAD**

Contraceptive Concordance

**AUTHOR NAMES**

Sarah Vincent

S Anukriti

Catalina Herrera Almanza

Mahesh Karra

**AUTHOR AFFILIATIONS**

SV: Global Development Policy Center, Boston University, Boston, MA 02215

CHA: Department of Agricultural and Consumer Economics, University of Illinois-Urbana  
Champaign, Urbana, IL 61801

SA: Development Research Group, World Bank, Washington, DC 20433

MK: Frederick S. Pardee School of Global Studies, Boston University, Boston, MA 02215

**CORRESPONDING AUTHOR**

Mahesh Karra

Frederick S. Pardee School of Global Studies

Boston University

152 Bay State Road, Room G04C

Boston, MA 02215

mvkarra@bu.edu

**FUNDING STATEMENT**

Support for this project was provided by a World Bank Research Support Budget grant and the Program for Women's Empowerment Research (POWER) at the Boston University Global Development Policy Center through a grant from the William and Flora Hewlett Foundation (Grant No. 2020-1162). The study funders had no role in study design, data collection, analysis, interpretation, or writing of the results. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

**COMPETING INTERESTS**

At the time when the manuscript was submitted, Mahesh Karra was a Co-Editor of *Studies in Family Planning*. In accordance with the journal's guidelines and conflict of interest policies, Karra recused himself from any processes related to the management and review of the manuscript.

**DATA AVAILABILITY**

De-identified data are available upon reasonable request. A replication dataset and code will be available on the Harvard Dataverse at XXX.

## **Abstract**

We propose an indicator of contraceptive concordance that identifies the alignment between stated preferences for contraception and concurrent contraceptive behavior. Our indicator departs from traditional approaches to measurement in family planning that infer concordance to be the alignment between women's contraceptive (non-)use and their fertility preferences. We estimate our indicator using data from a cross-sectional survey that was conducted with 1,958 married women in rural India. More than half of all women in our sample (51.2 percent) report that they are currently using a contraceptive method. More than 3 in 5 women (60.8 percent) were classified as wanting to use a contraceptive method at the time of the survey. We find that 60 percent of women in our sample are classified to be concordant (either wanted users or wanted non-users), while almost 1 in 4 women (24.8 percent) state a preference for using contraception but are not users (unwanted non-users), and 15.2 percent of women in our sample state a preference for not using contraception but are users (unwanted users). We discuss the comparative advantages and limitations of our approach relative to traditional measures and other recently developed indicators.

## Introduction

### *Progress: Slow or Stagnant?*

The 1994 International Conference on Population and Development (ICPD) brought forth a shift towards a rights-based approach to family planning and reproductive health (FP/RH) policy, practice, and service delivery (1–3). Through this movement, there has been growing demand from researchers, policymakers, and practitioners to develop new FP/RH indicators that effectively embody ICPD's core mission to promote reproductive agency and well-being (4). However, current FP/RH indicators have largely fallen short (or failed altogether) to effectively reflect these goals.

Recently, there has been conceptual progress, with a consensus emerging around the need for new metrics that better reflect the principles of agency and choice in FP/RH decision-making (5–7). To this end, considerable efforts have been taken to introduce indicators that capture informed choice in contraceptive decision-making as a means to both infer the demand for family planning and estimate the extent to which such demand has been met.<sup>1</sup> While efforts in this space have been enthusiastic, the development and implementation of new demand-side measures have been conspicuously slow. Recent proposals to operationalize these concepts into concrete indicators remain in the early stages of development and have been limited by: 1) a lack of standardized definitions, methodologies, and objectives to measurement; 2) limited feasibility and validation across contexts and populations, and; 3) uncertainty around the extent to which such indicators can be interpreted at various levels (e.g. person-centered, program-centered, population-centered) and by various audiences (academics, practitioners, or policymakers, among others). In the absence of clear alternatives to measuring the demand for contraception (specifically) and family planning (more broadly), there is a general concern that the field will continue to rely on outdated, problematic measures that were developed prior to and have been widely critiqued since ICPD.

### *The Elusive Quest for Contraceptive Concordance*

A key challenge to effectively measuring the demand for contraception is determining the extent to which an individual's contraceptive behavior does, in fact, align with their true preferences for contraception (9,10). Most current indicators inherently assume that contraceptive (non-)use and (dis)continuation are directly reflective of contraceptive demand; concordance between contraceptive preferences and behavior therefore follows from what is observed. However, in the absence of direct and unbiased preference elicitation, such measures risk misinterpreting observed behavior as indicative of informed and autonomous choice (11,12). This risk highlights the need for indicators that can successfully distinguish between states of contraceptive concordance (both in terms of preferred use as well as preferred non-use), states where contraceptive use persists despite preferences for non-use (proxied by unwanted family planning), and states where preferences for contraceptive use are not being realized (proxied by unmet need).

In this study, we propose an indicator of contraceptive concordance, building off of recent conceptual and empirical work that has sought to identify the alignment between stated contraceptive preferences and concurrent behavior (9,11,13–15). We develop a simple approach to elicit this indicator in routine, cross-sectional survey data, and we use this approach to estimate the prevalence of contraceptive

---

<sup>1</sup> Capturing the level of met demand for family planning through contraceptive use has been identified as a key indicator of progress in many global FP/RH programs and development agendas, including the 2012 London Summit on Family Planning and, more recently, as target 3.7 of the 2030 Sustainable Development Goals (SDGs) (8).

concordance in a sample of married Indian women. We discuss the comparative advantages and limitations of our approach relative to other recently developed indicators.

## Methods

### *Data*

We use data from a cross-sectional survey that was conducted between March 2024 and May 2024 with a sample of 1,958 women aged 18-35 who were married, lived in Jaunpur district in Uttar Pradesh, had at least one child, and were neither pregnant nor sterilized at the time of their interview.

The table below presents the survey questions and responses that were asked of all women in our sample about their current contraceptive use as well as their preferences for contraception. Among these questions, question Q403, which measures current use of contraception, is already included as part of standard surveys like the Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS), while three additional questions, Q414A, Q414B, and Q415E, are being newly introduced in our survey beyond the standard contraception module.

Variable	Question
<b><i>For All Women:</i></b>	
Q403: Current use of contraception	Are you currently doing something or using any method to delay or avoid getting pregnant? 1. Yes 2. No

Additional questions that are proposed include:

<b><i>For Current Users (Q403 = 1):</i></b>	
Q414A: Wants to stop using method	If you had the choice and ability to stop using your family planning method, would you choose to stop? 1. Yes → SKIP Q414B 2. No 88. Don't Know
Q414B: Wants to switch using method  IF YES: A follow-up question is asked to probe which specific method(s) the woman would like to switch to.	If you had the choice and ability to switch to another family planning method, would you choose to switch? 1. Yes 2. No 88. Don't Know
<b><i>For Current Non-Users (Q403 ≠ 1):</i></b>	
Q415E: Wants to start using method  IF YES: A follow-up question is asked to probe which specific method(s) the woman would like to start.	If you had the choice and ability to use a family planning method, would you use a method? 1. Yes 2. No 88. Don't Know

*A Measure of Concordance*

Our indicator of contraceptive concordance is motivated by Senderowicz (2020)’s conceptual work on contraceptive autonomy and builds on recent theoretical and empirical studies by Holt et al (2023) and Rothschild et al (2024) to estimating preference-aligned fertility management (PFM) (9,11,16). Each of these approaches fundamentally relies on the identification of concordance between contraceptive preferences and behavior, either as wanted contraceptive use or wanted non-use. As shown in Figure 1, an individual’s contraceptive (non-)use can be assessed against her preference for (not) using contraception, resulting in one of four possible outcomes: 1) wanted non-use of contraception (Box *A*); 2) wanted use of contraception (Box *D*); 3) unwanted non-use of contraception (Box *C*); or 4) unwanted use of contraception (Box *B*). Wanted use and wanted non-use together indicate contraceptive concordance, whereby individual preferences for contraceptive (non-)use are aligned with their contraceptive behavior, resulting in a successful family planning outcome from a rights-based perspective. In contrast, discordance is identified by a) contraceptive non-users who express a preference for using contraception, resulting in unwanted non-use of contraception, which is currently (and imperfectly) proxied by unmet need for family planning (17,18), or b) contraceptive users who express a preference for non-use, resulting in unwanted use of contraception, which is currently (and again imperfectly) proxied by unwanted family planning use, the complement to unmet need (19).

**Figure 1: Contraceptive Autonomy Framework**

		Has FP method	
		No	Yes
Wants FP Method	No	A	B
	Yes	C	D

Source: Senderowicz (2020).

Notes: If we treat the boxes as containing the proportion of women of reproductive age in each category, we can consider the contraceptive prevalence, as currently measured, as  $B + D$ . Contraceptive concordance, measured by wanted use and wanted non-use, is represented by boxes *D* and *A*, respectively. Discordance is represented either as unwanted non-use, box *C*, or as unwanted use, box *B*.

Our indicator of contraceptive concordance seeks to estimate each of the four boxes in the Senderowicz (2020) framework with our proposed survey questions. We first classify a woman to either be a current contraceptive user or current contraceptive non-user based on her stated response to Q403. We then classify a woman to have a stated preference for using contraception if:

**Case 1:** She was a current non-user and stated a preference for wanting to adopt a contraceptive method (Q403 = 2 and Q415E = 1);

**Case 2:** She was a current user and stated a preference for not wanting to stop her contraceptive use, but stated a preference for switching contraceptive methods (Q403 = 1 and Q414A = 2 and Q414B = 1); or

**Case 3:** She was a current user and stated that she neither wanted to stop her current contraceptive use nor wanted to change her current contraceptive method use (Q403 = 1 and Q414A = 2 and Q414B = 1).

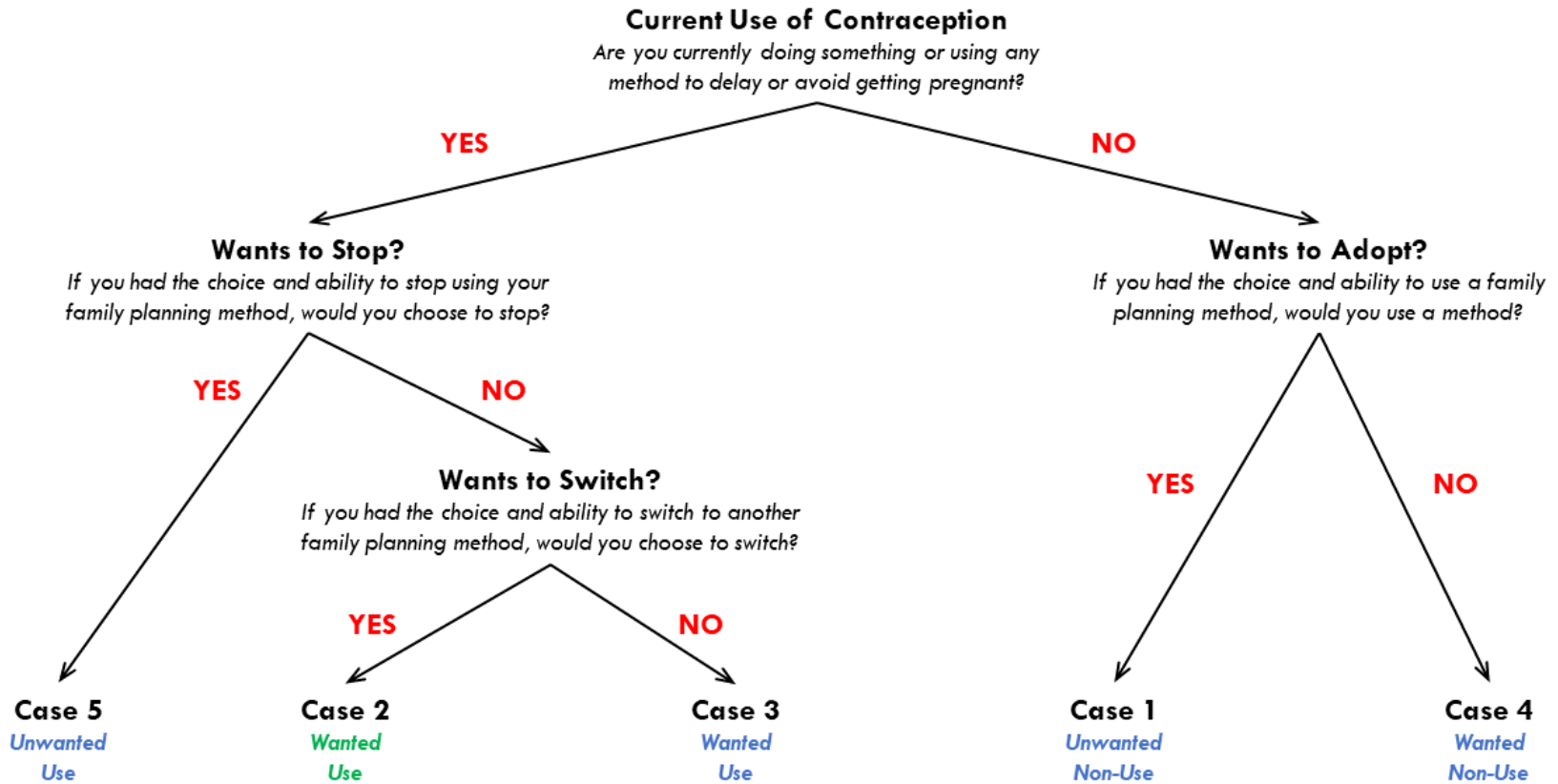
By the same token, we classify a woman to have a stated preference for not wanting to use contraception if:

**Case 4:** She was a current non-user and stated a preference for not wanting to adopt a contraceptive method (Q403 = 2 and Q415E = 2); or

**Case 5:** She was a current user and stated a preference for discontinuing her method use (Q403 = 1 and Q414A = 1).

Figure 2 presents a flow diagram identifying the cases based on the responses to the survey items.

Figure 2: Contraceptive Concordance Case Flow Diagram



For the time being, we take a conservative approach and classify women with uncertain contraceptive preferences as not wanting to adopt that behavior and, in turn, wanting to continue with their current behavior. Specifically, women who state that they do not know whether they want to adopt contraception are classified as not wanting to adopt contraception. By the same token, women who state that they do not know whether they want to switch to another contraceptive method are classified as not wanting to switch methods, while women who stated that they do not know whether they want to stop contraception are classified as not wanting to stop contraception. We take the above classifications and infer that a woman's contraceptive preferences are concordant with her behavior if a) she neither wants to stop or switch her contraceptive method, among women who are current users (**Case 3**); or b) she does not want to start a method, among women who are current non-users (**Case 4**). By the same token, we infer that a woman's contraceptive preferences are discordant with her behavior if a) if she wants to start, among women who are current non-users (**Case 1**); or b) if she wants to stop contraceptive use, among women who are current users (**Case 5**).

We identify women who are classified as **Case 3** to be wanted users (Box *D* in Figure 1), while women who are classified as **Case 4** are identified as wanted non-users (Box *A*). We further identify the two types of discordance by stating that: a) a woman is classified to be an unwanted non-user of contraception (Box *C*) if she wants to start a method and is a current non-user (**Case 1**); and b) a woman is classified to be an unwanted user of contraception (Box *B*) if she wants to stop her method use and is a current user (**Case 5**).

In our approach, we face a challenge as to how we should classify the subset of women who are current users and want to use contraception, but who also state a preference for switching their current method (**Case 2**). Based on the 2-by-2 framework, these women would likely be classified as wanted users (Box *D*) since they prefer to use contraception and are using contraception; however, an argument could be made that they are unwanted non-users of contraception since they are not using their preferred contraceptive method and should therefore be classified into Box *B*. Since the framework only considers the contraceptive use and preferences on the extensive margin (whether or not a woman is using / wants to use contraception) and not on the intensive margin (the specific contraceptive method that the woman is using / prefers), we classify women who are current users but who want to switch their choice of method to be wanted users (Box *D*).

Figure 3 presents the contraceptive concordance table with our proposed case classifications as described above.



**Figure 3: Contraceptive Concordance Table with Case Classifications**

		Using FP Method	
		No	Yes
Wants FP Method	No	Wanted Non-Use Case 4	Unwanted Use Case 5
	Yes	Unwanted Non-Use Case 1	Wanted Use Case 2, Case 3

**Results**

Table 1 describes reported contraceptive preferences and behavior from our sample of 1,958 women. More than half of all women in our sample (1,003 women, or 51.2 percent) report that they are currently using a contraceptive method, with almost twice as many users reporting that they are using traditional methods relative to users who report using a modern method. More than 3 in 5 women (1,190 women, or 60.8 percent) were classified as wanting to use a contraceptive method at the time of the survey (**Cases 1 to 3**, combined), while 785 women were classified as not wanting to use a contraceptive method at the time of the survey (**Cases 4 to 5**, combined). Uncertainty over switching, starting, or stopping methods was very low, with fewer than one percent of women reporting that they did not know whether they would start, switch, or stop if given the opportunity.

Among the subsample of 955 current non-users, more than half (485 women, or 50.8 percent of non-users) reported wanting to start a new method and would therefore be classified as having unwanted non-use (**Case 1, Box C**), implying that 470 non-users (49.2 percent of non-users) would be classified as wanted non-users (**Case 4, Box A**). By the same token, the sample of 1,003 current users can be disaggregated into the subsample of 298 users (29.7 percent of users) who prefer to discontinue their method use and would therefore be classified as having unwanted use (**Case 5, Box B**), or continue using contraception (705 women, or 60.3 percent of users). However, we note that among these 705 users who prefer to contracept, 114 of these users (16.2 percent) prefer to switch methods (**Case 2**), while the remaining 591 (83.8 percent) users who prefer to contracept and not switch methods would be classified as wanted users (**Case 3, Box D**). Table 2 presents the prevalence estimates for concordance (wanted use and non-use), unwanted non-use, and unwanted use of contraception together in a 2-by-2 cross-tabulation.

As noted, we currently classify women who prefer to switch methods to be wanted users (**Case 2, Box D**), recognizing that a proportion of these women may be dissatisfied with their method to the extent that some women may eventually prefer to not use contraception altogether. To provide additional insight on the types of methods that women prefer to switch from, we present the method mix distribution among the subgroup of 114 women who have a stated preference for switching (Table 3). Although our subsample is small, we note that almost half of these women in this subsample (64

percent) state that they would prefer to switch out of using traditional methods (Rhythm method or withdrawal), while more than one in three women in this subsample (37.7 percent) state a preference for switching out of a male-dependent method (male condoms or withdrawal).

Taken together, we find that 60 percent of women in our sample are classified to be concordant (either wanted users or wanted non-users) if we include women who prefer to switch to be wanted users; this estimate of concordance drops to 54.2 percent if women who prefer to switch are recategorized as being discordant.<sup>2</sup>

In Table 4, we observe that among the subsample of 591 concordant users (excluding women who prefer to switch methods), more than half (320 women, or 54.1 percent) reported using the rhythm method, 23.4 percent (or 138 women) the male condoms, 12.9 percent (or 76 women) the withdrawal method and 3.6 percent (or 21 women) the standard days method. Only 1.4 percent (or 8 women) reported having a long-acting method (IUD / PPIUD / Multiload), which reflects the current method mix among non-sterilized users in the Indian context (20). However, we find in Table 6 that 48.4 percent (or 286 women) do not desire another child.

Table 5 presents the methods used of a subsample of 198 women with unwanted use. We observe that the most used methods are the rhythm (118 women or 39.6 percent), the male condom (108 women or 36.2 percent), and the withdrawal (34 women or 11.4 percent) ones. 3.4 percent (or 10 women) use the pill method, 4 percent (or 12 women) the IUD // PPIUD / Multiload one, and 1.7 percent (or 5 women) the standard days method.

While declaring they want to stop their current method, we see in Table 6 that 69.9 percent of women who are classified as unwanted users state that they do not want another child, while 30.1 percent of women who are unwanted users state a preference for wanting another child in the future. In contrast, 52.9 percent of women who are concordant in their contraceptive (non-) use state a preference for wanting another child in the future, while 46 percent of these women state that they do not want any more children.

In Table 7, we compare our approach to estimating contraceptive concordance with standard approaches that calculate (non)alignment between contraceptive use and fertility preferences, such as unmet need and unwanted family planning. We note that even though the total share of discordant women (the sum of both red boxes) are comparable across both approaches (40 percent with our approach versus 39.1 percent with the standard approach), the relative proportions of unwanted users and unwanted non-users are significantly different between approaches; in our approaches, 15.2 percent of women are classified to be unwanted users, while only 3.4 percent of women are classified to have unwanted family planning under the standard approach. By the same token, the relative proportion of concordant users is significantly higher under the standard approach (47.8 percent) relative to our approach (36.0 percent), while the proportion of concordant non-users is significantly higher under our approach (24.0 percent) relative to the standard approach (13.1 percent).

Appendix Tables 1 and 2 present parallel analyses to Tables 4 and 5 by describing the method mix distributions among the subsamples of women who are classified as wanted users and unwanted users, respectively. Among wanted users, we note that the method mix under the standard approach is similar

---

<sup>2</sup> In the absence of additional information, it is not clear what type of discordance (Box *B* or Box *C*) would be most appropriate to assign women who prefer to switch their method use.

to the distribution that was observed with our approach in Table 4. For unwanted users, however, we observe a higher proportion of unwanted users using the rhythm method and withdrawal and a lower proportion using male condoms in the standard approach relative to our approach.

## **Discussion**

We propose an indicator of contraceptive concordance that captures the (mis)alignment between contraceptive preferences and concurrent contraceptive behavior. We test our indicator with survey data from married Indian women and estimate that 3 out of 5 women (60 percent) in our sample are concordant with their contraceptive use and behavior, while almost 1 in 4 women (24.8 percent) are unwanted non-users of contraception, and 15.2 percent of women in our sample are estimated to be unwanted users of contraception.

### *Comparative Advantages*

Our measure of contraceptive concordance offers several advantages over traditional family planning indicators like unmet need. It is easy to implement, requiring up to three additional questions to be asked of respondents in standard, nationally representative health surveys like the DHS or MICS, which already collect data on respondents' current contraceptive use. For current users, up to three additional questions would be required (depending on whether users state a preference for switching methods), while only two are needed for non-users (depending on whether non-users state a preference for adopting a method). The simplicity with which concordance can be calculated from these few questions would make this approach particularly attractive for family planning and reproductive health programming, given the field's ongoing struggles to develop indicators that are both conceptually aligned with the aim to measure informed choice while also being feasible to implement as part of large-scale, population-representative surveys. Conceptually, this measure is superior to current approaches that create a false correspondence between fertility preferences and contraceptive use (9,11,18). In particular, indicators like unmet need inaccurately assume that all women who wish to space or limit pregnancies inherently prefer using contraception, yet many may have no demand for it due to factors like religious beliefs or health concerns. Conversely, some women who do not intend to space or limit pregnancies may still use contraception for other reasons, such as STI or HIV prevention. Taken together, these and other counterexamples make a strong case for developing indicators that decouple contraceptive preferences and demand from fertility preferences altogether.

### *Comparisons with PFM*

Our new indicator of contraceptive concordance shares several similarities with preference-aligned fertility management (9,16). Both indicators prioritize an understanding of individuals' contraceptive preferences and seek to align them with their contraceptive behaviors, rather than assuming a direct link between reproductive desires and contraceptive use. By centering on preferences, both PFM and contraceptive concordance seek to offer a more accurate and person-centered understanding of contraceptive demand. Finally, both PFM and contraceptive concordance have the potential to measure concordance between preferences for and use of particular methods of contraception and not just whether women seek to contracept or not.

However, contraceptive concordance and PFM differ in a few key ways, namely in terms of how the indicators are operationalized and their resulting implications. In PFM, respondents are first asked questions about their contraceptive preferences before being asked about their contraceptive behavior. In the presence of anchoring biases, this approach may prime respondents to confirm their current behavior even if it may be unwanted, thereby overestimating concordance. Given that stated

preferences are inherently anchored to and shaped by current behavior, it may be difficult for respondents to initially report a preference that would indicate a deviation from their current behavior (21). On the other hand, guiding respondents to reflect on whether their current behavior is, in fact, preferred may overcome this issue. Contraceptive concordance takes this latter approach by asking about respondents' contraceptive behavior first, followed by questions about whether women prefer their current behavior or would like to deviate, which may facilitate direct reflection. A direct test of each approach against the other is warranted, and further investigation is needed to test the extent to which concordance may be sensitive to ordering effects (22).

Another difference between PFM and contraceptive concordance is in how stated preference questions are framed and elicited. PFM uses direct questions to identify a respondent's stated preferences by asking: "Do you currently want to be using any method to avoid pregnancy – that is, do something to keep it from happening?" In contrast, contraceptive concordance uses hypothetically framed questions which, given the question order, are conditioned on the respondent's previously stated contraceptive behavior; for example, in the case when a respondent is a non-user., the stated preference question to assess whether the respondent would adopt a method is framed as follows: "If you had the choice and ability to use a family planning method, would you use a method?" The relative merits of direct versus hypothetical question framing have been discussed in other settings and, in a similar vein to ordering effects, is another difference between the two approaches that warrants further evaluation (23).

### *Limitations*

Our proposal for a new contraceptive concordance indicator is not without its limitations. Like PFM, our indicator adopts standard language from the DHS to elicit contraceptive use, which frames the question around whether a respondent wants to take an action or use a method to *avoid pregnancy*. Specifically, the question states "Are you currently doing something or using any method to delay or avoid getting pregnant?" This framing of contraception as a means of pregnancy prevention can be problematic given that contraception can be used for reasons other than fertility regulation. It may therefore be worth exploring whether contraceptive use should be framed independently of family planning and pregnancy prevention, although doing so could be challenging to translate across different languages and cultural contexts, where the term "contraception" is often directly translated as "pregnancy prevention" (e.g., *مانع حمل* in Urdu or *गर्भनिरोध* in Hindi) or even as "family planning" (*परिवार नियोजन*), which defines a more expansive set of fertility regulation options than just contraception alone (24). Inconsistent wording across questionnaires also complicates the issue, as survey questions vary between using terms like "family planning method" and "contraceptive method" interchangeably. These nuances may or may not affect responses but should be tested to rule out any possibility for bias. Direct preference elicitation, irrespective of how the questions are framed, also carries known biases, which have been highlighted in critiques of unmet need measures (18,25). Additionally, the dynamic nature of preferences creates uncertainty around the meaning of concordance at the time of the interview, especially if preferences and behaviors are likely to shift over short periods of time (13–15,26). Beyond its intrinsic value as a person-centered measure, it is not clear how useful contraceptive concordance could be to inform programs if contraceptive preferences, and concordance by extension, are changing frequently. In order for a service provider to effectively use the indicator to target respondents who are not concordant, there would need to be sufficient stability in respondents' stated preferences and behavior that would allow for the indicator to accurately be reflective of their contraceptive demand. To address these challenges, it is crucial to

improve how contraceptive preferences are measured and understand the extent to which such measures can be programmatically relevant.

### **Conclusions**

The contraceptive concordance indicator that we propose provides a conceptual and practical approach to understanding the alignment between women's contraceptive preferences and their actual behavior. By decoupling the demand for contraception from fertility preferences and the demand for childbearing, the concordance indicator offers a clearer and more person-centered understanding of women's contraceptive decisions. The simplicity with which the indicator can be operationalized makes it an attractive tool to be implemented as part of large-scale surveys and included as part of routine programmatic measurement. It requires minimal additional data collection, yet it provides significantly richer insights into women's contraceptive experiences. While contraceptive concordance holds promise for improving family planning metrics, further testing is needed to determine how it can be adapted for wider contexts and across diverse populations. A more rigorous comparative analysis of contraceptive concordance and other proposed indicators, such as PFM, is also warranted. Finally, refinements that account for method-specific concordance should also be explored. By redefining how we measure contraceptive preferences and behavior, this indicator has the potential to improve reproductive health programs by demanding alignment between practice and core principles of voluntary contraceptive choice.

## References

1. UNFPA. International Conference on Population and Development Programme of Action. New York, NY: United Nations; 2014.
2. Hardee K, Kumar J, Newman K, Bakamjian L, Harris S, Rodríguez M, Brown W. Voluntary, Human Rights—Based Family Planning: A Conceptual Framework. *Stud Fam Plann Population Council*; 2014;45:1–18.
3. Hardee K, Harris S, Rodriguez M, Kumar J, Bakamjian L, Newman K, Brown W. Achieving the Goal of the London Summit on Family Planning By Adhering to Voluntary, Rights-Based Family Planning: What Can We Learn from Past Experiences with Coercion? *Int Perspect Sex Reprod Health Guttmacher Institute*; 2014;40:206–14.
4. Bingenheimer JB, Hardee K, Hindin M, Jain A, Mumah J, Dam J van. Introduction to the Special Issue: Indicators in Sexual and Reproductive Health and Rights. *Stud Fam Plann* 2023;54:9–16.
5. Holt K, Challa S, Alitubeera P, Atuyambe L, Dehlendorf C, Galavotti C, Idiodi I, Jegede A, Omoluabi E, Waiswa P, et al. Conceptualizing Contraceptive Agency: A Critical Step to Enable Human Rights-Based Family Planning Programs and Measurement. *Glob Health Sci Pract [Internet] Global Health: Science and Practice*; 2024 [cited 2024 Sep 3];12. Available from: <https://www.ghspjournal.org/content/12/1/e2300299>
6. Bhan N, Raj A, Thomas EE, Nanda P. Measuring women’s agency in family planning: the conceptual and structural factors in the way. *Sex Reprod Health Matters Taylor & Francis*; 2022;30:2062161.
7. Hardee K, Jordan S. Advancing Rights-Based Family Planning from 2020 to 2030. *Open Access J Contracept Dove Medical Press*; 2021;12:157–71.
8. United Nations. Sustainable Development Goals. New York, NY: United Nations; 2018. Available from: <https://sdgs.un.org/>
9. Holt K, Galavotti C, Omoluabi E, Challa S, Waiswa P, Liu J. Preference-Aligned Fertility Management as a Person-Centered Alternative to Contraceptive Use-Focused Measures. *Stud Fam Plann* 2023;54:301–8.
10. Boydell V, Galavotti C. Getting Intentional about Intention to Use: A Scoping Review of Person-Centered Measures of Demand. *Stud Fam Plann* 2022;53:61–132.
11. Senderowicz L. Contraceptive Autonomy: Conceptions and Measurement of a Novel Family Planning Indicator. *Stud Fam Plann* 2020;51:161–76.
12. Rothschild CW, Brown W, Drake AL. Incorporating Method Dissatisfaction into Unmet Need for Contraception: Implications for Measurement and Impact. *Stud Fam Plann* 2021;52:95–102.
13. Burke KL, Potter JE. Meeting Preferences for Specific Contraceptive Methods: An Overdue Indicator. *Stud Fam Plann* 2023;54:281–300.
14. Cardona C, Sarnak D, Gemmill A, Gichangi P, Thiongo M, Anglewicz P. Are Contraceptive Method Preferences Stable? Measuring Change in the Preferred Method among Kenyan Women. *Stud Fam Plann* 2024;55:193–214.
15. Karra M, Zhang K. User-Centered Counseling and Male Involvement in Contraceptive Decision Making: Protocol for a Randomized Controlled Trial. *JMIR Res Protoc* 2021;10:e24884.
16. Rothschild CW, Bulama A, Odeh R, Chika-Igbokwe S, Njogu J, Tumlinson K, Musau A. Preference-aligned fertility management among married adolescent girls in Northern Nigeria: assessing a new measure of contraceptive autonomy. *BMJ Glob Health BMJ Specialist Journals*; 2024;9:e013902.
17. Bradley SEK, Casterline JB. Understanding Unmet Need: History, Theory, and Measurement. *Stud Fam Plann* 2014;45:123–50.
18. Karra M. Measurement of Unmet Need for Contraception: A Counterfactual Approach. *Stud Fam Plann* 2022;53:657–80.

19. Canning D, Karra M. Unwanted Family Planning: Prevalence Estimates for 56 Countries. *Stud Fam Plann* 2023;54:75–93.
20. Government of India. National Family Health Survey, 2019-2021. New Delhi, India: Ministry of Health and Family Welfare; 2022.
21. Ami D, Aprahamian F, Luchini S. Stated Preferences and Decision-Making: Three Applications to Health. *Rev Économique Paris: Presses de Sciences Po*; 2017;68:327–33.
22. Day B, Bateman IJ, Carson RT, Dupont D, Louviere JJ, Morimoto S, Scarpa R, Wang P. Ordering effects and choice set awareness in repeat-response stated preference studies. *J Environ Econ Manag* 2012;63:73–91.
23. Ahlert M, Breyer F, Schwettmann L. How you ask is what you get: Framing effects in willingness-to-pay for a QALY. *Soc Sci Med* 2016;150:40–8.
24. Robinson WC. The Economic Theory of Fertility Over Three Decades. *Popul Stud* 1997;51:63–74.
25. Senderowicz L, Bullington BW, Sawadogo N, Tumlinson K, Langer A, Soura A, Zabré P, Sié A. Assessing the Suitability of Unmet Need as a Proxy for Access to Contraception and Desire to Use It. *Stud Fam Plann* 2023;54:231–50.
26. Huber-Krum S, Bornstein M, Garver S, Gipson J, Chapotera G, Norris AH. Are rural Malawian women using their preferred contraceptive method and that of their male partners? *Contraception* 2021;104:132–8.

## Figures and Tables

**Table 1: Descriptive Statistics**

<b>Variable</b>	<b>N</b>	<b>Mean</b>	<b>N<sub>i</sub></b>
Current Use (1 = yes)	1,958	0.512	1,003
Current Use of Modern Method (1 = yes)	1,958	0.175	343
Current Use of Traditional Method (1 = yes)	1,958	0.337	660
Currently wants to use (1 = yes)	1,958	0.608	1,190
Wants to start, among non-users (1 = yes)	955	0.508	485
Wants to stop, among users (1 = yes)	1,003	0.297	298
Wants to switch methods, among users who do not want to stop (1 = yes)	705	0.162	114
Uncertain about starting, among non-users (1 = yes)	955	0.009	9
Uncertain about stopping, among users (1 = yes)	1,003	0.003	3
Uncertain about switching methods, among users who do not want to stop (1 = yes)	705	0.004	3
Concordance between wants and use, excluding switchers as concordant users (1 = yes)	1,958	0.542	1,061
Concordance between wants and use, including switchers as concordant users (1 = yes)	1,958	0.600	1,175
Unwanted Non-Use (1 = yes)	1,958	0.248	485
Unwanted Use (1 = yes)	1,958	0.152	298
<b>N</b>	<b>1,958</b>		

Notes: Rates are for a sample of 1,958 women aged 18-35, unweighted.



**Table 2: Contraceptive Concordance 2 x 2 Table**

		Using FP Method		Total
		No	Yes	
Wants FP Method	No	470 (24.0)	298 (15.2)	768 (39.2)
	Yes	485 (24.8)	705 (36.0)	1,190 (60.8)
Total		955 (48.8)	1,003 (51.2)	<b>1,958</b>

Notes: Cells are highlighted in green for concordant women and in red for discordant women.

**Table 3: Method Mix, Among Women who Want to Switch Methods**

Method	<i>N</i>	Pct.
IUD / PPIUD / Multiload for 5 Years	3	2.6
Injectables	2	1.8
Pills	4	3.5
Condom, Male	26	22.8
Standard Days Method	5	4.4
Lactational Amenorrhea Method	1	0.9
Rhythm Method	56	49.1
Withdrawal	17	14.9
<b>Observations</b>	<b>114</b>	

Notes:

**Table 4: Method Mix among Women who are Wanted Users (Excluding Switchers)**

<b>Method</b>	<b>N</b>	<b>Pct.</b>
IUD / PPIUD / Multiload for 5 Years	8	1.4
Injectables	7	1.2
Pills	17	2.9
Condom, Male	138	23.4
Emergency Contraception	1	0.2
Standard Days Method	21	3.6
Lactational Amenorrhea Method	2	0.3
Rhythm Method	320	54.1
Withdrawal	76	12.9
Other Traditional Method	1	0.2
<b>Observations</b>	<b>591</b>	

Notes:

**Table 5: Method Mix among Women who are Unwanted Users**

<b>Method</b>	<b>N</b>	<b>Pct.</b>
IUD / PPIUD / Multiload for 5 Years	12	4
Injectables	6	2
Pills	10	3.4
Condom, Male	108	36.2
Condom, Female	1	0.3
Standard Days Method	5	1.7
Lactational Amenorrhea Method	3	1
Rhythm Method	118	39.6
Withdrawal	34	11.4
Other Modern Method	1	0.3
<b>Observations</b>	<b>298</b>	

Notes:

**Table 6: Fertility Preferences by Concordance**

<b>Fertility Preference</b>	<b>Wanted Users (incl. Switchers)</b>		<b>Wanted Non-Users</b>		<b>Unwanted Users</b>		<b>Unwanted Non-Users</b>	
	<b>N</b>	<b>Pct.</b>	<b>N</b>	<b>Pct.</b>	<b>N</b>	<b>Pct.</b>	<b>N</b>	<b>Pct.</b>
Have another child	336	47.7	285	60.9	89	30.1	235	48.6
No more	366	51.9	174	37.2	207	69.9	245	50.6
Says they cannot get pregnant	0	0.0	1	0.2	0	0.0	2	0.4
Up to MIL	1	0.1	1	0.2	0	0.0	0	0.0
Up to husband	1	0.1	2	0.4	0	0.0	1	0.2
Up to God / fatalistic	0	0.0	4	0.9	0	0.0	0	0.0
Don't know	1	0.1	1	0.2	0	0.0	1	0.2
<b>Observations</b>	<b>705</b>		<b>468</b>		<b>296</b>		<b>484</b>	

Notes: Fertility preference information is missing for five women (two reporting wanted non-use, two reporting unwanted use, and one reporting unwanted non-use).

**Table 7: Contraceptive Concordance vs. Standard Measurement 2 x 2 Tables**

		Using FP Method		
		No	Yes	Total
Wants FP Method	No	470 (24.0)	298 (15.2)	768 (39.2)
	Yes	485 (24.8)	705 (36.0)	1,190 (60.8)
Total		955 (48.8)	1,003 (51.2)	<b>1,958</b>

(a) New measure

		Using FP Method		
		No	Yes	Total
Wants Another Child Within 2 Years	Yes	257 (13.1)	66 (3.4)	323 (16.5)
	No	698 (35.7)	937 (47.8)	1,635 (83.5)
Total		955 (48.8)	1,003 (51.2)	<b>1,958</b>

(b) Standard measure

Notes: Cells are highlighted in green for concordant women and in red for discordant women.

## Appendix

**Appendix Table 1: Method Mix among Women who are Wanted Users, Standard Approach**

<b>Method</b>	<b>N</b>	<b>Pct.</b>
IUD / PPIUD / Multiload for 5 Years	22	2.3
Injectables	14	1.5
Pills	30	3.2
Condom, Male	255	27.2
Condom, Female	1	0.1
Emergency Contraception	1	0.1
Standard Days Method	31	3.3
Lactational Amenorrhea Method	6	0.6
Rhythm Method	461	49.2
Withdrawal	115	12.3
Other Traditional Method	1	0.1
<b>Observations</b>	<b>937</b>	

Notes:

**Appendix Table 2: Method Mix among Women who are Unwanted Users, Standard Approach**

<b>Method</b>	<b>N</b>	<b>Pct.</b>
IUD / PPIUD / Multiload for 5 Years	1	1.5
Injectables	1	1.5
Pills	1	1.5
Condom, Male	17	25.8
Rhythm Method	33	50
Withdrawal	12	18.2
Other Modern Method	1	1.5
<b>Observations</b>	<b>66</b>	

Notes: