Building a coalition to promote family planning through shared goals: assessing the concordance of two initiatives

Abstract

Objectives. Build a broad coalition of support for family planning through demonstrating the convergence of two recently launched initiatives: Family Planning 2020’s (FP2020’s) adding 120 million modern contraceptive users by 2020 and satisfying 75% demand for contraceptive by 2030.

Methods. We projected the bi-directional implications of the two goals using survey-based dataset on modern contraceptive prevalence rate (mCPR) and United Nations Development Programme (UNDP) population projection: (1) how many additional modern contraceptive users would be added following the 75% satisfied demand initiative; (2) what % demand satisfied would be if 120 million modern contraceptive users were added.

Results. Achieving the 75% satisfied demand by 2030 goal means about 91 million additional modern users in 66 FP2020 countries from 2012 to 2020. Following the trajectory of increasing mCPR, additional modern users will reach 120 million in early 2022.

Among the 28 FP2020 pledging countries, except Bangladesh, Indonesia, South Africa, and Zimbabwe, where the % satisfied demand was already above 75% in the last survey, only Kenya, Malawi, and India will reach the 75% satisfied demand goal by 2020 following a 1.5% annual increase; half of the 28 countries will reach the target by 2030.

Conclusion.

Both initiatives promote access to family planning to women and girls, particularly in developing countries. Greater political and financial investment are needed to reach the FP2020 goal by 2020 and to accelerate the progress afterwards to reach 75% satisfied demand goal by 2030. A broad coalition need to be formed to promote family planning through the shared mission.
Introduction:

Access to family planning is a crucial component of reproductive rights and leads to tremendous benefits to women and their families. It is unique among medical interventions in the breadth of health, developmental and economic benefits, such as reducing maternal and child mortalities, empowering women and girls, and enhancing environmental sustainability.\textsuperscript{1, 2} The Lancet series on family planning in 2012 documented strong evidence of the extensive benefits of family planning. Ahmed and colleagues estimated that contraceptive use averted 272,040 maternal deaths in 2008, and satisfying unmet need for contraceptive could prevent another 104,000 deaths per year.\textsuperscript{2} Cleland and colleagues made nearly identical estimates using a different methodology.\textsuperscript{3} Additionally, Canning and Schultz evaluated the economic consequences of family planning, including increases in female labor participation rate and proportion in paid employment.\textsuperscript{4}

Universal access to reproductive health also helps to reaching Millennium Development Goals (MDGs), particularly MDGs 4 and 5.\textsuperscript{5, 6} A cost-effective analysis conducted by UN concluded that every dollar spent in family planning could save US $2-6 in interventions aimed at achieving other MDGs.\textsuperscript{1}

However, both financial support and political commitment for family planning have been insufficient, and even declining in the decade prior to 2012, after reaching its global peak following the 1994 International Conference on Population and Development (ICPD) in Cairo.\textsuperscript{1, 7} Given the political risk of including family fertility, the original MDGs adopted in 2000 contained nothing about family planning, though it was added as an indicator without measurable target for tracking progress on improving maternal health in a less well-known revision in 2006: achieve, by 2015, universal access to reproductive health.\textsuperscript{8} Consequently, the progress toward providing the access to contraceptive to women and girls in developing countries has been slow, and on average women in Sub-Sahara Africa still have more than five children.\textsuperscript{9}

Compared with other public health interventions, family planning has two unique features that need special attention. First, due to cultural, religious, and political motivations, family planning has been more controversial than many other public health issues, starting from trial of Charles Bradlaugh and Annie Besant in London in 1877 for distributing a pamphlet on birth control and the arrest of Margaret Sanger in New York in 1916 for opening a birth control clinic.\textsuperscript{1} Similar oppositions to family planning occurred and are still strong in many other countries, such as the concern from African nationalists that family planning was part of a conspiracy to control the black population.\textsuperscript{10-12}

Even the proponents of family planning disagree with each other over what the primary aims should be. Some emphasize ecological concerns, specifically the effect of fertility decline on population structure and economy. Others emphasize rights concerns, promoting women’s control over their reproduction.\textsuperscript{13} The ICPD Programme of Action, a victory for the rights-based argument, discourage targets, which was partially a cause of the fall in enthusiasm on family planning since then.

Second, unlike other public health issues, such as reducing child mortality, the biomedical side of family planning is well established with proven methods to space and limit pregnancies. It is a political issue of getting support and forming a broad coalition of elite groups, which has been established as a key element for successful family planning programmes.\textsuperscript{1, 13}
Another key to effective and sustainable family planning programmes is adequate funding. Currently global funding for family planning have two distinct features. First, despite the large amount from a historical perspective, particularly thanks to the London Summit on Family Planning in 2012, the funding is still unstable and needs further boost. The donor funding for family planning languished between 1998 and 2009, while the total donor financing for global health nearly tripled. It is estimated that development assistance for health (DAH) for family planning was $963 million in 2013 and slightly dropped to $778 million in 2014. The benefits of further increasing the spending on family planning would far exceed the cost, $1.40 payoff for each dollar investment.

Second, the funding comes from more than a dozen sources (e.g. Bill & Melinda Gates Foundation (BMGF), private philanthropies, and governmental agencies) and are allocated through an even larger number of channels, which, in addition to the funding sources, also includes development banks and other bilateral agencies.

The complexity of making effective strategies to promote the access of family planning to women and girls calls for closer coordination of resource and attentions from all stakeholders. As noted by Kim and Ammann (2004), clear consensus on targets and priorities are indispensable for all the successful public projects in modern era.

During the past few years, two major Family Planning initiatives were launched: (1) the London Summit on Family Planning of July 2012 convened by the UK Department for International Development (DFID) and the Bill & Melinda Gates Foundation (BMDF) proposed to add 120 million modern contraceptive users by 2020; (2) USAID set a target of satisfying 75% of the demand for family planning with modern contraceptives by 2030. A prominent feature of those initiatives is that they both proposed concrete measurable targets, mainly after reflecting on the major constraint imposed by the lack of quantifiable goals for family planning in ICPD and MDGs.

The London Summit on Family Planning held in July 2012 proposed a global goal of reaching 120 additional users of modern contraceptive methods, including both married and unmarried sexually active women, by 2020 in world’s 69 poorest countries with a 2010 gross national per capita annual income less than or equal to US $2500. Although its income was higher than US $2500, South Africa also made a commitment at the Summit. The Initiative intends to mobilize global resources and leadership around family planning programs, focusing on the meeting women’s unmet needs and promoting their right to practice contraception.

The Summit was a huge success in both raising financial support and strengthening political commitment. Totally US$ 4.6 billion was committed for the following eight years, exceeding the official goal of $4.2 billion. Five heads of state (UK, Malawi, Rwanda, Tanzania, and Uganda) and more than a dozen ministers of health and development attended the Summit.

Many partners, including governments, civil society, private sector, donors, and foundations, have been making remarkable efforts towards the ambitious goal of enabling an additional 120 million women and girls in the world’s 69 poorest countries to access modern contraceptives by 2020. The Summit highlighted the fundamental importance of voluntary family planning and the urgency to meet the unmet need for family planning. The FP2020 initiative has tremendous public health implications. It is estimated that reaching the goal would help avert 116 million unintended pregnancies, 52 million abortions, 212 thousand maternal deaths, and 2.8 million infant deaths from 2013 to 2020.
Another initiative was launched two years later. Fabric and colleagues from United States Agency for International Development (USAID) proposed a target of satisfying 75% of the demand for family planning with modern contraceptives by 2030.18 A similar yet more ambitious target is currently being considered by the Open Working Group for Sustainable Development Goals (SDG).19

The % satisfied demand is the proportion of who use modern contraception divided by the total demand for family planning, which is defined by adding the percentage of married or in-union women aged 15-49 who are using any contraception to the percentage of women with unmet need. Following Fabric et al. (Lancet 2014), we only consider the demand for FP among married or in-union women aged 15-49 years in the present study.18

FP2020 and 75% satisfied demand initiatives are two unprecedentedly ambitious initiatives on family planning. Given the scale of the initiatives and the number of partners involved in the family planning filed, a better coordination and a broader coalition are necessary to achieve the targets.

The objective of this study is to assess the concordance of these two initiatives. Such a demonstration of internal consistency, or the lack of it provides a better understanding of the proposed quantitative goals and help to form collective actions. We will estimate what are the modern contraceptive prevalence rate (mCPR) required to satisfy 75% of the FP demand with modern contraceptives in world’s 69 poorest countries? How many additional users will be added if the target is reached? We also investigate the implication for % satisfied demand if the 28 FP2020 pledging countries keep a 1.5% annual increase in mCPR from 2012. We used 1.5% since it is close to the overall target proposed by the London Summit on Family Planning Metrics Group across all 69 countries. It is considered as an aspirational yet achievable goal assuming the resources and leadership around current family planning programs could be collectively mobilized.

Data:

The contraceptive prevalence data are from United Nations Development Programme (UNDP) survey-based estimates of percentage of married or in-union women aged 15-49 who are using any modern contraceptive methods. 407 surveys conducted from 1986 to 2014 in 139 countries are included. Four FP2020 countries, Afghanistan, Djibouti, Somalia, and Western Sahara, do not have any survey based estimates on mCPR and % satisfied demand, and therefore are excluded from the present study. South Africa joined the FP2020 Initiative after the London Summit. So our study is based on 66 FP2020 countries, with a focus on the 28 countries that made commitment to the FP2020 Initiative (pledging countries), either at the London Summit (22 countries) or at the 2013 International Conference on Family Planning (6 countries).

Since the FP2020’s target is based on all women, regardless of marital status, we used datasets from 210 Demographic Health Surveys (DHS) from 70 developing countries to estimate the empirical relationship between married mCPR and all women mCPR, which in turn is used in the conversion between married mCPR and all women mCPR.

Methods:
The concordance between FP2020 and 75% SD targets needs a bi-directional assessment. We want to estimate the implication of achieving one of them on the other. First, we estimate how many additional users will be added in the 66 FP2020 countries following the 75% satisfied demand target. Then we calculate what % of FP demand will be satisfied in 28 pledging countries assuming a 1.5% annual increase from 2012 until 2030. These two assessment will be conducted separately, but with similar methodology.

There are three steps to answer the first research question. Step 1 is to estimate the required married women mCPR to satisfy 75% FP demand with modern methods by 2030. We use the following country-level fixed effects longitudinal model based on survey-based data compiled by UN. tCPR denotes the traditional contraceptive prevalence rate.

\[
\%_{SD} = 100 \times \frac{mCPR}{mCPR + tCPR + unmet need} \quad (1)
\]

So we have,

\[
\log(mCPR) = \log(tCPR + unmet) - \log\left(\frac{100}{\%_{SD}} - 1\right) \quad (2)
\]

This relationship is true by definition and will be the base for the regression model. Suppose we have \(T_i\) observations for \(i\)th country. Let \((\log(mCPR))_i\) and \(\left(\log\left(\frac{100}{\%_{SD}} - 1\right)\right)_i\) be the \(T_i\) observations for the \(i\)th county, \(I_i\) be a \(T_i \times 1\) column of ones, and let \(\epsilon_i\) be the \(T_i \times 1\) vector of disturbances, \(\alpha_i\) be the time-invariant unobserved fixed effects for \(i\)th country. Then the regression model can be expressed as follows.

\[
(\log(mCPR))_i = \beta_0 + \beta_1 \times \left(\log\left(\frac{100}{\%_{SD}} - 1\right)\right)_i + I_i \alpha_i + \epsilon_i \quad (3)
\]

We transformed the data accordingly to fit the model. A country dummy variable, \(\alpha_i\), is used to denote the term “tCPR + unmet need” because the aim is to predict mCPR from the assume % satisfied demand for 2030 for which year we do not have tCPR and unmet need. Another approach is to predict tCPR and unmet need in 2030 from historical trend, and then calculate the mCPR for that year. But we do not have well-fitted regression models for those two indicators, making the prediction inaccurate.

Instead of the regular xtreg Stata routine with fe option, we used the Least Square Dummy Variable (LSDV) method to estimate the model. Those two estimation approaches give identical coefficients for the covariates, while LSDV approach also explicitly present the coefficients of the country dummy, which is used in predicting the mCPR for the assumed 75% satisfied demand in 2030.

The adjusted R-squared of the model is 0.98 based on 407 surveys from 139 countries (see the appendix for detailed regression results.), indicating a nearly perfect correlation between the outcome and covariates. The % satisfied demand is defined as the ratio of mCPR over the sum of CPR and unmet need. There are two reasons for the extremely strong correlation. First, determined by the same socio-economic, cultural, and programmatic factors, mCPR, CPR, and unmet need are correlated. In the 407 surveys, the correlation coefficient is 0.91 between mCPR and CPR and -0.69 between mCPR and unmet need. Second, the variations in unmet need are substantially smaller than in mCPR.
The % of FP demand satisfied by modern methods was already above 75% in 10 of the 66 countries in their most recent surveys. It is reasonable to assume that in those countries no additional activities are needed to achieve the 75% satisfied demand by 2030 goal.

For the other 54 countries, we assume the % of FP demand satisfied with modern methods will reach 75% in 2030. Then with the assumed % SD values, we utilize the relationship between mCPR, % satisfied demand, and a country dummy to estimate the mCPR in 2030.

Our next step is to estimate the all women mCPR from the estimated married women mCPR. All modern contraceptive users, married and sexually active unmarried, are counted in FP2020 Initiative. So we need to convert the married women mCPR estimated in step 1 to all women mCPR.

174 DHS surveys conducted from 1990 to 2013 in 64 countries were based on samples of all women of reproductive ages while the other surveys only covered ever-married women. We used the following model to estimate the relationship between all women and married women mCPR. By definition, all women mCPR and married women mCPR do not have a linear relationship, but a linear model fits the data so well that we use a linear relationship in the prediction. The model includes a binary region dummy variable: SSA and non-SSA. We use a region dummy because a model with a country dummy cannot be used to convert married women to all women mCPR in countries without a DHS survey.

In the last step, we assume all women mCPR and % satisfied demand will increase linearly from the level in the last survey to the level estimated for 2030 in step 2. The linear interpolation approach is then applied to the survey based estimates and the predicted 2030 mCPR and % satisfied demand to estimate the mCPR and % satisfied demand in 2012, 2020, and 2030, which will be used to calculate the number of modern contraceptive users. The population data come from UN World Population Prospects. Lastly we calculated the additional users of modern contraceptives from 2012 to 2020 and 2030.

The second research question is answered similarly in three steps. First we estimate the mCPR in 2012. Among the 28 FP2020 pledging countries, 6 have a survey in 2012; For the following 8 countries, we used the last survey-based estimate for 2012: Benin (2011), Côte d'Ivoire (2011), Mauritania (2011), Nigeria (2011), South Africa (2003), Myanmar (2001), India (2007), Solomon Islands (2006); for the other 14 countries, we linearly interpolated the 2012 mCPR based on their historical trend. Except Tanzania whose last survey was in 2009, all of those countries haves surveys both before and after 2012.

The second step is to impose 1.5% annual increase in mCPR from 2012 until 2030. Finally, we predict the % satisfied demand associated with the assumed trend of mCPR based on the model below.

\[
\%_{SD} = 100 \times \frac{mCPR}{mCPR + tCPR + unmet\, need}
\]  

(4)

So we have,

\[
\log \left( \frac{100}{\%_{SD}} - 1 \right) = \log(tCPR + unmet) - \log(mCPR)
\]  

(5)

Using the same notation defined above, the regression model is as follows.
\[
\left( \log \left( \frac{100}{\%SD} - 1 \right) \right)_i = \beta_0 + \beta_1 \times (\log(mCPR))_i + I_i \alpha_i + \epsilon_i \quad (6)
\]

**Results:**

Using 407 survey-based estimates from 139 countries, the adjusted R-squared of the model regressing mCPR on %SD and country dummy is 0.98, meaning that only about 2% of the variations in mCPR cannot be explained by the model. As a result, the estimated mCPR based on the assumed 75% satisfied demand should be highly accurate and reliable.

The adjusted R-squared is 0.96 in the regression model of all women mCPR on married women mCPR and region dummy based on 174 DHS surveys from 64 countries. Such a strong correlation also indicates accurate conversion from married women to all women mCPR.

Achieving the 75% satisfied demand by 2030 goal means about 91 million additional users in these 66 FP2020 countries from 2012 to 2020, which is about 76% of the 120 million proposed by the FP2020 Initiative. From 2012 to 2020, these 28 pledging countries will contribute 74.6 million additional users while these 38 non-pledging FP2020 countries only contribute 16.6 million. Following the trajectory of increasing mCPR and %SD, the goal of adding 120 million modern contraceptive users will be achieved in early 2022. By 2030, there will be 130 and 36 million additional users in pledging and non-pledging countries, respectively, making a total number of 228 additional modern contraceptive users in these 66 FP2020 countries.

The adjusted R-squared of the model regressing %SD on mCPR and country dummy is 0.98 based on 407 surveys from 139 countries. With the estimated coefficients, we predicted the %SD for years 2012-2030. Except four pledging countries, Bangladesh, Indonesia, South Africa, and Zimbabwe, where the %SD was already above 75% in the last survey, only Kenya, Malawi, and India will reach the 75% satisfied demand by 2030 following a 1.5% annual increase. The %SD will reach 75% by 2030 in half (14) of the 28 pledging countries under the assumed 1.5% annual increase.

**Limitations**

Despite the highly satisfactory model fit, our regressions are simple and could be theoretically improved by including other factors such as calendar time. We did not include year as a covariate because its coefficient reflects not only temporal effects, but also the changing composition of countries. For example, earliest DHS surveys were mostly in Africa while Asia was added later. Since we are mainly interested in the predictability of the model, measured by the adjusted R-squared, rather than interpretation of coefficients, and adding year as a covariate changed the adjusted R-squared by less than 1%, our final model did not consider calendar time.

**Discussion**

Setting targets for family planning programmes has been controversial historically, and particularly discouraged since ICPD in Cairo 1994. It makes the interventions vulnerable to misinterpretation as
population control. For example, two years after ICPD in Cairo, the Indian government abandoned setting quantitative targets on contraceptive acceptors in response to pressure from women’s groups.

Another objection to target-setting, perhaps more importantly, is that as a fundamental human right, the only goal should be universal access, and no midway or compromise should be advocated.

Yet, upon reflecting the progress of family planning during the past two decades, especially learning from successful public health interventions (e.g. United Nations Children’s Fund’s (UNICEF)’s child survival revolution and World Health Organization’s (WHO’s) 3 by 5 imitative), proponent of family planning reached an agreement in London Summit on the importance of setting a clear, overarching goal that rally different stakeholders around clarity of purpose. In 2014, Fabic and her colleagues from USAID also proposed a clear target.

These two goals, 120 by 20 and 75% satisfied demand by 2030, represent the objectives of proponents of family planning that make absolute majority of global funding for family planning programmes. A consensus goal is critical to build a broad coalition to effectively and collectively mobilize the financial and political resources, and capture global attention.

Our results show that the two initiatives move towards the same goal of promoting access to family planning for women and girls. Overall, achieving the 75% satisfied demand goal by 2030 implies that 120 million modern contraceptive users will be added by 2022 in 68 FP2020 countries, only two years later than in the FP2020 imitative. On the other hand, achieving a 1.5% annual increase in mCPR will make half of the 28 pledging countries to reach 75% satisfied demand by 2020.

As repeatedly emphasized in the London Summit document, setting a quantitative target should not cause concerns among people firmly committed to sexual and reproductive health and rights since all interventions will make the women’s rights at the center of all implementation efforts. We here repeat the rejection of the idea of “population control” and demographic targets. Our concordance assessment aims to bring together international communities into collective actions to secure women’s and girls’ access to effective contraceptive methods.

References


Figure 1 Number of additional modern contraceptive users in 28 pledging countries, 38 non-pledging countries, and 66 FP2020 countries from 2012 to 2030 in two scenarios

Note: in scenario 1, %SD remains constant once reaches 75%; in scenario 2, we use the UN model-based %SD for countries reaching 75% before 2030
Table 1  mCPR and % satisfied demand in 10 countries where % satisfied demand exceeded 75% in the last survey

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>mCPR</th>
<th>% satisfied demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh*</td>
<td>2012</td>
<td>59.2</td>
<td>78.2</td>
</tr>
<tr>
<td>Bhutan</td>
<td>2010</td>
<td>65.4</td>
<td>84.6</td>
</tr>
<tr>
<td>Egypt</td>
<td>2014</td>
<td>56.9</td>
<td>80.0</td>
</tr>
<tr>
<td>Honduras</td>
<td>2011</td>
<td>63.8</td>
<td>76.0</td>
</tr>
<tr>
<td>Indonesia*</td>
<td>2012</td>
<td>57.9</td>
<td>79.0</td>
</tr>
<tr>
<td>Lesotho</td>
<td>2014</td>
<td>59.8</td>
<td>76.1</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>2006</td>
<td>68.8</td>
<td>82.8</td>
</tr>
<tr>
<td>North Korea</td>
<td>2010</td>
<td>65.3</td>
<td>76.7</td>
</tr>
<tr>
<td>South Africa*</td>
<td>2003</td>
<td>59.8</td>
<td>81.1</td>
</tr>
<tr>
<td>Zimbabwe*</td>
<td>2014</td>
<td>66.3</td>
<td>85.8</td>
</tr>
</tbody>
</table>

Note: * denotes countries that made commitment to FP2020.