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Demographic and
Health Survey
2004

National Institute of Population Research and Training (NIPORT)
Dhaka, Bangladesh

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CONTENTS

Tables and Figures .......................................................................................................................... ix
Preface ........................................................................................................................................... xv
Foreword ...................................................................................................................................... xvii
Summary of Findings .................................................................................................................... xix
Map of Bangladesh ...................................................................................................................... xxvi

CHAPTER 1 INTRODUCTION

1.1 GEOGRAPHY AND ECONOMY ................................................................................1
1.2 POPULATION ...............................................................................................................2
1.3 POPULATION, FAMILY PLANNING AND MATERNAL AND CHILD
   HEALTH POLICIES AND PROGRAMS .......................................................................2
1.4 ORGANIZATION OF THE 2004 BANGLADESH DEMOGRAPHIC AND
   HEALTH SURVEY ......................................................................................................5
   1.4.1 Survey Objectives and Implementing Organizations ..............................5
   1.4.2 Sample Design .......................................................................................5
   1.4.3 Questionnaires ......................................................................................6
   1.4.4 Training and Fieldwork .......................................................................7
   1.4.5 Data Processing ................................................................................. 8
   1.4.6 Coverage of the Sample ....................................................................8

CHAPTER 2 HOUSEHOLD POPULATION AND HOUSING CHARACTERISTICS

2.1 Household Population by Age, Sex, and Residence .................................................11
2.2 Household Composition ..........................................................................................14
2.3 Educational Attainment of Household Members ......................................................14
   2.3.1 School Attendance ..............................................................................17
2.4 Employment ............................................................................................................18
2.5 Housing Characteristics .........................................................................................20
2.6 Household Possessions ...........................................................................................22
2.7 Wealth Index ...........................................................................................................23
2.8 Arsenic in Household Drinking Water ......................................................................24

CHAPTER 3 CHARACTERISTICS OF SURVEY RESPONDENTS

3.1 Background Characteristics of Respondents .............................................................29
3.2 Educational Attainment ..........................................................................................32
3.3 Exposure To Mass Media .........................................................................................35
3.4 Employment ............................................................................................................37
  3.4.1 Employment Status ..........................................................................................37
  3.4.2 Control Over Women’s Earnings .....................................................................40

3.5 Women’s Empowerment .........................................................................................42
  3.5.1 Women’s Participation in Decisionmaking: Women’s Perspective .................42
  3.5.2 Wife’s Participation in Decisionmaking: Husbands’ Perspective .......................45
  3.5.3 Freedom of Movement ....................................................................................45

3.6 Men’s Attitudes Towards Wife-Beating ....................................................................46

CHAPTER 4 FERTILITY

4.1 Introduction ............................................................................................................49
  4.2 Current Fertility Levels .......................................................................................50
  4.3 Fertility Differentials .........................................................................................51
  4.4 Fertility Trends ....................................................................................................53
  4.5 Children Ever Born and Living ............................................................................55
  4.6 Birth Intervals .....................................................................................................57
  4.7 Age at First Birth ...............................................................................................59
  4.8 Adolescent Fertility .............................................................................................60

CHAPTER 5 FERTILITY REGULATION

5.1 Knowledge of Family Planning Methods ............................................................63
  5.2 Ever Use of Contraception ..................................................................................64
  5.3 Knowledge and Ever Use of Menstrual Regulation ..............................................65
  5.4 Current Use of Contraception ..............................................................................66
    5.4.1 Trends in Current Use of Family Planning ....................................................67
    5.4.2 Differentials in Current Use of Family Planning ...........................................69
  5.5 Number of Children at First Use of Contraception .............................................72
  5.6 Problems with Current Method ..........................................................................72
  5.7 Use of Social Marketing Brands .........................................................................74
  5.8 Age at Sterilization and Sterilization Regret .......................................................75
  5.9 Source of Family Planning Services ....................................................................78
  5.10 Contraceptive Discontinuation ..........................................................................79
  5.11 Future Intentions to Use Family Planning ..........................................................82
    5.11.1 Future Use of Contraception .................................................................82
    5.11.2 Reasons for Not Intending to Use Contraception .......................................82
    5.11.3 Preferred Method for Future Use ............................................................83
  5.12 Family Planning Outreach Services ....................................................................84
  5.13 Discussion about Family Planning between Spouses .........................................87
  5.14 Exposure To Family Planning Messages ............................................................87
CHAPTER 6  OTHER PROXIMATE DETERMINANTS OF FERTILITY

6.1 Introduction ............................................................................................................91
6.2 Marital Status .......................................................................................................91
6.3 Age at First Marriage ...........................................................................................93
6.4 Postpartum Amenorrhea, Abstinence, and Insusceptibility ...............................96
6.5 Termination of Exposure to Pregnancy ..............................................................99

CHAPTER 7  FERTILITY PREFERENCES

7.1 Desire for More Children ...................................................................................... 101
7.2 Desire to Limit Childbearing .............................................................................. 103
7.3 Need for Family Planning Services .................................................................... 105
7.4 Ideal Family Size ................................................................................................ 107
7.5 Wanted and Unwanted Fertility ........................................................................ 111

CHAPTER 8  INFANT AND CHILD MORTALITY

8.1 Introduction ......................................................................................................... 115
8.2 Assessment of Data Quality .............................................................................. 115
8.3 Levels and Trends in Infant and Child Mortality .............................................. 117
8.4 Socioeconomic Differentials in Infant and Child Mortality ............................. 118
8.5 Demographic Differentials in Infant and Child Mortality ................................. 120
8.6 Perinatal Mortality .............................................................................................. 121
8.7 High-Risk Fertility Behavior ............................................................................. 122

CHAPTER 9  CAUSES OF DEATH IN CHILDREN UNDER FIVE YEARS OF AGE

9.1 Introduction ......................................................................................................... 125
9.2 Description of the Data Collection Instrument ................................................. 126
9.3 Assigning Cause of Death ................................................................................ 126
9.4 Causes Of Death Among Children Under Five ............................................... 129
9.5 Differentials in Causes of Deaths among Children Under Five ...................... 130

CHAPTER 10  MATERNAL AND CHILD HEALTH

10.1 Antenatal Care .................................................................................................. 135
10.1.1 Antenatal Care Coverage ....................................................................... 135
10.1.2 Number and Timing of Antenatal Visits .................................................. 137
10.1.3 Health Services Received during Pregnancy ......................................... 138
10.1.4 Tetanus Toxoid Vaccinations ............................................................... 140
10.2 Delivery Care ................................................................................................... 141
10.2.1 Place of Delivery ................................................................................... 141
10.2.2 Assistance during Delivery .................................................................. 143
10.3 Caesarean Section ............................................................................................. 144
10.4 Postnatal Care .................................................................................................. 145
10.5 Complications during Pregnancy, during delivery or after delivery
10.5.1 Knowledge of Life-Threatening Maternal Conditions
10.5.2 Experience of Specific Maternal Complications around Delivery
10.5.3 Treatment for Maternal Complications

10.6 Childhood Vaccination
10.6.1 Vaccination Coverage
10.6.2 Differentials in Vaccination Coverage
10.6.3 Trends in Vaccination Coverage

10.7 Childhood Illness and Treatment
10.7.1 Acute Respiratory Infection
10.7.2 Childhood Diarrhea
10.7.3 Treatment of Diarrhea

CHAPTER 11 INFANT FEEDING AND NUTRITIONAL STATUS OF CHILDREN AND WOMEN
11.1 Breastfeeding and Supplementation
11.1.1 Initiation of Breastfeeding
11.1.2 Age Pattern of Breastfeeding
11.1.3 Duration of Breastfeeding
11.1.4 Complementary Feeding
11.2 Micronutrient Intake
11.2.1 Micronutrient Intake among Children
11.2.2 Micronutrient Intake and Deficiencies among Women
11.3 Nutritional Status of Children under Five
11.3.1 Stunting
11.3.2 Wasting
11.3.3 Underweight
11.3.4 Nutritional Status of Women

CHAPTER 12 KNOWLEDGE, ATTITUDES AND BEHAVIOR RELATED TO HIV/AIDS AND OTHER SEXUALLY TRANSMITTED INFECTIONS
12.1 Knowledge of HIV/AIDS
12.2 Knowledge of Ways to Avoid HIV/AIDS
12.3 Knowledge of HIV/AIDS-Related Issues and Communication with Spouses
12.4 Awareness, Prevalence, and Treatment of Sexually Transmitted Infections (STIs)
Table of Contents

TABLES AND FIGURES

CHAPTER 1 INTRODUCTION

Table 1.1 Results of the household and individual interviews ................................................. 8

CHAPTER 2 HOUSEHOLD POPULATION AND HOUSING CHARACTERISTICS

Table 2.1 Household population by age, sex, and residence ............................................. 12
Table 2.2 Population by age from selected sources .......................................................... 13
Table 2.3 Household composition .................................................................................... 14
Table 2.4.1 Level of education of household population: women ................................ 15
Table 2.4.2 Level of education of household population: men .......................................... 16
Table 2.5 School attendance ............................................................................................... 17
Table 2.6 Employment status ............................................................................................. 18
Table 2.7 Form of earnings .................................................................................................. 19
Table 2.8 Household characteristics .................................................................................. 21
Table 2.9 Household durable goods and land ownership ............................................... 22
Table 2.10 Level of arsenic in household drinking water .................................................. 26
Table 2.11 Arsenic levels and knowledge of arsenic and markings on tubewells .............. 27

Figure 2.1 Population Pyramid, Bangladesh 2004 ............................................................. 12
Figure 2.2 Distribution of De Facto Household Population by Single Year of Age and Sex ...................................................................................................................................... 13
Figure 2.3 Trends in Percentage of Men and Women Age Six and Above With No Education by Sex and Residence ................................................................. 17
Figure 2.4 Percentage of Household Respondents Who Know About Arsenic in Water, According to Background Characteristics .................................................. 25

CHAPTER 3 CHARACTERISTICS OF SURVEY RESPONDENTS

Table 3.1.1 Background characteristics of respondents: women ........................................ 30
Table 3.1.2 Background characteristics of respondents: men ............................................. 31
Table 3.2.1 Level of education by background characteristics: women ................................ 33
Table 3.2.2 Level of education by background characteristics: men .................................... 34
Table 3.3.1 Exposure to mass media: women ..................................................................... 35
Table 3.3.2 Exposure to mass media: men ........................................................................... 36
Table 3.4.1 Employment status: women ............................................................................. 38
Table 3.4.2 Employment status: men .................................................................................. 39
Table 3.5 Decision on use of earnings ................................................................................ 40
Table 3.6 Decision on use of wife’s earnings ..................................................................... 41
Table 3.7 Women’s participation in household decisionmaking ........................................ 42
Table 3.8 Women’s participation in decisionmaking by background characteristics ... 44
Table 3.9 Wife’s participation in decisionmaking ................................................................ 45
Table 3.10 Freedom of movement ..................................................................................... 46
Table 3.11 Men’s attitude towards spousal violence ........................................................... 47
Figure 3.1 Differences in husband’s and wife’s ages (husband’s age minus wife’s age) ................................................................. 32
Figure 3.2 Education of couples ................................................................................................................................................. 34
Figure 3.3 Percentage of ever-married women and all men exposed to various media at least once a week................................................................. 37

CHAPTER 4 FERTILITY

Table 4.1 Current fertility rates .................................................................................................................................................. 50
Table 4.2 Fertility by background characteristics .................................................................................................................. 51
Table 4.3 Trends in current fertility rates ..................................................................................................................................... 53
Table 4.4 Percent pregnant ............................................................................................................................................................ 54
Table 4.5 Trends in fertility by marital duration ...................................................................................................................... 55
Table 4.6 Children ever born and living .................................................................................................................................. 56
Table 4.7 Trends in children ever born .................................................................................................................................... 57
Table 4.8 Birth intervals.................................................................................................................................................................. 58
Table 4.9 Age at first birth ............................................................................................................................................................. 59
Table 4.10 Median age at first birth............................................................................................................................................ 60
Table 4.11 Teenage pregnancy and motherhood ...................................................................................................................... 61

Figure 4.1 Age-Specific Fertility Rates by Residence .................................................................................................................. 52
Figure 4.2 Total Fertility Rates by Background Characteristics ........................................................................................................... 52
Figure 4.3 Trends in Total Fertility Rates ........................................................................................................................................ 54

CHAPTER 5 FERTILITY REGULATION

Table 5.1 Knowledge of contraceptive methods .................................................................................................................. 63
Table 5.2 Ever use of contraception ........................................................................................................................................ 64
Table 5.3 Trends in ever use of family planning methods ......................................................................................................... 65
Table 5.4 Menstrual regulation ...................................................................................................................................................... 66
Table 5.5 Current use of contraception ...................................................................................................................................... 66
Table 5.6 Trends in current use of contraceptive methods .................................................................................................. 67
Table 5.7 Current use of contraception by background characteristics .................................................................................... 70
Table 5.8 Number of children at first use of contraception ...................................................................................................... 72
Table 5.9 Problems with current method of contraception .................................................................................................... 73
Table 5.10 Use of pill brands .......................................................................................................................................................... 74
Table 5.11 Use of condom brands ................................................................................................................................................. 75
Table 5.12 Timing of sterilization ................................................................................................................................................ 76
Table 5.13 Sterilization regret ......................................................................................................................................................... 77
Table 5.14 Source of supply of modern contraceptive methods .............................................................................................. 78
Table 5.15 Contraceptive discontinuation rates .......................................................................................................................... 80
Table 5.16 Reasons for discontinuation ........................................................................................................................................ 81
Table 5.17 Future use of contraception ......................................................................................................................................... 82
Table 5.18 Reason for not intending to use contraception ........................................................................................................... 83
Table 5.19 Preferred method of contraception for future use ..................................................................................................... 84
Table 5.20 Contact with family planning fieldworkers and health fieldworkers ...................................................................... 85
Table 5.21 Satellite clinics .............................................................................................................................................................. 86
Table 5.22 Discussion of family planning with husband ........................................................................................................ 87
Table 5.23 Exposure to family planning messages ................................................................................................................... 88

Figure 5.1 Trends in Contraceptive Use (%) Among Currently Married Women
10-49, Selected Surveys, 1975-2004 ........................................................................................................................................ 68
Figure 5.2 Trends in Contraceptive Method Mix Currently Married Women
10-49 Using a Method, Selected Surveys, 1991-2004 ................................................................................................................ 69
TABLES AND FIGURES

Figure 5.3  Contraceptive Use and Women’s Status Indicators .................................... 71
Figure 5.4  Distribution of Current Users of Modern Contraceptive Methods
            By Source of Supply................................................................................... 79

CHAPTER 6  OTHER PROXIMATE DETERMINANTS OF FERTILITY

Table 6.1  Current marital status................................................................................. 92
Table 6.2  Trends in proportion never married ........................................................... 93
Table 6.3.1  Age at first marriage: women ............................................................... 93
Table 6.3.2  Age at first marriage: men.......................................................................... 94
Table 6.4.1  Median age at first marriage: women ....................................................... 95
Table 6.4.2  Median age at first marriage: men............................................................. 96
Table 6.5  Postpartum amenorrhea, abstinence and insusceptibility ......................... 97
Table 6.6  Median duration of postpartum insusceptibility by background
            characteristics ........................................................................................... 98
Table 6.7  Menopause ............................................................................................... 99

Figure 6.1  Trend in First Marriage of Women 20-24 by Age 18 .................................. 94

CHAPTER 7  FERTILITY PREFERENCES

Table 7.1  Fertility preferences by number of living children ..................................... 101
Table 7.2  Fertility preferences by age ...................................................................... 103
Table 7.3  Desire to limit childbearing .................................................................. 104
Table 7.4  Need for family planning services ............................................................. 106
Table 7.5.1  Ideal and actual number of children: women .......................................... 108
Table 7.5.2  Ideal and actual number of children: men ............................................... 109
Table 7.6  Mean ideal number of children by background characteristics ................ 110
Table 7.7  Fertility planning status ............................................................................ 111
Table 7.8  Wanted fertility rates ............................................................................... 113

Figure 7.1  Fertility Preferences Among Currently Married Women Age 10-49 ..........102
Figure 7.2  Percent of Currently Married Women Who Want No More Children
            by Number of Living Children................................................................... 102
Figure 7.3  Percentage of Married Women Who Want No More Children by
            Number of Living Children and Background............................................ 105
Figure 7.4  Trend in Unmet Need for Family Planning by Division.............................107
Figure 7.5  Trend in Unplanned Births by Percent.......................................................112

CHAPTER 8  INFANT AND CHILD MORTALITY

Table 8.1  Trend in early childhood mortality rates..................................................... 117
Table 8.2  Early childhood mortality rates by socioeconomic characteristics ..........118
Table 8.3  Early childhood mortality rates by demographic characteristics ............ 120
Table 8.4  Perinatal mortality ................................................................................... 123
Table 8.5  High-risk fertility behavior...................................................................... 124

Figure 8.1  Trends in Infant and Child Mortality .........................................................117
Figure 8.2  Under-Five Mortality Rate by Socioeconomic Characteristics............ 119
Figure 8.3  Under-Five Mortality Rate by Demographic Characteristics.................. 121
CHAPTER 9 CAUSES OF DEATH IN CHILDREN UNDER FIVE YEARS OF AGE

Table 9.1 Causes of death among children under five by age group ............... 130
Table 9.2 Causes of death among children under five by sex of child and residence ................................................................. 131
Table 9.3 Causes of death among children under five by mother’s education .... 132
Table 9.4 Causes of death among children under five by division ................. 133

Figure 9.1 Flow Chart Showing the Different Tiers Used in Assigning Cause of Death Based on Algorithms (ref) ............................................................. 127

CHAPTER 10 MATERNAL AND CHILD HEALTH

Table 10.1 Antenatal care ................................................................................. 136
Table 10.2 Number of antenatal care visits and timing of first visit ............... 138
Table 10.3 Health care during pregnancy ......................................................... 139
Table 10.4 Tetanus toxoid injections ................................................................. 140
Table 10.5 Place of delivery ............................................................................ 142
Table 10.6 Assistance during delivery ............................................................... 143
Table 10.7 Delivery characteristics ................................................................. 144
Table 10.8 Postnatal care for mother and children ........................................... 145
Table 10.9 Postnatal care by background characteristics ............................... 146
Table 10.10 Knowledge of life threatening maternal conditions ................... 147
Table 10.11 Experience of complications around delivery .............................. 148
Table 10.12 Treatment seeking for maternal complications ............................ 149
Table 10.13 Vaccinations by source of information .......................................... 150
Table 10.14 Vaccinations by background characteristics ............................... 152
Table 10.15 Prevalence and treatment of acute respiratory infection (ARI) ....... 155
Table 10.16 Prevalence of fever ..................................................................... 157
Table 10.17 Prevalence of diarrhea ................................................................. 158
Table 10.18 Treatment of diarrhea ................................................................. 159
Table 10.19 Feeding practices during diarrhea ................................................ 161
Table 10.20 Treatment of diarrhea ................................................................. 162
Table 10.21 Feeding practices during diarrhea ................................................ 163

Figure 10.1 Reasons for Not Seeing Anyone for Antenatal Care .................... 137
Figure 10.2 Vaccinations by Background Characteristics ............................. 153
Figure 10.3 Trends in Vaccination Coverage among Children Age 12-23 Months .... 153

CHAPTER 11 INFANT FEEDING AND NUTRITIONAL STATUS OF CHILDREN AND WOMEN

Table 11.1 Initial breastfeeding ...................................................................... 166
Table 11.2 Breastfeeding status by child’s age ................................................. 167
Table 11.3 Median duration of breastfeeding .................................................. 170
Table 11.4 Foods consumed by children in the day preceding the interview .... 172
Table 11.5 Micronutrient intake among children ............................................ 174
Table 11.6 Micronutrient intake and deficiency among mothers .................... 175
Table 11.7 Nutritional status of children by demographic characteristics ....... 179
Table 11.8 Nutritional status of children by background characteristics ......... 180
Table 11.9 Nutritional status of women by background characteristics ......... 184
Tables and Figures

Figure 11.1 Infant Feeding Practices by age ................................................................. 168
Figure 11.2 Trends in Exclusive Breastfeeding for Children Under Six Months ............. 169
Figure 11.3 Trends in Complementary Feeding for Children 6-9 Months ....................... 169
Figure 11.4 Median Duration (Months) of Breastfeeding ........................................... 171
Figure 11.5 Percentage of Children Under Five Who Are Stunted, According to Demographic Characteristics ................................................................. 178
Figure 11.6 Percentage of Children Under Five Who Are Stunted According to Socioeconomic Characteristics ...................................................... 178
Figure 11.7 Trends in Nutritional Status of Children Under Five .................................. 181
Figure 11.8 Trends in the Nutritional Status of Women with Children under Five Years of Age ................................................................. 183

CHAPTER 12 KNOWLEDGE, ATTITUDES, AND BEHAVIOR RELATED TO HIV/AIDS AND OTHER SEXUALLY TRANSMITTED INFECTIONS

Table 12.1.1 Knowledge of HIV/AIDS and sources of AIDS information: women ......... 186
Table 12.1.2 Knowledge of HIV/AIDS and sources of AIDS information: men ............. 187
Table 12.2.1 Knowledge of ways to avoid HIV/AIDS: women ................................... 189
Table 12.2.2 Knowledge of ways to avoid HIV/AIDS: men ....................................... 190
Table 12.3.1 Knowledge of HIV/AIDS and its prevention: women .......................... 191
Table 12.3.2 Knowledge of HIV/AIDS and its prevention: men ............................... 192
Table 12.4 Perceptions of HIV/AIDS-related issues ................................................... 194
Table 12.5 Discussion of HIV/AIDS with spouse ...................................................... 195
Table 12.6.1 Knowledge of signs and symptoms of STIs : women ............................ 196
Table 12.6.2 Knowledge of signs and symptoms of STIs : men .................................. 197
Table 12.7 Gynecological health problems ............................................................... 198
Table 12.8 Women seeking treatment for gynecological health problems .................. 199
Table 12.9 Self-reporting of sexually-transmitted infections (STIs) and STI symptoms .......... 200
Table 12.10 Men seeking treatment for STIs ............................................................ 201

Figure 12.1 Trends in Knowledge of HIV/AIDS Among Ever-Married Women and Currently Married Men ................................................................. 188
Figure 12.2 Percentage of Ever-married Women and All Men Who have Heard of HIV/AIDS, by Background Characteristics ........................................... 188
Figure 12.3 Trends in Knowledge of Two or More Correct Ways to Avoid HIV/AIDS Among Ever-Married Women and Currently Married Men ................. 193

CHAPTER 13 COMMUNITY CHARACTERISTICS

Table 13.1 Distance to nearest general services ......................................................... 204
Table 13.2 Distance to nearest education facilities .................................................... 205
Table 13.3 Availability of income-generating organizations ....................................... 205
Table 13.4 Availability of family planning and health services .................................. 206
Table 13.5 Distance to nearest health and family planning services .......................... 207

CHAPTER 14 POLICY IMPLICATIONS OF THE 2004 BDHS

Table 14.1 Percent reduction in mortality per year, among children under five ............. 215

Figure 14.1 Percentage of Women Age 15-19 Ever Married ...................................... 211
Figure 14.2 Percentage of Females Age 15-19 with No Education and Percentage with at Least Some Secondary Education .................................................. 212
Figure 14.3  Median Age at Marriage and Median Age at First Birth among women age 20-24 ................................................................. 213

APPENDIX A  SAMPLE IMPLEMENTATION

Table A.1 Sample implementation: women .................................................... 229
Table A.2 Sample implementation: men ......................................................... 230
Figure A.1 Urban Sampling Points ................................................................. 231
Figure A.2 Rural Sampling Points ................................................................. 232

APPENDIX B ESTIMATES OF SAMPLING ERRORS

Table B.1 List of selected variables for sampling errors .................................. 236
Table B.2 Sampling errors: Total sample ....................................................... 237
Table B.3 Sampling errors: Urban sample ..................................................... 238
Table B.4 Sampling errors: Rural sample ...................................................... 239
Table B.5 Sampling errors: Barisal sample .................................................... 240
Table B.6 Sampling errors: Chittagong sample ............................................. 241
Table B.7 Sampling errors: Dhaka sample .................................................... 242
Table B.8 Sampling errors: Khulna sample ................................................... 243
Table B.9 Sampling errors: Rajshahi sample ............................................... 244
Table B.10 Sampling errors: Sylhet sample ............................................... 245

APPENDIX C DATA QUALITY TABLES

Table C.1 Household age distribution ............................................................ 247
Table C.2.1 Age distribution of eligible and interviewed: women .................. 248
Table C.2.2 Age distribution of eligible and interviewed: men ....................... 248
Table C.3 Completeness of reporting ............................................................ 249
Table C.4 Births by calendar years ............................................................... 249
Table C.5 Reporting of age at death in days .................................................. 250
Table C.6 Reporting of age at death in months .......................................... 251
The Bangladesh Demographic and Health Survey 2004 is the fourth survey of this type conducted in Bangladesh. The main objective of this survey is to provide policy-makers and program managers in health and family planning with detailed information on fertility and family planning, childhood mortality, maternal and child health, nutritional status of children and mothers, and awareness of HIV/AIDS. The survey consisted of two parts: a household-level survey of women and men and a community survey around the sample points from which the households were selected. Preparations for the survey started in mid-2003 and the fieldwork was carried out between January and May 2004. Financial support for the BDHS survey was provided by the United States Agency for International Development (USAID)/Dhaka. It was implemented through a collaborative effort of NIPORT, Mitra and Associates, and ORC Macro.

The findings of this report will be instrumental in assessing the achievements of family planning, nutrition, and health programs. The report provides estimates of key indicators by socioeconomic and demographic differentials. The preliminary results of the 2004 BDHS, with its major findings, were officially announced through a national seminar in September 2004. The final report supplements the preliminary report, which was released earlier. I believe that the information obtained from this survey will help the policymakers and program managers in the formulation of new programs and monitoring the ongoing programs.

The Technical Review Committee (TRC) consisted of experts from government, non-government, and international organizations, as well as researchers and professionals working in the health and population areas. The TRC contributed their valuable opinions in major phases of the survey. In addition, the Technical Task Force (TTF) was formed with representatives from NIPORT, Mitra and Associates, USAID/Dhaka, ICDDR,B, the NGO Service Delivery Program, and ORC Macro to design and implement the survey. I would like to extend my thanks and appreciation to the members of the TRC and TTF for their contributions at different phases of the survey.

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(Lokman Hakim)
FOREWORD

The Bangladesh Demographic and Health Survey (BDHS) is a nationally representative survey designed to obtain and provide information on the basic indicators of social progress including fertility, childhood mortality, reproductive and child health, nutritional status of mothers and children and awareness of HIV/AIDS. Previously, BDHS surveys were carried out in 1993-1994, 1996-1997, and 1999-2000.

The findings of the 2004 BDHS presented in this report provide up-to-date, and reliable information on a number of key health and demographic topics of interest to planners, policymakers, program managers, and researchers that will guide the planning, implementation, monitoring and evaluation of the Health, Nutrition and Population Sector Program (HNPSP) in Bangladesh. The data indicate there has been a decline in the total fertility rate and a steady increase in contraceptive use. After an almost decade-long stagnation, fertility declined to 3.0 children per woman in 2004. The 2004 BDHS findings also show a trend toward increasing utilization of health services for mothers and children. While the survey results are encouraging, there is still a long way to go to achieve the national health and demographic goals.

The findings of this report together with other national surveys will enhance the understanding of important issues related to the HNPSP in Bangladesh. Information obtained from the 2004 BDHS can be used to review the progress of programs and to improve future policies and strategies.

Further analysis of the BDHS data is necessary. It is hoped that academicians, researchers and program personnel will carry out such analysis and provide in-depth knowledge to guide the future direction and effective implementation of the HNPSP.

The successful completion of the 2004 BDHS was made possible by the contributions of a number of organizations and individuals. I deeply appreciate the United States Agency for International Development (USAID), Dhaka for providing financial support. I would like to thank NIPORT, Mitra and Associates, and ORC Macro for the effort they put into implementing the 2004 BDHS.

(A. F. M. Sarwar Kamal)
SUMMARY OF FINDINGS

The 2004 Bangladesh Demographic and Health Survey (2004 BDHS) is a nationally representative survey of 11,440 women age 10-49 and 4,297 men age 15-54 from 10,500 households covering 361 sample points (clusters) throughout Bangladesh, 122 in urban areas and 239 in the rural areas. This survey is the fourth in a series of national-level population and health surveys conducted as part of the global Demographic and Health Surveys (DHS) program. It is designed to provide data to monitor the population and health situation in Bangladesh as a followup to the 1993-1994, 1996-1997 and 1999-2000 BDHS surveys. The survey utilized a multistage cluster sample based on the 2001 Bangladesh Census and was designed to produce separate estimates for key indicators for each of the six divisions of the country—Barisal, Chittagong, Dhaka, Khulna, Rajshahi and Sylhet. Data collection took place over a five-month period from 1 January to 25 May 2004. Previous surveys included only ever-married women and currently married men; this is first DHS survey in Bangladesh to also include never-married and formerly married men, i.e., the sample for the survey was ever-married women age 10-49 and all men age 15-54.

The survey obtained detailed information on fertility levels, marriage, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutritional status of women and young children, childhood mortality and causes of death of children under five, maternal and child health, awareness and behavior regarding HIV/AIDS, and other sexually transmitted infections (STIs). In the previous surveys, anthropometric measurements (height and weight) were restricted to mothers who had a child under five, their young children. In the 2004 BDHS, all children under five in the household and all interviewed women had their height and weight measured. In addition, the 2004 BDHS collected information on the level of arsenic in drinking water.

The 2004 BDHS was conducted under the authority of the National Institute for Population Research and Training (NIPORT) of the Ministry of Health and Family Welfare. It was implemented by Mitra and Associates, a Bangladeshi research firm located in Dhaka. Technical assistance was provided by ORC Macro through the MEASURE DHS program. Financial support for the survey was provided by the U.S. Agency for International Development (USAID)/Bangladesh.

FERTILITY

Fertility Levels and Trends. In 1971-1975, women in Bangladesh were having on average 6.3 children. The total fertility rate (TFR) declined to 5.1 fifteen years later, and to 4.3 in 1989-1991. The TFR plateaued at around 3.3 for most of the 1990s, when the three earlier BDHS surveys took place. Data from the 2004 BDHS indicate that after almost a decade-long stagnation, the Bangladesh fertility rate has declined slightly to 3.0 children per woman. Comparison of the Bangladesh TFR with fertility rates in other Asian countries that have implemented a DHS survey indicates that, with a TFR of 3.0, Bangladesh is in the mid-range among the countries—below Nepal (4.1 in 2001), Cambodia (3.8 in 2000), and the Philippines (3.5 in 2003), but above India (2.8 in 1998-1999), Indonesia (2.6 in 2002-2003), and Vietnam (1.9 in 2002).

Fertility Differentials. Differentials in fertility by background characteristics are substantial. Women in rural areas have more children than their urban counterparts (3.2 and 2.5 children per woman, respectively). The TFR is highest in Sylhet division (4.2) and lowest in Rajshahi (2.6). As expected, women’s education is strongly associated with lower levels of fertility; the TFR decreases from 3.6 among women with no education to 2.2 among those who have at least completed their secondary education. Similar differentials are observed by wealth quintile, with the TFR decreasing from 4.0 among women in the lowest wealth quintile to 2.5 among those in the highest wealth quintile.

Unplanned Fertility. Despite a steady rise in the level of contraceptive use over the past thirty years, the 2004 BDHS data indicate that unplanned pregnancies are common in Bangladesh. Overall, 3 out of 10 births in Bangladesh are either unwanted (14 percent).
or mistimed and wanted later (16 percent). However, the proportion of unplanned births declined from 33 percent in 1999-2000 to 30 percent in 2004. The proportion of unwanted births did not change.

**Fertility Preferences.** There is considerable desire among currently married Bangladeshi women to stop having children. A total of 54 percent of women age 10-49 reported not wanting another child, and 6 percent are already sterilized. Twenty-one percent of women want to have a child but would prefer to wait two or more years. Thus, over 80 percent of women want either to space their next birth or to limit childbearing altogether. Only 13 percent of women would like to have a child soon (within two years). A comparison of the 1999-2000 and 2004 data shows that the proportion of women who want to limit childbearing has not changed.

As in the 1999-2000 BDHS, a majority of ever-married women and currently married men embrace the two-child family as an ideal (2.4 and 2.3 children, respectively).

**FAMILY PLANNING**

**Knowledge of Contraception.** Knowledge of family planning is universal in Bangladesh. Among ever-married women, the most widely known methods of family planning are the pill (100 percent), injectables (99 percent), female sterilization (96 percent), and condom (92 percent); these are followed by the IUD (85 percent), Norplant (76 percent), male sterilization (73 percent), periodic abstinence (70 percent), and withdrawal (58 percent).

Since overall knowledge of contraceptive methods was already high in 1999-2000, little change has taken place. However, knowledge of Norplant has increased from 56 to 77 percent among currently married women.

**Use of Contraception.** The contraceptive prevalence rate (any method) among currently married women is 58 percent. The most commonly used modern method is the pill (26 percent), followed by injectables (10 percent). Female sterilization and male condoms are used by 5 percent and 4 percent of married women, respectively, while Norplant, the IUD, and male sterilization are each used by only 1 percent. Periodic abstinence, used by 7 percent of married women, is the most commonly used traditional method.

**Trends in Contraceptive Use.** Over the past three decades, use of any method of contraception by married women has increased sevenfold, from 8 to 58 percent, while use of modern methods has increased almost tenfold, from 5 to 47 percent. The same trend was observed between the 1999-2000 BDHS and the 2004 BDHS, when use of any method increased from 54 to 58 percent and use of modern methods increased from 43 to 47 percent. Trends in the contraceptive method mix show that short-term methods, especially the pill, are gaining in popularity against long-term methods, such as the IUD, Norplant, and sterilization. The pill now accounts for 45 percent of all contraceptive use, compared with 35 percent in 1991. On the other hand, long-term methods now account for only 12 percent of all contraceptive use, compared with 30 percent in 1991.

**Differentials in Contraceptive Use.** Women in urban areas are slightly more likely to use contraceptive methods (63 percent) than their rural counterparts (57 percent); however, the condom is the only method that shows differentials in use by urban-rural residence: 8 percent in urban areas compared with only 3 percent in rural areas. Differentials are more marked by division: use of any method varies from 32 percent in Sylhet and 47 percent in Chittagong to 64 percent in Khulna and 68 percent in Rajshahi. Contraceptive prevalence is 54 percent in Barisal and 59 percent in Dhaka. There is little variation in contraceptive use by level of education. However, women in economically better-off households tend to use family planning more than those in households in the lowest wealth quintile (63 and 54 percent, respectively). The proportion of women using contraception increases with increasing number of children. Twenty-three percent of women with no children are currently using a contraceptive method, compared with 62 to 70 percent of women with two or more children.

**Source of Modern Methods.** In Bangladesh, both the public and private sectors are important sources of supply for users of modern methods (57 and 36 percent, respectively). The most common public sector source remains government fieldworkers (23
percent), although their share has declined substantially since 1993-1994 (42 percent). Upazila health complexes are the second most important public source (10 percent). Pharmacies (29 percent) provide most of the methods in the private sector (an increase from 21 percent in 1999-2000). Femicon, the most commonly used social marketing brand of pills, is distributed through a network of retail outlets including pharmacies. Of every ten pills used in Bangladesh, three carry the Femicon brand.

**Contraceptive Discontinuation.** One in two contraceptive users in Bangladesh stops using their method within 12 months of starting. The most common reason for discontinuation is side effects or health problems. Discontinuation rates are highest for condoms (72 percent) and withdrawal (60 percent), and lowest for periodic abstinence (41 percent).

**Unmet Need for Family Planning.** Eleven percent of married women have an unmet need for family planning. Unmet need is about equally divided between spacing and limiting births. Unmet need declined from 15 percent in 1999-2000 to 11 percent in 2004. It has remained high in Sylhet division (21 percent), while dropping substantially in Rajshahi (7 percent) and Khulna (8 percent). Overall, 84 percent of the demand for family planning is currently being met.

**MATERNAL HEALTH**

**Antenatal Care.** Antenatal care coverage increased sharply between the 1999-2000 BDHS and the 2004 BDHS. One-third of women received an antenatal checkup from a medically trained provider in 1999-2000 compared with one-half (49 percent) in 2004. Thirty-one percent of women received antenatal care from a doctor and 17 percent received care from a nurse, midwife, or paramedic. A relatively high proportion of women received no antenatal care (44 percent), especially in Sylhet (52 percent) and Barisal (53 percent).

Two in three women received at least two doses of tetanus toxoid for their most recent birth in the five years preceding the survey, 21 percent received only one tetanus toxoid injection, and 15 percent received none, which was an improvement since the 1999-2000 BDHS (19 percent).

**Delivery Care.** Nationally, nine in ten births in the last five years were delivered at home; only 9 percent were delivered in a health facility. Delivery in a health facility is substantially higher among women who have at least completed their secondary education (44 percent), and among those in the highest wealth quintile (30 percent). The data also show that only 13 percent of babies were delivered by medically trained providers, compared with 63 percent who were delivered by untrained birth assistants.

**Postnatal Care.** Only 15 percent of women who had a non-institutional live birth in the five years preceding the survey received postnatal care within two days of delivery; more than 80 percent received no postnatal care at all.

**Maternal Complications around Delivery.** One in four births in the five years preceding the survey had at least one of the following maternal complications around delivery—prolonged labor, excessive bleeding, baby’s hands or feet came first, fever with foul-smelling discharge, convulsions/eclampsia. The most common complication was prolonged labor of over 12 hours, associated with one in six live births. For 11 percent of the births, the mothers experienced excessive bleeding, and 3 percent had convulsions. Two other problems, high fever with foul discharge and baby’s hands or feet coming first, were reported for 5 and 1 percent of births, respectively.

Treatment was sought from a medically trained provider for only 29 percent of the cases that had maternal complications around delivery. Nearly four in ten women with complications did not seek any care. The 2004 BDHS data confirm the findings of the 2001 BMMS, that there are two main problems regarding the treatment of maternal complications: first, a large proportion of women with potentially life-threatening maternal complications seek no health care; and second, among those who do seek health care, about half seek assistance from providers that are not medically trained.

**CHILD HEALTH**

**Childhood Mortality.** Data from the 2004 BDHS show that under-five mortality (88 deaths per 1,000 live births) has continued to decline thanks primarily to the substantial decline (20 percent) in child mortality (age 1-4 years) over the past five years. However, this still means that for the most recent five-
year period, one in every eleven Bangladeshi children dies before reaching age five, while one in fifteen children dies before reaching the first birthday (65 deaths per 1,000 live births). A majority of infant deaths occur during the first month of life (neonatal mortality). The 2004 BDHS also collected information on causes of death. Overall, for all children under five, the two most important causes of death were: possible serious infections (31 percent) including possible ARI and diarrhea and ARI (21 percent), which particularly affect children age 1-11 months. Birth asphyxia (12 percent), which occurs in the first 28 days, diarrhea (7 percent), and prematurity/low birth weight (7 percent) were responsible for most of the other deaths.

**Childhood Vaccination Coverage.** Seventy-three percent of Bangladeshi children age 12-23 months are fully immunised—most of them by 12 months of age as recommended—while 3 percent have received no vaccinations. More than nine in ten children have received BCG and the first dose of DPT and polio vaccines. While coverage for the first dose of DPT and polio is high, there is a decline with subsequent doses, with only about 81 percent of children receiving the recommended three doses of these vaccines. Seventy-six percent of children have received measles vaccine. Full vaccination coverage is highest in Khulna division (83 percent) and lowest in Sylhet division (62 percent). Mother’s education is strongly associated with children’s vaccination coverage: only 60 percent of children of mothers with no education are fully vaccinated compared with 92 percent of children of highly educated mothers.

**Child Illness and Treatment.** Among children under five years of age, 21 percent were reported to have had symptoms of acute respiratory illness in the two weeks preceding the survey. Of these, only one-fifth were taken to a health facility or provider for treatment, and one-third received no treatment at all. Eight percent of children under five years had diarrhea in the two weeks preceding the survey. Of these, 16 percent were taken to a health provider. Use of oral rehydration therapy (ORT) for children with diarrhea has remained unchanged since 1999-2000, but there has been a shift toward greater use of the commercially available packets of oral rehydration salts (ORS), from 61 to 67 percent. Overall, 83 percent of the children with diarrhea received ORS, recommended home fluids (RHF), or increased fluids.

Forty percent of children under five years had a fever in the two weeks preceding the survey. Of these, nearly two-thirds were taken to a provider for treatment, but only 19 percent were taken to a medically trained provider/facility.

**NUTRITION**

**Breastfeeding Practices.** Almost all (98 percent) Bangladeshi children are breastfed for some period of time. Twenty-four percent of infants were put to the breast within one hour of birth, and 83 percent started breastfeeding within the first day. This is a substantial increase when compared to the 1999-2000 BDHS data. The median duration of any breastfeeding in Bangladesh is 32 months, but it varies among divisions from 36 months in Khulna and Rajshahi to around 26 months in Chittagong and Sylhet.

Exclusive breastfeeding of children under six months (based on 24-hour period before the survey) has not improved in the past 10 years; it remained unchanged at around 45 percent between 1993-94 and 1999-2000, and has declined to 42 percent most recently.

Supplementary feeding of children who are also breastfed has greatly improved over the past decade. In 1993-1994, only 29 percent of children age 6-9 months received complementary foods while being breastfed, compared with 62 percent in 2004. The most commonly used complementary foods are rice, wheat, and porridge (over 60 percent); 20 to 25 percent of the children in this age group received other complementary foods (fruits, meat/fish/eggs, and green leafy vegetables), and a smaller proportion received dal.

Feeding children with a bottle with a nipple starts very young, and three in ten infants age 2-3 months receive some food this way. Also, commercially produced baby formula is more popular than it was at the time of the 1999-2000 BDHS.

**Intake of Vitamin A.** Ensuring that children 6-59 months receive enough vitamin A may be the single most effective child survival intervention because deficiencies in this micronutrient can cause blindness and increase the severity of infections such as measles
and diarrhea. Between the 1999-2000 BDHS and the 2004 BDHS, vitamin A supplementation among children 12-59 months increased from 80 to 84 percent, but it actually dropped by half for children age 9-11 months (from 73 to 38 percent). Consumption of fruits and vegetables rich in vitamin A is another way to ensure that children are protected from blindness or infection. Overall, 7 in 10 children under three consumed such foods.

Only 15 percent of mothers with a birth in the past five years reported receiving a vitamin A dose postpartum. Three percent of interviewed women reported night blindness during pregnancy.

**Nutritional Status of Children.** According to the 2004 BDHS which measured all children under five in the household, 43 percent of children are stunted and 17 percent severely stunted. Thirteen percent of children under five are wasted and 1 percent severely wasted. Weight-for-age results show that 48 percent of children under five are underweight, with 13 percent severely underweight. Comparison of children whose mothers were interviewed shows that in spite of the fact that child nutritional levels showed a substantial improvement from 1996-1997 to 1999-2000, since then no noticeable improvement has occurred except that the severe stunting has slightly decreased and overall wasting has increased from 10 to 13 percent.

**Nutritional Status of Women.** The mean height of Bangladeshi women is 151 centimetres, which is above the critical height of 145 centimetres. A high proportion of women (16 percent) are below 145 centimetres. Thirty-four percent of women were found to be chronically malnourished, their body mass index (BMI) being less than 18.5. One in ten women was found to be overweight or obese (BMI 25 or higher). A woman’s place of residence, level of education, and household wealth quintile are strongly associated with her nutritional status. For example, 37 percent of rural women are considered thin (<18.5), compared with 25 percent of their urban counterparts. Among divisions, Sylhet has the highest proportion of women who are thin (48 percent) and Khulna the least (29 percent). Although Bangladeshi women with children under five years are not getting taller, there is a substantial improvement in mother’s nutritional status as measured by BMI. Since 1996-97, the proportion of mothers below the cutoff point of BMI of 18.5 continued to drop, from 52 percent in 1996-97 to 38 percent in 2004—a decline of 27 percent in less than ten years.

**Arsenic in Drinking Water.** Arsenic in drinking water is a hazard to human health. Its main source is arsenic-rich rocks through which the water has filtered. It may also occur because of mining or industrial activity. In Bangladesh, arsenic-contaminated water is found particularly in tubewells. Overall, in the 2004 BDHS, one in twelve households were found to have elevated levels of arsenic (equal to or greater than 50 parts per billion) in their drinking water. The problem is especially severe in Chittagong, where 22 percent of the households tested had arsenic-contaminated water; arsenic contamination is almost nonexistent in Barisal and Rajshahi (1 and 2 percent).

**HIV/AIDS AND STIs**

**Awareness of HIV/AIDS.** Knowledge of HIV/AIDS among ever-married women increased from 19 percent in 1996-1997 to 31 percent in 1999-2000, and then it almost doubled to 60 percent in 2004. For currently married men, the corresponding proportions are 34, 51, and 78 percent.

A respondent’s place of residence, level of education, and household wealth quintile are strongly associated with HIV/AIDS awareness. Whereas 82 percent of women and 93 percent of men in urban areas have heard of AIDS, only 54 percent of women and 78 percent of men in rural areas have heard of the disease. Education is positively associated with knowledge of HIV/AIDS. It ranges from 37 percent among women with no education, to 71 percent among those who have completed primary school (only), to virtually all women (98 percent) who have completed secondary education. A similar pattern can be found when analyzing the data by wealth quintile.

Thirty-seven percent of ever-married women, 57 percent of never-married men, and 45 percent of currently married men know that condom use is a way to avoid contracting HIV/AIDS, a clear improvement over the results of the 1999-2000 BDHS. About one in three married women and one in eight among all men or currently married men know that limiting the number of sexual partners can prevent HIV/AIDS. Overall, six in ten women and 42 percent of men do not know any way to avoid the disease.
Among respondents who know of HIV/AIDS, seven in ten women and 84 percent of men correctly reported that a healthy looking person can have the AIDS virus.

In 2004, 29 percent of ever-married women were able to cite two or more correct ways to avoid contracting HIV/AIDS. Since 1999-2000, the unprompted knowledge of at least two correct ways to avoid HIV/AIDS has increased substantially among ever-married women (from 7 to 29 percent) and moderately among currently married men (from 19 to 26 percent).

**Awareness of Sexually Transmitted Infections (STIs).** Knowledge of STIs is generally lower than that of HIV/AIDS. Ninety-four percent of women and 78 percent of married men still do not have any knowledge of STIs. Knowledge of STIs is highest among women and men who have completed secondary education, 19 and 38 percent, respectively.