

Mistimed and Unwanted Pregnancies in Bangladesh: Trends and Determinants

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CONTEXT: Although over the past two decades in Bangladesh contraceptive use has risen and total fertility has declined markedly, unintended pregnancies are still common. Evidence is lacking about the trend of unintended pregnancies and the factors associated with unwanted and mistimed pregnancies in Bangladesh.

METHODS: All Bangladesh Health and Demographic Survey (BDHS) data were analyzed to observe the trend of unintended pregnancy in Bangladesh. A multinomial logistic regression analysis of the risk factors for unintended pregnancy (both unwanted and mistimed) was conducted using a subsample of women who were interviewed for the 2004 BDHS. The study sample consisted of 5,817 women whose most recent pregnancy occurred five years preceding the date of interview or who were currently pregnant.

RESULTS: The results found that unintended pregnancy dropped in the recent survey but unwanted pregnancy still increased. The multivariate analysis indicated that several factors significantly influence the likelihood that women would classify their most recent pregnancy as unwanted or mistimed. Risk factors that independently increase the likelihood of an unintended pregnancy included women's age, education, number of living children, use of modern method of contraception prior to pregnancy, region, and place of residence.

CONCLUSIONS: Policymakers and program planners need to design programs and services carefully to reduce unwanted pregnancy in Bangladesh, especially, services should focus on helping those groups of women who are identified in the analysis as being at increased risk of unintended pregnancy – less educated, high-parity, and older women of age 30 and above, women in Khulna, Barisal, Dhaka, and Rajshahi regions, and those in the urban areas.

INTRODUCTION

Unintended childbearing is one of the most basic measures of women's autonomy and capacity for self-determination, because it reflects woman's capacity to determine whether and when to bear children.³ Unfortunately, in recent years, unintended pregnancy appeared as an important public health concern in both developed and developing countries because it is not only distressing for the affected women and children, but it can also have far-reaching health, social, and economic consequences.⁶ The incidence of unintended pregnancy, which includes both unwanted and mistimed pregnancies,^{3,15} has long been used as a primary indicator of the state of reproductive health.¹⁶ Unwanted pregnancies are those which occurred when the women did not want to have any further pregnancies at all.³ Reasons for unwanted pregnancies are: the growing desire to have smaller families, the unmet need for family planning, ineffectiveness of contraceptive methods, and unwanted sexual relations.⁹ Women who experience unwanted pregnancy are at a greater risk of complicated pregnancy outcomes, and their children are more likely to experience physical or psychological problems in infancy than those women with wanted pregnancies.⁸ In contrast, mistimed pregnancies are those that were wanted by the women at some time, but which occurred sooner than they were wanted. This may happen if women, who were hoping to space their births a certain distance apart, conceived sooner than was hoped for due to contraceptive failure, and women had intercourse without a contraceptive method despite the fact they did not hope to become pregnant.³ Each year, globally 40-60 million women seek termination of an unwanted pregnancy under unsafe conditions.¹⁴ The consequences of unintended pregnancy are serious, imposing appreciable burdens on children, women, men, families,³ and their societies.⁷ Both unwanted and mistimed pregnancies are known to be associated with numerous harmful behaviors and outcomes. For example, more than 50% of the

unwanted and mistimed pregnancies ended in abortion,^{3,4,5} which is responsible for at least one in eight maternal deaths worldwide.¹⁴ Studies conducted in developing countries indicate that women's age, level of education, number of children, and social and economic deprivation are the major determinants of unintended pregnancy.^{1,2,12,13}

Over the past decades, the total fertility rate has declined in Bangladesh, from 6.3 lifetime births per woman in 1975 to 3.0 births per woman in 2004. This decline in fertility is, of course, the result of the level of the use of family planning increasing steadily in Bangladesh, from 13.6 percent in 1975 to 80.2 percent in 2004.¹² Despite a high rate of contraceptive use in Bangladesh, many women still experience unintended pregnancies.⁶ It is reported that if all unwanted births were avoided, the fertility rate in Bangladesh could be reduced and therefore, reduction in the rate of unintended pregnancies may be an important strategy to achieve the replacement level of fertility (2.1 children per woman) in Bangladesh.¹¹ It is, therefore, important to observe the trend and to identify risk factors associated with unintended pregnancy in Bangladesh to enable policymakers and program planners to design programs and services specifically for the women who are most likely to experience this problem. This article addresses two separate issues: the first analysis seeks trend of unintended pregnancies in Bangladesh, and the second analysis identifies the important demographic and sociocultural factors associated with unwanted and mistimed pregnancies in Bangladesh.

METHODS

Survey Data

This study analyzes the Bangladesh Demographic and Health Survey (BDHS) data conducted during 1993-94, 1996-97, 2000-01, and 2004 to investigate the trend of unintended pregnancy, and the most recent survey BDHS 2004 data is used to find the important risk factors. This study considers women whose most recent pregnancy occurred five years preceding the date of interview or currently pregnant. The pregnant women were extracted using the question: Are you pregnant now? The answer was coded as either yes, no, or not sure. If she answered yes, she was considered as pregnant. Further, she was asked to respond the question, "At the time of becoming pregnant, did you want this pregnancy then, did you want to wait until later, or did you not want to have any (more) children at all?" The women who wanted the pregnancy then were considered under the wanted group, who desired pregnancy, but later, were considered under the mistimed group, and who did not want to have any (more) children were considered under the unwanted group. The BDHS 2004 covered a nationally representative sample of 11,440 ever-married women of age 10-49 years. The analysis is based on 5,817 women who had a pregnancy five-year preceding the survey or who were currently pregnant. This relatively recent time frame was chosen to limit problems of recall and rationalization associated with retrospective data. To control for multiple pregnancy outcomes to the same woman, only the most recent pregnancy considers in the analysis. The women in the study sample are representative of women in Bangladeshi women who experienced a recent pregnancy; they differ slightly from all women who were interviewed, however, in age, the number of living children, and area of residence.

Statistical Analysis

To analyze the data the study considers pregnancy intention status (mistimed, unwanted, and wanted) as a response variable, and a set of explanatory variables includes: age of the respondents, access to media, region, place of residence, education of respondents, religion, number of living children, age at first marriage, use of modern method of Family Planning (FP) prior to pregnancy, current working status, and wealth index. Both bivariate and multivariate techniques were employed to analyze the data. For bivariate analysis, chi-square tests of independence were implemented. As a multivariate technique, multinomial logistic regression was used to assess the important risk factors associated with the odds of a woman having a pregnancy that is wanted at the time of conception, a pregnancy that is wanted but mistimed, or a pregnancy that occurred at a time when the woman did not want any more children. Because the circumstances of women who report mistimed, unwanted, or wanted pregnancies have been shown to differ⁴ and because the bivariate results of this analysis supported an approach that treated each category of intendedness as distinct, such that factors associated with mistimed pregnancies differed from those associated with unwanted pregnancies, multinomial logistic regression was determined to be the most appropriate method of multivariate analysis.

RESULTS

Trends

The analysis of four consecutive BDHS survey data indicates that mistimed pregnancy declined in the recent survey. Table 1 shows that mistimed pregnancy was about 21 percent for the first three surveys, whereas it observed 17 percent in 2004. Unlike the trend of mistimed pregnancy, the trend of unwanted pregnancy increased from 13 percent in 1993-94 to 16 percent in 2004. An

increasing pattern of unintended pregnancy noticed in the first three surveys but the pattern decreased in 2004 (37 percent in 1999-2000 vs. 33 percent in 2004). However, the decrease was entirely a result of the large percentage decline in mistiming combined with small increases in unwanted pregnancy.

TABLE 1 ABOUT HERE PLEASE

Characteristics

Table 2 shows the background characteristics of women who were recently pregnant. Over half (55.8%) of them were aged 20-29 years and nearly one-fifth (19.2%) were teenagers. The average age of the respondents was 25.4 years. About two-third (69.0%) of women had the opportunity to access to media. Many of the women were included from Dhaka division (31%), from Muslim community (92%), and lived in rural (79.2%) area. Over half (64.5%) of the women had formal education, mostly either primary (30.4%) or secondary (28.4%). Half (51.7%) of the women had married aged less than 15 years and over half (55.4%) of them had 1-2 births. Most (82%) of the women did not work and about half of the women were poor (45%). The majority (77.4%) of the women used modern method of FP prior to pregnancy.

TABLE 2 ABOUT HERE PLEASE

Pregnancy Intention Status - Bivariate Analysis

Analyzing the most recent BDHS 2004 data, Table 3 shows the percentage distribution of the sociodemographic characteristics among ever married women whose most recent pregnancy

occurred within five years preceding the survey by intention status. About 67 percent of women reported that their most recent pregnancy was wanted at that time, 17 percent reported that the index pregnancy was mistimed, and 16 percent reported that it was unwanted (Table 3). This indicates that nearly one-third of the recent pregnancies were unintended. Pregnancy intention varied significantly by most variables; only those with significant relationships in the bivariate will be discussed here. It is important to note that the bivariate results indicate the distinctions between women with mistimed pregnancies and those with unwanted pregnancies.

TABLE 3 ABOUT HERE PLEASE

The age of women has a monotonic relationship with wantedness: as age increases, the percentage of women reporting their pregnancy as wanted decreases, from about 75 percent at age 10-19 to 53 percent at age 30-49. The reverse is true for the unwantedness, such that unwanted pregnancy increases with age, from 0.2 percent among those 10-19 years old to 40 percent among those 30-49 years old. The mistimed pregnancy shares similarity with wantedness: 25 percent of those age 10-19 reported that their most recent pregnancy was mistimed, while 7 percent of women age 30-49 reported their last pregnancy as mistimed. Access to media shows an inverse relationship between mistimed and unwanted pregnancies. Women with no formal education (25 percent) or who had primary education (15.5 percent) were more likely to have had an unwanted pregnancy than women with secondary education (8.1 percent). However, mistimed pregnancy was more common among literate women than those having no formal education. Among Muslim women the percentage of mistimed and unwanted

pregnancies (17.3 percent and 16.6 percent) was higher than that of non-Muslim women (14.4 percent and 9.5 percent).

The number of living children and unwanted pregnancy were clearly positively linked, while wanted and mistimed pregnancies were negatively related. With the increases of age at marriage for unwanted pregnancy women, the percentage turned down. However, the percentage for mistimed women was somewhat stable for all ages which was about 16 percent. Both unwanted and mistimed pregnancies were more common among women who had used a modern method of family planning (18.5 percent and 17.5 percent) than those who had not used a method before their most recent pregnancy (7.5 percent and 15.5 percent). The result shows that unwanted pregnancy was higher among women who were currently working (21.7 percent) compared to who were not (14.8%), while mistimed pregnancy was lower for currently working women (13.7 percent) than those who were not working (17.8 percent).

Results shows a negative and monotonic relationship between wealth and the reporting of unwanted pregnancy: only 12 percent of the women in the wealthiest quintile reported their most recent pregnancy as unwanted, whereas about 19.3 percent of those in the two poorest quintiles reported their pregnancy as mistimed. In case of mistimed pregnancy, the percentage of women who were in the wealthiest quintiles was higher (17.4 percent) than those who were in the poorest quintiles (15.5 percent). Bangladesh is administratively divided into six divisions or regions on the basis of geographic and cultural proximity. These are Barisal, Chittagong, Dhaka, Khulna, Rajshahi, and Sylhet. By area or region of residence, women from Barisal division were found to be more likely to have unintended pregnancies, while women from Sylhet division were

least likely to have unintended pregnancies. Although urban women were more likely to have unwanted or mistimed pregnancies than rural women, the difference was not statistically significant.

Multivariate Analysis

The reduced multivariate models are discussed here; many of the variables which show significance in the bivariate but fail to show a significant overall relationship to the dependent variable in the multivariate analysis, and are therefore dropped from the final models. Variables that remain in the model include age of respondents, region, place of residence, education of respondents, number of living children, used modern method of FP prior to pregnancy. Results for the multivariate analysis are presented in Table 4.

Unwanted vs. wanted

Compared with women with age 30 and above, those age less than 19 and age 20-29 were about 96 and 36 percent less likely to say that the pregnancy was unwanted than wanted. Women from Khulna, Dhaka, and Rajshahi divisions compared to Sylhet division were at a higher risk of unwanted pregnancy relative to wanted pregnancy. Women living in the urban areas were 0.4 times more likely than women living in rural areas to report the index pregnancy as unwanted, as opposed to wanted. Women with no education were about 3 times more likely than women with higher education to say that their most recent birth or current pregnancy was unwanted as opposed to wanted. Women with primary and secondary education were also about 3 times more likely than women with higher education to say that the index pregnancy was unwanted as

TABLE 4 ABOUT HERE PLEASE

opposed to wanted at the time. With regard to the number of living children, women having no child, having 1 to 2 children, having 3 to 4 children were 99 percent, 96 percent, 54 percent respectively were less likely than the women with more than 5 living children to report that a pregnancy was unwanted as opposed to wanted. Women who have never used modern contraception were 58 percent less likely to say that their most recent pregnancy was unwanted as opposed to wanted.

Mistimed vs. wanted

The relationship between age and mistimed pregnancy, as opposed to wanted pregnancy, is negative. Compared with women with age 30 and above, those age less than 19 and age 20-29 were about 3 and 2 times more likely to say that the pregnancy was mistimed than wanted. Only women from Dhaka division were about 30 percent less likely than Sylhet division to have had mistimed pregnancy rather than wanted pregnancy. Women with 3 to 4 living children were 0.6 times more likely than the women with more than 5 living children to report that a pregnancy was mistimed as opposed to wanted. Women who have never used modern contraception were 30 percent less likely to say that their most recent pregnancy was mistimed as opposed to wanted.

Unwanted vs. mistimed

The relationship of age to planning status of the index birth is such that the youngest women (less than 19) were about 99 percent less likely than the oldest women to say that their most recent pregnancy was unwanted as opposed to mistimed. Women living in the urban areas were 0.6 times more likely than women living in rural areas to report the index pregnancy as

unwanted, as opposed to mistimed. Women from Sylhet divisions were less likely than residents of any other region to have had unwanted pregnancy, relative to mistimed pregnancy. Education increased the odds that a pregnancy was unwanted rather than mistimed. For example, women who had primary or secondary education were about 5 times more likely than those who had higher education to have experienced an unwanted pregnancy rather than a mistimed pregnancy. With regard to the number of living children, women having no child, having 1 to 2 children, having 3 to 4 children were 99 percent, 96 percent, 61 percent were less likely than the women with more than 5 living children to report that a pregnancy was unwanted as opposed to mistimed. Women who have never used modern contraception were 54 percent less likely to say that their most recent pregnancy was unwanted as opposed to mistimed.

Discussion and Conclusions

In this article, the trends and determinants of mistimed and unwanted pregnancies in Bangladesh have been presented. The results show that though the prevalence of unintended pregnancy was dropped in the recent survey but unwanted pregnancy was still increasing. These are the similar findings to the study conducted based on countries like Egypt, Indonesia, and Morocco.¹ Various determinants of mistimed and unwanted pregnancies were investigated and multinomial logistic regression was used to sort out the effects of each of the determinants net of the effects of other variables in the analysis. The significant differences in intendedness that emerged by region and area of residence suggest that family planning services need to be expanded or improved in urban areas and in the Khulna, Dhaka, Rajshahi, and Barisal regions. Such regional disparities may be due to cultural factors as well as to differences in the availability and quality of family planning services. Unfortunately, the BDHS does not collect information on these factors. Both

the number of living children and women's age were associated with the likelihood of unwanted and mistimed pregnancy. The more children a woman already had, the more likely she was to report that her current pregnancy was unwanted. On the contrary, the more children a woman already had, the less likely she was to report that her current pregnancy was mistimed. Women who have had many children may differ in meaningful ways from women who have not; for example, women may have limited access to services or may experience particular difficulty in practicing contraception. Teenagers are more likely to classify their most recent pregnancy as mistimed but less likely to report as unwanted than their older counterparts. This finding may reflect more deferred childbearing among Bangladeshi women, or it may indicate that older women want larger families than younger women do. Indeed, the 2004 BDHS indicated that women aged 30-49 considered a family of more children to be ideal, compared to less children among women aged 15-19 years. Nonetheless, unwanted pregnancy remains a problem for some older women in Bangladesh; when women in 30s and 40s did have an unintended pregnancy, it was usually unwanted rather than mistimed. The study finds that education is an important issue for deciding pregnancy intention. Unwanted pregnancies were more likely among less educated women compared to women who had higher level of education. Women who had primary or secondary education were more likely than those who had higher education to have had a mistimed rather than a wanted pregnancy. Women had no education might be less likely than better educated women to have mistimed pregnancies because they might have more modest expectations of their ability to control the timing of their pregnancies.

Experience using a modern family planning method was independently associated with the likelihood of unintended pregnancy in this analysis. Past users of a modern method of FP were

more likely than nonusers to say their pregnancy had been unwanted or mistimed than to report that it was wanted. Users of a FP method might have higher expectations about limiting or spacing their pregnancies, and thus be more likely to view a pregnancy as unwanted. The lack of an association between contraceptive knowledge and pregnancy intention status may indicate that awareness does not always indicate an ability to obtain methods or to use them correctly and effectively.⁶ More refined measures of both family planning knowledge and experience may shed more light on these relationships. Thus, the results point to the need for further research in several areas. Current measures of pregnancy intention status are probably inadequate and need to be refined to be more relevant to different social and cultural groups. In addition, the biases inherent in reporting retrospective attitudes toward pregnancy need to be addressed; feelings about pregnancy may change throughout the gestation, as well as after the birth. Further research is also needed to identify the cultural and psychosocial factors that differentiate women at high risk of unintended pregnancy from those who are able to plan their pregnancies. More information is needed on the role of family planning methods and services in preventing unintended pregnancy. Program planners and policymakers in Bangladesh would benefit from knowing what proportions of unintended pregnancies are caused by nonuse of contraception and what proportion stem from contraceptive failure or inconsistent or inaccurate use. The role of the quality of care in improving women's ability to achieve their reproductive goals and reduce their number of unintended pregnancies should also be given special attention, since disrespectful treatment, inadequate information or limited method choice might lead women to underutilize services. Indeed, a recent study carried out in Peru found that quality of care significantly affected women's ability to avoid unintended pregnancy.¹⁰ Finally, it should be noted that some women with unintended pregnancies- those who respond to mistimed or unwanted ones by

resorting to induced abortion- probably did not report such pregnancies, and thus were not reflected in this study. Qualitative research methods, such as in-depth interviews, may prove more effective than survey research in exploring the characteristics of these women, particularly in societies where abortion is illegal or highly restricted, as well as where it is allowed but socially condemned.

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TABLE 1: Trends of mistimed and unwanted pregnancies of Bangladesh of women aged 10-49 whose recent birth occurred five years preceding the survey or who were currently pregnant.

Bangladesh DHS	Mistimed (%)	Unwanted (%)	Unintended (%)
1993-94	20.3	13.2	33.2
1996-97	21.1	13.2	34.3
1999-200	20.7	15.9	36.6
2004	17.0	16.0	33.0

TABLE 2. Percentage distribution of women aged 10-49 whose most recent pregnancy occurred five years preceding the survey or who were currently pregnant (N=5,817) according to selected characteristics, BDHS 2004

Characteristics	%	Characteristics	%
Age of respondents		Age at first marriage	
<19	19.2	<15	51.7
20-29	55.8	15-19	42.3
30+	25.0	20+	6.0
Access to media		Used modern method of FP prior to pregnancy	
No	31.0	No	22.6
Yes	69.0	Yes	77.4
Region		Respondent currently working	
Barisal	6.1	No	82.0
Chittagong	20.3	Yes	18.0
Dhaka	31.1	Wealth index	
Khulna	11.4	Poorest	23.2
Rajshahi	23.9	Poorer	20.8
Sylhet	7.2	Middle	19.5
Place of residence		Richer	18.6
Urban	20.8	Richest	17.9
Rural	79.2		
Education of respondents			
No education	35.5		
Primary	30.4		
Secondary	28.4		
Higher	5.7		
Religion			
Muslim	92.0		
Non-Muslim	8.0		
Number of living children			
None	5.9		
1-2	55.4		
3-4	27.6		
5+	11.1		
		Total	100.0

TABLE 3: Percent distribution of women aged 10-49 whose most recent pregnancy occurred five years preceding the survey or who were currently pregnant (N=5,817) by intention status, BDHS 2004

Characteristics	Wanted	Mistimed	Unwanted	Total
Age of respondents***				
<19	74.7	25.2	0.2	100.0
20-29	70.4	18.8	10.8	100.0
30+	53.1	6.9	40.0	100.0
Access to media***				
No	63.3	15.4	21.3	100.0
Yes	68.6	17.8	13.7	100.0
Region				
Barisal	62.6	18.3	19.1	100.0
Chittagong	67.7	16.1	16.2	100.0
Dhaka	67.5	15.7	16.8	100.0
Khulna	65.8	19.4	14.8	100.0
Rajshahi	66.3	18.0	15.7	100.0
Sylhet	69.8	17.6	12.6	100.0
Place of residence				
Urban	65.9	17.3	16.8	100.0
Rural	67.2	17.0	15.8	100.0
Education of respondents***				
No education	62.4	12.6	25.0	100.0
Primary	66.4	18.0	15.5	100.0
Secondary	70.7	21.2	8.1	100.0
Higher	78.9	18.7	2.4	100.0
Religion***				
Muslim	66.1	17.3	16.6	100.0
Non-Muslim	76.1	14.4	9.5	100.0
Number of living children***				
None	77.0	22.5	-	100.0
1-2	77.1	20.8	2.2	100.0
3-4	54.6	13.5	31.9	100.0
5+	41.1	4.3	54.5	100.0

(Continued...)

Characteristics	Wanted	Mistimed	Unwanted	Total
Age at first marriage***				
<15	64.4	15.9	19.7	100.0
15-19	68.6	18.6	12.9	100.0
20+	77.2	16.2	6.6	100.0
Used modern method of FP prior to pregnancy***				
No	76.9	15.5	7.5	100.0
Yes	64.0	17.5	18.5	100.0
Respondent's working status***				
No	67.4	17.8	14.8	100.0
Yes	64.6	13.7	21.7	100.0
Wealth index***				
Poorest	65.2	15.5	19.3	100.0
Poorer	66.0	15.1	18.9	100.0
Middle	64.0	19.7	16.3	100.0
Richer	69.6	17.9	12.5	100.0
Richest	70.7	17.4	11.9	100.0
All	66.9	17.1	16.0	100.0

*p<0.10, **p<0.05, ***p<0.01

TABLE 4: Odds ratios from multinomial logistic regression model showing likelihood that a woman's pregnancy was unwanted or mistimed by selected characteristics, Bangladesh, 2004

Characteristics	Reduced model		
	Unwanted versus Wanted	Mistimed versus Wanted	Unwanted versus Mistimed
Age of respondents			
<19	0.04***	2.61***	0.01***
20-29	0.64***	1.93***	0.22***
30+	1.00	1.00	1.00
Region			
Barisal	1.50	0.846	3.250***
Chittagong	1.12	0.777	2.166***
Dhaka	1.53**	0.710**	2.731***
Khulna	2.09**	0.899	3.256***
Rajshahi	1.85***	0.806	3.146***
Sylhet	1.00	1.00	1.00
Place of residence			
Urban	1.40***	1.01	1.62***
Rural	1.00	1.00	1.00
Education of respondents			
No education	3.219***	0.85	6.33***
Primary	2.873***	1.01	4.88***
Secondary	2.784***	1.07	5.48***
Higher	1.00	1.00	1.00
Number of living children			
None	0.01***	1.41	0.01***
1-2	0.04***	1.35	0.04***
3-4	0.46***	1.62**	0.39***
5+	1.00	1.00	1.00
Used modern method of FP prior to pregnancy			
No	0.42***	0.70***	0.56***
Yes	1.00	1.00	1.00

*p<0.10. **p<0.05. ***p<0.01.