

Effect of the factor to transpire unintended pregnancy in Bangladesh: A cross-sectional study

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Abstract:

Unintended pregnancy is a very important issue for every country in the world. Which factors mainly affect to occur unintended pregnancy, it does not study. The aim of this study to find out factors affecting variables to occur unintended pregnancy and also find out to socio-demographic characteristics variables, how much effect on unintended pregnancy variable. I am also concentrating on the association of the unintended pregnancy variable with some other related variables. The result of socio-demographic characteristics variables such as current contraception method, unmet need for contraception, etc are significantly related to unintended pregnancy but sexual violence is insignificantly related to the selected independent variable. The study examines how much impact on the independent variable to the dependent variable. Unmet need for contraception has a significant effect on unintended pregnancy, also the husband's education level has a significant effect on unintended pregnancy but the husband's education level has an insignificant effect on the dependent variable. Unmet need for contraception and unintended pregnancy are significantly positively related. Frequency distribution, Percentage of the variable, Factor influencing model (Multinomial logistic regression model) was run to useable data. The findings of the study could provide clear guidelines for the next researcher.

Keywords —Unmet, Pregnancy, Contraception, Association, Logistic Regression, Comparison

I. INTRODUCTION

Each year unintended pregnancies occur 80 million from 210 million. In developing countries, 95% of women have an unsafe abortion because of their unintended pregnancies. Maternal morbidity and maternal death are increasing for unsafe abortion. A negative effect can see in these mothers who are abortion such as mental health, breastfeeding, etc. Unwanted pregnancy means when a woman does not want to be pregnant and does not want to deliver a child. In Bangladesh, one-third of pregnancies are unwanted because of a lacking of awareness. In the whole world, unwanted pregnancies are a big problem in the health sector.

Unmet need for contraception means which women are sexually active but do not use any contraception method (WHO). In the nineteenth century, Bangladeshi women had a fertility rate of 6.3 but it was decline day by day, now fertility rate is 2.3 per woman.

II. LITERATURE REVIEW

It is important to know about the fertility rate of a country and also essential to know which factors are influence to increases unintended pregnancy in a country. Unintended pregnancies and unplanned births can have serious health, economic, and social consequences for women and their families (Brown and Eisenberg 1995; Gipson et al. 2008). The first

research will be held in 1995 to know about unintended pregnancy and related outcomes. The next research was held in 2017 to know about the association of unmet need for contraception with unintended pregnancy based on Bangladesh Demographic and Health Survey (BDHS) data 2011. Our research will go on which factors influencing unintended pregnancy based on Bangladesh Demographic and Health Survey (BDHS) data 2014: A cross sectional study. The related variables with unintended pregnancy are measured.

III. SOURCE OF DATA

Every researcher needs to confirm the source of data because the result is shown about this data-based and also findings are shown based on the data set. If the source of data set is not believable or not confirm then the result is shown that means research is shown wrong result. We can use two types of data; primary data and secondary data. But in this analysis, we use secondary data Bangladesh Demographic and Health Survey (BDHS) 2014. BDHS 2014 data are using to measure demographic characteristics and unintended pregnancy experienced women or not and also find out the association about reproductive health variable, unmet need for contraception.

IV. ASCERTAINED VARIABLES

Unintended pregnancy is the main term in this paper. It mainly works form birth control, family planning, unmet need for contraception, etc. Unintended pregnancy occurs when a woman does not use effective contraception method or use inconsistent contraception method. Unmet need means women want to avoid pregnancy but do not use any contraception method. The majority of married women are not aware of their contraceptive uses this reason they face many health risk problems. In this case, we discuss to increase the awareness of the women how can they prevent unintended pregnancy. The study variables are selected based on literature review and BDHS data set , the variables are such that: Age of the

respondents (15-20,20-24,25-29,30-34,35-39,40-44,45-49),Husband education(no education, primary, secondary, higher),Husband occupation(land owner, farmer, agriculture worker, fisherman, poultry raising home based manufacturing ,rickshaw driver, domestic servant, on agricultural worker, Carpenter, mason, taxi driver, Doctor, lawyer ,teacher, dentist, Big businessman, Small businessman, student, Retired, others, don't know), Division(Barisal, Chittagong, Dhaka, Khulna, Rajshahi, Rangpur, Sylhet), Unintended pregnancy/current pregnancy(no, yes), Sexual violence(Forced to have sex to obtain money, Forced by someone other than husband to perform sexual acts),Unmet need for contraception(Unmet need for spacing, Unmet need for limiting, Spacing failure, Using for limiting, Using for spacing, Limiting failure, No unmet need, In fecund ,menopausal), Current contraception method(Not using, Pill, IUD, Injections, Condom, Female sterilization, Male sterilization, Periodic abstinence, Withdrawal, other, Implants, Lactational amenorrhea(LAM)). We present results for married women where such information is available.

V. PARTICIPANTS AND METHODS

Bangladesh is the most densely populated country in the world. The data use from the Bangladesh Demographic and Health Survey (BDHS) 2014 and also data use from the National Institute of Population Research and Training (NIPORT) organization. Technical sites are using from ICF International of Calverton (Maryland, USA). The study is conducted a cross-sectional study among married women with unintended pregnancy experienced or not and also cross-section with other variables. We find out the social-demographic characteristics of unintended pregnancy experienced women or not. The response rate from the true population of 85%. A total of 40074 married women are selected for an interview, (response rate of 98%). Data entry and statistical analysis are using SPSS software (version 21; SPSS Inc., Chicago, Illinois, USA). We analysed

frequencies and percentages using this data set and also show that χ^2 -test for qualitative data, which are shown as numbers and percentages. We find out cross-section that women are unintended pregnant with unmet need for contraception or do not use any contraception method. The percentage of unintended pregnancy is calculate as following: The response variables unmet needfor contraception(categorical),current contraceptionuse(coded),husband education(categorical), Husbandoccupation(categorical), Residence (urban, rural), Division etc. Logistic regression is used to find out which variable is significantly associated with unintended pregnancy variable. If the factor variables are significant his value must be less than .005, in this case, we can say that the variable is highly significant with the study variable. Finally, we can say that Bangladesh Demographic and Health Survey (2014) data, the association unintended pregnancy with current modern contraceptive use, sexual violence, and unmet need for contraception is examining to using Pearson's chi-square tests and multinomial logistic regression models.

VI. RESULTS AND FINDINGS

Table1 presents the socio-demographic characteristics of the sample. Respondent age group conclude that many respondents interviewed more than 25 years 69.6 percent of women come from a rural area. Almost half of the respondent-husband has no education and some respondent having primary education (29%), secondary education level greater than higher education. The majority of women's husband occupation are farmer, non-agricultural worker, Carpenter, mason, taxi driver, a small businessman. Out of 40074 women, they were reported that 97.2% of respondents have no idea about unintended pregnancy. Sexual violence of women reported that they are forced to have sex to obtain money (84.3%). Half of the respondent's unmet need for contraception for using for spacing limiting. Current contraception methods many

respondents using pill, injections to prevent pregnancy than the other methods.

Table 2 shows that cross-section unintended pregnancy variable (independent variable) with all other variables. Respondent whose age more than 25 they were not experienced about unintended pregnancy and significantly associated because of a p-value less than .05.

TABLE I
 SOCIO DEMOGRAPHIC CHARACTERISTICS OF THE UNINTENDED PREGNANCY WOMEN POPULATION, BANGLADESH DEMOGRAPHIC AND HEALTHSURVEY (BDHS) 2014.

Variables	Definition of the variable	Frequen cy	Per cent
15-19	Respondent's age	1038	2.6
20-24		3853	9.6
25-29		6379	15.6
30-34		7964	19.9
35-39		7175	17.9
40-44		7267	18.1
45-49		6398	16.0
Residence	Respondent's residence		
Urban		12183	30.4
Rural	27891	69.6	
Husband education	Respondent husband education level		
No education		14394	35.9
Primary		11640	29.0
Secondary		9710	24.2
Higher		4330	10.8
Husband occupation	Respondent husband occupation		
Land Owner		150	.4
Farmer		7451	18.6
Agriculture worker		4431	11.1
Fisherman		896	2.2
Poultry raising		90	.2
Home based manufacturing		105	.3
Rickshaw driver		4470	11.2
Domestic servant		33	.1
Nonagricultural worker		2876	7.2
Carpenter,mason,taxi driver		7107	17.7
Doctor,lawyer,teacher,denti st,		2141	5.3
Big businessman		1074	2.7
Small businessman		7796	19.5
student		266	.7
Retired		154	.4
Others	1028	2.6	
Don't know	33	.1	
Division	Women living division		
Barisal		5014	12.5
Chittagong		6850	17.1
Dhaka		6503	16.2
Khulna		5175	12.9
Rajshahi	5267	13.1	

Rangpur		5574	13.9
Sylhet		5691	14.2
Unintended pregnancy	Unintended pregnancy experienced women		
No		38936	97.2
Yes		11138	2.8
Sexual violence	Sexual violence of women to have sex or someone other than husband		
Forced to have sex to obtain money		33785	84.3
Forced by someone other than husband to perform sexual acts		6289	15.7
Unmet need	Unmet need for contraception of women		
Unmet need for spacing		790	2.0
Unmet need for limiting		3053	7.6
Using for spacing		3422	8.5
Using for limiting		23155	57.8
Spacing failure		154	.4
Limiting failure		240	.6
No unmet need		1975	4.9
Infecund, menopausal		7285	18.2
Contraception method	Current contraception using method		
Not using		13497	33.7
Pill		10285	25.7
IUD		281	.7
Injections		5737	14.3
Condom		2024	5.1
Female sterilization		2888	7.2
Male sterilization		764	1.9
Periodic abstinence		3013	7.5
Withdrawal		771	1.9
other		103	.3
Implants	705	1.8	
Lactational amenorrhea (LAM)	6	.00	

Women whose husbands have no education they also no idea about unintended pregnancy and it is also significant. Interviewer husband having occupation like that rickshaw driver, small businessman, Carpenter, mason, taxi driver they don't know unwanted pregnancy effect. Sexual violence is insignificantly related to unintended pregnancy Respondents reporting unintended pregnancy also have statistically significant of current modern family planning not use than those who do and the value of p is less than 0.05 and. most of the respondents using any contraception method to prevent unwanted pregnancy. Women using spacing limit because they don't know which contraception method to prevent unintended

pregnancy. All variables are significantly related to unintended pregnancy who is not experienced except sexual violence. Most unintended pregnancy occurs whose husband employment level low and having no education.

TABLE 2
PERCENTAGE OF UNINTENDED PREGNANCY VARIABLE ACROSS THE INDEPENDENT VARIABLES, BDHS 2014.

	Unintended pregnancy		Chi-Square value	P-value
	Yes	No		
Age				
15-19	5.0	2.5	1078.509	<.05
20-24	27.7	9.1		
25-29	34.3	15.4		
30-34	21.7	19.8		
35-39	9.5	18.2		
40-44	1.8	18.6		
45-49	0.0	16.4		
Husband education			14.312	<.05
No education	37.1	35.9		
Primary	32.6	28.9		
Secondary	20.0	24.4		
Higher	10.3	10.8		
Husband occupation			76.080	<.05
Land Owner	.06	.4		
Farmer	15.7	18.7		
Agriculture worker	11.8	11.0		
Fisherman	4.4	2.1		
Poultry raising	.0	.02		
Home based manufacturing	.04	.3		
Rickshaw driver	10.5	11.2		
Domestic servant	.04	.1		
Nonagricultural worker	9.1	7.1		
Carpenter, mason, taxi driver	18.7	17.7		
Doctor, lawyer, teacher, dentist,	3.3	5.4		
Big businessman	2.4	2.7		
Small businessman	20.7	19.4		
student	.04	.7		
Retired	.00	.4		
Others	1.5	2.6		
Don't know	.01	.1		
Sexual violence			2.316	.128
Forced to have sex to obtain money	84.3	84.4		
Forced by someone other than husband to perform sexual acts	15.7	15.6		

Unmet need			12119.406	<.05
Unmet need for spacing	10.1	1.7		
Unmet need for limiting	15.4	7.4		
Using for spacing	.00	8.8		
Using for limiting	.00	59.5		
Spacing failure	8.2	.2		
Limiting failure	13.8	.2		
No unmet need	52.5	3.5		
Infecund, menopausal	.00	18.7		
Contraception method				
Not using	.00	31.7		
Pill	.00	26.4		
IUD	.00	.7		
Injections	.00	14.7		
Condom	.00	5.2		
Female sterilization	.00	7.4		
Male sterilization	.00	2.0		
Periodic abstinence	.00	7.7		
Withdrawal	.00	2.0		
other	.00	.3		
Implants	.00	1.8		
Lactational amenorrhea (LAM)	.00	.00		

we see that the final model is a significant improvement in fit over a null model [$\chi^2(3) = 73.282, p < .005$].

TABLE 3
MODEL FITTING INFORMATION

Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig
Intercept only	6086.884	6095.504	6084.884	73.282	3	.000
Final	6019.602	6054.080	6011.602			

TABLE 4
GOODNESS-OF-FIT

	Chi-Square	df	Sig
Pearson	13067.631	374	.000
Deviance	5657.738	374	1.000

The ‘‘Goodness of Fit’’ table contains the Deviance and Pearson chi-square tests, which are useful to determine whether a model exhibits a good fit to the data. Non - significant test results indicate that the model fits the data well. So, from the above table, we can see that the Pearson chi-square test does not fit the data well [$\chi^2(374) = 13067.631, p = .000$]. but Deviance test indicates good fit [$\chi^2(374) = 5657.738, p = 1.000$].

VII. MULTINOMIAL LOGISTIC REGRESSION MODEL

The association of unintended pregnancy variable with unmet need for contraception, husband education, husband occupation. To consider the hypothesis for these studies is given below:

H₀₁: There is no effect unmet need for contraception to unintended pregnancy variables.

H₀₂: There is no relationship with husband education with unintended pregnancy variable.

H₀₃: There is no relationship with husband occupation with unintended pregnancy variable.

Table 3 shows that Statistical significance indicates that the full model represents a significant improvement in fit over the null model. In this data,

TABLE 5
LIKELIHOOD RATIO TESTS

Effect	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig
Intercept	8186.075	8211.933	8180.075	2168.473	1	.000
Unmet need	6083.185	6109.043	6077.185	65.583	1	.000
Husband Education	6020.138	6045.996	6014.138	2.536	1	.111
Husband Occupatio	6019.592	6045.450	6013.592	1.990	1	.158

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Table 5 shows that These results contain likelihood ratio tests of the overall contribution of each independent variable to the model.

TABLE 6
PARAMETER ESTIMATES

Unintended pregnancy	B	Std. Error	df	Sig.	Exp (B)	95% Confidence Interval for Exp(B)	
						Lower bound	Upper bound
No	Intercept	3.947	.090	1	.000		
	Unmet need	.103	.012	1	.000	.903	.881 .925
	Husband Education	.050	.031	1	.003	1.103	1.027 1.185
	Husband Occupation	.002	.002	1	.162	1.002	.999 1.006

The above table shows that the unmet need for contraception is significantly related to the unintended pregnancy variable because P value less .005 and null hypothesis rejected. Accordingly, H₀₂ is rejected and we see that the husband's education has an effect on unintended pregnancy. There is a variable that has an insignificant effect because a P-value greater than .005 this is a husband occupation, but in a general husband, the occupation has an effect on unintended pregnancy. Table 6 shows the results comparing each other against the reference category yes. Especially the regression coefficients indicate which predictors are significantly related between unintended pregnancy for an experienced person with unmet needs, husband occupation, and husband education. The coefficient represents that unintended pregnancy is significantly related to unmet needs (b=1.03, S.E=.012, p<.005) in the model. The odds ratio .903 indicates that for every one-unit increase on unmet needs, the odds of a person unintended pregnancy .903. The remaining coefficient for husband education level is significantly related to unintended pregnancy but not husband occupation. Overall, we can say that the unmet need for

contraception has a significant effect on unintended pregnancy.

VIII. COMPARISON WITH BDHS DATA 2014 TO BDHS DATA 2011 FOR UNINTENDED PREGNANCY VARIABLE

In comparison with the findings from BDHS 2011, our result showed that the rate of unintended pregnancy has changed during this period (29.3% in 2011 to vs 26% in 2014). Our previous result has shown that both unmet needs and non-use of contraception are positively associated with an unintended pregnancy. Unintended pregnancy is also associated with an increased risk of abortion and maternal morbidity. Unmet need, contraceptive discontinuation, and non-use are also a very common phenomenon in Bangladesh.

IX. LIMITATIONS OF THE STUDY

This study has some limitations. 1. The study is cross-sectional, maybe arises correlated variable. 2. Unmet needs and unintended pregnancy are measured based on self-reported data, which may be arises error. This study is conducted some years ago based data, the result of contraceptive use and unintended pregnancy will be changed. In spite of some limitations, this study will be helpful for developing countries to prevent unplanned conception in the country.

X. CONCLUSION

Unintended pregnancy can carry serious consequences for women and their families. Policy and programs intended to reduce unintended pregnancy. From the above study, we can say that the unmet need for contraception has a positive effect on unintended pregnancy women and also how much influence socio-demographic characteristic variables to unintended pregnancy variables. Again any researcher can show up the adoption of family planning and pregnancy. Intervention programs regarding reproductive health and services should be undertaken. Awareness should be created to continue the use of

modern contraceptive methods to avoid unintended pregnancy.

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