Original Article

PREVALENCE AND FACTORS ASSOCIATED WITH CONTRACEPTIVE USE AMONG MARRIED FEMALE GARMENT WORKERS IN DHAKA, BANGLADESH

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ABSTRACT

Background: Contraceptive use is an effective measure for fertility control and unwanted pregnancy reduction, thus improving the reproductive health of women. This study was conducted among married reproductive-aged female garment workers to assess the prevalence of contraceptive use among them and the factors associated with it.

Method: This cross-sectional study was conducted in four randomly selected garment factories in Dhaka city, from March to April, 2020. A structured questionnaire was used to collect data from 277 participants selected by simple random sampling method. Only married and within reproductive age female garment workers were included. Pregnant women, women who were trying to conceive at the time of the interview, who were not sexually active: widows, separated from husband or husband living away for more than 1 year, and women with a history of Hysterectomy were excluded from this study.

Result: Descriptive statistics were described for the dependent and independent variables. Chi-square test and logistic regression were used to find out the association between dependent and independent variables. The results showed the prevalence of contraceptive use was 74.7% among married reproductive-aged female garment workers in Dhaka city, Bangladesh. This study found a significant association between age, education, duration of marriage, number of living children, desire for additional children, Knowledge on contraception, reproductive autonomy, husband's education level, husbands' participation, family income, Influence of family member, availability and accessibility to Reproductive Healthcare facility, workplace rules and regulation, social belief, access to mass media, perception on national policy and contraceptive use (p-value < 0.05).

Conclusion: This study show, that the prevalence of contraceptive use among the target group can be increased by improving knowledge on contraception, enhancing reproductive autonomy, and utilizing mass media effectively.

JOPSOM 2025; 44(2): 48-61
DOI: https://doi.org/10.3329/jopsom.v44i2. 89224

Keywords: Contraceptive use, married women, reproductive age, garment workers, unmet need, cross-sectional study, Bangladesh.

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INTRODUCTION

A high population growth rate is one of the leading problems experienced by the developing world, as it is responsible for increasing the level of poverty and decreasing life expectancy. Bangladesh is the 8th most populous country in the world with a total population of more than 170 million. The contraceptive prevalence rate is 64% according to BDHS 2022, which means 38% of females of the reproductive age group do not use any method of contraception (1). Unwanted pregnancy and teenage pregnancy can lead to maternal mortality, which is a consequence of not using contraception. In Bangladesh, 24% of females start childbearing in their teenage years (15–19 years) (1). Unintended pregnancy is 25.4% to 35.8% among different groups

of women in Bangladesh. Bangladesh has a higher maternal mortality ratio (MMR), which is 172/100,000 live births at present (2). Contraception can be an effective medical intervention for reducing teenage pregnancy, and unintended pregnancy, thus reducing MMR which helps improve female reproductive health and maternal and child health. One of the 4th HPNSP's (Health, Population and Nutrition Sector Program) objectives regarding teenage pregnancy is to reduce the number of childbearing teenagers to 25% by 2022. The target of SDG regarding MMR is to reduce the maternal mortality ratio to less than 70/100,000 live births. To meet all these targets, one common possible approach can be to increase the use of contraceptive methods. One of the 4th HPNSP's (Health, Population and Nutrition Sector Program) objectives regarding teenage pregnancy is to reduce the number of childbearing teenagers to 25% by 2022 (1). The target of SDG regarding MMR is to reduce the maternal mortality ratio to less than 70/100,000 live births (2). To meet all these targets, one common possible approach can be to increase the use of contraceptive methods. According to the National Institute of Population Research and Training, this country has made substantial progress in contraceptive use from 8% in 1975 to 62% in 2018 among married women of reproductive age (3). But still, the issue demands importance.

At present, Bangladesh is moving fast towards an industrialized economy in which the garment sector is playing an important role occupying a unique position in overall economic development. This industry has become the largest export-earning source of Bangladesh as well as it is considered the backbone of the country's economy. Over 4.2 million workers from lower socioeconomic conditions and having no or minimal formal education are employed in more than 4500 garment factories. Of these large numbers of workers, 80% are female (4). Although we do not have an exact record regarding the age group and marital status of female garment workers, but in Bangladesh, 55.1% of females belong to the reproductive age group, and 63.6% are married among a total 82.2 million female population (5). The workers in this sector have very low incomes which make it difficult to maintain minimum health care, medical services, hygienic accommodation and other basic needs. As a result, they have to suffer from various health-related problems especially women who are vulnerable where married female workers are very much prone to health problems due to practicing wrong as well as non-practicing family planning methods (6). The rate of miscarriage among garment workers is very high and most of them experience abortion more than once. Only 31% of female reproductive-aged workers are using contraception (7). Most of the previous studies have revealed an association of different factors with contraceptive use among married women of reproductive age in different settings (8, 9), but little attention is given to the contraceptive use pattern of this large vulnerable female population working in garment factories.

As individual behavior both affects and is affected by multiple levels of influence through interacting with physical as well as socio-cultural environments, the Ecological model can explain different factors that affect contraceptive use among the target group of this study (10). A study of contraceptive use patterns and factors affecting the use of contraception among married reproductive-aged female garment workers is needed to improve their reproductive health, control population, as well as economic development of Bangladesh.

This study aimed to assess the prevalence of contraceptive use among married reproductive-aged female garment workers and the association of factors such as intrapersonal, interpersonal, institutional or organizational factors, community factors, and public policy with it.

METHODS

It was a cross-sectional study on married reproductive-aged female garment workers. This study was based on the ecological model. Intrapersonal factors such as age, education, religion, duration of marriage, number of living children, desire for additional children, son preference, knowledge on contraception, and reproductive autonomy, interpersonal factors such as husband's education level, husband's occupation, husband's participation, family income, influence of family members, institutional or organizational factors like availability and accessibility to reproductive healthcare facility, workplace rules and regulation, community factors such as social belief, access to mass media, public policy (perception on national policy) was described for association with contraceptive use in this study.

Sample size calculation: The Target population of this study was married, reproductive-aged female garment workers working in a garment factory in Dhaka city. According to the data of the Bangladesh Health and Demographic Survey 2017-2018, overall, 62% of the currently married women aged 15–49 years are currently using any method of

https://doi.org/10.3329/jopsom.v44i2. 89224

contraception. This prevalence was used to calculate the sample size in this study.

The following formula of sample size calculation was used:

$$n = \frac{z^2 P (1-P)}{d^2}$$

Where,

n = estimated sample size

z = value from normal distribution at 95 % confidence interval= 1.96

d = error = 0.06

P = the proportion in the population possessing the characteristic of interest = 62% (CPR is 62%, Bangladesh Health and Demographic Survey 2017-2018)

$$n = \frac{(1.96)^2 (0.62)(1-0.62)}{(0.06)^2}$$

= 251

To prevent attrition, 10% minimal sample size was added to sample size and thus total sample size of the study was 276.1 ~ 277.

Study population was married, reproductive-aged female garment workers.

Inclusion criteria were: a. Married women, b. Reproductive aged (15 to 49 years old) c. Working in a garment factory, d. Willing to participate.

Exclusion criteria were: a. Pregnant women, b. Women who are trying to conceive at the time of the interview, c. Who are not sexually active: widow, separated from husband, Husband living away more than 1 year, d. Women with a history of Hysterectomy e. Women who are not present at the day of data collection.

Stratified random sampling was done to select the respondents among the study population and followed by three steps-

Step 1: By studying the available list of garment factories in Dhaka city, it was seen that garment factories are situated randomly in and around Dhaka city (11). They were located in different areas in the central zone of Dhaka city (Mirpur, Uttara, Pallabi, Rampura, Double mooring) as well as in the peripheral zone of Dhaka city (Savar, Ashulia, Gazipur). These areas with different names were very small in size and located adjacent to each other. According to the location of garment factories, for this study purpose, they were categorized into two groups: a) factories located in the Central zone and b) factories located in the peripheral zone. There were 890 factories in the central zone and 869 factories in peripheral zone (12).

Step 2: 2 areas from each zone were selected by simple random sampling. Total 4 areas were there- area 1, area 2, area 3, area 4.

Step 3: 1 garment factory was selected from each area by simple random sampling. Total 4 garment factories were there- factory 1, factory 2, factory 3, factory 4.

Step 4: Participants from each factory were selected by simple random sampling method.

Sample size in each factory was calculated according to this formula: $n_i = n \times N_i / N$

Where, n_i = Number of participants taken from one garment factory, i= 1, 2, 3, 4.

n = Estimated sample size (n= 277)

N_i = Total number of female workers in that garment factory

N = Total number of female workers in the selected 4 garment factories.

The total number of female married reproductive-aged workers in the randomly selected 4 garment factories were 80, 152, 110 and 93, respectively. Following the formula, 51, 97, 70 and 59 participants were selected from the four garment factories, respectively, by simple random sampling.

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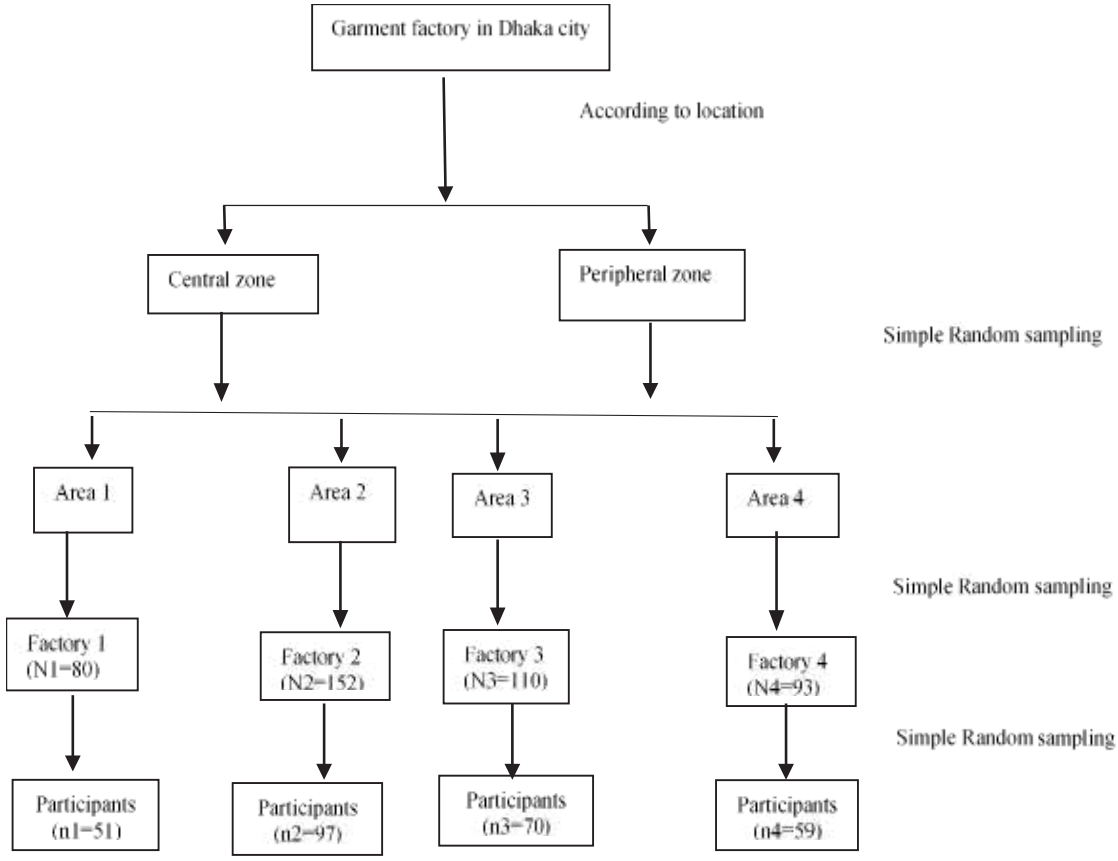

Figure: Sampling procedure

Data collection was conducted within a time frame. It was started in March, 2020 and ended in April, 2020. To collect data, two research assistants were assigned and whole methodology was explained to them. Before data collection, the whole procedure, aim of this study, detailed questionnaire were explained to the authorities of that four selected garment factories and they were requested for approval to conduct this study on respective factory. Before interview, every part of questionnaire was explained to participants and informed consent was taken from every participant by assistants. Interview lasted about 20 minutes. A structured questionnaire was used having 9 parts with a total of 89 questions related to intra-personal factors including age, education, religion, duration of marriage, number of living children, desire of additional children, son preference, knowledge on contraception, and reproductive autonomy. About reproductive characteristics, age at marriage, age at 1st pregnancy, number of conceptions, number of unwanted pregnancies, number of abortions, taking reproductive healthcare services etc. were included. Knowledge scores were categorized using a modified Bloom's cut-off point commonly used in KAP studies: 1) Well knowledge: more than or equal to 80% of the total score, 2) Average knowledge: 60-79% of total score, 3) Poor knowledge: less than 60 % of the total score (13). Regarding reproductive autonomy, questions about decision-making about methods to be used to prevent pregnancy, about planning for a baby, decisions about unplanned baby were asked and scoring was done by following 'Development and Validation of a Reproductive Autonomy Scale' by Ushma D. Upadhyay (14). During Data analysis, Mean, median, standard deviation, minimum, maximum, and percentage values were described for the dependent and independent variables for descriptive statistics.

Regarding Inferential statistics, the chi-square test and logistic regression were used to find out the association between dependent and independent variables with a significance level of 5% by using SPSS (Statistical Package for Social Science) version 18.

Ethical implication: Before starting the study, ethical clearance was taken from the Ethical Review Committee for Human Research, Faculty of Public Health, Mahidol University (COA. No. MUPH 2020-038, Protocol No. 32/2563). Written permissions were taken from the administrative authority of selected garment factories. Throughout the study,

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neither an invasive procedure nor any intervention was done. Before the initiation of the interview, a brief introduction about aims, objectives and way of interviewing was described to the participant. Also, the right to participate or refuse was given to them. Their confidentiality was assured. After taking informed written consent the interview was started and proper privacy was maintained.

RESULTS

Descriptive statistics

The results showed the age distribution of the total participants (n=277) where 39% of the participants were 26 to 30 years old and 67.5% of participants got married at 17 to 19 years old and 12.6% got married at less than 16 years old. This data showed about 80% of participants got married at less than 20 years of age while the minimum age of being married was 15 years old. More than 61% of participant became pregnant at 17 to 19 years of age while the minimum age of being pregnant was 16 years old. The study revealed that more than 49% participants had primary level education and more than 23% below primary level, which reveals very low level of education among female garment workers. Among the participants, more than 90% are Muslims and remaining are from religion other than Muslim. 45% of the participants are married for 6 to 10 years, with mean 10.44 years of married life. Among participants, 42.3% had one child, 37.9% had two, 16.2% had three and 3.6% had four children. Regarding sex of the child, 34.3% had only male child, 20.6% had only female child and 45.1% had both male and female child. Among participants, 35% had desire for additional children, among them (n=97) and 37% had desire for additional child due to having son as further child which is son preference. This study revealed, 27.4% participant had conceived for once, 38.3% for twice, 16.6% for thrice, 12.3% for four times and 5.4% for more than four times. About 32% had history of unwanted pregnancy where more than 26% had experience of unwanted pregnancy at least once. 45% of the participant had history of abortion and among them (n=125) more than 86% experience of abortion at least once in life. Also the data revealed that 32.4% of the total abortion cases occurred intentionally.

Table 1: Frequencies and percent distribution of general characteristics of the participants (n=277)

Variables	Frequencies	Percentage (%)
Age group of the participants		
≤ 20 years	3	1.1
21 to 25 years	79	28.5
26 to 30 years	108	39.0
31 to 35 years	61	22.0
36 to 40 years	22	7.9
41 to 45 years	3	1.1
≥46 years	1	0.4
Mean:28.56 ± S.D. 4.858, Minimum:17, Maximum:46		
Participants age at marriage		
≤16 years	35	12.6
17 to 19 years	187	67.5
20 to 22 years	50	18.1
23 to 25 years	5	1.8
Mean 18.08 ± S.D. 1.592, Minimum:15, Maximum :25		
Participants age at 1st pregnancy		
≤16 years	4	1.4
17 to 19 years	170	61.4
20 to 22 years	90	32.5
23 to 25 years	11	4.0
≥26	2	0.7
Mean 19.25 ± S.D. 1.826, Minimum:16, Maximum:29		
Participants education level		
Less than primary	65	23.5
Primary	137	49.4
Secondary	74	26.7
Higher secondary	1	0.4

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Religion		
Muslim	250	90.3
Other than Muslim	27	9.7
Duration of marriage		
Less than 5 years	37	13.4
6 to 10 years	126	45.5
11 to 15 years	66	23.8
More than 15 years	48	17.3
Mean 10.44 ± S.D. 4.970, Minimum:2, Maximum:30		
Number of children:		
One	117	42.3
Two	105	37.9
Three	45	16.2
Four	10	3.6
Gender of existing children:		
Male	95	34.3
Female	57	20.6
Both	125	45.1
Desire for additional children:		
Yes	97	35.0
No	180	65.0
Cause of desire of more child (n=97):		
To have son	36	37.1
To have daughter	14	14.4
To have desired no. of child	47	48.5
Desire for additional child due to		
Son preference	36	37.1
Other than son preference	61	62.9
Number of conceptions:		
One	76	27.4
Two	106	38.3
Three	46	16.6
Four	34	12.3
More than four	15	5.4
Experience of unwanted pregnancy:		
Yes	88	31.8
No	189	68.2
Number of unwanted pregnancies (n=88):		
One	73	26.3
Two	14	5.1
Three	1	0.4
Experience of abortion in participants		
Yes	125	45.1
No	152	54.9
Number of abortions in participants (n=125):		
Once	108	86.4
Twice	17	13.6
Mode of abortion (among total 142 abortion cases):		
Naturally occurred	96	67.6
Done intentionally	46	32.4

The level of knowledge on contraception was measured by the cumulative score of the participants answer of 12 items about information on contraceptive use. The minimum score among the participants was 1, maximum was 9 with a mean score of 5.556.

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Table 2: Frequencies and percent distribution of participants according to level of knowledge (n=277)

Knowledge level	Frequency	Percent
Poor Knowledge (<7)	190	68.6
Average Knowledge (7 -9)	87	31.4
Well Knowledge (≥10)	0	0

Mean 5.55 ± S.D. 1.78, Minimum: 1, Maximum: 9

More than 80% of the participants knew that using contraception can prevent unplanned pregnancy while 76.9% knew about minor side effects of oral pill. However, they had poor knowledge on IUD, sterilization and calendar method of contraception.

Table 3: Frequencies and percent distribution of participants by correct score of knowledge items(n=277)

Statement	Correct answer	
	Frequency	Percentage
• Using contraceptive method can prevent unplanned pregnancy	224	80.9
• Oral pill has minor side effects (for example, Nausea, vomiting, dizziness) for some women	213	76.9
• Birth spacing is important for mothers' health	209	75.5
• Injection is taken once in three months	201	72.6
• If you forget to take oral pills, you should continue to take according to instruction of oral pill pack.	192	69.3
• Implant can prevent pregnancy up to 3 years	151	54.5
• Women can conceive after IUD removal	110	39.7
• Breast feeding can act as contraception	87	31.4
• Condom prevents pregnancy and STD	71	25.6
• IUD can cause heavy menstrual bleeding for some months after insertion	42	15.2
• After completing family, sterilization can be used	35	12.6
• To maintain calendar method, it is needed to have regular menstrual cycle	4	1.4

Regarding the level of reproductive autonomy, the minimum score among the participants was -9, maximum was 30 with a mean score of 16.0469. According to the result, 44% of the participants had poor autonomy. 17% and 39% of the participants had average and well autonomy respectively.

Table 4: Frequencies and percent distribution of Reproductive Autonomy level of participants (n=277)

Level of Reproductive Autonomy	Frequency	Percent
Poor (≤16)	122	44.0
Average (17-18)	47	17.0
Well (>18)	108	39.0

Mean 16.04 ± S.D. 6.92, Minimum: -9, Maximum:30

Interpersonal factors showed the occupation of the participants husband. These are 1.8%, 19.1%, 22.4%, 24.5%, 3.6% and 28.6% for Unemployed, Factory worker, Driver, Business, Govt. job and Others categories respectively. For the education level of participants husband, the data revealed that more than half about 54.2% of them had education up to a secondary level. In case of less than primary, primary and higher secondary level the percentage is 2.2%, 20.9% and 22.7% respectively. Among the

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participants husbands, more than 75% of husbands participated in decision making about using contraception and 24.9% did not. On the other hand, 82.3% of participants husbands participated in decision making about the number of children in the family whereas the remaining 17.7% did not. Regarding total family income, 48.4% of participants had a total family income of more than 26,000 BDT. 20.9% and 30.7% of participants had a total family income of less than 20,000 and in the range of 21,000 to 25,000 BDT. The mean of their family income was 24129.96 BDT where the minimum was 14000 BDT and the maximum was 30000 BDT. Among the participants 70.8 % thought that their total family income was adequate, whereas 19.9% and 9.3% of participants total family income was inadequate without debt and inadequate with debt respectively. It was found that 22% of the participants had the influence of family members on the decision making of having a baby in their life and 78% had no such influence.

Analysis of the **institutional or organizational factors** showed that more than half of the participants went to government hospitals for reproductive healthcare services. Then 31% of participants went to different healthcare centers affiliated with NGO. 12.3%, 2.2%, and 0.7% of participants usually went to drug stores, private clinics and private hospitals respectively. More than 79% of participants were satisfied with the service of the healthcare center. Regarding mode of transport, 47.3% used tricycle rickshaw, 40.3% went by walking, remaining 6.1%, 5.1%, and 1.1% went by bus, car and motorcycle respectively. Among all participants, 88.4% usually took less than 30 minutes to go to the reproductive healthcare center while the remaining took more than 30 minutes. Here, the minimum was 5 minutes, Maximum was 60 minutes with a mean of 22.22 minutes. It was found convenient to go to a healthcare center for reproductive healthcare service by 67.1% of participants, while the remaining found it inconvenient. It was found that 57.8% of participants usually had to wait less than 30 minutes at the reproductive healthcare center for required service, while the remaining had to wait more than 30 minutes. Here, the minimum was 1 minute, Maximum was 60 minutes with a mean of 31.84 minutes. More than half, 53.8% of the participants said, there were available free healthcare facilities in government hospitals as well as in some private healthcare facilities, while the remaining said that free service was not available. Among those, who said free service was available, 22.1% found it expensive even after being free of cost due to transportation and medicine expenses. Only 16.6% of the participants had home visits of family planning workers but most of them were before more than six months. It is revealed by 25.3 % of participants that there was rule in the factory that goes against pregnancy. Most of them said that they had to discontinue jobs if pregnant. Others said about the discontinuation of the job if sick due to pregnancy, absence of leave during pregnancy, lack of rest time for pregnant ladies and pregnant women are not eligible to be recruited for the job.

In **community factors,** participants showed a high level of social belief on contraception where 82.3% had low belief against contraception with a minimum score of 13.00, maximum score of 37.00 and mean score of 23.9314. Among all participants 13.4% had an average belief against contraception and 4.3% had a high belief against contraception. The study showed participants perceptions of different social beliefs against contraception. 41.2% of participants disagreed with the statement that contraception is against nature while 25.3% agreed. Similarly, 46.6% of participants disagreed with the statement that Contraception can make one sterile while 29.5% agreed. Moreover, 36.5% of participants agreed with the statement that Contraception can cause serious disease while 53.1% disagreed. 66.1% of participants disagreed with the statement that More children can make the family stronger while 19.8% agreed. For the statement Contraception is forbidden in Islam, 62.1% disagreed. Similarly, the majority group disagreed with the statement that the Pill can cause fetal abnormality, long-acting methods for females can cause harm to their husbands and Contraception can weaken the bond between spouses. Different opinions were found on the statement that Contraception causes weight gain and Pill can be accumulated within the body, where the majority agreed with that statement with 67.5% and 52.7% respectively. The study also showed more than 76% of the participants had access to mass media. Among them 74% had access to Television and only 24.1% of them had any information regarding contraception. When asked further, most of them got information about where to get reproductive healthcare services and then the name of NGO they had known from mass media.

Among participants 67.9 % had a low perception of **national policy** where the minimum score was 5.00 and the maximum score was 10.00 with a mean score of 6.94. 67.9% of the participants knew that free healthcare services were available in all government or some private hospitals, while 32,1% did not know about this free service. On the other hand, only 22,4% of participants knew that there was 24-hour available service in all government healthcare

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facilities, while the majority did not know about that. Similarly, only 15.9% of participants knew about national policy. Regarding the popular slogan of national policy, 52.7% knew about it, among them three fifth (3/5) followed the slogan of national policy.

Collected data revealed that among the participants, the prevalence of contraceptive use was 74.7%, while 25.3% of participants did not use any contraceptive method currently. Among the participants who were not using contraceptive methods, 54.3% had done it willingly, 35.7% due to side effects and 10% due to husbands' demand. Among current contraceptive users, 49.3% were using oral pills. After that Depo injection, Copper T, Condom, Implant and Sterilization were used by 19.3%, 16.9%, 6.8%, 6.3% and 1.4% of participants respectively. The most preferred method of contraception among participants was oral pill (36.7%) and after that Condoms, Depo injection, Copper T, Implant and Natural method came with 20.8%, 19.8%, 14.5%, 6.3% and 1.9% respectively. 71.8% of participants had ever changed contraceptive methods and among them 43.7% had changed due to side effects.

Inferential statistics

The **age** of the participants had a significant association with contraceptive use (p-value <0.001). Participants aged 30 years or below were 5 times (OR=4.948, 95% CI: 2.777 - 8.816) more likely to use contraception than those aged above 30 years. 84.7% of the participants of the age group 30 years or below used contraceptives. Participants **age at marriage** had a significant association with contraceptive use (p-value 0.002). Participants who got married at 19 years or above age were 2.7 times (OR=2.667, 95% CI: 1.4 - 5.120) more likely to use contraception than those who got married at 18 years or below age. More than 85% of the participants of the age group 19 years or above had found using contraceptives. Participants **age at 1st pregnancy** had a significant association with contraceptive use (p-value 0.001). Participants who had 1st pregnancy at 20 years or above age were 3 times (OR=3.017, 95% CI: 1.580 - 5.762) more likely to use contraception than those who had 1st pregnancy at 19 years or below age. Contraceptive was used by 86.4% of participants among those who had 1st pregnancy at 20 years or more age. Participants **level of education** was found significantly associated with contraceptive use (p-value 0.005). Participants with an education level more than primary were 3 times (OR=2.746, 95% CI: 1.322 - 5.705) more likely to use contraception than those with an education level primary or less. Contraceptive was used by 86.7% of participants among those whose education level was more than primary. The **duration of marriage** of the participants had a significant association with contraceptive use (p-value <0.001). Participants with duration of marriage less than 10 years were 11 times (OR=10.690, 95% CI: 4.869 - 23.467) more likely to use contraception than those with duration of marriage 10 years or more. Among participants with a duration of marriage less than 10 years, 93.8% were using contraceptives. Several **living children** had a significant association with contraceptive use (p-value <0.001). Participants with two or fewer children were 6 times (OR=6.061, 95% CI: 3.211 - 11.439) more likely to use contraception than those with more than two children. Among participants with two or fewer children 82.4% were using the contraceptive method. **Experience of abortion** had a significant association with contraceptive use (p-value <0.001). Participants without experience of abortion were 3 times (OR=3.105, 95% CI: 1.760 – 5.478) more likely to use contraception than those with experience of abortion. Among participants without experience of abortion, 84.2% were using contraceptive methods. The **desire for additional children** was also found significantly associated with contraceptive use (p-value <0.001). Participants who want more children in the future after at least one year were 7 times (OR=6.923, 95% CI: 3.025 - 15.842) more likely to use contraception than those who don't want more children in the future. Among participants who want more children, 92.8% were using contraceptive methods. **Experience of unwanted pregnancy** had a significant association with contraceptive use (p-value <0.001). Participants without experience of unwanted pregnancy were 4 times (OR=4.057, 95% CI: 2.294 – 7.175) more likely to use contraception than those with experience of unwanted pregnancy. Among participants without experience of unwanted pregnancy, 83.6% were using contraceptive methods. The desire for additional child due to **son preference** and participants' **religion** were found not significantly associated with contraceptive use. Significant association between **level of knowledge** on contraception of the participants and contraceptive use is shown in Table 2.

https://doi.org/10.3329/jopsom.v44i2. 89224

Table 5: Association between level of knowledge on contraception of the participants and contraceptive use (n=277)

Variables	Contraceptive use		OR	95% CI	p-value
	Yes n (%)	No n (%)			
Knowledge on Contraception					
Average Knowledge	81 (93.1%)	6 (6.9%)	6.857	2.838-16.567	<0.001
Poor Knowledge	126 (66.3%)	64 (33.7%)	1		

Significant p-value <0.05

Significant association between **level of reproductive autonomy** of the participants and contraceptive use is shown in table 3.

Table 6: Association between level of reproductive autonomy of the participants and contraceptive use (n=277)

Variables	Contraceptive use		OR	95% CI	p-value
	Yes n (%)	No n (%)			
Reproductive Autonomy					
Well	95 (88%)	13 (12%)	4.217	2.150-8.484	0.164
Average	35 (74.5%)	12 (25.5%)	1.705	0.804-3.615	<0.001
Poor	77 (63.1%)	45 (36.9%)	1		

Significant p-value <0.05

Participants' **husband's level of education** was found significantly associated with contraceptive use (p-value 0.001). Participants with husbands' education level more than primary were 2 times (OR=2.628, 95% CI: 1.444 - 4.784) more likely to use contraception than those with husband's education level primary or less. Contraceptive was used by 79.3% of participants among those whose husband's education level was more than primary. Regarding the **husband's occupation**, there was no significant association between participants' husband's occupation and contraception use (p-value 0.851). Participants' **husband's participation in contraceptive use** was found significantly associated with contraceptive use (p-value <0.001). Participants with husbands participating in decision making regarding contraceptive use were 5 times (OR=5.088, 95% CI: 2.805 - 9.230) more likely to use contraception than those with non-participating husbands. The contraceptive was used by 83.2% of participants among those with husbands participating in decision making regarding contraceptive use. Similarly, participants' **husband's participation in decision making** about several children in the family was found significantly associated with contraceptive use (p-value <0.001). Participants with husbands participating in decision making regarding the number of children in the family were 6 times (OR=5.905, 95% CI: 3.060 - 11.395) more likely to use contraception than those with non-participating husbands. The contraceptive was used by 81.6% of participants among those with husbands participating in decision making regarding the number of children in the family.

Total **family income** was not significantly associated with contraceptive use (p-value 0.907). However, participants' perception of the adequacy of family income had a significant association with it (p-value <0.001). Participants with adequate family income were 5 times (OR=5.398, 95% CI: 3.011 - 9.679) more likely to use contraception than those with inadequate income. Among those with adequate family income 84.7% of participants used contraception. The **influence of family members** on decision making about having a baby was found significantly associated with contraceptive use (p-value 0.005). Participants with such influence were 3 times (OR=3.176, 95% CI: 1.371 - 7.360) more likely to use contraception than those without such influence. The contraceptive was used by 88.5% of participants among those with the influence of family on decision making about having a baby. **Availability of free healthcare services** was found significantly associated with contraceptive use (p-value 0.197).

Expenses of transportation and medicine while healthcare service free (n=149) were found significantly associated with contraceptive use (p-value <0.001). Participants who found it not expensive were 12 times (OR=12.18, 95% CI: 4.92 – 30.15) more likely to use contraception than those

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who found it expensive. Contraceptive was used by 88.8% of participants among those who found it not expensive. The time required to go to the healthcare center was found significantly associated with contraceptive use (p-value <0.001). Participants taking less than 30 minutes were 5 times (OR=5.560, 95% CI: 2.574 - 12.007) more likely to use contraception than those taking more than 30 minutes. The contraceptive was used by 79.2% of participants among those taking less than 30 minutes to go to the healthcare center. Similarly, **waiting time** at healthcare centers was found significantly associated with contraceptive use (p-value 0.001). Participants waiting for less than 30 minutes were 2 times (OR=2.437, 95% CI: 1.401 - 4.237) more likely to use contraception than those waiting for more than 30 minutes. The contraceptive was used by 81.9% of participants among those waiting for less than 30 minutes at the healthcare center. Participants who considered it was convenient to go to a healthcare center were found 3 times (OR=3.177, 95% CI: 1.810 - 5.576) more likely to use contraception than those considering it inconvenient. This relation showed a significant association at p-value <0.001. Similarly, satisfaction with service was found to be a significant association at the same p-value. Contraceptive use was 5 times more likely among participants who were satisfied with healthcare service. Home visit by family planning workers was found significantly associated with contraceptive use (p-value 0.001). Participants who had home visits by family planning workers were 6 times (OR=5.856, 95% CI: 1.756 - 19.527) more likely to use contraception than those who had not. The contraceptive was used by 93.5% of participants among those who had home visits by a family planning worker. The presence of factory rules against pregnancy was found significantly associated with contraceptive use (p-value <0.001). Participants working in a garment factory with rules against pregnancy were 34 times (OR=34.500, 95% CI: 4.692 - 253.690) more likely to use contraception than those working in a garment factory without such rule. The contraceptive was used by 98.6% of participants among those working in a garment factory with rules against pregnancy. Social belief in contraception was found significantly associated with contraceptive use (p-value <0.001). Participants who had a social belief not against contraception were 15 times (OR=15.801, 95% CI: 7.60 - 32.83) more likely to use contraception than those who had a social belief against contraception. Contraceptive was used by 85.1% of participants among those who had social belief not against contraception. Access to mass media was found significantly associated with contraceptive use (p-value <0.001). Participants who had access to mass media were 4 times (OR=3.686, 95% CI: 2.029 - 6.694) more likely to use contraception than those who had no access to mass media. Contraceptive was used by 81.1% of participants among those who had access to mass media. Acknowledgment of free healthcare service was not significantly associated with contraceptive use (p-value 0.655). On the other hand, acknowledgment of the 24-hour availability of healthcare service was found significantly associated with contraceptive use (p-value <0.001). Participants who knew about the availability of healthcare services for 24 hours in government facilities were 5 times (OR=4.940, 95% CI: 1.893 - 12.894) more likely to use contraception than those who did not know. Contraceptive was used by 91.9% of participants among those who acknowledged about availability of healthcare services for 24 hours in government facilities. Acknowledgment of national policy about family planning was found significantly associated with contraceptive use (p-value 0.007). Participants who knew about the national policy about family planning were 4 times (OR=3.952, 95% CI: 1.360 - 11.483) more likely to use contraception than those who didn't know. The contraceptive was used by 90.9% of participants among those who acknowledged about the national policy about family planning. Acknowledgment of the slogan of national policy about family planning was found significantly associated with contraceptive use (p-value 0.014). Participants who knew about the slogan of national policy about family planning were 2 times (OR=1.989, 95% CI: 1.145 - 3.453) more likely to use contraception than those who did not know. Contraceptive was used by 80.8% of participants among those who acknowledged about slogan of national policy about family planning. Among the participants, who had acknowledged of slogan of national policy about family planning (n=146) there was a significant association between following the slogan and contraceptive use (p-value <0.001). Participants who followed the slogan of national policy about family planning were 8 times (OR=8.036, 95% CI: 3.192 - 20.227) more likely to use contraception than those who did not follow. Contraceptive was used by 91.8% of participants among those who followed the slogan of national policy about family planning. At last, participants' perception of national policy was significantly associated with contraceptive use (p-value <0.001). Participants with a high perception of national policy were 15 times more likely to use contraception (OR=15.873, 95% CI: 4.83 – 52.13) than participants with a low perception.

https://doi.org/10.3329/jopsom.v44i2. 89224

DISCUSSION

According to the study, the prevalence of contraceptive use was 74.7% among married reproductive aged female garment workers in Dhaka City, Bangladesh. In this study, the most frequently used method of contraception was the oral pill (49.3%). After that Depo injection, Copper T, Condom, Implant and Sterilization were used by 19.3%, 16.9%, 6.8%, 6.3% and 1.4% of participants respectively. Regarding not using contraceptive methods, 54.3% had done it willingly, 35.7% due to side effects, and 10% due to husbands' demand. Intrapersonal factors such as age, education, duration of marriage, number of living children, desire for additional children, Knowledge on contraception, and reproductive autonomy were found significant associations with contraceptive use. Previous study in Bangladesh and Indonesia also showed similar findings (15, 16).

Interestingly number of living children had significant association with contraceptive use (p-value <0.001) where participants with two or less child were 6 times (OR=6.061, 95% CI: 3.211 - 11.439) more likely to use contraception than those with more than two children. It could be explained that perception among women that fertility decreases after birth of several children and also with age could discourage women who had more than two children to use contraceptive. This finding is similar with a study conducted in Bangladesh (15). But several studies conducted previously in Bangladesh, Pakistan, Afghanistan, Indonesia showed different result saying number of living children increases contraceptive use (16, 17, 18, 19).

Another interesting finding was Desire for additional children variable found significantly associated with contraceptive use (p-value <0.001) and revealed that participants who want more child in future after at least one year were 7 times (OR=6.923, 95% CI: 3.025 - 15.842) more likely to use contraception than those who does not want more child in future. But several studies conducted previously in Bangladesh, Pakistan, Indonesia showed different result showing that woman who had no desire for more children was much more likely to use contraception (16, 19, 20).

Interpersonal factors such as the husband's education level, husband's participation, family income, and Influence of family members were significantly associated with contraceptive use. These findings are consistent with those reported in previous studies (18, 21). In Institutional/organizational factors, availability and accessibility to Reproductive Healthcare facility, workplace rules and regulation found significant associations with contraceptive use. Similar associations have been documented in other studies (15, 16). For community and public policy factors, social belief, and access to mass media, some factors related to the perception of national policy were found significant association with contraceptive use supported by previous research conducted in Bangladesh and elsewhere (15, 21). On the other hand, no association is found between religion, son preference, husband's occupation and contraceptive use. Factors having significant association create a further workspace to march forward.

Limitation of the study: This study was conducted during COVID-19 pandemic. Data collector had to face difficulties to collect data while maintaining personal protective equipment and physical distance. The study was a cross-sectional study among married reproductive aged female garment workers in Dhaka city, the capital city of Bangladesh. So, the result is not possible to be generalized among garment workers outside Dhaka city due to obvious differences in social, economic, and cultural context between inside and outside of the town. As the questions about contraception, reproductive autonomy, the cause of not using contraception, abortion etc. are sensitive issues for some participants due to the social and cultural context of Bangladesh, sometimes answers to these items can be biased. This research was based on ecological model. Some individual and intrapersonal factors such as participants reproductive characteristics, abortion, and unwanted pregnancy could not be explored due to the limitation of time which need further investigation.

CONCLUSION

The results showed the prevalence of contraceptive use was 74.7% among married reproductive-aged female garment workers in Dhaka city, Bangladesh. This study found a significant association between age, education, duration of marriage, number of living children, desire for additional children, Knowledge on contraception, reproductive autonomy, husband's education level, husbands' participation, family income, Influence of family member, availability and accessibility to Reproductive Healthcare facility, workplace rules and regulation, social belief, access to mass media, perception on national policy and contraceptive use (p-value < 0.05). On the other hand, no association is found between religion, son preference, husband's occupation and contraceptive use.

https://doi.org/10.3329/jopsom.v44i2. 89224

RECOMMENDATIONS

According to the study more than 68% of the participants had poor knowledge on contraception. Improvement of knowledge can directly increase contraception use as well as indirectly decrease unwanted pregnancy and abortion which can be done using appropriate information education communication (IEC) material that is suitable for the target population with minimum or without any formal education Thus, it contributes to maintaining the well-being of reproductive health. To enhance reproductive autonomy, sharing thoughts during decision making, proper communication and a supportive mentality are crucial which can be achieved by different methods like couple counseling sessions or post-marital counseling. Government and non-government organizations should work in collaboration to make such policies, implementing and monitoring.

Competing interest: All the authors declared no competing interests.

Funding: This study did not receive any grants.

Acknowledgements: The authors are grateful to all participants for their voluntary participation in the study.

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