

**EGYPT  
DEMOGRAPHIC  
AND  
HEALTH  
SURVEY  
1998**

**Egypt**  
**Demographic and Health**  
**Survey**  
**1998**

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**Cairo, Egypt**

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The 1998 Interim Egypt Demographic and Health Survey (EIDHS-98) is part of the international Demographic and Health Surveys project. Additional information about the EIDHS-98 may be obtained from: El-Zanaty and Associates, 62 Mossadaq Street, Cairo, Egypt (Telephone: 20-2-349-6936; Telefax: 20-2-336-4120; and E-mail: [edhs@idsc.gov.eg](mailto:edhs@idsc.gov.eg)). Additional information about the worldwide DHS project may be obtained from: Macro International Inc. , 11785 Beltsville Drive, Calverton, MD 20705 (Telephone: 301-572-0200; Telefax: 301-572-0999; and E-mail: [reports@macroint.com](mailto:reports@macroint.com)).

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# 1 Introduction

The 1998 Egypt Interim Demographic and Health Survey (1998 EIDHS) was the second interim survey being undertaken in Egypt<sup>1</sup>. The survey was designed to obtain information needed to track progress toward the achievement of the GOE's and USAID's goals in population, health and nutrition. The principal objectives of the 1998 interim Egypt Demographic and Health survey were to:

- Collect data at the national level which will allow the calculation of demographic rates, particularly, fertility and infant mortality rates;
- Measure the level of contraceptive knowledge and practice of women by method;
- Collect quality data on family health: immunizations, prevalence and treatment of diarrhea and other diseases among children under three, prenatal visits, assistance at delivery and breastfeeding.

To achieve these objectives, the interviews were conducted in the 1998 EIDHS with a nationally representative survey of ever-married women age 15-49. The 1998 EIDHS was more limited in content than earlier DHS surveys in Egypt, focusing on the collection of information on a number of key family planning and maternal and child health indicators. The sample for the survey was similar in size to that selected for the 1997 Interim DHS, including around half the households covered in the 1995 DHS survey.

This report presents a summary of findings related to the principal topics in the survey.

## 1.1 Survey Design and Implementation

The 1998 EIDHS was carried out by El-Zanaty and Associates. Macro International provided technical support for the survey through the measure DHS+ project, which is sponsored by the United States Agency for International Development (USAID) to assist countries worldwide to obtain information on key population and health indicators. USAID/Cairo provided funding for the survey under the Population and Family Planning III project.

### Sample Design and Selection

The sample for the 1998 EIDHS was designed to provide estimates of population and health indicators including fertility and mortality rates for the country as a whole and for five major subdivisions (Urban Governorates, urban Lower Egypt, rural Lower Egypt, urban Upper Egypt, and rural Upper Egypt). The Frontier Governorates, which represent less than 2 percent of the total population, were excluded from the survey.

A systematic random sample of around 6,000 households was chosen for the 1998 EIDHS. The 1998 EIDHS sample was drawn from 467 primary sampling units (shaikhas and villages) which were originally selected for the 1995 EDHS (El-Zanaty et al., 1996). Each of the the PSUs selected for the 1995 survey had been divided into parts, with one part selected from smaller PSUs and two parts selected from larger PSUs. A total of 934 segments were then chosen from the selected parts, and a household listing was prepared within each segment. These household listings were used in selecting the final household samples in both the 1995 DHS and the 1997 Interim Survey in all of the governorates except Assuit and Souhag. In Assuit and Souhag governorates, new segments were

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<sup>1</sup> The 1998 EIDHS is the fifth Demographic and Health Survey to be implemented in Egypt; earlier rounds included full-scale DHS surveys conducted in 1988, 1992 and 1995 as well as an Interim DHS survey conducted in 1997. Other national-level surveys for which results are shown in this report include the 1980 Egyptian Fertility Survey (EFS-80), the 1984 Egypt Contraceptive Prevalence Survey (ECPS-84) and the 1991 Egypt Maternal and Child Health Survey (EMCHS-91).



chosen for the 1997 Interim Survey from the parts that had been selected for the 1995 DHS, and a household listing operation was undertaken in the newly selected segments prior to the final household selection in the two governorates (El-Zanaty and Associates and Macro International Inc., 1998).

In planning for the 1998 EIDHS, it was decided that it would be preferable to obtain new household listings for most PSUs rather than employing the listings from the 1995 survey for a third time. Therefore, in all governorates except Assuit and Souhag, the first stage in the process of drawing the 1998 sample involved the selection of two segments from the segments created at the time of the 1995 survey. This procedure resulted in the selection of new segments in all but 23 PSUs; in the latter PSUs, the number of segments created at the time of the 1995 DHS were not sufficient to allow two new segments to be selected for the 1998 survey<sup>2</sup>.

A household listing operation was carried out in the segments chosen for the 1998 EIDHS in all of the governorates except Assuit and Souhag. Using the listings, a systematic random sample of households was selected within each segment. In Assuit and Souhag, the household lists prepared for the 1997 Interim Survey were used in selecting a new independent household sample from these governorates for the 1998 EIDHS.

In order to allow for sub-regional estimates, the final number of households selected from each governorate in the 1998 EIDHS is disproportionate to the size of the population in the governorate. Thus, the 1998 EIDHS sample is not self-weighting at the national level.

### **Questionnaires**

Two questionnaires were used in the 1998 EIDHS: a household questionnaire and a woman's questionnaire. The household and woman questionnaires were based on the questionnaire used in the EIDHS-97, and on model survey instruments developed in the DHS program. However, because of the interim nature of the survey, the content of the 1998 questionnaires was more limited in scope than in the main EDHS earlier surveys.

The questionnaires were developed in English and translated into Arabic. A pretest of the household and woman questionnaires was conducted in September 1998.

The household questionnaire was used to enumerate all usual members of and visitors to the selected households and to collect information on the socioeconomic status of the households. The first part of the household questionnaire collected information on the age, sex, marital status, educational attainment and drop out, and relationship to the household head of each household member or visitor. This information was used to identify the women who were eligible for the individual interview. It also provides basic demographic data for Egyptian households. In the second part of the household questionnaire, there were a limited number of questions on housing characteristics (e.g., the number of rooms, the flooring material, etc.) and on ownership of a variety of consumer goods.

The individual questionnaire for women obtained information on the following topics: respondent's background characteristics, reproduction, contraceptive knowledge and use, fertility preferences and attitudes about family planning, pregnancy care and infant feeding practices, child

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<sup>2</sup> In 15 PSUs, a new part was selected. A quick count was carried out in order to divide the new part into the segments and two segments were selected from each of the new parts for the 1998 survey. In 8 PSUs, however, there were no additional parts available in which new segments could be selected. In 7 of these PSUs, the part originally selected for the 1995 survey included one segment in addition to the two that had been chosen for the 1995 survey. For these PSUs, that segment was included in the 1998 sample, and the second segment was randomly selected from the two segments that had been chosen in 1995. Finally, there was one PSU in which there were no additional parts or segments available; accordingly, both segments that had been selected for the 1995 survey were used in the 1998 EIDHS.

immunization and health, marriage and husband's background, and height and weight of children and mothers. In addition to the monthly calendar that included information on births, contraceptive use, discontinuation, source of method and marriage status of women. The calendar covered a period more than five years.

### **Data Collection and Processing**

Eight teams collected data for the 1998 EIDHS; each team consisted of four interviewers and a field editor, and the team supervisor. The interviewers and editors were all females, while the supervisors were all males. One team was assigned for Cairo, and one team for Alexandria and Behera. Each of the other teams was assigned to work in three governorates. The field staff was trained during a four-week period in October 1998. The main fieldwork began on November 2<sup>nd</sup> 1998. All interviews, callbacks, and re-interviews were completed by the first week of December 1998.

Questionnaires were returned to the EIDHS survey office in Cairo for data processing. The office editing staff first checked that questionnaires had been received for all selected households and eligible respondents. In addition, the few questions which had not been pre-coded (e.g., occupation) were coded at this time. The data were then entered and edited using microcomputers and the ISSA (Integrated System for Survey Analysis) software which was developed in the DHS program to facilitate processing of survey data using eight computers. For verification, the data were double entered. Office editing and data processing activities were initiated almost immediately after the beginning of fieldwork and were completed by mid December 1998.

## **1.2 Coverage of the Sample**

Table 1.1 presents information on the results of the household and individual interviews. A total of 6,894 households were selected for the 1998 EIDHS sample. Household interviews were completed for 6,759 households, which represents 99 percent of the sample households. As noted above, an eligible respondent was defined as an ever-married woman age 15-49 who was present in

Result of interview and response rate	Urban Governorates			Lower Egypt			Upper Egypt			Total
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	
<b>Households (HH)</b>										
Sampled	3,552	3,342	1,801	2,770	970	1,800	2,323	781	1,542	6,894
Found	3,502	3,325	1,770	2,753	962	1,791	2,304	770	1,534	6,827
Interviewed	3,460	3,299	1,751	2,729	952	1,777	2,279	757	1,522	6,759
<b>HH response rate</b>	98.8	99.2	98.9	99.1	99.0	99.2	98.9	98.3	99.2	99.0
<b>Eligible women (EW)</b>										
Identified	2,919	3,535	1,469	2,663	787	1,876	2,322	663	1,659	6,454
Interviewed	2,902	3,504	1,459	2,646	784	1,862	2,301	659	1,642	6,406
<b>EW response rate</b>	99.4	99.1	99.3	99.4	99.6	99.3	99.1	99.4	99.0	99.3

the household on the night before the interview. A total of 6,454 eligible women were identified in the interviewed households in the 1998 EIDHS sample. Of these women, 6,406 were successfully interviewed, with a response rate of 99.3 percent. The response rate does not vary much by region.

## **1.3 Background Characteristics of Respondents**

Table 1.2 presents the distribution of ever-married women 15-49 interviewed in the 1998 EIDHS by selected background characteristics. Almost all of the respondents were married at the

time of the interview, with 5 percent reporting that they were widowed, and 2 percent that they were divorced. Considering the age distribution, 21 percent of the sample were under age 25, 35 percent were in the 25-34 age group, and 44 percent were over age 35. The age distribution of the 1998 EIDHS reflects the fact that the age at first marriage has been steadily increasing over time in Egypt.

The majority of the 1998 EIDHS respondents were from rural Egypt (55 percent), with 30 percent residing in rural areas in Lower Egypt and 25 percent in rural areas in Upper Egypt. Around half of the urban residents—23 percent of the entire sample—were living in one of the four Urban Governorates.

**Table 1.2 Background characteristics of respondents**

Percent distribution of ever-married women 15-49 by selected background characteristics, Egypt 1998

Background characteristics	Weighted percent	Number of women	
		Weighted number	Unweighted number
<b>Marital status</b>			
Currently married	93.2	5,971	5,977
Widowed	4.8	306	302
Divorced	2.0	129	127
<b>Age</b>			
15-19	5.2	331	328
20-24	15.6	1,001	991
25-29	18.3	1,174	1,182
30-34	16.7	1,068	1,091
35-39	16.8	1,078	1,069
40-44	13.4	856	838
45-49	14.0	899	907
<b>Urban-rural residence</b>			
Urban	45.3	2,901	2,902
Rural	54.7	3,505	3,504
<b>Place of residence</b>			
Urban Governorates	22.7	1,453	1,459
Lower Egypt	41.6	2,666	2,646
Urban	11.5	736	784
Rural	30.1	1,930	1,862
Upper Egypt	35.7	2,287	2,301
Urban	11.1	712	659
Rural	24.6	1,575	1,642
<b>Educational level</b>			
No education	42.6	2,731	2,661
Some primary	16.2	1,041	1,026
Primary completed/Some secondary	12.3	786	799
Secondary completed/Higher	28.9	1,849	1,920
Total	100.0	6,406	6,406

The educational attainment of 1998 EIDHS respondents varied considerably. More than four in ten women in the sample had never attended school, 16 percent had less than a primary education, 12 percent had completed the primary but not secondary level, and 29 percent had completed at least the secondary level.

#### **1.4 Content of the Report**

The remaining sections of this report provide an overview of the main results of the 1998 EIDHS. Wherever possible those findings are compared with the results from earlier surveys in Egypt in order to assess trends in key demographic and health indicators. Appendix A provides the sampling errors from the 1998 EIDHS for these indicators. Appendix B includes an assessment of the significance of recent trends (since 1995) in a number of these indicators.



## 2 Fertility

Monitoring change in fertility levels and differentials has been one of the primary reasons for conducting a series of demographic surveys in Egypt during the last decade. The fertility data in the 1998 EIDHS were obtained from all respondents through, retrospective reproductive histories. In collecting these histories, each woman was first asked about the number of sons and daughters living with her, the number living elsewhere and the number who had died. She was then asked for a history of all her births, including the child's name, sex, the month and year in which each child was born, if dead, the age at death, and, if alive, the current age and whether the child was living with the mother. The information on the age and/or date of birth of children is used to estimate current levels of fertility in Egypt.

### 2.1 Current Fertility

Measures of current fertility presented in Table 2.1 include the total fertility rate, age-specific fertility rates, the general fertility rate, and the crude birth rate. The rates are shown for the three-year period before the survey (i.e., for the approximate calendar period 1996-1998) according to the mother's place of residence at the time of the interview.

**Table 2.1 Current fertility by residence**

Age-specific fertility rates (per 1,000 women) and total fertility and the crude birth rate and the general fertility rate for the three years preceding the survey, Egypt 1998

Age	Urban Govern-			Lower Egypt			Upper Egypt			
	Urban	Rural	norates	Total	Urban	Rural	Total	Urban	Rural	Total
15-19	32	90	35	47	15	51	101	40	110	64
20-24	150	229	137	194	145	205	227	173	230	192
25-29	183	204	178	176	158	179	228	205	230	194
30-34	120	149	112	120	111	122	175	148	190	135
35-39	63	83	65	58	45	63	98	76	108	73
40-44	15	29	17	18	9	23	29	17	37	22
45-49	1	1	0	2	0	3	2	5	0	1
TFR 15-44	2.8	3.9	2.7	3.1	2.4	3.2	4.3	3.3	4.5	3.4
TFR 15-49	2.8	3.9	2.7	3.1	2.4	3.2	4.3	3.3	4.5	3.4
GFR	93	138	90	107	84	117	148	115	166	117
CBR	23	31	22	25	19	27	33	26	34	27

Note: Rates are for the period 1-36 months preceding the survey. Rates for the age group 45-49 may be slightly biased due to truncation.  
TFR – Total fertility rate (births per woman)  
GFR – General fertility rate (births per 1,000 women 15-44)  
CBR – Crude birth rate (births per 1,000 population)

The total fertility rate indicates that, if fertility rates were to remain constant at the level prevailing during the period 1996-1998, an Egyptian woman would bear 3.4 children during her lifetime. Rural women are having more children than urban women. At current levels, rural women will have 3.9 births by the end of the childbearing period, one birth more than urban women. A more detailed examination of the age-specific rates presented in Table 2.1 suggests that much of the overall urban-rural differential is the result of significantly higher fertility levels among rural women under age 25 compared to urban women in the same age group. For example, the age-specific fertility rate for rural women 15-19 is almost three times the rate among urban women in the same age group, and

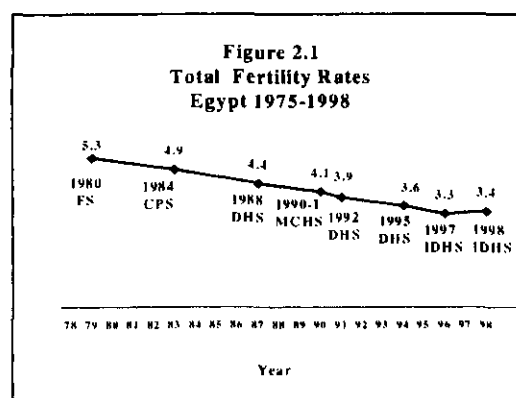
the rate for rural women 20-24 is around 50 percent higher than that for urban women in the same age group. Differences in fertility levels in the the 15-24 age group reflect both earlier ages at marriage and lower rates of adoption of contraception in rural compared to urban areas.

By place of residence, fertility levels are lowest in the Urban Governorates, followed by Lower Egypt. Upper Egypt, where the average woman is having 4.3 live births, has the highest level. Within Upper Egypt, the urban-rural differential in fertility is fairly large; rural women in Upper Egypt are having an average of 4.5 births, a rate more than one birth higher than the level among urban women in the region. In contrast, the fertility rate for rural Lower Egypt is 3.2 births. Urban women in Lower Egypt are giving birth at less rate than women living in the Urban Governorates.

Estimates of the general fertility rate and crude birth rate are also presented in Table 2.1. For the period 1996-1998, the general fertility rate was 117 births per thousand women and the crude birth rate was 27 births per thousand population. There are substantial differences by residence in both the CBR and the GFR. The lowest rates are found in urban Lower Egypt where the CBR is 20 births per thousand populations and the GFR is 84 births per thousand women. In contrast, in rural Upper Egypt where these rates are highest, the CBR was estimated to be 34 births per thousand populations, and the GFR was 166 births per thousand women.

## 2.2 Trends in Fertility

Using data from earlier surveys as well as from the 1998 EIDHS, Figure 2.1 and Table 2.2 show the trend in fertility in Egypt since the late 1970s. Overall, from Figure 2.1 it is clear that fertility levels fell by 2 births during the nearly 20-year period, from 5.3 births at the time of the 1980 Egypt Fertility Survey to 3.4 births at the time of the 1998 EIDHS. Considering the decline in the age-specific rates as Table 2.2 shows, fertility fell at a faster pace among women age 30 and over than among younger women.



**Table 2.2 Trends in fertility**

Age-specific fertility rates (per 1,000 women) and total fertility rates, Egypt 1979-1998

Age	EFS-80 1979- 1980 <sup>1</sup>	ECPS-84 1983- 1984 <sup>1</sup>	EDHS-88 1986- 1988 <sup>2</sup>	EMCHS-91 1990- 1991 <sup>1</sup>	EDHS-92 1990- 1992 <sup>2</sup>	EDHS-95 1993- 1995 <sup>2</sup>	EDHS-97 1995- 1997 <sup>2</sup>	EDHS-98 1996- 1998 <sup>2</sup>
15-19	78	73	72	73	63	61	52	64
20-24	256	205	220	207	208	200	186	192
25-29	280	265	243	235	222	210	189	194
30-34	239	223	182	158	155	140	135	135
35-39	139	151	118	97	89	81	65	73
40-44	53	42	41	41	43	27	18	22
45-49	12	13	6	14	6	7	5	1
TFR 15-49	5.3	4.9	4.4	4.1	3.9	3.6	3.3	3.4

<sup>1</sup> Rates are for the 12-month period preceding the survey.

<sup>2</sup> Rates are for the 36-month period preceding the survey.

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

Source: El-Zanaty and Associates and Macro International Inc., 1998, Table 2.2

**Table 2.3 Trends in fertility by residence**

Total fertility rates by urban-rural residence and place of residence, Egypt 1986-1998

Residence	EDHS-88	EMCHS-91	EDHS-92	EDHS-95	EDHS-97	EDHS-98
	1986-1988	1990-1991	1990-1992	1993-1995	1995-1997	1996-1998
<b>Urban-rural residence</b>						
Urban	3.5	3.3	2.9	3.0	2.7	2.8
Rural	5.4	5.6	4.9	4.2	3.7	3.9
<b>Place of residence</b>						
Urban Governorates	3.0	2.9	2.7	2.8	2.5	2.7
Lower Egypt	4.5	U	3.7	3.2	3.0	3.1
Urban	3.8	3.5	2.8	2.7	2.6	2.4
Rural	4.7	4.9	4.1	3.5	3.2	3.2
Upper Egypt	5.4	U	5.2	4.7	4.2	4.3
Urban	4.2	3.9	3.6	3.8	3.3	3.3
Rural	6.2	6.7	6.0	5.2	4.6	4.5
TFR 15-49	4.4	4.1	3.9	3.6	3.3	3.4

<sup>1</sup> Rates are for the 12-month period preceding the survey.

<sup>2</sup> Rates are for the 36-month period preceding the survey.

U-Unavailable

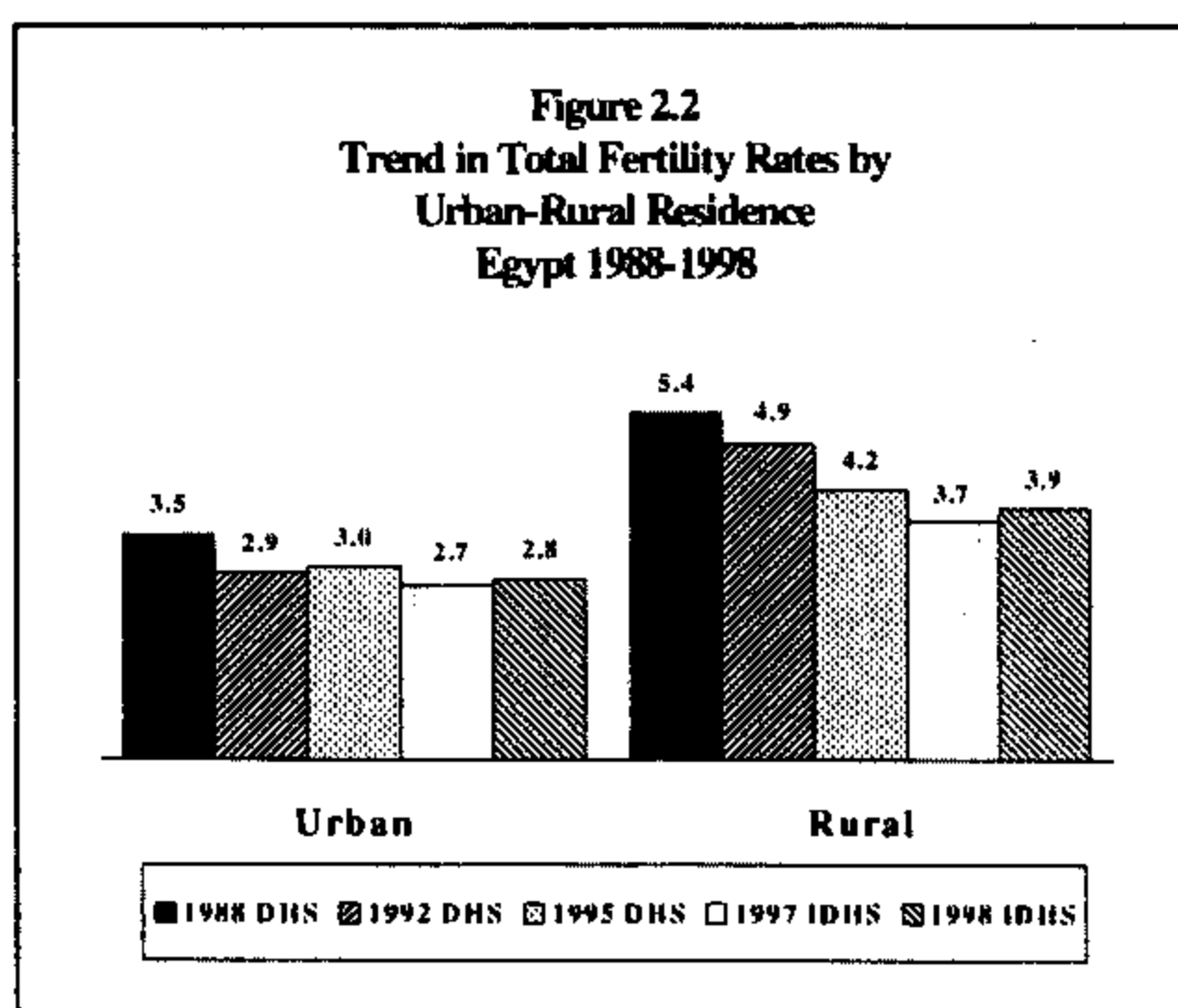
Note: Rates for the age group 45-49 may be slightly biased due to truncation.

Source: El-Zanaty & Associate, and Macro International Inc., 1998, Table 2.2

The trend in fertility by residence is shown in Table 2.3 for the period between the 1988 EDHS and the 1998 EIDHS. Rural fertility declined more rapidly than urban fertility throughout this period (see figure 2.2). As a result, the gap between the rural and urban fertility rates decreased from almost 2 births in the mid-1980s to one birth in the late 1990s.

By place of residence, Table 2.3 shows that the decline in fertility during the past decade was greatest in Lower Egypt. In urban areas in that region, there was around a 35 percent decline in the total fertility rate between the 1988 EDHS and the 1998 EIDHS. This was a more rapid decline than that experienced in the Urban Governorates, or in urban Upper Egypt.

Fertility also fell at a somewhat faster pace in rural areas in Lower Egypt than in rural Upper Egypt. Among rural women in Lower Egypt, the total fertility rate decreased by 32 percent, from 4.7 births at the time of the 1988 EDHS to 3.2 births at the time of the 1998 EIDHS. In rural Upper Egypt, fertility fell by 27 percent during the period from 6.2 births to the current level of 4.5 births.







### 3 Family Planning Knowledge and Use

The 1998 EIDHS collected information on the knowledge and use of family planning. To obtain these data, respondents were first asked about which contraceptive methods they had heard about. All methods named in response to this question were recorded as spontaneously recognized. For methods not mentioned spontaneously, a description of the method was read, and the respondents were asked if they had heard about the method. For each method that they recognized, respondents were asked whether they had ever used the method and if they knew of a place where they could obtain the method. Finally, each currently married woman was asked if she was currently using a method, and, if so, which method was she using and from where did she obtain that method.

#### 3.1 Knowledge and Ever Use

Knowledge of family planning methods is crucial in the decision of using a contraceptive method and which method to use. Table 3.1 indicates that knowledge of family planning methods is almost universal among Egyptian women. With regard to knowledge of specific methods, the EIDHS-98 results indicate that virtually all currently married women have heard about the pill, IUD, and injectables. With respect to the other methods, the results indicate that more than 60 percent know

about Norplant, and nearly 65 percent have heard of female sterilization. In contrast, recognition of male methods is less widespread; half of currently married women in EIDHS-98 know about the condom, 22 percent about withdrawal, and less than 10 percent about male sterilization.

Method	Knowing method	Ever using method
<b>Any method</b>	99.4	72.2
<b>Any modern method</b>	99.4	70.1
Pill	99.2	38.0
IUD	99.2	54.1
Injectables	97.5	10.1
Norplant	61.1	0.2
Diaphragm, foam or jelly	38.2	1.7
Condom	49.7	5.1
Female sterilization	65.3	1.3
Male sterilization	8.4	-
<b>Any traditional method</b>	72.1	12.4
Periodic abstinence	30.3	3.1
Withdrawal	22.2	1.8
Prolonged breastfeeding	66.0	8.4
Other methods	2.8	0.4
Number of women	5,971	5,971

The 1998 EIDHS findings indicate that 72 percent of currently married women in Egypt have used a family planning method at some time. Table 3.1 indicates that among the currently married women, 70 percent have used a modern method and around 12 percent have used a traditional method. This result confirms that almost all of the women who have ever used a method have used a modern contraceptive.

Looking at ever use of specific methods, the IUD and the pill are the most widely adopted methods; 54 percent of married women ever used the IUD at some time while 38 percent have ever used the pill. Around one in ten married women report ever use of injectables. The most widely used traditional method is prolonged breastfeeding (8 percent).

#### 3.2 Levels and Trends in Current Use

The 1998 EIDHS results show that overall, 52 percent of currently married women were currently using a contraceptive method at the time of the survey, with around 50 percent depending on a modern method (Table 3.2). With regard to the method mix, the IUD is the principal method used by Egyptian couples to control their fertility. At the time of the 1998 EIDHS, 34 percent of married women—nearly two-thirds of all current users—were using an IUD. The pill, used by 9 percent of married women, is the second most popular method followed by injectables (4 percent).

**Table 3.2 Trends in current use of family planning methods**

Percent distribution of currently married women by the family planning method currently used. Egypt 1980-1998

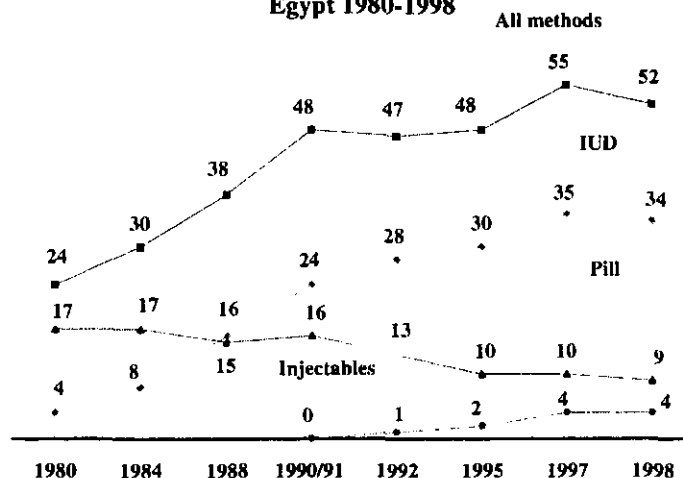
Method	EFS 1980	ECPS 1984	EDHS 1988	EDHS 1992	EDHS 1995	EIDHS 1997	EIDHS 1998
<b>Any method</b>	24.2	30.3	37.8	47.1	47.9	54.5	51.7
<b>Any modern method</b>	22.8	28.7	35.4	44.8	45.5	51.8	49.5
Pill	16.6	16.5	15.3	12.9	10.4	10.2	8.7
IUD	4.1	8.4	15.7	27.9	30.0	34.6	34.3
Injectables	-	0.3	0.1	0.5	2.4	3.9	3.9
Norplant	-	-	-	0.0	0.0	0.1	0.0
Vaginal methods	0.3	0.7	0.4	0.4	0.1	0.2	0.1
Condom	1.1	1.3	2.4	2.0	1.4	1.5	1.1
Female sterilization	0.7	1.5	1.5	1.1	1.1	1.4	1.3
Male sterilization	0.1	0.0	0.0	0.0	0.0	0.0	-
<b>Any traditional method</b>	1.4	1.6	2.4	2.3	2.4	2.7	2.3
Periodic abstinence	0.5	0.6	0.6	0.7	0.8	0.6	0.8
Withdrawal	0.4	0.3	0.5	0.7	0.5	0.4	0.3
Prolonged breastfeeding	-	0.6	1.1	0.9	1.0	1.5	1.1
Other methods	0.3	0.1	0.2	0.1	0.1	0.1	0.1
Not using	75.8	69.7	62.2	52.9	52.1	45.5	48.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	8,012	9,158	8,221	9,153	13,710	5,157	5,971

Note: A dash (-) indicates that information on the method was not collected or reported.  
Source: El-Zanaty & Associates and Macro International Inc, 1998, Table 3.2

Table 3.2 presents the trend in the use of family planning between 1980 and 1998. The use rate rose quite rapidly during this period. As a result, by 1992, 47 percent of married women were using family planning, almost twice the rate at the time of the 1980 Egypt Fertility Survey (24 percent). The pace of change in use rates then slowed substantially during the period 1992-1995, before accelerating again following the 1995 EDHS.

Figure 3.1 shows that much of the growth in use rates in Egypt has been a result of the increased use of the IUD. Overall, the proportion of married women who reported current use of the IUD rose from 4 percent in 1980 to 34 percent in the late 1990s. In contrast to the continuous increase in IUD, there was a steady decline in the use of the pill throughout the period. Between the 1988 and 1998 DHS surveys, the level of use of the pill decreased by around 40 percent,

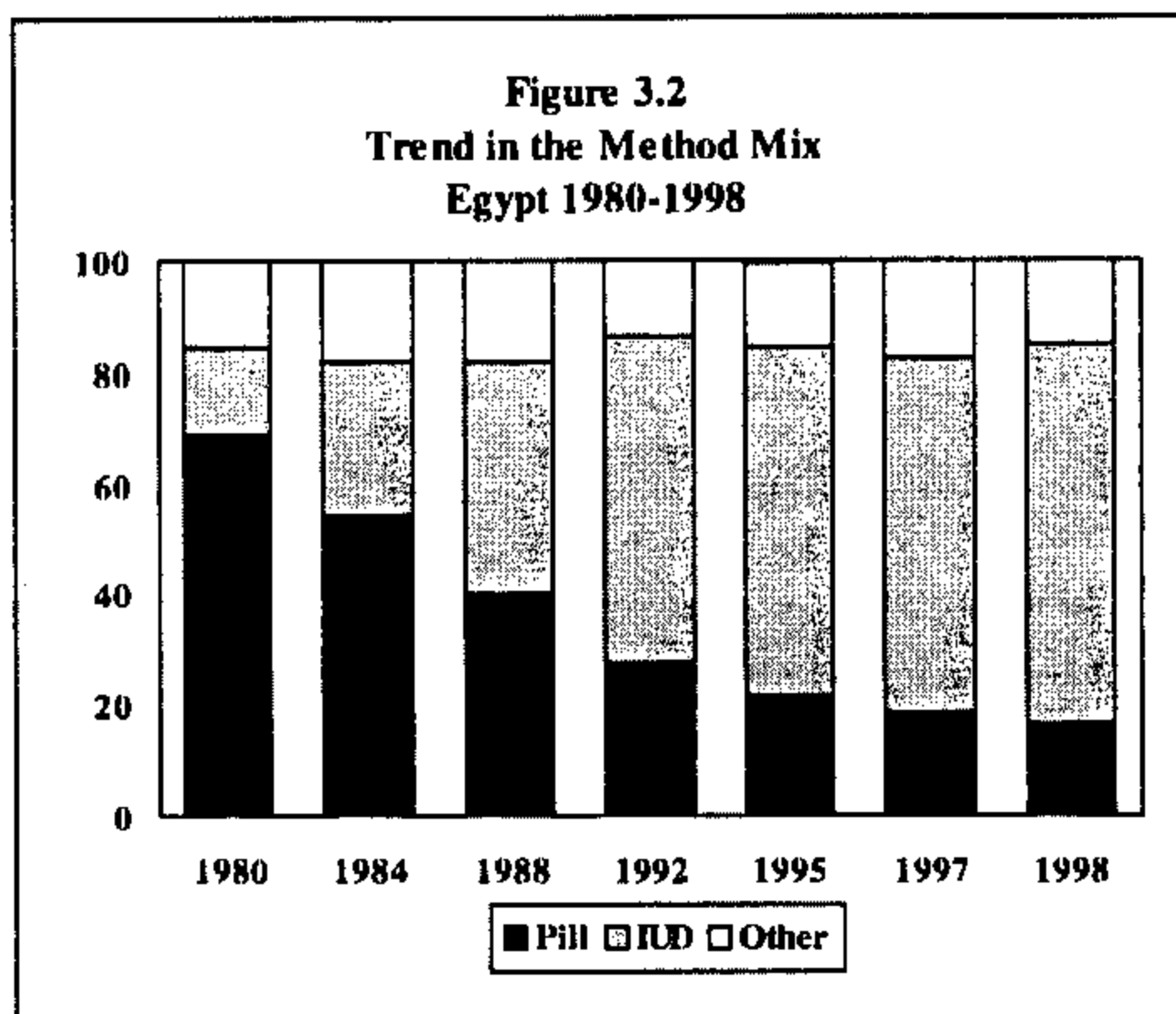
**Figure 3.1**  
**Current Use of Family Planning**  
**Egypt 1980-1998**



from 15 percent to 9 percent. The slowing of the growth in the overall level of contraceptive use in Egypt during the first half of 1990s was owed, at least in part, to the decline in the pill use rates.

The introduction of the injectable as a program method broadened the choice of family planning methods available to Egyptian women and helped in some measure to offset the effects of the decline in use of the pill. Overall, use of injectables rose from less than one percent in 1992 to 4 percent at the time of the 1998 EIDHS.

### Trends in the method mix



The effects of the rising rates of IUD use and falling rates of pill use on the method mix among family planning users are clearly evident in Figure 3.2. In 1980, more than two in three users were relying on the pill to prevent pregnancy and 17 percent were employing an IUD. By the late 1990s, the method mix was reversed, with two in three current users relying on an IUD and 17 percent relying on the pill. The trend in the method mix away from the pill and toward the IUD is important since both failure and discontinuation rates are generally lower for IUD users than for pill users.

### **3.3 Differentials in Current Use**

#### Residence

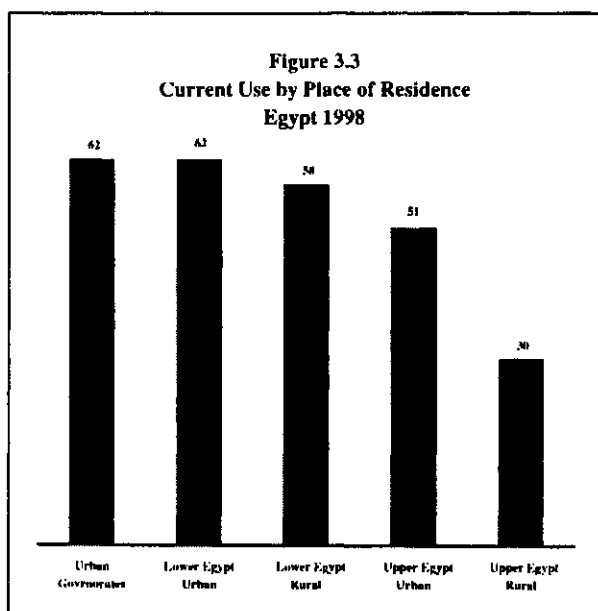
Table 3.3 presents differentials in current use by residence. The results show marked differences in the level of current use of family planning methods by residence within Egypt. At the time of the 1998 EIDHS, the level of current use among currently married women was 59 percent in urban areas compared to 46 percent in rural areas. Most of the differential in the prevalence level between urban and rural Egypt is the result of significantly greater use of the IUD among urban women (40 percent) compared to rural women (29 percent). Urban-rural differentials in use rates are much smaller in the case of the observed in the use of the pill (9 percent versus 8 percent, respectively) and injectables (3 percent and 5 percent, respectively).

**Table 3.3 Current use of family planning methods by residence**

Percent distribution of currently married women 15-49 by the family planning method currently used, according to residence, Egypt 1998

Method	Urban Governorates			Lower Egypt			Upper Egypt			Total
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	
<b>Any method</b>	59.3	45.6	62.1	59.2	62.2	58.1	36.5	50.8	29.9	51.8
<b>Any modern method</b>	56.4	43.8	58.4	57.0	59.7	55.9	34.9	48.8	28.5	49.5
Pill	9.3	8.2	7.4	10.1	11.3	9.7	7.9	11.2	6.4	8.7
IUD	40.4	29.3	42.9	39.6	42.3	38.6	22.6	33.2	17.7	34.3
Injectables	3.1	4.6	3.9	4.6	2.6	5.3	3.2	2.1	3.7	3.9
Norplant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vaginal methods	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.4	0.0	0.1
Condom	1.7	0.5	2.2	1.1	1.9	0.8	0.3	0.5	0.2	1.1
Female sterilization	1.7	1.0	2.0	1.4	1.4	1.4	0.8	1.5	0.5	1.3
Male sterilization	-	-	-	-	-	-	-	-	-	-
<b>Any traditional method</b>	3.0	1.8	3.7	2.3	2.5	2.2	1.6	1.9	1.4	2.3
Periodic abstinence	1.5	0.3	1.6	0.8	1.7	0.5	0.3	0.9	0.1	0.8
Withdrawal	0.4	0.1	0.4	0.2	0.5	0.1	0.3	0.4	0.2	0.3
Prolonged breastfeeding	1.0	1.2	1.6	1.2	0.4	1.5	0.8	0.7	0.9	1.1
Other methods	0.1	0.2	0.1	0.1	0.0	0.1	0.2	0.0	0.3	0.1
<b>Not using</b>	40.7	54.4	37.9	40.8	37.8	41.9	63.5	49.2	70.1	48.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	2,700	3,271	1,348	2,503	683	1,820	2,119	668	1,451	5,971

Figure 3.3 highlights differentials in the use rates by place of residence. At the time of the 1998 survey, use rates were considerably higher in the Urban Governorates (62 percent) and Lower Egypt (59 percent) than in Upper Egypt (37 percent). Differentials in use levels between Lower Egypt and Upper Egypt were evident in both urban and rural areas. The use rate in urban Lower Egypt (62 percent) was more than 20 percent than the use rate among women in urban Upper Egypt (51 percent). The differential between rural Lower Egypt and rural Upper Egypt was even greater, 58 percent of currently married women in rural Lower Egypt were using a method at the time of the EIDHS-98 compared to 30 percent of married women in rural Upper Egypt.



## Demographic and Social Characteristics

Table 3.4 examines differentials in current use levels at the time of the 1998 survey by other selected social and demographic characteristics. Younger and older women are less likely to be using contraception than women in the age group 25-44. The lowest level of use is observed among women age 15-19 (20 percent), while the highest level is for women aged: 35-39 (70 percent).

Use rates also are related to family size. The prevalence rate is zero among women with no children, suggesting that women in Egypt do not consider adopting contraception before having the first birth. After the first child, contraceptive use increases sharply with the number of living children, peaking at 69 percent among women with 3 children, after which it declines slightly. Current use levels increase directly with the educational level of the woman, increasing from 47 percent among women who never attended school to 58 percent among women who have completed the secondary level or higher.

**Table 3.4 Current use of family planning methods by selected demographic and social characteristics**

Percent distribution of currently married women 15-49 by contraceptive method currently used according to selected demographic and social characteristics, Egypt 1998

Background characteristics	Any method	Any modern	Pill	IUD	Injec- Tables	Vagin- als	Nor- plant	Con- dom	Female sterilization	Any tradi- tional	Pro- longed breast- feeding	Peri- odic absti- nence	Other	Not using	Total percent	Number of women
<b>Age</b>																
15-19	19.7	18.1	2.8	14.7	0.7	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	80.3	100.0	324
20-24	39.0	37.4	5.2	28.6	3.1	0.2	0.0	0.3	0.0	1.6	1.6	0.0	0.0	61.0	100.0	984
25-29	51.6	48.8	7.8	37.0	2.7	0.0	0.0	0.9	0.3	2.9	2.3	0.3	0.3	48.4	100.0	1,141
30-34	63.9	61.9	11.6	43.9	4.7	0.0	0.0	0.7	0.8	2.0	1.1	0.6	0.3	36.1	100.0	1,015
35-39	69.5	66.4	12.7	43.4	6.5	0.1	0.0	1.5	2.2	3.2	0.9	1.3	1.1	30.5	100.0	1,016
40-44	59.1	56.3	11.7	35.5	5.3	0.2	0.0	2.0	1.6	2.8	0.2	2.0	0.6	40.9	100.0	759
45-49	34.6	32.9	4.8	19.4	2.3	0.5	0.0	1.5	4.4	1.7	0.0	1.4	0.3	65.4	100.0	731
<b>Number of living children</b>																
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	640
1	39.0	36.2	5.2	29.4	1.0	0.2	0.0	0.4	0.0	2.8	2.0	0.6	0.2	61.0	100.0	839
2	61.4	58.1	8.2	44.8	2.8	0.1	0.0	1.9	0.4	3.3	1.6	1.4	0.3	38.6	100.0	1,125
3	69.0	65.6	11.9	46.4	4.3	0.1	0.0	1.7	1.1	3.4	1.5	1.1	0.7	31.0	100.0	1,138
4+	57.9	56.1	11.2	34.6	6.5	0.2	0.0	0.8	2.7	1.8	0.7	0.7	0.4	42.1	100.0	2,229
<b>Education</b>																
No education	46.6	45.1	9.3	28.1	5.5	0.1	0.0	0.3	1.9	1.6	1.2	0.1	0.3	53.4	100.0	2,515
Some primary	53.1	50.4	8.5	35.7	4.0	0.0	0.0	1.1	1.1	2.6	1.4	0.5	0.7	46.9	100.0	935
Prim.comp./some sec.	52.7	51.2	9.8	35.7	3.0	0.3	0.0	1.5	1.0	1.5	0.3	1.1	0.0	47.3	100.0	731
Sec.comp./higher	58.1	54.4	7.6	41.8	2.0	0.2	0.0	1.9	0.8	3.6	1.3	1.8	0.5	41.9	100.0	1,789
Total	51.8	49.5	8.7	34.3	3.9	0.1	0.0	1.1	1.3	2.3	1.1	0.8	0.4	48.2	100.0	5,971

### 3.4 Trends in Current Use by Background Characteristics

Table 3.5 presents the trends in contraceptive use during the period between 1988 and 1998 by selected background characteristics of women for all methods and for the pill, IUD, and injectables. Looking at the entire period, use rates increased markedly in all residential groups. However, the absolute change in use rates among rural women, especially those living in Lower Egypt, was greater than the change in the urban areas and in the population as a whole. As a result, the urban-rural differential in use rates narrowed during the decade between 1988 and 1998.

**Table 3.5 Trends in current use of family planning methods by social and demographic characteristics, Egypt 1988-1998**

Percentage of currently married women 15-49 currently using any method, the pill, IUD and injectables by selected background characteristics, DHS surveys 1988-1998

Background characteristics	Any method					Pill					IUD					Injectables				
	1988	1992	1995	1997	1998	1988	1992	1995	1997	1998	1988	1992	1995	1997	1998	1988	1992	1995	1997	1998
<b>Urban-rural</b>																				
Urban	51.8	57.0	56.4	63.1	59.3	18.4	14.0	11.0	10.8	9.3	23.0	34.6	36.2	41.7	40.4	0.1	0.5	2.4	3.0	3.1
Rural	24.5	38.4	40.5	47.1	45.6	12.4	11.9	9.9	9.7	8.2	8.8	22.0	24.6	28.4	29.3	0.1	0.5	2.5	4.6	4.6
<b>Place of residence</b>																				
Urban Governorates	56.0	59.1	58.1	67	62.1	16.9	12.5	8.4	10.7	7.4	26.8	36.8	40.2	44.1	42.9	0.1	0.3	2.2	3.3	3.9
Lower Egypt	41.2	53.5	55.4	61.6	59.2	19.2	15.1	12.6	12.2	10.1	16.2	32.6	34.7	40.0	39.6	0.1	0.5	2.8	4.3	4.6
Urban	54.5	60.3	59.1	65.9	62.2	24.2	17.3	14.3	12.8	11.3	21.2	36.3	34.4	42.4	42.3	0.0	0.7	3.0	3.4	2.6
Rural	35.6	50.5	53.8	59.9	58.1	17.2	14.1	11.9	11.9	9.7	14.1	31.0	34.8	39.1	38.6	0.1	0.5	2.7	4.7	5.3
Upper Egypt	22.1	31.4	32.1	37.4	36.5	10.0	10.7	9.1	7.5	7.9	7.9	16.4	17.7	21.4	22.6	0.1	0.6	2.0	3.7	3.2
Urban	41.5	48.1	49.9	52.1	50.8	16.0	13.8	12.6	8.9	11.2	17.6	27.6	30.3	35.8	33.2	0.2	0.6	1.8	1.8	2.1
Rural	11.5	24.3	24.0	30.3	29.9	6.7	9.3	7.5	6.9	6.4	2.7	11.6	11.9	14.5	17.7	0.0	0.6	2.1	4.5	3.7
<b>Age</b>																				
15-19	5.5	13.3	16.1	21.4	19.7	3.5	4.1	3.2	3.1	2.8	1.7	8.4	11.3	12.9	14.7	0.0	0.0	1.1	1.5	0.7
20-24	24.3	29.7	33.2	40.3	39.0	10.8	6.8	6.6	5.0	5.2	10.7	21.2	21.7	30.7	28.6	0.0	0.2	2.1	1.7	3.1
25-29	37.1	46.0	47.6	53.3	51.6	14.9	13.3	9.8	9.8	7.8	17.7	29.3	33.1	35.1	37.0	0.0	0.2	2.2	4.2	2.7
30-34	46.8	58.8	58.1	63.9	63.9	19.2	16.2	13.3	12.8	11.6	20.2	36.7	37.3	42.4	43.9	0.2	0.5	3.2	3.8	4.7
35-39	52.8	59.6	60.7	68.7	69.5	23.2	18.2	13.8	13.5	12.7	21.2	34.0	37.2	43.2	43.4	0.1	0.8	3.2	4.6	6.5
40-44	47.5	55.5	58.8	61.0	59.1	15.5	14.0	12.5	12.2	11.7	18.5	28.9	34.4	33.8	35.5	0.3	1.1	2.5	6.4	5.3
45-49	23.4	34.5	33.3	39.4	34.6	8.6	7.9	7.6	7.8	4.8	6.6	14.9	16.2	21.0	19.4	0.0	0.5	1.2	2.3	2.3
<b>Number of living children</b>																				
0	0.7	0.5	1.2	0.7	0.0	0.1	0.3	0.5	0.3	0.0	0.4	0.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	23.1	31.6	31.6	38.8	39.0	7.6	6.7	4.7	5.5	5.2	11.4	22.4	23.3	29.1	29.4	0.0	0.0	0.9	0.8	1.0
2	43.4	52.5	53.9	61.9	61.4	14.7	12.7	8.9	9.6	8.2	20.5	34.3	38.9	44.7	44.8	0.0	0.0	1.6	2.0	2.8
3	47.8	59.3	65.4	67.6	69.0	19.9	17.1	13.7	12.3	11.9	19.6	34.8	40.3	44.6	46.4	0.0	0.5	3.8	3.4	4.3
4+	44.4	54.3	53.9	60.2	57.9	17.1	15.8	13.9	13	11.2	17.1	30	30.6	33.3	34.6	0.2	1.0	3.2	6.7	6.5
<b>Education</b>																				
No education	27.5	37.5	40.6	45.6	46.6	13.4	12.0	11.0	9.7	9.3	10.0	20.7	23.8	26.0	28.1	0.1	0.5	2.3	4.6	5.5
Some primary	42.5	53.5	50.5	57.1	53.1	20.3	17.6	12.2	12.7	8.5	16.3	29.4	30.2	32.1	35.7	0.1	0.5	3.1	6.1	4.0
Primary.comp.																				
some second.	52.3	56.1	51.2	58.4	52.7	15.6	13.7	10.1	10.0	9.8	23.9	34.0	32.8	39.8	35.7	0.0	0.6	2.3	3.6	3.0
Secondary																				
comp./higher	53.2	58.0	56.5	64.7	58.1	13.8	9.8	8.3	9.4	7.6	27.1	40.0	39.0	47.0	41.8	0.1	0.4	2.0	1.3	2.0
Total	37.8	47.1	47.9	54.5	51.8	15.3	12.9	10.4	10.2	8.7	15.7	27.9	30.0	34.6	34.3	0.1	0.5	2.4	3.9	3.9

Considering the age patterns, an examination of the results in Table 3.5 indicates that increases in use rates were fairly uniform across age groups. Within each family size category, use levels also generally increased substantially throughout the period, except among women who had not yet begun childbearing. Among women in the latter group, fewer than 1 percent were using at any time during the period.

Much of the change in use rates over the past decade in Egypt was among women with less than a primary education. For example, between 1988 and 1998, use rates increased by 19 percentage points among women who never attended school (from 28 percent to 47 percent). Somewhat smaller increases were observed during the period among better-educated women. As a result, differentials in use rates across educational groups narrowed during the period.

## 4 Family Planning Services

The 1998 EIDHS obtained information on a number of aspects of the family planning service delivery including the source from which users had obtained their method, the cost of obtaining services, and the extent of information provided to women obtaining family planning services from pharmacies or clinical sources.

### 4.1 Sources of Family Planning Methods

Detailed information was collected in the 1998 EIDHS on sources from which family planning methods were obtained. Current users of modern methods were asked for the name and location of the source where they had most recently gotten their method. The findings of 1998 EIDHS presented in Table 4.1 and Figure 4.1 indicate that the users are slightly more likely to obtain their

methods from the private sector facilities (52 percent) than public sector facilities (48 percent).

**Table 4.1 Sources for modern family planning methods**

Percent distribution of current users of modern family planning methods by the most recent source for their method, according to the method used, Egypt 1998

Source	Pill	IUD	Injec- tables	All methods
<b>Public sector</b>	9.9	55.5	76.0	47.9
Ministry of Health (MOH)	8.9	52.1	73.6	44.9
Urban hospital	0.7	11.0	5.8	8.4
Urban health unit	2.5	23.3	22.2	19.0
Rural hospital	0.8	2.5	3.8	2.2
Rural health unit	3.5	9.1	34.4	10.0
Mobile units	0.8	3.2	5.7	2.9
Other MOH	0.6	3.0	1.7	2.4
Teaching hospital	0.3	1.0	0.0	0.8
HIO/CCO	0.0	1.6	1.4	1.4
Other governmental	0.7	0.8	1.0	0.8
<b>Private sector</b>	90.7	44.5	21.5	51.9
NGO/PVO clinics	0.7	6.3	2.5	4.9
EFPA	0.5	2.0	0.5	1.6
CSI	0.0	3.0	2.0	2.3
Other NGO/PVO	0.2	1.3	0.0	1.0
Mosque/church health unit	0.9	4.6	4.6	3.9
Private hospital/clinic	0.0	2.6	1.5	2.0
Private doctor	7.4	31.0	9.6	24.3
Pharmacy	81.0	0.0	3.8	16.8
Other vendor	0.0	0.0	0.0	0.0
<b>Other</b>	0.3	0.0	2.2	0.2
Other	0.0	0.0	0.0	0.0
Friends/relatives	0.3	0.0	2.2	0.2
<b>Don't know</b>	0.0	0.0	0.0	0.1
<b>Total percent</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Number of users</b>	<b>521</b>	<b>2,049</b>	<b>234</b>	<b>2,875</b>

MOH - Ministry of Health  
 HIO - Health Insurance Organization  
 CCO - Curative Care Organization  
 NGO - Nongovernmental organization  
 PVO - Private voluntary organization  
 EFPA - Egypt Family Planning Association  
 CSI - Clinical Services Improvement project

**Figure 4.1**  
 Source for Family Planning  
 Methods, Egypt 1998

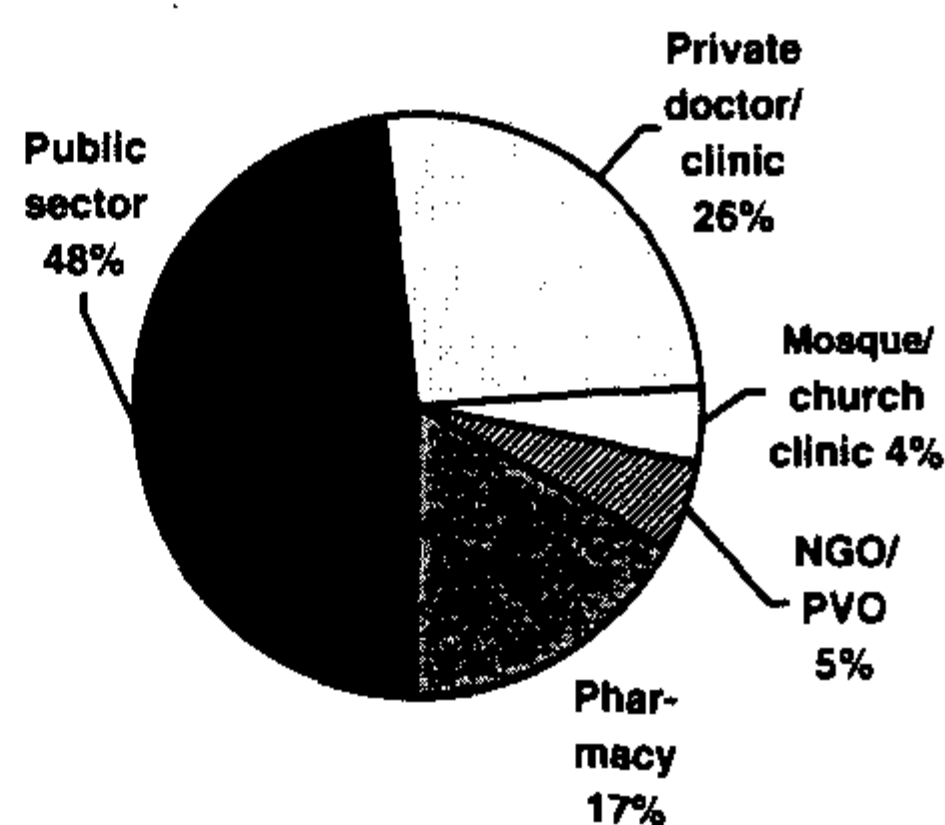


Table 4.1 shows that the source from which users obtain services varies according to the method used. The majority of pill users obtain their method from pharmacies (81 percent). More than half of IUD users had the method inserted at a public health facility (56 percent), 34 percent at a private doctor or clinic, 6 percent from clinics operated by nongovernmental (NGO) or private voluntary (PVO) organizations, and 5 percent at mosque or church clinics. The principal providers of the injectables are the public sector (76 percent), private doctors and hospitals/clinics (11 percent).



Table 4.2 takes into account residence in presenting the distribution of IUD users by source. The table shows that the percentage of users reporting that the IUD was inserted at a public sector source at the time of the 1998 EIDHS varied by type of residence (urban—rural) but not by region. Overall, 61 percent of IUD users obtained the method from public sources in rural areas compared to 51 percent in urban areas.

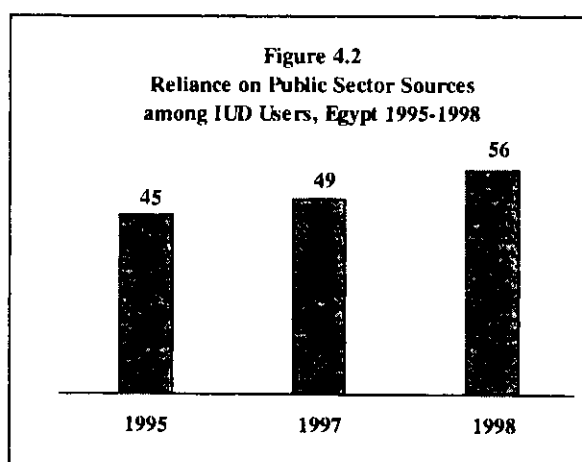
**Table 4.2 Sources of IUD by residence, Egypt 1995-1998**

Percent distribution of IUD users by the type of source for the method at the time of the EIDHS-98 and the percentage of IUD users obtaining the method from public sector sources at the time of the EDHS-95, EIDHS-97, and EIDHS-98 according to residence. Egypt 1995 - 1998

Method	Urban	Rural	Urban Governates	Lower Egypt		Upper Egypt			Total	
				Total	Urban	Rural	Total	Urban		Rural
<b>EIDHS-98</b>										
Public sector	50.9	60.9	55.1	55.8	44.7	60.3	55.7	47.8	62.5	55.5
Private sector	49.1	39.0	44.9	44.3	55.3	39.7	44.3	52.3	37.4	44.5
NGO/PVO clinic	6.0	6.7	6.7	7.0	6.2	7.3	4.6	3.7	5.3	6.3
Private doctor/clinic/hospital	35.6	31.2	28.8	35.3	44.7	31.4	35.8	41.8	30.7	33.6
Mosque/church clinic	7.5	1.1	9.4	2.0	4.4	1.0	3.9	6.8	1.4	4.5
Pharmacy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other/Not sure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of IUD users	1,089	960	578	991	289	702	479	222	258	2,049
<b>EDHS-95</b>										
Public sector	42.8	46.7	46.5	44.4	37.4	47.3	42.1	39.9	44.5	44.5
<b>EIDHS 97</b>										
Public sector	47.7	49.9	54.7	47.9	39.3	51.6	42.0	40.4	43.8	48.7

NGO — Nongovernmental organization  
PVO - Private voluntary organization

The results presented in Table 4.2 also can be used to look at the trend in the percentage of IUD users relying on public sector sources during the period 1995-1998. Overall, as Figure 4.2 indicates, the percentage of IUD users who reported the method was inserted at public sector source increased from 45 percent in 1995 to 56 percent in 1998. Increases in the proportion of users inserted the IUD at public sector providers were observed in all places of residence. During the period, the largest increase in the percentage obtaining the IUD from public sector facilities was observed for rural Upper Egypt.



## 4.2 Cost of Family Planning Methods

**Table 4.3 Cost of the pill**

Percent distribution of current users of the pill by the cost of a cycle, Egypt 1998

Cost of cycle ( in piasters)	
Free	0.7
1-10	2.9
11-30	0.6
31-50	2.14
51-75	34.0
76-100	35.3
More than 100	21.3
Not sure	3.1
Total	100.0
Number	521
Median	95.1
Mean	110.7

Table 4.3 looks at the information provided by current users about the amount they paid for the most recent packet (cycle) of pills. The majority of users (69 percent) paid between 51 piasters and one pound for a cycle of pills. The median price paid per cycle was 95 piastres.

Table 4.4 shows that there is considerable variability in the cost of IUD services. Relatively few IUD users received the method free (7 percent). Around 40 percent of the IUD users paid less than 5 pounds for the method. Most of the users paying less than 5 pounds relied on public sector source (67 percent compared with 8 percent at private health facilities). The median cost of an IUD was 3.3 pounds at public sources and 20.9 pounds at private sources.

A similar pattern is observed in the case of injectable users (Table 4.5). The median amount paid by all injectable users was 3.8 pounds. Among users obtaining the method from public sector sources, the median amount paid was 3.7 pounds, around half the amount paid by users going to private sector providers (7.3 pounds).

**Table 4.4 Cost of the IUD**

Percent distribution of current users of the IUD by the cost of obtaining the method according to the type of source. Egypt 1998

Cost of method (in pounds)	Public health facility	Private health facility	Total
Free	7.7	5.5	6.7
< 3	35.7	4.0	21.3
3-4	31.0	3.8	18.6
5-6	13.7	2.3	8.5
7-8	2.4	1.3	1.9
9-10	3.7	5.5	4.5
11-15	3.3	14.0	8.1
16-20	1.0	15.2	7.4
21-30	0.9	20.6	9.8
31-50	0.4	16.8	7.8
> 50	0.4	10.8	5.1
Not sure	0.0	0.2	0.1
Total	100.0	100.0	100.0
Number	1,121	928	2,049
Median	3.3	20.9	5.5
Mean	4.6	28.7	15.4

Note: Private health facilities include private doctors, clinics or hospitals; NGO/PVO clinics; mosque or church clinics and other private sector providers.

**Table 4.5 Cost of injectables**

Percent distribution of current users of the injectables by the cost of obtaining the method at the beginning of the period of use. Egypt 1998

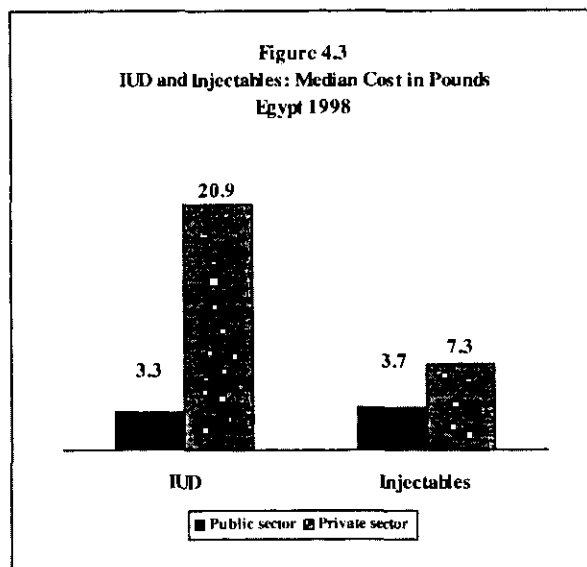
Cost of method (in pounds)	Public health facility	Private health facility	Total
Free	5.3	0.0	4.0
< 3	4.6	0.0	3.5
3-4	72.4	29.1	62.2
5-6	7.0	14.7	8.8
7-8	5.7	24.7	10.2
9-10	1.2	9.1	3.1
> 10	2.7	23.2	6.6
Not sure	1.1	3.1	1.6
Total	100.0	100.0	100.0
Number	179.0	55.0	234.0
Median	3.7	7.3	3.8
Mean	3.6	7.5	4.6

Note: Private health facilities include private doctors, clinics or hospitals; NGO/PVO clinics; mosque or church clinics and other private sector providers.

Figure 4.3 indicates that on average, IUD users pay more than five times as much at private provides as at public sector sources, and injectable users pay nearly twice as much.

### 4.3 Information Received at Pharmacies

As shown in Table 4.1, the majority of women using the pill (8 in 10 users) reported that the most recent source for the method was a pharmacy. Pill users who cited the pharmacy as the most recent source were asked if they themselves had actually obtained the method at the pharmacy. In addition, current users of the pill who reported a source other than a pharmacy, were asked whether they had obtained the pill themselves from a pharmacy at any time during the current episode of use. The results confirm the findings reported in earlier DHS surveys that around only half of all pill users had actually gone themselves to get the method at a pharmacy.



Pill users who had actual experience in getting the method themselves from a pharmacy were asked several questions about the information that they had received at the pharmacy (data not shown in table). Overall, relatively few women who had visited a pharmacy to obtain the pill reported receiving any information from the pharmacy staff. If they did receive information, they were most likely to have been shown how to use the pill (17 percent). Less than one in ten women who obtained the pill at a pharmacy reported that the possible side effects from the method had been described to them, and 8 percent said that they had been told about other methods.

### 4.4 Assessing Services at Clinical Providers

The perception of women on the quality of services they received at the clinical providers has an influence on both the level and discontinuation of use. Women who reported that they had gone to a clinical provider to obtain their methods were asked a number of questions to obtain information about their perceptions on the services that they received. These findings should be interpreted cautiously since they are subject to a number of potential sources of bias<sup>1</sup>.

Table 4.6 presents findings with regard to users' perspectives on the services that they had received. In general, users seem to be satisfied with most aspects of the services that they are receiving from clinical providers; overall, more than 90 percent of current users found their provider to be offering quick service, polite treatment, privacy during consultation, clean surroundings, and an affordable cost.

An area of still greater concern regarding the services women are receiving from clinical providers is the information they are given about family planning methods. Around 2 in 5 users who obtained services from a clinical provider reported that the provider did not offer them information on any methods other than the one they adopted. Around one in 2 users reported that they were not given any information about side effects. Mosque and church clinics had the lowest proportion reporting that they had received information about other methods or about the possible side effects of the method that they had adopted.

<sup>1</sup> One potential bias comes from difficulties women may have in recalling aspects of the experiences that they had at a provider, particularly if they have been using their method for an extended period of time. Respondents also may be unwilling to complain about the services that they had received or to admit that the services had been too costly. The questions also do not capture the experiences of women who may not be using a method because of problems they experienced in obtaining services.

**Table 4.6 User assessment of services at clinical providers by type of source**

Percentage of current users of modern methods obtaining their methods from a clinical source who said that they had received various components of services at the source by type of source, Egypt 1998.

Service indicator	Public sector facility			NGO/ PVO clinic	Private doctor/ clinic/ hospital	Mosque clinic/ church	Total
	Gold Star	Other public facility	All public facilities				
Quick service	95.4	93.7	93.9	91.2	96.3	77.1	93.7
Polite treatment	100.0	97.8	98.1	99.1	99.7	80.1	97.8
Information about methods	74.2	55.5	58.1	71.4	68.3	49.8	61.9
Information about side effects	64.6	49.5	51.6	58.7	66.4	50.4	57.1
Privacy during consultation	94.5	91.4	91.8	94.4	97.1	78.0	93.1
Clean surroundings	98.7	97.2	97.4	99.2	99.4	81.1	97.3
Affordable costs	98.9	98.4	98.4	100.0	94.0	78.3	95.9
Number of users	201	1,266	1,468	144	960	146	2,717

NGO – Non governmental organization

PVO – Private voluntary organization



## 5 Nonuse of Family Planning and Intention to Use

One of the main goals of Egypt's family planning program is to improve the quality of contraceptive use. The rate at which users discontinue using a method of contraception is one of the major indicators of the quality of use. One of the major objectives of DHS surveys is to provide information on reasons for nonuse and intention to use family planning. Topics relating to these issues: levels and trends of family planning discontinuation, reasons for discontinuation, reasons for nonuse, and intention to use in the future will be presented in the following.

### 5.1 Discontinuation Rates

A key concern for family planning programs is the rate at which users discontinue use of contraception and the reasons for such discontinuation. Table 5.1 presents life table discontinuation rates based on information collected in the calendar in the 1998 EIDHS questionnaire. The rates presented in Table 5.1 are cumulative one-year discontinuation rates and present the proportion of users discontinuing by 12 months after the start of use. The reasons are classified in the table into four main categories: method failure, desire to become pregnant, side effects/health concerns and all other reasons.

**Table 5.1 Contraceptive discontinuation rates according to specific method**

One-year contraceptive discontinuation rates due to method failure, desire for pregnancy, side effects/health reasons, or other reasons, according to specific method, Egypt 1998

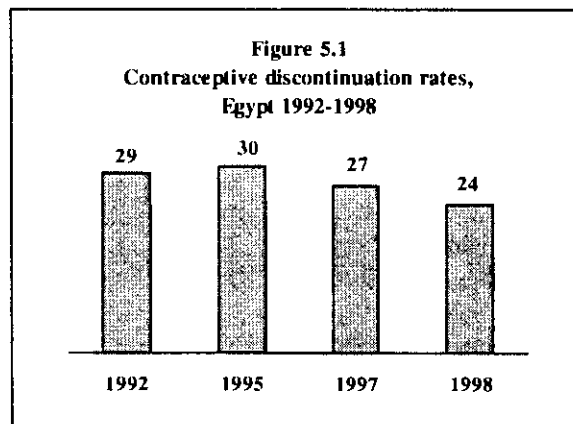
Contraceptive method	Method failure	To Become pregnant	Side effects/health concerns	All other reasons	All reasons
Pill	6.1	6.7	14.5	11.3	38.7
IUD	0.7	3.1	6.4	1.5	11.7
Injectable	2.1	3.3	32.5	9.4	47.4
All methods	3.1	4.0	9.8	7.2	24.1

The results of Table 5.1 indicate that almost one in four users stops using within 12 months of starting use. Three percent stop using due to method failure, 4 percent because they want to become pregnant, 10 percent as a result of side effects/health concerns, and 7 percent due to other reasons. The one-year discontinuation rates vary by method, with the lowest level observed among IUD users (12 percent), and the highest level among injectable users (47 percent). The rate for the pill (39 percent) is lower than for injectables but considerably higher than for the IUD.

Looking at the reasons for discontinuation shown in Table 5.1, side effects/health concerns is the major reason for discontinuation for all methods. Fifteen percent of pill users discontinue during the first year of use because of side effects or health concerns, 6 percent due to method failure, 7 percent as a result of the desire to become pregnant, and 11 for all other reasons. IUD users are most likely to discontinue during the first 12 months because they experience side effects or health concerns (6 percent) than for other reasons; only 1 percent reports stopping because of method failure. Side effects/health concerns is the main reason for discontinue using injectables (33 percent).

### 5.2 Trend in Discontinuation Rates

Figure 5.1 presents the one-year discontinuation rates for all methods for the period 1992-1998. The rate appears to have declined



somewhat in the latter half of the decade from the levels observed in the first part of the decade. This is at least in part due to the change in the method mix toward the IUD.

### 5.3 Future Use of Family Planning

To obtain information about the potential demand for family planning services, all currently married women who were not using contraception at the time of the survey were asked about their interest in adopting family planning in the future. Table 5.2 presents the distribution of currently married women who were not using family planning at the time of interview by their intention in the future. Fifty-four percent of nonusers reported that they intend to use in the future, 30 percent within the next 12 months. Differentials by region are existing. Intention to use is higher in Lower and Upper Egypt than in Urban governorates. More than one third of non-users have no intention to use in the future.

**Table 5.2 Intention to use in the future by residence**

Percent distribution of currently married women who are not using family planning by intention to use in the future according to residence, Egypt 1998

Intention to use	Urban		Lower Egypt			Upper Egypt				
	Urban	Rural	Gover- norates	Total	Urban	Rural	Total	Urban	Rural	Total
In next 12 months	29.0	31.4	26.6	36.2	31.8	37.7	27.5	30.5	26.5	30.4
Later	22.4	24.5	22.6	20.8	16.2	22.3	26.3	26.9	26.1	23.6
Unsure as to timing	6.4	6.4	9.6	6.3	4.5	6.9	5.3	2.7	6.1	6.4
Unsure as to intention	2.4	2.9	2.0	1.8	2.9	1.4	3.7	2.5	4.1	2.7
Do not intend to use	39.9	34.8	39.2	35.0	44.7	31.7	37.2	37.3	37.2	36.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1,144	1,812	537	1,055	267	787	1,364	339	1,025	2,956

### 5.4 Reasons for Nonuse of Family Planning

The reasons given by women who do not use family planning are of particular interest to the family planning program in Egypt. Table 5.3 presents the distribution of currently married non-users women who do not intend to use in the future by the main reason for not using. The primary reason for not using is menopausal/hysterectomy; 20 percent of nonusers said they are not using because they are menopausal/hysterectomy. Desire for more children is the second reason for nonuse, where 16 percent of non-users women mentioned this reason. Around 15 percent mentioned that they are subfecund/ infecund as the reason for not using contraception. Fears of side effects or health concerns were mentioned by around 15 percent of

**Table 5.3 Main reason for not using family planning**

Percent distribution of currently married women who plan never to use family planning by the main reason for not using according to residence, Egypt 1998.

Main reason for not intending to ever use a method	Age		Total
	< 30	30+	
No sex	2.6	3.9	3.6
Infrequent sex	3.8	7.1	6.3
Menopausal/ Hysterectomy	0.0	25.7	19.8
Subfecund / Infecund	6.0	18.0	15.3
Wants more children	44.0	8.0	16.4
Respondent opposed	2.6	1.7	1.9
Husband opposed	10.5	1.7	3.7
Religious Prohibition	1.3	0.4	0.6
Knows no method	0.6	0.0	0.1
Knows no source	0.0	0.2	0.1
Health concerns	1.5	7.2	5.9
Fear of side effects	12.8	8.2	9.3
Cost too much	0.0	0.1	0.1
Inconvenient to use	0.0	0.1	0.1
Interferes with body's normal process	0.1	0.2	0.2
Other	7.4	16.3	14.2
DK	6.7	1.1	2.4
Total	100.0	100.0	100.0
Number	305.0	1,014.0	1,319.0

nonusers as the reason for not using. Infrequent sex was mentioned by fewer percentages (6 percent). Four percent of nonusers reported husband opposed as the reason for nonuse. Religion was mentioned by less than one percent as the reason for nonuse of family planning.

There are significant differences in the answer given by women under age 30 and those who are 30 and over. Nonusers under age 30 were more likely to mention the desire to have more children than older nonusers. 44 percent of non-users under age 30 mentioned that reason compared with only 8 percent among older non-users.

More than one in four older women also mentioned being menopausal or having had a hysterectomy as a reason for not using.. Husband opposition was mentioned by younger women (11 percent) more than older women (2 percent).





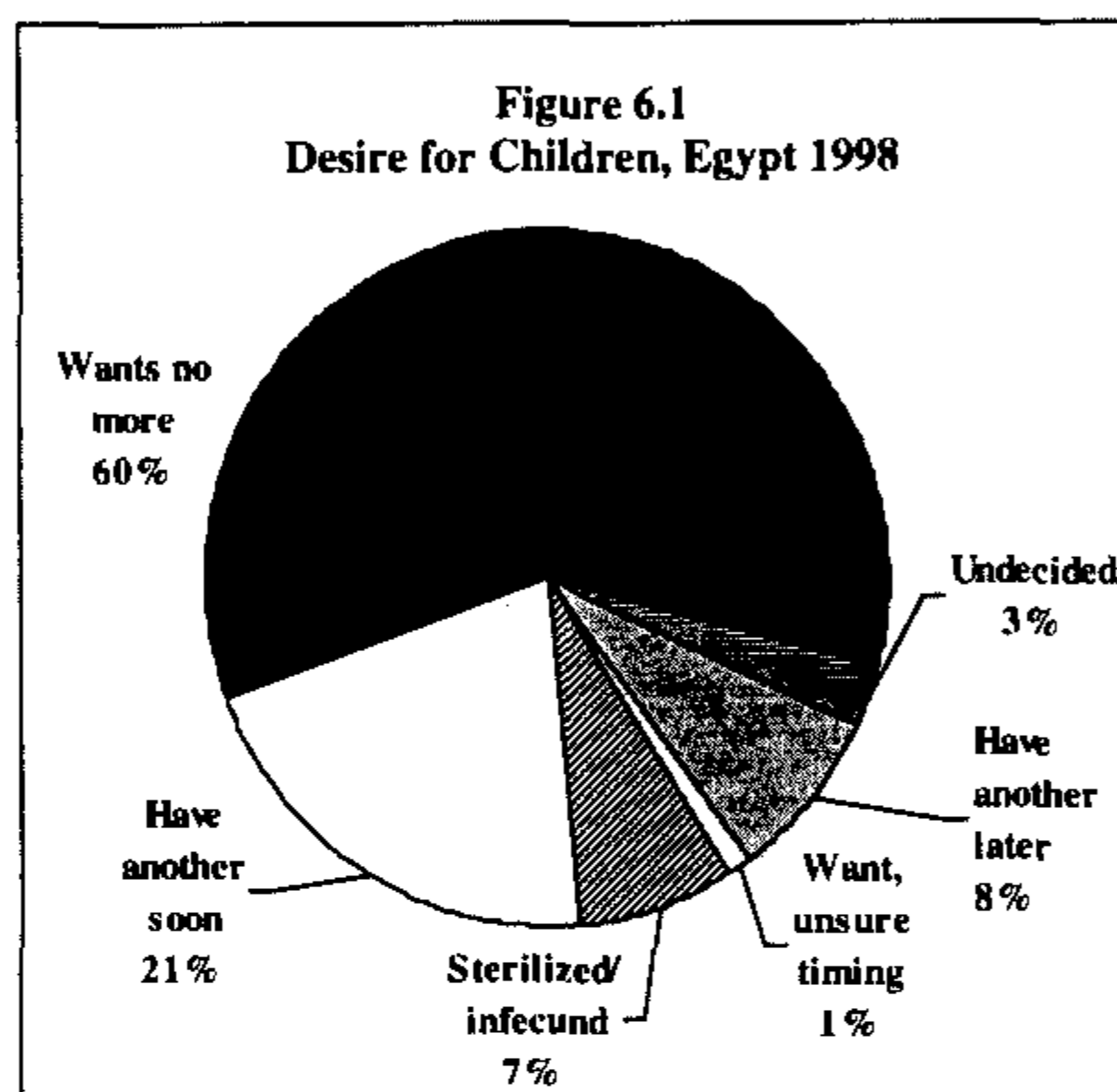
## 6 Fertility Preferences and Unmet Need for Family Planning

The EDHS included a number of questions on women's fertility preferences. To gain an insight into childbearing preferences, 1998 EIDHS respondents were asked about whether they wanted to have another child and, if so, how soon. This information can be used to assess the extent to which women who are not using any contraceptive method are in need of family planning to achieve their childbearing goals. However, women's attitudes toward childbearing change over time, and women may not be able to act on their preferences due to social pressures or the desires of other family members, particularly the husband. Data on fertility preferences are important in assessing women's motivation to use family planning.

### 6.1 Desire for Children

Table 6.1 and Figure 6.1 summarize the information on women's reproductive preferences. The majority of all married women express a desire to control future childbearing. Around two-thirds of the women reported that they do not want another child or were sterilized or infecund. Moreover, although they wanted another, 8 percent who say that they want to wait at least two years before the birth of their next child.

The desire to delay childbearing is largely concentrated among women who have one or two children. As expected, the proportion wanting no more children increases rapidly with the number of living children (including the current pregnancy).



**Table 6.1 Fertility preferences**

Percent distribution of currently married women by desire for more children according to the number of living children. Egypt 1998

Desire for more children	Number of living children plus current pregnancy							Total
	0	1	2	3	4	5	6+	
Have another soon	88.8	55.6	20.0	6.8	3.2	1.8	0.7	20.8
Have another later	0.4	31.5	13.0	2.9	1.0	0.3	0.0	8.0
Wants, unsure timing	0.3	3.1	1.8	1.2	0.6	0.5	0.1	1.3
Undecided	0.1	1.1	5.9	2.9	2.8	1.0	0.9	2.5
Wants no more	0.8	5.7	54.8	80.5	84.1	84.1	80.6	59.4
Sterilized	0.0	0.0	0.4	1.1	2.2	2.3	3.4	1.3
Declared infecund	8.2	2.2	3.6	4.1	6.1	10.1	14.2	6.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	430	898	1,169	1,181	913	590	789	5,971

## 6.2 Unmet Need for Family Planning

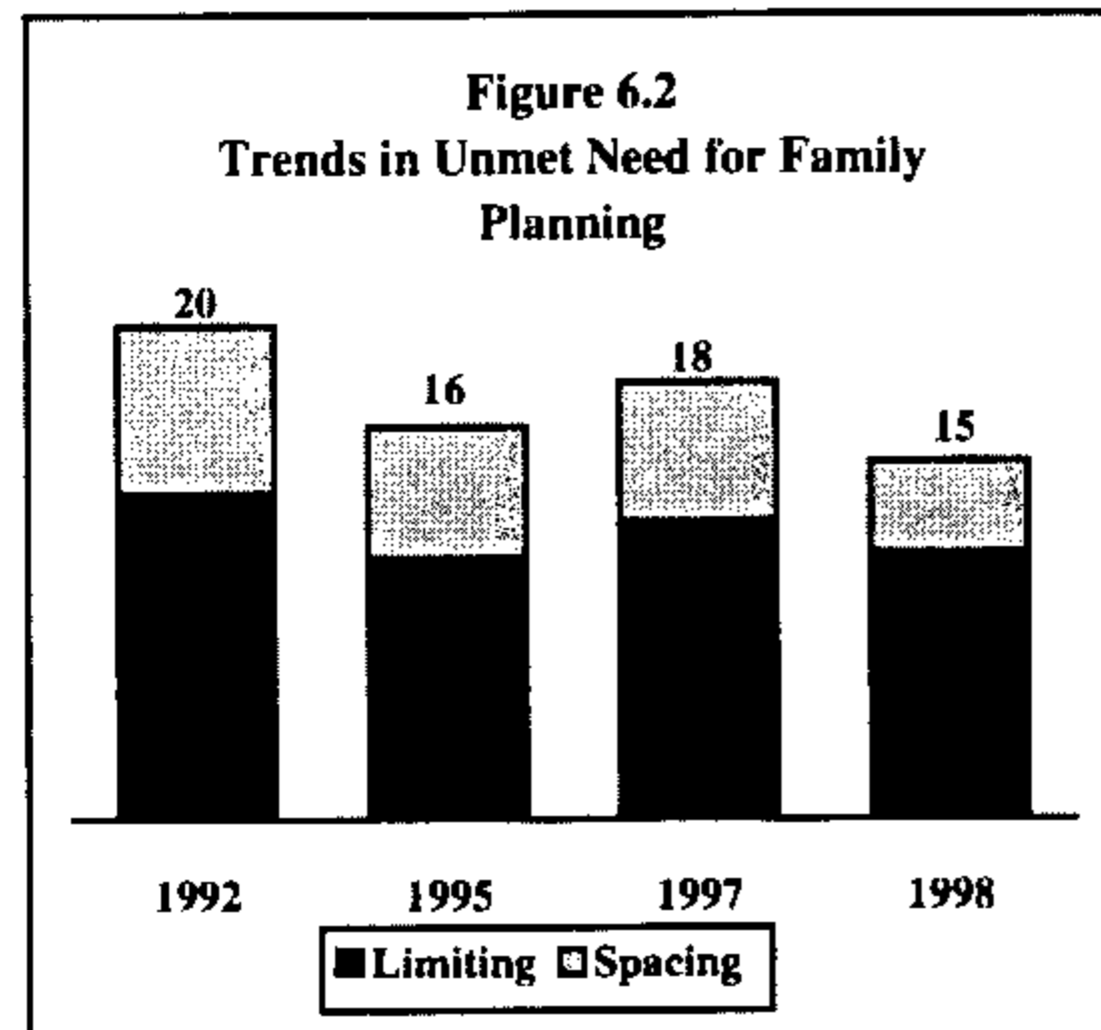
Data on fertility preferences can be combined with information on a woman's current contraceptive status to define a woman's need for family planning. Table 6.2 presents estimates of unmet need and met need for family planning and the total demand for family planning. *Unmet need for family planning* includes nonusers who are in need of family planning for *spacing* purposes, i.e., pregnant or amenorrheic women whose pregnancy or last birth was mistimed as well as other women who want to delay the next birth for two or more years or who are unsure when or if they want another birth. *Unmet need for family planning* also includes nonusers who are in need of family planning for *limiting* purposes, i.e., pregnant or amenorrheic women whose pregnancy or last birth was not wanted as well as other women who want no more children. Menopausal and infecund women are excluded from the unmet need category, as are pregnant and amenorrheic women who became pregnant while using a method (these women are in need of better contraception). *Met need for family planning* includes women who are currently using family planning. The total demands for family planning represents the sum of the unmet and met need as well the proportions of pregnant and amenorrheic women who became pregnant while using a method.

Background Characteristics	Unmet need			Met need (using)			Demand			Percentage of demand satisfied	Number of women
	Space	Limit	Total	Space	Limit	Total	Space	Limit	Total		
<b>Age</b>											
15-19	8.5	2.7	11.1	17.1	2.5	19.7	25.6	5.2	30.8	63.8	324
20-24	9.3	4.2	13.5	26.7	12.2	39	36.1	16.4	52.5	74.3	984
25-29	5.8	6.4	12.2	17.5	34.1	51.6	23.5	40.5	64	80.9	1,141
30-34	2.3	10.2	12.5	8.2	55.7	63.9	10.5	65.9	76.4	83.6	1,015
35-39	1.0	11.2	12.2	3.4	66.2	69.5	4.4	77.4	81.7	85.1	1,016
40-44	0.0	19.9	19.9	1.2	57.9	59.1	1.2	77.7	78.9	74.8	759
45-49	0.2	20.9	21.1	1.5	33.0	34.6	1.7	53.9	55.6	62.1	731
<b>Urban-rural Residence</b>											
Urban	3.1	9.0	12.1	12	47.3	59.3	15.1	56.4	71.4	83.1	2,700
Rural	4.2	12.3	16.5	10.2	35.4	45.6	14.4	47.7	62.1	73.5	3,271
<b>Place of residence</b>											
Urban Governorates	3.1	8.1	11.2	12.6	49.5	62.1	15.7	57.6	73.3	84.7	1,348
Lower Egypt	3.1	8.1	11.1	12.1	47.2	59.2	15.2	55.2	70.4	84.2	2,503
Urban	2.6	7.6	10.2	11.9	50.3	62.2	14.5	57.9	72.4	85.9	683
Rural	3.3	8.2	11.5	12.1	46.0	58.1	15.5	54.2	69.7	83.5	1,820
Upper Egypt	4.8	15.7	20.6	8.7	27.8	36.5	13.5	43.5	57.0	64.0	2,119
Urban	3.6	12.4	15.9	10.8	40.0	50.8	14.4	52.3	66.7	76.1	668
Rural	5.4	17.3	22.7	7.7	22.2	29.9	13.1	39.5	52.6	56.9	1,451
<b>Education</b>											
No education	3.0	14.5	17.5	5.8	40.8	46.6	8.9	55.3	64.1	72.7	2,515
Some primary	1.9	14.5	16.5	9.3	43.8	53.1	11.4	58.3	69.7	76.3	935
Primary comp./some secondary	5.8	8.7	14.5	15	37.7	52.7	20.8	46.4	67.2	78.4	731
Secondary comp./higher	4.6	4.5	9.2	17.5	40.5	58.1	22.2	45	67.2	86.3	1,789
<b>Total</b>	3.7	10.8	14.5	11.0	40.8	51.8	14.7	51.6	66.3	78.1	5,971

According to Table 6.2, the total unmet need for family planning is 15 percent. The majority of the unmet need is for limiting purposes (11 percent). Similarly, the majority of the met need for family planning (contraceptive use) is for limiting purposes.

Overall, the total demand for family planning comprises 66 percent of married women. Presently, 78 percent of that demand is being met. Unmet need is greater among rural than urban women (17 percent and 12 percent, respectively). Considering place of residence, unmet need varies from 11 percent in Urban governorates to 23 percent in rural Upper Egypt. Unmet need varies also by educational level, from the highest of 18 percent among women who never attended school to only 9 percent among women with secondary and higher education.

Using the results from earlier rounds of the DHS in Egypt in addition to the 1998 EIDHS, Figure 6.2 shows an overall decline in the level of unmet need from 20 percent in 1992 to 15 percent in 1998. In all of the surveys, the majority of women defined as in need of family planning were in need to avoid unwanted births rather than to space wanted births.





## 7 Maternal Health

Both mother and child benefit when a woman receives proper maternal health care during pregnancy and childbirth. To obtain data on these issues, women were asked a series of questions for each birth during the five-year period before the survey. These questions seek information on antenatal care, other medical care received during pregnancy, tetanus toxoid vaccination, the assistance received at delivery and whether the delivery was caesarian or normal.

### 7.1 Care During Pregnancy

It is very important to provide mothers with medical care during pregnancy to reduce the risks of pregnancy and ensure the survival for both mother and child. To be more effective, the care should be regular throughout a pregnancy. Therefore, it is recommended that all mothers see a trained provider at least four times during pregnancy.

In the 1998 EIDHS, women were asked about whether they had received any antenatal care (care for the pregnancy) prior to delivery and, if so, who had provided the antenatal care and how many times the woman had visited the provider for such care. Both women who had received antenatal care and those who had received no antenatal care were asked an additional question about whether they had seen a medical provider for any reason other than antenatal care during the pregnancy. Women who received antenatal or other medical care were asked about whether certain physical checks (height, weight, and blood pressure) or laboratory investigations (blood and urine samples) were conducted during any of the visits that they had during the pregnancy.

#### Antenatal care

Overall, the EIDHS-98 found that antenatal care was received from a trained provider for 47 percent of the births during the five-year period before the survey (Table 7.1). In the case of the majority of these births, women had received the antenatal care from a private doctor or clinic; public sector facilities were consulted in 11 percent of all births compared to 37 percent in which a private doctor or clinic was consulted. Not all of the births in which mothers reported having had antenatal care received regular antenatal care, the mother reported that she had four or more antenatal care visits in only 33 percent of all births.

#### Other medical care

In addition to the questions on antenatal care, mothers were asked in the 1998 EIDHS about whether they had seen a medical provider at any time during the pregnancy for reasons other than care for the pregnancy. Overall, mothers reported seeing a medical provider for reasons other than care for the pregnancy in the case of 41 percent of all births in the five-year period before the survey (Table 7.2). In the case of 76 percent of the births in which mother reported receiving such care, the care was provided at public sector facilities (not shown in table). Both public and private sector providers were seen in the case of 3 percent of the births, and private doctors or clinics were consulted in 21 percent of births.

**Table 7.1 Antenatal care**

Percent distribution of births during the five-year period before the survey in which the mother received antenatal care by the type of provider from whom the care was received, and the type of facility at which the care was given, Egypt 1998

#### Antenatal care indicators

<b>Type of provider</b>	
Doctor	46.7
Trained nurse/midwife	0.5
Other/missing	0.1
No care	52.7
<b>Type of facility</b>	
Public sector	10.6
Private sector	36.9
Both	0.3
Other	0.2
No care	52.7
<b>Number of antenatal care visits</b>	
None	54.1
1	2.7
2	5.0
3	5.0
4 or more	33.1
Don't know	0.1
Total percent	100.0
Number of births	5,483

Table 7.2 combines the information from the 1998 EIDHS on other medical care along with that on antenatal care. The results indicate that women reported that they had seen a medical provider at some point during pregnancy in the case of 70 percent of all births during the five-year period before the survey. Mothers reported receiving antenatal care and other medical care in the case of 18 percent of all births, while mothers had seen a medical provider only for antenatal checkups in the case of 29 percent of all births. Finally, mothers said that they had no antenatal checkups but had seen a medical provider for some type of other care in the case of an additional 23 percent of the births.

**Table 7.2 Other Antenatal Care**

Antenatal and Other Medical Care during Pregnancy. Percent distribution of births during the five-year period before the survey by whether the mother had received antenatal care and other medical care from health professionals during the pregnancy, Egypt 1998.

Antenatal care	Other care		Total
	Had care	No care	
Had care	18.3	28.9	47.2
No care	22.8	30.0	52.8
Total	41.1	58.9	100.0

**Medical examinations and laboratory tests**

Women who had seen a medical provider during pregnancy for antenatal or other care were asked about whether, at any point, their height, weight or blood pressure had been checked and urine or blood samples taken. Table 7.3 shows that three in four mothers had had at least one of the examinations or tests during pregnancy. They were more likely to have had their blood pressure (60 percent) and weight (54 percent) measured than to have their height taken (22 percent). Forty-five and forty-one percent had had given a blood or urine sample, respectively.

Women who reported that they had antenatal care were much more likely than women who did not report getting antenatal checkups to say that they had the various examinations or tests about which questions were asked in the 1998 EIDHS. Overall, 86 percent of women who had both antenatal and other care and 83 percent of the women saying that they had had only antenatal checkups during the pregnancy had had at least one of the tests or examinations compared to only 50 percent of the women had seen a provider during the pregnancy but did not have an antenatal checkup.

**Table 7.3 Medical Examinations and Laboratory Tests**

Percentage of births during the five-year period before the survey in which the mother reported having had various medical examinations or laboratory tests during the pregnancy by the type of care received from health professionals during the pregnancy, Egypt 1998.

Antenatal/other care	Weight	Height	Blood pressure	Urine sample	Blood sample	Any check/test	No check/test
Both antenatal and other care	71.7	28.0	71.0	60.2	54.2	86.2	13.8
Antenatal care only	56.4	20.8	72.2	51.8	47.6	83.0	17.0
Other care only	36.7	18.6	34.2	23.3	22.6	49.8	50.2
Total	54.0	21.9	59.5	44.7	41.2	73.1	26.9

## 7.2 Tetanus Toxoid Vaccinations

Tetanus toxoid injections are given during pregnancy in order to prevent neonatal tetanus, a frequent cause of infant deaths where sterile procedures are not observed in cutting the umbilical cord following delivery. The 1998 EIDHS obtained information on whether women received tetanus toxoid vaccinations during pregnancy for each birth in the five-year before the survey and, if so, the number of injections. Table 7.4 shows that mothers had received at least one tetanus toxoid injection during pregnancy in the case of 71 percent of births during the five-year period before the survey. Public sector facilities are responsible for providing the majority of tetanus toxoid injections. Overall, 64 percent of women received a tetanus toxoid vaccination at public sector facilities.

**Table 7.4 Tetanus toxoid coverage**

Percent distribution of births during the five-year period before the survey by the number of tetanus toxoid injections received, Egypt 1998

Tetanus toxoid coverage	
<b>Number of tetanus toxoid injections</b>	
None	29.4
One dose	30.6
Two doses	39.5
Not sure/missing	0.5
<b>Type of facility</b>	
Public sector	64.3
Private sector	5.3
Other	1.1
No injections	39.5
Total percent	100.0
Number of births	5,483

## 7.3 Overlap Between Tetanus Toxoid Coverage and Medical Care

Many women who received tetanus toxoid vaccinations during pregnancy did not report seeing a doctor for antenatal care or other medical care. In some cases, women who had had antenatal or other care receive tetanus toxoid injections. Table 7.5 shows the overlap between medical care and tetanus coverage. Overall, the majority of mothers who reported seeing a provider for medical care (either antenatal checkups or other care) reported receiving tetanus toxoid vaccinations. Among women who said that they had not consulted a provider for medical care at all during the pregnancy, 44 percent said that they had had a tetanus toxoid injection.

**Table 7.5 Antenatal Care, Other Care and Tetanus Toxoid Coverage**

Percent distribution of births during the five-year period before the survey by whether the mother had received antenatal care or other medical care from health professionals during the pregnancy by whether she had had a tetanus toxoid injection, Egypt 1998.

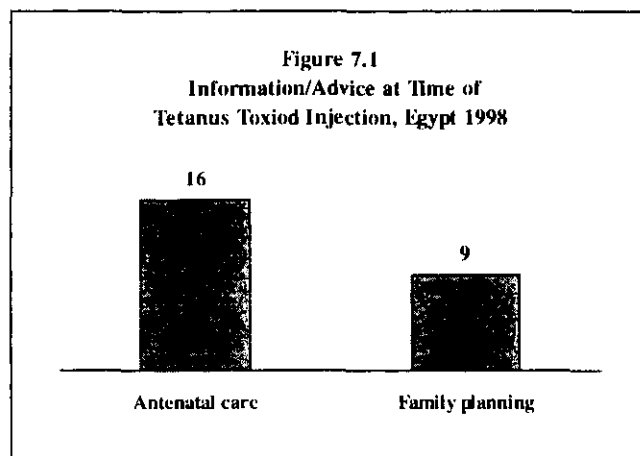
Antenatal/other care	Tetanus toxoid injection		Total
	Yes	No	
Both antenatal and other care	88.3	11.0	100.0
Antenatal care only	70.2	29.2	100.0
Other care only	91.2	8.8	100.0
No care	44.4	54.3	100.0
Total	70.6	28.7	100.0

## 7.4 Advice About ANC/FP

In order to increase the proportion of Egyptian women receiving antenatal care, the Ministry of Health and population has instituted a program in which pregnant women who come to public sector facilities for tetanus toxoid vaccinations will be advised about the importance of antenatal care and given information about family planning. To provide a baseline figure for use in monitoring this program, mothers who received tetanus toxoid injections were asked whether they had been advised that they should go for antenatal care.



They were also asked if someone had talked to them about family planning when they obtained their tetanus injection. The results presented in Figure 7.1 show that the majority of women who went for tetanus toxoid vaccinations at public sector facilities did not receive advice about the need for antenatal care or family planning use (data not shown in table). Among those women who are given advice, they are more likely to receive recommendations about the need for antenatal care (16 percent) than information about family planning (9 percent).



It worth mentioning that the percentage of women who received advice about antenatal care and family planning is very low and also is declining over time. Generally, women do not receive advice about other reproductive health services at the time they receive a tetanus toxoid injection.

## 7.5 Assistance at Delivery

**Table 7.6 Assistance at delivery**

Percent distribution of births during the five-year period before the survey by the type of provider assisting at delivery and the place where the mother delivered, Egypt 1998

Delivery assistance

**Type of provider**

Doctor	46.8
Trained nurse/midwife	8.4
Traditional birth attendant	41.9
Relative/other	1.8
No assistance	1.1
Don't know/missing	-

**Type of facility**

Public sector	19.6
Private sector	20.1
At home	60.2
Other	-
DK/missing	-

Total percent	100.0
Number of births	5,483

In addition to the questions of antenatal care and tetanus toxoid vaccinations, the EIDHS-98 collected information on two other important aspects of maternity care: the place of delivery and the person(s) assisted in delivery. Table 7.6 presents information on these indicators for births during the five-year period before the survey.

Of all births in the five-year period before the 1998 EIDHS, the majority of deliveries took place at home. Among the deliveries in facilities, roughly half occurred in public sector facilities and half in private sector. A doctor or trained nurse/midwife assisted at the delivery of 55 percent of cases. Most of the remaining births were assisted by *dayas* (traditional birth attendant).

Women who delivered with the assistance of doctors were also asked whether the birth was a caesarian or normal delivery. Fifteen percent of physician assisted deliveries were

reported as caesarian births. Women assisted by physicians or nurse – midwives were asked about instruments used in the delivery. These mothers reported a total of 15 percent of births in which instruments were used in the delivery (10 percent forceps and 5 percent ventouse ).

## 7.6 Differentials in Maternal Health Indicators

Table 7.7 examines variations in maternity care indicators according to selected socio-economic and demographic background characteristics. Considering age patterns, women with age

delivery from a trained medical provider and to deliver in a medical facility. Tetanus toxoid vaccination coverage is, however, more common among younger than older women.

There is a negative association between the birth order of the child and the maternal health indicators. For example, the proportion receiving regular antenatal care decreases from 46 percent among first births to 16 percent among births of order six or higher.

**Table 7.7 Maternal health indicators by background characteristics**

Percentage of births in the five-year period whose mothers received any antenatal care and regular antenatal care from a trained medical provider and at least one tetanus toxoid vaccination and whose mothers were assisted at delivery by a medical provider and delivered in a medical facility, Egypt 1998

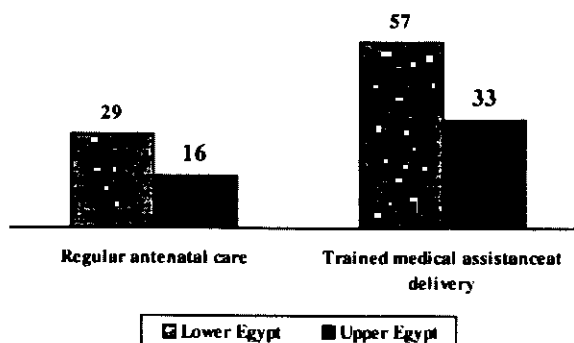
Background Characteristic	Any antenatal care	Regular Antenatal Care	Tetanus toxoid injections	Assisted by trained medical provider	Delivery In medical facility
<b>Age</b>					
under 20	43.4	26.4	77.9	47.6	31.4
20-34	48.6	34.7	70.3	56.9	41.4
35-49	42.3	30.4	56.9	53.2	39.4
<b>Birth order</b>					
1	60.9	45.6	82.4	69.4	52.8
2-3	48.6	34.5	72.1	56.6	40.7
4-5	39.0	25.2	60.7	42.7	29.0
6 or more	29.3	16.1	54.3	41.4	27.3
<b>Urban-rural residence</b>					
Urban	61.0	49.9	67.1	71.6	61.8
Rural	38.5	22.3	71.9	44.8	25.7
<b>Place of residence</b>					
Urban Governorates	59.1	51.2	62.9	70.6	65.1
Lower Egypt	48.8	34.6	76.1	62.3	41.6
Urban	65.8	54.4	74.4	80.7	68.4
Rural	43.7	28.6	76.6	56.8	33.5
Upper Egypt	40.5	23.6	67.6	41.8	26.8
Urban	60.3	44.0	68.2	65.8	51.0
Rural	33.4	16.3	67.4	33.2	18.2
<b>Education</b>					
No education	29.4	16.0	64.6	36.3	23.2
Some primary	42.7	27.8	70.9	51.3	33.6
Primary comp./					
Some secondary	52.7	35.8	72.8	60.7	45.3
Completed secondary/Higher	72.2	58.4	76.2	81.2	63.5
Total	47.2	33.1	70.1	55.2	39.7

Note: A woman is considered to have had regular antenatal care if she had 4 or more visits for care during the pregnancy

Urban-rural residence and region are strongly associated with both antenatal care and assistance. Rural women, especially those living in Upper Egypt are less likely than urban women to receive care during pregnancy or assistance at delivery from trained medical providers.

Figure 7.2 shows that both regular antenatal care and medical assistance at delivery are more common among women living in rural areas in Lower Egypt than in Upper Egypt. With regard to tetanus

**Figure 7.2 Maternity Care Indicators for Rural Areas Egypt 1998**



toxoid vaccinations, however the differential between rural Lower Egypt and Rural Upper Egypt is much less marked.

## 7.7 Trends in Maternal Health Indicators

Table 7.8 looks at the trends in key maternal health indicators during the period 1988-1998. The table suggests that there has been a very sharp increase in the proportions of women who receive tetanus toxoid injections during pregnancy. Improvements in other maternal health indicators were more gradual but steady during the period.

<b>Table 7.8 Trends in maternal health indicators</b>						
For births during the five-year period before the survey, the percentage whose mothers had at least one tetanus toxoid injection, antenatal care from a doctor or trained nurse-midwife, and four or more antenatal care visits and the percentage whose mothers assisted at delivery by a trained medical provider and delivered in a medical facility, Egypt 1988-1998						
Maternal health indicator	1988 DHS	1990/1 EMCHS	1992 EDHS	1995 EDHS	1997 EIDHS	1998 EIDHS
Antenatal care						
Any	52.8	52.1	52.9	39.1	52.0	47.2
Regular	U	U	22.5	28.3	31.8	33.1
Tetanus toxoid injection	11.4	42.5	57.3	69.5	72.1	70.1
Medical assistance at delivery	34.6	36.5	40.7	46.3	56.4	55.2
Delivered in medical facility	22.9	U	27.1	32.5	39.7	39.7
U=unknown (not available)						

The proportion of births in which the mother had regular antenatal care increased from 23 to 33 percent between 1992 and 1998. The decline in the total proportion of births in which the mother received any antenatal care is not a genuine trend but the result of changes in study procedures between the 1992 and 1995 surveys. The proportion of births attended by a doctor or trained nurse/midwife increased from 35 percent in 1988 to 55 percent in 1998.

## 8 Child Health

The 1998 EIDHS obtained information on a number of key child health indicators, including immunization of young children, childhood illnesses and treatment, breastfeeding nutrition status of children (based on height and weight measurements of children under age five), and infant and child mortality. The information included here can be used in efforts to plan and monitor the outcome of maternal and child health programs.

### 8.1 Vaccination Coverage

In the 1998 EIDHS, information on childhood immunizations was collected for all children born during the five-year period before the survey. In Egypt, immunizations are recorded on a child's birth record (certificate) or on a special health card<sup>1</sup>. For each child, mothers were asked whether they had the birth record or health card for the child and, if so, to show the document to the interviewer. When the mother was able to show the birth record or health card, the dates of vaccinations were copied from the document to the questionnaire. If a birth record or health card was not available (or a vaccination was not recorded), mothers were asked questions to determine whether the child had received each vaccine.

The estimates of immunization coverage among children 12-23 months in Table 8.1 are based on the information taken from the birth record or health card, or for those whom no document was seen (or a vaccination not recorded), information provided by the mother on the child's immunization status. Mothers were able to provide birth records for 65 percent of the children.

The World Health Organization guidelines for childhood immunizations call for all children to receive: a BCG vaccination against tuberculosis, three doses of the DPT vaccine to prevent diphtheria, pertussis and tetanus; three doses of polio vaccine; and a measles vaccination. Egypt has added the hepatitis vaccine to its child immunization program. However, although it is shown in the table, hepatitis immunizations are not taken into account in calculating the proportion of children who are considered to be fully immunized. Thus, a child is considered to have had the full schedule of immunizations if they have received a BCG and measles vaccination and three doses of the DPT and polio vaccines.

#### Levels and Differentials in Vaccination Coverage

Table 8.1 shows that, among Egyptian children 12-23 months, 84 percent are regarded as fully immunized. Less than one percent had received no vaccinations (exactly 0.3 percent). Looking at coverage levels for individual vaccines, the proportion of children who have received the BCG vaccination was 98 percent, while 87 percent had received three doses of DPT and 90 percent three doses of the polio vaccine. Ninety-three percent had also received the measles vaccine. Although hepatitis vaccine coverage is somewhat lower than the levels for the other vaccines, 81 percent of children had received three doses of the hepatitis vaccine.

Considering differentials in immunization coverage, there are very minor differences in the levels of immunization between boys and girls. By residence, however, there are clear differences. Urban children are more likely to be immunized than rural children are (93 percent vs. 80 percent, respectively). Looking at place of residence, the percentage considered to be fully immunized was lowest in rural Upper Egypt, where 2 in 10 children

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<sup>1</sup> During earlier rounds of the DHS in Egypt, vaccination data usually were obtained only from the birth record. A new health card was introduced during the 1996. Therefore, the 1997 EIDHS, and the 1998 EIDHS questionnaires were modified so that information from either document could be easily recorded.

had not received all recommended vaccinations. As expected, the percentage of children that have received all vaccines increases with education of mother.

**Table 8.1 Vaccinations by background characteristics**

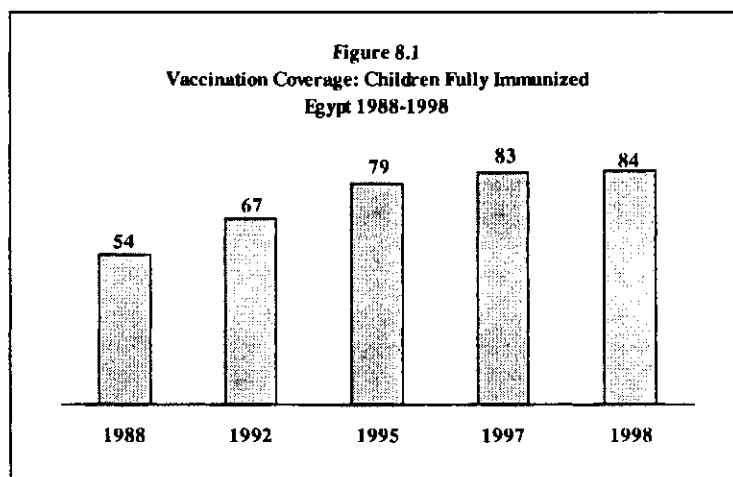
Among children 12-23 months, the percentage who had vaccination records seen by the interviewer and the percentage who had received each vaccine (according to the vaccination record or the mother's report) by selected background characteristics, Egypt 1998.

Background Characteristics	Record seen	DPT			Polio			Hepatitis			Measles	Fully immunized	None	Number Of children	
		BCG	1	2	3	1	2	3	1	2					3
<b>Sex</b>															
Male	65.9	98.4	98.1	96.3	87.2	99.3	97.4	89.0	95.0	90.5	81.0	94.8	85.5	0.5	448
Female	63.3	97.9	98.6	96.6	88.0	99.8	97.8	90.3	92.9	89.9	81.8	91.1	83.0	0.0	389
<b>Urban-rural</b>															
Urban	62.1	99.9	99.6	98.9	96.0	100.0	99.0	96.8	95.9	94.0	90.1	95.9	93.1	0.0	299
Rural	66.1	97.2	97.6	95.0	82.8	99.2	96.8	85.6	93.0	88.1	76.5	91.5	79.5	0.4	538
<b>Place of residence</b>															
Urban Governorates	61.7	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.0	97.9	97.8	97.3	97.3	0.0	139
Lower Egypt	66.0	98.9	98.9	96.3	86.2	99.6	97.3	88.2	94.8	89.9	79.6	93.3	82.4	0.4	343
Urban	64.9	100.0	98.5	95.8	89.9	100.0	96.2	92.0	94.1	90.5	82.3	94.2	86.7	0.0	72
Rural	66.3	98.6	99.0	96.5	85.2	99.5	97.6	87.2	94.9	89.8	87.9	93.0	81.3	0.5	271
Upper Egypt	64.5	96.7	97.2	95.1	84.0	99.2	96.9	86.9	91.4	87.4	76.6	91.3	81.2	0.3	355
Urban	60.5	99.6	100.0	99.6	94.8	100.0	99.6	96.0	92.5	90.8	84.2	95.1	91.7	0.0	88
Rural	65.8	95.7	96.2	93.6	80.4	98.9	96.0	84.0	91.0	86.3	74.1	90.0	77.7	0.4	267
<b>Education</b>															
No education	71.3	96.2	97.2	95.4	85.0	99.4	97.2	88.3	91.5	86.8	77.9	91.7	80.7	0.3	316
Some primary	64.5	98.6	97.4	93.2	80.0	99.3	95.8	86.3	94.2	87.1	75.0	86.8	76.5	0.0	123
Primary comp./some secondary	63.8	98.5	98.6	96.2	88.6	98.8	97.1	88.0	92.3	89.8	83.9	93.8	84.6	1.2	113
Secondary comp./higher	57.7	100.0	100.0	99.0	93.2	100.0	99.0	93.1	97.4	95.5	86.9	97.1	91.6	0.0	285
<b>Total</b>	<b>64.7</b>	<b>98.1</b>	<b>98.4</b>	<b>96.4</b>	<b>87.5</b>	<b>99.5</b>	<b>97.6</b>	<b>89.6</b>	<b>94.0</b>	<b>90.2</b>	<b>81.4</b>	<b>93.1</b>	<b>84.3</b>	<b>0.3</b>	<b>837</b>

Note: Children are fully immunized if they have received BCG, measles, and three doses of DPT and polio vaccines.

## Trends in Vaccination Coverage

Figure 8.1 and Table 8.2 show vaccination coverage rates in Egypt during the period 1988-1998. The percentage of children 12-23 months who were fully immunized increased steadily during the period, from 54 percent in 1988 to 84 percent in 1998. The table also documents the rapid expansion in hepatitis coverage rates after the inclusion of the vaccine in the country's immunization program.



**Table 8.2 Trends in vaccination coverage, Egypt 1988-1997**

Among children 12-23 months, the percentage who had received specific vaccinations and the percentage fully immunized, Egypt 1988-1998

Specific vaccinations	1988	1992	1995	1997	1998
BCG	70	90	95	96	98
DPT 3	66	76	83	90	88
Polio 3	66	79	84	91	90
Measles	76	82	89	89	93
Hepatitis	NA	NA	57	77	81
Fully immunized	54	67	79	83	84

Note: Children are fully immunized if they have received BCG, measles, and three doses of DPT and polio vaccines.

Source: El-Zanaty Associates and Macro International Inc., 1998, Table 8.2.

## 8.2 Prevalence of Childhood Illnesses

Two main illnesses, as well as their treatment, are discussed in this section due to their importance for infant and child survival. They are acute respiratory infection and diarrhea. In the 1998 EIDHS, mothers of children under age five were asked if their children had had diarrhea during the two-week period before the survey. If the child had had diarrhea, the mother was asked about what she had done to treat the diarrhea. Mothers were also asked about the presence of fever and of the symptoms of acute respiratory infection (cough with short, rapid breathing) among children during the two-week period before the survey. If the child had symptoms of respiratory illness, the mother was asked about the actions taken to treat the illnesses. Since the prevalence of diarrhea and acute respiratory illnesses varies seasonally, the results pertain only to the pattern during the period November 1998 when the EIDHS interviewing took place. In assessing the information on the prevalence of these illnesses, it should be remembered that the mother's assessment is subjective.

Table 8.3 presents information on the prevalence of childhood illnesses among young children. Overall, 11 percent of children under age five were reported to have had diarrhea in the two-week period before the survey, and around 1 percent was reported as having bloody stools. As expected, diarrhea is more prevalent among children age under 24 months. This pattern is believed to be associated with increased exposure to the illness as a result of both weaning and the greater mobility of the child as well as to the immature immune system of children in this age group.

**Table 8.3 Prevalence of childhood illnesses by background characteristics**

Percentage of children under age five reported as having diarrhea, diarrhea with bloody stools, fever or a cough with short, rapid breathing during the two-week period before the survey, Egypt 1998

Background characteristic	All diarrhea	Diarrhea with blood in stools	Fever	Cough with short, rapid breathing	Number of children
<b>Child's age</b>					
< 6 months	16.6	0.5	25.4	11.0	512
6-11 months	23.6	1.7	34.0	17.4	529
12-23 months	16.1	0.8	32.9	14.5	979
24-35 months	8.0	0.6	24.4	11.4	1,072
36-47 months	5.2	0.4	22.4	11.2	1,146
48-59 months	4.7	0.8	18.7	9.5	9750
<b>Sex</b>					
Male	11.5	0.7	26.3	12.9	2,686
Female	9.9	0.7	24.8	11.3	2,526
<b>Urban-rural residence</b>					
Urban	9.1	0.4	24.1	12.1	2,057
Rural	11.8	0.9	26.5	12.2	3,155
<b>Place of residence</b>					
Urban Governorates	8.6	0.5	19.2	11.1	991
Lower Egypt	13.6	1.0	32.5	13.3	2,052
Urban	10.7	0.5	32.0	12.6	482
Rural	14.4	1.2	32.7	13.5	1,570
Upper Egypt	9.0	0.6	21.8	11.6	2,169
Urban	8.5	0.3	25.8	13.3	585
Rural	9.2	0.7	20.4	10.9	1,584
<b>Education</b>					
No education	9.0	0.7	22.6	11.6	2,172
Some primary	12.6	1.1	26.3	13.5	734
Primary comp./Some secondary	12.5	1.0	26.8	12.4	720
Secondary comp./Higher	11.4	0.5	28.8	12.2	1,586
<b>Total</b>	10.7	0.7	25.6	12.2	5,212

Table 8.3 also shows the prevalence of fever and of symptoms of acute respiratory infection (ARI) among young children. More than 26 percent of children were reported to have had a fever during the two-week period before the survey, and 12 percent had had a cough with short, rapid breathing. Differentials in the prevalence of these illnesses are generally small. The peak prevalence for both illnesses is found among children 6-11 months old.

### 8.3 Treatment of Diarrhea

The 1998 EIDHS included questions with regard to the actions mothers took to treat children who had had diarrhea. Table 8.4 presents the findings from these questions. The table shows that mothers sought advice from a medical provider in 44 percent of the cases. Among mothers reporting that medical advice was sought, the majority said that a private doctor was consulted, where 27 percent went to private facility to treat the diarrhea and 18 percent went to public facility.

**Table 8.4 Treatment of diarrhea**

Percentage of children under age five ill with diarrhea during the two-week period before the survey who received various treatments by selected background characteristics, Egypt 1998

Background characteristics	Taken to health facility			Oral rehydration therapy								Number Of children
	Any	Public	Private	ORS packets	RHS	Either ORS/ RHS	Increased fluids	Anti-biotics	Injec-tion	Other	None	
<b>Sex</b>												
Male	42.3	17.8	24.5	29.9	11.7	36.5	21.4	28.3	9.3	40.8	3.2	308
Female	46.4	17.8	29.2	34.7	11.1	41.8	23.5	27.7	11.0	35.6	3.5	251
<b>Urban-rural</b>												
Urban	45.3	19.7	25.5	27.1	9.9	32.8	23.2	29.6	4.9	38.9	4.0	187
Rural	43.6	16.8	27.1	34.5	12.2	42.0	21.9	27.2	12.6	38.2	3.0	372
<b>Place of residence</b>												
Urban Gov.	45.9	24.1	21.8	28.4	12.6	32.3	31.8	32.1	8.9	42.7	1.7	86
Lower Egypt	44.9	13.5	31.9	29.8	12.5	39.3	28.8	31.5	11.3	38.0	3.8	278
Urban	43.8	17.1	26.7	20.6	12.0	31.4	22.5	36.8	2.2	30.2	2.5	51
Rural	45.2	12.6	33.1	31.9	12.6	41.0	30.2	30.3	13.4	39.7	4.1	227
Upper Egypt	42.3	21.2	21.1	36.8	9.4	41.3	9.0	21.2	8.7	37.2	3.5	195
Urban	45.7	15.0	30.8	31.8	3.1	34.9	9.0	17.9	0.7	41.5	9.4	50
Rural	41.1	23.3	17.7	38.5	11.5	43.4	9.0	22.3	11.4	35.8	1.5	145
<b>Education</b>												
No education	42.1	19.6	23.1	34.7	8.4	38.7	17.5	22.9	7.6	33.3	2.0	195
Some primary	52.7	23.4	29.3	42.9	14.3	48.0	22.4	28.2	15.6	40.5	1.1	93
Primary completed/ Some secondary	46.5	19.2	27.3	25.3	9.6	33.4	17.8	32.5	9.0	31.3	6.3	90
Secondary comp./Higher	40.8	12.3	28.5	26.9	14.1	37.2	29.8	31.1	10.2	46.5	4.5	181
<b>Total</b>	44.1	17.8	26.6	32.0	11.4	38.9	22.3	28.0	10.0	38.4	3.4	559

Note: Oral rehydration therapy (ORT) includes solutions prepared from ORS packets and recommended home solution (RHS), e.g., sugar-salt solutions. Increased fluids includes increased frequency of breastfeeding.

The administration of oral rehydration therapy (ORT) is a simple means of countering the effects of dehydration accompanying diarrhea. During ORT, the child is given a solution either prepared by mixing water with the salts in a commercially prepared rehydration packet (ORS) or by making a homemade solution using sugar, salt and water. Around 39 percent of the children who had diarrhea were treated with oral rehydration therapy (either ORS packets or a homemade solution). ORS packets were used more often than homemade solutions.

Among the other common responses to diarrheal episodes was to increase the amount of fluids a child was given. Table 8.4 shows that 22 percent of mothers had given the children with diarrhea increased fluids (other than ORS or RHS solutions). Mothers also reported that children were frequently given antibiotics (28 percent) or home remedies to treat the diarrhea (38 percent).

Table 8.4 shows that there are relatively minor differences by gender in the treatment practices mothers reported. Mothers were slightly more likely to seek medical advice for episodes of diarrhea among girls than among boys. Also, girls were more likely than boys to be treated with some form of ORT.

Considering the other differentials shown in Table 8.4, a medical provider was consulted more often for children living in urban areas than for rural children. However, rural children were more likely than urban children to have received some form of ORT. Mothers with less than primary education were more likely to report using some form of ORT than better educated mothers.



## 8.4 Treatment of Respiratory Illnesses

The 1998 EIDHS also included questions with regard to whether medical advice was sought when a child had the symptoms of an acute respiratory infection. Table 8.5 shows that mothers sought advice from a medical provider in 66 percent of cases where the child had a cough with short, rapid breathing. As was the case with diarrheal illnesses, among mothers who sought medical advice, the majority reported that a private doctor was consulted (46 percent).

There was no significant difference by gender in the likelihood that medical advice would be sought when a child was ill. However, medical advice was less likely to be sought in the case of rural children than urban children were and for children whose mothers were from Upper Egypt. The likelihood of seeking medical advice was also directly associated with the mother's educational level. Because there is over utilization of Antibiotics, mothers were asked if they gave the children Antibiotics to treat cough. Around 11 percent (not shown in table) of children, who had cough in the two weeks period preceding the survey, were given Antibiotics.

**Table 8.5 Treatment of cough**

Percentage of children under age five ill with cough with short rapid breathing during the two-week period before the survey who were taken to a health facility for treatment by selected background characteristics. Egypt 1998

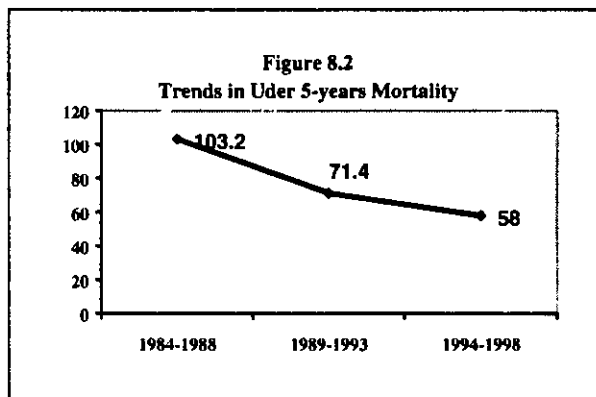
Background characteristics	Taken to health facility			Number of children
	Any	Public	Private	
<b>Sex</b>				
Male	68.7	16.8	53.3	2,686.0
Female	61.7	24.1	38.0	2,526.0
<b>Urban-rural residence</b>				
Urban	75.9	28.1	49.2	2,057.0
Rural	58.8	14.9	44.6	3,155.0
<b>Place of residence</b>				
Urban Governorates	81.2	35.5	47.1	991.0
Lower Egypt	68.9	17.9	50.9	2,052.0
Urban	82.5	24.8	57.7	482.0
Rural	64.9	15.9	49.0	1,570.0
Upper Egypt	55.0	15.7	41.1	2,169.0
Urban	63.3	20.2	45.4	585.0
Rural	51.3	13.6	39.2	1,584.0
<b>Education</b>				
No education	56.6	23.3	33.7	2,172.0
Some primary	67.3	19.9	48.8	734.0
Primary comp./Some Secondary	64.0	18.9	45.1	720.0
Secondary comp./ Higher	77.0	16.6	62.3	1,586.0
Total	65.5	20.1	46.4	5,212.0

## 8.5 Infant and Child Mortality

### Trends in Early Childhood Mortality

This section presents information on levels, trends and differentials in neonatal, post-neonatal, infant and child mortality. This information is central to an assessment of the demographic situation in Egypt. It is also important to improve child survival programs in Egypt by helping to identify those segments of the child population that are at increased risk.

Data on children's birth dates, survivorship status and age at death obtained in the birth histories collected in the 1998 EIDHS were used to estimate the levels and trends in mortality among children under the age of five in Egypt. Table 8.6 presents the information on early childhood mortality for a 5-year period prior to the survey. The results suggest that mortality among young children has fallen steadily during the period since 1988. Overall, under-five mortality has fallen from an estimated level of 103 deaths per 1,000 births during the period 1984-1988 to 58 deaths per 1,000 births during the five-year period immediately prior to the EIDHS-98.



**Table 8.6 Levels and trends in early childhood mortality**

Early childhood mortality rates for the five-year periods before the 1998 EIDHS

Approximate calendar period	Neonatal	Post-neonatal	Infant	Childhood	Under-five
1994-1998	20.8	24.7	45.5	13.1	58.0
1989-1993	25.4	30.3	55.7	16.6	71.4
1984-1988	37.5	34.9	72.4	33.2	103.2

### **Differentials in Early Childhood Mortality**

Although there has been a steady decline in mortality levels among young children in Egypt, Tables 8.7 and 8.8 show that there remain significant differentials in mortality levels in the population. The mortality rates shown in these two tables are calculated for a ten-year period before the survey because most subgroups were not sufficiently large to permit reliable estimation of five-year rates.

Considering the relationship with socio-economic measures, Table 8.7 shows that mortality levels are higher in rural areas than in urban areas. Place of residence is also associated with mortality levels, with the highest levels observed in Upper Egypt, particularly in rural areas where the under-five mortality rate is 88 compared with 64 in rural Lower Egypt. As expected, Table 8.7 also indicates that mortality levels are negatively associated with the educational level of the mother. The under-five mortality rate among children born to women with no education is 81 deaths per 1,000 births compared to 35 deaths per 1,000 births among children born to women who have completed the secondary school or higher.

**Table 8.7 Early childhood mortality by socio-economic characteristics**

Early childhood mortality rates for the ten-year period preceding the survey by selected socio-economic characteristics, Egypt 1998.

Background characteristic	Neonatal	Post-neonatal	Infant	Childhood	Under-five
<b>Urban-rural residence</b>					
Urban	14.6	23.4	38.1	10.1	47.8
Rural	28.9	29.6	58.6	18.8	76.2
<b>Place of residence</b>					
Urban Governorates	12.2	19.2	31.4	9.4	40.5
Lower Egypt	26.8	21.3	48.1	14.0	61.4
Urban	17.2	28.4	45.7	7.2	52.5
Rural	29.8	19.0	48.9	16.4	64.4
Upper Egypt	25.0	36.8	61.8	19.4	80.0
Urban	16.7	26.8	43.5	14.2	57.1
Rural	28.0	40.5	68.5	21.3	88.3
<b>Education</b>					
No education	27.0	34.8	61.8	20.0	80.5
Some primary	29.4	30.6	60.0	15.3	74.4
Primary comp./Some sec.	18.5	24.0	42.5	13.2	55.1
Secondary comp./Higher	15.5	13.3	28.8	6.2	34.8
Total	23.2	27.2	50.4	15.2	64.8

Table 8.8 shows that the mortality levels do not vary greatly with the sex of the child. However, the interval since the previous birth is strongly related to a child's survival chances. Mortality levels decline significantly as the interval since the previous birth increases. It is clear from the table that mortality level among children with births interval less than two years is more than twice the mortality level among children with long birth interval. Mortality levels are also significantly greater for children of birth order six or higher and for births to women under age 20 and over age 35.

**Table 8.8 Early childhood mortality by demographic characteristics**

Early childhood mortality rates for the ten-year period preceding the survey by selected demographic characteristics, Egypt 1998

Background characteristic	Neonatal	Post-neonatal	Infant	Childhood	Under-five
<b>Sex</b>					
Male	23.9	27.3	51.3	15.2	65.7
Female	22.4	27.0	49.4	15.2	63.9
<b>Mother's age at birth</b>					
Less than 20	34.1	41.1	75.3	18.0	91.9
20-34	19.8	25.2	45.0	14.6	58.9
35 or more	33.7	22.0	55.6	16.3	71.1
<b>Birth order</b>					
1	18.8	22.2	40.0	7.7	47.3
2-3	21.7	25.6	47.3	13.1	59.8
4-5	22.1	30.1	52.2	23.8	74.8
6+	35.6	36.3	71.8	19.6	90.0
<b>Previous birth interval</b>					
Less than 2 years	39.9	45.9	85.8	31.7	114.7
2-3 years	15.9	22.0	37.8	11.9	49.3
4 years or more	20.1	19.3	39.4	9.5	48.6

## 9 Infant Feeding and Child Nutrition

The 1998 EIDHS obtained data on several important aspects of the nutritional status of Egyptian children and their mothers. Infant feeding practices including breastfeeding and supplementation patterns and the prevalence of bottle-feeding, are considered first. Then anthropometric data (height and weight) collected in the survey are used to assess the current nutritional status of children under age five.

### 9.1 Breastfeeding and Supplementation

The pattern of infant feeding has an important influence on the health of children. Feeding practices are among the principal determinants of a young child's nutritional status, and poor nutritional status has been shown to increase the risk of illness and death among children. Breastfeeding practices also have an effect on the mother's fertility. More frequent breastfeeding for longer duration as well as delays in the age at which longer birth intervals and lower fertility.

#### Initiation of Breastfeeding

Early initiation of breastfeeding is beneficial for a number of reasons. For the mother, early sucking promotes the release of hormone that helps uterus to achieve a contracted state and reduces the risk of postpartum hemorrhage. For the child, it is important to receive the colostrum which is contained in the first breast milk after delivery. Colostrum is rich in antibodies that are needed since the child's own immune system is immature.

According to the 1998 EIDHS results presented in Table 9.1, almost all-Egyptian children are breastfed for some period of time. Differentials in the proportion of children ever breastfed are small with at least 92 percent of children in every subgroup reported as having been breastfed.

The timing of initiation of breastfeeding for the last-born child is also examined in Table 9.1. Around one in three Egyptian children is put to the breast within an hour of birth and around seventy-five percent within the first day. The timing of initiation of breastfeeding varies in a fairly narrow range with the background characteristics shown in Table 9.1. From a programmatic standpoint, perhaps the most relevant differential in breastfeeding practices is that found between children born in facilities and those whose mothers deliver at home. Table 9.1 indicates that children born in a health facility are somewhat more likely to be put to the breast within an hour of birth than children born at home (28 percent versus 38 percent, respectively). Children whose mothers delivered in a health facility also are less likely to be put to the breast within 24 hours of birth than children who were born at home (78 percent versus 72 percent, respectively).

**Table 9.1 Timing of initiation of breastfeeding**

Percentage of children born in the five years preceding the survey who were ever breastfed and the percentage of last-born children who started breastfeeding within one hour of birth and within one day of birth, by selected background characteristics, Egypt 1998

Background characteristics	Percentage ever breastfed	Among last-born children, percentage who started breastfeeding:		Number of children
		Within 1 hour of birth	Within 1 day of birth	
<b>Sex</b>				
Male	94.6	32.9	74.6	1,742
Female	94.1	34.5	75.2	1,550
<b>Urban-Rural residence</b>				
Urban	94.1	34.4	77.4	1,357
Rural	94.6	33.2	73.1	1,934
<b>Place of residence</b>				
Urban Governorates	94.0	38.6	79.1	665
Lower Egypt	95.3	29.8	77.1	1,326
Urban	94.2	26.6	79.7	319
Rural	95.6	30.8	76.3	1,007
Upper Egypt	93.7	35.1	70.5	1,301
Urban	94.2	33.5	72.6	373
Rural	93.5	35.8	69.7	928
<b>Mother's education</b>				
No education	95.1	37.3	75.4	1,276
Some primary	92.9	29.9	70.9	468
Primary through econdary	93.6	32.1	74.6	460
Completed secondary/higher	94.4	31.7	76.2	1,088
<b>Assistance at delivery</b>				
Medically-trained personnel	93.4	30.5	73.7	1,974
Daya	95.7	38.5	76.9	1,227
Other or none	95.5	39.2	74.4	90
<b>Place of delivery</b>				
Health facility	92.4	27.7	71.6	1,453
At home	95.8	38.4	77.5	1,838
All children	94.4	33.7	74.9	3,291

### **Introduction of Supplements**

Breast milk contains all of the nutrients needed by young infants so that supplementing breast milk before 4 months of age is not necessary. In fact, early supplementation is discouraged for a number of reasons. First of all, the early introduction of breast milk supplements increases the exposure of an infant to pathogens, which may cause diarrheal disease. Undernutrition is another risk. The breast milk supplements given a child may not be sufficient to provide all of the calories that the infant needs, particularly if the supplements are watered down, as is often the case. Since the production of breast milk is influenced by the intensity and frequency of sucking, early supplementation may reduce breast milk output, again exposing the child to increase risk of under-nutrition.

Data on the current breastfeeding status of all surviving children under age 5 was obtained from mothers in the 1998 EIDHS. In addition, the mother was asked whether various types of liquids

or solid foods had been given to child "yesterday" or "last night". These data are used to derive the information on the age patterns of breastfeeding and supplementation presented in Table 9.2. Children are considered exclusively breastfed if they receive breast milk only. Children who are fully breastfed receive only plain water in addition to breast milk. The World Health Organization recommends that children should be exclusively breastfed for the first 4-6 months of life. Table 9.2 indicates that two-third of infants under two months receive only breast milk. The proportion of exclusively breastfed children drops off to 34 percent among children 2-3 months of age and only 14 percent among children 4-5 months.

**Table 9.2 Breastfeeding status**

Percent distribution of living children by breastfeeding status, according to child's age in months, Egypt 1998

Age in months	Percentage of living children who are:				Total	Number of living children
	Not breastfed	Exclusively breastfed	Breastfed and given:			
			Plain water only	Supplements		
< 2	3.4	66.6	0.6	29.4	100.0	135
2-3	3.5	34.0	10.7	51.8	100.0	185
4-5	5.2	13.9	15.7	65.2	100.0	164
6-7	7.7	5.5	8.9	77.9	100.0	152
8-9	10.3	1.8	5.4	82.5	100.0	154
10-11	16.0	0.8	7.0	76.2	100.0	170
12-13	13.9	1.5	6.3	78.3	100.0	157
14-15	18.5	0.5	1.2	79.8	100.0	152
16-17	28.9	0.6	2.5	68.0	100.0	143
18-19	45.8	0.0	0.8	53.4	100.0	108
20-21	52.0	0.0	0.0	48.0	100.0	130
22-23	73.0	0.0	1.0	26.0	100.0	147
24-25	87.9	0.0	0.4	11.7	100.0	173
26-27	93.5	0.0	0.0	6.5	100.0	149
28-29	94.7	0.0	0.0	5.3	100.0	148
30-31	96.8	0.0	0.0	3.2	100.0	114
32-33	98.9	0.0	0.0	1.1	100.0	148
34-35	99.3	0.0	0.0	0.7	100.0	133

Note: Breastfeeding status refers to preceding 24 hours. Children classified as breastfed and plain water only receive no supplements.

### Types of Supplemental Foods

Table 9.3 presents more detailed information on the types of foods given to children under age three during the 24-hour period before the survey. The results suggest that Egyptian mothers are much less likely to give a child infant formula than other types of food. This was very clear for children age less than 2 months. Milk supplements and solid or semi-solid foods are associated with the child's age. Up to 2 years age, milk supplements increase with increasing age. The solid and semi solid foods continue increasing with increasing ages, as they are the common weaning foods.

Feeding with a bottle with a nipple increases the risk of illness among young children. Moreover, the use of a bottle with a nipple can reduce the period when the mother is not at risk of conception since bottle feeding is associated with lessening of the intensity of breastfeeding and a consequent shortening of the period of postpartum amenorrhea. Overall, bottle feeding is minor among Egyptian children, especially in the early ages. The maximum percentage of children fed with bottle was among children with age 6-7 months (24 percent) (not shown in the table).

**Table 9.3 Types of food received by children in the preceding 24 hours**

Percentage of children under 36 months of age who received specific types of food in the 24 hours before the interview and the percentage using bottle with a nipple, by breastfeeding status and child's age in months, Egypt 1998

Age in months	Infant formula	Other milk	Other liquid	Any solid/semi-solid	Using bottle with a nipple	Number of children
< 2	0.8	9.1	25.9	1.0	16.6	130
2-3	8.4	19.2	41.4	12.4	21.0	179
4-5	12.7	26.0	44.9	25.8	23.9	155
6-7	25.4	32.1	52.9	54.6	24.0	140
8-9	22.7	37.1	56.9	73.5	18.4	138
10-11	14.8	54.9	59.5	81.6	13.8	143
12-13	16.6	52.0	53.1	87.5	13.3	135
14-15	8.9	61.9	69.5	90.9	9.0	124
16-17	15.0	53.2	64.4	93.6	6.1	102
18-19	9.9	44.4	57.0	95.9	9.1	59
20-21	20.5	56.0	67.7	95.8	2.6	62
22-23	8.2	68.4	66.9	96.4	9.4	40

### **Differentials in the Duration of Breastfeeding**

Table 9.4 shows the median duration of breastfeeding by background characteristics. The median duration of breastfeeding is 19 months. The median duration of breastfeeding is slightly longer for male children, rural children, and children born to mothers less than a primary education.

**Table 9.4 Median duration and frequency of breastfeeding**

Median duration of any, exclusive and full breastfeeding among children according to background characteristics, Egypt 1998.

Background characteristic	Median duration of breastfeeding in months			Number of children
	Any	Exclusive	Full	
<b>Sex</b>				
Male	19.6	1.6	2.0	1,504
Female	18.6	1.6	2.0	1,296
<b>Urban-rural residence</b>				
Urban	18.3	0.9	1.0	1,072
Rural	19.6	2.0	2.5	1,728
<b>Place of residence</b>				
Urban Governorates	17.6	0.7	0.7	520
Lower Egypt	19.4	2.0	2.4	1,070
Urban	17.9	1.7	2.0	232
Rural	19.6	2.1	2.5	838
Upper Egypt	19.7	1.6	2.3	1,209
Urban	19.6	0.7	0.7	319
Rural	19.6	1.9	2.6	890
<b>Mother's education</b>				
No education	19.5	1.9	2.4	1,112
Some primary	19.7	1.6	2.0	395
Primary through secondary	18.2	1.8	2.2	386
Completed secondary/higher	18.7	1.2	1.4	907
<b>Assistance at delivery</b>				
Medically-trained personal	19.0	1.6	1.9	1,653
Daya	19.2	1.9	2.5	1,068
Other or none	24.3	0.4	0.4	79
<b>All children</b>	19.1	1.6	2.0	2,800
Mean	18.4	3.0	4.1	--
Prevalence/Incidence mean	18.4	2.4	3.7	--

The median duration of exclusive breastfeeding is 1.6 months. The duration of exclusive breastfeeding is longer for children in rural areas than in urban areas and for children of mothers with less than a primary education.

## 9.2 Nutritional Status of Children

Nutritional status is a major determinant of a child's susceptibility to disease, thus the risk of dying. Both inadequate or unbalanced diets and chronic illness are associated with poor nutritional status among children. To assess nutritional status, all children of women interviewed in the 1998 EIDHS who had been born since January 1993 were weighed and their heights were measured.

Using these anthropometric measurements as well as information on the ages of the children, three standard indices of physical growth describing the nutritional status of children are constructed: **height-for-age**, **weight-for-height**, and **weight-for-age**. Each index measures a somewhat different aspect of nutritional status. The height-for-age index provides an indicator of linear growth retardation and, thus, assesses the proportion of children who are *stunted*. Stunting of a child's growth may be the result of a failure to receive adequate nutrition over a long period of time or of the effects of recurrent or chronic illness. The weight-for-height index measures body mass in relation to body length and provides a measure of the proportion of children who are *wasted*. Wasting is an outcome of a failure to receive adequate nutrition during the period immediately before the survey. It may be the result of recent episodes of illness or acute food shortages. The weight-for-age index is a composite index of height-for-age and weight-for-height, and, thus, does not distinguish between the effects of acute malnutrition (wasting) and chronic malnutrition (stunting). A child can be *underweight* because he is wasted, stunted or both.

As recommended by the World Health Organization (WHO), evaluation of nutritional status in this report is based on the comparison of the indices for the population of children in the survey with those reported for a reference population of well-nourished children. Use of a reference population is based upon the finding that well-nourished children in all population groups follow similar growth patterns and, thus, exhibit similar distributions with respect to height and weight at given ages (Martorell and Habicht, 1986). One of the most commonly used reference populations, and the one used for this study, is the international reference population defined by the U.S. National Center for Health Statistics (NCHS) and accepted by WHO and the U.S. Center for Disease Control (CDC). Children whose values on an index fall below minus two standard deviations (-2 SD) from the median for the reference population is considered as undernourished and those values fall below minus three standard deviations (-3 SD) from the reference population median are considered to be *severely* undernourished. In a well-nourished population, only 2.3 percent of children fall below minus two standard deviations for each of the three indices.

### Levels and Differentials in Nutrition Status

Table 9.5 shows the percentage of children under age five who are classified as malnourished according to the height-for-age, weight-for-height, and weight-for-age indices by the child's age and selected other demographic characteristics. Overall, around one-fifth of children under age five are considered to be stunted or too short for their age and 5 percent are wasted, or too thin for their height. The proportion considered as underweight is 11 percent.

The child's age is closely associated with nutrition status. Children under age 6 months are much less likely to be undernourished than older children. The highest level of stunting is found among children in the 12-23 month age group, while the highest proportions of children who are wasted or underweight are observed for children age 6-11 months.

The table shows that a child's gender is not closely associated with the likelihood that the child will be undernourished. However, the likelihood that a child will be undernourished generally rises with a child's birth order and declines as the length of the birth interval increases.



**Table 9.5 Nutritional status by demographic characteristics**

Percentage of children under five years of age who are classified as undernourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by selected demographic characteristics, Egypt 1998

Demographic characteristics	Height-for-age (stunting)		Weight-for-height (wasting)		Weight-for-age (underweight)		Number of children
	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	
<b>Age</b>							
<6 months	1.7	8.0	1.8	7.8	0.8	4.3	418
6-11 months	11.8	27.9	2.5	8.6	7.9	21.9	436
12-23 months	16.0	31.5	1.4	4.8	3.5	15.6	740
24-35 months	9.1	23.1	1.8	6.4	2.5	12.3	803
36-47 months	5.4	16.4	0.7	3.4	1.9	6.9	811
48-59 months	5.7	14.8	0.5	2.3	0.8	5.7	790
<b>Sex</b>							
Male	9.3	21.3	1.6	5.6	2.6	11.4	2,066
Female	7.6	19.9	1.0	4.5	2.7	10.0	1,391
<b>Birth order</b>							
1	7.6	17.7	0.8	4.0	2.4	10.0	1,080
2-3	8.2	19.7	1.0	4.2	2.2	9.4	1,595
4-5	9.1	24.1	1.9	6.9	3.3	12.8	775
6+	10.0	24.1	2.4	7.4	3.3	13.2	547
<b>Birth interval</b>							
First birth	7.6	17.8	0.8	4.0	2.4	9.9	1,087
<24 months	12.0	24.7	1.9	6.4	3.3	14.0	711
24-47 months	7.4	21.7	1.7	5.5	2.4	10.9	1,395
48+ months	8.5	19.0	0.8	4.6	2.9	8.6	804
<b>All children</b>	<b>8.5</b>	<b>20.6</b>	<b>1.3</b>	<b>5.1</b>	<b>2.6</b>	<b>10.7</b>	<b>3,997</b>

Note: Figures are for children born in the 0-59 months preceding the survey. Each index is expressed in terms of the number of standard deviation (SD) units from the median of the NCHS/CDC/WHO international reference population. Children are classified as undernourished if their z-scores are below minus two standard deviations (-2 SD) from the median of the reference population and as *severely* undernourished if their z-scores are below minus three standard deviations (-3 SD) from the median of the reference population.

<sup>1</sup> Includes children who are below -3 SD.

Data on the nutrition status indicators are presented in Table 9.6 by residence and the educational level of the child's mother. Rural children, especially those living in Upper Egypt, are less well off than urban children with regard to all of the indicators of nutrition status. The level of stunting among rural children, for example, is 22 percent compared to 19 percent among urban children.

As expected, a child's nutrition status also is positively related to the mother's educational level. For example, the proportion of children who are stunted varies from 15 percent among children of mother's who have at least a secondary education to 24 percent among children whose mothers have no education.

**Table 9.6 Nutritional status by socio-economic characteristics**

Percentage of children under five years of age who are classified as undernourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by selected socio-economic characteristics, Egypt 1997

Socio-economic characteristics	Height-for-age (stunting)		Weight-for-height (wasting)		Weight-for-age (underweight)		Number of children
	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	
	<b>Urban-rural residence</b>						
Urban	7.7	19.1	0.6	3.7	2.1	8.9	1,559
Rural	9.0	21.6	1.8	5.9	3.0	11.9	2,439
<b>Place of residence</b>							
Urban Governorates	8.2	21.9	0.6	3.3	2.5	9.2	737
Lower Egypt	6.0	16.3	1.0	3.7	2	8.4	1,591
Urban	4.7	10.3	0.6	3.6	0.6	4.7	377
Rural	6.4	18.2	1.1	3.7	2.4	9.5	1,214
Upper Egypt	10.9	24.1	1.9	7.2	3.3	13.7	1,669
Urban	9.5	22.1	0.5	4.6	2.9	12.1	444
Rural	11.4	24.9	2.4	8.1	3.5	14.2	1,225
<b>Education</b>							
No education	9.8	23.5	1.6	5.9	3.8	12.6	1,627
Some primary	9.2	22.3	0.8	5.2	1.9	9.7	561
Primary comp./some secondary	9.1	22.3	2.2	5.5	2.1	11.4	563
Secondary comp./Higher	6.2	15.3	0.8	3.7	1.6	8.5	1,246
All children	8.5	20.6	1.3	5.1	2.6	10.7	3,997

Note: Figures are for children born in the 0-59 months preceding the survey. Each index is expressed in terms of the number of standard deviation (SD) units from the median of the NCHS/CDC/WHO international reference population. Children are classified as undernourished if their z-scores are below minus two standard deviations (-2 SD) from the median of the reference population and as severely undernourished if their z-scores are below minus three standard deviations (-3 SD) from the median of the reference population.

<sup>1</sup> Includes children who are below -3 SD.

### Trends in Nutrition Status

Figure 9.1 looks at recent trends in the percentage of stunting children under age 5 in Egypt, using data from the 1992, 1995, 1997 and 1998 DHS surveys. The figure suggests the level of stunting among young children has been gradually declining since 1995.

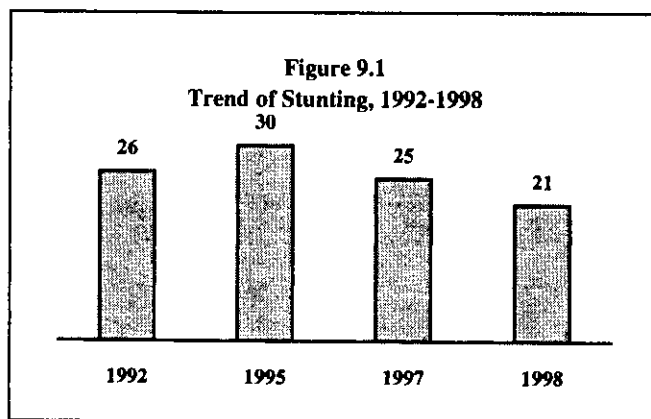


Table 9.7 presents the trends in the nutritional status of children under age five by background characteristics. The results indicate that levels of under-nutrition increased between 1992 and 1995, before declining slowly in the next three years. The level of wasted remained relatively stable to a

level between 3-4 percent. During the study period, 10-12 percent were considered to be underweight.

**Table 9.7 Trends in nutrition status of children**

Among children under age five, the percentage classified as undernourished according to height-for-age, weight-for-height, and weight-for-age by residence, Egypt 1992-1998

Residence	Height-for-age				Weight-for-height				Weight-for-age			
	1992	1995	1997	1998	1992	1995	1997	1998	1992	1995	1997	1998
<b>Urban-rural residence</b>												
Urban	20.0	22.8	20.0	19.1	3.4	4.7	5.5	3.7	7.1	9.9	9.5	8.9
Rural	29.6	34.4	22.8	21.6	3.4	4.5	6.5	5.9	11.6	14.1	13.1	11.9
<b>Place of residence</b>												
Urban Governorates	16.8	18.4	18.4	21.9	4.5	5.4	5.9	3.3	7.7	9.1	11	9.2
Lower Egypt	27.0	28.0	21.5	16.3	2.6	3.0	4.6	3.7	8.1	9.6	9.1	8.4
Urban	20.5	25.6	17.6	10.3	2.3	2.4	4.6	3.6	4.5	8.8	7.4	4.7
Rural	29.1	28.8	22.8	18.2	2.7	3.2	4.6	3.7	9.3	9.9	9.7	9.5
Upper Egypt	28.7	36.5	31.4	24.1	3.7	5.2	7.8	7.2	12.6	16.1	14.6	13.7
Urban	24.6	27.2	24.7	22.1	2.8	4.7	5.7	4.6	8.8	11	8.9	12.1
Rural	30.0	39.7	34.0	24.9	4.0	5.3	8.6	8.1	13.8	17.8	16.8	14.2
Total	26.0	29.8	24.9	20.6	3.4	4.6	6.1	5.1	9.9	12.5	11.7	10.7

Note: Figures are for children born in the 0-59 months preceding the survey. Each index is expressed in terms of the number of standard deviation (SD) units from the median of the NCHS/CDC/WHO international reference population. Children are classified as undernourished if their z-scores are below minus two standard deviations (-2 SD) from the median of the reference population.

With regard to the patterns by residence, urban children were less likely to be stunted or underweight than rural children throughout the period. Children in the Urban Governorates exhibited the least evidence of under-nutrition at all points in time, while children in rural Upper Egypt consistently had the highest levels of both acute and chronic under-nutrition throughout the period.

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# **Appendix A**



Table A.1 List of variables selected for sampling error calculation, Egypt Interim Survey 1998

<b>Variable name</b>	<b>Estimate</b>	<b>Base population</b>
No education	Proportion	Ever-married women 15-49
Ever used any contraceptive method	Proportion	Currently married women 15-49
Currently using any contraceptive method	Proportion	Currently married women 15-49
Currently using a modern method	Proportion	Currently married women 15-49
Currently using pill	Proportion	Currently married women 15-49
Currently using IUD	Proportion	Currently married women 15-49
Currently using injectables	Proportion	Currently married women 15-49
Using public sector source	Proportion	Currently married women 15-49
Want no more children	Proportion	Currently married women 15-49
Want to delay at least 2 years	Proportion	Currently married women 15-49
Mothers received tetanus injection	Proportion	Births in last 5 years
Mothers received medical care at delivery	Proportion	Births in last 5 years
Had diarrhea in last 2 weeks	Proportion	Children 0-59 months
Treated with ORS packets	Proportion	Children under 5 with diarrhea in last 2 weeks
Consulted medical personnel about diarrhea	Proportion	Children under 5 with diarrhea in last 2 weeks
Having immunization record	Proportion	Children 12-23 months
Received BCG vaccination	Proportion	Children 12-23 months
Received DPT vaccination (3 doses)	Proportion	Children 12-23 months
Received polio vaccination (3 doses)	Proportion	Children 12-23 months
Received measles vaccination	Proportion	Children 12-23 months
Received hepatitis vaccination (3 doses)	Proportion	Children 12-23 months
Fully immunized	Proportion	Children 12-23 months
Weight-for-height	Proportion	Children 0-59 months
Height-for-age	Proportion	Children 0-59 months
Weight-for-age	Proportion	Children 0-59 months
Total fertility rate (0-3 years)	Rate	Women-years of exposure to childbearing
Neonatal mortality rate (0-9 years)	Rate	Number of births
Postneonatal mortality rate (0-9 years)	Rate	Number of births
Infant mortality rate (0-9 years)	Rate	Number of births
Child mortality rate (0-9 years)	Rate	Number of births
Under-five mortality rate (0-9 years)	Rate	Number of births



Table A.2 Sampling errors – National sample, Egypt Interim Survey 1998

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)			R-2SE	R+2SE
No education	0.426	0.013	6406	6406	2.030	0.029	0.401	0.451
Ever used any contraceptive method	0.723	0.010	5977	5971	1.744	0.014	0.703	0.743
Currently using any contraceptive method	0.518	0.010	5977	5971	1.550	0.019	0.498	0.538
Currently using a modern method	0.495	0.010	5977	5971	1.504	0.020	0.475	0.514
Currently using pill	0.087	0.004	5977	5971	1.197	0.050	0.078	0.096
Currently using IUD	0.343	0.008	5977	5971	1.377	0.025	0.326	0.360
Currently using injectables	0.039	0.003	5977	5971	1.200	0.077	0.033	0.045
Using public sector source	0.479	0.015	2900	2953	1.560	0.031	0.449	0.508
Want no more children	0.594	0.008	5977	5971	1.192	0.013	0.579	0.609
Want to delay at least 2 years	0.080	0.004	5977	5971	1.094	0.051	0.072	0.089
Mothers received tetanus injection	0.701	0.041	4657	4642	1.364	0.058	0.619	0.783
Mothers received medical care at delivery	0.552	0.047	4657	4642	1.454	0.210	0.458	0.646
Had diarrhea in last 2 weeks	0.107	0.006	4430	4411	1.255	0.052	0.096	0.118
Treated with ORS packets	0.320	0.022	583	537	1.056	0.069	0.276	0.364
Consulted medical personnel about diarrhea	0.441	0.023	583	537	1.082	0.051	0.396	0.487
Having immunization record	0.647	0.018	861	837	1.079	0.028	0.611	0.683
Received BCG vaccination	0.981	0.006	861	837	1.245	0.006	0.970	0.993
Received DPT vaccination (3 doses)	0.875	0.014	861	837	1.198	0.016	0.848	0.903
Received polio vaccination (3 doses)	0.896	0.013	861	837	1.246	0.014	0.871	0.921
Received measles vaccination	0.931	0.010	861	837	1.079	0.011	0.911	0.951
Received hepatitis vaccination (3 doses)	0.814	0.016	861	837	1.174	0.020	0.781	0.846
Fully immunized	0.843	0.015	861	837	1.204	0.018	0.813	0.874
Weight-for-height	0.051	0.005	4048	3997	1.251	0.091	0.040	0.600
Height-for-age	0.206	0.008	4048	3997	1.213	0.039	0.190	0.222
Weight-for-age	0.107	0.007	4048	3997	1.237	0.061	0.094	0.120
Total fertility rate (0-3 years)	3.404	0.066	NA	162102	1.061	0.019	3.273	3.536
Neonatal mortality rate (0-9 years)	20.807	2.431	9093	9102	1.061	0.117	15.946	25.669
Postneonatal mortality rate (0-9 years)	24.767	2.621	9111	9121	1.057	0.106	19.526	30.009
Infant mortality rate (0-9 years)	45.575	3.533	9112	9122	1.021	0.078	38.508	52.642
Child mortality rate (0-9 years)	12.911	2.015	9125	9136	1.083	0.156	8.881	16.940
Under-five mortality rate (0-9 years)	57.897	4.072	9145	9156	1.056	0.070	49.752	66.042

# **Appendix B**



## An Evaluation of the Significance of Recent Trends in Key Demographic and Health Indicators for Egypt

Egypt had three Demographic and Health Surveys within a three-year period between 1995 and 1998. The following examines the issue of the statistical significance of the changes that were observed in key demographic and health indicators between these surveys. In general, the assessment indicates that statistically significant changes can be documented between the 1995 and 1997 surveys and the 1995 and 1998 surveys. However, in the case of most indicators, the changes observed between the 1997 and 1998 surveys were not statistically significant.

### Trends in Family Planning and Maternal and Child Health Indicators

An assessment of the significance of differences in the results of the three Demographic and Health surveys was undertaken for the following key family planning and maternal and child health indicators:

#### Family planning

- Percentage using any method
- Percentage using the IUD
- Percentage using injectables
- Percentage using the pill

#### Maternal and child health

- Percentage of births in which mother received any antenatal care
- Percentage of births in which mother received regular antenatal care
- Percentage of births in which mother was assisted at delivery by medical personnel
- Percentage of births in which the mother received tetanus toxoid injections
- Percentage of children fully immunized

Table 1 summarizes information on the levels of each indicator estimated in 1995 Demographic and Health Survey, the 1997 Interim Demographic and Health Survey, and the 1998 Interim Demographic and Health Survey. Information on the sampling errors calculated for each of these indicators for the various surveys is shown in Appendix A.

Indicator	Population	1995 DHS	1997 IDHS	1998 IDHS
<b>Family planning</b>				
% using any method	Currently married women 15-49	47.9	54.5	51.8
% using IUD	Currently married women 15-49	30.0	34.6	34.3
% using pill	Currently married women 15-49	10.4	10.2	8.7
% using injectables	Currently married women 15-49	2.4	3.9	3.9
<b>Maternal and child health</b>				
% receiving antenatal care	Births 0-4 years before survey	39.1	52.0	47.2
% receiving regular antenatal care	Births 0-4 years before survey	28.3	31.8	33.1
% assisted at delivery by medical personnel	Births 0-4 years before survey	46.3	56.4	55.2
% receiving tetanus toxoid injection	Births 0-4 years before survey	69.5	72.1	70.1
% fully immunized	Children 12-23 months	79.1	82.8	84.3

A t-test was performed to assess the significance of the differences between the estimates of these indicators for each pair of DHS surveys (i.e., 1995 and 1997, 1995 and 1998, and 1997 and 1998). The procedure used in performing the tests is described in the Appendix C. Table 2 summarizes the results of the significance testing of the key indicators for the various pairs of surveys.

Table 2 indicates that the differences between the estimates from the 1995 DHS and 1997 IDHS were uniformly statistically significant. Thus, for example, the increase in family planning use observed in the current use of family planning between the 1995 DHS (47 percent) and 1998 IDHS (55 percent) was found to be significant. The differences between the estimates for the 1995 DHS and 1998 IDHS were also generally found to be statistically significant for all of the indicators shown in Table 2.

The situation is less uniform with respect to the differences in the estimates from the 1997 IDHS and the 1998 IDHS. The decrease in the overall rate of family planning use between the two surveys (from 54.5 percent in the 1997 survey to 51.8 percent in the 1998 survey) was found to be significant; this was largely due to the significant decline in the rate of pill use between the two surveys. With regard to the health indicators, the changes in the antenatal care indicators between the 1997 and 1998 surveys were found to be significant.

The absence of significant changes between the 1997 and 1998 surveys is not surprising. It is likely due to the comparatively short time between the two surveys.

Indicator	1995 DHS- 1997 IDHS	1995 DHS- 1998 IDHS	1997 IDHS- 1998 IDHS
<b>Family planning</b>			
% using any method	S	S	S
% using IUD	S	S	NS
% using pill	NS	S	S
% using injectables	S	S	NS
<b>Maternal and child health</b>			
% receiving antenatal care	S	S	S
% receiving regular antenatal care	S	S	S
% assisted at delivery by medical personnel	S	NS	NS
% receiving tetanus toxoid injection	S	NS	NS
% fully immunized	S	NS	NS

# **Appendix C**



### Testing the Significance of Differences in Survey Results

The significance of the differences in the estimates from DHS surveys carried out in Egypt during the period 1995 to 1998 was assessed by performing a t-test on the differences. In order to perform the test on any characteristic of interest, the following information was obtained for the characteristic in question from each pair of DHS surveys:

- the estimated values of the characteristic for each cluster in both surveys,
- the weight variables used in both surveys, and,
- the overall sample estimated values and their sampling errors in both surveys.

Clusters which were not common to the surveys were excluded from consideration.

In order to test the difference, a 95% confidence interval was computed using the sampling error of the difference between the survey results. The sampling error of the difference is calculated as follows:

$$SE(m_1 - m_2) = \sqrt{SE^2(m_1) + SE^2(m_2) - 2\rho SE(m_1) \times SE(m_2)}$$

where

$m_1$  and  $m_2$  are the estimated values from the first and second survey, respectively,  
 $SE(m_i)$ ,  $i = 1, 2$  designates the sampling error of the estimated value obtained from survey  $i$ ,  $\rho$   
 is the correlate between  $m_1$  and  $m_2$ .

This correlation is computed from the data to be used for the t-test as is shown below:

$$\rho = \frac{\sum_{j=1} (m_{1j} - \bar{m}_1)(m_{2j} - \bar{m}_2)}{\sqrt{\sum_{j=1} (m_{1j} - \bar{m}_1)^2 \times \sum_{j=1} (m_{2j} - \bar{m}_2)^2}}$$

where

$m_{ij}$  is the estimated value of the characteristic for cluster  $j$  during survey  $i$ , and  
 $\bar{m}_i$  is the weighted mean of the  $m_{ij}$ 's, and  $\sum_j$  is the sum over all clusters.

If the confidence intervals included zero, then the difference between the estimates from the pair of DHS surveys was not considered statistically significant.