

Readiness, Willingness and Ability to Use Contraception in Bangladesh

This study has established that most women now want to control their fertility and consider fertility control as normatively acceptable, as well as convenient in terms of availability/accessibility and cost.

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In his frequently quoted article, Coale (1973) proposes that one weakness of the demographic transition theory is that it indicates a high degree of modernization as sufficient to cause a fall of fertility, without indicating the degree of modernization that is necessary. By summarizing the findings of historical

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studies of European communities, Coale proposed three broad conditions necessary for fertility transition. He argued that modernization ultimately establishes these conditions, but that they can also occur in communities that have undergone little modernization. Lesthaeghe and Vanderhoeft (1998) later described the three conditions for fertility transition under the heading “readiness”, “willingness” and “ability”. Economic readiness means that fertility control must be advantageous to the actor so that fertility is within the calculus of conscious choice. Willingness means that fertility control must be legitimate and normatively acceptable. The basic question addressed by “willingness” is to what extent fertility control runs counter to established traditional beliefs and codes of conduct, and to what extent there is a willingness to overcome objections and fears. Ability refers to the availability and accessibility of contraceptive techniques. Similarly, Ahmed (1987: 363), applying Easterlin’s supply-demand theory of fertility observes that “studies on contraceptive use most often view three variables-motivation, attitude, and access-as the key determinants”. Motivation stems from having or expecting to have too many children or having them too soon. Although this has similarity with Coale’s notion of “economic readiness”, it does not necessarily capture whether fertility control is economically advantageous to an individual. In this paper the authors name Easterlin’s notion of motivation as simply “readiness” to distinguish it from Coale’s broader notion of “economic readiness”. Attitude refers to broad notions of acceptability of family planning in general and feelings about specific contraceptive methods in particular and is similar to Coale’s notion of willingness. Access or the “costs of fertility regulation”, as described by Easterlin (1975) pertains to the availability of contraceptives and selected services and is similar to Coale’s notion of ability.

Coale’s “economic readiness” and “willingness” conditions relate respectively to economic and cultural dimensions of an innovation. Thus, we expect a greater economic readiness to use contraception for individuals who have more living children, and who have more contact with modern economic conditions where it is advantageous to have fewer children. By contrast, persons who are in more traditional environments are expected to have less willingness to use contraception. Some authors have argued in particular that normative changes have been based on the diffusion of new forms of family behaviour (Knodel, 1974; Lesthaeghe, 1977; Cleland, 1985; Rosero-Bixby and Casterline, 1993). Those changes fall under the category of willingness in terms of Coale’s notion. Knowledge about family planning methods plays an important role in the diffusion process. Coale’s precondition of ability to regulate fertility includes family planning knowledge and helps to explain the diffusion process well (Knodel, 1974).

In general, fertility has declined much more rapidly in Asia and Latin America than in European countries during the demographic transition. In Bangladesh, for example, fertility has declined significantly over a relatively short period of time through massive adoption of modern contraceptives in spite of minimal economic development (Stevens, 1994). There has been debate about whether the Bangladesh fertility decline has been achieved solely owing to massive adoption of modern contraceptives (Carty, Yinger and Rosov, 1993; Cleland and others, 1994; Caldwell and others, 1999). The present study does not attempt to resolve this debate. Instead, it will seek to determine the extent to which questions of readiness and willingness to control fertility are prevailing in the Bangladeshi society following the fertility decline, besides the question of availability and accessibility to contraception. Although ideally it would have been important to determine the extent to which questions of economic readiness are prevailing in the Bangladeshi society following the fertility decline, because of difficulty in proper operationalization of this concept, the study will examine a similar concept; motivation or simply readiness to regulate fertility as described by Easterlin (1975).

Traditional analyses of determinants of contraceptive use have often examined socio-economic and demographic factors as potential determinants of contraceptive use. Those variables have been found to be important determinants of contraceptive use in Bangladesh (Ullah and Chakraborty, 1993; Khan and Rahman, 1997). However, very few studies have examined the effects of readiness, willingness and ability on contraceptive use. Previous researches have examined the relevance of some of the aspects of “willingness” to contraceptive method choice, by measuring the perception of side effects and inconvenience of use (Mannan, 2002). But, the relevance of those aspects and other aspects of “willingness” have not been examined with regard to contraceptive use. Only a single study by Ahmed (1987) examined the impact of motivation or readiness to regulate fertility on contraceptive use, in which it was found that strong motivation to regulate fertility led to higher contraceptive use in rural Bangladesh. Previous researches in Bangladesh have shown that contraceptive access, quality of field workers and quality of clinical services encourage a greater adoption and continuation of contraception (Koenig, 2003; Islam, Barua and Bairagi, 2003) while community contraceptive availability encourages greater adoption (Tsui and others, 1981). Thus, the present study seeks to determine the relative importance of readiness, willingness, ability and socio-economic, sociocultural and demographic variables with regard to contraceptive use in Bangladesh.

Data, measures and methods

The authors used data from the 1996-1997 Bangladesh Demographic and Health Survey (BDHS), which is a national survey conducted under the authority of the National Institute for Population Research and Training (NIPORT) of the Ministry of Health and Family Welfare (Mitra and others, 1997). Using a two stage stratified sample design a total of 9,355 ever-married women aged 10-49 were identified as eligible for the individual interview. Of those, 9,127 or 97.8 per cent were successfully interviewed. The sample is first restricted to the 8,450 currently married women aged 10-49 for whom information was obtained on contraceptive usage. In order to consider solely women for whom current use of contraception is relevant, the analysis is based on the 7,517 currently married fecund women who were not pregnant at the time of the survey. Current use of contraception was used as the dependent variable for the study of contraceptive use because it allows for the analysis of behaviour at the time of the interview and it is less subject to error. Future intention to use contraception would also have been an important dependent variable for the purpose of the study. Lack of data did not allow for the inclusion of this variable in the study.

The ready, willing and able variables were measured as dummy variables following the guidelines by Lesthaeghe and Vanderhoeft (1998). Readiness was measured by concentrating exclusively on subsequent births. In the BDHS questionnaire, non-pregnant women were asked whether they preferred to have a/another child or preferred not to have any more children (Mitra and others, 1997: 221). In addition, women who wanted a/another child were asked when they would like to have the next child. Those who intended to wait for two or more years before having a/another child, or who did not want more children, were considered as being ready for using contraception. Women who wanted a child within two years, or were undecided about their future fertility were considered as being not ready for using contraception. The measure for readiness was based on 7,497 cases. Based on this measure, 82.7 per cent were ready and 17.3 per cent were not ready to use contraception.

The notion of "willingness" refers to considerations of legitimacy and normative acceptability of family planning methods as well as willingness to overcome objections and fears associated with family planning methods. In the BDHS, women were asked whether they approved or disapproved of family planning (Mitra and others, 1997: 222). In addition, they were asked to specify the main reason for not intending to use a method. Women who disapproved of family planning and did not intend to use contraception because of personal opposition, opposition from husband, opposition from others, religious prohibitions, fears for

health which included answers like bad for health, side effects, inconvenient to use, and interference with body's normal processes, were regrouped in the category "non-willingness". The measure for willingness was based on 7,517 cases, of which 95.3 per cent were willing to use contraception.

The notion of "ability" refers to the accessibility of family planning methods. In the BDHS, women were asked which methods they had heard about (Mitra and others, 1997: 205, 211). They were also asked whether they knew of any source from where they could obtain a family planning method. Women who did not intend to use contraception were asked the main reasons for not doing so, the reasons included among others, difficulty of access to family planning services and difficulty pertaining to costs. Respondents who had no knowledge about methods of contraception, no knowledge about family planning services, had difficulty in accessing family planning services or for whom family planning services were too distant, and had difficulty pertaining to costs were classified as "non-able", which amounted to 6.3 per cent of the measure for ability which was based on 7,517 cases. The questionnaire simply asked for the main reason, rather than multiple reasons, for not intending to use contraception. This may result in the overestimation of proportions willing and able. In addition, it would have been better to measure willingness and ability as continuous variables by counting the number of "yes" responses to the reasons related to willingness and ability, but respondents were only asked to specify through a single question the main reason for not intending to use contraception and thus it was not possible to measure those variables in this manner. Also, given the politically sensitive questions, it is difficult to know whether the interview setting may have had any influence on answers to the questions which were related to the measures of willingness and ability.

For testing the association between each covariate and the outcome at the bivariate level, the chi-square test was used. Logistic regression is used for multivariate analysis, with the categorical and interval variables indicated in the tables (see tables 1 and 2). The interval variables were also entered as squared terms to capture their non-linear effects on the dependent variable. To avoid problems of multicollinearity, the linear and squared terms for the interval variables were centred. Since the authors' main objective is to examine the individual effects of readiness, willingness and ability on contraceptive use, their interactions were not considered for easier interpretability of results. The model chi-square statistic has been used for evaluating model fit. It is a likelihood ratio (LR) test between $-2\log LR$ when only the constant term is in the model and $-2\log LR$ when the constant and the covariates are in the model. A LR test can also be used to compare the fit of two nested models. The statistical significance for

each covariate is tested using Wald's statistic. Each covariate is tested at 5 per cent level of significance. For obtaining national estimates based on BDHS, appropriate weights were derived to adjust for oversampling from urban population and non-response (Mitra and others, 1997). All analyses in the present study will thus consider weights.

Sample characteristics and descriptive results

The distributions of the socio-economic, sociocultural, residence/region and demographic variables are shown in tables 1 and 2. The only sociocultural variable which was included in this study is religion. Lack of data did not allow for the consideration of other relevant sociocultural factors such as superstitions or taboos against family planning (eg., folk stories), religiosity, etc. The proportions currently using contraception, ready, willing and able within categories of the variables are also shown in tables 1 and 2. Regarding ready, willing and able, there is no large variation between urban and rural areas, but the Sylhet region shows markedly lower values than the other divisions. While the differences are not large, it appears that religion affects willingness more than the two other variables since religion has statistically significant effect only on willingness. There is markedly lower readiness to use contraception for women who are young, recently married or have no children, but those demographic considerations have much less impact on willingness and ability to use contraception (table 2). Similarly, the lack of living sons seems to affect readiness much more than willingness. Women with secondary or more education show low readiness but high willingness and ability to use contraception.

Contraceptive use increases curvilinearly with current age, number of living children, number of living sons, and duration of marriage. It increases with the educational levels of women and their husbands. Urban women have higher contraceptive use rates than their rural counterparts while women of Sylhet division have considerably lower rates than women of other divisions.

Predictors of readiness, willingness and ability to use contraception

While the proportions who do not qualify as willing and able to use contraception are on the low side for analysis through logistic regression, it is still worth observing the extent to which those ready, willing and able variables can be predicted by the socio-economic, sociocultural and demographic variables (table 3). The results are discussed below.

Table 1. Currently married, fecund and non-pregnant women, showing percentage who are currently using contraception and are ready, willing and able to use contraception, by RWA, region/residential, sociocultural and socio-economic variables, Bangladesh, 1996-1997

Characteristics	Number of cases	Using contraceptive	Ready	Willing	Able
Readiness					
Not ready	1,294 (17.3)	15.1	--	--	--
Ready	6,203 (82.7)	63.7	--	--	--
		p<0.0001			
Willingness					
Not willing	352 (4.7)	8.5	--	--	--
Willing	7,164 (95.3)	57.6	--	--	--
		p<0.0001			
Ability					
Not able	474 (6.3)	8.6	--	--	--
Able	7,043 (93.7)	58.5	--	--	--
		p<0.0001			
Place of residence					
Urban	873 (11.6)	63.7	84.4	97.9	95.9
Rural	6,644 (88.4)	53.6	82.5	95.0	93.4
		p<0.0001	p>0.05	p<0.001	p<0.01
Region of residence					
Sylhet	373 (5.0)	24.7	68.0	82.3	80.5
Barisal	492 (6.5)	56.1	84.9	96.3	92.7
Chittagong	1,489 (19.8)	42.5	80.9	93.6	92.9
Dhaka	2,370 (31.5)	55.8	83.2	96.0	93.3
Khulna	929 (12.4)	68.1	85.0	96.4	96.2
Rajshahi	1,963 (24.8)	64.5	84.9	97.6	96.5
		p<0.0001	p<0.0001	p<0.0001	p<0.0001
Women's education					
No schooling	3,958 (52.7)	52.1	83.8	93.5	91.8
Primary incomplete	2,102 (28.0)	56.8	82.7	96.2	94.4
Primary complete and above	1,456 (19.4)	62.0	79.9	98.9	97.7
		p<0.0001	p<0.01	p<0.0001	p<0.0001
Current work status					
Not working	5,106 (67.9)	52.5	81.4	94.9	92.2
Working	2,408 (32.0)	61.3	85.7	96.1	96.8
		p<0.0001	p<0.0001	p<0.05	p<0.0001
Religion					
Muslim	6,715 (89.3)	54.2	82.6	95.1	93.6
Non-Muslim	801 (10.7)	64.6	83.9	97.0	94.8
		p<0.0001	p>0.05	p<0.05	p>0.05

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Table 1. (Continued)

Characteristics	Number of cases	Using contraceptive	Ready	Willing	Able
Husband's education					
No schooling	3,269 (43.5)	51.9	84.6	93.7	91.8
Primary incomplete	1,872 (24.9)	53.3	83.0	95.5	93.5
Primary complete	1,590 (21.2)	58.7	83.2	96.1	95.7
Secondary and above	722 (9.6)	69.4	81.5	98.8	98.9
		p<0.0001	p>0.05	p<0.0001	p<0.0001
Husband's occupation					
Professional/business	1,933 (25.7)	63.6	84.0	96.7	95.8
Others	5,649 (74.3)	55.2	82.2	94.8	93.0
		p<0.0001	p>0.05	p<0.001	p<0.0001
Total	7,517	55.3	82.7	95.3	93.7

Note: The percentages on the parentheses may not add up to 100.00 because of rounding. The percentages for ready are based on 7,497 cases. The p-values are based on chi-square test.

Table 2. Currently married, fecund and non-pregnant women, showing percentage who are currently using contraception and are ready, willing and able to use contraception, by demographic variables, Bangladesh, 1996-1997

Characteristics	Number of cases	Using contraceptive	Ready	Willing	Able
Current age					
Below 15	121 (1.6)	18.2	44.2	95.0	76.0
15-19	1,067 (14.2)	38.5	68.2	96.2	90.6
20-24	1,484 (19.7)	48.0	77.0	96.6	94.6
25-29	1,646 (21.9)	57.8	81.7	96.5	95.9
30-34	1,222 (16.3)	66.9	89.0	96.1	96.6
35-39	955 (12.7)	68.9	92.0	93.9	94.8
40-44	642 (8.5)	62.9	95.2	93.3	91.4
45-49	380 (5.1)	47.6	98.4	87.6	86.3
		p<0.0001	p<0.0001	p<0.0001	p<0.0001
Number of living children					
0	770 (10.2)	21.4	234.3	94.3	84.0
1	1,663 (19.5)	47.1	72.9	96.5	94.5
2	1,642 (21.8)	63.8	86.7	96.6	96.0
3	1,316 (17.5)	64.3	92.1	96.3	96.0
4	1,001 (13.3)	64.6	96.3	94.8	94.8
5 or more	1,326 (17.7)	57.6	97.2	92.4	92.4
		p<0.0001	p<0.0001	p<0.0001	p<0.0001

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Table 2. (Continued)

Characteristics	Number of cases	Using contraceptive	Ready	Willing	Able
Number of living sons					
0	2001 (26.6)	38.2	58.5	95.2	90.4
1	2552 (33.9)	60.1	86.8	96.7	95.8
2	1654 (22.0)	65.3	94.7	95.3	95.0
3	801 (10.7)	62.3	95.8	93.3	93.4
4	355 (4.7)	57.0	98.6	92.4	93.8
5 or more	153 (2.0)	49.7	96.1	90.3	88.9
		p<0.0001	p<0.0001	p<0.0001	p<0.0001
Child loss experience					
0	5042 (67.1)	55.5	80.1	96.6	94.1
1	1550 (20.6)	58.0	87.5	94.2	94.1
2	598 (7.9)	52.0	89.3	92.0	91.8
3 or more	328 (4.4)	46.0	89.0	86.3	88.1
		p<0.0001	p<0.0001	p<0.0001	p<0.0001
Duration of marriage (years)					
Below 5	1257 (16.9)	36.1	63.2	96.3	89.3
5-9	1368 (18.2)	48.6	76.7	96.5	95.2
10-14	1474 (19.6)	57.9	83.2	96.1	96.1
15-19	1182 (15.7)	66.7	89.0	96.2	96.4
20-24	929 (12.4)	67.7	92.2	95.3	95.0
25 or more	1227 (16.3)	59.4	95.6	91.1	90.2
		p<0.0001	p<0.0001	p<0.0001	p<0.0001
Total	7517	55.3	82.7	95.3	93.7

Note: The percentages on the parentheses may not add up to 100 because of rounding. The percentages for ready are based on 7,497 cases. The p-values are based on chi-square test.

With regard to readiness, the significant predictor variables are region of residence, women's education, husband's education, number of living children, number of living sons and marital duration. Women are significantly more ready to use contraception with increase in their and their husband's educational levels. This contradicts the results of bivariate analysis. It was observed by bivariate analysis that the relationship between readiness and education (for both women's and their spouse's) changes with number of living children (results not given). Women with fewer living children are less ready while at the same time they are more educated. Among the regions, women of Chittagong division are least ready to use contraception followed by women of Sylhet division. As was expected, individuals with more living children are significantly more ready to use

contraception. The results also show that individuals with more living sons are significantly more ready to use contraception. This result was expected, given the importance of son preference in situations where women are economically and socially dependent on men.

As expected, religion and region of residence are also strong predictors of willingness. Women of Sylhet division are least willing to use contraception followed by women of Chittagong division. The other predictors of willingness are women's education and number of dead children.

For able the significant predictors are region of residence, women's education, husband's education, women's current work status, maternal age and number of living children. Ability increases significantly with education. This is expected because educated people are likely to have more knowledge about contraceptive methods. Working women are significantly more able to use contraception than their non-working counterparts. Those women are likely to have more knowledge about contraceptive methods possibly through greater social interaction. Women of Sylhet division are least able to use contraception. This means that this region is lagging behind other regions of the country in terms of availability/accessibility and knowledge of modern contraceptive methods. Other researches have also shown that family planning programmes have been implemented differently in the various regions (NIPORT, 2001; Freedman, Khoo and Supraptilah, 1981), which affects the notion of ability.

It is noteworthy that religion is a strong predictor of willingness to use contraception, with less willingness among Muslim women, but religion is a weak predictor of readiness and ability to use contraception. By contrast, readiness is much more affected by the number of living children, living sons, duration of marriage and some socioeconomic variables. Thus, the results confirm the greater importance of cultural factors to willingness, and socio-economic and demographic factors to readiness to use contraception.

Table 3. Logistic regression for readiness, willingness and ability to use contraception, Bangladesh, 1996-1997

Variables	Ready Coefficient	Willing Coefficient	Able Coefficient
Residence/regional variables			
Place of residence (Urban)	--	--	--
Rural	-0.2337	-0.472	-0.0058
Region of residence (Sylhet)	--	--	--
Barisal	1.2190*	1.5460*	0.9978*

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Table 3. (Continued)

Variables	Ready Coefficient	Willing Coefficient	Able Coefficient
Chittagong	0.5501**	1.0345*	1.1349*
Dhaka	1.1761*	1.6680*	1.2928*
Khulna	1.3743*	1.6810*	1.9004*
Rajshahi	1.4885*	2.2516*	1.9938*
Sociocultural variables			
Religion (Muslim)	--	--	--
Non-Muslim	0.0977	0.5672***	0.0821
Socio-economic variables			
Women's education (No education)	--	--	--
Primary incomplete	0.1142	0.3301***	0.4455*
Primary complete +	0.2569***	1.3870*	1.0993*
Current work status (Not working)	--	--	--
Working	0.11	0.2456	0.7837*
Husband's occupation (Prof./business)	--	--	--
Others	0.0517	-0.1435	-0.1705
Husband's education (No education)	--	--	--
Primary incomplete	0.1353	0.2361	0.1324
Primary complete	0.2222	0.1688	0.273
Secondary+	0.3570***	0.2971	1.0937*
Demographic variables			
Current age	-0.086	0.1552	0.2885*
Current age squared	0.0016	-0.0026	-0.0043*
Number of living children	1.7272*	0.2192	0.4112*
Number of living children squared	-0.1507*	-0.0173	-0.0343*
Duration of marriage	-0.2112*	-0.0564	-0.0302
Duration of marriage squared	0.0057*	0.0007	-0.0004
Number of living sons	0.7093*	0.1776	0.1434
Number of living sons squared	-0.0979**	-0.0345	-0.0275
Child loss experience	-0.0592	-0.2253***	-0.1422
Child loss experience squared	-0.0033	0.0057	0.0097
Constant	-0.1777	-0.2303	-3.5212*
Model Chi-square	1,859.981	303.239	449.676
Degrees of freedom	24	24	24
Sample size	7,496	7,496	7,496

Note: The reference category for a categorical variable is in the parentheses.

* indicates $p < 0.001$; ** indicates $p < 0.01$; and *** indicates $p < 0.05$.

Relative importance of “ready, willing and able” compared to other predictors of contraceptive usage

The bivariate analysis indicated that contraceptive use increases curvilinearly with current age, number of living children, number of living sons, and duration of marriage. Thus, squared terms are introduced in the logistic models to capture their non-linear relationships with contraceptive use. Three models were used for predicting contraceptive usage: Model A includes the terms for ready, willing and able, Model B has all the socio-economic, sociocultural and demographic variables but no ready, willing and able variables, and Model C is the full model which has all the variables included in Models A and B (see table 4). Based on LR tests all the models are found to be statistically significant indicating a good fit for each model. Since the sample sizes for the three models are similar and Model A is a subset of Model C, a LR test can be used to compare their fit. Similarly, Model B and Model C can be compared by a LR test. A comparison with Model A indicates that when the socio-economic, sociocultural and demographic variables are introduced in Model C, the model chi-square increases by 654.516 with 24 degrees of freedom ($p=0.000$). A comparison between Models B and C indicates that model chi-square increases by 1035.935 with 3 degrees of freedom ($p=0.000$) for the inclusion of ready, willing and able variables to the model with only socio-economic, sociocultural and demographic variables as covariates (Model B). Thus, the variables ready, willing and able together are considerably more important than the socio-economic, sociocultural and demographic variables in terms of model fit. A comparison between models with and without controls for the socio-economic, sociocultural and demographic variables further indicates that the coefficients for ready, willing and able are fairly robust as they only differ in the first or second decimal points. On the other hand, when the ready, willing and able variables are controlled in Model C, the magnitude of the effects of most socio-economic, sociocultural and demographic variables decreases considerably. This suggests that much of the effects of the socio-economic, sociocultural and demographic variables on contraceptive use are absorbed by the ready, willing and able variables. Thus, the effects of the socio-economic, sociocultural and demographic variables on contraceptive use are influenced to a large degree by the three variables. While these may seem to suggest that the ready, willing and able variables act as intervening variables between the more distant background variables and the outcome of contraceptive usage, changes in those background characteristics are key to changes in the readiness, willingness and ability to use contraception as has been found in the previous section.

The results indicated that women who are ready to control fertility are associated with increasing likelihood to use contraceptive than those who are not ready to regulate fertility. This is in accordance with Ahmed's (1987) findings who had found, using Easterlin's framework, that strong motivation to regulate fertility led to higher contraceptive use in rural Bangladesh. It was found that women who are able or have the means to control fertility are associated with increasing likelihood to use contraceptive than those who are not able to regulate fertility. Ahmed (1987) had similarly found earlier that lower costs of fertility regulation led to higher contraceptive use in rural Bangladesh. However, he considered just one indicator; distance to family planning clinics as a proxy for cost of fertility regulation or means to regulate fertility while the present study considered all issues relevant to means to regulate fertility. The study found that women who are willing to regulate fertility are associated with higher likelihood to use contraceptive than those who are not willing to regulate fertility. None of the previous studies in Bangladesh including the one by Ahmed (1987) examined the impact of normative willingness on contraceptive use. A few studies have examined the influence of individual's religious beliefs and religiosity on contraceptive use (Bernhardt and Uddin, 1990; Kamal and Slogget, 1993), in which it was found that those variables do not pose a significant barrier to contraceptive use. However, individual's religious beliefs and religiosity are only a few predictors of willingness to regulate fertility (the other predictors are likely to be superstitions against family planning, social conservatism, etc.) and thus cannot fully explain individual's willingness to regulate fertility.

The authors further found that urban, better educated, non-Muslim, and currently working women are associated with higher odds to practice contraceptive than those who are rural, less educated, Muslim, and not currently working. Wives of professionals/businessmen are more likely to practice contraception than those whose husbands are engaged in other occupations. In Bangladesh, women who belong to the former category are likely to have higher socio-economic status. There is also a strong regional variation in current use. Women of Sylhet and Chittagong divisions have considerably lower use rates than those of other divisions. It has been suggested that women of those two divisions are religiously more conservative and have traditional values regarding family formation (Khan and Raeside, 1998). The present study also supported this as women of those two divisions were found to be less willing to use contraception than those of other divisions. Low levels of education and low former-sector employment may also partly contribute to the low use of contraceptives among Sylhet women. Both bivariate and multivariate analyses in this study suggested that women of Sylhet division are significantly less ready and able to regulate fertility than those of other

divisions. It has been found that family planning programmes have been implemented differently across the various regions of the country and Sylhet and Chittagong divisions are lagging behind other divisions in terms of family planning service delivery (NIPORT, 2001; Freedman, Khoo and Supraptilah, 1981).

Regardless of whether the ready, willing and able variables are controlled in the analysis, the likelihood of contraceptive use is higher for women having urban residence, non-Muslim religious denomination and husbands being employed as professionals/businessmen as compared with their counterparts having rural residence, Muslim religious denomination and husbands being employed in services other than professional or business, respectively. Controlling for other variables in the analysis, contraceptive usage increases significantly with educational levels of women and that of their husbands, current age, duration of marriage and number of living sons, while it declines with child loss experience. For each of the interval variables, the squared term has a sign that is opposite the linear term, implying a decreasing effect, but none of the squared terms are statistically significant in the final models.

Regarding changes in the effects of the socio-economic, sociocultural and demographic variables when the ready, willing and able variables are controlled for in the analysis, possibly the most notable point is the narrowing down of regional variations in contraceptive use when the ready, willing and able variables are controlled in the analysis. This is possibly because the effect of region of residence on current use is partly transmitted through the ready, willing and able variables. It should be mentioned that the analysis in the previous section indicated that region of residence had strong effect on each of those three variables. However, the regional variations in contraceptive use do not totally diminish when the ready, willing and able variables are controlled in the analysis. Thus, the ready, willing and able variables do not entirely account for the regional variations in contraceptive use. This unexplained variation could be owing to several reasons. First, the creation of Sylhet division, which isolates the sections of the former Chittagong division that have the lowest use rates, results in wider divisional differences than existed previously (Mitra and others, 1997:55). Furthermore, this unexplained variation could be owing to the different socio-economic status of the respondents across the regions. In particular, the socio-economic scenario of Sylhet division is different from the rest of the country in several aspects including because it has a larger percentage of affluent expatriate and semi-expatriate population which may not have similar views regarding fertility control compared to the much larger non-expatriate population of the country. In this study, socio-economic status of women were partly controlled for. However, further studies need to be undertaken to understand the reasons for lower use rate among

women of Sylhet division in particular. Such an understanding may help to provide appropriate services and possibly bring the Sylhet division in line with the rest of the country in terms of contraceptive use. The magnitude of the effect of number of living children on current use reduces drastically and diminishes when the ready, willing and able variables are introduced in the final model. This is probably because the effect of number of living children on current use is largely transmitted through the ready variable as was found in the previous section. Although infant and child mortality has been declining in Bangladesh, it is still high by international standards (Mitra and others, 1997). In this study, child loss experience has been found to have a strong negative significant effect on current use regardless of the presence of the ready, willing and able variables. When the effect of child loss experience on readiness, willingness and ability to use contraception was examined, it was found to have negative effects on all of them, however, the effect was statistically significant only for willingness. The results thus seem to suggest that the effect of infant and child mortality on contraceptive use is only partly transmitted through willingness to use contraception and because of this, the magnitude of its effect on contraceptive use does not change much when the three variables are controlled in the analysis. Similarly, the effects of current age and marital duration on contraceptive use remain strong after controlling for the three variables. When the effects of current age and marital duration on readiness, willingness and ability were examined, they were found to be statistically significant only for ability and readiness, respectively.

Table 4. Logistic regression for current use of contraception, Bangladesh, 1996-1997

Variables	Model A Coefficient	Model B Coefficient	Model C Coefficient
Easterlin/Coale variables			
Readiness (Not ready)	--	--	--
Ready	2.199*	--	2.126*
Willingness (Not willing)	--	--	--
Willing	2.002*	--	2.029*
Ability (Not able)	--	--	--
Able	2.396*	--	2.111*
Residence/regional variables			
Place of residence (Urban)	--	--	--
Rural	--	-0.502*	-0.479*
Region of residence (Sylhet)	--	--	--
Barisal	--	1.247*	0.920*
Chittagong	--	0.668*	0.416*

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Table 4. (Continued)

Variables	Model A Coefficient	Model B Coefficient	Model C Coefficient
Dhaka	--	1.300*	0.985*
Khulna	--	1.863*	1.527*
Rajshahi	--	1.799*	1.365*
Sociocultural variables			
Religion (Muslim)	--	--	--
Non-Muslim	--	0.421*	0.427*
Socio-economic variables			
Women's education (No education)	--	--	--
Primary incomplete	--	0.288*	0.261*
Primary complete and above	--	0.494*	0.375*
Current work status (Not working)			
Working	--	0.181*	0.136***
Husband's occupation(Prof./business)			
Others	--	-0.265*	-0.301*
Husband's education (No education)			
Primary incomplete	--	-0.084*	-0.146*
Primary complete	--	0.050	0.009
Secondary and above	--	0.271*	0.163
Demographic variables			
Current age	--	0.161*	0.192*
Current age squared	--	-0.002*	-0.003*
Number of living children	--	0.476*	0.022
Number of living children squared	--	-0.055*	-0.011
Duration of marriage	--	0.015	0.0528***
Duration of marriage squared	--	0.000	-0.000
Number of living sons	--	0.350*	0.1918**
Number of living sons squared	--	-0.051*	-0.023
Child loss experience	--	-0.173**	-0.167**
Child loss experience squared	--	-0.001	0.003
Constant	-6.010*	-4.103*	-9.345*
Model chi-square	1,639.319	1,257.900	2,293.835
Degrees of freedom	3	24	27
Sample size	7,477	7,362	7,343

Note: The reference category for a categorical variable is in the parentheses.
* indicates $p < 0.001$, ** indicates $p < 0.01$; and *** indicates $p < 0.05$.

Conclusion

The present study attempted to measure motivation or readiness, willingness and ability to regulate fertility and examine their impacts on fertility regulating behaviour of women in view of the rapid fertility decline in Bangladesh. All analyses in the present study were limited to fecund and non-pregnant women. The “ready” precondition has received considerable attention in the economic literature while the “able” precondition has been extensively examined in the family planning literature. By contrast, “willingness” has not received ample attention mainly because it is harder to measure. The results of the present study indicate that a vast majority of women satisfy those three conditions. With the exception of women without living children, most women want to control their reproduction. Most women consider fertility regulation as legitimate and acceptable on normative and health related grounds, that is, they are willing to adopt fertility regulation, counter to established traditional beliefs, codes of conduct, moral objections and health concerns. This is an important result as none of the previous studies in Bangladesh including the one by Ahmed (1987) examined all issues related to willingness to regulate fertility. In addition, it was found that for most women family planning methods are available, accessible and convenient in terms of costs. Thus, this study has established that most women now want to control their fertility and consider fertility control as normatively acceptable, as well as convenient in terms of availability/accessibility and cost. In other words, the sociocultural changes which are favourable to fertility transition have already taken place in Bangladesh. The results confirmed the greater importance of cultural factors to willingness, and socio-economic and demographic factors to readiness to use contraception. It was also found that while they are willing and able, the majority of women with no living children are not ready to use contraception. This is also partly why more women are willing to control fertility than they are ready.

The results of multivariate analysis suggested that readiness and willingness show up as independent factors to ability to practice and therefore they may have been part of the fertility transition at some point. However, the authors are unable to suggest at what point of the transition readiness and willingness directly played roles in the fertility decline. The fact that the analysis shows ability, willingness, readiness to be strongly associated with contraceptive use, at a time when more than 50 per cent of eligible women were using contraception, and had been for some time, does not constitute a full test of Easterlin’s theory since one does not know which of the changes occurred when. It is possible that those changes in attitudes occurred after changes in fertility control. To explore this further, the Matlab longitudinal data can be used although the results will not be entirely

nationally representative. The present study seems to suggest that fertility transition is well underway in Bangladesh as a vast majority of eligible women satisfy the three preconditions of fertility decline. Looking back at the national estimates for Total Fertility Rate (TFR) imply that the rapid decline in TFR from around five to around three first occurred in 1993-1994 based on the Bangladesh Demographic and Health Survey (BDHS) and after that it has remained almost stable. To explore whether in addition to ability, readiness or willingness or both have also played roles in the fertility transition, one needs at least to measure those variables based on national population surveys conducted during the pre-transition and post-transition periods. However, lack of BDHS prior to the major fertility decline mentioned above somewhat restricts such analysis. As explained earlier, given the limitation of data, the authors particularly overestimated the percentage who were willing and able and thus the impact of those variables on contraceptive use are likely to be overestimated in this study. However, this is the best one could do with nationally representative data from Bangladesh. Also, from the point of view of study design ideally the pre-conditions should be measured prior to the measures of fertility control, and ideally, prior to the onset of fertility change and this would require longitudinal data. But, in this study cross-sectional data are used so that preconditions and fertility are measured simultaneously. Unfortunately, there are no such longitudinal data at the national level in Bangladesh. Alternatively, one can use the Matlab data collected by the ICDDR,B for performing this analysis. However, results based on such data will not be representative of the entire country. Finally, contraceptive use has not increased much in Bangladesh following the last major fertility transition (decline) and therefore we do not expect that the effects of the three variables on contraceptive use have changed dramatically since the 1996-1997 BDHS. It is not expected that using data from more recent surveys would give substantially different results from those obtained in this study.

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