Fertility preferences, contraceptive use and the unmet need for contraception in Papua New Guinea: key findings from 1996—2016

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Abstract

Expanding access to reliable contraception is a global priority in the fight to lower maternal morbidity and mortality. Papua New Guinea (PNG) continues to face significant challenges in enhancing contraceptive services for women. PNG Demographic Health Survey (DHS) has been undertaken every ten years since 1996 and describes the major trends in crude birth rates, fertility rates and preferences, contraceptive use and the unmet needs for contraception. The latest survey in 2016 means that there is now twenty years of data available. Between 1996 and 2016 modern contraceptive prevalence increased from 14% to 29% with a preference for longer-acting-reversible-contraception, though the unmet need for contraception persisted at 32% in 2016 with minimal change since 1996. Rurally dwelling women as well as those with low literacy, who make up the majority of reproductive age women in PNG, were consistently the least likely to use contraception. Expanding access to reliable contraception should therefore be prioritised for these women.

Introduction

Expanding access to reliable contraception in Papua New Guinea (PNG) is a priority of the United Nations Sustainable Development Goals, and one of the key strategies of the PNG National Health Plan for halving the national maternal mortality rate by 2030[1]. To help guide future program planners to effectively expand contraception programs in PNG, this short report uses reproductive health data from the national Demographic Health Survey (DHS) to summarise the major trends in fertility preferences, contraceptive use and the unmet need for contraception in PNG from 1996 to 2016.

Methods

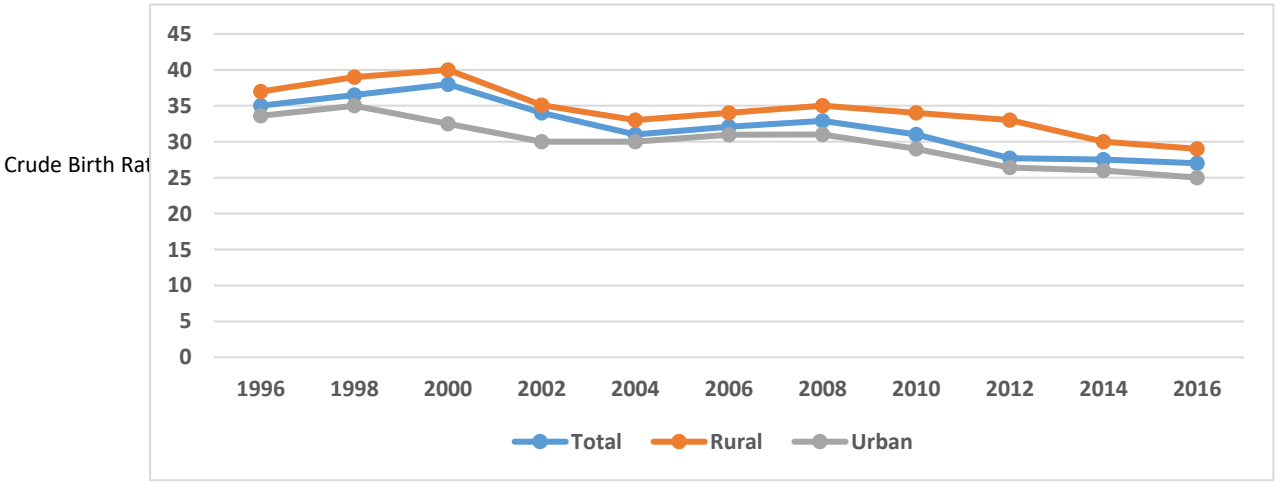
We reviewed the PNG DHS reports for 1996, 2006 and 2016 to analyse household survey data on key indicators relevant to sexual and reproductive health including: birth rate, fertility preference, unintended pregnancy, contraceptive prevalence and method mix, and the unmet need for contraception. Data on unintended pregnancy rates, which is crucial to informing contraceptive need, are not well captured by the DHS surveys. Hence data from the integrated Health and Demographic Surveillance System (iHSS) developed by the Papua New Guinea Institute of Medical Research were used to measure the unmet need for contraception among women in rural areas of PNG[2]. Descriptive analyses were then carried out to outline changes in the demand and use of modern methods of contraception among women in PNG over time. Ethical approval was sought for the study from the PNG Medical Research Advisory Committee and the PNG Institute of Medical Research.

Results

Crude Birth Rate, Fertility Preferences and Unintended Pregnancy

The Crude Birth Rate (CBR) fell by 21% from 1996 to 2016 (34.9 to 27.7 per 1000 population; Figure 1). Table 1 summarises changes in Total Fertility Rate (TFR) by region. For all women, irrespective of age, place of residence or education, the preferred number of children was consistently lower than the number of children birthed and this disparity widened over time. Unintended pregnancy rates marginally decreased from 1996 to 2016 (4% reduction) with an equal number of women wishing to avoid pregnancy for spacing versus limiting family size (48.8% versus 51.2%)[2].

Figure 1: Changes in Crude Birth Rate from 1996—2016 by place of residence



Change in Crude Birth Rate (CBR) per 1000 population

Contraceptive Prevalence, Modern Contraceptive Method Mix and the Unmet Need for Contraception

Table 2 outlines changes in the contraceptive prevalence rate (CPR) from 1996 to 2016. Marital status strongly predicted contraception use and inversely related to the unmet need. The contraceptive implant overtook the oral contraceptive pill and injectable Depo-Provera to become the most popular in-use modern method of contraception by 2016 (Figure 2). Introduction of the implant also coincided with a reduction in sterilisation rates, particularly among women <35 years. Modern contraceptive prevalence was lowest among adolescents (2.6%) with a preference for short acting methods (barrier, the pill and injectables)[2].

Table 1: Fertility trends among married or in-union women aged 15—49 years

	Total or Actual fertility rate			**Preferred fertility rate**		
	1996	2006	2016	1996	2006	2016
Total	4.84	4.38	4.2	3.9	3.0	3.0
Residence						
Rural	5.02	4.52	4.3	4.1	3.1	3.1
Urban	4.00	3.59	3.5	3.2	2.6	2.6
Region						
Southern	4.85	4.48	4.5	3.9	3.1	3.2
Highlands	4.36	3.87	3.8	3.6	2.6	3.0
Momase	5.33	4.97	4.4	4.3	3.4	3.0
Islands	5.26	4.59	4.5	4.0	3.2	2.8
Education Status						
No education	4.97	4.45	4.6	4.1	2.9	3.5
Elementary	4.74	4.75	4.4	3.8	3.3	3.1
Primary	5.10	4.67	3.8	3.9	3.1	2.6
Secondary or higher	3.85	3.81	3.1	3.3	2.8	2.7

Total Fertility Rate expressedper woman aged 15—49 years

Table 2: Contraceptive prevalence rates and unmet need for contraception among married or in-union women aged 15—49 from 1996 to 2016

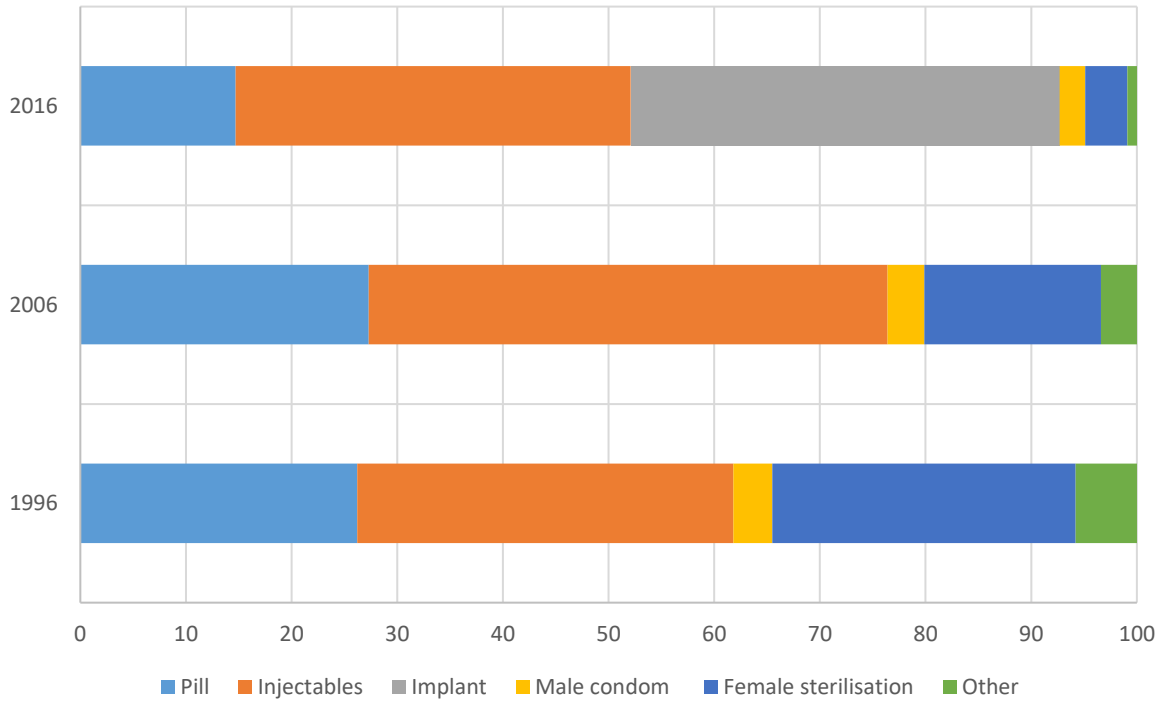
	Contraceptive Prevalence Rate (any method)			**Contraceptive Prevalence Rate (modern methods)**			**Unmet Need for Contraception**		
	1996	*2006*	*2016*	*1996*	*2006*	*2016*	*1996*	*2006*	*2016*
All women	22.4	29.5	32.1	14.3	19.8	29.4	*	*	*
Married women	26	32	36.5	19.6	24.3	34.2	39	36	32
Age (married women)									
15—19									
20—24	2.1	3.5	4.1	0.9	2.5	3.4	9.0	35.5	32.2
25—29	11.7	16.3	21.1	6.8	13.4	17.0	11.7	34.5	33.6
30—34	18.3	25.1	32.7	11.4	18.6	27.9	18.9	27.1	26.4
35—39	20.1	30.4	38.8	16.7	23.5	31.7	26.5	27.2	25.1
40—44	21.4	29.8	38.4	18.4	25.6	32.4	36.7	25.4	25.2
45—49	19.7	27.5	36.7	12.7	24.1	30.5	46.6	22.6	24.0
	17.6	21.3	29.2	8.5	17.4	23.0	56.2	19.8	15.1
Place of Residence									
Rural	16.1	21.4	25.9	10.7	13.6	21.2	44.7	38.7	34.5
Urban	29.7	36.6	50.2	23.6	31.8	41.5	37.4	32.4	27.3
Education									
No education	13.3	20.2	24.2	8.3	11.5	13.5	36.4	28.9	26.9
Elementary	15.6	26.4	35.5	11.4	20.6	31.1	28.5	27.0	24.3
Primary	20.1	30.1	40.2	15.6	22.4	34.2	23.6	32.1	24.6
Secondary or higher	25.6	34.3	45.9	19.8	25.7	37.5	17.1	21.8	22.5

CPR: Contraceptive Prevalence Rate—percentage of married women aged 15—49 years using contraception. Sub divided into any method of contraception and any modern method of contraception

Unmet need: percentage of women aged 15—49 desiring no further pregnancies who are not currently using any method of contraception

* missing data

Figure 2: Percentage modern contraceptive method mix among married women aged 15—49 years from 1996 to 2016



Discussion

Outreach implant programs led by non-government organisations including Marie Stopes International and Rotary Australia International have been pivotal in achieving the 15—25% increases in modern CPR throughout PNG since 2006[3]. These outreach initiatives successfully delivered contraceptive implants to women in rural and very remote locations and facilitated health worker training in implant insertion and removal to promote capacity building and sustainable access to reliable contraception; however inconsistencies in program funding led to services being interrupted[3]. Greater government subsidisation of outreach programs in other low and middle income countries with similar demography to PNG including Bangladesh, Sri Lanka, and parts of Latin America and sub-Saharan Africa led to more dramatic increases in modern CPR over a similar time frame (30—50% increase)[4—6]. Government subsidisation of outreach programs in these regions enabled campaigns to roll out for longer periods of time with more consistent local staffing and more comprehensive coverage in rural and remote settings[4—6].

To address the particularly low CPR in rural areas in PNG (10% lower than the national average) the government of PNG has committed to the Family Planning 2020 global partnership which aims to increase national contraceptive prevalence to 50% by 2030 with a preference for long-acting-reversible contraception (LARC)[1,7]. Expanding access to contraceptive implants in PNG may be the fastest way to achieve these CPR targets because, compared with IUCDs, health worker training and program co-ordination is simplified, side effect profiles are milder and complication rates are lower[1,7,8].

Including adolescents and unmarried sexually active women in contraceptive programs is crucial to sustainably increasing CPR throughout PNG because the population is bottom heavy with 36% of persons being <15 years in 2020[9,10]. Despite positive advocacy in the National Family Planning Policy for all women to access reliable contraception, socio-cultural stigma continues to discourage adolescents from accessing these services and will likely result in high unmet need for contraception among this emerging demographic over the next decade[1,9]. Having youth-friendly services and making use of mobile satellite outreach clinics has successfully circumvented access barriers for minority group and very remote women in Bangladesh, Sri Lanka and parts of India; these strategies may be transferrable to the PNG setting where analogous access barriers are present[1,9,10].

Study limitations include the absence of inter-provincial analyses in the DHS which overlooks differences in reproductive health indicators and access to contraception between regions in PNG. Exclusion of reproductive health data for adolescents and sexually active unmarried women until late 2015 means we are unable to comment on birth trends and patterns of contraceptive uptake for this important and expanding demographic in PNG. Finally, more detailed analyses of raw data from urban and rural areas concerning unintended pregnancy and the unmet need for contraception would better delineate the contraceptive access disparities between these localities and assist in program development, however this was beyond the scope of our paper.

Conclusion

There have been important improvements in PNG's sexual and reproductive health-scape between 1996 and 2016. However current data are concentrated to reflect the needs of married women and continue to exclude key vulnerable groups including rurally

disadvantaged women, adolescents and sexually active unmarried women. The persisting discrepancy between wanted and actual fertility rates and the ongoing high unmet need for contraception indicate that current contraception services are lacking and vulnerable women are most disadvantaged by these service deficiencies.

References

1. WHO Western Pacific Region. Papua New Guinea: actions for scaling up long-acting reversible contraception. WHO, New York, 2017. Accessed 23rd March, 2021 from: https://apps.who.int/iris/bitstream/handle/10665/258650/9789290617921-eng.pdf?sequence=1&isAllowed=y
2. Pham B, Magara S, Boli R et al. Partnership in health programme report: March 2016 edition on women's health. Goroka PNG Institute of Medical Research; 2016
3. United Nations. World Family Planning Highlights. United Nations, New York, 2017 Accessed 23rd March, 2021 from: https://www.un.org/en/development/desa/population/publications/pdf/family/World_Fertility_and_Family_Planning_2020_Highlights.pdf
4. Hayes G. Family planning in Papua New Guinea: current status and prospects for re-positioning family planning in the development agenda. United Nations Family Planning Association, Presented at ICOMP Regional Consultation, Bangkok, Thailand 2010
5. Kitur, U., Adair, T., Riley, I. et al. Estimating the pattern of causes of death in Papua New Guinea. BMC Pub Health 19, 1322 (2019). https://doi.org/10.1186/s12889-019-7620-5
6. Gianna Robbers, Joshua P. Vogel, Glen Mola, John Bolgna & Caroline S. E. Homer (2019) Maternal and new born health indicators in Papua New Guinea – 2008–2018, Sex and Reprod Health Matters, 27:1, 52-68, DOI: 10.1080/26410397.2019.1686199
7. Rademacher K, Sripipatana T, Pfitzer A et al. A global learning agenda for the levonorgestrel intrauterine system (LNG IUS): addressing challenges and opportunities to increase access. Glob Health Sci Pract 2018; 6:635—643
8. Mukasa B, Ali M, Farron M & Van de Weerdt. Contraception supply-chain challenges: a review of evidence from low-and-middle-income countries. Eur J of Contra and Reprod Healthcare, 2017.
9. Kennedy E, Gray N, Azzopardi P & Creati M. Adolescent fertility and family planning in East Asia and the Pacific: a review of DHS reports. Reprod Health 2011; 8:11—23
10. Bell S, Kenendy E, Black K, Vallely A, Vallely L, Mola G et al. Youth-centred research to help prevent and mitigate the adverse health and social impacts of pregnancy amongst young Papua New Guineans. Reprod Health Matters, 2018; 4:5—12