

## Effects of Socio-Demographic Factors on Fertility in Bangladesh: Cross-Tabulation Analysis

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**Abstract:** Attempts have been made in this study to examine the effects of selected socio-demographic variables on mean number of Children Ever Born (CEB) using the data from Bangladesh Demographic and Health Survey (BDHS), 1999/2000. It reveals from this study that both unstandardized and the standardized values for childhood place of residence, the mean number of CEB of the women who had no schooling exceeds that of who had not completed primary education and who completed primary and above. Again, in all age groups, the mean number of CEB increases as the number of children lost increases. Furthermore, the overall mean number of CEB for the women who breastfeed is higher than those who did not breastfeed their children and the mean number of CEB decreases with increasing age at first marriage. Based on the findings of this study, it may be suggested that attention should be focused on the need for providing educational facilities in particularly among women in rural areas in order to decline the level of fertility in Bangladesh.

**Key words:** Socio-demographic variables, fertility, cross tabulation, CEB, analysis, Bangladesh

### INTRODUCTION

Human fertility is determined by a complex biosocial system and there are many factors that affect and influence fertility. The factors determining the levels of fertility are difficult to ascertain and often require explanation of the complex socio-economic, cultural and institutional dimensions and their interrelationships. Studies in fertility differentials indicate that, on the whole, there exists a negative relationship between socio-economic status and cumulative fertility indexed by the number of children ever born (CEB). In most underdeveloped countries, reducing fertility is often stated as a goal for family planning but it involves changes in social values, attitudes, norms and behavior (Misra, 1981). Obviously, it is not possible to measure exactly the real capacity of female to produce offspring, it can only be guessed with the help of the maximum levels of fertility ever observed in a non-contraceptive population. One simple measure of fertility is the average number of children ever born per female and this measure of fertility has been employed in this study. Such analysis gives good insight into the interrelationships among variables, which can later be tested by more rigorous statistical techniques. It is

also, worth noting that in order to eliminate structural differences direct standardization may be applied. This study is highlighted an exploratory inquiry into the relationship between the number of children ever born (CEB) and the selected socio-economic and demographic variables, using simple cross tabular analysis.

**Data sources:** The study is based on the analysis of secondary data of ever-married women obtained from the 1999/2000 Bangladesh Demographic and Health Survey (BDHS), a nationally representative survey from 10th November 1999-15th March 2000.

**Variables included in the analysis:** In the 1999/2000 BDHS a number of socio-economic, demographic and cultural variables are available. Among them, eight variables have been taken into consideration in this study. Table 1 gives a detailed description of the variables. Wife's education and place of residence are considered as the socio-economic and background variables, while the demographic as well as intermediate variables regarded in this study are current age, age at first marriage, contraceptive use, duration of breastfeeding and fetal loss or children dead. Finally, the

Table 1: Description of variables

Variable name	Abbreviation		Measurement
Childhood	PR	Dummy	1 = Urban 2 = Rural
Place of Residence			
Current Age of Wife	AGE		Single year
Wife's Education	EDU	Dummy	0 = No schooling 1 = Incomplete primary 2 = Primary and above
Proportion of Dead Children	D		Proportion dead children
Age at First Marriage	AFM		Completed years
Length of Breastfeeding	LBF		Completed months
Contraceptive Use	CON	Dummy	1 = Ever use 2 = Never use
Children Ever Born	CEB		Number of live births

number of children ever born to each female is used here as a measure of fertility.

**Objectives:** According to several authors, the high level of fertility in Bangladesh may be attributed to a combination of social, cultural and economic factors. Although, socio-economic variations in fertility have been observed in Bangladesh, biological and behavioral factors through which socio-economic factors operate to bring about a change in fertility. So, the main objective of this study is to analyze the effects of selected socio-demographic variables on mean number of children ever born using cross tabular analysis.

### EFFECTS OF SOCIO-DEMOGRAPHIC AND PROXIMATE FACTORS ON MEAN NUMBER OF CHILDREN EVER BORN (CEB)

The recent decline in fertility has created much interest among researchers, policy makers and academicians because such dramatic change in fertility has occurred in Bangladesh without a substantial improvement in socio-economic status, health condition and other factors needed usually for fertility decline. In Bangladesh the socio-economic development carried since 1970 is in progress but at a very slow rate. Average GDP growth reached 4.9% per annum during, 1990-2000 (BBS, 2001). Decline in infant mortality (from 112 in 1986 to 66 per thousand births in 1999-2000) (Mitra *et al.*, 2001; BBS, 1996) indicates improvements in socio-economic welfare, increased literacy and continuous rise in educational attainment, which in turn has led to an increase in age at first marriage and use of contraception. Some authors argued that the decline in fertility level in Bangladesh was achieved mainly due to a successful family planning program (Cleland *et al.*, 1994). In the long run, economic development plays a decisive role in fertility reduction, but in the short run it is individual behavior, like age at marriage, practice of breastfeeding and contraceptive use, which directly affects fertility. To

improve our understanding of the causes of fertility decline, it is necessary to analyze the mechanisms through which socio-economic variables interact with individual behavior to influence fertility.

**Childhood place of residence, level of education and fertility:** Urban-rural differences in demographic trends exist in almost all countries. Some of the important determinants of such differences are on account of higher literacy and educational achievements; easier and effective mass communications, higher density and housing problems, industrial occupations, rational thinking, role segmentation and increased social and territorial mobility. Table 2 presents the mean number of CEB to all ever-married female by current age (AGE), childhood place of residence (PR) and the level of education (LED). The mean number of CEB by different age groups is higher in rural areas than in urban areas. The same pattern is observed when the age differences are standardized. The observed differential may be attributed to higher age at marriage, higher level of real income per capita, better health services, educational facilities, employment of female in the modern sector (especially garments sector) and other social amenities in urban areas that have the effect of reducing fertility in urban areas than rural areas. Furthermore, male children might be considered as economic assets rather than burden in rural areas which contributes to higher fertility in rural areas where son are considered both as earners during childhood and as social security in old age (Caldwell and Caldwell, 1987). The relatively higher economic cost of bearing children and the lower economic value of children in urban area, opportunity cost for mother's time might have played an important role in lowering the fertility of urban female through the practice of effective method of birth control.

The classification of mean number of CEB by current age (AGE), childhood place of residence (PR) and level of education (LED) is given in Table 2. The urban, rural and overall mean number of children ever born (CEB) decreased from 3.9-3.1, 4.0-3.7 and 4.0-3.5, respectively as the level of education of the female increased from no schooling to primary and above. Both unstandardized and the standardized values for PR reveal that the mean number of CEB of the female who had no schooling exceeds that of who had not completed primary education and primary and above. This pattern holds true for each age group, except in the first age group for urban and rural level of education with no schooling. The reason for higher fertility in the age group 10-14 in the urban areas with no schooling due to the fact that the number of married females with no schooling in these 2 age group are much less in urban than in rural areas due to higher age at marriage in urban areas. Moreover, female in the

Table 2: Mean number of CEB by age, place of residence and by level of education

Age group	Childhood place of residence						Over all			Standardized			Total	Urban (Ur)	Rural (Ru)
	Urban level of education			Rural level of education			Level of education			Level of education					
	0	1	2+	0	1	2+	0	1	2+	0	1	2+			
10-14	1.5 (5)	0.5 (9)	0 (15)	1.0 (29)	0.5 (48)	0.5 (65)	1.3 (34)	0.5 (57)	0.3 (80)	1.0 (34)	0.5 (57)	0.5 (80)	1.0 (171)	0.5 (29)	1.0 (142)
15-19	1.5 (88)	1.5 (75)	1.5 (204)	1.5 (323)	1.5 (230)	1.8 (531)	1.5 (411)	1.5 (305)	1.7 (735)	1.5 (411)	1.5 (305)	2.0 (735)	2.0 (1451)	1.5 (367)	2.0 (1084)
20-24	2.5 (135)	2.5 (88)	2.0 (332)	2.5 (527)	2.5 (281)	2.5 (547)	2.5 (662)	2.5 (369)	2.3 (879)	2.5 (662)	2.5 (369)	2.5 (879)	2.5 (1910)	2.5 (555)	2.5 (1356)
25-29	3.5 (187)	3.0 (84)	3.0 (366)	4.1 (677)	3.5 (257)	3.0 (441)	3.8 (864)	3.3 (341)	3.0 (807)	4.1 (864)	3.5 (341)	3.0 (807)	4.1 (2012)	3.5 (637)	4.1 (1375)
30-34	4.5 (186)	4.0 (59)	3.5 (320)	5.0 (577)	5.0 (220)	4.6 (313)	4.8 (763)	4.6 (279)	4.6 (633)	5.0 (763)	5.1 (279)	4.6 (633)	6.0 (1675)	4.5 (565)	6.0 (1110)
35-39	4.6 (155)	4.0 (62)	5.0 (189)	6.0 (545)	4.5 (171)	5.2 (215)	5.3 (700)	4.3 (233)	5.1 (404)	6.0 (700)	4.5 (233)	5.6 (404)	6.0 (1337)	5.0 (406)	6.0 (931)
40-44	6.1 (143)	6.1 (44)	5.2 (177)	6.0 (494)	5.5 (139)	5.5 (146)	6.1 (637)	5.9 (183)	5.4 (323)	6.5 (637)	5.5 (183)	6.0 (323)	6.5 (1143)	6.5 (364)	6.0 (779)
45-49	6.7 (94)	5.0 (35)	5.0 (98)	6.5 (410)	6.1 (98)	6.5 (110)	6.6 (504)	5.6 (133)	5.8 (208)	7.2 (504)	6.1 (133)	6.2 (208)	7.6 (845)	6.7 (227)	7.0 (618)
Over all	3.9 (993)	3.3 (456)	3.1 (1701)	4.0 (3582)	3.7 (1444)	3.7 (2368)	4.0 (4575)	3.5 (1900)	3.5 (4069)	4.2 (4575)	3.6 (1900)	3.8 (4069)	4.3 (10544)	3.8 (3150)	4.3 (7395)
Std.*	3.9	3.2	3.1	3.9	3.6	3.6	3.9	3.4	3.4	4.1	3.5	3.7	4.3	3.7	4.2

\*Std. = Standardized

Table 3: Mean number of CEB by age, age at first marriage and number of dead children

Age group	Age at first marriage												Over all	Standardized (Std.)				
	<15			15-19			20-24			25+					Children dead	Children dead		
	0	1	2+	0	1	2+	0	1	2+	0	1	2+						
10-14	1.0 (169)	1 (2)	--	--	--	--	--	--	--	--	--	--	1.0 (169)	1.0 (2)	--	1.0 (169)	1.0 (2)	--
15-19	1.5 (981)	2.0 (84)	3.0 (16)	1.0 (362)	1.5 (14)	--	--	--	--	--	--	--	1.3 (1343)	1.8 (980)	3.0 (10)	1.5 (1343)	2.0 (98)	3.0 (10)
20-24	2.5 (920)	3.0 (169)	3.5 (27)	1.5 (566)	2.5 (56)	2.5 (4)	1.0 (158)	1.5 (10)	--	--	--	--	1.7 (1644)	2.3 (235)	3.0 (31)	2.5 (1644)	3.0 (235)	3.5 (31)
25-29	3.5 (810)	4.0 (264)	6.0 (84)	2.5 (493)	3.5 (82)	4.0 (18)	2.0 (190)	2.0 (200)	2.5 (20)	1.0 (46)	1 (1)	--	2.2 (1539)	2.6 (368)	4.2 (106)	3.5 (1539)	4.0 (367)	5.1 (106)
30-34	4.5 (6.4)	5.0 (278)	6.0 (1460)	3.5 (346)	4.9 (830)	5.5 (35)	2.5 (121)	3.4 (19)	4.5 (6)	1.0 (34)	2.0 (3)	--	2.9 (1105)	3.8 (383)	5.3 (187)	4.5 (1105)	5.6 (383)	6.0 (187)
35-39	4.6 (439)	5.5 (279)	7.0 (175)	3.5 (196)	4.5 (83)	6.3 (46)	2.2 (27)	4.0 (2)	--	--	--	--	3.4 (729)	4.7 (380)	6.6 (228)	4.5 (729)	5.5 (380)	7.0 (228)
40-44	5.5 (347)	6.5 (272)	7.5 (233)	4.0 (118)	5.5 (67)	7.0 (38)	4.1 (31)	4.0 (8)	5.5 (8)	1.8 (16)	4.3 (4)	--	3.9 (512)	5.1 (351)	6.7 (351)	5.1 (512)	6.5 (351)	7.5 (280)
45-49	6.0 (2.18)	6.5 (215)	8.5 (214)	4.0 (70)	5.9 (46)	8.4 (33)	3.5 (22)	4.0 (8)	7.7 (3)	3.0 (9)	3.3 (4)	7.0 (4)	4.1 (319)	4.9 (272)	7.9 (254)	6.0 (319)	6.0 (272)	8.4 (254)
Over all	3.7 (4488)	4.2 (1563)	5.9 (891)	2.9 (2151)	4.1 (431)	5.6 (174)	2.6 (589)	3.2 (81)	5.1 (260)	1.7 (132)	1.7 (13)	2.7 (5)	2.6 (7360)	3.3 (2088)	6.1 (1096)	2.6 (7360)	3.3 (2088)	6.1 (1096)
Std.	3.7	4.2	5.9	2.9	4.1	5.6	2.6	3.2	5.1	1.7	1.7	2.7	2.6	3.3	6.1	2.6	3.3	6.1

Std. = Standardized

age group 10-14 and 15-19 in rural areas may be comparatively suffering more from adolescent sterility resulting from early age at marriage as well as various diseases in rural areas or may be due to the higher age at menarche which is assumed to be associated with malnutrition. Recent migration of young couple not as yet adjust their reproductive behavior with the urban environment might be responsible to some extent for this observed lack of differential.

**Age at first marriage, child loss experience and fertility:** Rise in age at marriage and proportion of those not marrying played an important role in fertility decline. Variou demographers have Indicated a negative association between total fertility rate and age at marriage and also between birth rate and age at marriage. Raise in age at marriage implies a shorter reproductive span for the female that consequently reduces the family size. The link between shortening of the reproductive span of female

Table 4: Mean number of CEB by age, contraceptive use and by level of education

Age group	Contraceptive use											
	Never use			Ever use			Over all			Standardized		
	Level of education			Level of education			Level of education			Level of education		
	0	1	2+	0	1	2+	0	1	2+	0	1	2+
10-14	0.5(25)	0.5(35)	0.5(40)	1.0(09)	0.5(22)	0.5(40)	0.5(34)	0.8(57)	0.5(80)	1.0(34)	0.5(57)	0.5(80)
15-19	1.5(202)	1.5(117)	1.8(236)	1.5(209)	1.5(188)	1.5(499)	1.5(411)	1.5(305)	1.7(735)	1.5(411)	1.5(305)	2.0(735)
20-24	2.5(223)	2.0(87)	2.0(146)	2.5(439)	2.5(288)	2.5(733)	2.5(662)	2.3(369)	2.3(879)	2.5(662)	2.5(369)	2.5(879)
25-29	4.1(241)	3.1(45)	2.5(80)	3.5(623)	3.5(293)	3.0(727)	3.8(864)	3.3(341)	2.8(807)	4.1(864)	3.5(341)	3.0(807)
30-34	5.0(212)	4.3(37)	3.5(47)	5.0(551)	4.5(242)	4.2(586)	5.0(763)	4.4(279)	3.9(633)	5.0(763)	5.1(279)	4.6(633)
35-39	5.5(202)	3.5(232)	4.1(35)	6.0(498)	4.5(201)	5.6(369)	5.8(700)	4.0(233)	4.9(404)	6.0(700)	4.5(233)	5.6(404)
40-44	6.5(221)	5.5(31)	5.5(42)	6.5(416)	5.5(152)	5.2(281)	6.5(637)	5.5(183)	5.4(323)	6.5(637)	5.5(183)	6.0(323)
45-49	6.0(210)	5.5(48)	5.5(51)	7.6(294)	6.4(85)	6.7(157)	6.8(504)	6.0(133)	6.1(208)	7.1(504)	6.1(133)	6.1(208)
Over all	4.0(1536)	3.2(1435)	3.2(677)	4.1(3039)	3.6(1465)	3.6(3392)	4.1(4575)	3.5(1900)	3.5(4069)			
Std.	4.1(1536)	3.1(1435)	3.0(677)	4.2(3039)	3.7(1465)	3.5(3392)	4.2(4575)	3.6(1900)	3.4(4069)			

Table 5: Mean number of CEB by age, contraceptive use and length of breastfeeding

Age group	Contraceptive use											
	Never use			Ever Use			Over All			Standardized		
	Never B.F	Ever B.F		Never B.F	Ever B.F		Never B.F	Ever B.F		Never B.F	Ever B.F	
		1-18 M	19-59 M		1-18 M	19-59 M		1-18 M	19-59 M		1-18 M	19-59 M
10-14	1.2(2)	1.0(7)	--	1.0(2)	1.1(7)	--	1.0(4)	1.1(14)	--	1.0	1.0	--
15-19	1.2(23)	1.3(179)	1.2(51)	1.4(25)	1.3(334)	1.1(248)	1.3(48)	1.3(513)	1.2(299)	1.2	1.3	1.1
20-24	2.2(18)	2.1(190)	1.6(96)	2.3(24)	2.1(523)	1.8(636)	2.2(46)	2.1(713)	1.8(731)	2.1	2.1	1.8
25-29	3.2(11)	3.3(134)	3.1(79)	2.9(25)	3.1(467)	2.8(630)	3.6(36)	3.2(601)	2.8(709)	2.8	3.1	2.8
30-34	4.8(10)	4.9(70)	4.2(61)	4.8(20)	4.6(254)	4.1(344)	4.8(30)	4.6(324)	4.1(449)	4.5	4.5	4.0
35-39	5.8(4)	6.0(47)	5.0(37)	5.8(5)	5.6(92)	5.6(186)	5.8(9)	5.7(139)	5.5(223)	5.0	5.5	5.3
40-44	1.5(2)	6.6(12)	6.9(29)	6.0(1)	7.3(29)	7.2(69)	3.6(3)	7.1(41)	7.1(98)	1.5	6.8	6.9
45-49	--	7.0(1)	8.2(12)	4.0(1)	10.0(6)	8.1(21)	8.0(1)	9.6(7)	8.1(33)	4.0	8.4	7.8
Over all	2.5(70)	2.8(640)	3.0(364)	2.9(107)	2.9(1712)	3.0(2178)	2.8(177)	2.9(2352)	3.0(2542)	2.7	2.8	3.0
Std.	2.7	2.8	3.2	2.8	2.9	2.9	2.7	2.9	3.0			

M = Month, B.F. = Breastfeed, Std. Standardized

and completed family size is not universally strong. In a society, where use of contraception is widespread, age at marriage and the reproductive span available would matter little as far as actual fertility is concerned. But in a non-contracepting, high fertility society, especially in which age at marriage is also low, rising the age at marriage will cause a reduction in the family size. Mean number of CEB by age, age at first marriage and child loss experience is tabulated in Table 3. In all age groups, the mean number of CEB increases as the number of children lost increases in all ages. For all female, of all ages, mean number of CEB ranges from 2.6 for female with no child loss to 6.1 for female who had experienced childloss of at least 2 children. Those with only one child loss attained 3.3. There is not much difference between the unstandardized and standardized values. Between the marriage cohorts, the mean number of CEB increases in all the child-loss categories. For instance, those who got married at the age of less than 15 and (15-19) have had higher mean number of CEB, for female who have experienced childloss of at least 2, ranging from 5.9-6.6. This might be because of the replacement effect, although, the measurement is not adequate to indicate the replacement effect (Elisa, 1988).

**Contraceptive use, level of education and fertility:** The relationship between contraceptive use and cumulative fertility is examined using Table 4, which presents the mean number of CEB to all ever married female by current age, contraceptive use and by level of education. The Table 4 depicts that the mean number of CEB for the users is higher than that for the non-users in all levels of education and age groups. Contraceptive use is usually associated with the decrease in fertility. However, the Table shows that in all age groups, contraceptive use has increased the number of children ever born. This relationship is inconsistent with the hypothesis that contraceptive use reduce the number of CEB. This could happen, where the use of modern contraceptive method is low and is characterized by improper use and high rates of discontinuation, which may lead to shorten the birth intervals and a rise in fertility (Kelley *et al.*, 1982). In addition, it might probably be due to the high parity female being the users of contraception (Farah, 1982; ESCAP Secretariat, 1979; Kelley *et al.*, 1982). The Table also reveals that the overall mean number of CEB for the non-users with no schooling to primary and above is

Table 6: Mean number of CEB by age, age at first marriage of female and place of residence

Age group	Age at first marriage											
	<15		15-19		20-24		25+		Over all		Standardized	
	Ur	Ru	Ur	Ru	Ur	Ru	Ur	Ru	Ur	Ru	Ur	Ru
10-14	0.1(29)	0.1(142)	n.a	n.a.	n.a	n.a	n.a	n.a.	0.1(29)	0.1(142)	0.1(29)	0.1(142)
15-19	0.9(244)	0.9(831)	0.3(123)	0.4(253)	n.a.	n.a.	n.a	n.a.	0.7(367)	0.8(1084)	0.7(367)	0.8(1084)
20-24	1.9(265)	2.1(851)	1.1(202)	1.3(424)	0.5(88)	0.6(80)	n.a	n.a.	1.4(555)	1.8(1355)	1.3(555)	1.7(1355)
25-29	2.7(294)	3.2(866)	2.2(218)	2.4(375)	1.3(97)	1.5(115)	0.5(28)	0.6(19)	2.2(637)	2.8(1375)	2.2(637)	2.8(1375)
30-34	3.6(286)	4.2(742)	2.9(186)	3.4(278)	1.9(72)	2.4(74)	0.8(21)	1.5(16)	3.1(565)	3.8(1110)	3.0(565)	3.7(1110)
35-39	4.0(228)	4.7(665)	3.6(123)	4.2(202)	2.3(38)	3.4(52)	1.7(17)	1.8(12)	3.6(406)	4.5(931)	3.5(406)	4.4(931)
40-44	5.0(237)	5.4(615)	4.1(89)	5.0(134)	3.4(28)	4.1(19)	1.5(10)	3.3(11)	4.6(364)	5.2(779)	4.5(364)	5.2(779)
45-49	6.0(144)	6.4(503)	4.7(60)	5.8(89)	2.8(17)	5.1(16)	2.2(06)	4.5(10)	5.3(227)	6.2(618)	5.1(227)	6.1(618)
Over all	3.2(1727)	3.5(5215)	2.4(1001)	2.6(1755)	1.6(340)	2.1(356)	1.1(82)	2.0(68)	2.7(3150)	3.2(7394)	2.7(3150)	3.1(7394)
Std.	3.1(1727)	3.4(5215)	2.3(1001)	2.5(1755)	1.5(340)	2.0(356)	1.0(82)	1.8(68)				
Over AFM	3.4(6942)		2.5(2756)		1.8(696)		1.5(150)		3.03(10544)		3.0(10544)	

AFM = Age at First Marriage, Std. = Standardized, Ur = Urban, Ru = Rural, n.a. = Not Applicable

4.0-3.2 and for the users with no schooling to primary and above is 4.1-3.6. Besides, the table also shows that about 31.6% ever-married female do not use contraception and about 68.4% ever-married female use contraception. Among the non-users 13.3% female have no schooling, 12.4% have incomplete primary and 5.9% have primary and above education. Among the users 26.3% ever-married female have no schooling, 12.6% have incomplete primary and 29.4% have primary and above education. So, education is strongly correlated with the use of contraception and fertility.

**Contraceptive use, length of breastfeeding and fertility:**

The relationship between contraceptive use, length of breastfeeding and cumulative fertility is examined using Table 5. Bongaarts and Potter (1983) have pointed out that in populations without access to modern forms of contraception, birth intervals are determined primarily by duration of breastfeeding. The overall mean number of CEB of those who did not breastfeed is 2.8, while the mean number of CEB of those who breastfeed with the duration of 1-18 months is 2.9 and breastfeed with the duration of 19-59 months is 3.0. Again, the mean number of CEB for the non-users female of those who did not breastfeed is 2.5 and who breastfeed with the duration of 1-18 months is 2.8 and with the duration of 19-59 months is 3.0, while the mean number of CEB for the users of those who did not breastfeed is 2.9 and who breastfeed with the duration of 1-18 months is 2.9 and with the duration of 19-59 months is 3.0. There is not much difference between the unstandardized and standardized values for the both non-users and users with both duration of breastfeeding. This relationship is inconsistent with the hypothesis that breastfeeding provides protection against pregnancy and reduce fertility. This could be due to the small number of cases, or more consciousness about their physical structure

especially for the never-breastfeed category or reporting errors of CEB for the ever breastfeed female. But except for female aged 40-40 and 45-49, the mean parity decreases with the increase of the duration of breastfeeding for all age groups, which is consistent relationship.

**Age at first marriage of female, place of residence and fertility:**

For most societies, marriage marks the point in a female's life when childbearing first becomes socially acceptable. When we look at age at first marriage categories, the mean number of CEB decreases with the increasing age at first marriage. This relationship is drawn from the overall and age standardized patterns shown in Table 6. A female married below the age of 15 years tends to have a mean number of CEB of 3.2 and 3.5 which declines to 1.1 and 2.0 for female who had first married at the age of 25 or more in urban and rural areas, respectively. This result is consistent with the hypothesis that early age at marriage is positively associated with higher number of CEB. This conclusion holds true with each age group and place of residence categories. There is not much difference between the standardized and unstandardized values.

**CONCLUSIONS AND RECOMMENDATIONS**

Some findings of this study deserve consideration from the viewpoint of their policy implications. This study demonstrates a very high incidence of teenage childbearing in Bangladesh, which is detrimental to national efforts to produce a further decline in the overall fertility rate in order to achieve the replacement level of fertility within a short period of time. A female's education, occupation and socio-economic status appear to be important as determinants of adolescents' childbearing. Bangladesh has a long tradition of early marriage. In this traditional rural society, there are many

social pressure to “marry off” pubescent teenage girls (Aziz and Maloney, 1985). The 1999/2000 BDHS suggests that the mean age at first marriage among ever-married female in Bangladesh is 14.99 years, which is well below the minimum legal age for marriage in Bangladesh. As a result, childbearing starts at a very early age in Bangladesh, with the large majority of female becoming mothers during adolescents. The international community and most governments view adolescent childbearing as undesirable because of its negative consequences and increasingly parents and adolescents themselves share this view (Maina, 1995). Appropriate policy and programmatic measure should be undertaken immediately to reduce the incidence of early childbearing that can have negative health, social and economic consequences, including the curtailment of education and job prospects of young mothers. In order to reduce the rate of early childbearing, adolescents, their parents and community should be made more aware of the negative health, social and economic consequences of early marriage and early childbearing. Such awareness could be created through social mobilization and information, education and communication campaigns. Early childbearing can be postponed by delaying early marriage. However, there are other avenues such as policies and programmes to increase the opportunities for education, empowerment in decision-making and empowerment outside the home for young female, all of which are likely to result in delayed marriage. More important is the need to extend the interval between marriage and first birth, thus delaying the timing of the first birth through the effective use of family planning methods. Here is evidence that, in most developing countries, adolescents face difficulty in obtaining family planning methods owing to a lack of knowledge and limited access to family planning services (Blanc and Way, 1998). This situation suggests the need for a more concerted family planning programme effort focused especially on newly married adolescents’ couples. However, more studies should be conducted to understand the impacts of factors that are not examined fully in this study such as migration, occupation, religion, etc. on fertility.

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