

The Hashemite Kingdom of Jordan

Jordan Population and Family Health Survey 2009

Preliminary Report

Department of Statistics
Amman, JORDAN

MEASURE DHS
ICF Macro
Calverton, Maryland, USA



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This report summarizes the findings of the 2009 Jordan Population and Family Health Survey (JPFHS) carried out by the Department of Statistics (DoS). The survey was funded by the Government of Jordan. Additional funding was provided by the U.S. Agency for International Development (USAID) and the United Nations Population Fund (UNFPA). ICF Macro provided technical assistance through the MEASURE DHS program.

The JPFHS is part of the worldwide Demographic and Health Surveys Program, which is designed to collect data on fertility, family planning, and maternal and child health. Additional information about the Jordan survey may be obtained from the Department of Statistics, P.O. Box 2015, Amman, Jordan (Telephone (962) 6-5-300-700; Fax (962) 6-5-300-710; e-mail stat@dos.gov.jo; www.dos.gov.jo). Additional information about the MEASURE DHS program may be obtained from ICF Macro, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705 (Telephone 301-572-0200; Fax 301-572-0999; e-mail reports@macrointernational.com; www.measuredhs.com).

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Preface

The 2009 Jordan Population and Family Health Survey (JPFHS) is the fifth Demographic and Health Survey conducted in Jordan. Like the first four JPFHS, conducted respectively in 1990, 1997, 2002, and 2007, the 2009 JPFHS was carried out by the Department of Statistics (DoS). The main objective of the survey is to provide comprehensive data on fertility and mortality, family planning, fertility preferences, and nutrition as a tool to evaluate existing population and health policies and programs.

The sample is nationally representative and has been designed to produce estimates of major survey variables at the national level, for urban and rural areas, for each of the three regions (Central, North, and South), for each of the twelve governorates, and for the Badia and non Badia areas. Almost 14,000 households and more than 10,000 ever-married women age 15 to 49 were interviewed during the period October-December, 2009.

The 2009 JPFHS was funded by the Government of Jordan. Additional funding was provided by the U.S. Agency for International Development (USAID) and the United Nations Population Fund (UNFPA). ICF Macro provided technical assistance through the worldwide MEASURE Demographic and Health Surveys (DHS) program.

It is hoped that the 2009 JPFHS data will meet its objective of facilitating important government policies and programs promoting family planning and maternal and child nutrition. Furthermore, the survey will also be useful to those interested in the fields of population, family planning, and nutrition.

This report provides some preliminary results of the 2009 JPFHS. Detailed findings will be presented in the main survey report to be released mid-2010.

The DoS would like to express its thanks and appreciation to the individuals and organizations that contributed to the success of the survey. The timely and high quality data are the result of hard work from all the survey staff. Thanks go to all of the households interviewed during the survey for their time and willingness to provide the required information. Acknowledgment also goes to the Ministry of Health for its technical and logistic assistance. Thanks are also due to the USAID and UNFPA missions in Amman for their financial support, and to the ICF Macro team: Dr. Mohamed Ayad, and Mr. Bernard Barrère, DHS Coordinators, who assisted in all stages of the survey, Mr. Ruilin Ren for his recommendations on the sampling design, and Mr. Noureddine Abderrahim for his valuable assistance in data processing.

Dr. Haidar Fraihat
Director General of Statistics

Main Indicators: JPFHS 2002, 2007, and 2009

Indicator	JPFHS 2002	JPFHS 2007	JPFHS 2009
Sample			
Number of households successfully interviewed	7,825	14,564	13,577
Household response rate (%)	99.0	98.8	97.3
Number of ever-married women successfully interviewed	6,006	10,876	10,109
Woman response rate (%)	97.6	97.9	97.2
Background Characteristics of Ever-Married Women			
Urban (%)	80	85	84
Ever-Married Women Age 15-29 years (%)	34	32	32
Educational level attended (%)			
No education	6	4	3
Elementary	12	8	7
Preparatory	21	16	15
Secondary	37	44	43
Higher	25	29	32
Fertility			
Total Fertility Rate (expressed per woman)	3.7	3.6	3.8
Urban	3.5	3.6	3.8
Rural	4.2	3.7	4.0
Central	3.5	3.5	3.8
North	3.9	3.8	4.0
South	4.0	3.6	4.1
Contraception (Current Use %)			
Any method	56	57	59
Central	58	58	61
North	54	55	58
South	48	53	54
Any modern method	41	42	42
Any traditional method	15	15	17
Nutrition			
Mainnutrition (%)			
Stunting (Height-for-Age) New WHO Standard	Not Available	Not Available	8
Stunting (Height-for-Age) Old NCHS/CDC/WHO Standard	9	Not Available	6
Central	7	Not Available	5
North	10	Not Available	7
South	12	Not Available	10
Wasting (Weight-for-Height) New WHO Standard	Not Available	Not Available	2
Wasting (Weight-for-Height) Old NCHS/CDC/WHO Standard	2	Not Available	2
Central	2	Not Available	2
North	2	Not Available	1
South	2	Not Available	1
Underweight (Weight-for-Age) New WHO Standard	Not Available	Not Available	2
Underweight (Weight-for-Age) Old NCHS/CDC/WHO Standard	4	Not Available	3
Central	4	Not Available	3
North	4	Not Available	3
South	8	Not Available	3
Overweight (Weight-for-Height) New WHO Standard	Not Available	Not Available	7
Anemia (Children 6-59 months %)			
Central	34	Not Available	34
North	35	Not Available	31
South	34	Not Available	36
Anemia (All women %)			
Central	33	Not Available	41
North	26	Not Available	26
South	25	Not Available	25
North	29	Not Available	27
South	27	Not Available	30
Mortality (per1,000)			
Infant Mortality	22	19	23
Child Mortality	5	2	5
Under-five Mortality	27	21	28

I. INTRODUCTION

A. Background

The 2009 Jordan Population and Family Health Survey (JPFHS) is the fifth survey conducted in Jordan under the auspices of the worldwide Demographic and Health Surveys (DHS) program. The JPFHS was funded by the Government of Jordan. Additional funding was provided by USAID and UNFPA. The first JPFHS was carried out in 1990, the second in 1997, the third in 2002, and the fourth in 2007. ICF Macro, based in Calverton, Maryland, provided technical assistance to the project through the Demographic and Health Surveys (DHS) program.

This preliminary publication presents the first findings of the 2009 JPFHS. These preliminary results were produced one month after completion of data collection in order to facilitate their use in family planning and nutrition intervention programs. The final report on the JPFHS is expected to be published in mid-2010 and will include a more comprehensive analysis of the survey results. The results presented here are provisional and may be subject to slight modifications. The final figures however are not expected to differ significantly from the findings presented in this report.

B. Objectives of the Survey

As in the previous DHS surveys in Jordan, the primary objective of the JPFHS is to provide reliable estimates of demographic parameters, such as fertility, childhood mortality, family planning, fertility preferences, and nutrition that can be used by program managers and policy makers to evaluate and improve existing programs. In addition, the JPFHS data will be useful to researchers and scholars interested in analyzing trends in demographic parameters in Jordan as well as those conducting comparative, regional or cross-national studies.

The content of the 2009 JPFHS is significantly reduced from the previous surveys since it does not include information on maternal and child health.

II. METHODOLOGY

A. Survey Instruments

The 2009 JPFHS used two questionnaires, namely, the Household Questionnaire and the Individual Questionnaire. The Household Questionnaire was used to list all usual members of the sampled households and to obtain information on each household member's age, sex, educational attainment, relationship to the head of household, and marital status. In addition, questions were included on the socio-economic characteristics of the household, such as source of water, sanitation facilities, and the availability of durable goods. The Household Questionnaire was also used to identify women who are eligible for the individual interview (ever-married women, age 15-49). In addition, all women age 15-49 years and children less than 5 years living in the household were weighed and measured to determine nutritional status and tested for anemia.

The household and women's questionnaires were based on the Model questionnaires developed by the MEASURE DHS Project. Additions and modifications to the model questionnaire were made in order to provide detailed information specific to Jordan. For each ever-married woman age 15-49, information on the following topics was collected:

1. Respondent's background
2. Birth history
3. Knowledge and practice of family planning
4. Marriage
5. Fertility preferences
6. Respondent's employment

In addition, information on births and pregnancies and on contraceptive use and discontinuation during the five years prior to the survey was collected using a monthly calendar.

B. Sample Design and Implementation

The 2009 JPFHS sample was designed to produce reliable estimates of major survey variables for the country as a whole, for urban and rural areas, for each of the twelve Governorates, and for the Badia and non-Badia areas. To facilitate comparisons with previous surveys, the sample was also designed to produce estimates for three regions (North, Central, and South). The grouping of the governorates into regions is as follows: the North consists of Irbid, Jarash, Ajlun, and Mafrq; the Central region consists of Amman, Madaba, Balqa and Zarqa; and the South region consists of Karak, Tafila, Ma'an and Aqaba.

The 2009 JPFHS sample was selected using the 2004 Jordan Population and Housing Census (JPHC 2004). The sampling frame was stratified first by governorate, and then by major cities, other urban, and rural within each stratum. A two-stage sampling procedure was employed. First, blocks were selected systematically as Primary Sampling Units (PSUs) with probability proportional to the size of the PSU. A total of 930 PSUs were selected at this stage. In the second stage, a fixed number of 16

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households selected	10,184	4,688	14,872
Households found	9,550	4,409	13,959
Households interviewed	9,250	4,327	13,577
Household response rate	96.9	98.1	97.3
Interviews with ever-married women 15-49			
Number of eligible women	7,134	3,267	10,401
Number of eligible women interviewed	6,918	3,191	10,109
Eligible women response rate	97.0	97.7	97.2

households were selected in each selected PSU.

Results of the sample implementation are presented in Table 1. A total of 14,872 households were selected for the survey and, of these, 13,959 were found. Of these households, 13,577 or 97 percent were successfully interviewed. In these households, 10,401 eligible women were identified, and complete interviews were obtained with 10,109 women, or 97 percent of all eligible women. Overall, the response rate combining the household and individual response rates is 95 percent.

C. Training and Pretest

Training of the interviewers took place in Amman for three weeks in September-October, 2009. The training course consisted of instructions regarding interviewing techniques and field procedures, a detailed review of items on the questionnaires, instruction and practice in weighing and measuring children and women, anemia testing, mock interviews between participants in the classroom, and practice interviews. After the training, pretest fieldwork was conducted over a one-week period in fifteen urban and four rural clusters. Field practice in anemia testing was also carried out during the pretest for persons who were assigned as team health technicians. In addition, team members practiced their ability to weigh and measure women and children. Additional training was also conducted in health centers of the Ministry of Health: the interviewers who were assigned to measure height and weight and to conduct blood testing for anemia were able to practice on patients visiting the centers. Also during this period, field editors and team supervisors were provided with additional training in methods of field editing, data quality control procedures, and fieldwork coordination. Debriefing sessions were held with the pretest field staff, and modifications to the questionnaires and instructions were made based on lessons drawn from the exercise.

D. Data Collection and Processing

As in previous surveys, the household and women's data were collected by interview teams. A total of 18 field teams were formed, consisting of 18 supervisors, 11 field editors, 65 interviewers, and 11 "team health technicians". During fieldwork, teams were grouped or split up depending on the need. Each team was provided with vehicles. Fieldwork began on October 7, 2009 and was completed on December 28, 2009.

The field editors and supervisors first checked the completed questionnaires for completeness and consistency in the field. The questionnaires were then sent to the DoS central office in Amman where they were edited again and open-ended questions were coded. The data were processed using microcomputers and the CSPro (Census and Survey Processing) computer package. Data entry and editing were initiated almost immediately after the beginning of fieldwork. Processing activities (central office editing, data entry, one-hundred percent double entry, final editing, and verification) were completed on January 6, 2010.

III. RESULTS

A. Characteristics of the Respondents

The percent distribution of women interviewed in the 2009 JPFHS by selected background characteristics is presented in Table 2. Compared to 34 percent in 2002, 32 percent of ever-married women are under age 30. In contrast, the proportion of women age 30-49 has increased by two percentage points (from 66 percent to 68 percent).

In 2009, more women live in urban areas than in 2002 (84 percent versus 80 percent). Two in three women live in the Central region, 28 percent in the North region, and only 9 percent live in the South region.

The distribution of ever-married women by governorate is comparable to the distribution of the total population in the 2004 census, attesting the reliability of the sample. Two in five women live in Amman, 15 percent in Zarqa, and 19 percent in Irbid governorate. Table 2 also presents the weighted and unweighted numbers of women in the sample. The unweighted numbers of women in the largest governorates are smaller than the weighted numbers. The opposite is true for all other governorates because of oversampling. For example, in Ma'an governorate, although the weighted number of women is 167, in reality data were collected from 760 women: Ma'an governorate was oversampled to obtain sufficient women to yield statistically reliable estimates. One in twelve women lives in Badia areas, mainly in the Central region.

The overall level of education among women continues to improve. The percentage of ever-married women 15-49 who had no schooling declined from 4 percent in 2007 to 3 percent in 2009 and the percentage who have attended preparatory or secondary school remains almost unchanged (60 percent in 2007 versus 58 percent in 2009), while the percentage who have higher education increased from 29 percent in 2007 to 32 percent in 2009.

Table 2. Background Characteristics of Respondents

Percent distribution of ever-married women by background characteristics, Jordan 2009

Background characteristic	Weighted percent	Weighted number	Unweighted number
Age			
15-19	2.5	249	229
20-24	10.9	1,107	1,184
25-29	18.8	1,903	1,930
30-34	20.3	2,053	2,018
35-39	17.5	1,771	1,925
40-44	17.3	1,751	1,636
45-49	12.6	1,274	1,187
Marital status			
Married	95.5	9,651	9,639
Divorced	2.1	217	214
Widowed	2.4	241	256
Residence			
Urban	84.0	8,490	6,918
Rural	16.0	1,619	3,191
Governorate			
Amman	39.6	3,998	1,177
Balqa	6.2	625	781
Zarqa	14.8	1,491	985
Madaba	2.2	226	811
Irbid	18.7	1,894	844
Mafraq	4.5	456	845
Jarash	3.0	301	839
Ajlun	2.2	218	805
Karak	3.8	389	769
Tafiela	1.4	142	789
Ma'an	1.6	167	760
Aqaba	2.0	199	704
Region			
Central	62.7	6,340	3,754
North	28.4	2,870	3,333
South	8.9	896	3,022
Badia area			
Badia	8.5	855	1,513
Other	91.5	9,254	8,596
Education			
No education	2.8	287	527
Elementary	7.1	718	912
Preparatory	15.5	1,567	1,528
Secondary	42.8	4,329	4,037
Higher	31.7	3,208	3,105
Total	100.0	10,109	10,109

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.

B. Fertility

All women who were interviewed in the 2009 JPFHS were asked to report the total number of sons and daughters they had given birth to during their lifetime. To ensure complete reporting, women were asked separately about children living at home, those living elsewhere, and children who had died. A complete birth history was obtained from each respondent including information on the sex, date of birth, and survival status of each child. Age-specific and Total Fertility Rates (TFR) for the 2009 JPFHS were calculated directly from the birth history data.

The age-specific fertility rates and TFR shown in Table 3 are for the three-year period before the survey, a period covering approximately the years 2006-2009. The TFR is the sum of the age-specific rates and is a useful measure of the level of recent fertility. It represents the average number of children a woman would have by the end of her reproductive life if she were to bear children at the currently observed age-specific rates. The TFR indicates that, if fertility rates were to remain constant at the level prevailing during the period 2006-2009, a Jordanian woman would bear 3.8 children during her lifetime. Compared to urban areas, fertility is slightly higher in rural areas (4.0 versus 3.8 births per woman).

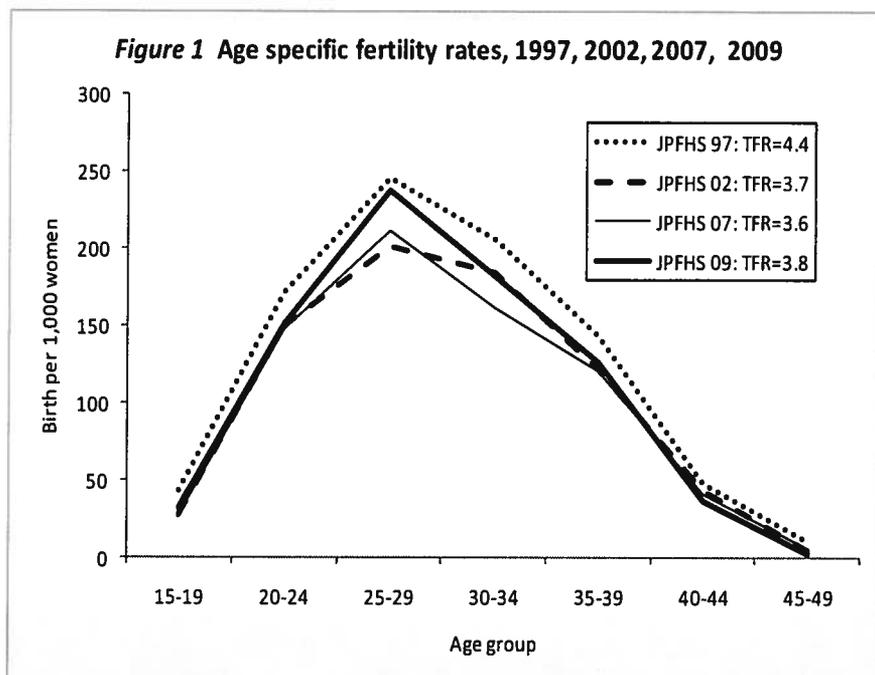
Table 3. Current Fertility

Age-specific and total fertility rates, the general fertility rate, and the crude birth rate for the three years preceding the survey, by urban-rural residence, Jordan 2009

Age group	Residence		
	Urban	Rural	Total
15-19	34	24	32
20-24	150	163	152
25-29	245	205	238
30-34	177	205	182
35-39	122	147	126
40-44	35	47	37
45-49	3	6	3
TFR	3.8	4.0	3.8
GFR	127	129	127
CBR	30.6	30.7	30.6

Note: Rates for age group 45-49 may be slightly biased due to truncation.

TFR: Total fertility rate for ages 15-49, expressed per woman
 GFR: General fertility rate (births divided by the number of women age 15-44), expressed per 1,000 women
 CBR: Crude birth rate, expressed per 1,000 population

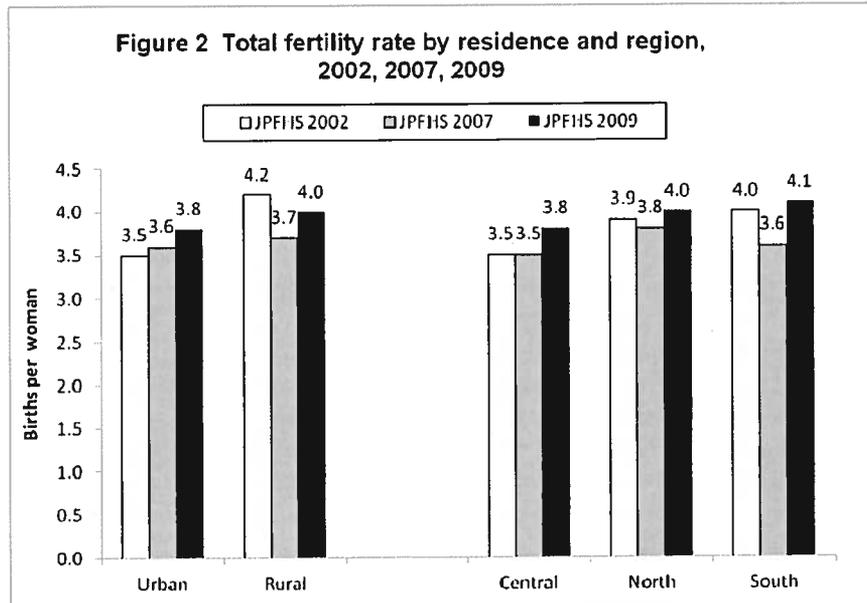


According to the age-specific fertility rates shown in Table 3, on average, a Jordanian woman will give birth to less than one child (0.9) by age 25¹ and, similarly, about two children (2.1) between the ages of 25 and 34. In the age group 15-19, fertility rate is quite low (32 per 1,000 women). The TFR then increases drastically to reach a maximum of 238 per 1,000 women in the age group 25-29. Above the age of 29, rates decline slowly but regularly.

¹ Calculated as the sum of age specific rates 15-19 and 20-24, times 5 (to take into account the five-year age group), divided by 1,000.

The general fertility rate (GFR), and the crude birth rate (CBR) are also presented in Table 3. The GFR is defined as the annual number of births per 1,000 women age 15-44, and the CBR refers to the total number of births occurring in a given year per 1,000 population. The GFR is 127 per 1,000 women age 15-44 and the CBR is 31 per 1,000 population. The GFR and CBR do not vary by urban-rural residence.

The trend in fertility obtained from previous surveys is shown in Figures 1 and 2. The total fertility rate for Jordan has declined by 16 percent between 1997 and 2002 (from 4.4 to 3.7 births per woman). However, the TFR estimated for the period 2004-2007 by the 2007 JPFHS was not significantly different than the TFR for the 1999-2002 period estimated by the 2002 JPFHS (3.6 versus 3.7 births per woman). The



The TFR estimated by the 2009 JPFHS for the most recent period (2006-2009) is slightly higher than the 2002 and 2007 estimates (3.8 versus 3.7 and 3.6, respectively). Although the different estimates from the last three surveys are not significantly different, it can be concluded that, at least, the decline of fertility has reached a plateau in Jordan. In 2002, 2007, and 2009 the age-specific fertility rates are identical for women under age 25 and above age 34. However, in 2009, fertility rates in the age group 25-29 are higher than in 2002 and 2007; in the age group 30-34, the rates are also higher than in 2007 but the same as in 2002.

Table 4. Fertility by residence

Total fertility rate for the three years preceding the survey, by governorate, region, and Badia area, Jordan 2009

Residence	Total Fertility Rate
Governorate	
Amman	3.7
Balqa	3.9
Zarqa	3.9
Madaba	3.6
Irbid	3.8
Mafraq	4.2
Jarash	4.5
Ajlun	4.0
Karak	3.8
Tafiela	4.3
Ma'an	4.3
Aqaba	4.2
Region	
Central	3.8
North	4.0
South	4.1
Badia Area	
Badia	4.3
Non Badia	3.8
Total	3.8

Note: Total fertility rate for ages 15-49, expressed per woman

Figure 2 shows that, in urban areas, the TFR has slightly increased since 2002 and 2007 (3.8 versus 3.5 and 3.6 births per woman, respectively) while fertility has slightly declined in rural areas where it was still high in 2002 (4.0 versus 4.2 births per women). In the South region, the decline of fertility found in 2007 (TFR of 3.6 versus 4.0 in 2002) is not confirmed by the current survey (4.1). Fertility remains about the same in the North region; however, in the Central region, the TFR is slightly higher than in 2002 and 2007 (3.8 versus 3.5). Consequently, fertility differentials existing previously by residence and region have almost disappeared.

Preliminary analysis of age at marriage, age at first birth and birth interval does not reveal any significant change (data not presented). Compared to 2002, use of modern contraception remains almost unchanged, except in the South region where slightly more women are using modern methods contraception (see Section C). Many other factors and determinants may contribute to the stability of the TFR. For instance, in the age group 15-29, the percentage of women who are currently married rose by three percentage points (34 percent in 2009 compared to 31 percent in 2002). In addition, the percentage of women who discontinued use of a contraceptive method during the 12 months prior to the survey increased from 42 percent in 2002 to 45 percent in 2009. Even though in depth analysis of all fertility determinants is necessary to

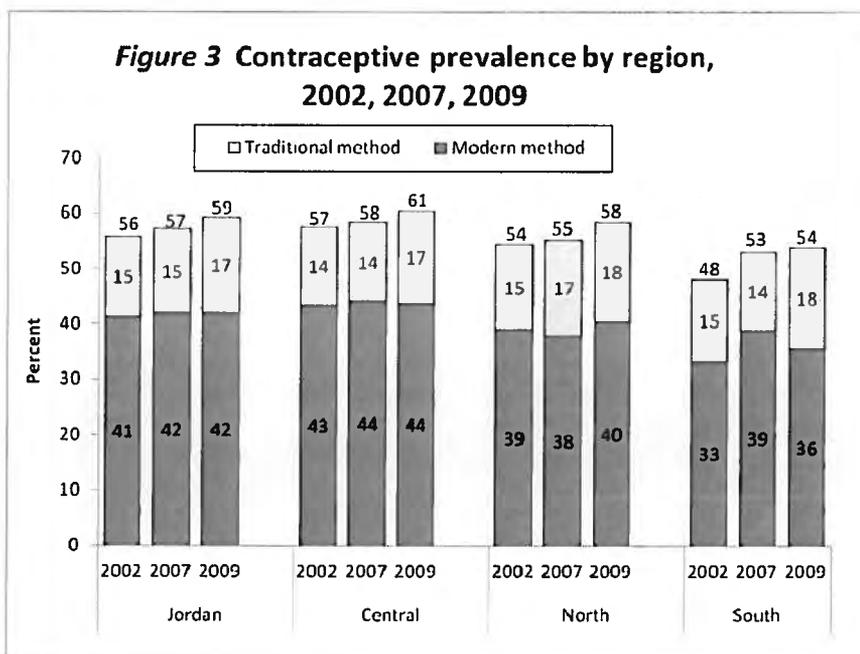
explain this interruption in fertility decline, it seems that a comparison of different indicators supports this finding.

The fertility differentials according to residence of women are shown in Table 4. There are still large differentials in level of fertility by governorate: the TFR ranges from 3.6 in Madaba governorate and 3.7 in Amman to 4.3 in Tafiela and Ma'an, and to 4.5 in Jarash. In addition, women who live in Badia areas have higher fertility than other women (4.3 versus 3.8 births per woman).

C. Family Planning

Current Use of Family Planning

Table 5 shows that 59 percent of currently married women in Jordan are using a method of family planning: 42 percent are using modern contraceptive methods and 17 percent use traditional methods. Contraceptive prevalence has slightly increased since 2002, from 56 percent to 59 percent (Figure 3), however use of modern methods has remained



almost unchanged (41 percent to 42 percent). The most popular method is the IUD, used by 23 percent of married women. The next most popular methods are the pill (8 percent of currently married women), the condom (6 percent), and female sterilization (3 percent). Withdrawal, used by 13 percent of married women (versus 9 percent in 2002), is the most popular traditional method, followed by periodic abstinence (4 percent).

Differentials in contraceptive use according to background characteristics are shown in Table 5. In general, women age 30-44, those with more than elementary education, those living in urban areas, those living Amman and Madaba governorates, and women who have larger numbers of children (3 and more) are more likely to use family planning than other women. The contraceptive prevalence rate for modern methods ranges from 28 percent in Ma'an and 33 percent in Mafraq governorates to 44 percent in Amman and Zarqa governorates, and to 45 percent in Madaba governorate. In addition, women who live in Badia areas are less likely to use contraception than other women (33 percent versus 43 percent for modern methods).

Except among women in the youngest age groups, the IUD is the most popular method. This method is used by more than 29 percent of women age 35-44, by 25 percent of women age 30-34 and more than one in five women age 45-49. Use of female sterilization is positively associated with the woman's age; older women are more likely to use this method to prevent pregnancy. Nine percent of women in the oldest age group have been sterilized.

Table 5. Current use of contraception

Percent distribution of currently married women by contraceptive method currently used, according to background characteristics, Jordan 2009

Background characteristic	Any method	Any modern method	Modern method									Traditional method				Not currently using	Total	Number of women	
			Female sterilization	Male sterilization	Pill	IUD	Injectables	Implants	Male condom	Female condom	LAM	Any traditional method	Periodic abstinence	Withdrawal	Folk method				
Age																			
15-19	27.0	15.9	0.0	0.0	7.8	3.0	0.2	0.0	3.0	0.0	1.9	11.0	0.2	10.7	0.2	73.0	100.0	242	
20-24	42.6	30.5	0.0	0.0	9.5	12.9	0.7	0.0	5.8	0.0	1.6	12.1	1.1	10.9	0.2	57.4	100.0	1,078	
25-29	58.0	41.8	0.0	0.0	11.3	18.7	0.9	0.2	7.9	0.3	2.5	16.2	2.4	13.4	0.3	42.0	100.0	1,860	
30-34	61.8	42.5	0.5	0.0	8.7	24.1	0.9	0.0	6.7	0.0	1.7	19.3	4.3	14.1	0.9	38.2	100.0	2,000	
35-39	67.6	50.0	2.5	0.0	9.0	29.0	1.1	0.0	6.8	0.0	1.7	17.6	2.9	14.4	0.2	32.4	100.0	1,704	
40-44	69.0	48.7	6.1	0.0	6.7	29.3	0.5	0.0	5.3	0.1	0.7	20.2	5.5	14.3	0.5	31.0	100.0	1,628	
45-49	53.2	36.4	8.9	0.0	1.9	20.5	0.1	0.0	4.9	0.0	0.1	16.8	8.8	7.4	0.6	46.8	100.0	1,139	
Residence																			
Urban	60.4	43.3	2.5	0.0	8.2	23.8	0.7	0.1	6.6	0.1	1.4	17.1	4.1	12.6	0.4	39.6	100.0	8,102	
Rural	53.2	35.5	3.1	0.0	8.1	16.3	1.1	0.0	4.9	0.0	2.0	17.7	3.1	14.1	0.5	46.8	100.0	1,549	
Governorate																			
Amman	61.6	43.8	2.0	0.0	8.6	25.3	0.5	0.0	6.2	0.2	1.1	17.8	5.6	11.8	0.5	38.4	100.0	3,806	
Balqa	58.0	41.7	2.2	0.0	8.2	21.9	1.1	0.1	6.1	0.0	2.1	16.2	5.2	10.9	0.1	42.0	100.0	598	
Zarqa	58.2	43.9	2.4	0.0	6.9	23.9	0.7	0.1	7.2	0.1	2.6	14.3	2.8	10.8	0.7	41.8	100.0	1,411	
Madaba	62.2	45.4	3.6	0.0	10.1	22.6	1.3	0.0	6.3	0.0	1.5	16.8	5.1	11.3	0.4	37.8	100.0	214	
Irbid	59.5	42.1	3.8	0.0	8.8	21.2	0.6	0.1	6.7	0.0	0.8	17.4	2.2	14.7	0.5	40.5	100.0	1,831	
Mafraq	53.7	33.2	2.1	0.0	7.0	14.6	1.9	0.0	5.5	0.0	2.1	20.5	3.2	17.3	0.0	46.3	100.0	434	
Jarash	59.1	40.4	2.7	0.0	7.4	21.3	1.8	0.0	4.5	0.0	2.7	18.7	3.4	14.8	0.5	40.9	100.0	289	
Ajlun	56.3	40.6	2.4	0.0	4.6	25.8	0.1	0.0	4.7	0.0	3.0	15.7	2.3	13.0	0.4	43.7	100.0	210	
Karak	50.3	35.4	3.1	0.0	9.8	14.3	1.2	0.0	6.3	0.0	0.7	14.9	1.7	12.4	0.8	49.7	100.0	374	
Tafila	57.9	37.9	4.6	0.0	9.5	15.2	1.1	0.0	5.9	0.0	1.4	20.0	1.2	18.8	0.0	42.1	100.0	137	
Ma'an	53.5	27.8	4.2	0.1	4.5	11.0	0.7	0.1	6.0	0.0	1.1	25.7	3.2	22.1	0.4	46.5	100.0	156	
Aqaba	58.0	40.3	1.5	0.0	8.4	21.9	1.0	0.1	4.5	0.0	2.8	17.7	2.7	14.7	0.3	42.0	100.0	192	
Region																			
Central	60.5	43.7	2.2	0.0	8.2	24.5	0.6	0.0	6.5	0.1	1.5	16.8	4.9	11.4	0.5	39.5	100.0	6,028	
North	58.3	40.4	3.3	0.0	8.0	20.6	0.9	0.1	6.2	0.0	1.3	17.9	2.5	15.0	0.4	41.7	100.0	2,764	
South	53.8	35.5	3.2	0.0	8.5	15.5	1.1	0.1	5.8	0.0	1.4	18.3	2.1	15.7	0.5	46.2	100.0	859	
Badia area																			
Badia	50.6	32.7	2.5	0.0	7.7	13.2	1.6	0.1	5.2	0.1	2.2	18.0	3.4	14.3	0.3	49.4	100.0	808	
Other	60.1	42.9	2.6	0.0	8.2	23.4	0.7	0.1	6.4	0.1	1.4	17.2	4.0	12.7	0.5	39.9	100.0	8,844	
Education																			
No education	31.7	24.2	6.8	0.1	3.4	9.4	1.8	0.3	0.7	0.0	1.8	7.5	0.2	7.4	0.0	68.3	100.0	259	
Elementary	50.3	33.7	5.5	0.0	4.5	18.2	1.2	0.0	1.8	0.0	2.5	16.6	2.7	13.7	0.1	49.7	100.0	646	
Preparatory	61.5	46.4	5.2	0.0	9.5	22.3	0.6	0.1	6.8	0.0	2.0	15.1	2.1	11.6	1.4	38.5	100.0	1,485	
Secondary	61.0	43.5	1.7	0.0	9.5	24.0	0.9	0.1	5.9	0.0	1.4	17.5	4.2	13.1	0.2	39.0	100.0	4,152	
Higher	60.0	41.2	1.6	0.0	7.0	22.9	0.3	0.0	8.1	0.2	1.0	18.8	5.0	13.3	0.4	40.0	100.0	3,109	
Living Children																			
0	1.8	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	1.3	0.1	1.3	0.0	98.2	100.0	878	
1-2	50.4	33.1	0.0	0.0	8.8	13.8	0.5	0.0	8.0	0.2	1.8	17.3	3.4	13.6	0.3	49.6	100.0	2,617	
3-4	69.5	49.6	1.1	0.0	10.6	27.9	1.0	0.1	7.3	0.0	1.6	19.9	4.0	15.7	0.2	30.5	100.0	3,096	
5+	73.0	53.9	7.1	0.0	7.5	31.3	0.9	0.0	5.6	0.0	1.5	19.1	5.5	12.6	1.0	27.0	100.0	3,059	
Total	59.3	42.0	2.6	0.0	8.2	22.6	0.7	0.1	6.3	0.1	1.5	17.2	4.0	12.8	0.5	40.7	100.0	9,651	

Note: If more than one method is used, only the most effective method is considered in this tabulation.

In general, urban women are more likely to use family planning than rural women. Urban women are also more likely to use the IUD than rural women (24 percent and 16 percent respectively). The proportion of married women using contraception rises steadily with increasing education. While 32 percent of women with no education use some method of family planning, the proportion rises to 50 percent among women with elementary education, and 60 percent or higher for women who have attended preparatory, secondary or higher education.

Fifty percent of women with one or two living children are using family planning. The prevalence rate is the highest among those with three to four children (70 percent), and is expectedly low (2 percent) among childless women. Almost three quarters of women with five or more children (73 percent) are using a method of contraception, mainly IUD (31 percent).

Sources of Family Planning

Women who were using a modern method of contraception at the time of the survey were asked where they obtained the method the last time. As shown in Table 6, 46 percent of modern contraceptive users obtain their method from a public source: 20 percent from a maternal and child health center, 17 percent from a government health center, and 6 percent from a government hospital. Among the private sector (54 percent), the most important providers are the pharmacies (13 percent), the private doctors (13 percent), the Jordan Association of Family Planning and Protection (JAFPP) (12 percent), and UNRWA clinics and private hospitals (8 percent each). The source of family planning methods varies according to the method being used. For example, more than one third of pill users and condom users (36 percent for both methods) obtained the method from a private pharmacy, while 23 percent of IUD users obtained the service from a private doctor and 21 percent from the JAFPP. For female sterilization, women are more likely to go to a government hospital (65 percent) than a private hospital or clinic (21 percent).

Source	Female sterilization	Pill	IUD	Injectables	Male condom	Total ¹
PUBLIC	79.1	48.8	39.1	72.3	48.8	45.7
Public government hospital	65.2	1.3	2.5	5.5	0.1	6.0
Public government health center	0.0	28.2	13.0	35.9	23.4	17.2
Public MCH	0.0	18.2	21.4	30.6	22.8	19.7
University hospital	1.7	0.5	1.1	0.0	0.1	0.8
Royal medical services	12.3	0.5	1.0	0.4	2.4	1.8
Other public	0.0	0.0	0.2	0.0	0.0	0.1
PRIVATE MEDICAL	20.8	51.1	60.9	27.7	51.2	54.3
Private hospital/clinic	20.8	0.8	10.9	0.4	0.3	7.7
Private doctor	0.0	2.1	22.6	2.3	0.5	13.1
Private pharmacy	0.0	36.0	0.5	5.9	36.0	13.4
JAFPP	0.0	2.0	20.5	5.6	1.9	12.2
UNRWA clinic	0.0	10.1	6.3	13.5	12.5	7.7
Other NGO	0.0	0.0	0.1	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	253	789	2,180	71	609	3,915

¹ Includes 5 users of implants and 7 users of female condom, but excludes LAM.

Discontinuation Rates

An important concern for family planning programs is the rate at which users discontinue use of contraception and the reasons for such discontinuation. High rates of discontinuation indicate that a family planning program should focus greater attention on counseling and follow-up, which can reduce discontinuation rates by helping women deal with various obstacles to continued use. The rates are one-year discontinuation rates, i.e. they represent the proportion of users discontinuing within the first 12 months after beginning to use the method. The rates are calculated separately for five modern methods

(pill, IUD, injectables, condom, and LAM) and two traditional methods (periodic abstinence, and withdrawal). The reasons for discontinuation were grouped into three specific categories: method failure, desire for pregnancy and other reasons, including switch to another method (mainly due to the need for a more effective method), side effects/health concerns, husband's disapproval, marital dissolution, etc. The percentage of women who switched to another method is also presented separately, since these women did not stop using contraception, but stopped using one method and started using another one.

Table 7 First-year contraceptive discontinuation rates

Percentage of contraceptive users who discontinued use of a method within 12 months after beginning its use, by reason for discontinuation and specific method, Jordan, 2009

Method	Method failure	Desire to become pregnant	Other reason ¹	Total	Switched to another method ²
Pill	8.1	11.8	31.0	50.9	19.5
IUD	1.1	4.7	9.3	15.1	6.0
Injectables	1.6	5.8	56.9	64.3	32.4
Male condom	10.1	12.9	28.5	51.5	18.7
Lactational amenorrhea	6.7	10.3	82.0	99.1	40.9
Periodic abstinence	20.6	11.9	13.4	45.9	11.1
Withdrawal	12.8	11.3	15.7	39.8	11.5
Other	12.9	6.2	43.9	62.9	28.6
All methods	8.2	9.6	27.3	45.1	16.5
Number of episodes of use	845	978	2,827	4,650	1,713

Note: Table is based on episodes of contraceptive use that began 3-59 months prior to the survey.
¹ Includes women who switched to another method.
² Used a different method in the month following discontinuation or said that they wanted a more effective method and started another method within two months of discontinuation.

Overall, Table 7 shows that more than two in five users in Jordan (45 percent) stopped using a method within 12 months of starting use. Seventeen percent of users stopped using to switch to another method, 8 percent stop using due to method failure (i.e., they became pregnant while using the method), 10 percent stop using because they want to become pregnant, and 10 percent stop using for other reasons (27 percent minus 17 percent who switched to another method). Regarding individual methods, the highest rate is observed for LAM (99 percent), followed by injectables (64 percent), condom (52 percent), pill (51 percent), and periodic abstinence (46 percent). The IUD (the most popular method) has one of the lowest discontinuation rates with 15 percent of users stopping use during the first 12 months of use, mainly to switch to another method (6 percent).

D. Fertility Preferences

The 2009 JPFHS inquired about the respondent's fertility preferences, including her desire for additional children, and spacing preferences. The survey findings are presented in Table 8. Overall, 47 percent of married women in Jordan do not want to have any more children at any time in the future, including 3 percent who have been sterilized, and 28 percent want to delay having another child for at least two years. Thus, 75 percent of married women in Jordan may be considered to have a potential need for family planning services for either limiting or spacing births.

The desire for a child is strongly related to the number of living children the woman has. Almost nine in ten women (86 percent) who had not yet begun childbearing at the time of the survey want a birth soon. Ninety percent of women who have one child also express a desire to have another; however, the majority (57 percent) of women with two children want to wait two years or more to have the next birth. Among women with more than one child, the desire to cease childbearing rises rapidly with the number of children, from 17 percent among women with two children to 89 percent among women with six or more children (including 9 percent who have been sterilized).

Table 8. Fertility preferences by number of living children

Percent distribution of currently married women by desire for children, according to number of living children, Jordan 2009

Desire for children	Number of living Children							Total
	0	1	2	3	4	5	6+	
Have another soon	86.3	36.2	20.3	15.5	10.1	7.2	3.3	18.9
Have another later	2.0	52.3	56.5	37.6	22.6	13.0	3.7	27.5
Have another, undecided when	0.7	1.3	1.4	0.6	1.0	0.6	0.1	0.8
Undecided	0.5	4.6	3.9	7.5	4.8	2.8	2.8	4.1
Want no more	2.7	4.7	17.0	36.4	58.9	71.4	79.8	44.4
Sterilized	0.0	0.0	0.0	0.6	1.7	3.9	8.8	2.6
Declare infecund	7.9	0.9	0.8	1.8	0.8	1.0	1.4	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	651	1,032	1,586	1,648	1,549	1,267	1,917	9,651

E. Nutritional Status of Children

The nutritional status of young children is a comprehensive index that reflects the level of household, community, and national development. Malnutrition (inadequate nutrition) is a direct result of insufficient food intake or repeated infectious diseases or a combination of both. It can result in increased risk of illness and death.

In the 2009 JPFHS, anthropometric data on height and weight for children less than 5 years of age and women 15-49 were collected to evaluate their nutritional status. Their height was measured using a height board. Electronic Seca scales were used to measure the weight of children. Based on these measurements, three internationally accepted indices were constructed and are used to reflect the nutritional status of children. These are:

- Height-for-age (Stunting)
- Weight-for-height (Wasting)
- Weight-for-age (Underweight)

In presenting anthropometric results, the nutritional status of children is compared with the recently developed WHO Child Growth standards (WHO, 2006). The use of the WHO Child Growth standard is based on the finding that well-nourished children for all population groups follow very similar growth patterns before puberty. The internationally-based standard population serves as a point of comparison, facilitating the examination of differences in the anthropometric status of subgroups in a population. In any large population, there are natural variations in height and weight. The variations approximate a normal distribution. Children who fall below minus two standard deviations (-2 SD) from the reference median are considered malnourished, and children who fall below minus three standard deviations (-3 SD) from the reference median are considered severely malnourished. Since children's height and weight change with age, it is suggested that height and weight be related to age and that weight be related to height. Each of the three indices provides and measures different aspects of children's nutritional status.

The anthropometric index height-for-age reflects long-term, cumulative effects of inadequate nutrition and/or health. Children who are below -2 SD from the median of the reference population are considered short for their age, or stunted. Children who are below -3 SD from the reference population median are severely stunted. Stunting of a child's growth may be the result of failure to receive adequate nutrition over a long period, or of sustained improper feeding practices, or of the effects of repeated episodes of illness. Height-for-age therefore represents a measure of the outcome of undernutrition in a population over a long period and does not vary appreciably with the season of data collection.

Table 9. Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Jordan 2009

Background characteristic	Height-for-age		Weight-for-height			Weight-for-age			Number of children
	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage above +2 SD	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage above +2 SD	
Age in months									
<6	0.4	5.4	0.3	1.2	9.1	0.3	1.3	5.2	384
6-8	0.4	1.2	0.3	7.2	5.6	0.3	0.6	6.0	202
9-11	0.7	2.2	0.0	2.1	9.2	0.1	0.9	6.2	223
12-17	2.7	10.0	0.7	1.2	5.9	0.4	1.1	2.7	467
18-23	2.8	9.7	0.6	0.9	9.1	0.1	1.4	3.9	417
24-35	2.0	10.5	0.0	1.3	6.6	0.0	2.4	4.3	862
36-47	1.7	6.6	0.1	0.8	6.0	0.1	1.6	2.7	773
48-59	1.5	9.1	0.1	1.6	5.0	0.3	3.1	1.9	738
Sex									
Male	1.9	7.8	0.3	1.5	7.7	0.2	1.6	3.6	2,109
Female	1.5	8.1	0.1	1.5	5.6	0.2	2.1	3.6	1,958
Residence									
Urban	1.5	7.1	0.2	1.5	6.8	0.2	1.8	3.8	3,340
Rural	2.6	11.8	0.4	1.6	6.5	0.2	2.3	2.7	727
Governorate									
Amman	1.2	5.7	0.1	2.1	6.7	0.0	1.5	5.5	1,407
Balqa	3.7	11.9	0.6	3.0	6.1	1.2	4.0	3.3	259
Zarqa	1.0	5.9	0.0	0.9	5.7	0.0	1.8	2.4	602
Madaba	2.8	12.4	1.0	3.4	7.1	0.7	4.6	2.8	90
Irbid	1.6	8.3	0.2	0.7	6.6	0.0	1.1	1.8	837
Mafraq	1.9	10.4	0.0	1.4	5.7	0.4	3.3	3.8	213
Jarash	2.0	8.7	0.5	1.3	6.1	0.3	1.9	1.2	144
Ajlun	1.0	8.6	0.2	1.6	5.7	0.2	1.9	2.3	103
Karak	3.3	13.4	0.3	1.0	9.6	0.6	2.6	3.5	182
Tafiela	2.0	9.8	0.7	0.7	13.7	0.2	1.5	4.3	68
Ma'an	4.1	14.3	0.5	0.5	8.9	0.3	1.4	3.2	77
Aqaba	4.4	12.7	0.0	1.5	8.7	0.6	1.3	4.2	84
Region									
Central	1.5	6.7	0.2	1.9	6.4	0.2	2.0	4.4	2,358
North	1.6	8.7	0.2	1.0	6.3	0.1	1.6	2.1	1,298
South	3.4	12.8	0.4	1.0	10.0	0.5	1.9	3.7	411
Badia area									
Badia	3.1	12.5	0.4	1.8	6.1	0.5	2.9	3.2	414
Other	1.5	7.4	0.2	1.5	6.8	0.2	1.7	3.6	3,653
Education²									
No education	7.8	23.8	2.1	3.4	6.1	3.4	4.9	0.9	82
Elementary	3.4	13.2	0.1	2.3	4.3	0.1	2.0	1.8	240
Preparatory	2.6	9.6	0.0	2.1	6.8	0.2	3.7	3.0	620
Secondary	1.4	7.8	0.3	1.7	6.7	0.2	1.7	3.5	1,790
Higher	1.1	5.5	0.1	0.8	6.8	0.0	0.9	4.2	1,312
Mother's status									
Mother interviewed	1.7	8.0	0.2	1.5	6.7	0.2	1.8	3.5	3,996
Mother not interviewed, but in household	(2.0)	(7.2)	(0.0)	(1.1)	(2.5)	(0.0)	(2.5)	(1.1)	47
Mother not interviewed, not in household ³	*	*	*	*	*	*	*	*	22
Total	1.7	8.0	0.2	1.5	6.7	0.2	1.9	3.6	4,066

Note: Table is based on children who stayed in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards..

Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight.

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parenthesis are based on 25-49 unweighted cases

¹ Includes children who are below -3 standard deviations (SD) from the International Reference Population median

² For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire

³ Includes children whose mothers are deceased

Weight-for-height measures body mass in relation to body length. It describes a recent and severe process that has produced a substantial weight loss usually as a consequence of acute shortage of food and/or severe disease. Children whose weight-for-height is below -2 SD from the median of the reference population are too thin for their height, or wasted, while those who measure below -3 SD from the reference population median are severely wasted. Wasting represents the failure to receive adequate nutrition during the period immediately before the survey and usually shows marked seasonal patterns associated with changes in food availability or disease prevalence. It may be the result of recent episodes of illness, particularly diarrhea, improper feeding practices, or acute food shortage.

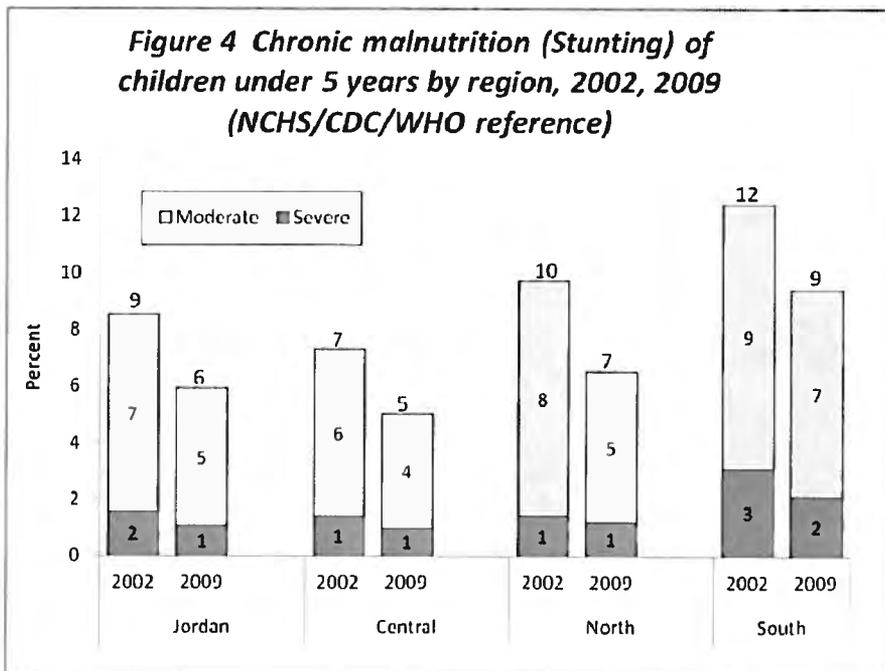
Weight-for-age is a composite index of height-for-age and weight-for-height. It represents body mass relative to age. Children whose weight-for-age measures below -2 SD from the median of the reference population are underweight for their age, while those whose measurements are below -3 SD from the reference population median are severely underweight. Being underweight for one's age therefore could mean that a child is stunted or wasted or both stunted and wasted.

Overweight and obesity are becoming problems for some children in developing countries. The percentage of children more than two standard deviations above the median for weight-for-height indicates the level of this potential problem. The percentage of children more than two standard deviations above the median for weight-for-age is included here in order to compare with other data sources that did not measure height.

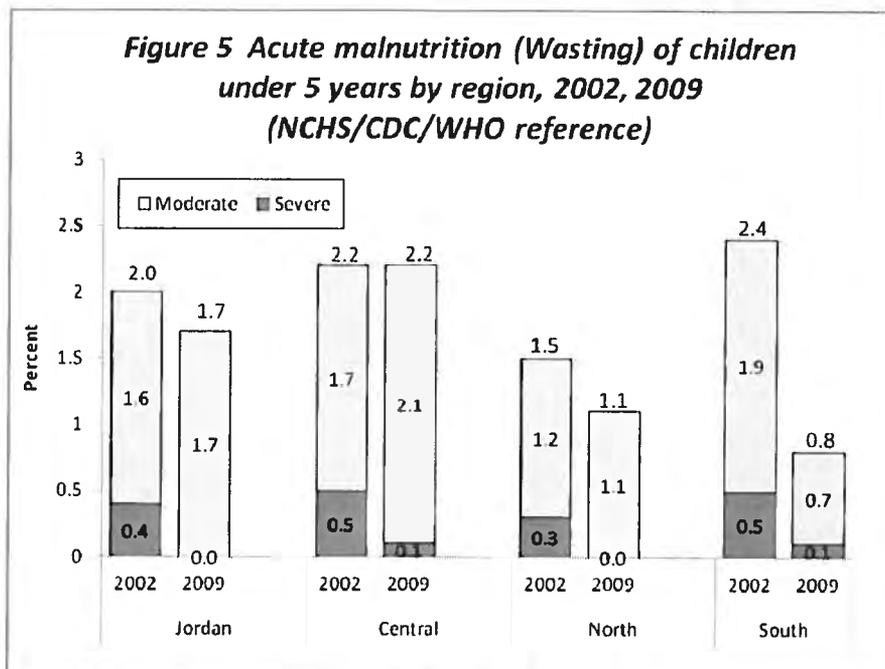
The 2009 JPFHS measured and weighed all children born in the five years prior to the survey who were listed in the Household Questionnaire. Table 9 shows the percentage of children under five years classified as malnourished according to the background characteristics. Less than 2 percent of children are wasted (weight-for-height below -2 SD), of which about one in ten (0.2 percent) are severely wasted; 8 percent are stunted or chronically malnourished (height-for-age below -2 SD), of which one in four (2 percent) are severely stunted; and 2 percent are underweight (weight-for-age below -2 SD). On the other end, 7 percent of children are overweight.

In terms of nutritional status, there is no significant difference between girls and boys, with the exception of overweight, which is more frequent among boys than girls (8 percent versus 6 percent). Stunting is strongly associated with residence. Rural children are more likely to be chronically malnourished than urban children (12 percent and 7 percent, respectively). The mother's education has a strong relationship to her children's nutritional status. The proportion of stunted children ranges from 24 percent among children whose mothers have no education to 6 percent among those whose mothers have higher education. Children from the South (13 percent) are more likely to be chronically malnourished than children from the North (9 percent) and the Central (7 percent) regions. The prevalence of wasting varies from 2 percent in the Central region to 1 percent in the North and the South regions. The prevalence of stunting ranges from 6 percent in Amman and Zarqa governorates to 13 percent in Karak and Aqaba governorates and to 14 percent in Ma'an governorate. The proportion of children who are wasted varies from less than 1 percent in Zarqa, Irbid, Tafila, and Ma'an governorates to a maximum of 3 percent in Balqa and Madaba.

In the 2002 JPFHS, the nutritional status was determined using the International Reference Population defined by the U.S. National Center for Health Statistics (NCHS), as recommended by WHO and the U.S. Centers for Disease Control and Prevention (CDC). Compared to the new WHO Child Growth standards, the proportions of children classified as stunted and wasted are slightly lower according to the NCHS/CDC/WHO reference. Figures 4 and 5 present the prevalence of stunting and wasting according to NCHS/CDC/WHO reference in 2002 and 2009.



According to this reference, in 2009, 6 percent of children are classified as stunted (versus 8 percent according to the new WHO Child Growth standards), compared to 9 percent in 2002. Since 2002, the prevalence of stunting has drastically decreased in the three regions. According to the NCHS/CDC/WHO reference, the prevalence of wasting has not significantly changed in Jordan (from 2.0 percent to 1.7 percent). However, the proportion of wasted children has noticeably decreased in the South region, from 2.4 percent to 0.8 percent.



F. Anemia

Anemia is characterized by a low level of hemoglobin in the blood. Hemoglobin is necessary for transporting oxygen from the lungs to other tissues and organs in the body. Anemia can result from a nutritional deficiency of iron, foliate, vitamin B₁₂, or some other nutrients. This type of anemia is commonly referred to as iron-deficiency anemia and is the most widespread form of malnutrition in the world. Anemia can also be the result of hemorrhage and chronic disease, malaria, parasitic infection or genetic disorders.

Hemoglobin testing is the primary method of anemia diagnosis. The 2009 JPFHS included direct measurement of hemoglobin levels for children (6-59 months) and all women (15-49 years). Hemoglobin measurements were taken in the field using the HemoCue system. A drop of capillary blood taken from the finger is drawn in one continuous process directly into a reagent-coated microcuvette that serves as a blood collection device. The filled microcuvette is inserted into the cuvette holder of a portable, battery-operated photometer. In less than a minute, hemoglobin concentration is indicated on a digital read-out in grams per deciliter.

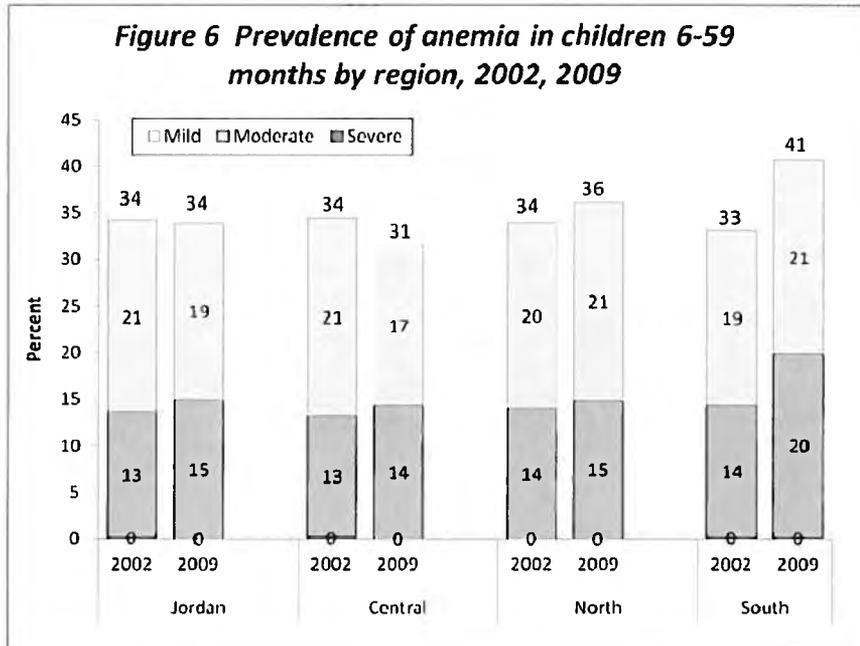
Table 10 presents the anemia levels for children under five years of age (6-59 months) and for all women age 15-49 years. Levels of anemia were classified as severe, moderate, or mild according to criteria developed by the World Health Organization. Children with < 7.0 g/dl of hemoglobin are classified as having severe anemia, those with 7.0 – 9.9 g/dl are classified as having moderate anemia, and those with 10.0 – 10.9 g/dl are

Table 10. Anemia among children and women					
Percentage of children age 6-59 months and women age 15-49 years classified as having iron-deficiency anemia, by background characteristics, Jordan 2009					
Background characteristic	Percentage with:			Number	
	Any anemia	Mild anemia	Moderate anemia		
CHILDREN					
Residence					
Urban	32.6	18.1	14.5	0.0	2,835
Rural	39.8	22.4	17.3	0.1	619
Governorate					
Amman	31.8	16.7	15.0	0.0	1,161
Balqa	39.2	21.8	17.4	0.0	225
Zarqa	28.4	16.2	12.2	0.0	513
Madaba	24.3	17.1	7.3	0.0	78
Irbid	38.3	21.8	16.5	0.0	740
Mafraq	26.9	17.1	9.8	0.0	172
Jarash	36.1	23.5	12.6	0.0	125
Ajlun	35.8	20.8	15.0	0.0	86
Karak	45.3	23.0	22.0	0.3	155
Tafiela	37.5	18.0	19.4	0.0	57
Ma'an	42.8	23.6	18.8	0.4	69
Aqaba	32.2	15.8	16.1	0.3	74
Region					
Central	31.4	17.2	14.3	0.0	1,977
North	36.1	21.2	14.9	0.0	1,123
South	40.8	20.8	19.7	0.2	354
Badia area					
Badia	38.4	22.8	15.4	0.1	343
Other	33.4	18.4	15.0	0.0	3,111
Total	33.9	18.9	15.0	0.0	3,454
WOMEN					
Residence					
Urban	25.0	20.4	4.5	0.1	5,830
Rural	29.0	23.3	5.4	0.3	1,212
Governorate					
Amman	23.0	18.2	4.8	0.0	2,607
Balqa	35.0	28.4	5.9	0.7	478
Zarqa	23.9	20.8	3.2	0.0	953
Madaba	21.5	18.7	2.8	0.0	163
Irbid	27.2	22.6	4.5	0.1	1,468
Mafraq	23.4	18.9	4.2	0.3	322
Jarash	29.6	22.9	6.3	0.4	207
Ajlun	26.2	19.5	6.2	0.5	182
Karak	30.3	24.2	5.9	0.2	298
Tafiela	24.0	19.5	4.2	0.3	114
Ma'an	28.6	21.4	7.0	0.2	128
Aqaba	35.2	28.9	6.3	0.0	124
Region					
Central	24.5	20.0	4.5	0.1	4,200
North	26.8	21.8	4.8	0.2	2,178
South	29.8	23.8	5.9	0.2	664
Badia area					
Badia	29.3	24.2	4.8	0.3	581
Other	25.4	20.6	4.7	0.1	6,462
Total	25.7	20.9	4.7	0.1	7,043

Note: Table is based on children and women who stayed in the household the night before the interview. Prevalence is adjusted for altitude (for children and women) and smoking (for women) using CDC formulas (CDC, 1998). Women and children with <7.0 g/dl of hemoglobin have severe anemia, women and children with 7.0-9.9 g/dl have moderate anemia, and non-pregnant women with 10.0-11.9 g/dl and children and pregnant women with 10.0-10.9 g/dl have mild anemia.

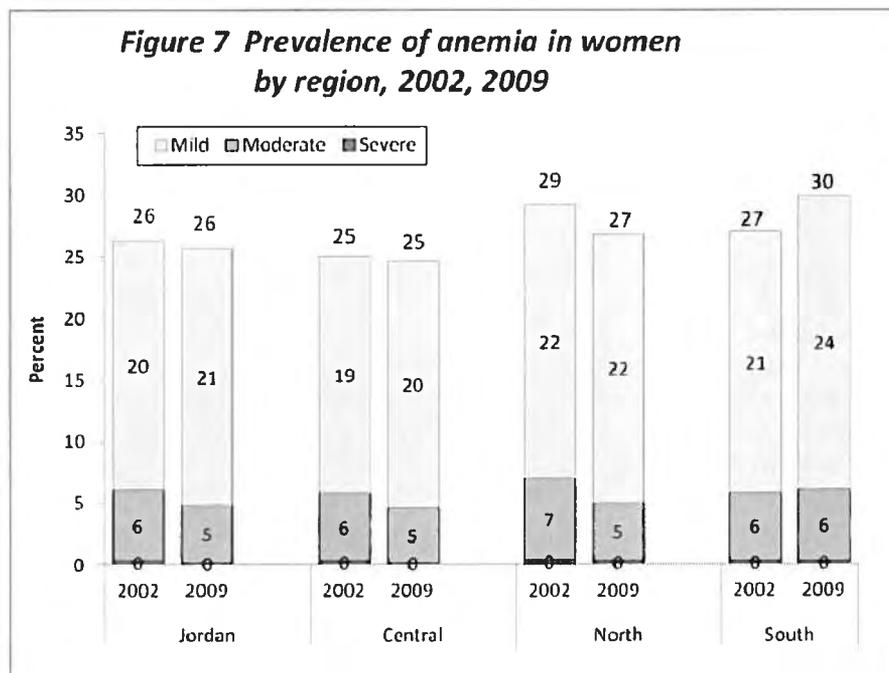
classified as having mild anemia. Women with < 7.0 g/dl are classified as having severe anemia, those with 7.0 – 9.9 g/dl are classified as having moderate anemia, and non-pregnant women with 10.0 – 11.9 g/dl and pregnant women with 10.0 – 10.9 g/dl are classified as having mild anemia.

Anemia is common among children in Jordan; one-third children are anemic (34 percent). Less than half of children who suffer from anemia are classified as having moderate anemia (15 percent of all children) and more than half of children who suffer from anemia are classified as having mild anemia (19 percent of all children). Almost no children are classified as having severe anemia. The



The prevalence of anemia among children is higher in rural areas than in urban areas (40 percent versus 33 percent) (Table 10). Children from the South region (41 percent) are more likely to be anemic than children from the North and Central regions (36 and 31 percent, respectively). The prevalence of anemia varies from 24 percent in Madaba governorate to 43 percent in Ma'an and to 45 percent in Karak governorate. Figure 6 shows that the prevalence of anemia has not changed since 2002: it has slightly decreased in the Central region (31 percent versus 34 percent), while it has slightly increased in the North region (from 34 percent to 36 percent) and significantly increased in the South (from 33 percent to 41 percent).

Anemia is also common among women in Jordan; about one in four women are anemic (26 percent). About one in five women who suffer from anemia is classified as having moderate anemia (5 percent of all women), and four in five of women who suffer from anemia are classified as having mild anemia (21 percent of all women). The prevalence of anemia among women is higher in rural areas than in urban areas (29 percent versus 25 percent). Women from the South region (30 percent) are more likely to be anemic than women from the North and Central regions (27 and 25 percent, respectively). The prevalence of anemia among women varies from 22 percent in Madaba and 23 percent in Amman and Mafraq governorates to 35 percent in Balqa and Aqaba governorates. Figure 7 shows that the prevalence of anemia among women has not changed since 2002 at the national level or in the Central region. However, it has slightly decreased in the North region (29 percent versus 27 percent), while it has slightly increased in the South region (from 27 percent to 30 percent).



G. Infant and Child Mortality

One important objective of the JPFHS 2009 was to measure the levels and trends in mortality among children, because infant and child mortality rates are basic indicators of a country's socioeconomic situation and quality of life. Estimates of childhood mortality are based on information from the birth history section of the questionnaire administered to individual women. The section began with questions about the aggregate childbearing experience of respondents (i.e., the number of sons and daughters who live with the mother, the number who live elsewhere and the number who have died). For each of these births, information was then collected on sex, month and year of birth, survivorship status and current age, or, if the child had died, age at death. This information is used to directly estimate the following five mortality rates:

Neonatal mortality:	the probability of dying within the first month of life;
Postneonatal mortality:	the difference between infant and neonatal mortality;
Infant mortality:	the probability of dying before the first birthday;
Child mortality:	the probability of dying between the first and fifth birthday;
Under-five mortality:	the probability of dying between birth and the fifth birthday.

All rates are expressed per 1,000 live births, except for child mortality, which is expressed per 1,000 children surviving to 12 months of age.

Table 11 presents early childhood mortality rates for the 15 years preceding the survey. Under-five mortality for the period 0-4 years before the survey (which corresponds to the years 2004-2009) is 28 per 1,000 births. Most of the mortality occurs during the first year of life, as evidenced by the fact that the infant mortality rate is 23 deaths per 1,000 live births while mortality between the first and the fifth birthday is 5 per 1,000 children surviving at the first birthday. As expected, mortality during the first month, or neonatal mortality, is higher than post-neonatal mortality (15 per 1,000 versus 8 per 1,000) and accounts for 65 percent of the overall infant mortality.

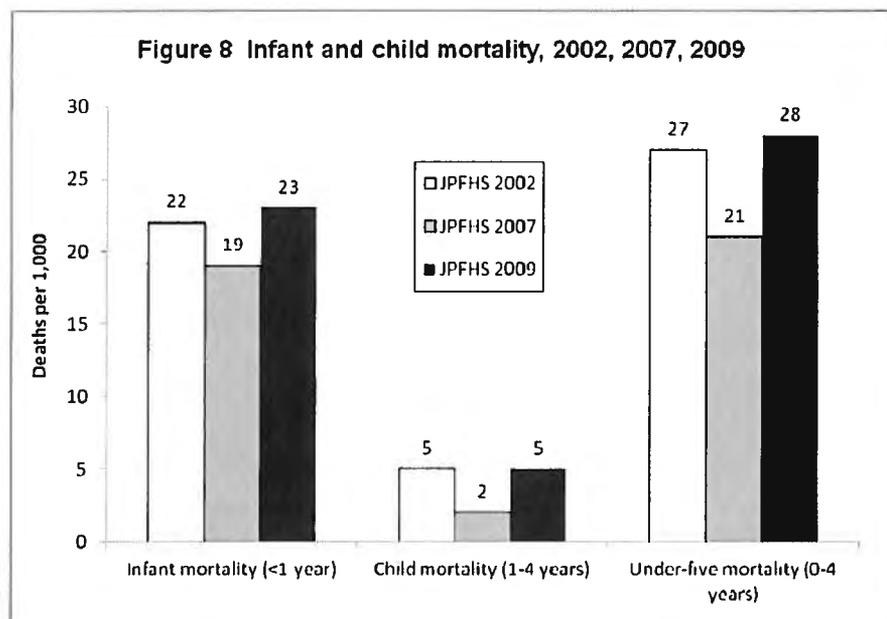
The results in Table 11 can be used to explore the trend in early childhood mortality in Jordan. It should be noted however that the rates in Table 11 are derived from retrospective data from the 2009 JPFHS. Thus, they are subject to errors of omission and misreporting of date of birth and age at death,

which are usually more common for events further back in time. In addition, sampling errors associated with infant and child mortality estimates are quite large and differences of less than five per thousand points between two estimates should be interpreted with caution. According to the 2009 JPFHS estimates, infant mortality has increased from 23 deaths per 1,000 births in the period 10-14 years before the survey (circa 1996), to 29 deaths in the period 5-9 years before the survey (circa 2001) and has declined recently to meet the same level as observed for the period 10-14 years ago (23 deaths per 1,000). During the same period, child mortality has remained the same. Consequently, under-five mortality has followed the same trend as infant mortality: first an increase from 28 to 33 deaths per 1,000, then a decrease to return to 28 deaths per 1,000).

Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality (PNN) ¹	Infant mortality (1q0)	Child mortality (4q1)	Under-five mortality (5q0)
0-4	15	8	23	5	28
5-9	22	7	29	5	33
10-14	15	8	23	5	28

¹ Computed as the difference between the infant and neonatal mortality rates

Another approach to looking at trends in mortality levels involves the comparison of estimates from surveys conducted at different points in time. A comparison of the 2009 JPFHS and the previous two JPFHS data is presented in Figure 8. Current levels of infant and child mortality are very close to those estimated by the 2002 JPFHS, which is consistent with the level of mortality found for the 10-14 years preceding the current survey. However, according to the 2007 JPFHS, under-five mortality had declined from 27 deaths per 1,000 in 2002 to 21 in 2007. Consequently, compared to the 2007 findings, the current survey shows an important increase of under-five mortality (from 21 to 28 deaths per 1,000). This inconsistency between the 2007 and 2009 results may result of an underestimation of the infant and child mortality by the 2007 JPFHS. Further analyses would be necessary to determine whether or not the 2007 levels of mortality were underestimated and whether or not the increase of mortality revealed by the current survey around the year 2001 was real.



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Senegal (MIS) 2008-09	April	2009	French
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Kenya 2008-09	September	2009	English
Congo (Brazzaville) (AIS) 2009	September	2009	French
São Tomé e Príncipe 2009	September	2009	French
Guyana 2009	September	2009	English
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Madagascar 2008-09	October	2009	French
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