

# Use of Combined Oral Contraceptive Pills among Women with Elevated Blood Pressure in Bangladesh

## Key Highlights

- World Health Organization (WHO) and Bangladesh family planning (FP) guidelines suggest that providers should not provide combined oral contraceptive (COC) pills to women with raised blood pressure (hypertensive women).
- About 1 in 5 women ages 18-49 in Bangladesh has elevated blood pressure (BP).
- About 1 in 4 COC users in Bangladesh is hypertensive. An estimated 2.3 m (23 lakh) women with elevated BP use COCs.
- Yet, only 2 out of 5 COC users in Bangladesh with elevated BP are aware of their health condition.
- 4 out of 5 COC users in Bangladesh obtained the method from pharmacies/drugstores and FP fieldworkers. Drug sellers and FP fieldworkers are not trained in BP screening, which makes BP screening before receiving COCs challenging.
- Family planning programs should introduce BP screening among COC users.

**Use of COCs in Bangladesh:** Currently, in Bangladesh, more than half (52%) of women of reproductive age (15-49 years) use modern FP methods, and COC pills constitute nearly half (49%) of the methods used [1]. While most women complete their desired family size by age 30, less than 10% adopt long-acting reversible contraceptives (LARC), namely intrauterine devices (IUD) and implants, or permanent methods (PM), namely tubectomy and no-scalpel vasectomy (NSV)—the most effective methods among fertility limiters. Furthermore, a substantial portion of such women continue using COCs throughout the remaining 19 years of their reproductive life [2].

**Guidelines on COCs for women with elevated BP:** The World Health Organization [3] and the Bangladesh Directorate General of Family Planning [4] have guidelines for screening women based on specific indicators before providing any modern FP methods, including COCs. Both of the aforementioned guidelines recommend other FP methods for women with elevated BP because COCs temporarily elevate BP, putting them at additional risk for further elevation [3]. Hypertension is a risk factor for many chronic diseases like heart disease, stroke, and diabetes [5].

**Objectives of the technical brief:** (1) To examine the prevalence of elevated BP among currently married women ages 18-49 (CMWA18-49) by their family planning method use: (a) COC pills, (b) other modern methods, and (c) those who do not use any methods or use traditional methods. (2) To estimate the total number of CMWA18-49 who use COCs and have elevated BP.

**Methods:** We analyzed the contraceptive use data and BP measurement data from the 2017-18 Bangladesh Demographic and Health Survey (BDHS) [6]. The survey collected contraceptive use and BP data from 4,546 CMWA18-49. The prevalence of elevated BP by FP method was estimated



after adjusting for factors that are associated with elevated BP and COC use [7]. The total number of COC users with elevated BP was estimated using the percentage of CMWA18-49 who use COCs and have elevated BP (not model based), the percentage of women ages 18-49 who are married, and the total number of CMWA18-49 living in the country. The first two statistics come from BDHS 2017-18 and the third statistic comes from UN population prospect data [8]. Elevated BP is defined as systolic BP (SBP)  $\geq 140$  mmHg and/or diastolic BP (DBP)  $\geq 90$  mmHg [9], and is used as a proxy for being “hypertensive.”

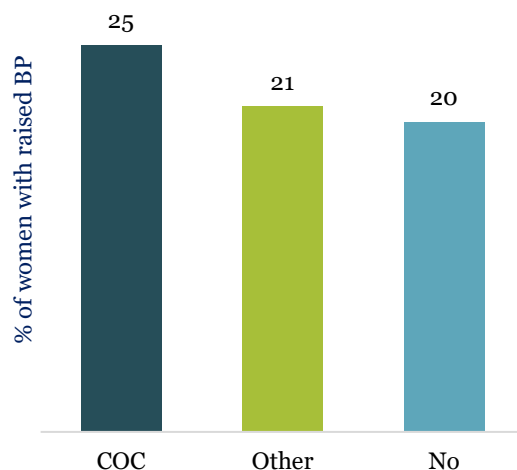
**FP method use and elevated BP among CMWA18-49 in Bangladesh:** COC use among CMWA18-49 is high at 25% in Bangladesh (data not shown). Although 22% of CMWA18-49 have elevated BP, it is 25% among COC users. Of the other method users and no-method users, 21% and 20% respectively have elevated BP (Figure 1).<sup>1</sup> The higher hypertension prevalence among COC users is statistically significant. Also, elevated BP is significantly higher for pill users among women ages 30-39 (Figure 2).<sup>2</sup>

We estimated there are a total of 2.3 million (23 lakh) CMWA18-49 (out of 37 million) in Bangladesh who are COC users living with elevated BP.

#### **Possible alternative FP methods for COC users who have elevated BP:**

Women with elevated BP can adopt any modern method other than COCs. Only injectables are not recommended for women who have very high BP (160/100 or higher) [4]. However, the method choice also depends on a woman’s fertility desire—whether she is a spacer (women who want more children after a certain interval) or a limiter (women who do not want any more children). We found that 80% of the women who use COC and have elevated BP are limiters. Although they can adopt any method, LARC and PMs are the most effective. The other 20% of women who use COCs and have elevated BP are spacers, and they may choose LARCs or any other short-acting methods. Traditional methods, including rhythm and withdrawal, are also alternatives, but modern methods are more effective. Figure 3. illustrates potential alternative FP method choices according to fertility desire.

Figure 1. Adjusted prevalence of raised BP among CMWA18-49, by FP use<sup>1</sup>

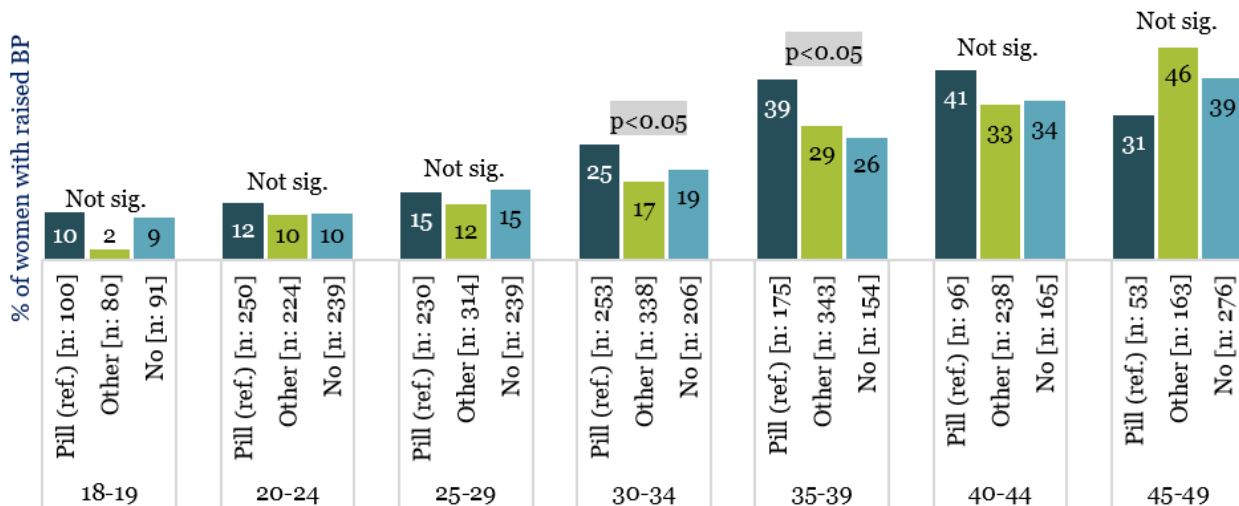


<sup>1</sup> The percentages are predicted probabilities from a logistic regression that were adjusted after controlling for women’s age, nutritional status, blood glucose level, education, religion, household wealth quintiles, and rurality.

<sup>2</sup> Ibid., numbers of women by age and FP use are observed (unweighted).



Figure 2. Raised BP among CMWA18-49 by age and FP method use<sup>2</sup>



COC users with elevated BP	Alternative FP methods
80% have achieved their desired family size (limiters) (1.8 m COC users with elevated BP)	<p><b>Most effective permanent methods:</b> Tubectomy and NSV</p> <p><b>More effective methods:</b> IUDs and implants</p> <p><b>Effective methods:</b> Injectables†</p> <p><b>Less effective:</b> Condoms and traditional methods</p>
20% have yet to achieve their desired family size (spacers) (0.5 m COC users with elevated BP)	IUDs, implants, injectables,† condoms, and traditional methods

†Injectables are not recommended if SBP≥160 mmHg and/or DBP≥100 mmHg [3, 4]

**Challenges in BP screening before providing COCs:** It is important to understand the FP program implementation and the sources of COCs to comprehend the practicality of screening women for their BP status before receiving COCs. Usually COCs are distributed by pharmacies/drug stores (55%), government FP fieldworkers (22%), government facilities (17%), NGOs (3%), or other entities (3%) [2]. Virtually no hypertension screening takes place in government facilities or pharmacies/drugstores, and FP fieldworkers are neither trained in BP screening nor required to perform screenings. Furthermore, the majority of these facilities lack BP screening equipment and trained providers [10]. Additionally, on many occasions, pills are collected by other people on behalf of the woman receiving the medication, so there is no opportunity for BP screening. Thus, only a small portion of COC users may be in contact with a trained provider to be BP screened before receiving COCs. FP guidelines should also clarify how frequently women should be screened for elevated BP while taking COCs; it needs policy action.



The lack of BP screening opportunity left women unaware of their BP status. Only 43% of the CMWA18-49 with raised BP were aware of their raised BP condition. This figure was similar among COC, other, and no-method users—44%, 43%, and 44%, respectively.<sup>3</sup>

**Way forward:** Combined oral contraceptives are the most commonly used FP method in Bangladesh, and the COC distribution challenges described above mean that many COC users do not have their BP screened in the current FP program. It remains unclear whether women know that they cannot use COC if they are hypertensive. Awareness about the guidelines and possible health consequences might lead women to consider alternative FP methods, many of which are more effective than COCs. The public health history of Bangladesh illustrates the power of community awareness in improving health and FP behavior. Therefore, the government and non-government programs and related mass media could help build awareness regarding COC use for hypertensive women.

We recommend BP screening of COC users. Government and NGO facilities can start it immediately, which covers 20% users (government, 17% and NGOs, 3%); pharmacies/drugstores can initiate BP screening by their trained pharmacists, which covers 55% users; and FP fieldworkers (whose share is 22%) need training on BP measurement, for which the government arranges a short training activity. Implementation research can identify affordable and effective modalities of BP screening of pill users.

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<sup>3</sup> Ibid.



## References

1. ICF. (2012). *The DHS Program STATcompiler*. Retrieved June 29, 2022, from <http://www.statcompiler.com>
2. National Institute of Population Research and Training (NIPORT) and ICF. (2020). *Bangladesh Demographic and Health Survey 2017-18*. Retrieved June 12, 2022 from <https://dhsprogram.com/publications/publication-FR344-DHS-Final-Reports.cfm>
3. World Health Organization & Johns Hopkins Bloomberg School of Public Health. Center for Communication Programs. (2018). *Family planning: a global handbook for providers: evidence-based guidance developed through worldwide collaboration*, 3rd ed. Retrieved June 12, 2022 from <https://apps.who.int/iris/handle/10665/260156>. License: CC BY-NC-SA 3.0 IGO.
4. Clinical Contraception Services Delivery Program (CCSDP). (2018). *Family Planning Manual*. CCSDP, Directorate General of Family Planning: Dhaka, Bangladesh.
5. World Health Organization. (2013). *A global brief on hypertension: silent killer, global public health crisis: World Health Day 2013* (WHO/DCO/WHD/2013.2). <https://www.who.int/publications/i/item/a-global-brief-on-hypertension-silent-killer-global-public-health-crisis-world-health-day-2013>
6. ICF. (n.d.). [Available Datasets]. Retrieved June 29, 2022, from <http://www.dhsprogram.com>
7. Iqbal, A., et al. (2021). Demographic, socioeconomic, and biological correlates of hypertension in an adult population: evidence from the Bangladesh demographic and health survey 2017–18. *BMC Public Health*. **21**(1): p. 1-14.
8. United Nations Department of Economic and Social Affairs. (2019). *World Population Prospects 2019*. Retrieved June 29, 2022, from <https://population.un.org/wpp>
9. World Health Organization and I.S.o.H.W. Group. (2003). 2003 World Health Organization (WHO)/International Society of Hypertension (ISH) statement on management of hypertension. *Journal of Hypertension*, **21**(11): p. 1983-1992.
10. National Institute of Population Research and Training (NIPORT) and ICF. 2019. Bangladesh Health Facility Survey 2017. Dhaka, Bangladesh: NIPORT, ACPR, and ICF. Retrieved June 12, 2022 from <https://dhsprogram.com/publications/publication-spa28-spa-final-reports.cfm>

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## Recommended citation

Research for Decision Makers (RDM) activity, International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) and Data for Impact (D4I). (2022). Technical Brief: Use of combined oral contraceptive (COC) pill among hypertensive women in Bangladesh. Dhaka, Bangladesh and Chapel Hill, North Carolina, USA: RDM activity, icddr,b, and D4I.



## For more information

The USAID's Research for Decision Makers (RDM) Activity is a five-year implementation research project, implemented by icddr,b, under cooperative agreement # AID-388-A-17-00006. The RDM Activity was launched to increase the use of evidence-based research and policy analysis for health planning and decision making to support the effective implementation of the 4th Health, Population and Nutrition Sector Program (HPNSP) 2017-22, with an ultimate goal to improve the health status of the Bangladeshi population. For more information, visit <http://www.rdm.icddr.org/>

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