



Correlates and Determinants of Long-Acting and Permanent Methods of Contraception Use among Women of Reproductive Age in Bangladesh

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Abstract:

The Government of Bangladesh has become very alert for controlling excessive birth rate to regulate population explosion. So, it is very important to promote different contraceptive methods among women of reproductive age in Bangladesh. In spite of attaining the self-sufficiency in many sectors, the increasing population is a great impediment for the sustainability of the consistent development of the country. So, modern long-acting and permanent methods (LAPM) of contraception are mandatory to maintain the situation. In this study, we have attempted to identify the important factors that affect the long-acting and permanent methods (LAPM) of contraception. Firstly, we have carried out chi-square test for defining the correlates of long-acting and permanent methods (LAPM) of contraception using data from Bangladesh Demographic and Health Survey (BDHS), 2014. From these analyses, bi-variate association between each independent variable and dependent variable has been observed. However, an empirical association between two variables does not necessarily imply a causal relationship between them. It is essential to adjust for the effect of correlated variables in order to determine more precisely the net effect that any particular independent variable has on the dependent variable. In order to estimate the independent effects of each variables controlled, data have been further analyzed within a multivariate framework using multinomial logistic regression model. The great achievement of this study is that we have got some demographic, socio-economic and family planning variables as determinants of long-acting and permanent methods (LAPM) of contraception.

Keyword: Women Reproductive Age, Demographic, Family Planning Knowledge, and Contraceptive Method

Introduction:

Bangladesh is a developing country. Geographically it is situated northern part of south Asia, surrounded by India and Myanmar which covers an area of 147,570 square kilometers. So, it is obvious that the nature or

characteristics and health condition of people will be quite similar because of geographical fact. It is a challenge for developing countries to promote long-acting and permanent methods of contraception to control birth.

Family planning allows people to attain their desired number of children and determine the spacing of pregnancies. It is achieved through use of contraceptive methods and the treatment of infertility (WHO). Four contraceptive methods are categorized under LAPMs: intra-uterine devices (IUDs), implants (Implanon, Jadele), female sterilization, and vasectomy. IUDs and implants are long-acting temporary methods; when removed, return to fertility is prompt; and female sterilization and vasectomy are permanent method. Implants are effective from 3 to 7 years depending on type and IUDs are effective for at least 12 years LAPMs are the most effective (99% or greater) methods injectables, such as Depo-Provera are considered “shortacting” because their lengths of action are only from 1 to 3 months (Bekele et al., 2003). Bangladesh had made significant achievements during the last decades in reducing population growth and improving maternal and child health. The reduction in the total fertility rate (TFR) from 6.3 births per woman in 1975 to 3.4 in 1994 and to 2.3 in 2011 is encouraging. Bangladesh has experienced a sevenfold increase in its contraceptive prevalence rate (CPR) in less than forty years from 8% in 1975 to 62% in 2014. However, despite this progress, almost one-third of pregnancies are still unintended which may be attributed to unmet need for family planning and discontinuation and switching of methods.

Literature Review:

This study assessed the prevalence and determinants of modern contraceptive utilization among married women of reproductive age in Bangladesh. Nearly half (49%) of participants were currently using modern contraceptive methods (BDHS, 2011). Oral contraceptive pill was the most popular method among the study participants (Ashraf et al., 2013). In fact, since 1991, 76% of the increase in contraception in Bangladesh has been due to the increase in use of contraceptive pills (Ashraf et al., 2013). It was hypothesized in previous studies that women in rural Bangladesh were at liberty to use pills in spite of their husband's disapproval (Ashraf et al., 2013). The choice could be due to the fact that women do not need logistic or monetary support from their husband for this method as government FP workers supply free pills at doorsteps.

Streatfield and Kamal (2013) rightly pointed out previously that programmatically it would have been better for Bangladesh if LAPM use rate could be increased. Their finding showed that as the average age at marriage for women in Bangladesh was well below the legal minimum age of 18 years, many women would have completed their childbearing by their mid- to late 20s and this left them with 20 years or so of reproductive life to protect themselves from unwanted pregnancies. Women in Bangladesh had traditionally dependent on short-acting methods in this long period. The problem with the short acting method is that it has either risks of failure or early discontinuation or both resulting in unintended pregnancies and subsequently high incidence of menstrual regulation (MR) or abortion (Rabbi et al., 2015). Several other papers also recognized that to achieve replacement fertility, a much greater proportion of eligible couples will need to be using long-term and permanent methods (Rabbi et al., 2015). It is evident from the analysis that visits by family planning workers still had a very strong and positive influence on short term methods mainly and to some extent long term methods, but this visits did not increase the rate of permanent method use. Household delivery of family planning services was introduced in Bangladesh in 1978; whereas the FP workers still are authorized to deliver only condom and pills (Kamal et al., 2000). There definitely are issues related to the authority and training of giving LAPMs. Previous study identified a number of factors like myths and misconceptions, fear of side effect, opposition of partner, lack of knowledge and others as the barriers of using LAPMs (Kamal et al., 2000).

In a study, it was found that improving socio-demographic factors like education and wealth index would not influence the use of long acting or permanent methods use; whereas, the strong predictors of these methods

were number of living children and FP worker visitation (Jennifer et al. 2012). The finding was in agreement with findings from African countries. In a Nigerian study, the authors commented that some myths and misbeliefs towards LAPM, such as these methods causing infertility, could be one of the reasons for non-use (Ejembi et al., 2015). As the number of sons increased fear of infertility related to those methods would decrease and people tend to use LAPMs (Ejembi et al., 2015). Unfortunately, preferences for sons were key demographic features in South Asia (Mohsena et al., 2014); Bangladesh was not an exception. After the birth of one-son, the odds of using not only permanent method but also all types of contraceptives increased, ranging from 1.7 to 3.9 (Mohsena et al., 2014). This existence of son preference in a region, where the official target was to decline fertility, had implications for future population policy. Therefore, in Bangladesh, NGOs should advocate more on the issues like limiting family size effectively, convenience and benefits of LAPMs, increasing societal value of girl child etc. Such discussions play important role in correcting myths and misconceptions related to LAPMs use.

Regional disparity in contraceptive use indicators was a decade old problem for Bangladesh, the 2011 BDHS confirmed that fertility levels were quite uneven - remarkably low in the west of the country (below replacement, on average) and worryingly high in the east (up to 1.5 children above replacement). This study also found Sylhet and Chittagong as low performing area. The issue had been extensively examined in different literatures to derive health policy recommendations. More qualitative research is needed to address the cultural and religious barriers existing over those regions. The model in many studies revealed that the women who could give their opinion in their family decisions were significantly less likely to use all form of contraceptives compared to those who could not give their opinion in family matters. Previous studies had remarked that women in Bangladesh have a tendency to use contraception only when they perceive that their husbands do not object (Kamal et al., 2000). Women's empowerment is a complex process, having multiple dimensions: economic, social, cultural and political. In Bangladesh the promotion of gender equality and women empowerment had been addressed by different governmental and non-governmental organizations for quite a few years. If the achievements were judged, it was clear that although many positive results have already been achieved; developments have not been reached to the desirable degree yet. Health service programs and strategies of the country at each level of health care delivery system needed to consider the involvement of males for modern contraceptives utilization; husbands' perception and acceptance toward contraceptive use were major areas that need to be addressed rigorously. Hence, governmental and nongovernmental organizations, health facilities and other stakeholders need to ensure sustained advocacy targeting male members, as well as, availability and accessibility of contraceptives for married couples. The BDHS, 2011 study had its strength in the fact that it utilized large data sets representing the whole country, and thus the findings were based on adequate statistical power. This study had some limitations. Here, selection of variable was constrained by preexisting data; it was unable to include additional, potentially important variables concerning current contraceptive use. Secondly, the study failed to include husband's view regarding contraceptive use as explanatory variables. Lastly a detailed examination of contraceptive use also requires an understanding of the cultural changes in a society, whereas BDHS lacks inclusion of cultural variables (BDHS, 2011).

Objectives of the Study

The main objective of this study is to examine the correlates and determinants of long-acting and permanent methods of contraception among women of reproductive age in Bangladesh. The general objectives are:

- i. The objective of this study is to identify the factors related to contraceptive use with special emphasis on the LAPM methods utilization in Bangladesh.

Methodology:

In this study 2014 BDHS data has been used to examine the correlates and determinants of long-acting and permanent methods of contraception use among women of reproductive age in Bangladesh. In this study, Birth Record (BR) file has been chosen for the analysis. The sample size is 37213 here. As our interest is to find out the correlates and determinants of long-acting and permanent methods (LAPM) of contraception use among women of reproductive age in Bangladesh. We have selected some relevant variables from 2014 BDHS data set which are designed below.

Dependent Variable:

In this study the dependent variable is: Current Contraceptive Use.

Table 01: Dependent variable is categorized and coded as follows:

Dependent Variable	Categories and Codes
Current Contraceptive Use	0 = No Use, 1 = LAPM, 2 =Others

Here, LAPM = Intra-uterine Device (IUD), Implants, Vasectomy, Tubectomy

Others = Pills, Injections, Condoms, Periodic abstinence, Withdrawal, Lactational amenorrhea (LAM) etc.

Independent Variables:

In this study, we have some demographic variables, socio-economic variables and family planning variables as independent variables. The demographic variables are: Number of Living Children and Women's Age. The socio-economic variables are: Religion, Division, Residence, Husband's Education, Women's Education, and Residing with Husband, Husband's Occupation, Working Status of Women and Wealth Index. The family planning variables are: Family Planning (FP) Worker Visitation and Hearing Family Planning (FP) on Television (TV).

The selected dependent and independent variables are described here in extensive from before performing any statistical analysis. At first bivariate analysis will be carried out. Then in multivariate section multinomial logistic regression will be described. Bivariate analysis is a statistical method to study the relationship between two variables. The dependent variable of this study 'current contraceptive use' is a categorical variable. To find out the association of this variable to independent variables chi-square test is done as for this study all the independent variables are now in categorical form

Result and Discussion:

We will discuss the percentages of the different categories of the variables. We will see the categories of both dependent and independent variable. This will help us to see the percentage distributions of the variables.

Table 02: Frequency distribution of the respondents and its demographic and Socio-economic characteristics

Variables	Category	Frequency	Percent
Respondent's current age	Age below 25	5207	12.7
	Age 25-34	14762	36.1
	Age above 34	20926	51.2
Religion	Islam	37267	91.1
	Hinduism	3340	8.2
	Other	288	.7
Division	Barisal	5111	12.5
	Chittagong	7128	17.4
	Dhaka	6623	16.2
	Khulna	5244	12.8
	Rajshahi	5327	13.0
	Rangpur	5619	13.7
Place of Residence	Sylhet	5843	14.3
	Urban	12401	30.3
Husband/Partner's Education Level	Rural	28494	69.7
	No education	14564	35.6
	Primary	11851	29.0
	Secondary	10035	24.5
Women Education Level	Higher	4445	10.9
	No education	13375	32.7
	Primary	13437	32.9
	Secondary	11912	29.1
Working status of women	Higher	2171	5.3
	No	27289	66.7
Wealth index	Yes	13606	33.3
	Poor	17166	42.0
	Middle	8484	20.7
Husband/Partner's Occupation	Rich	15245	37.3
	Farmer	13243	32.4
	Laborer	14962	36.6
	Job holder	2192	5.4
	Businessman	8980	22.0
	Others	1518	3.7

Women's age is an important demographic variable which may have impact on current contraceptive use. In this table show that, maximum number of women's age (51.2%) fall in the age category above 34 whereas only 12.7% and 36.1% fall in the below 25 and 25-34 age group respectively. In case of highest educational level, 32.9% women are primary level whereas percentages of 'No education', 'Secondary', and 'Higher' are 32.9%, 29.1% and 5.3% respectively. Table 02 also show that, among all the respondents, 66.7% respondents are not currently working, 33.3% respondent are currently working, 69.7% respondents lived in rural areas, 91.1% respondents are the followers of Islam. Maximum number of the respondents belong to the poorest category whereas 20.7% and 23.5% women belong to the middle class and richest family respectively. In case of

husband's education, 35.6% husband's are illiterate whereas 64.5% are literate. Among literate husband's, minimum number (10.9%) fall in the higher education category and primary and secondary education constitutes 29% and 24.5% respectively. Among literate husband's maximum number of husband's occupation is belong to 'laborer' class which is 36.6%. The percentages of 'Farmer', 'Job Holder', 'Businessman' and 'Others' are 32.4%, 5.4%, 22% and 3.7% respectively.

Table 02 also show that, maximum number of respondents (17.4%) fall in the Chittagong division whereas the minimum numbers (12.5) fall in the Barisal division. Also a large portion (16.2%) of the respondents falls in Dhaka division.

Table 03: Frequency distribution of the indicators for measuring long-acting and permanent methods of contraception

Variables	Category	Frequency	Percent
Current contraceptive method	No Use	14286	34.9
	Others	21951	53.7
	LAPM	4658	11.4
Number of living children	Children Number 0-1	4472	10.9
	Children Number 2-3	21092	51.6
	Above 3	15331	37.5
Currently residing with husband/partner	Living with her	36858	90.1
	Staying elsewhere	4037	9.9
Hearing family planning (FP)	No	34232	83.7
	Yes	6663	16.3
Visited by FP worker in past 6 months	No	33160	81.1
	Yes	7735	18.9

Current contraceptive use is an important variable to make an analysis on long-acting and permanent methods of contraception. In this table, a percentage of different categories of the variable 'Current Contraceptive Use' has been shown. Here, percentage of 'No use' is the highest which is 34.9%. The percentage of 'LAPM' is 11.4% and the percentage of 'others' is 53.7% respectively.

Number of living children is an important demographic variable which may have impact on current contraceptive use. In this table, percentages of different categories of the variable 'Number of Living Children' has been shown. Here, percentage of 'Children number 2-3' is the highest which is 51.6%. The percentage of 'Children number 0-1' is 10.9% and the percentage of 'Children above 3' is 37.5%.

Residing with husband is an important socio-economic variable which may have impact on current contraceptive use. In this table, percentages of different categories of the variable 'Residing with Husband' has been shown. Here, percentage of 'Living with her' is the highest which is 90.1%. The percentage of 'Staying elsewhere' is 9.9%.

Hearing family planning (FP) is an important family planning variable which may have impact on current contraceptive use. In this table, percentages of different categories of the variable 'Hearing FP on TV' has been shown. Here, percentage of 'No' is the highest which is 83.7%. The percentage of 'Yes' is 16.3%.

Family planning (FP) worker visitation is an important family planning variable which may have impact on current contraceptive use. In this table, percentages of different categories of the variable 'FP Worker Visitation' has been shown. Here, percentage of 'No' is the highest which is 81.1%. The percentage of 'Yes' is 18.9%.

Table 03: Number distribution of current contraceptive use according to the independent variables

Variables	Category	Current Contraceptive Use			
		No use	Others	LAPM	P-Value
Number of living children	Children Number 0-1	1903	2443	126	.000
	Children Number 2-3	6164	12429	2499	
	Above 3	6219	7079	2033	
Women's Age	Age below 25	1764	3176	263	.000
	Age 25-34	3792	9304	1666	
	Age above 34	8726	9473	2729	
Religion	Islam	13238	20042	3987	.000
	Hinduism	949	1772	619	
	Other	99	137	52	
Division	Barisal	1838	2875	398	.000
	Chittagong	2895	3571	662	
	Dhaka	2249	3644	730	
	Khulna	1643	2963	638	
	Rajshahi	1506	3146	675	
	Rangpur	1564	3266	789	
Place of Residence	Sylhet	2591	2486	766	.000
	Urban	3865	7045	1491	
Husband/Partner's Education Level	Rural	10421	14906	3167	.000
	No education	5208	7333	2023	
	Primary	4061	6457	1333	
	Secondary	3571	5420	1044	
Women Education Level	Higher	1446	2741	258	.000
	No education	5173	6289	1913	
	Primary	4693	7075	1669	
	Secondary	3808	7155	949	
Currently residing with husband/partner	Higher	612	1432	127	.000
	Living with her	11309	21075	4474	
Working status of women	Staying elsewhere	2977	876	184	.000
	No	10224	14273	2792	
Wealth index	Yes	4062	7678	1866	.000
	Poor	5787	9208	2171	
	Middle	3041	4472	971	
Hearing family planning (FP)	Rich	5458	8271	1516	.000
	No	12135	18316	3961	
Visited by FP worker in past 6 months	Yes	2151	3815	697	.000
	No	12589	16542	4029	
Husband/Partner's Occupation	Yes	1697	5409	629	.000
	Farmer	4704	6970	1569	
	Laborer	5391	7924	1647	
	Job holder	686	1365	141	.000

	Businessman	2655	5246	1079	
	Others	850	446	222	

Number of living children is an important variable to make influence on the variable "Current Contraceptive Use". We may get an association between current contraceptive method and number of living children. From the Above table, we see that the association between current contraceptive use and number of living children is significant. Women having children 2-3 have higher preference to use long-acting and permanent methods of contraception (LAPM).

Women's age is an important variable to make influence on the variable "current contraceptive use". We may get an association between current contraceptive method and women's age. From the table we see that the association between current contraceptive use and women's age is significant. Women those who are above 34 years old have higher preference to use long-acting and permanent methods of contraception (LAPM).

Religion is an important variable to make influence on the variable "current contraceptive use". We may get an association between current contraceptive method and religion. From the table we see that the association between current contraceptive use and religion is significant. Women who are Muslim have higher preference to use long-acting and permanent methods of contraception (LAPM).

Division is an important variable to make influence on the variable "current contraceptive use". We may get an association between current contraceptive method and division. From the table we see that the association between current contraceptive use and division is significant. Women of Rangpur division have higher preference to use long-acting and permanent methods of contraception (LAPM).

Residence is an important variable to make influence on the variable "current contraceptive use". We may get an association between current contraceptive method and residence. From the table we see that the association between current contraceptive use and residence is significant. Women of rural areas have higher preference to use long-acting and permanent methods of contraception (LAPM).

Husband's education is an important variable to make influence on the variable "current contraceptive use". We may get an association between current contraceptive method and husband's education. From the table we see that the association between current contraceptive use and husband's education is significant. Women whose husband is not educated have higher preference to use long-acting and permanent methods of contraception (LAPM).

Women's education is an important variable to make influence on the variable "current contraceptive use". We may get an association between current contraceptive method and women's education. From the table we see that the association between current contraceptive use and women's education is significant. Uneducated women have higher preference to use long-acting and permanent methods of contraception (LAPM).

Residing with husband is an important variable to make influence on the variable "current contraceptive use". We may get an association between current contraceptive method and residing with husband. From the table we see that the association between current contraceptive use and residing with husband is significant. Women who are living with their husband have higher preference to use long-acting and permanent methods of contraception (LAPM).

Husband's occupation is an important variable to make influence on the variable "current contraceptive use". We may get an association between current contraceptive method and husband's occupation. From the table we see that the association between current contraceptive use and husband's occupation is significant. Women

whose husband works as a laborer have higher preference to use long-acting and permanent methods of contraception (LAPM).

Working status of women is an important variable to make influence on the variable “current contraceptive use”. We may get an association between current contraceptive method and working status of women. From the table we see that the association between current contraceptive use and working status of women is significant. Women with no working status have higher preference to use long-acting and permanent methods of contraception (LAPM).

Wealth index is an important variable to make influence on the variable “current contraceptive use”. We may get an association between current contraceptive method and wealth index. From the table we see that the association between current contraceptive use and wealth index is significant. Women having poor wealth index have higher preference to use long-acting and permanent methods of contraception (LAPM).

FP worker visitation is an important variable to make influence on the variable “current contraceptive use”. We may get an association between current contraceptive method and FP worker visitation. From the table we see that the association between current contraceptive use and FP worker visitation is significant. Women with no FP worker visitation have higher preference to use long-acting and permanent methods of contraception (LAPM).

Hearing FP on TV is an important variable to make influence on the variable “current contraceptive use”. We may get an association between current contraceptive method and hearing FP on TV. From the table we see that the association between current contraceptive use and hearing FP on TV is significant. Women who do not hear FP on TV have higher preference to use long-acting and permanent methods of contraception (LAPM).

Discussion:

Population growth constitutes a primary threat to continue economic growth and development in our country. Despite increasing pattern of use of contraceptives and fertility decline, the vital population strategy is not achieving the target. As the future reduction of fertility is largely dependent on increased use of effective birth control measures, identification of specific determinants of each method is essential for planning. The current study attempted to examine the determinants of use of modern methods of contraception, with special emphasis on the LAPMs, by using data from 2014 BDHS. The study found that among 40,895 currently married women, 39% did not practice any method of contraception; permanent and long term contraceptive methods use was 8.8%.

Conclusion:

Women’s intension for using LAPM has been historically low and it has remained almost unchanged over three decades in Bangladesh (Kamal et al., 2000). The fundamental reasons behind the low demand for and use of LAPM should be properly addressed. Policies, now-a-days, should have focus on factors related to increase males’ contraceptive knowledge and thus increase male participation in family planning and reproductive health in Bangladesh. Furthermore, it is crucial to continue improving girls’ and young women’s access to education, as this is important for increasing the women’s use of modern contraceptives and hence empowering women. Mass communication, as well as interpersonal communication, could be used to increase knowledge of available options and access. All systems such as educational institutions, youth associations, religious organizations, traditional leaders, communities and families should be concurrently sensitized and educated about contraception.

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