FACTORS AFFECTING UNMET NEED FOR CONTRACEPTION AMONG REPRODUCTIVE AGED WOMEN IN BANGLADESH: DOES EMPLOYMENT STATUS MATTER?

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ABSTRACT

Background: In most of the developing countries, millions of women in their reproductive age do not use contraceptives but prefer to postpone or limit their births. So, the main purpose of this study is to identify the factors influencing unmet need for contraception among employed and unemployed women in Bangladesh. **Methods:** This study used a cross-sectional data (n=16,596) extracted from the Bangladesh Demographic and Health Survey (BDHS) 2011. The binary logistic regression was used to identify the determinants of unmet need for contraception. **Results:** This study reports that unmet need for contraception of unemployed women is higher than that of employed women and even the national level. Giving family planning (FP) methods by FP workers contributed the most in lowering the likelihood of having unmet need for contraception among unemployed women followed by non-Muslim religion and having secondary level of education whereas fertility preferences, having more than two children, regional variations and residing in the rural areas of the country increase the likelihood of having unmet need for contraception. **Conclusion:** Since unmet need for contraception among unemployed women is higher than the national level, different family planning programme initiatives are required for this sub-group of women.

KEYWORDS: Unmet need for contraception; family planning; employment status; women's empowerment; BDHS.

INTRODUCTION

Unmet need for contraception, a major concept in the discourse on worldwide populations, refers to that part of women who are not willing to become pregnant but do not use any contraceptive method.[1] It is a strong idea for designing sustainable family planning (FP) programs and it also has important implications for maternal health and for future population growth. Apparently, the FP programs have a considerable impact on the practice of contraceptives and consequently in the reduction of fertility. In developing countries, the use of modern FP methods has increased dramatically over the three decades and this has led to a decline in the birth rate and also has cut the number of maternal deaths by 40% over the past 20 years[2] but there are still significant levels of demand for FP that are unmet. A further 30% of maternal deaths could be avoided[2] and in an average 23% of abortions[3] and 10% of infant deaths can be reduced by fulfillment of unmet need for contraception.[4] Westoff has estimated that in Asian countries, unmet need is between 5% and 33%, between 6% and 40% for the Latin America and the Caribbean, and between 13% and 38% in sub-Saharan Africa.[1] Other studies estimated that over 200 million women have an unmet need for FP in developing countries.[5,6] However, Bangladesh experienced a fascinating increase in its contraceptive prevalence rate in last four decades, from 8% in 1975 to 62% in 2014,[7] and that is a major cause of declining fertility in past 25 years.[8] Though Bangladesh has achieved considerable success in FP programs, 14% of women who are currently married had an unmet need for contraception where 8% had unmet need for limiting births and 5% possessed unmet need for spacing births.[9,10]

Studies showed that many diverse factors such as age, education, religion, region, marital status, the length of marriage, children ever born, household wealth, spousal joint participation in household decision making and desire for children have been found as predictors of unmet need for contraception.[11-20] However, earlier studies have failed to focus on the employment status of women in analyzing their unmet need for contraception though a study found that it is an important indicator of using contraceptives.[14] Therefore, the objective of this study is to address the gap in knowledge by exploring factors influencing unmet need for contraception among employed and unemployed women of reproductive span (15-49 years) in Bangladesh.

METHODS

Data Source
This study utilized the data extracted from Bangladesh Demographic and Health Survey (BDHS) 2011, which were conducted under the authority of the National Institute of Population Research and Training of the Ministry of Health and Family Welfare, Bangladesh. Respondents were selected through a stratified, multistage, cluster sampling strategy by which 600 primary sampling units (207 in urban areas and 393 in rural areas) were constructed. The primary sampling units were derived from a sampling frame created for the Population and Housing Census 2011, provided by Bangladesh Bureau of Statistics (BBS).[21] Detailed information on survey design and sampling procedures has been reported elsewhere.[22]
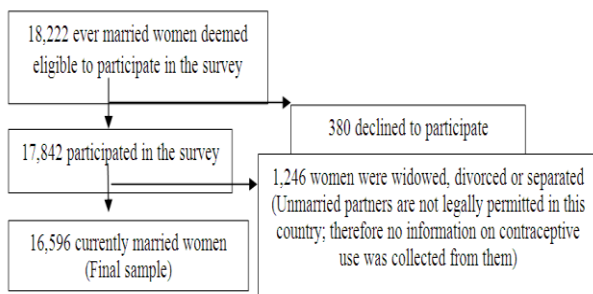

Figure 1: A total of 16,596 currently married women were considered for analyses out of 17,842 women aged 15-49 years: BDHS 2011.

Statistical analyses
This study begins with descriptive exploration of both explanatory and outcome variables. Differences in unmet need for contraception by socio-demographic characteristics were assessed by χ^2 tests, setting at $p<0.05$ level of significance for all analyses. The response variable of this study was demand for contraception, which is binary in nature: having unmet need for contraception versus having no unmet need for contraception. Hence, binary logistic regression model was fitted to assess the net effect of some selected social and demographic variables. Multicollinearity in the logistic regression analyses in this study was checked by examining the standard errors for the regression coefficients. Standard errors larger than 2.0 indicate numerical problems, such as multicollinearity among the independent variables.[23] In this study all the independent variables in the fitted model had standard errors <0.80 that indicates the absence of multicollinearity. Data were analyzed using SPSS Release 21.0 (SPSS Inc., Chicago, IL).

RESULTS

Prevalence of unmet need for contraception
Table 1 illustrates that prevalence of unmet need for contraception of unemployed women (14%) was higher than that of employed women (10%), while 7% employed women and 8% unemployed women had unmet need for limiting births whereas 3% employed women and 6% unemployed women had unmet need for spacing births. This study also shows that unmet need for limiting births (8%) was higher than the unmet need for spacing births (5%) among all women in Bangladesh.

Table 1: Percentage distribution of unmet need for contraception of women: BDHS 2011 (n=16,596).

Unmet need for contraceptives	Employed		Unemployed		All	
	n	**%**	**n**	**%**	**n**	**%**
Unmet need for spacing	54	2.8	813	5.7	867	5.4
Unmet need for limiting	130	6.8	1144	8.0	1274	7.9
Using for spacing	332	17.5	2413	16.9	2745	16.9
Using for limiting	981	51.6	6548	45.8	7529	46.5
No unmet need	221	11.6	2019	14.1	2240	13.8
Infecund/ menopausal	181	9.5	1355	9.5	1536	9.5

Unmet need for contraception by socio-demographic profiles

Table 2 shows the percentage distribution of unmet need for contraception according to socio-demographic characteristics among employed and unemployed women in Bangladesh. This study explored factors that might be associated with unmet need for contraception at a bivariate level of analysis, using the chi-square test where the *p*-values are based on two categories, such as having unmet need for contraception versus having no unmet need for contraception.

On the one hand, this study reveals that unmet needs for contraception was found highest among unemployed women who were aged 15-24 years, who had secondary level of education, who lived in Chittagong region, who resided in the rural areas, who were Muslim, who had more than two children, who were not visited by FP workers and those who were undecided about their fertility preferences.

On the other hand, unmet needs for contraception was highest among employed women who lived in Sylhet region, who were not visited by FP workers, who were undecided about their fertility preferences and whose husbands were illiterate.

Table 2: Percentage distribution of unmet need for contraception by socio-demographic characteristics of women: BDHS 2011 (n=16,596).

Characteristics	Unmet need for contraception (%)					
	Employed		Unemployed		All	
	No	Yes	No	Yes	No	Yes
Current age				***		*
15-24	89.3	10.7	84.4	15.6	84.8	15.2
25-34	91.9	8.1	85.4	14.6	86.3	13.7
35-49	89.0	11.0	89.4	10.6	89.3	10.7
Education level				***		***
No education	86.5	13.5	85.5	14.5	85.7	14.3
Primary	89.3	10.7	85.0	15.0	85.5	14.5
Secondary	88.7	11.3	83.7	16.3	84.1	12.9
Higher	93.1	6.9	85.7	13.3	87.4	12.6
Husband's education level		**		***		***
No education	85.9	14.1	85.8	14.2	85.2	14.8
Primary	91.6	9.4	84.4	15.6	83.8	16.2
Secondary	88.9	11.1	83.2	16.8	86.8	13.2
Higher	90.6	8.4	86.1	13.9	88.2	11.8
Region		***		***		***
Barisal	89.4	10.6	87.6	12.4	87.8	12.2
Chittagong	91.6	8.4	78.8	21.2	80.2	19.8
Dhaka	89.2	10.8	86.5	13.5	86.9	13.1
Khulna	92.5	7.5	90.1	9.9	90.4	9.6
Rajshahi	91.0	9.0	88.6	11.4	88.9	11.1
Rangpur	93.2	6.8	90.1	9.9	90.4	9.6
Sylhet	82.2	17.8	82.9	17.1	82.9	17.1
Type of place of residence				***		***
Urban	90.6	9.4	88.3	11.7	88.7	11.3
Rural	90.0	10.0	85.3	14.7	85.8	14.2
Religion				***		***
Muslim	90.3	9.7	85.7	14.3	86.2	13.8
Non Muslim	90.5	9.5	91.8	8.2	91.6	8.4
No of living children				**		***
None	91.3	8.7	88.4	11.6	88.7	11.3
1-2	90.9	9.1	86.5	13.5	87.1	12.9
3 and above	88.9	11.1	85.5	14.5	85.9	14.1
Visited by FP worker during last 6 months		***		***		***
Talked	92.0	8.0	86.6	13.4	87.2	12.8
Gave family planning method	99.0	1.0	97.7	2.3	97.8	2.2
Talked and gave method	97.7	2.3	94.4	5.6	94.9	5.1
No	89.4	10.6	85.5	14.5	85.9	14.1
Fertility preference		**		***		***
Want	92.9	7.1	88.5	11.5	89.0	11.0

Undecided	86.4	13.6	72.6	27.4	73.9	26.1
Doesn't want	89.2	10.8	85.6	14.4	86.0	14.0

Note: Row percentage sum to 100%, ***$p<0.001$, **$p<0.01$ and *$p<0.05$

Factors affecting unmet need for contraception

The outcome variable of this study is 'demand for contraception' which is binary in nature, such as having unmet need for contraception versus having no unmet need for contraception. Therefore, logistic regression was used to identify the influential factors that have effects on unmet need for contraception among employed and unemployed women. Table 3 elucidates that nine variables; visits of FP workers, women's age, religion, women's educational level, educational level of husband, fertility preferences, number of living children, region and place of residence (urban-rural) were significant predictors of unmet need for contraception among unemployed women, while there are five variables, namely visits of FP workers, women's age, educational level of husband, region and fertility preferences, that significantly affect unmet need for contraception among employed women.

In case of unemployed women, the likelihood of having unmet need for contraception was lower among women who were given FP methods by FP workers (OR: 0.169) than their counterparts who only had a talk to FP workers. Women aged 25-49 years were less likely to have unmet need for contraception than their younger counterparts. The likelihood of having unmet need for contraception was decreased (OR: 0.536) among non-Muslim compared to Muslim women. Women who had secondary and higher level of education were less likely to have unmet need for contraception than their illiterate counterparts. The likelihood of having unmet need for contraception was higher among women who were undecided about having more children (OR: 3.185) or wanted no more children at all (OR: 1.905) than women who wanted to have more children, and women having children were more likely to have unmet need for contraception than women who had no child at all. Women who lived in Chittagong or Sylhet region were 1.915 and 1.557 times likely to have unmet need for contraception respectively than who resided in Barisal region, and women who lived in the rural areas of the country were 1.382 times likely to have unmet need for contraception compared to their urban counterparts.

On the other hand, it is observed among employed women that the likelihood of having unmet need for contraception was lower who were given FP methods by FP workers (OR: 0.131) compared to women who only had a talk to FP workers. Women aged 25-34 years were less likely (OR: 0.591) to have unmet need for contraception compared to their younger counterparts, and the likelihood of having unmet need for contraception was also lower among women who had primary level of education (OR: 0.605) than illiterate women. Last but not least, the likelihood of having unmet need for contraception was higher (OR: 1.769) among employed women who lived in Sylhet region compared to women who resided in Barisal region.

Table 3: Logistic regression of unmet need for contraception.

Characteristics	Employed			Unemployed			All		
	β	S.E.	Odds Ratio	β	S.E.	Odds Ratio	β	S.E.	Odds Ratio
Current age									
15-24®			1.000			1.000			1.000
25-34	-.525	.234	0.591*	-.403	.070	.668***	-.426	.066	.653***
35-49	-.354	.265	0.702	-.853	.087	.426***	-.806	.082	.447***
Educational level									
No education®			1.000			1.000			1.000
Primary	-.021	.225	0.979	.071	-.076	0.924	.049	-.071	0.929
Secondary	-.055	.261	0.945	.274	-.084	0.916***	.255	-.080	0.92***
Higher	-.650	.407	0.522	.461	-.137	0.863***	.320	-.128	0.872**
Husband's education level									
No education®			1.000			1.000			1.000
Primary	-.503	.229	.605*	.096	.072	1.101	.040	.068	1.041
Secondary	-.084	.239	.919	.188	.076	1.207*	.164	.072	1.179**
Higher	-.184	.348	0.816	-.046	.108	.955	-.032	.102	.969
Region									
Barisal®			1.000			1.000			1.000
Chittagong	-.322	.324	.725	.650	.091	1.915***	.567	.087	1.763***
Dhaka	-.024	.296	.976	.161	.096	1.174*	.143	.091	1.154
Khulna	-.455	.334	.635	-.177	.104	.857*	-.207	.099	.813*
Rajshahi	-.185	.316	.831	-.010	.102	.990	-.036	.097	.964

Rangpur	-.486	.352	.615	-.163	.107	.849	-.193	.102	.824*
Sylhet	.570	.326	1.769*	.443	.100	1.557***	.454	.096	1.575***
Type of place of Residence									
Urban®			1.000			1.000			1.000
Rural	.128	.169	1.136	.324	.057	1.382***	.320	.054	1.377***
Religion									
Muslim®			1.000			1.000			1.000
Non-Muslim	-.172	.237	.842	-.624	.099	.536***	-.564	.091	.569***
No of living children									
None®			1.000			1.000			1.000
1-2	.027	.332	1.027	.180	.097	1.197*	.159	.093	1.173*
3 and above	.039	.384	1.040	.394	.119	1.482***	.365	.113	1.441**
Visited by FP worker during last 6 months									
Talked®			1.000			1.000			1.000
Gave family planning method	-2.033	1.054	.131*	-1.779	.269	.169***	-1.806	.260	.164***
Talked and gave method	-1.305	1.061	.271	-.964	.301	.381***	-1.023	.289	.359***
No	.353	.318	1.423	.141	.091	1.152	0.155	.088	1.167*
Fertility preference									
Want®			1.000			1.000			1.000
Undecided	.800	.661	2.225	1.159	.166	3.185***	1.139	.160	3.124***
Doesn't want	.616	.245	1.851*	.644	.073	1.905***	.647	.070	1.910***

Note: ® denotes reference category ***$p<0.001$, **$p<0.01$ and *$p<0.05$

DISCUSSION

This study assessed the prevalence of unmet need for contraception and explored the predictors of unmet need for contraception among employed and unemployed women in Bangladesh using the BDHS data of 2011. The results showed that the proportion of having unmet need for contraception among unemployed women is higher than employed women, which is in agreement with other studies.[24,25] This study also found that the percentage of unmet need for limiting births was greater than that of unmet need for spacing births, which shows a different result than several other studies that were conducted in different areas such as Ethiopia, Sudan,[12,15,26] and shows similarity with studies conducted in India.[27,28] It is also noticeable that unmet need for contraception of unemployed women was even higher than that of the national (12%) level.[10,29] Therefore, government should carefully consider the unmet need for contraception of target population when making decisions about service integration. Improvement of the quality of FP services not only attracts new clients but can also help prevents contraceptive discontinuation.[30] Hence, coordinating or integrating FP services may offer complementary means to reach especially unemployed women and reduce missed opportunities to provide FP services.

This study clearly pointed out that the least likelihood of having unmet need for contraception was found among unemployed women who were given FP methods by FP workers, followed by who aged 35-49 years, who were non-Muslim and who had secondary level of education whereas highest increase of the likelihood of having unmet need for contraception was found among unemployed women who were undecided about having more children or wanted no more children at all, followed by who lived in Chittagong or Sylhet region, who had more than two children and who resided in the rural areas of the country. On the other hand, the highest decrease of the likelihood of having unmet need for contraception was found among employed women who were given FP methods by FP workers, followed by who aged 25-34 years and who had primary level of education whereas the likelihood of having unmet need for contraception was increased among employed women who lived in Sylhet region. Studies suggest that religious forbearance, fertility preferences, lack of knowledge about appropriate methods, fear of side effects, fatalistic attitudes, infrequent sex and social and familial/husband disapproval of contraception are the reasons for not using contraceptives.[16,17,31] Therefore, initiatives should be taken to develop appropriate information and communication strategy to promote the value of having small family size and to educate women about their rights to choose the number of children and spacing of children.

This study demonstrates that getting FP methods from FP workers have a significant effect on unmet need for contraception among both employed and unemployed women. Consistently, other studies highlighted that outreach activities by FP workers and accessibility to FP related information to reproductive aged married women were significantly associated with unmet need for contraception as well as with the use of modern contraceptives.[9,32-34] This study also revealed that fertility preferences play a significant role in having unmet need for contraception since the likelihood of having unmet need for contraception was higher among women who were undecided about having more children

or wanted no more children at all than women who wanted to have more children.

Present study explained that a geographical variation was one of the factors associated with unmet need for contraception because that was found higher when women lived in Sylhet and Chittagong region or resided in the rural areas of the county. The result is identical with some other studies conducted in different time in Bangladesh.[7,35-37] Education plays a significant role in lowering unmet need for contraception since women having secondary or higher level of education were less likely to have unmet need for contraception than their illiterate counterparts, which is alike with other study.[15] Non-Muslim women were less likely to have unmet need for contraception than their Muslim counterparts. This finding is similar to a previous study which reported that Muslim women were more likely to have unmet need for contraception than their non-Muslim counterparts.[9] Religious affiliation has also been recognized as influential to fertility behavior in other studies.[19,38]

Limitations and strengths
This study must be considered in the light of some limitations. Firstly, there may be possibility of threats to internal validity of this study. When cleaning the data, 7% of the observations are dropped because this study only considered currently married women; hence present study would suffer from the selection bias. The possibility of under reporting cannot be ruled out: use of contraceptive being a sensitive and often stigmatized subject in the South Asian region, women may be reluctant to reveal their contraceptive use status. However, the personal interview method applied in this study is widely resorted to for this kind of research.

Besides, being a cross-sectional study, a cause-effect relationship between use of contraceptive and socio-demographic covariates could not be established. Longitudinal research regarding the relations is needed to provide clarity regarding these concerns. Finally, the questionnaire was filled out by the interviewers and their personal opinions could have biased the information. However, according to the BDHS, interviewers were provided training for implementing the survey based on a training manual especially developed to enable the field staff to collect data in a friendly, secure, and ethical manner. Moreover, to increase response rates, interviewers were trained to maintain motivation with longer questionnaires, probe for responses, clarify ambiguous questions, use memory jogging techniques for aiding recall of events and behavior, and control the order of the questions.

Nevertheless, this study has its strengths also. The study used 2011 BDHS data from a nationally representative dataset. Hence, findings of the study could be a true representation of the situation in the country. Moreover, international comparisons of results are possible as DHS surveys take up similar instruments across the countries.

In addition, contraceptive discontinuation and switching of methods among currently married fecund young women would be our future research.

CONCLUSIONS

This study concludes that percentage of unmet need for contraception among unemployed women was higher than that of employed women and it is even higher than the national level; hence different FP program initiatives are required for this sub-group of women. This study reports that giving FP methods by FP workers contributed the most in lowering the likelihood of having unmet need for contraception among unemployed women followed by non-Muslim religion and having secondary level of education whereas fertility preferences, having more than two children, regional variations and residing in the rural areas of the country increase the likelihood of having unmet need for contraception. This study suggests that it is essential to ensure regular and effective home visits of FP workers and to introduce reproductive and sex education in schools to prepare women for healthy and responsible living by reducing unmet need for contraception.

Abbreviations
BDHS, Bangladesh Demographic and Health Survey; CI, Confidence Interval; FP, family planning; OR, Odds Ratio.

Authors' contributions
AZI designed the study, analyzed the data and drafted the manuscript, MLK analyzed the data, AEI drafted the manuscript and Dr. MRI, Dr. MGM and Dr. MNIM reviewed the manuscript. All authors read and approved the final manuscript.

Availability of data and materials
The dataset is available to registered users in http://dhsprogram.com/data/available-datasets.cfm.

Conflict of interests
The authors declare that they have no conflict of interests.

Consent for publication
Not applicable.

Ethics approval and consent to participate
The BDHS data collection procedures were approved by the ORC Macro Institutional Review Board (Calverton, MD, USA). The protocol of the survey was reviewed and

approved by the National Ethics Review Committee of the Bangladesh Ministry of Health and Family Welfare. Informed consent was obtained from each of the participants before the interview.

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