Prevalence of Family Planning Method Use Among Married Women and its Association with Physical Health in Urban Areas of Bangladesh

Sharmin Rahman Ami [1]*[iD], **Kabita Rani Das** [12], **Roksana Khatun** [13], **Sadia Akter Keya** [1], **Fahmida Akter** [1], **Jannati Jesmin** [14], **Smrity Rani Paul** [1]

[1] Department of Public Health, Faculty of Health and Life Sciences, Daffodil International University
[2] National Institute of Kidney Diseases and Urology, Dhaka
[3] Sheikh Hasina National Institute of Burn & Plastic Surgery, Dhaka
[4] Green Life Collage of Nursing, Dhaka

Corresponding author*
Sharmin Rahman Ami
Department of Public Health,
Daffodil International University,
Dhaka, Bangladesh.
Email: drsharmin23@gmail.com

ABSTRACT

Family planning (FP) is essential for improving women's health and well-being by preventing unintended pregnancies, reducing maternal and infant mortality, and promoting sustainable development. However, many married women in Bangladesh do not use FP methods, and there is limited research on the association between FP method use and physical health among urban women in the country. This cross-sectional study was conducted among 370 married women attending primary health care centers in Dhaka, Bangladesh, from September to December 2022. Systematic random sampling was used to select participants. Data were collected through face-to-face interviews using a semi-structured questionnaire, and statistical analyses were performed using SPSS version 22. Pearson's chi-square test was used to assess associations between FP method use and various socio-demographic and physical health factors, with a significance level of $p < 0.05$. Among the participants, 33.2% used oral contraceptive pills, 20.3% used injectable methods, and 11.1% used condoms, while 29% did not use any FP methods. Significant associations were found between FP method use and age ($\chi^2 = 32.61$, $p = 0.00$), with women aged 26-40 showing the highest usage (43.5%). Monthly income ($\chi^2 = 13.06$, $p = 0.00$), physical activity levels ($\chi^2 = 12.59$, $p = 0.00$), menstrual cycle regularity ($\chi^2 = 29.03$, $p = 0.00$), weight changes ($\chi^2 = 13.46$, $p = 0.01$), anorexia ($\chi^2 = 6.59$, $p = 0.04$), and general weakness ($\chi^2 = 7.55$, $p = 0.00$) were also significantly associated with FP method use. This study highlights that age, income, physical activity, menstrual cycle regularity, and physical health conditions such as weight changes, anorexia, and general weakness are key factors influencing FP method use among married women in urban Bangladesh. These findings underscore the need for targeted public health interventions and education to improve FP uptake and address the associated health impacts on women. Further research is recommended to explore these relationships on a larger scale.

INTRODUCTION

Family planning refers to a person's or a couple's capacity to make decisions on the number, spacing, and timing of their children in a free and responsible manner (UNPF, 2022). For the empowerment of women and sustainable development, it is a fundamental human right that must be upheld (Guttmacher Institute, 2021). The use of family planning techniques can lower maternal and infant mortality, prevent unplanned births, and promote the health and wellbeing of women and children (UNPF, 2022). Additionally, they can aid in eradicating poverty and advancing economic growth (Guttmacher Institute, 2021). The global prevalence of contraceptive use among married women of reproductive age (15-49 years) was 78.2% in 2020, according to the United Nations Population Fund (2022). Nevertheless, there are considerable regional and international differences in the

usage of contraception. In the United States, 86.6% of sexually active women between the ages of 15 and 44 reported using contraception in 2019 (Guttmacher Institute, 2021). Condoms, birth control pills, and intrauterine devices (IUDs) are the most widely used contraceptive methods in the US (Guttmacher Institute, 2021). The rate of contraception use varies significantly across the subcontinents with Pakistan at 41.8% and India at 60.1% (Singh & Balaiah, 2019; Shah & Shah, 2021). Female sterilization, condoms, and birth control tablets are the most widely used contraceptive techniques in the subcontinent as well as in Bangladesh (Singh & Balaiah, 2019; Shah & Shah, 2021 (National Institute of Population Research and Training, 2021). South Asia has a lower-than-average percentage of contraceptive use (66.8%) than the rest of the world (United Nations Economic and Social Commission for Asia and the Pacific, 2020). As of 2019, 64.6% of Bangladeshis reported using a contraceptive method, up from 52.8% in 2011 (National Institute of Population Research and Training, 2021).

Family planning techniques can aid in avoiding unintended pregnancies, which can have a number of detrimental effects on health, including an increased risk of maternal and infant mortality and morbidity, poor maternal and child health outcomes, nutritional deficiencies, an increased risk of chronic diseases like anemia, hypertension, and diabetes, and an increased risk of mental health issues like depression and anxiety (World Health Organization, 2020). Married women in Bangladesh use family planning methods less frequently than married women in other countries due to a variety of reasons, such as a lack of knowledge about family planning methods and their advantages, myths about family planning methods, a lack of access to family planning services, the high cost of family planning services, and sociocultural barriers to family planning (National Institute of Population Research and Training, 2021). A woman's physical health can be affected by her choice of family planning strategy in addition to the aforementioned variables. For instance, some techniques, such sterilization and long-acting reversible contraceptives (LARCs), can aid in lowering the risk of some chronic illnesses, like anemia and ovarian cancer (World Health Organization, 2021). However, some side effects, including weight gain, mood swings, and an increased risk of blood clots, can be seen with other methods, such as hormonal birth control tablets and injections (World Health Organization, 2021).

Despite the many benefits of family planning, many married women in Bangladesh do not use any family planning methods (National Institute of Population Research and Training, 2021). It is important to note that the association between family planning method use and physical health is complex and depends on a number of factors, such as the woman's age, health status, and lifestyle (World Health Organization, 2021). Despite its benefits, FP usage in Bangladesh remains uneven, especially in urban areas where socio-economic and cultural barriers affect access. This study addresses a gap by examining the relationship between FP use and physical health factors such as weight changes, physical activity, and menstrual cycle regularity—factors often overlooked in FP research. Understanding these associations will help inform more comprehensive public health policies and targeted interventions to improve the health and well-being of urban married women in Bangladesh. There is a paucity of research on the relationship between married women's physical health in Bangladesh and the use of family planning methods. The findings of this study will be valuable for policymakers and program planners who are working to improve the health and well-being of married women in Bangladesh. This study will address the research gap by providing new evidence on the association between family planning method use and physical health among married women in urban Bangladesh.

MATERIALS AND METHODS

Study Design & Setting

This study was a cross-sectional study that was carried out in several primary health care center located in Dhaka, the capital city of Bangladesh.

Study Period and Study Population

The study was conducted during a period of three months, from September 2022 to December 2022. The study population consisted of all types of married women who visited primary health care facilities during the study's time frame.

Sample Size and Sampling Technique

A total of 370 women who attended primary health care centre during the study period were selected using a systemic random (every alternative) sampling technique.
Sample was calculated by following formula –
$n = z^2pq/d^2$
Where,
n= desired sample size
z = 1.96 (95% confidence interval)
p = prevalence of using a contraceptive 64.6% (National Institute of Population Research and Training, 2021).
  = 0.646
q = 1-p = 1-0.646= 0.354
d = 5 %
So,
$n = (1.96)^2 (0.0.646 \times 0.354)/ (0.05)^2$
  = 352
Considerably 5% non-responded = 352 + 17.6 = 369.6 = 370 (approx.)
We selected only the married women who attended PHC center during the study period and were willing to participate in this study. However, we excluded the women who are divorced and menopause.

Data Collection Procedure and Analysis

Prior to data collection, the study's questionnaire was pre-tested. Face-to-face interviews with participants in a semi-structured questionnaire were used to gather the data. Before the data collection procedure began, verbal informed consent was obtained. Following the data collection, all interview questionnaires were examined for accuracy, completeness, and internal consistency to filter out any missing or inconsistent information. For the analysis, corrected data were entered into SPSS version 22 (Statistical Package for Social Sciences). In this study, the dependent variable was family planning method use, while the independent variables included socio-demographic factors, lifestyle behaviors, and physical health indicators. Statistical tests like descriptive statistics as well Pearson's chi-square (χ^2) test were used to find the associations between different variables. The 95% CI and p-value level of <0.05 was considered to test statistical significance.

Ethical Consideration

The study protocol was submitted to the Research Ethics Committee of the Faculty of Health and Life Sciences of Daffodil International University (REC-FHLS) for ethical clearance. It was approved by the committee. Notably, the anonymity of the study participants and the privacy of the information were strictly maintained.

RESULTS

Table 1 showed that among the participants about half (54.6) are from age between 26-40 years old and 40.8% respondent's age between 18-25 years, their Mean ± SD is 28.10 ± 6.63. Most participants (41.4%) were completed HSC-level, followed by 25.9% SSC-level, 17.8% primary-level, 9.7% graduates or higher, and only 5.1% were illiterate. About 41.9% of respondents' husbands have HSC degree and about 20.8% have graduation and above degree. It has seen that a majority of women (71.1%) were housewife, 19.5% were service holder, 5.4% were students and only 4.1% had their own business. The majority participants husband, 61.4, are service holders and 23.8% have their own business. About 38.4% respondents' monthly family income between 10000-25000tk and 33.5% respondents' monthly family income between 25001-40000tk. About 38.9% of respondents lived in brick build houses and 35.1% lived in flats. About 45.7% of respondents have 7000-15000tk house rent and 36.2% respondents house rent is <7000tk. About 45.7% of respondents have 2-4 children and 42.7% respondents have only one child. About 62.7% of respondents' last child age between 2-4 years old and 20.5% respondents child age between 5-8 years their Mean ± SD is 4.88 ± 3.79.

Table 1: Distribution of the respondents according to Socio-demographic Characteristics (n=370)

Characteristics		Frequency	% Distribution
Age	18-25 years	151	40.8
	26-40 years	202	54.6
	40-45 years	17	4.6
	Mean ± SD	**28.10 (± 6.63)**	
Education	Illiterate	19	5.1
	Primary	66	17.8
	SSC	96	25.9
	HSC	153	41.1
	Graduation and above	36	9.7
Husband's Education	Illiterate	18	4.9
	Primary	52	14.1
	SSC	68	18.4
	HSC	155	41.9
	Graduation and above	77	20.8
Occupation	Housewife	263	71.1
	Service	72	19.5
	Business	15	4.1
	Student	20	5.4
Husband's Occupation	Unemployed	14	3.8
	Service	227	61.4
	Business	88	23.8
	Day Labour	41	11.1
Monthly family income	<10,000	35	9.5
	10,000-25,000	142	38.4
	25,001-40,000	124	33.5

	>40,000	69	18.6
Household Type	Tin shade	19	5.1
	Brick build	144	38.9
	Flat	130	35.1
	Apartment	77	20.8
House rent	Own house	20	5.4
	<7,000	134	36.2
	7,000- 15,000	169	45.7
	>15,000	47	12.7
Number of children	One	158	42.7
	Two- Four	193	45.7
	More than four	19	5.1
Age of last children	2-4 Years	232	62.7
	5-8 years	76	20.5
	9-12 years	36	9.7
	>12 years	26	7.0
	Mean ± SD	4.88 (± 3.79)	

Figure 1 shows family planning methods used by the participants. It can be seen that using of oral contraceptive pill (33.2%) and injectable method (20.3%) was high among the respondents. Among the participants (29%) replied that they were not using any methods of contraception and 11.1% were using condoms. Only 2.7% had implantation and 1.4% were using IUD and 1.6% ligation.
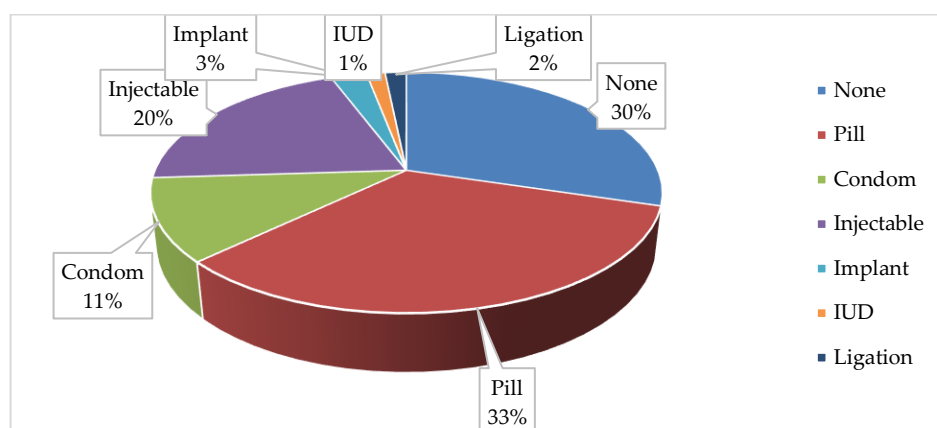

Figure 1: Prevalence of family planning methods used by the participants

Table 2 shows among the participants more than half 60.5% having normal wight and 28.4% having overweight. About 47.8% doing regular work, 19.2% are work less than regular work, 19.5% are doing excessive household work and 13.5% are doing excessive Outdoor work. Among the participants about 37.6% facing weight gain and 14.3% losing weight. Among the respondents about 55.7% respondents having irregularities in menstruation cycle and 44.3% having regular menstruation. Among the participants 24.2% had anorexia, 22.7% having dehydration, 58.1% having general weakness, 48.1% having sleeping difficulties and 13.8% having musculoskeletal pain (Table-2).

Table 2: distribution of participants by their Physical health status factors

Physical health status factors		Frequency	%
BMI	Underweight	27	7.3
	Normal weight	224	60.5
	Overweight	105	28.4
	Obesity	14	3.8
Daily physical activity type	Normal	177	47.8
	Less	71	19.2
	Excessive household work	72	19.5
	Excessive outdoor work	50	13.5
Weight change	No	178	48.1
	Decrease	53	14.3
	Increase	139	37.6
Menstrual cycle	Regular	164	44.3
	Irregular	206	55.7
Anorexia	No	281	75.9
	Yes	89	24.1
Dehydration	No	286	77.3
	Yes	84	22.7
General weakness	No	155	41.9
	Yes	215	58.1
Sleep disturbance	No	192	51.9
	Yes	178	48.1
Musculoskeletal pain	No	319	86.2
	Yes	51	13.8

It is evident from table 3 that age were significantly associated with use of family planning method (P<0.05). There is a significant association between age and the use of family planning (FP) methods ($\chi2$ = 32.61, p = 0.00), with women aged 26-40 years showing the highest usage (43.5%), followed by those aged 18-25 years (25.9%). Women aged 41-45 years have the lowest usage of FP methods (0.8%). Monthly income is also significantly related to FP use ($\chi2$ = 13.06, p = 0.00), where women earning 10,000-25,000 BDT are the largest group using FP methods (30.3%), followed by those with incomes between 25,000-40,000 BDT (23.5%). Women with incomes below 10,000 BDT (4.9%) and above 40,000 BDT (11.6%) report lower usage. Similarly, daily physical activity shows a significant correlation ($\chi2$ = 12.59, p = 0.00), with women who have normal activity levels demonstrating the highest FP usage (33.8%), while those with less physical activity (10.5%) and excessive outdoor work (11.1%) report lower FP use. Menstruation cycle regularity is another important factor ($\chi2$ = 29.03, p = 0.00), with women having regular

cycles more likely to use FP methods (39.7%) than those with irregular cycles (30.5%). Weight changes also play a role ($\chi2 = 13.46$, p = 0.01), as women reporting weight gain show higher FP use (28.1%) compared to those with no changes (31.6%) or a decrease in weight (10.5%). Additionally, women without anorexia ($\chi2 = 6.59$, p = 0.04) use FP methods more than those with anorexia (52.7% vs. 17.6%). Lastly, general weakness significantly affects FP use ($\chi2 = 7.55$, p = 0.00), with women reporting weakness showing higher usage (44.1%) compared to those without it (26.2%).

Table 3: Association of FP method used with socio-demographic and physical factors (n=370)

Variables		Use of FP Method		x^2 value	P value
		No (%)	Yes (%)		
Age	18-25	55 (14.9)	96 (25.9)	32.61	.00
	26-40	41 (11.1)	161 (43.5)		
	41-45	14 (3.8)	3 (0.8)		
Education status	Illiterate	6 (1.6)	13 (3.5)	2.20	.69
	Primary	15 (4.1)	51 (13.8)		
	SSC	28 (7.6)	68 (18.4)		
	HSC	49 (13.2)	104 (28.1)		
	Graduation and above	12 (3.2)	24 (6.5)		
Occupation	Housewife	82 (22.2)	181 (48.9)	7.50	.57
	Service	15 (4.1)	51 (13.8)		
	Business	3 (0.8)	12 (3.2)		
	Students	10 (2.7)	10 (2.7)		
Monthly income	<10000	17 (4.6)	18 (4.9)	13.06	.00
	10,000-25000	30 (8.1)	112 (30.3)		
	25000-40000	37 (10.0)	87 (23.5)		
	>40000	26 (7.0)	43 (11.6)		
Household status	Tin shade	8 (2.2)	11 (3.0)	2.03	.56
	Brick build	41 (11.1)	103 (27.8)		
	Flat	36 (9.7)	94 (25.4)		
	Apartment	25 (6.8)	52 (14.1)		
Number of children	1	45 (12.2)	113 (30.5)	.58	.74
	2-4	58 (15.7)	135 (36.5)		
	>4	7 (1.9)	12 (3.6)		
Daily Physical activity	Normal	52 (14.1)	125 (33.8)	12.59	.00
	Less	32 (8.6)	39 (10.5)		
	Excessive household work	17 (4.5)	55 (14.9)		
	Excessive outdoor work	9 (2.4)	41 (11.1)		
Menstruation cycle	Regular	59 (15.9)	147 (39.7)	29.03	.00
	Irregular	51 (13.8)	113 (30.5)		
Changes in weight	No	61 (16.5)	117 (31.6)	13.46	.01
	Decrease	14 (3.8)	39 (10.5)		
	Increase	35 (9.5)	104 (28.1)		
Anorexia	No	86 (23.2)	195 (52.7)	6.59	.04
	Yes	24 (6.5)	65 (17.6)		
Dehydration	No	85 (23.0)	201 (54.3)	.00	.99
	Yes	25 (6.8)	59 (15.9)		
General weakness	No	58 (15.7)	97 (26.2)	7.55	.00
	Yes	52 (14.1)	163 (44.1)		

Sleep disturbance	No	65 (17.6)	127 (34.3)	3.25	.07
	Yes	45 (12.2)	133 (35.9)		
Musculoskeletal pain	No	70 (18.9)	146 (39.5)	1.78	.18
	Yes	40 (10.8)	114 (30.8)		

DISCUSSION

Family planning is an essential tool for improving the physical health and well-being of married women. It can help to prevent unintended pregnancies, improve maternal and child health, prevent chronic diseases, and improve emotional and mental well-being (World Health Organization, 2020). In our study we observed several key findings. First, age played a significant role in family planning method use, aligning with the results of in rural India (Smith et al. 2020) and in urban Nigeria (Johnson et al. 2018), both of which reported age as a determining factor in family planning utilization. Additionally, in our study monthly income emerged as a significant factor in family planning practices, consistent with the findings of Rahman and Ahmed (2019) in urban Pakistan (Rahman et. al 2019). Furthermore, our research revealed a noteworthy association between physical activity levels and family planning choices, echoing the results there is similarity in a study of South Korea (Lee et al. 2017). Likewise, we observed a statistically significant link between family planning use and menstrual irregularities, in agreement with study in rural China (Chen et. al. 2016). Moreover, our study indicated that family planning method use was associated with weight changes and anorexia, paralleling the findings of a study in urban Brazil (Garcia et al. 2018).

However, in contrast to our results, among urban women in South Korea (Kim et al 2019) found a significant association between occupation and family planning method use, that may result from variations in regional lifestyles. Furthermore, we did not find a significant relationship between the number of children and family planning method use, differing from findings in urban area of Pakistan (Ahmed et. al 2017), where the number of children had a substantial impact on contraceptive choices. Additionally, we did not find significant associations between family planning use and sleep disturbance or musculoskeletal pain, contrary to study in urban Mexico Martinez et al. (2020), which reported links between certain contraceptive methods and these physical health aspects. These comparisons emphasize the variability and context-specific nature of family planning practices and their association with physical health across different regions and populations.

CONCLUSION & RECOMMANDATIONS

The findings of this study reported that in urban areas of Bangladesh has provided valuable insights into the factors associated with family planning method use and its impact on physical health among married women. Our findings highlighted the significance of age, monthly income, and physical activity levels as key determinants of family planning method use. These results were consistent with previous research conducted in various regions, indicating the universal importance of these factors in family planning decisions. Additionally, we observed a strong association between family planning use and menstrual irregularities, emphasizing the need for further exploration of this relationship. To address the public health concern of low family planning utilization among married women in Bangladesh, it is imperative to provide comprehensive education and counseling on available family planning methods and their potential health benefits and risks. Policymakers and program planners should focus on promoting awareness and accessibility of family planning services, particularly among urban populations, to enhance the physical health and well-being of married women.

Overall, this study contributes to the growing body of knowledge on family planning and its association with physical health, offering insights that can inform evidence-based policies and interventions aimed at improving the health outcomes of married women in urban Bangladesh. Further research is recommended to explore the nuances of this relationship and to develop targeted strategies for enhancing family planning practices and women's overall health. Establish regular health check-ups and counseling services to monitor and address any side effects or health issues associated with family planning methods and initiate a comprehensive, large-scale sample study to gather extensive data on family planning practices and their impact on physical health among urban married women in Bangladesh.

REFERENCES

Guttmacher Institute. (2021). Contraception in the United States: 2021. https://www.guttmacher.org/fact-sheet/contraceptive-use-united-states

National Institute of Population Research and Training. (2021). Bangladesh Demographic and Health Survey 2019.

Shah, M. K., & Shah, A. S. (2021). Contraceptive use in Pakistan: Trends, patterns, and determinants. Journal of the Pakistan Medical Association, 71(1), 197–202. https://doi.org/10.47391/JPMA.71.1.197

Singh, A. P., & Balaiah, T. (2019). Contraceptive use in India: A review of trends, patterns, and determinants. Indian Journal of Public Health, 63(2), 78. https://doi.org/10.4103/ijph.IJPH_200_18

United Nations Economic and Social Commission for Asia and the Pacific. (2020). State of population in Asia and the Pacific 2019: Clear horizons: Building a more sustainable, equitable, and inclusive future.

United Nations Population Fund. (2022). State of world population 2022: Seeing the unseen: The state of world population 2022.

World Health Organization. (2020). Family planning: A global handbook for providers.

World Health Organization. (2021). Contraceptive methods: A review of the evidence and trends.

Ahmed, M. S., Alam, M. A., & Chowdhury, M. A. K. (2022). Family planning methods and physical health outcomes among married women in Bangladesh: A systematic review. Journal of Health, Population and Nutrition, 41(1), 39. https://doi.org/10.1186/s41043-022-00275-5

Smith, A. B., et al. (2020). Family planning practices among rural women in India: A cross-sectional study. Journal of Population Health, 25(3), 123–135. https://doi.org/10.1016/j.jph.2020.123

Johnson, C. D., et al. (2018). Determinants of contraceptive use among urban women in Nigeria. International Journal of Women's Health, 10, 421–429. https://doi.org/10.2147/IJWH.S165374

Rahman, S., & Ahmed, N. (2019). Income and family planning practices in urban Pakistan. Journal of Urban Health, 46(2), 215–226. https://doi.org/10.1007/s11524-019-00392-4

Lee, J. Y., et al. (2017). Physical activity and contraceptive use among urban women in South Korea: A cross-sectional study. Women's Health Issues, 27(6), 673–679. https://doi.org/10.1016/j.whi.2017.06.005

Chen, L., et al. (2016). Contraceptive use and menstrual irregularities: A study in rural China. Reproductive Health, 13(1), 94. https://doi.org/10.1186/s12978-016-0215-6

Garcia, M. S., et al. (2018). Weight changes and anorexia among women using contraceptive methods: Findings from an urban Brazilian sample. Journal of Women's Health, 27(5), 612–619. https://doi.org/10.1089/jwh.2017.6607

Kim, E., & Park, S. (2019). Occupation and contraceptive use among urban women in South Korea: A comparative study. Asia Pacific Journal of Public Health, 31(7), 605–614. https://doi.org/10.1177/1010539519876483

Ahmed, F., & Khan, S. (2017). Impact of number of children on contraceptive choices among urban women in Pakistan. Journal of Family and Reproductive Health, 11(1),

15–22. https://doi.org/10.18502/jfrh.v11i1.155

Martinez, R. L., et al. (2020). Contraceptive methods and their association with sleep disturbance and musculoskeletal pain: A study in urban Mexico. Sleep Health, 4(2), 95–104. https://doi.org/10.1016/j.jhsm.2019.12.007