Modelled Estimates for Measuring Progress in FP Program in India

Jay PRAKASH, Track20 India

Ashwani KUMAR, Track20 India

Extended Abstract

Assessing the prevalence of contraceptive use accurately has been challenging for the countries, specifically among the LMICs at the lower administrative divisions for effectively monitoring the program implementation. Moreover, countries have struggled more when the surveys are not conducted at regular intervals or at longer gaps of 5-10 years or there is more than one survey with different levels of estimates. Sometimes the survey estimates were found to be less reliable due to various reasons. We re-estimated the prevalence at the sub-national levels using Family Planning Estimation Tool (FPET) which follows Bayesian Hierarchical Modelling. The estimates at sub-national levels were then used to arrive at the national estimate using a bottoms-up approach at a defined level of uncertainty. Some states were found to be outliers and were left out from the input data. FPET provided the annual estimates of contraceptive use, unmet need and demand satisfied at lower administrative boundaries up to a certain level of accuracy. These estimates are found to be more reliable and fill the gap for the years when there are no surveys in the country. The use of FPET allowed us to have better annual estimates of FP indicators at the national and sub-national levels and being used to monitor the progress of family planning progress in India.
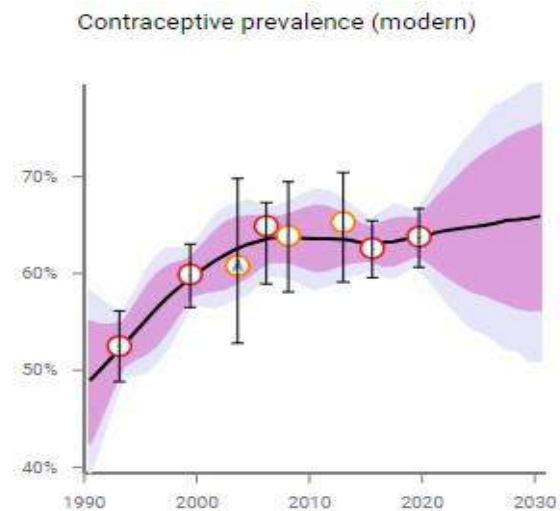
The **Family Planning Estimation Tool** (FPET) is a web application that is a country-specific implementation of the estimation approach for contraceptive prevalence and unmet need for family planning used by the United Nations Population Division (UNPD).

Estimating Annual Values of Modern CPR, Unmet Need and Total Demand

Family Planning Estimation Tool (FPET)

FPET is designed to provide the best estimate given the data available.
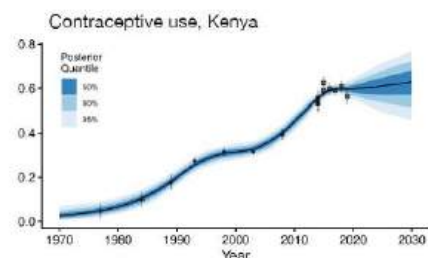- Bayesian model that includes uncertainty
- Hierarchical model that can borrow information from global or regional sources when data are scarce
- Uses all data sources: NFHS, MICS, DLHS, AHS, PMA2020, service statistics
- Data points are weighted according to confidence intervals
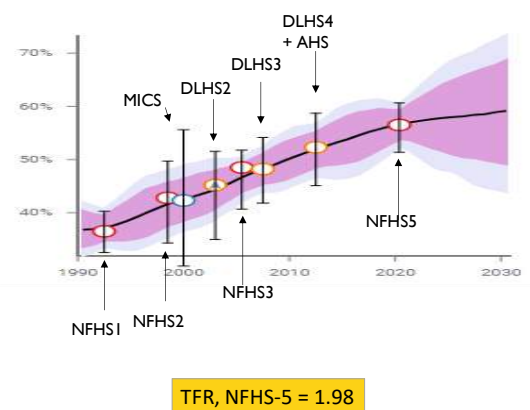- Used by UNPD and 81 countries

Contraceptive prevalence (modern)

FPET transition model

- Main assumptions in process model are based on capturing a contraceptive transition: CPR follows an "S-like curve"
  - starts low, increasing rate of change, levels off at an asymptote
- Country-specific accelerations and stalls are captured as well (more on next slide):
  - rate of change in CPR = expected rate of change based on S-curve + country-specific deviations
- Country-parameters with limited data, such as the asymptote for low-CPR countries, are informed by global data
  - FPEM-fit to global data base

Contraceptive use, Kenya

India: FPET estimates 2023

TFR, NFHS-5 = 1.98

Modern Contraceptive Prevalence among Married Women of Reproductive Age

Aggregation of State-Level Estimates

Mid-Year	Median	Range
2020	57.1	52.9 – 61.0
2021	57.8	52.0 – 63.0
2022	58.2	50.9 – 64.9
2023	58.6	49.8 – 66.7

In 2023 there are an estimated 156.1 (95%CI: 132.8 – 177.7) million married women using modern methods of contraception, 35.2 million additional users from 2012.

FPET estimates for other Indicators, India, 2023

India (IND) : Assessing Progress in Family Planning, 2023

Analysis by Track20 India Team

2023 Family Planning Snapshot

Key Indicators among All Women		Key Indicators among Married Women	
mCPR (AW)	Total Users	mCPR (MW)	Total Married Users
42.9%	15,75,11,000	58.6%	15,61,60,000
Unmet Need* (AW)	Demand Satisfied* (AW)	Unmet Need* (MW)	Demand Satisfied* (MW)
12.6%	81.8%	17.5%	76.8%

Note: AW = All Women, MW=Married Women   *refer to need and demand for modern methods of contraception