

EGYPT
DEMOGRAPHIC
AND
HEALTH
SURVEY
1997

Egypt
Demographic and Health
Survey
1997

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Cairo, Egypt

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Calverton, Maryland

June 1998

The 1997 Interim Egypt Demographic and Health Survey (EIDHS-97) is part of the international Demographic and Health Surveys project. Additional information about the EIDHS-97 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). 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).

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1 Introduction

The 1997 Egypt Interim Demographic and Health Survey (EIDHS-97) is the most recent in a series of national-level population and health surveys in Egypt.¹ The EIDHS-97 was carried out by El-Zanaty and Associates. Macro International provided technical support for the survey through the Demographic and Health Surveys 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.

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

A. Survey Design and Implementation

Objectives of the Survey

The EIDHS-97 was undertaken to provide information to measure progress toward the achievement of Government of Egypt and USAID goals in the population, health and nutrition sector. The EIDHS-97 was more limited in scope than earlier DHS surveys in Egypt, focusing on the collection of information on a number of key indicators. The survey also covered a smaller sample than earlier DHS surveys.

Sample Design and Selection

The sample for the EIDHS-97 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 were excluded because they represent less than 2 percent of the total population.

A systematic random sample of around 6,000 households was chosen for the EIDHS-97. In all areas except Assuit and Souhag, the EIDHS-97 sample was drawn from the same sample points as the 1995 Demographic and Health Survey sample², using the household listings that were prepared for the 1995 survey. Assuit and Souhag governorates were oversampled in the 1995 survey because they were the sites for a special indepth study on the reasons for the non-use of contraception. This study involved several rounds of follow-up interviews with respondents from these governorates in the 1995 survey. To avoid any effect that the revisits that were made to the sample segments in the indepth study might have on the outcome of the 1997 Interim Survey, a decision was made to select new segments in Assuit and Souhag. In each of these two governorates, therefore, the first stage of sample selection for the EIDHS-97 involved the selection of a subsample of 17 primary sampling units (PSUs) from the total number of PSUs in the 1995 EDHS sample. At the second stage, two new segments were chosen in each of the selected PSUs. A listing for all households living within each of the segments in the selected PSUs was then prepared and used for the final sample selection in the

¹ The EIDHS-97 is the fourth Demographic and Health Survey to be implemented in Egypt; the earlier DHS surveys were conducted in 1988, 1992, and 1995. 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).

² For more information on the sample design for the 1995 EDHS, see El-Zanaty et al., 1996.

two governorates.

In order to allow for the subregional estimates, the number of households selected from each governorate in the 1997 EIDHS is disproportionate to the size of the population in the governorate. Thus, the EIDHS-97 sample is not self-weighting at the national level.

Questionnaires

Two questionnaires were used in the EIDHS-97: a household questionnaire and a woman's questionnaire. The household and woman questionnaires were based on the questionnaires used in the EDHS-88, the EDHS-92, and the EDHS-95 and on model survey instruments developed in the DHS program. However, because of the interim nature of the survey, the content of the 1997 questionnaires was more limited in scope than in the earlier surveys.

The questionnaires were developed in English and translated into Arabic. A pretest of the household and woman questionnaires was conducted in October 1997.

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 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 immunization and health, marriage and husband's background, and height and weight of children and mothers.

Data Collection and Processing

Eight teams collected data for the EIDHS-97; each team consisted of four interviewers and 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 November 1997. The main fieldwork began on December 2nd, 1997. All interviews, callbacks, and reinterviews were completed by the first week of January 1998.

Questionnaires were returned to the EIDHS survey office in Cairo for data processing. The office editing staff first checked that questionnaires for all selected households and eligible respondents had been received from the field staff. In addition, the few questions which had not been precoded (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. Office editing and data processing activities were initiated almost immediately after the beginning of fieldwork and were completed in late January 1998.

B. Coverage of the Sample

Table 1.1 presents information on the results of the household and individual interviews. A total of 6,318 households were selected for the EIDHS-97 sample. Household interviews were completed for 6,067 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 the household on the night before the interview. A total of 5,615 eligible women were identified in the interviewed households in the EIDHS-97 sample. Of these women, 5,554 were successfully interviewed, with a response rate of 98.9 percent.

Result of interview and response rate	Urban		Urban Governorates	Lower Egypt		Upper Egypt		Total		
	Urban	Rural		Total	Urban	Rural	Total	Urban	Rural	
Households (HH)										
Sampled	3,259	3,059	1,635	2,629	929	1,700	2,054	695	1,359	6,318
Found	3,142	3,000	1,573	2,556	892	1,664	2,013	677	1,336	6,142
Interviewed	3,087	2,980	1,537	2,531	878	1,653	1,999	672	1,327	6,067
HH response rate	98.2	99.3	97.7	99.0	98.4	99.3	99.3	99.3	99.3	98.8
Eligible women (EW)										
Identified	2,524	3,091	1,276	2,334	675	1,659	2,005	573	1,432	5,615
Interviewed	2,502	3,052	1,266	2,303	667	1,636	1,985	569	1,416	5,554
EW response rate	99.1	98.7	99.2	98.7	98.8	98.6	99.0	99.3	98.9	98.9

C. Background Characteristics of Respondents

Table 1.2 presents the distribution of ever-married women 15-49 interviewed in the EIDHS-97 by selected background characteristics. Almost all of the respondents were married at the time of the interview, with 7 percent reporting that they were widowed or divorced. Considering the age distribution, 17 percent of the sample were under age 25, 35 percent were in the 25-34 age group, and 48 percent were over age 35. The age distribution of the EIDHS-97 reflects the fact that the age at first marriage has been steadily increasing over time in Egypt.

The majority of the EIDHS-97 respondents were from rural Egypt, with 30 percent residing in rural areas in Lower Egypt and 24 percent in rural areas in Upper Egypt. More than half of the urban residents—24 percent of the entire sample—were living in one of the four Urban Governorates.

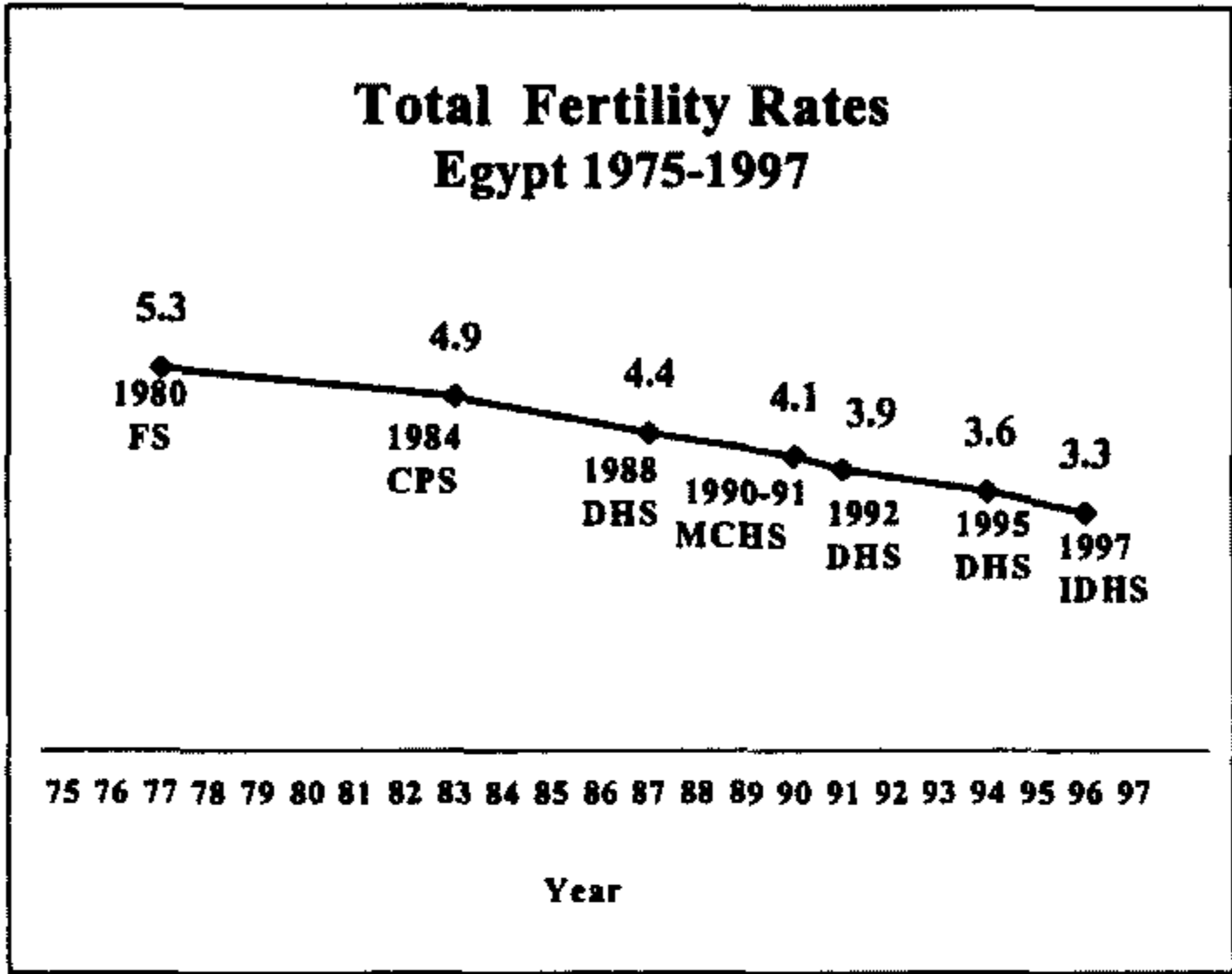
The educational attainment of EIDHS-97 respondents varied considerably. More than four in ten women in the sample had never attended school, 19 percent had had less than a primary education, 13 percent had completed the primary but not secondary level, and 26 percent had completed at least the secondary level.

Table 1.2 Background characteristics of respondents

Percent distribution of ever-married women 15-49 by selected background characteristics, Egypt 1997

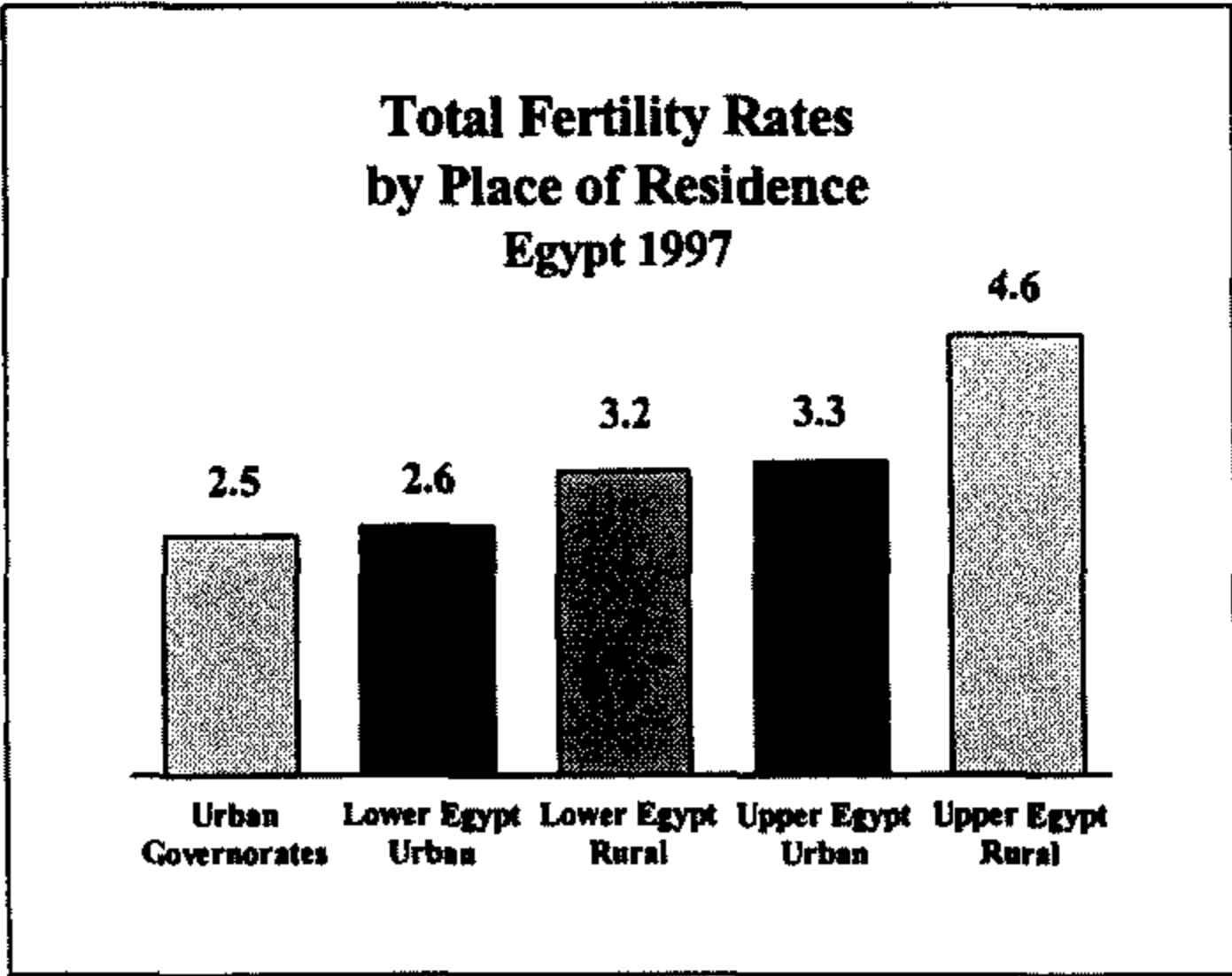
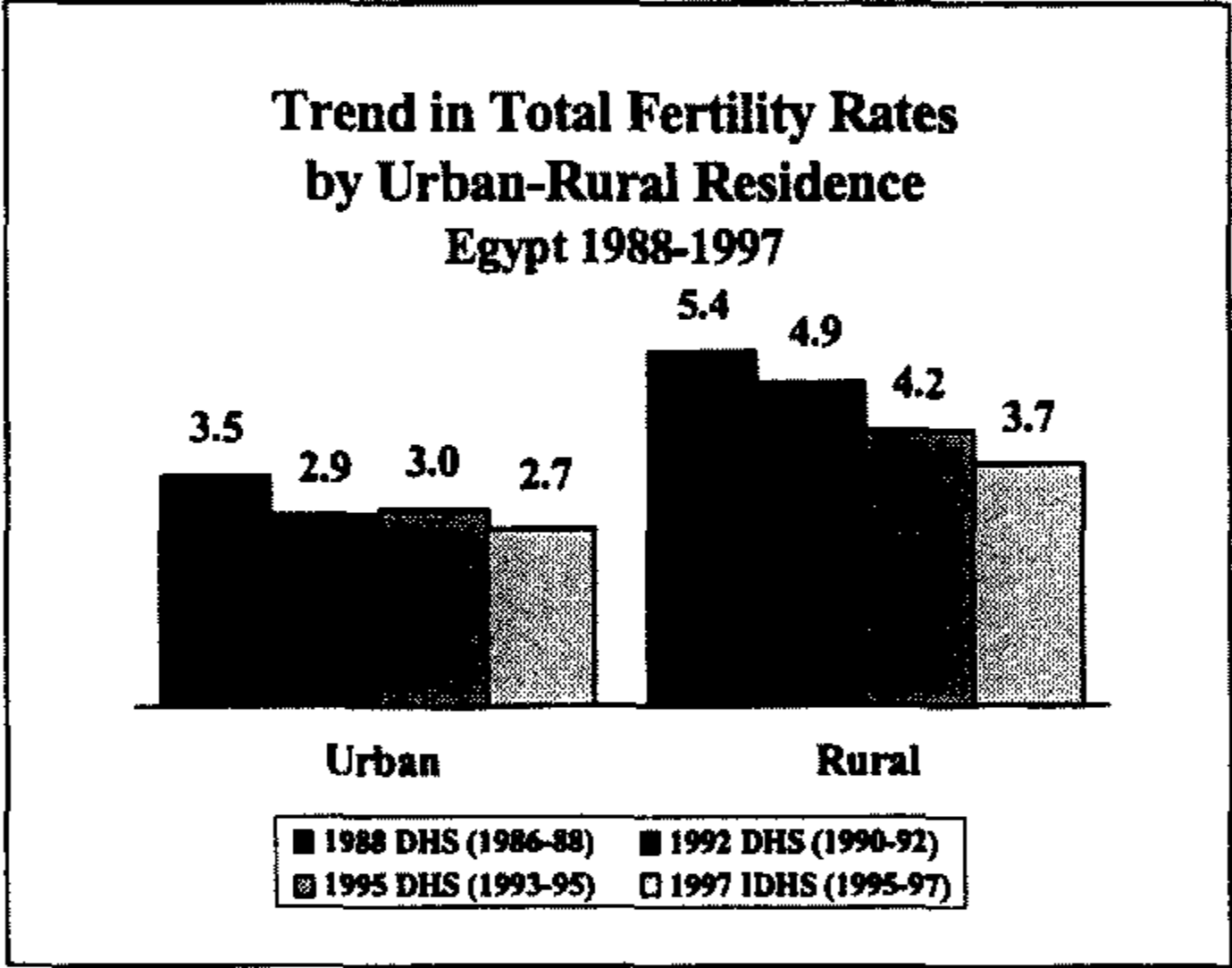
Background characteristics	Weighted percent	Number of women	
		Weighted number	Unweighted number
Marital status			
Currently married	92.9	5,157	5,152
Widowed	5.3	295	304
Divorced	1.8	101	98
Age			
15-19	4.2	232	234
20-24	13.0	719	711
25-29	17.0	947	944
30-34	18.2	1,012	999
35-39	18.6	1,032	1,000
40-44	15.7	870	888
45-49	13.4	742	778
Urban-rural residence			
Urban	45.8	2,546	2,502
Rural	54.2	3,008	3,052
Place of residence			
Urban Governorates	23.6	1,308	1,266
Lower Egypt	42.1	2,338	2,303
Urban	11.7	651	667
Rural	30.4	1,687	1,636
Upper Egypt	34.4	1,908	1,985
Urban	10.6	586	569
Rural	23.8	1,322	1,416
Educational level			
No education	43.0	2,388	2,422
Some primary	18.5	1,030	1,019
Primary completed/Some secondary	12.8	709	699
Secondary completed/Higher	25.7	1,428	1,414
Total	100.0	5,554	5,554





At the time of the 1997 EIDHS, Egyptian women were having an average of 3.3 births—two births fewer than the average in the 1970s.

Rural fertility has declined more rapidly than urban fertility; as a result, the urban-rural fertility gap narrowed from around two births in the mid-1980s to one birth in the mid-1990s.



The fertility rate among women from urban Upper Egypt is more than 20 percent higher than the rate among women from the Urban Governorates or urban Lower Egypt. Rural fertility also is higher in Upper Egypt than in Lower Egypt.

2 Fertility

In the EIDHS-97, retrospective reproductive histories were obtained from all respondents. 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 month and year in which each child was born, the child's name, sex and, 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.

A. Current Fertility

Table 2.1 presents age-specific and total fertility rates for the three-year period before the survey according to the mother's residence at the time of the interview (i.e., for the approximate calendar period 1995-1997). The total fertility rate indicates that, if fertility rates were to remain constant at the level prevailing during the period 1995-1997, an Egyptian woman would bear 3.3 children during her lifetime.

Age	Urban Governorates			Lower Egypt			Upper Egypt			
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	
15-19	23	73	20	36	14	45	91	29	113	52
20-24	139	223	126	190	140	207	225	177	247	186
25-29	165	209	147	187	182	187	222	187	240	189
30-34	132	139	129	108	104	109	175	164	180	135
35-39	58	74	55	61	61	62	80	64	91	65
40-44	12	24	12	16	10	19	28	18	33	18
45-49	4	5	4	3	2	3	9	11	8	5
Total 15-44	2.7	3.7	2.5	3.0	2.6	3.1	4.1	3.2	4.5	3.2
Total 15-49	2.7	3.7	2.5	3.0	2.6	3.2	4.2	3.3	4.6	3.3

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.

Rural women are having more children than urban women. At current levels, rural women will have 3.7 births by the end of the childbearing period, one birth more than urban women. A more detailed examination of the age-specific rates 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 30 compared to urban women in the same age group. For example, the age-specific fertility rate for rural women 15-19 is three times the rate among urban women in the age group, and the rate for rural women 20-24 is 60 percent higher than that for urban women in the same age group. Differences in fertility levels in the under 30 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 slightly more than 4 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, more than one birth more than the rate 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 almost the same rate as women living in the Urban Governorates.

B. Trends in Fertility

Using data from earlier surveys as well as from the EIDHS-97, Table 2.2 shows the trend in fertility in Egypt since the late 1970s. Overall, fertility levels fell by 2 births, from 5.3 births at the time of the 1980 Egypt Fertility Survey to 3.3 births at the time of the EIDHS-97. Considering the decline in the age-specific rates, fertility fell at a faster pace among women age 30 and over than among younger women.

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

¹ Rates are for the 12-month period preceding the survey.
² 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: EFS-80 – Hallouda et al., 1983, volume II, Table 4.16
ECPS-84 – unpublished results
EDHS-88 – Sayed et al., 1989, Table 3.2
EMCHS-91 – Abdel-Azeem et al., 1993, Table 7.14
EDHS-92 – El-Zanaty et al., 1993, Table 3.1
EDHS-95 – El-Zanaty et al., 1996, Table 3.1

The trend in fertility by residence is shown in Table 2.3 for the period between the 1988 EDHS and the 1997 EIDHS. Rural fertility declined more rapidly than urban fertility throughout this period. As a result, the gap between the rural and urban fertility rates decreased from almost 2 births in the mid-1980s to one birth at the time of the EIDHS-97.

By place of residence, the decline in fertility during the period was greatest in Lower Egypt. In urban areas in that region, there was around a 30 percent decline in the total fertility rate between the 1988 EDHS and the 1997 EIDHS. This was a more rapid decline than that experienced in the Urban Governorates, where fertility fell by 17 percent or in urban Upper Egypt, where fertility decreased by 21 percent during the same period.

Table 2.3 Trends in fertility by residence

Total fertility rates by urban-rural residence and place of residence, Egypt 1986-1997

Residence	EDHS-88	EMCHS-91	EDHS-92	EDHS-95	EDHS-97
	1986-1988 ²	1990-1991 ¹	1990-1992 ²	1993-1995 ²	1995-1997 ²
Urban-rural residence					
Urban	3.5	3.3	2.9	3.0	2.7
Rural	5.4	5.6	4.9	4.2	3.7
Place of residence					
Urban Governorates	3.0	2.9	2.7	2.8	2.5
Lower Egypt	4.5	U	3.7	3.2	3.0
Urban	3.8	3.5	2.8	2.7	2.6
Rural	4.7	4.9	4.1	3.5	3.2
Upper Egypt	5.4	U	5.2	4.7	4.2
Urban	4.2	3.9	3.6	3.8	3.3
Rural	6.2	6.7	6.0	5.2	4.6
Total 15-49	4.4	4.1	3.9	3.6	3.3

¹ Rates are for the 12-month period preceding the survey.

² 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.

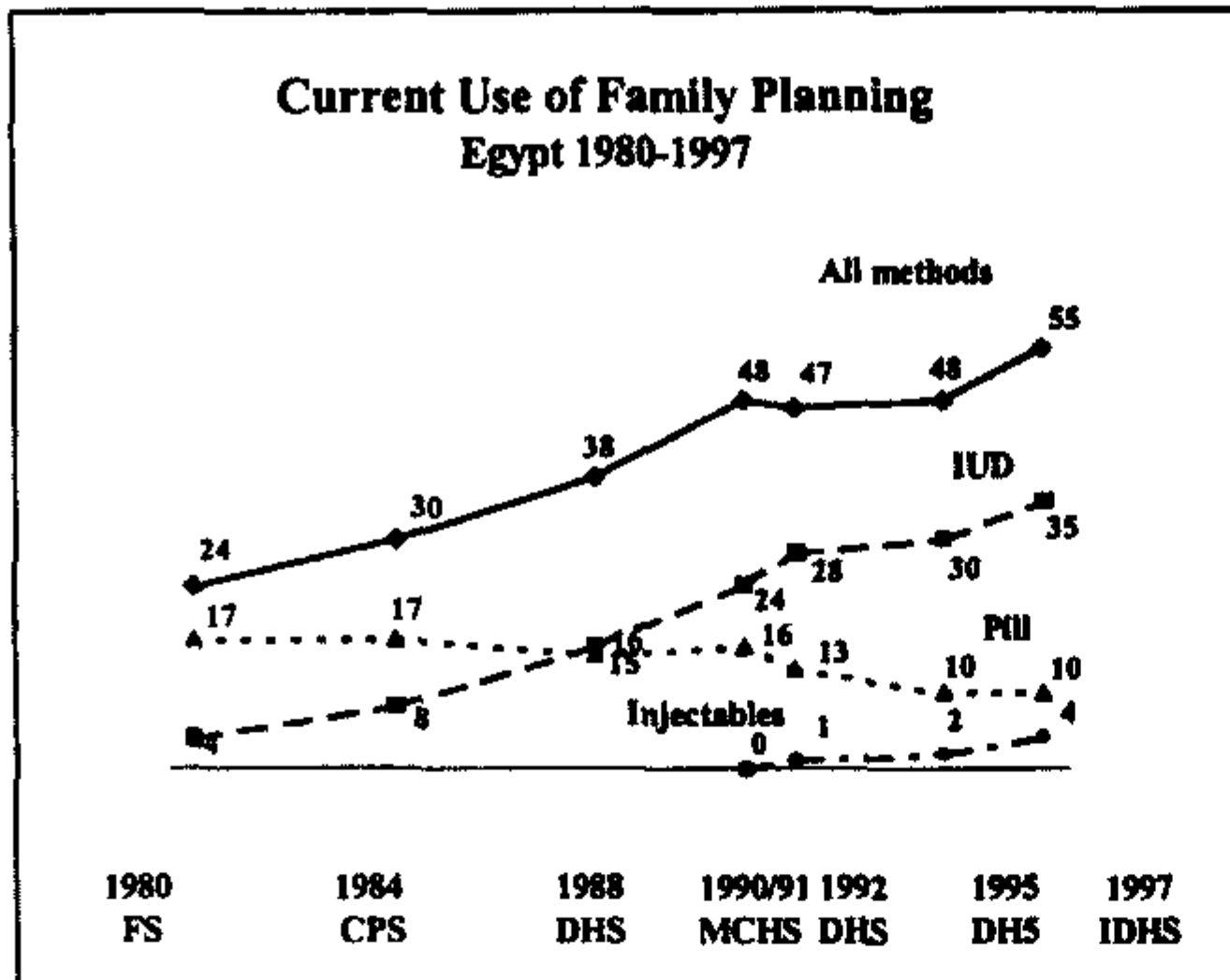
Source: EDHS-88 – Sayed et al., 1989, Table 3.1

EMCHS-91 – Abdel-Azeem et al., 1993, Table 7.11

EDHS-92 – El-Zanaty et al., 1993, Table 3.1

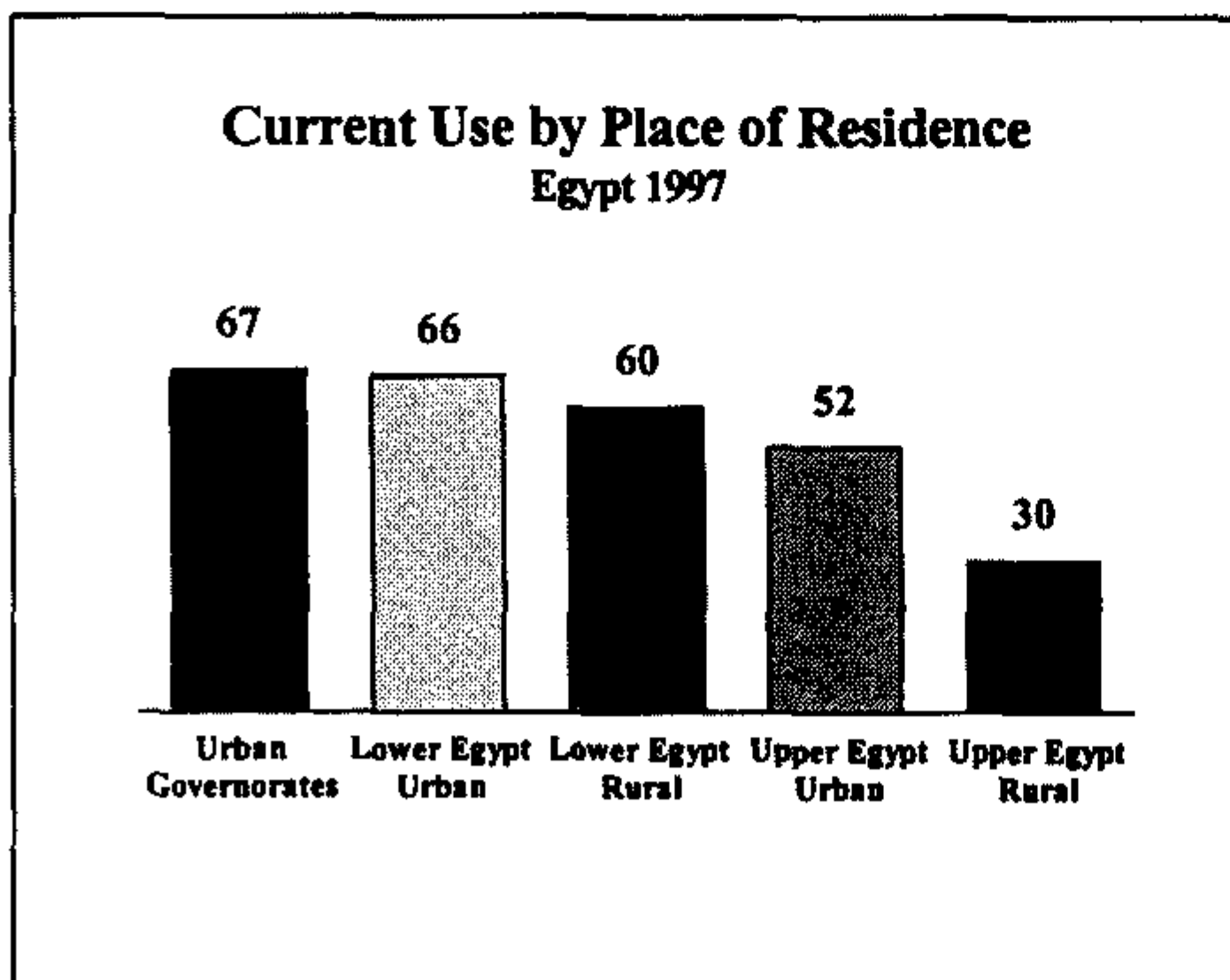
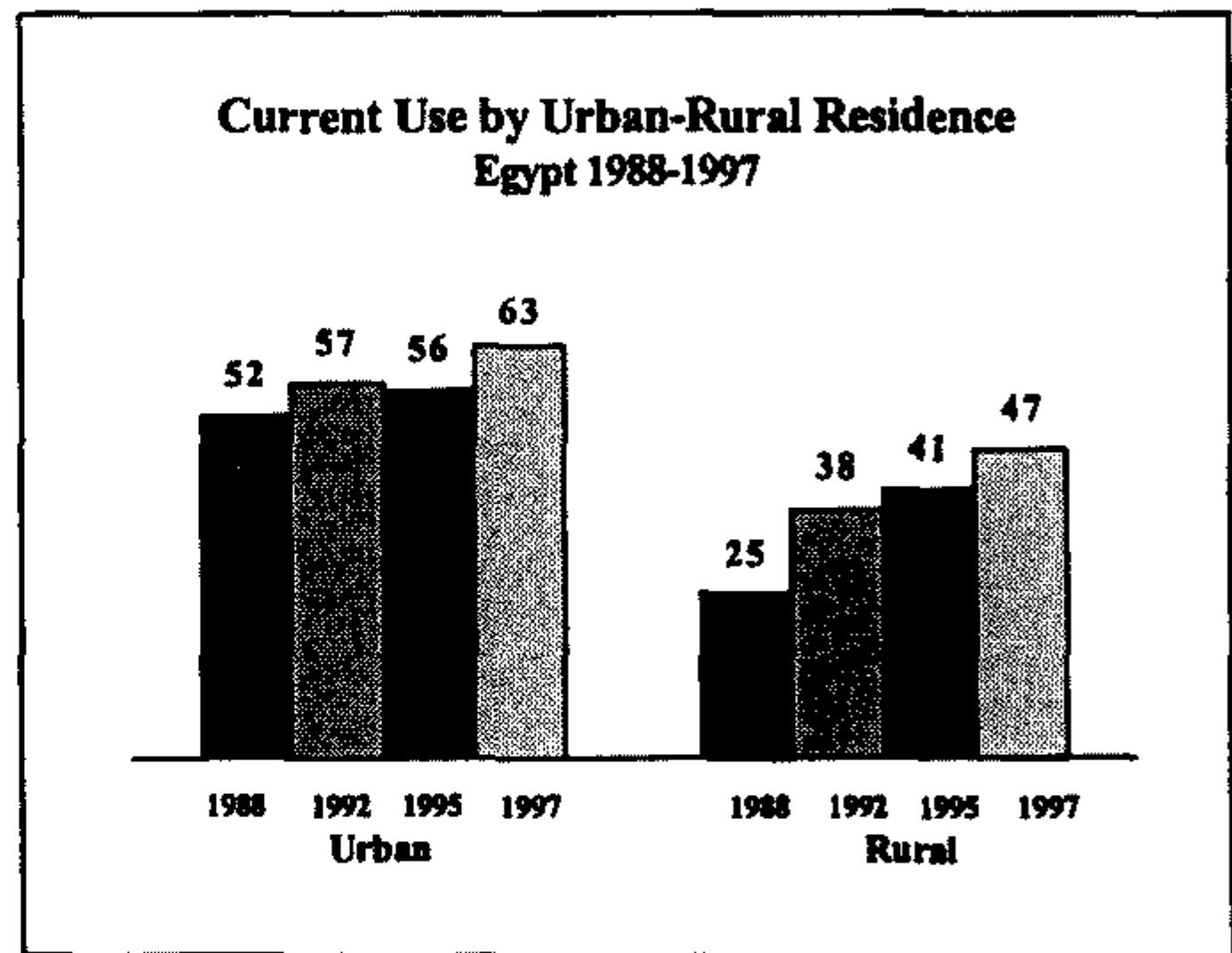
EDHS-95 – El-Zanaty et al., 1996, Table 3.1

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 1997 EIDHS. In rural Upper Egypt, fertility fell by 26 percent during the period from 6.2 births to the current level of 4.6 births.



Contraceptive use has more than doubled in Egypt since 1980. Much of the growth is the result of increased IUD use since pill use has been declining, and injectables were introduced fairly recently.

Contraceptive use rose steadily in rural areas between 1988 and 1997. In urban areas, growth was moderate during this period, with some evidence of a plateauing during the period between 1992 and 1995.



In 1997, the contraceptive use rate in rural areas in Lower Egypt was 60 percent, higher than the rate in urban Upper Egypt and twice the rate in rural areas in Upper Egypt.

3 Family Planning Knowledge and Use

The EIDHS-97 collected information on the knowledge and use of family planning. To obtain these data, respondents were first asked to name all of the methods that they had heard about. For methods not mentioned spontaneously, a description of the method was read, and the respondents were asked if they had heard of 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, women were asked if they were currently using a method, and, if so, where they had obtained the method that they were using.

A. Knowledge and Ever Use

Table 3.1 Knowledge and ever use of family planning methods

Percentage of currently married women 15-49 who know a family planning method and who have ever used a family planning method, by method, Egypt 1997

Method	Percent knowing method	Percent ever using method
Any method	99.7	75.8
Any modern method	99.6	73.7
Pill	99.5	43.0
IUD	99.4	56.1
Injectables	97.3	11.1
Norplant	72.2	0.4
Diaphragm, foam or jelly	34.8	2.1
Condom	49.2	6.6
Female sterilization	58.1	1.4
Male sterilization	9.6	--
Any traditional method	75.1	14.1
Periodic abstinence	31.1	3.3
Withdrawal	24.0	3.0
Prolonged breastfeeding	69.0	10.0
Other methods	7.5	0.8
Number of women	5,157	5,157

The EIDHS-97 findings confirm that knowledge of family planning methods is almost universal among Egyptian women (Table 3.1). With regard to knowledge of specific methods, the EIDHS-97 results indicate that virtually all currently married women have heard about the pill, IUD, and injectables, more than 70 percent know about Norplant, and nearly 60 percent have heard of female sterilization. In contrast, recognition of male methods is less widespread; 49 percent of EIDHS-97 respondents know about the condom, 24 percent about withdrawal, and less than 10 percent about male sterilization.

The EIDHS-97 found that 76 percent of currently married women in Egypt have had some experience in using family planning methods (Table 3.1). Almost all of the women who have ever used a method have used a modern contraceptive. Overall, 74 percent of currently married women have ever used a modern method while 14 percent have used a traditional method.

Looking at ever use of specific methods, the IUD and the pill are the most widely adopted methods; 56 percent of

married women have used the IUD at some time while 43 percent have ever used the pill. Around one in ten married women report ever use of injectables and of prolonged breastfeeding.

B. Levels and Trends in Current Use

Overall, 55 percent of currently married women were currently using a contraceptive method at the time of the EIDHS-97 (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 EIDHS-97, 35 percent of married women—nearly two-thirds of all current users—were using an IUD. The pill, used by 10 percent of married women, is the second most popular method followed by injectables.

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 1980-1997

Method	EFS 1980	ECPS 1984	EDHS 1988	EMCHS 1991	EDHS 1992	EDHS 1995	EDHS 1997
Any method	24.2	30.3	37.8	47.6	47.1	47.9	54.5
Any modern method	22.8	28.7	35.4	44.3	44.8	45.5	51.8
Pill	16.6	16.5	15.3	15.9	12.9	10.4	10.2
IUD	4.1	8.4	15.7	24.1	27.9	30.0	34.6
Injectables	-	0.3	0.1	-	0.5	2.4	3.9
Norplant	-	-	-	-	0.0	0.0	0.1
Vaginal methods	0.3	0.7	0.4	-	0.4	0.1	0.2
Condom	1.1	1.3	2.4	-	2.0	1.4	1.5
Female sterilization	0.7	1.5	1.5	-	1.1	1.1	1.4
Male sterilization	0.1	0.0	0.0	-	0.0	0.0	0.0
Any traditional method	1.4	1.6	2.4	3.3	2.3	2.4	2.7
Periodic abstinence	0.5	0.6	0.6	-	0.7	0.8	0.6
Withdrawal	0.4	0.3	0.5	-	0.7	0.5	0.4
Prolonged breastfeeding	-	0.6	1.1	-	0.9	1.0	1.5
Other methods	0.3	0.1	0.2	-	0.1	0.1	0.1
Not using	75.8	69.7	62.2	52.4	52.9	52.1	45.5
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	8,406	9,153	13,710	5,157

Note: A dash (-) indicates that information on the method was not collected or reported.

Source: EFS-80 – Unpublished results

ECPS-84 – Sayed et al., 1985, Table 9.4

EDHS-88 – Sayed et al., 1989, Table 6.1

EMCHS-91 – Abdel-Azeem et al., 1993, Table 8.7

EDHS-92 – El-Zanaty et al., 1993, Table 5.1

EDHS-95 – El-Zanaty et al., 1996, Table 5.1

Table 3.2 presents the trend in the use of family planning between 1980 and 1997. The use rate rose quite rapidly in the 1980s. As a result, by 1992, 47 percent of married women were using family planning, almost twice the level reported in 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.

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 35 percent in 1997. The continued importance of increases in the level of IUD use to the overall growth in family planning use in Egypt is evident in the pattern of growth in contraceptive use during the period between the 1995 and 1997 DHS surveys. There was an almost 5 percentage point increase in the use of the IUD between 1995 and 1997, which represented almost 70 percent of the total net gain in family planning use during this period.

In contrast to the continuous increase in IUD, there was a steady decline in the use of the pill throughout the period between the 1980 EFS and the 1997 EIDHS. 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. Between the 1988 and 1995 DHS surveys, the level of use of the pill decreased by around one-third. The decline in pill use appeared to have been arrested during the period between 1995 and 1997 EIDHS, with 10 percent of married women reporting that they were using the pill at both points in time.

The introduction of the injectable as a program method broadened the choice of family planning methods available to Egyptian women. Overall, use of injectables rose from less than one percent in 1992 to 4 percent at the time of the 1997 EIDHS. At least initially, injectable users may have been disproportionately drawn from among women who were using the pill, contributing to the decline in pill use rates and the plateauing in the overall prevalence rate between the 1992 and 1995 EDHS surveys. Between the 1995 and 1997 surveys, however, increased use of injectables contributed significantly to the overall increase in use levels; more than one-fifth of the growth in family planning use between the 1995 and 1997 EDHS surveys was accounted for by increased use of injectables.

C. Differentials in Current Use

Residence

According to the EIDHS-97 results, there continue to be marked differences in the level of current use of family planning methods by residence within Egypt (Table 3.3). The current use rate among currently married women was 63 percent in urban areas compared to 47 percent in rural areas.

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 1997

Method	Urban		Urban Gover- norates	Lower Egypt			Upper Egypt			
	Urban	Rural		Total	Urban	Rural	Total	Urban	Rural	Total
Any method	63.1	47.1	67.0	61.6	65.9	59.9	37.4	52.1	30.3	54.5
Any modern method	60.2	44.6	63.8	59.4	63.2	57.9	34.3	49.3	27.1	51.8
Pill	10.8	9.7	10.7	12.2	12.8	11.9	7.5	8.9	6.9	10.2
IUD	41.7	28.4	44.1	40.0	42.4	39.1	21.4	35.8	14.5	34.6
Injectables	3.0	4.6	3.3	4.3	3.4	4.7	3.7	1.8	4.5	3.9
Norplant	0.1	0.0	0.2	0.1	0.0	0.1	0.0	0.1	0.0	0.1
Vaginal methods	0.2	0.1	0.4	0.1	0.0	0.2	0.1	0.0	0.1	0.2
Condom	2.7	0.5	3.2	1.2	2.3	0.8	0.7	1.8	0.2	1.5
Female sterilization	1.7	1.1	1.8	1.5	2.3	1.2	0.9	0.8	0.9	1.4
Male sterilization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Any traditional method	3.0	2.6	3.2	2.2	2.7	2.1	3.1	2.8	3.2	2.7
Periodic abstinence	1.2	0.2	1.1	0.5	1.2	0.3	0.4	1.3	0.0	0.6
Withdrawal	0.5	0.4	0.5	0.5	0.6	0.5	0.2	0.3	0.2	0.4
Prolonged	1.1	1.9	1.3	1.1	0.8	1.1	2.3	1.2	2.9	1.5
Other methods	0.1	0.2	0.2	0.1	0.0	0.2	0.1	0.1	0.1	0.1
Not using	36.9	52.9	33.0	38.4	34.1	40.1	62.6	47.9	69.7	45.5
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	2,386	2,771	1,199	2,187	614	1,572	1,771	573	1,198	5,157

By place of residence, use rates were considerably higher in the Urban Governorates (67 percent) and Lower Egypt (62 percent) than in Upper Egypt (37 percent). The differential in current use rates between rural Lower Egypt and rural Upper Egypt is especially marked; 60 percent of currently married women in rural Lower Egypt were using a method at the time of the EIDHS-97 compared to 30 percent of married women in rural Upper Egypt.

Demographic and Social Characteristics

Differentials in current use by other selected social and demographic characteristics are presented in Table 3.4. Current use rises rapidly with age, reaching a peak (69 percent) in the 35-39 age group. Use rates also are related to family size. Few women use before having their first birth. After the first child, contraceptive use increases sharply with the number of living children, peaking at 68 percent among women with 3 children, after which it declines slightly. Current use levels are directly related to the educational level of the woman, increasing from 46 percent among women who never attended school to 65 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 1997

Background characteristics	Any method	Any modern	Pill	IUD	Injec- Tables	Vagin- als	Nor- plant	Con- dom	Female sterili- zation	Any tradi- tional	Pro- longed breast- feeding	Peri- odic absti- nence	Other	Not using	Total percent	Number of women
Age																
15-19	21.4	18.0	3.1	12.9	1.5	0.0	0.0	0.5	0.0	3.4	3.4	0.0	0.0	78.6	100.0	227
20-24	40.3	37.8	5.0	30.7	1.7	0.0	0.0	0.4	0.0	2.6	2.4	0.0	0.2	59.7	100.0	710
25-29	53.3	50.5	9.8	35.1	4.2	0.0	0.2	1.1	0.0	2.8	2.5	0.2	0.1	46.7	100.0	916
30-34	63.9	60.6	12.8	42.4	3.8	0.1	0.1	0.8	0.6	3.4	1.5	0.9	0.9	36.1	100.0	965
35-39	68.7	65.7	13.5	43.2	4.6	0.0	0.0	2.1	2.2	3.0	1.4	0.7	1.0	31.3	100.0	971
40-44	61.0	58.2	12.2	33.8	6.4	0.3	0.0	3.0	2.4	2.9	0.4	1.8	0.7	39.0	100.0	767
45-49	39.4	38.4	7.8	21.0	2.3	0.7	0.4	2.2	4.0	1.0	0.1	0.3	0.6	60.6	100.0	602
Number of living children																
0	0.7	0.7	0.3	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	99.3	100.0	433
1	38.8	36.3	5.5	29.1	0.8	0.0	0.2	0.5	0.1	2.5	2.0	0.2	0.3	61.2	100.0	615
2	61.9	59.2	9.6	44.7	2.0	0.4	0.0	2.1	0.3	2.8	1.3	1.5	0.0	38.1	100.0	1,017
3	67.6	64.6	12.3	44.6	3.4	0.0	0.0	2.4	2.0	3.0	1.4	0.8	0.7	32.4	100.0	1,053
4+	60.2	57.0	13.0	33.3	6.7	0.2	0.2	1.3	2.2	3.2	1.9	0.4	0.9	39.8	100.0	2,038
Education																
No education	45.6	42.7	9.7	26.0	4.6	0.1	0.2	0.6	1.5	3.0	2.1	0.1	0.7	54.4	100.0	2,147
Some primary	57.1	55.0	12.7	32.1	6.1	0.2	0.0	1.7	2.2	2.1	1.5	0.1	0.4	42.9	100.0	956
Primary comp./ Some secondary	58.4	56.7	10.0	39.8	3.6	0.0	0.0	2.8	0.4	1.7	0.9	0.6	0.2	41.6	100.0	677
Secondary comp./Higher	64.7	61.4	9.4	47.0	1.3	0.3	0.1	2.2	1.0	3.4	0.9	1.9	0.6	35.3	100.0	1,377
Total	54.5	51.8	10.2	34.6	3.9	0.2	0.1	1.5	1.4	2.7	1.5	0.6	0.5	45.5	100.0	5,157

D. Trends in Current Use by Background Characteristics

Table 3.5 presents the trends in contraceptive use during the period between 1988 and 1997 by selected background characteristics of women for all methods and for the pill, IUD, and injectables. Looking at the entire period, all residential groups shared in the rise in use rates. However, the absolute change in use rates among rural women, especially those living in Lower Egypt, was greater than the change in the population as a whole. As a result, the urban-rural

Table 3.5 Trends in current use of family planning methods by social and demographic characteristics

Trends in the percentages of currently married women currently using any contraceptive method and the pill, IUD, and injectable, by selected demographic and social characteristics, Egypt 1988-1997

Background Characteristics	Any method				Pill				IUD				Injectables			
	1988	1992	1995	1997	1988	1992	1995	1997	1988	1992	1995	1997	1988	1992	1995	1997
Urban-rural																
Urban	51.8	57.0	56.4	63.1	18.4	14.0	11.0	10.8	23.0	34.6	36.2	41.7	0.1	0.5	2.4	3.0
Rural	24.5	38.4	40.5	47.1	12.4	11.9	9.9	9.7	8.8	22.0	24.6	28.4	0.1	0.5	2.5	4.6
Place of residence																
Urban Governorates	56.0	59.1	58.1	67.0	16.9	12.5	8.4	10.7	26.8	36.8	40.2	44.1	0.1	0.3	2.2	3.3
Lower Egypt	41.2	53.5	55.4	61.6	19.2	15.1	12.6	12.2	16.2	32.6	34.7	40.0	0.1	0.5	2.8	4.3
Urban	54.5	60.3	59.1	65.9	24.2	17.3	14.3	12.8	21.2	36.3	34.4	42.4	0.0	0.7	3.0	3.4
Rural	35.6	50.5	53.8	59.9	17.2	14.1	11.9	11.9	14.1	31.0	34.8	39.1	0.1	0.5	2.7	4.7
Upper Egypt	22.1	31.4	32.1	37.4	10.0	10.7	9.1	7.5	7.9	16.4	17.7	21.4	0.1	0.6	2.0	3.7
Urban	41.5	48.1	49.9	52.1	16.0	13.8	12.6	8.9	17.6	27.6	30.3	35.8	0.2	0.6	1.8	1.8
Rural	11.5	24.3	24.0	30.3	6.7	9.3	7.5	6.9	2.7	11.6	11.9	14.5	0.0	0.6	2.1	4.5
Age																
15-19	5.5	13.3	16.1	21.4	3.5	4.1	3.2	3.1	1.7	8.4	11.3	12.9	0.0	0.0	1.1	1.5
20-24	24.3	29.7	33.2	40.3	10.8	6.8	6.6	5.0	10.7	21.2	21.7	30.7	0.0	0.2	2.1	1.7
25-29	37.1	46.0	47.6	53.3	14.9	13.3	9.8	9.8	17.7	29.3	33.1	35.1	0.0	0.2	2.2	4.2
30-34	46.8	58.8	58.1	63.9	19.2	16.2	13.3	12.8	20.2	36.7	37.3	42.4	0.2	0.5	3.2	3.8
35-39	52.8	59.6	60.7	68.7	23.2	18.2	13.8	13.5	21.2	34.0	37.2	43.2	0.1	0.8	3.2	4.6
40-44	47.5	55.5	58.8	61.0	15.5	14.0	12.5	12.2	18.5	28.9	34.4	33.8	0.3	1.1	2.5	6.4
45-49	23.4	34.5	33.3	39.4	8.6	7.9	7.6	7.8	6.6	14.9	16.2	21.0	0.0	0.5	1.2	2.3
Number of living children																
0	0.7	0.5	1.2	0.7	0.1	0.3	0.5	0.3	0.4	0.2	0.5	0.0	0.0	0.0	0.0	0.0
1	23.1	31.6	31.6	38.8	7.6	6.7	4.7	5.5	11.4	22.4	23.3	29.1	0.0	0.0	0.9	0.8
2	43.4	52.5	53.9	61.9	14.7	12.7	8.9	9.6	20.5	34.3	38.9	44.7	0.0	0.0	1.6	2.0
3	47.8	59.3	65.4	67.6	19.9	17.1	13.7	12.3	19.6	34.8	40.3	44.6	0.0	0.5	3.8	3.4
4+	44.4	54.3	53.9	60.2	17.1	15.8	13.9	13.0	17.1	30.0	30.6	33.3	0.2	1.0	3.2	6.7
Education																
No education	27.5	37.5	40.6	45.6	13.4	12.0	11.0	9.7	10.0	20.7	23.8	26.0	0.1	0.5	2.3	4.6
Some primary	42.5	53.5	50.5	57.1	20.3	17.6	12.2	12.7	16.3	29.4	30.2	32.1	0.1	0.5	3.1	6.1
Primary comp./																
Some secondary	52.3	56.1	51.2	58.4	15.6	13.7	10.1	10.0	23.9	34.0	32.8	39.8	0.0	0.6	2.3	3.6
Secondary comp./																
Higher	53.2	58.0	56.5	64.7	13.8	9.8	8.3	9.4	27.1	40.0	39.0	47.0	0.1	0.4	2.0	1.3
Total	37.8	47.1	47.9	54.5	15.3	12.9	10.4	10.2	15.7	27.9	30.0	34.6	0.1	0.5	2.4	3.9

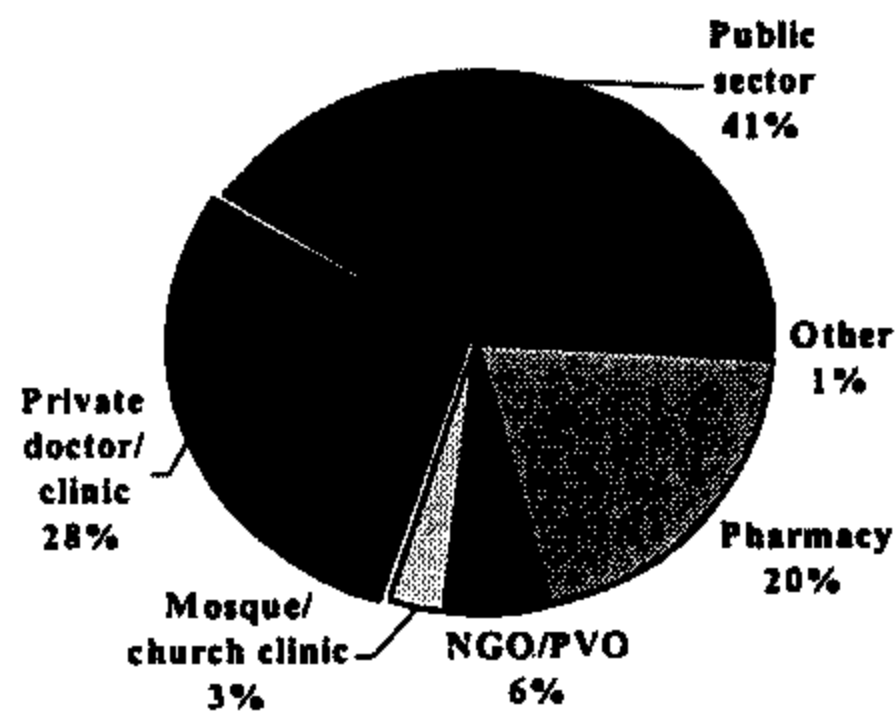
differential in use rates narrowed during the period.

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. There is no evidence of a trend toward the adoption of contraception immediately after marriage to postpone a first birth. Throughout the period, there was almost no use of family planning among women who had not begun childbearing.

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 1997, use rates increased by 18 percentage points among women who never attended school (from 28 percent to 46 percent) and by 14 percentage points among women with less than a primary education (from 43 percent to 57 percent). Somewhat smaller increases were observed during the period among better educated

women. As a result, the differential in use rates across educational groups narrowed during the period.

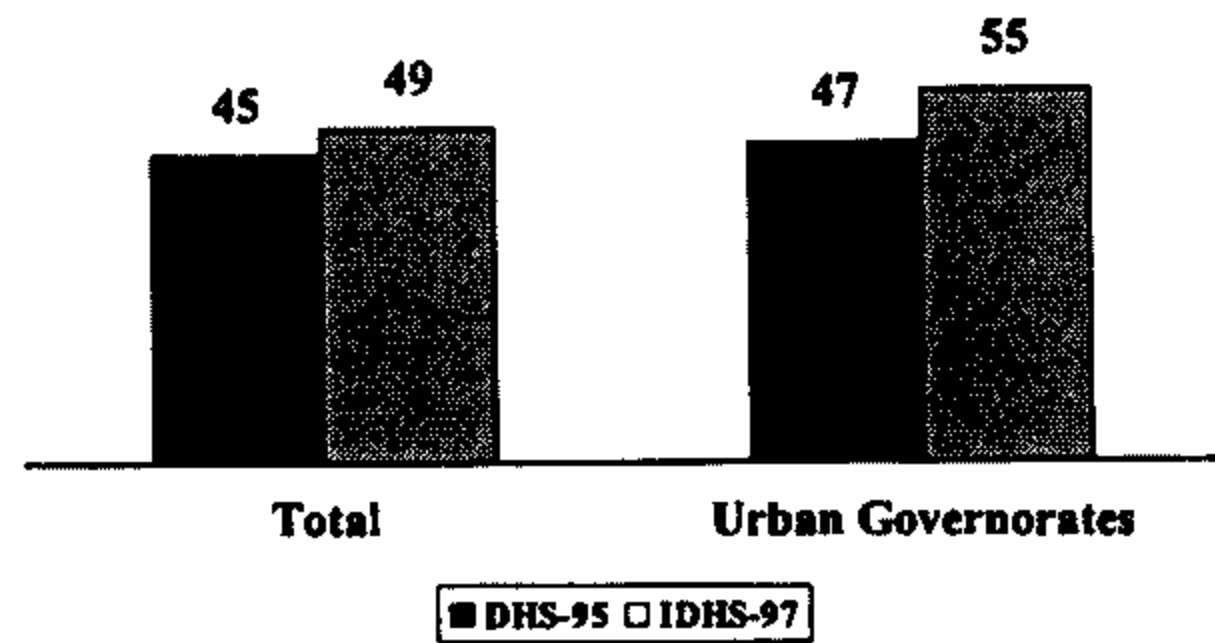
**Source for Family Planning Methods
Egypt 1997**



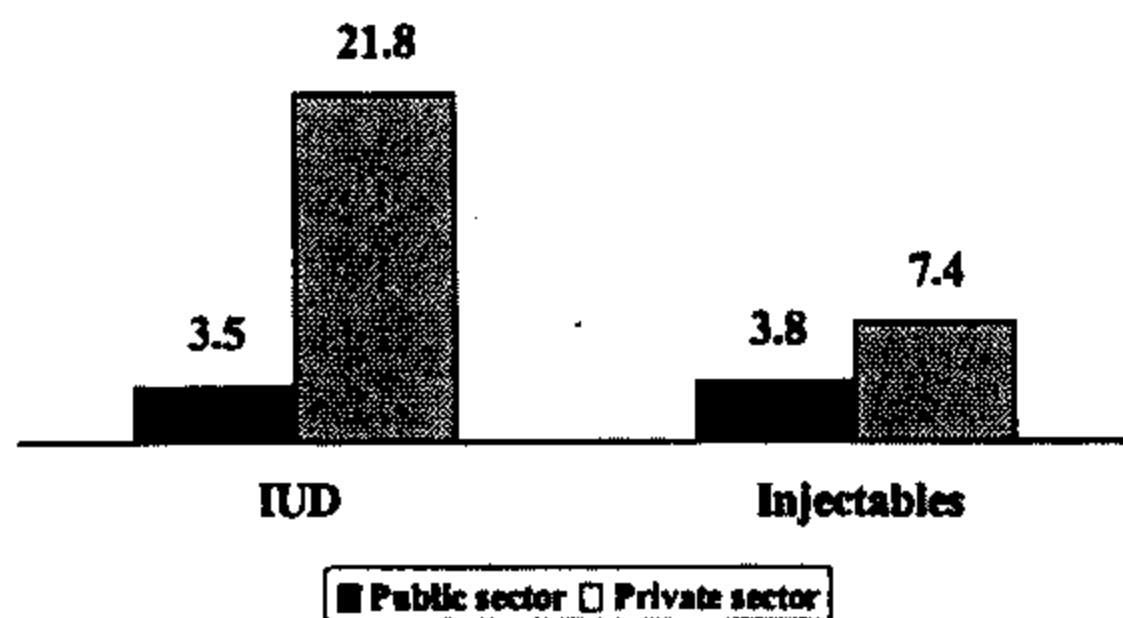
In Egypt, family planning users are more likely to obtain their method from a private provider than from a public hospital or clinic.

The percentage of IUD users getting the method from public sector sources increased between 1995 and 1997, especially in the Urban Governorates.

**Reliance on Public Sector Sources
among IUD Users
Egypt 1995-1997**



**IUD and Injectables:
Median Cost in Pounds
Egypt 1997**



On average, IUD users pay more than five times as much for the method at private providers as at public sector sources, and injectable users pay nearly twice as much.

4 Family Planning Services

The EIDHS-97 obtained information on a number of aspects of the family planning service delivery including the source from which current 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.

A. Sources of Family Planning Methods

Data obtained from current users of modern methods about the source from which they had gotten their method is presented in Table 4.1. Overall, the EIDHS-97 findings indicate that users are more likely to obtain their method from a private than from a public sector source.

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 1997

Source	Pill	IUD	Injec- tables	All methods
Public sector	8.7	48.7	67.0	40.9
Ministry of Health (MOH)	8.2	45.5	63.6	38.0
Urban hospital	0.7	13.3	10.6	10.9
Urban health unit	1.7	15.3	14.5	11.7
Rural hospital	0.6	2.7	8.0	2.5
Rural health unit	4.5	7.8	25.2	8.1
Other MOH	0.7	6.4	5.2	4.8
Teaching hospital	0.2	0.8	2.1	1.0
HIO/CCO	0.0	1.5	0.0	1.1
Other governmental	0.3	0.9	1.2	0.7
Private sector	89.5	50.6	33.0	58.1
NGO/PVO clinics	0.6	8.2	7.4	6.2
EFPA	0.3	3.9	5.8	3.2
CSI	0.3	3.9	0.6	2.7
Other NGO/PVO	0.0	0.4	1.0	0.3
Mosque/church health unit	0.2	3.6	0.0	2.5
Private hospital/clinic	0.1	5.2	1.4	4.1
Private doctor	1.8	33.6	15.2	24.8
Pharmacy	86.6	0.0	7.5	20.3
Other vendor	0.3	0.0	1.5	0.2
Other	1.6	0.2	0.0	0.5
Other	0.0	0.2	0.0	0.1
Friends/relatives	1.6	0.0	0.0	0.3
Don't know	0.2	0.5	0.0	0.5
Total percent	100	100	100	100
Number of users	528	1,783	199	2,671

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

The majority of current users of the pill (87 percent) get their method at a pharmacy. Almost half of all IUD users had the method inserted at a public health facility, 39 percent at a private doctor or clinic, 8 percent at a facility operated by a nongovernmental or private voluntary organization (NGO/PVO), and 4 percent at a mosque or church-sponsored clinic. The principal providers of injectables are government health facilities (67 percent), private doctors or hospital/clinics (17 percent), pharmacies (8 percent), and NGO/PVO facilities (7 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 EIDHS-97 varied by region, from 42 percent in Upper Egypt to 55 percent in the Urban Governorates.

Table 4.2 also shows the percentage of IUD users relying on public sector at the time of the EIDHS-97. A comparison of those percentages with the EIDHS-97 results indicates that there was an overall increase in the proportion of IUD users relying on public sector. The largest increases in the proportion

Table 4.2 Sources of family planning methods by residence, 1995 and 1997

Percent distribution of IUD users by the type of source for the method at the time of the EIDHS-97 and the percentage of IUD users obtaining the method from public sector sources at the time of the EDHS-95, according to residence, Egypt 1995 and 1997

Method	Urban	Rural	Urban Gover- norates	Lower Egypt		Upper Egypt			Total	
				Total	Urban	Rural	Total	Urban		Rural
EIDHS-97										
Public sector	47.7	49.9	54.7	47.9	39.3	51.6	42.0	40.4	43.8	48.7
Private sector	51.8	49.1	45.2	50.9	59.4	47.3	57.4	58.8	55.8	50.6
NGO/PVO clinic	8.8	7.4	4.3	10.3	17.5	7.3	8.6	9.3	7.8	8.2
Private doctor/clinic/hosp.	38.2	39.7	34.7	38.8	39.6	38.5	44.6	45.2	44.0	38.8
Mosque/church clinic	4.8	2.1	6.2	1.7	2.3	1.5	4.2	4.3	4.1	3.6
Pharmacy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other/Not sure	0.5	1.0	0.1	1.2	1.3	1.1	0.6	0.8	0.4	0.7
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	995	788	529	875	260	614	379	205	174	1,783
EDHS-95										
Public sector	42.8	46.7	46.5	44.4	37.4	47.3	42.1	39.9	44.5	44.5

NGO - Nongovernmental organization

PVO - Private voluntary organization

of users going to public sector providers for IUD services were observed in the Urban Governorates and rural Lower Egypt.

B. 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 1997

Cost of cycle	
Free	0.8
1-10	4.1
11-30	1.2
31-50	4.3
51-75	33.8
76-100	32.4
More than 100 piastres	18.7
Total	100.0
Number	528
Median (in piastres)	95.1
Mean (in piastres)	94.5

The EIDHS-97 obtained information from current users on the cost of their method. Table 4.3 shows the percent distribution of pill users according to the amount that they paid for packet (cycle) of pills. The majority of users (66 percent) paid between 50 piastres and 1 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 (6 percent), but a significant proportion (33 percent) paid less than 5 pounds for the method. Most of the users paying less than 5 pounds relied on public sector sources, where the median cost of an IUD was 3.5 pounds. In contrast, around 1 in 10 users obtaining the IUD from a private sector source paid less than 5 pounds or received the method free. The median amount paid for an IUD from private provider was 21.8 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 1997

Cost of method	Public health facility	Private health facility	Total
Free	7.8	5.1	6.4
< 3	30.6	2.4	15.8
3-4	32.3	3.1	16.9
5-6	14.7	4.0	9.1
7-8	5.1	2.4	3.6
9-10	3.6	6.6	5.2
11-15	2.3	15.4	9.2
16-20	1.6	16.3	9.3
21-30	1.3	15.8	9.0
31-50	0.7	18.9	10.3
> 50	0.2	8.7	4.6
Not sure	0.0	1.4	0.7
Total	100.0	100.0	100.0
Number	845	938	1,783
Median	3.5	21.8	10.2
Mean	4.9	28.0	16.4

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 1997

Cost of method	Public health facility	Private health facility	Total
Free	6.3	2.6	5.1
< 3	5.0	2.0	4.0
3-4	68.9	27.3	55.1
5-6	11.7	11.0	11.4
7-8	5.6	20.3	10.5
9-10	0.6	14.5	5.2
> 10	0.8	21.2	7.9
Not sure	1.1	0.2	0.8
Total	100.0	100.0	100
Number	133	66	199
Median	3.8	7.4	4.2
Mean	6.4	8.7	7.2

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

A similar pattern is observed in the case of injectable users (Table 4.5). The median amount paid by all injectable users was 4.2 pounds. Among users obtaining the method from public sector sources, the median amount paid was 3.8 pounds, around half the amount paid by users going to private sector providers (7.4 pounds).

C. Information Received at Pharmacies

Pharmacies are the primary source for the pill in Egypt, with nearly 9 in 10 current pill users obtaining the method from a pharmacy. Current pill users were asked a number of other questions about their experience in obtaining the method. First of all, previous studies have shown that women frequently do not go to the pharmacy to obtain the pill themselves, but instead rely on the husband or other family members to get the method. Therefore, pill users who reported the pharmacy as their 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.

Overall, 63 percent of pill users had themselves visited a pharmacy at some time during the current episode of use. These users 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 (19 percent). One in 10 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.

D. Assessing Services at Clinical Providers

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 the services that they received. Caution must be exercised in interpreting these findings since they are subject to a number of potential sources of bias³.

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, 90 percent or more found their provider to be offering quick service, polite treatment, privacy during consultation, clean surroundings, and an affordable cost.

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

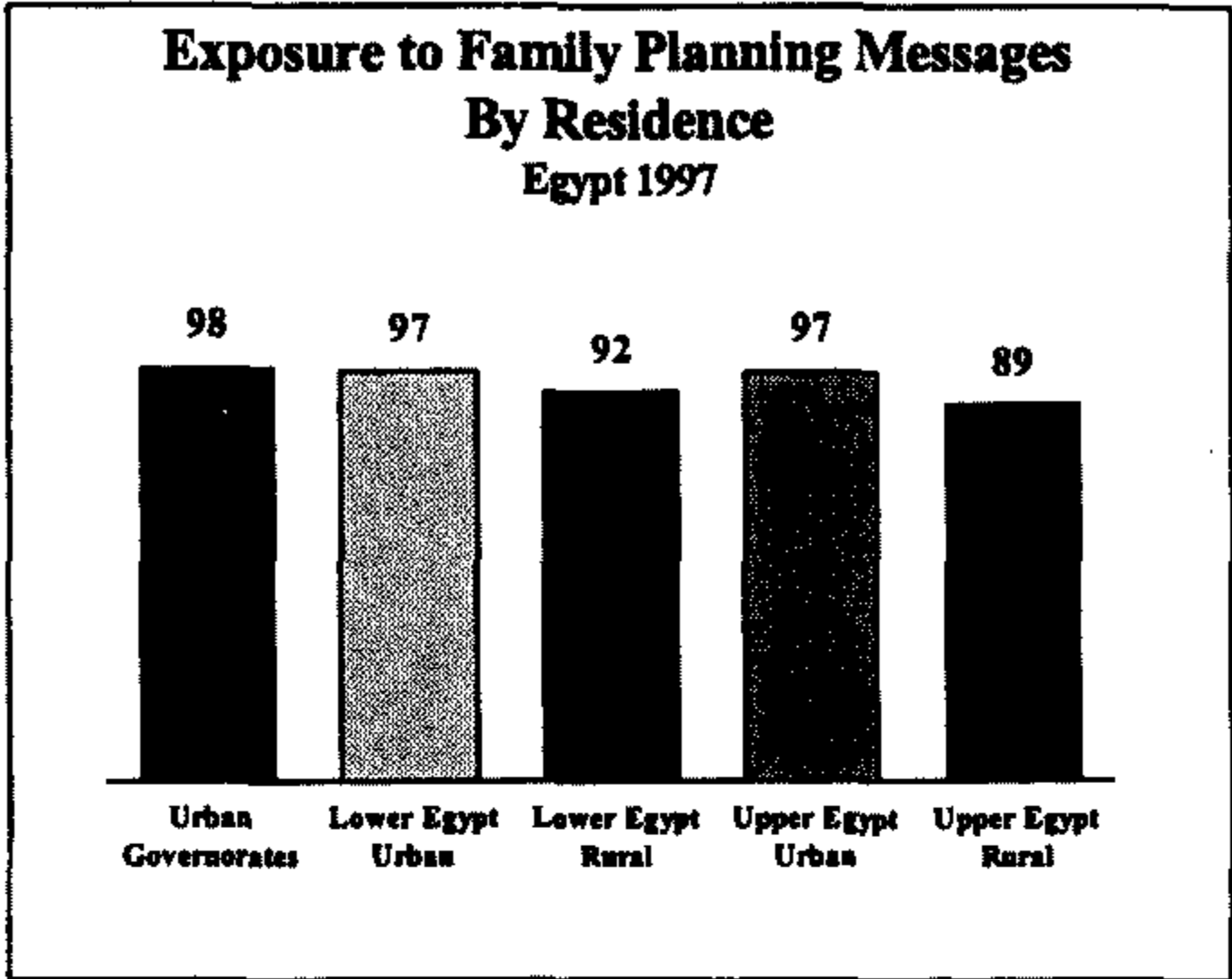
Percentage of current users of modern methods obtaining their methods from a clinical source who said that they had received various components of services at the source by type of source, Egypt 1997

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	92.8	88.7	89.2	91.3	93.5	83.4	90.9
Polite treatment	96.5	97.9	97.7	99.1	99.1	100.0	98.4
Information about methods	71.7	70.4	70.6	80.9	75.2	60.8	72.9
Information about side effects	62.8	64.4	64.2	71.4	72.7	57.2	67.9
Privacy during consultation	94.3	92.9	93.1	96.7	99.0	97.6	95.8
Clean surroundings	99.5	98.1	98.3	99.2	99.7	100.0	98.9
Affordable costs	99.2	97.8	97.9	97.5	94.0	94.2	96.2
Number of users	145	1,009	1,154	177	925	73	2,329

NGO - Nongovernmental organization
PVO - Private voluntary organization

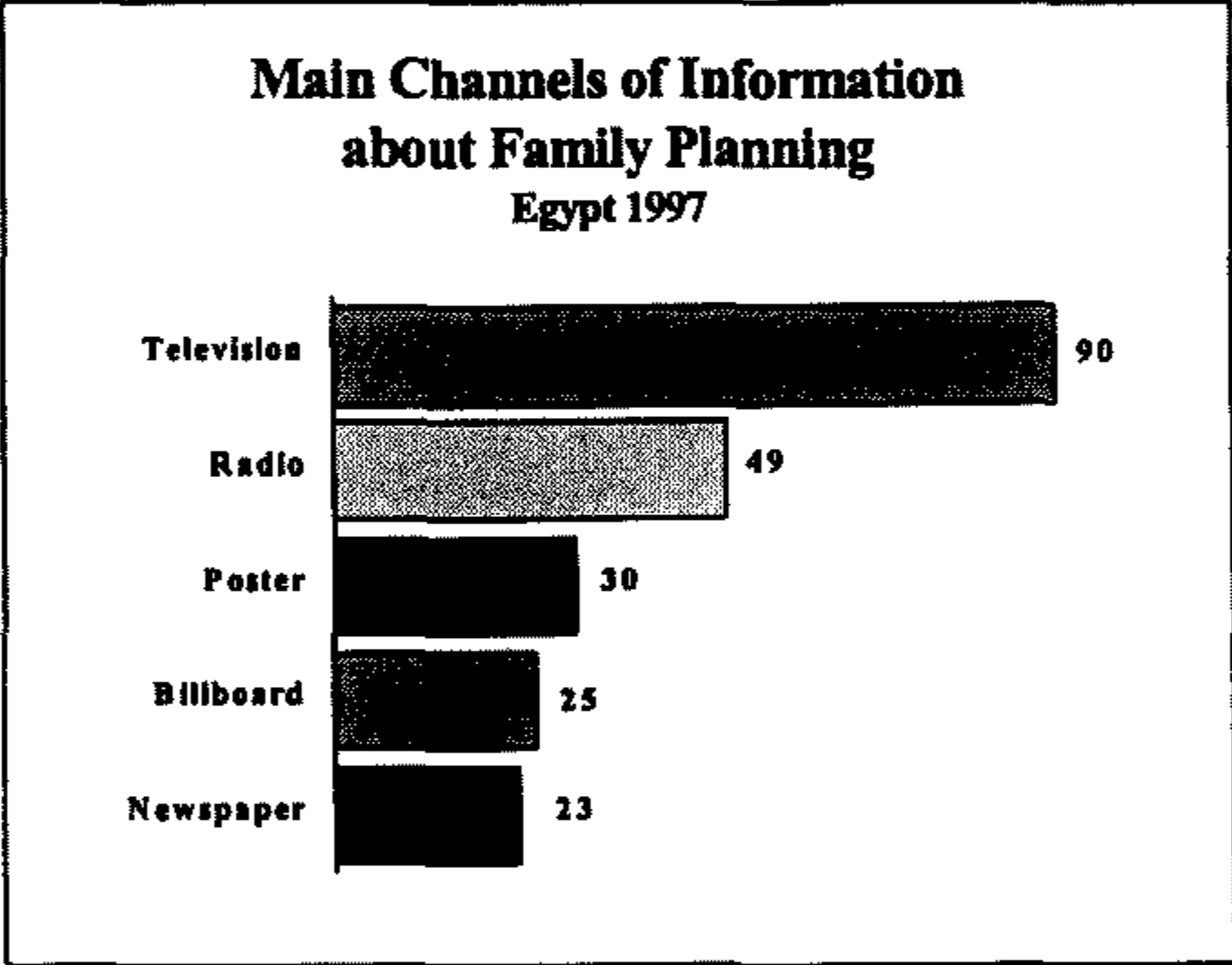
An area of greater concern regarding the services women are receiving from clinical providers is the information they are given about family planning methods. More than 1 in 4 users who obtained services from a clinical provider reported that the provider did not offer them information on any methods other than the one they adopted. One in 3 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.

³ 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.



Family planning messages reach a broad audience in Egypt; the proportion of married women who had been exposed to a message recently ranges from 89 percent in rural Upper Egypt to 98 percent in the Urban Governorates.

Nine in 10 married women have recently seen a family planning message on television, and nearly half have heard a radio broadcast about family planning.



5 Family Planning Communication

The EIDHS-97 obtained information on a number of aspects of women's exposure to family planning communication. Specifically, the survey obtained data on whether women had recently heard about family planning through various broadcast or print media. Questions also were included in the EIDHS-97 to ascertain whether women were familiar with Gold Star clinics. These clinics were promoted as part of the family planning Information, Education, and Communication (IE&C) efforts.

A. Communication Channels

Table 5.1 looks at the extent to which currently married women reported that they had recently seen or heard family planning messages through various communication channels. Overall, more than 90 percent of women had been exposed to family planning information through at least one print or broadcast medium. Almost two-thirds of the women had heard about family planning recently through more than one of the communication channels.

Communication channel	Urban	Rural	Urban Governorates	Lower Egypt			Upper Egypt			Total
				Total	Urban	Rural	Total	Urban	Rural	
Television	95.7	84.1	97.0	90.1	94.9	88.2	83.6	93.7	78.8	89.5
Radio	57.1	41.0	63.4	49.9	54.2	48.3	36.5	47.2	31.4	48.5
Newspaper/magazine	34.7	13.5	34.7	23.8	38.2	18.2	15.0	30.9	7.4	23.3
Poster	38.8	22.3	33.0	31.9	46.0	26.3	25.5	43.2	17.1	30.0
Leaflet/brochure	23.8	10.9	22.4	19.0	30.9	14.4	10.4	19.2	6.3	16.9
Billboard/signboard	33.3	18.1	30.2	27.9	39.0	23.5	18.3	33.6	11.0	25.1
Community meeting	6.5	4.2	5.5	6.1	9.2	4.9	4.0	5.5	3.2	5.2
Other	2.8	10.7	0.8	4.1	3.4	4.4	14.9	6.5	19.0	7.1
Any channel	97.6	91.1	98.2	93.8	97.2	92.4	91.7	96.8	89.3	94.1
More than one channel	73.6	54.1	75.7	62.7	73.2	58.6	55.1	69.4	48.3	63.1
Number of women	2,386	2,771	1,199	2,187	614	1,572	1,771	573	1,198	5,157

Considering the variation by residence, the proportion of women who had been exposed to a family planning message through at least one communication channel was high in most areas, ranging from 89 percent in rural Upper Egypt to 98 percent in the Urban Governorates. There was greater variation by place of residence in the percentages of women exposed to family planning messages through more than one media. For example, fewer than half of women in rural Upper Egypt reported that they had heard messages through more than one channel while three-fourths of women in the Urban Governorates had been exposed to messages through more than one communication channel.

With regard to the coverage of specific communication channels, women were more likely to report hearing about family planning on television than through other communication channels.

Around 9 in 10 married women reported that they had seen a family planning message on television in the few months immediately prior to the survey. Among the other communication channels, women were most likely to report being exposed to a radio message (49 percent), followed by family planning posters (30 percent), billboards or signboards (25 percent), and newspaper/magazine articles (23 percent).

B. Promotion of Gold Star Clinics

The Ministry of Health and Population (MOH&P) adopted the Quality Improvement Program (QIP) as part of its efforts under the USAID-supported Systems Development Project (SDP) to improve the quality of family planning service delivery. QIP concentrates on introducing standards of service and monitoring the extent to which facilities are complying with these standards. It involves a rating system, whereby each health facility is assessed quarterly on their conformity to the QIP standards of service. Clinics scoring 100 points or more for two consecutive quarters are rewarded with a "Gold Star". Thus, a Gold Star is a mark of excellence. An on-going mass media campaign has been launched to inform the public of the meaning of the gold star and assure potential clients that they will obtain excellent services at clinics that display this symbol.

Information collected in the EIDHS-97 allows assessment of the extent to which women had heard about Gold Star clinics. Overall, 42 percent of currently married women were familiar with the Gold Star program.

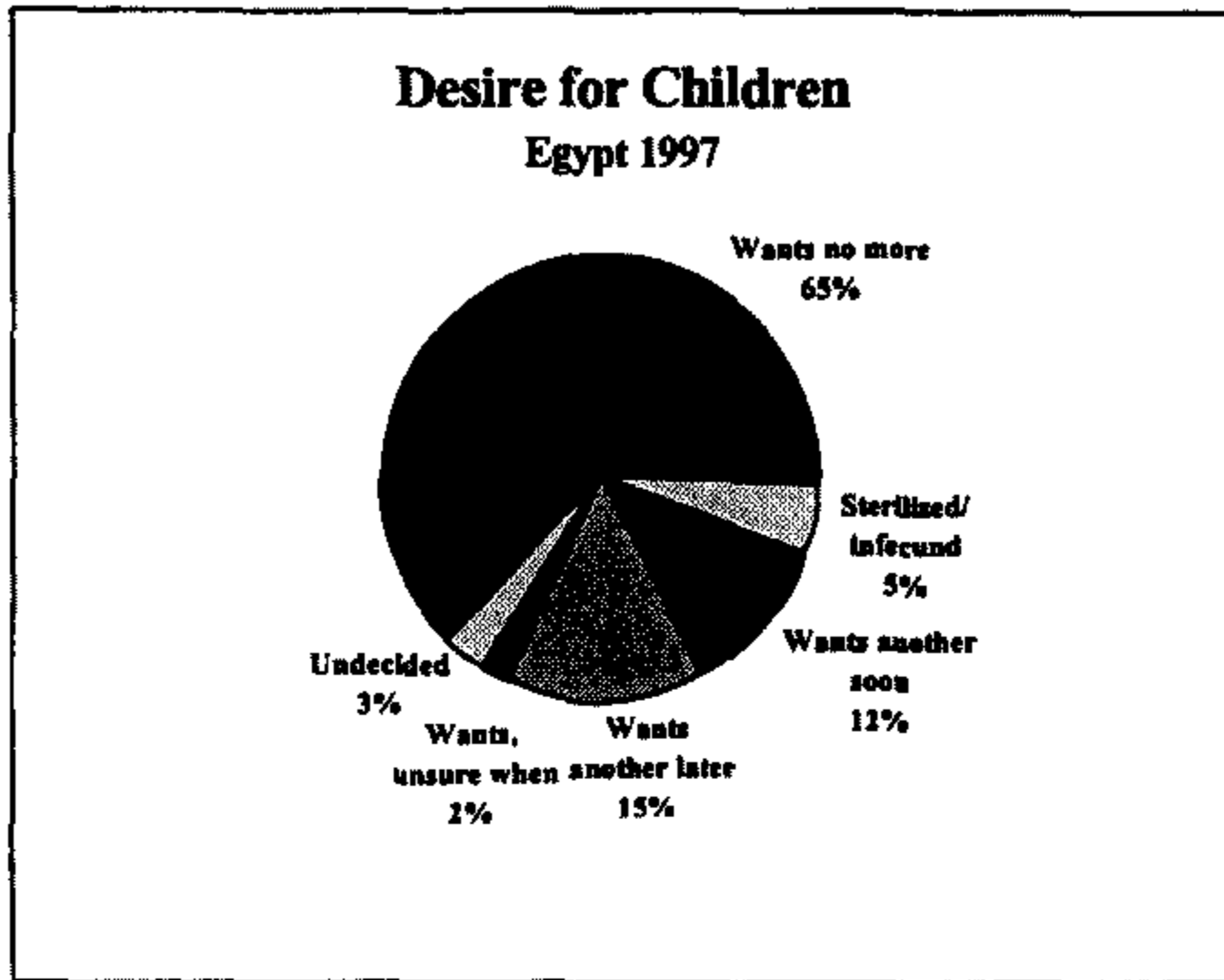
Women who had heard of the program were asked about what the "gold star" meant. Table 5.2 shows the proportion of women citing various characteristics as associated with the "gold star". Women were able to cite more than one characteristic. Women most often mentioned that the "gold star" meant that a facility offered information about methods (22 percent). Other characteristics which women associated with the gold star included polite treatment (19 percent), competent staff (16 percent), availability of services at any time (14 percent), suitable methods (14 percent), a clean facility (10 percent), and a choice of methods (6 percent).

Table 5.2 Perceptions regarding Gold Star clinics

Percentage of currently married women hearing about Gold Star clinics and, among women hearing about gold star, the percentages who identified Gold Star clinics with various aspects of service quality, Egypt 1997

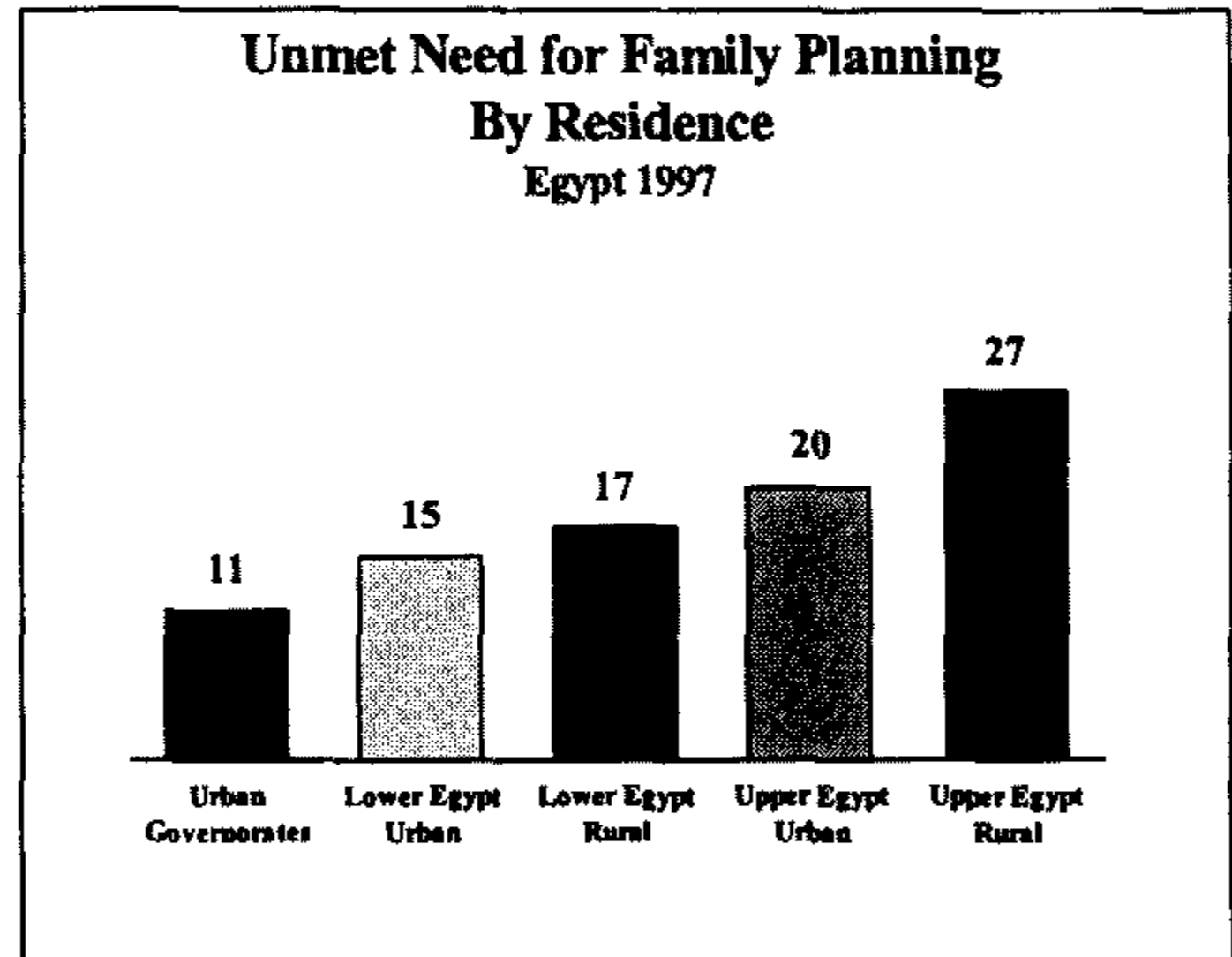
Recognition of Gold Star program/ Characteristics associated with Gold Star	
Percentage having heard about Gold Star	42.0
Characteristics associated with Gold Star	
Facility clean	9.9
Staff competent	16.3
Service available at any time	13.7
Offer suitable method	14.1
Polite treatment	18.9
Information about methods	22.0
Offer method choice	5.8
Other	20.4

Although many women were aware of the Gold Star program, few users who had obtained their method at a public sector facility reported that the facility had a gold star. Overall, 13 percent of users reported they had obtained their method at a Gold Star clinic (data not shown in table). This may underestimate the coverage of Gold Star facilities since the program is fairly new and the gold star may not have been in place at the clinic when the user obtained her method. Users may also not have been aware of a facility's identification as a Gold Star unit since there is variation across clinics in the prominence given to the display of the Gold Star.



Around 8 in 10 married women in Egypt want no additional children or to delay the next birth for at least two years.

The level of unmet need for family planning among married women varies from 11 percent in the Urban Governorates to 27 percent in rural Upper Egypt.



6 Fertility Preferences and Unmet Need for Family Planning

Data on fertility preferences are important in assessing women's motivation to use family planning. To gain an insight into childbearing preferences, EIDHS-97 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.

A. Desire for Children

Table 6.1 summarizes the information on women's reproductive preferences. The majority of all married women express a desire to control future childbearing. Sixty-six percent either report that they do not want another child or are using female sterilization. Moreover, 15 percent who say that they want another child indicate that they want to wait at least two years before the birth of their next child.

Desire for more children	Number of living children plus current pregnancy							Total
	0	1	2	3	4	5	6+	
Have another soon	91.8	24.7	9.1	2.8	1.8	2.5	1.1	11.6
Have another later	2.4	59.8	24.6	6.5	3.5	2.0	0.9	14.6
Wants, unsure timing	1.8	3.5	3.7	1.5	1.1	0.6	0.4	1.9
Undecided	0.1	2.8	4.7	3.9	2.0	1.5	1.7	2.8
Wants no more	1.0	7.9	56.3	81.1	87.8	87.5	83.8	64.6
Sterilized	0.0	0.1	0.3	1.9	1.0	2.3	3.5	1.4
Declared infecund	2.9	1.1	1.2	2.2	2.7	3.6	8.6	3.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	309	620	1,039	1,095	834	527	733	5,157

The desire to delay childbearing is largely concentrated among women who have not started childbearing or have only one child. As expected, the proportion wanting no more children increases rapidly with the number of living children (including the current pregnancy).

B. 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

Table 6.2 Need for family planning services

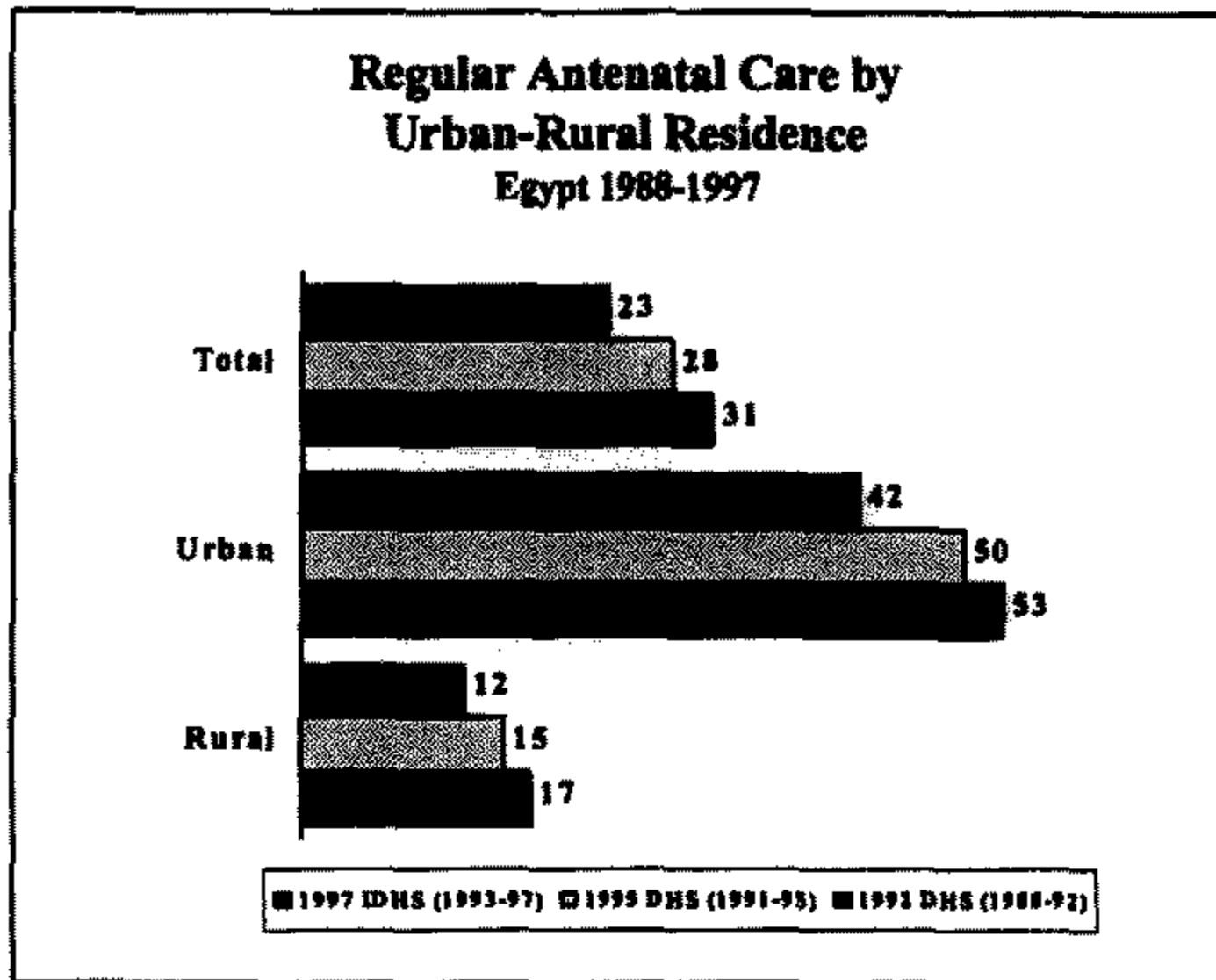
Percent distribution of currently married women 15-49 by need for family planning according to selected background characteristics, Egypt 1997

Background Characteristics	Unmet need			Met need (using)			Fail			Demand			Percentage of demand satisfied	Number of women
	Space	Limit	Total	Space	Limit	Total	Space	Limit	Total	Space	Limit	Total		
Age														
15-19	11.9	0.0	11.9	16.9	4.5	21.4	0.0	0.0	0.0	28.8	4.5	33.3	64.2	227
20-24	12.1	3.6	16.8	25.5	14.8	40.3	0.4	0.0	0.4	39.0	18.5	57.5	70.9	710
25-29	8.9	9.9	18.8	17.5	35.8	53.3	0.1	0.0	0.1	26.5	45.7	72.2	74.0	916
30-34	5.9	11.4	17.3	10.5	53.5	63.9	0.2	0.4	0.6	16.6	65.3	81.8	78.8	965
35-39	1.4	14.6	16.0	3.9	64.8	68.7	0.0	0.6	0.6	5.3	80.0	85.4	81.2	971
40-44	1.9	20.8	22.7	1.0	60.0	61.0	0.0	0.1	0.1	2.9	81.0	83.8	73.0	767
45-49	0.5	16.7	17.1	0.0	39.4	39.4	0.0	0.0	0.0	0.5	56.1	56.5	69.7	602
Urban-rural														
Residence														
Urban	4.4	9.8	14.2	11.1	52.0	63.1	0.0	0.1	0.1	15.6	61.9	77.5	81.6	2,386
Rural	6.7	14.2	20.9	9.4	37.7	47.1	0.2	0.3	0.5	16.3	52.2	68.5	69.5	2,771
Place of residence														
Urban														
Governorates	3.0	8.0	11.0	11.4	55.5	67.0	0.0	0.2	0.2	14.4	63.7	78.2	85.9	1,199
Lower Egypt	4.3	11.9	16.2	11.2	50.4	61.6	0.1	0.3	0.4	15.6	62.6	78.2	79.3	2,187
Urban	3.9	11.5	15.4	10.0	55.9	65.9	0.1	0.0	0.1	14.0	67.4	81.4	81.1	614
Rural	4.4	12.1	16.5	11.7	48.3	59.9	0.1	0.4	0.5	16.2	60.8	77.0	78.5	1,572
Upper Egypt	9.1	15.3	24.3	8.1	29.2	37.4	0.2	0.1	0.3	17.4	44.7	62.1	60.8	1,771
Urban	7.9	11.8	19.7	11.7	40.4	52.1	0.0	0.2	0.2	19.6	52.4	71.9	72.7	573
Rural	9.6	17.0	26.6	6.4	23.9	30.3	0.3	0.1	0.4	16.4	41.0	57.3	53.7	1,198
Education														
No education	6.5	16.5	23.0	5.3	40.4	45.6	0.0	0.2	0.3	11.8	57.1	68.9	66.6	2,147
Some primary	4.8	13.8	18.6	6.7	50.3	57.1	0.2	0.4	0.6	11.8	64.5	76.3	75.6	956
Primary comp./Some secondary	5.5	8.8	14.2	13.0	45.5	58.4	0.2	0.2	0.4	18.6	54.4	73.0	80.5	677
Secondary comp./Higher	4.8	6.0	10.8	19.0	45.8	64.7	0.1	0.0	0.1	23.9	51.8	75.7	85.7	1,377
Total	5.6	12.2	17.8	10.2	44.3	54.5	0.1	0.2	0.3	15.9	56.7	72.6	75.5	5,157

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 demand 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.

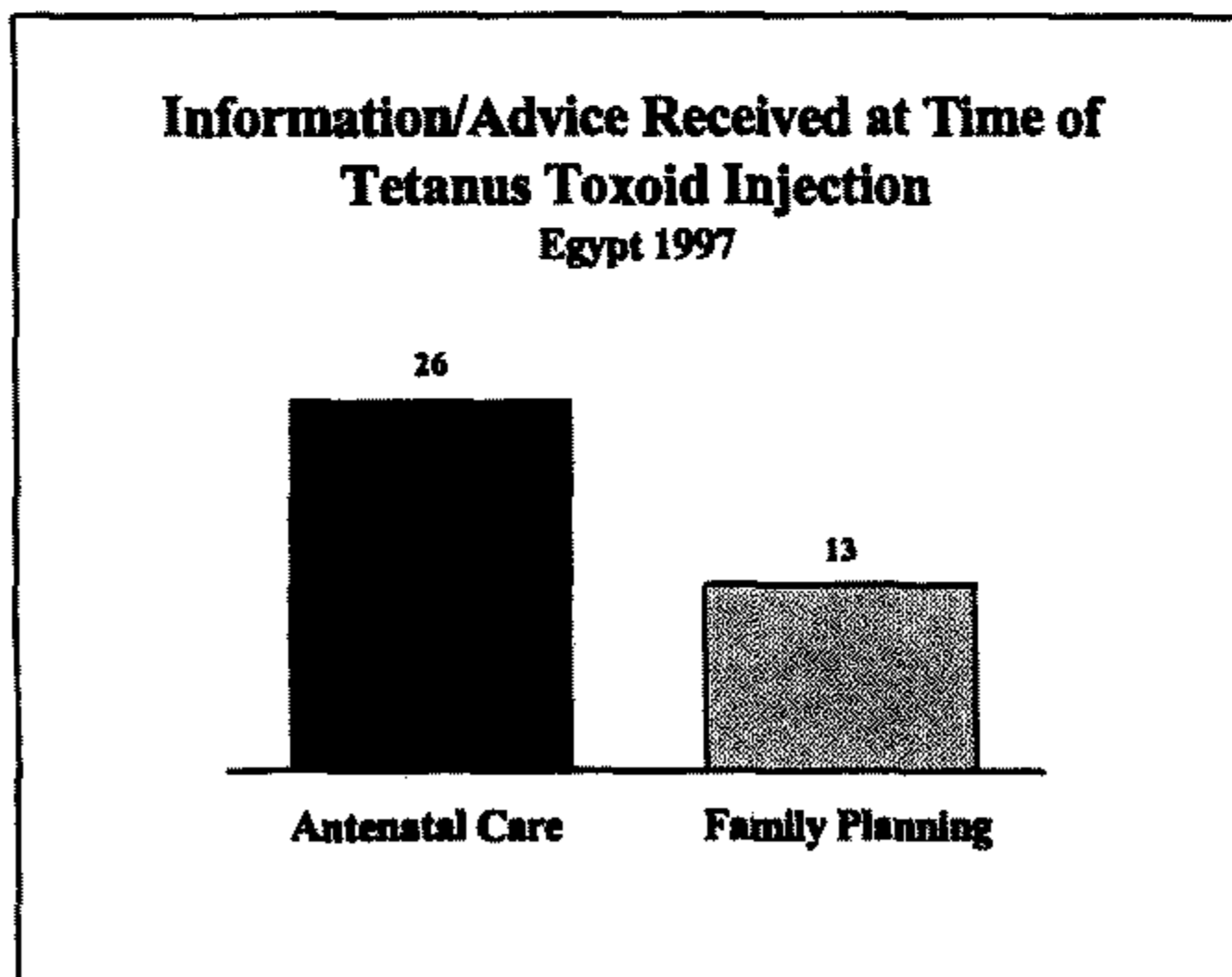
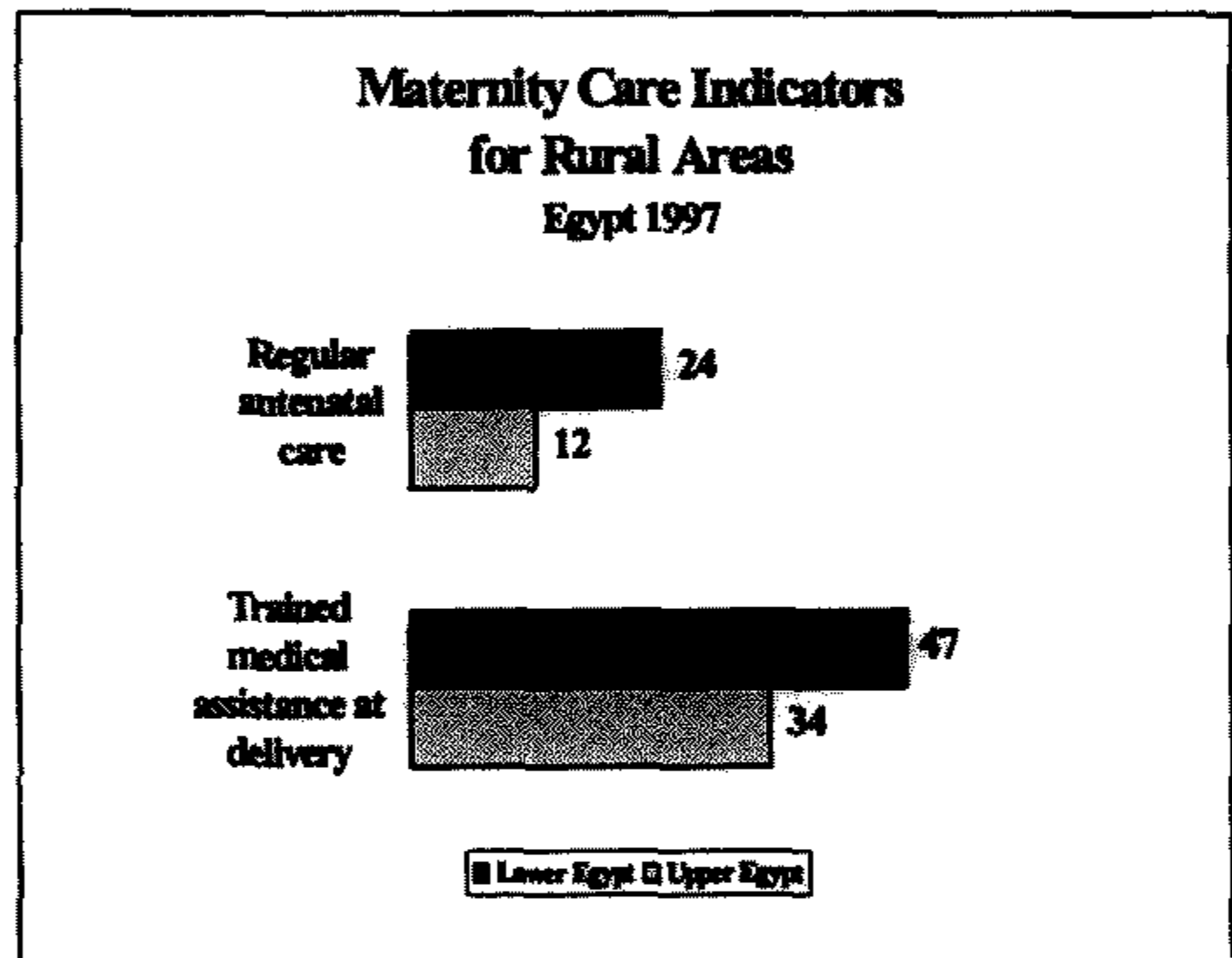
According to Table 6.2, the total unmet need for family planning is 18 percent. The majority of the unmet need is for limiting purposes. Similarly, the majority of the met need for family planning (contraceptive use) is for limiting purposes.

Overall, the total demand for family planning comprises 73 percent of married women. Presently, 76 percent of that demand is being met.



Urban women were much more likely than rural women to have regular antenatal care (at least four visits to a trained provider).

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.



Generally, women do not receive advice about other reproductive health services at the time they receive a tetanus toxoid injection.

7 Maternal Health

Proper care during pregnancy and childbirth is important to the health of both the mother and her baby. To obtain data on these issues, the EIDHS-97 included questions on antenatal care, tetanus toxoid vaccination and the assistance received at delivery for each birth that a woman reported during the five-year period before the survey.

A. Antenatal Care

Antenatal care from a provider is important in order to monitor the pregnancy and reduce the risks for the mother and baby during pregnancy and at delivery. To be most effective, there should be regular antenatal care throughout a pregnancy. In Egypt, it is recommended that all mothers see a trained provider at least four times during pregnancy.

In the EIDHS-97, women were asked about whether they had received any antenatal care prior to delivery and, if so, who had provided the care. Overall, the EIDHS-97 found that antenatal care was received from a trained provider for 52 percent of the births during the five-year period before the survey (Table 7.1). Not all of these births received regular antenatal care, the mother reported that she had four or more antenatal care visits in only 32 percent of births.

B. 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. Table 7.2 shows that mothers had received at least one tetanus toxoid injection during pregnancy in the case of 72 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 who received a tetanus toxoid vaccination were given the injection at public sector facilities.

C. Overlap between Tetanus Toxoid and Antenatal Care Coverage

Many women who received tetanus toxoid vaccinations during pregnancy did not report seeing a doctor for antenatal care. In some cases, women who had had antenatal care did not receive

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 1997

Antenatal care indicators	
Type of provider	
Doctor	51.9
Trained nurse/midwife	0.1
Other/missing	0.3
No care	47.5
Type of facility	
Public sector	10.6
Private sector	39.8
Both	0.9
Other	1.1
No care	47.5
Number of antenatal care visits	
None	47.5
1	4.8
2	7.9
3	6.3
4 or more	31.8
Don't know	1.7
Total percent	100.0
Number of births	4,007

Table 7.2 Tetanus toxoid coverage

Percent distribution of births during the five-year period before the survey in which the mother received antenatal care by the number of tetanus toxoid injections received during the pregnancy and the type of facility providing the tetanus toxoid vaccinations, Egypt 1997

Antenatal care and tetanus toxoid	
Tetanus toxoid coverage	
None	27.1
One dose	31.8
Two doses	40.3
Not sure/missing	0.8
Type of facility	
Public sector	64.4
Private sector	3.1
Other	5.4
No vaccinations	27.1
Total percent	100.0
Number of births	4,007

Table 7.3 Antenatal care and tetanus toxoid coverage

Percent distribution of births during the five-year period before the survey by whether the mother received antenatal care and/or a tetanus toxoid injection, Egypt 1997

Antenatal care (ANC) and tetanus toxoid (TT)	
Both ANC and TT injection (s)	39.2
ANC only	12.8
TT injection(s) only	32.9
Neither ANC nor TT injection (s)	15.1
Total percent	100.0
Number of births	4,007

tetanus toxoid injections. Table 7.3 shows the overlap between antenatal care and tetanus coverage.

Overall, mothers reported receiving both tetanus toxoid vaccinations and other antenatal care in the case of 39 percent of the births in the five-year period before the survey. In 33 percent of the births, mothers had received tetanus toxoid vaccinations but had not seen a doctor for antenatal care. Mothers reported receiving antenatal care but no tetanus toxoid injections in the case 13 percent of the births. The proportion of births for which there was apparently no medical contact during pregnancy (i.e., neither tetanus toxoid injections nor antenatal care visits) was 15 percent. These results highlight the need for more cross-referrals between the various services in health clinics.

D. Advice about ANC/FP

In an effort to increase the proportion of Egyptian women receiving antenatal care, the Ministry of Health 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 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 (26 percent) than information about family planning (13 percent).

Table 7.4 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 1997

Delivery assistance	
Type of provider	
Doctor	46.9
Trained nurse/midwife	9.5
Traditional birth attendant	38.1
Relative/other	3.8
No assistance	1.5
Don't know/missing	0.1
Type of facility	
Public sector	19.4
Private sector	20.3
At home	59.7
Other	0.5
DK/missing	0.1
Total percent	100.0
Number of births	4,007

E. Assistance at Delivery

Other maternity care indicators obtained in the EIDHS-97 relate to circumstances at delivery including the person who assisted with the delivery and the place where the delivery occurred. Table 7.4 presents information on these indicators for births during the five-year period before the survey.

A doctor or trained nurse/midwife assisted at the delivery of 56 percent of all births in the five-year period before the EIDHS-97. Most of the remaining births were assisted by *dayas* (traditional birth attendants). 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 facilities.

F. Differentials in Maternal Health Indicators

Table 7.5 examines variations in maternity care indicators according to selected socio-economic and demographic background characteristics. Considering age patterns, women under age 20 are less likely than older women to receive antenatal care or assistance at 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 43 percent among first births to women to 15 percent among births of order six or higher.

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. With regard to tetanus toxoid vaccinations, however, there is almost no differential in the proportions of births in which the mother received at least one injection. Regional differentials are also less marked with respect to tetanus toxoid coverage.

G. Trends in Maternal Health Indicators

Table 7.6 looks at the trends in key maternal health indicators during the period 1988-1997. The table suggests that there has been a very sharp increase in the proportions of women who receive

Table 7.5 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 1997

Background characteristic	Any antenatal care	Regular antenatal care	Tetanus toxoid injections	Assisted at by trained medical provider	Delivery In medical facility
Age					
under 20	46.8	21.7	77.1	48.4	33.3
20-34	53.1	33.2	73.4	57.7	40.6
35-49	49.9	31.8	57.0	55.1	39.4
Birth order					
1	65.5	43.0	81.5	71.6	56.0
2-3	55.4	34.9	74.5	59.9	43.4
4-5	44.5	26.0	68.5	47.5	29.1
6 or more	34.0	15.0	57.5	36.9	20.2
Urban-rural residence					
Urban	70.8	53.1	70.1	76.9	63.8
Rural	40.1	18.1	73.5	43.2	24.2
Place of residence					
Urban Governorates	74.0	58.2	67.6	82.3	71.5
Lower Egypt	53.2	31.2	76.4	60.3	41.0
Urban	75.2	55.1	71.3	79.3	67.1
Rural	46.5	24.0	78.0	54.5	33.1
Upper Egypt	41.3	20.6	70.2	41.3	24.4
Urban	61.9	43.0	73.2	66.2	48.3
Rural	33.8	12.4	69.1	32.3	15.7
Education					
No education	34.5	15.6	67.8	38.4	22.5
Some primary	49.2	25.6	71.2	50.0	33.0
Primary comp./					
Some secondary	59.2	37.7	79.1	63.1	48.7
Completed					
secondary/Higher	77.1	57.2	76.0	84.5	65.6
Total	52.0	31.8	72.1	56.4	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

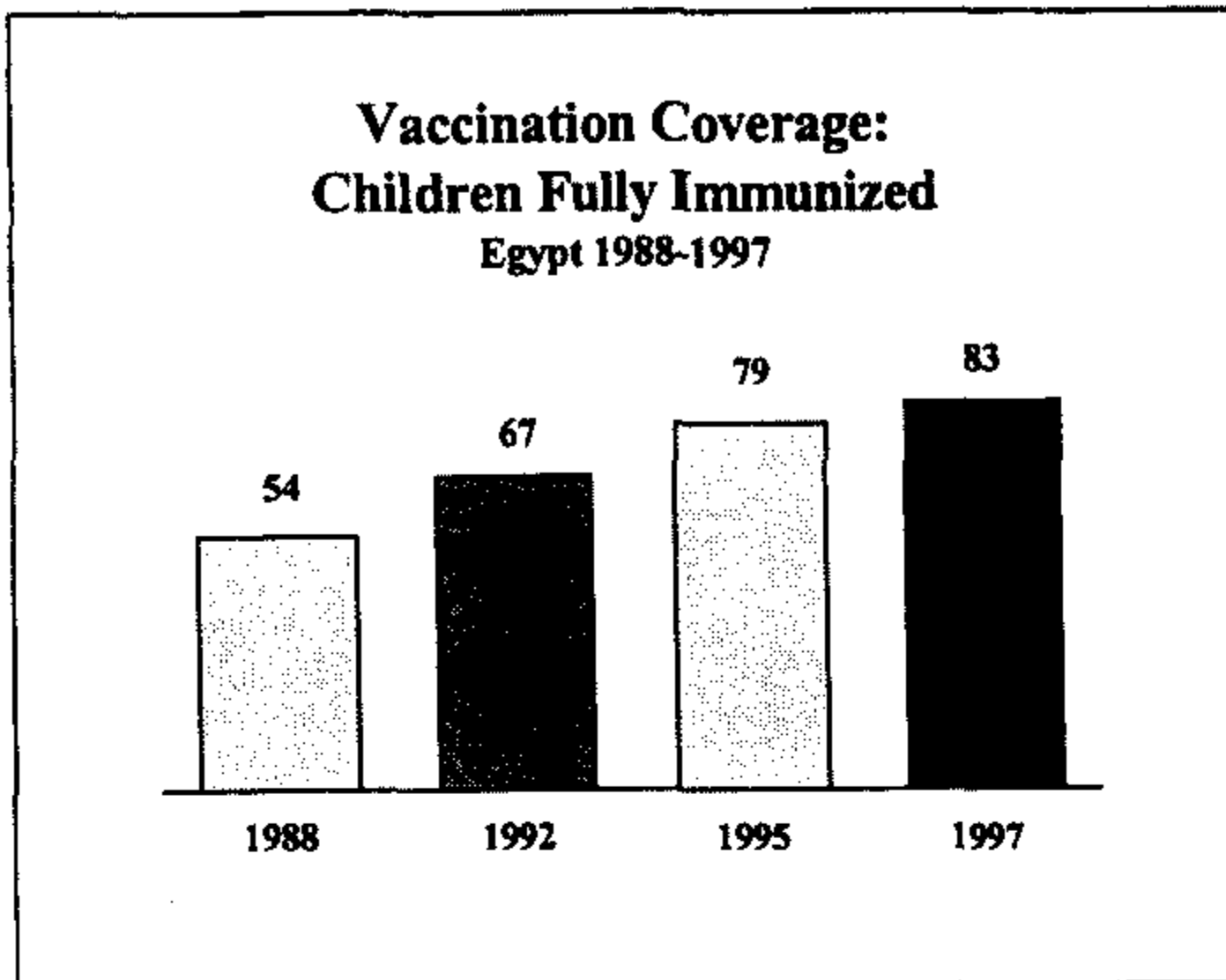
tetanus toxoid injections during pregnancy. Improvements in other maternal health indicators were more gradual but steady during the period. The proportion of births in which the mother had regular antenatal care increased from 23 to 32 percent between 1992 and 1997. The decline in the total proportion 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 56 percent in 1997.

Table 7.6 Trends in maternal health indicators

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 1988-1997

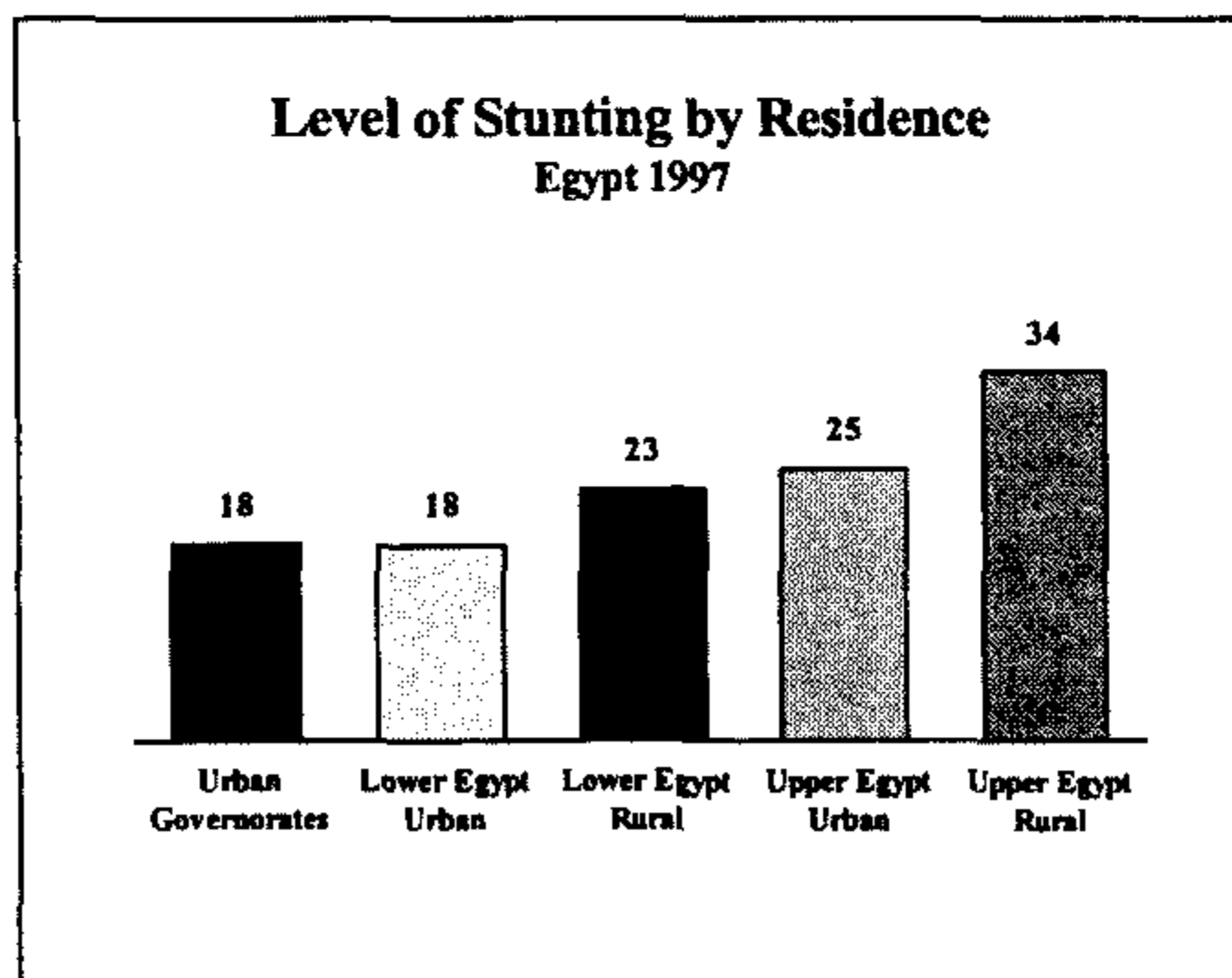
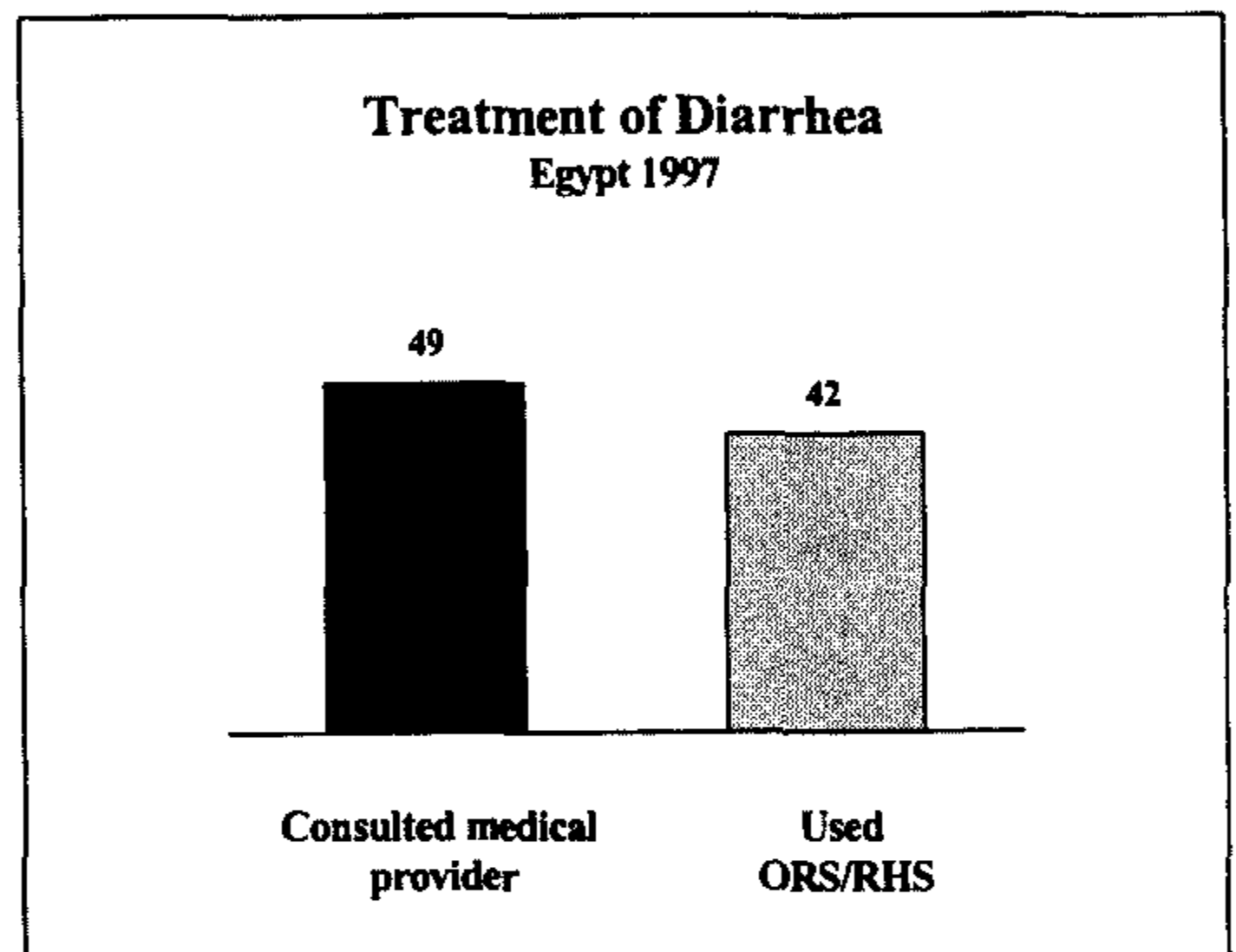
Maternal health indicator	EDHS-88	EMCHS-91	EDHS-92	EDHS-95	EIDHS-97
Antenatal care					
Any	52.8	52.1	52.9	39.1	52.0
Regular	U	U	22.5	28.3	31.8
Tetanus toxoid injection	11.4	42.5	57.3	69.5	72.1
Medical assistance at delivery	34.6	36.5	40.7	46.3	56.4
Delivered in medical facility	22.9	U	27.1	32.5	39.7

U = unknown (not available)



The proportion of young children who are fully immunized has been increasing steadily in Egypt.

Medical providers were consulted in nearly half the cases of diarrheal illness in children under age 5, and 4 in 10 children received some form of oral rehydration therapy.



The proportion of children whose growth is stunted, i.e., the child is too short for his age, ranges from 18 in the Urban Governorates and urban Lower Egypt to 34 percent in rural Upper Egypt.

8 Child Health

The EIDHS-97 obtained information on a number of key child health indicators, including immunization of young children and treatment practices when a child has diarrhea.

A. Vaccination Coverage

In the EIDHS-97, 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 card⁴. 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 and, for those whom no document was seen (or a vaccination not recorded), from the information provided by the mother. Mothers were able to provide birth records for 73 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, 83 percent are regarded as fully immunized. Only two percent had received no vaccinations. Looking at coverage levels for individual vaccines, the proportions of children who have received the BCG vaccination and three doses of DPT and polio vaccines exceed 90 percent. Almost 90 percent had also received the measles vaccine. Although coverage is somewhat lower than the levels for the other vaccines, 77 percent of children had received three doses of the hepatitis vaccine.

Considering differentials in immunization coverage, there is no difference 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. Looking at place of residence, the percentage considered to be fully immunized was lowest in rural Upper Egypt, where 1 in 4 children had not received all recommended vaccinations.

⁴During 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 period shortly before the EIDHS-97. Therefore, the EIDHS-97 questionnaire was modified so that information from either document could be easily recorded.

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 1997

Background Characteristics	Record seen	DPT			Polio			Hepatitis			Measles	Fully immunized	None	Number of children	
		BCG	1	2	3	1	2	3	1	2					3
Sex															
Male	75.4	97.1	97.5	95.7	90.3	99.3	96.5	91.9	84.5	80.8	75.9	88.9	83.5	0.5	411
Female	69.1	94.6	96.6	93.1	88.7	97.3	95.5	90.7	86.0	82.9	77.6	90.0	82.1	2.7	351
Urban-rural															
Urban	72.6	98.0	97.7	95.9	91.6	98.6	96.8	93.9	87.3	83.2	78.6	91.2	86.4	1.4	315
Rural	72.5	94.5	96.7	93.6	88.1	98.2	95.5	89.5	83.6	80.7	75.3	88.1	80.3	1.6	446
Place of residence															
Urban Governorates	67.6	97.9	96.2	95.9	92.7	98.0	96.7	95.7	86.0	83.9	78.0	89.9	86.7	2.0	153
Lower Egypt	76.5	96.9	98.8	95.4	90.9	99.5	96.2	91.0	91.0	87.5	81.6	93.4	84.7	0.5	295
Urban	81.4	96.8	98.0	92.7	86.7	98.0	92.7	86.7	94.6	87.1	82.6	89.6	83.2	2.0	69
Rural	75.0	96.9	99.1	96.2	92.2	100.0	97.3	92.3	89.9	87.6	81.3	94.5	85.1	0.0	226
Upper Egypt	71.1	94.1	96.0	93.0	86.8	97.5	95.5	89.6	79.2	75.3	71.5	85.4	79.3	2.3	314
Urban	74.3	99.1	100.0	98.1	93.4	100.0	100.0	96.3	83.9	79.2	76.7	94.5	88.3	0.0	94
Rural	69.8	91.9	94.3	90.8	83.9	96.4	93.5	86.7	77.2	73.7	69.2	81.5	75.4	3.3	220
Education															
No education	73.3	91.1	93.8	91.0	86.0	96.6	93.5	87.5	77.5	74.3	68.3	83.0	76.1	3.2	294
Some primary	72.4	97.8	97.7	95.9	91.4	98.8	97.8	94.8	89.4	87.9	82.7	88.0	83.4	1.2	125
Primary comp./															
Some secondary	71.1	99.6	100.0	96.6	91.1	100.0	98.0	92.6	88.9	82.9	80.2	98.6	90.8	0.0	105
Secondary comp./Higher	72.2	99.2	99.7	97.2	92.3	99.7	97.3	93.7	90.7	87.2	82.3	93.9	87.4	0.3	237
Total	72.5	95.9	97.1	94.5	89.6	98.4	96.0	91.3	85.1	81.7	76.7	89.4	82.8	1.5	761

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

Trends in Vaccination Coverage

Table 8.2 shows vaccination coverage rates in Egypt during the period 1988-1997. The percentage of children 12-23 months who were fully immunized increased steadily during the period, from 54 percent in 1988 to 83 percent in 1997. The table also documents the rapid expansion in

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 1988-1997

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

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

Source: EDHS-88 and EDHS-92 - Sommerfelt and Piani, 1977, Table 7.1
EDHS-95 - El-Zanaty et al., 1996, Table 11.2

hepatitis coverage rates after the inclusion of the vaccine in the country's immunization program.

B. Prevalence of Childhood Illnesses

In the EIDHS-97, 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-December, 1997 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, 15 percent of children under age five were reported to have had diarrhea in the

Background characteristic	All diarrhea	Diarrhea with blood in stools	Fever	Cough with short, rapid breathing	Number of children
Child's age					
< 6 months	18.4	0.0	33.0	28.3	376
6-11 months	27.9	0.7	52.5	42.6	335
12-23 months	23.4	1.9	42.8	34.4	761
24-35 months	13.8	2.6	45.1	32.7	759
36-47 months	9.4	1.0	41.4	27.7	774
48-59 months	5.9	0.8	37.8	32.4	776
Sex					
Male	17.0	1.3	42.3	34.0	1,982
Female	12.6	1.4	41.4	30.6	1,801
Urban-rural residence					
Urban	15.1	1.6	43.7	31.7	1,514
Rural	14.8	1.2	40.6	32.8	2,269
Place of residence					
Urban Governorates	12.8	1.2	43.0	30.0	730
Lower Egypt	16.5	1.4	44.7	33.5	1,485
Urban	19.5	1.4	42.8	32.5	354
Rural	15.5	1.3	45.3	33.8	1,132
Upper Egypt	14.4	1.4	38.6	32.4	1,567
Urban	15.3	2.2	45.5	34.0	430
Rural	14.1	1.1	36.0	31.8	1,137
Education					
No education	16.7	2.1	40.7	33.2	1,590
Some primary	15.1	0.6	42.3	33.6	638
Primary comp./Some secondary	16.4	1.4	43.7	35.5	484
Secondary comp./Higher	11.5	0.7	42.5	29.1	1,070
Total	14.9	1.3	41.9	32.4	3,783

two-week period before the survey, and 1 percent were reported as having bloody stools. As expected, diarrhea is more prevalent among children age 6-23 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 also shows the prevalence of fever and of symptoms of acute respiratory infection (ARI) among young children. More than 40 percent of children reported to have had a fever during the two-week period before the survey, and 32 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.

C. Treatment of Diarrhea

The EIDHS-97 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 49 percent of the cases. Among mothers reporting that medical advice was sought, the majority said that a private doctor was consulted.

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 1997

Background characteristics	Taken to health facility			Oral rehydration therapy			Increased fluids	Anti-biotics	Injection	Home remedy/Other	None	Number Of children
	Any	Public	Private	ORS Packets	RHS	Either ORS/RHS						
Sex												
Male	44.8	15.3	30.5	36.9	8.5	40.8	27.6	37.1	5.1	27.2	16.9	338
Female	55.3	18.6	37.5	40.7	6.6	44.1	26.8	40.4	6.5	16.4	18.8	226
Urban-rural												
Urban	44.3	16.7	27.8	33.4	8.8	38.3	30.6	40.0	3.1	21.2	18.1	228
Rural	52.2	16.6	37.0	41.9	7.0	44.8	25.0	37.4	7.4	23.9	17.4	336
Place of residence												
Urban Gov.	47.8	19.3	28.6	29.0	15.8	39.9	31.6	34.8	3.2	18.4	18.2	94
Lower Egypt	49.9	16.4	35.4	43.4	7.6	44.9	28.2	40.5	7.4	20.8	16.4	244
Urban	34.2	11.2	23.5	35.1	3.8	35.1	28.6	47.1	4.1	17.2	20.5	69
Rural	56.1	18.4	40.0	46.7	9.1	48.8	28.0	37.9	8.7	22.2	14.8	176
Upper Egypt	48.5	15.9	33.0	37.0	4.5	40.1	24.5	37.7	4.7	26.9	18.8	226
Urban	49.9	18.8	31.1	37.9	4.1	39.4	31.2	40.0	1.8	29.5	15.5	66
Rural	47.9	14.7	33.8	36.6	4.7	40.3	21.7	36.7	5.9	25.9	20.2	160
Education												
No education	46.9	19.8	27.2	42.1	8.3	47.1	30.4	31.8	5.8	23.1	16.8	265
Some primary	48.0	14.5	35.8	39.4	7.7	42.3	21.3	42.0	10.5	14.0	20.2	96
Primary completed/Some secondary	46.1	17.4	28.7	34.5	7.5	37.6	26.3	38.3	0.4	22.7	20.3	79
Secondary comp./Higher	56.1	11.2	47.5	32.3	6.6	34.2	25.8	50.0	4.9	29.3	15.8	123
Total	49.0	16.7	33.3	38.4	7.7	42.1	27.3	38.4	5.6	22.8	17.7	564

Note: Oral rehydration therapy (ORT) includes solutions prepared from ORS packets and recommended home fluids (RHF), 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. Slightly more than 40 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. Children in the age group 6-23 months, where the prevalence of diarrhea was the highest, were also the most likely to have been treated with oral rehydration therapy. There is comparatively little variation by residence in the proportions of children treated with some form of ORT.

Among the other common responses to diarrheal episodes was to increase the amount of fluids a child was given. Table 8.4 shows that 27 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 or home remedies to treat the diarrhea.

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 or with antibiotics.

Considering the other differentials shown in Table 8.4, a medical provider was consulted more often for children living in rural areas and children whose mothers had completed secondary or higher level than for other children. Rural children also were more likely than urban children to have received some form of ORT. There was a negative association between the likelihood a child was given some form of ORT and the mother's level of education.

D. Treatment of Respiratory Illnesses

The EIDHS-97 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 67 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.

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 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.

E. Nutritional Status of Children

Nutritional status is a primary determinant of a child's health and well-being. Both inadequate or unbalanced diets and chronic illness are associated with poor nutritional status among children. The 1997 EIDHS included the collection of anthropometric data which permit an assessment of the nutritional status of young children in Egypt.

Measurement of Nutritional Status

In order to assess nutritional status, measurements of height⁵ and weight were obtained using the survey for children of EIDHS respondents who were under age five. Using these anthropometric

⁵ Although the term "height" is used, children younger than 24 months were measured lying on a measuring board, while standing height was measured for older children. Weight data were obtained using a digital scale with an accuracy of 100 grams.

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 1997

Background characteristics	Taken to health facility			Number of children
	Any	Public	Private	
Sex				
Male	68.3	22.6	46.9	673
Female	66.0	20.1	46.6	552
Urban-rural residence				
Urban	75.0	24.3	52.5	481
Rural	62.2	19.6	43.0	745
Place of residence				
Urban Governorates	80.6	27.7	54.2	219
Lower Egypt	68.0	19.4	49.0	498
Urban	70.5	20.9	51.1	115
Rural	67.3	18.9	48.4	383
Upper Egypt	60.7	20.8	41.3	508
Urban	70.2	21.9	51.3	146
Rural	56.9	20.3	37.3	362
Education				
No education	61.5	24.3	38.7	528
Some primary	69.9	26.2	43.7	214
Primary comp./Some secondary	69.9	19.9	50.5	172
Secondary comp./Higher	73.7	14.4	60.5	311
Total	67.3	21.5	46.8	1,225

measurements as well as information on the ages of the children, three standard indices of phy growth describing the nutritional status of children are constructed:

height-for-age
weight-for-height
weight-for-age

Each index measures a somewhat different aspect of nutritional status. The height-for-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 are considered as undernourished and those whose 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 8.6 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

Table 8.6 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 1997

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 ¹	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage below -3 SD	Percentage below -2 SD ¹	
Age							
<6 months	3.3	9.4	1.1	8.1	0.0	2.8	310
6-11 months	12.0	25.1	3.4	11.2	7.4	20.2	286
12-23 months	13.7	31.0	2.2	6.6	4.2	16.4	666
24-35 months	13.0	25.5	1.6	4.6	3.3	12.7	675
36-47 months	9.5	27.3	1.8	5.5	1.5	11.2	692
48-59 months	7.2	22.9	1.2	4.8	1.4	7.0	699
Sex							
Male	10.2	25.6	1.7	6.2	3.1	12.4	1,735
Female	10.2	24.1	1.8	6.1	2.4	10.9	1,593
Birth order							
1	7.5	21.4	2.1	6.0	2.5	10.1	770
2-3	9.7	22.8	1.4	4.7	2.3	10.4	1,355
4-5	9.6	25.8	1.8	8.4	3.1	12.2	666
6+	16.0	34.0	2.4	7.1	4.0	16.5	537
Birth interval							
First birth	7.4	21.1	2.1	5.9	2.4	10.0	781
<24 months	14.5	30.8	1.2	5.6	3.7	13.2	591
24-47 months	11.0	26.8	1.6	6.1	2.6	12.8	1,247
48+ months	8.2	20.7	2.3	6.9	2.5	10.3	709
All children	10.2	24.9	1.8	6.1	2.8	11.7	3,328

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.

¹ Includes children who are below -3 SD.

selected other demographic characteristics. Overall, one in 4 children in the age group are considered to be stunted or too short for their age and 6 percent are wasted, or too thin for their height. The proportion considered as underweight is 12 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.

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.

Data on the nutrition status indicators are presented in Table 8.7 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 28 percent compared with 20 percent among urban children.

Table 8.7 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 ¹	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage below -3 SD	Percentage below -2 SD ¹	
Urban-rural residence							
Urban	7.4	20.0	1.9	5.5	1.9	9.5	1,344
Rural	12.1	28.2	1.7	6.5	3.4	13.1	1,984
Place of residence							
Urban Governorates	6.9	18.4	2.1	5.9	2.1	11.0	629
Lower Egypt	8.1	21.5	1.1	4.6	2.0	9.1	1,357
Urban	6.4	17.6	1.6	4.6	1.5	7.4	333
Rural	8.7	22.8	1.0	4.6	2.2	9.7	1,023
Upper Egypt	13.8	31.4	2.3	7.8	3.8	14.6	1,342
Urban	9.0	24.7	1.7	5.7	1.8	8.9	381
Rural	15.8	34.0	2.5	8.6	4.6	16.8	961
Education							
No education	13.4	30.1	2.0	6.8	3.7	14.4	1,390
Some primary	10.6	24.7	2.7	6.7	3.8	13.3	577
Primary comp./some secondary	7.6	21.6	0.9	5.1	2.0	9.2	439
Secondary comp./Higher	6.4	18.6	1.2	5.3	1.0	7.8	922
All children	10.2	24.9	1.8	6.1	2.8	11.7	3,328

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.

¹ Includes children who are below -3 SD.

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 19 percent among children of mother's who have at least a secondary education to 30 percent among children whose mothers never attended school.

Trends in Nutrition Status

Table 8.8 looks at recent trends in the nutritional status of children under age 5 in Egypt, using data from the 1992, 1995 and 1997 DHS surveys. The results indicate that levels of undernutrition have remained relatively stable during the current decade. Between 25 and 30 percent children were stunted at the time of each of the surveys, 3-6 percent were wasted, and 10-12 percent were considered to be underweight.

Table 8.8 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 1992-1997

Residence	Height-for-age			Weight-for-height			Weight-for-age		
	1992	1995	1997	1992	1995	1997	1992	1995	1997
Urban-rural residence									
Urban	20.0	22.8	20.0	3.4	4.7	5.5	7.1	9.9	9.5
Rural	29.6	34.4	22.8	3.4	4.5	6.5	11.6	14.1	13.1
Place of residence									
Urban Governorates	16.8	18.4	18.4	4.5	5.4	5.9	7.7	9.1	11.0
Lower Egypt	27.0	28.0	21.5	2.6	3.0	4.6	8.1	9.6	9.1
Urban	20.5	25.6	17.6	2.3	2.4	4.6	4.5	8.8	7.4
Rural	29.1	28.8	22.8	2.7	3.2	4.6	9.3	9.9	9.7
Upper Egypt	28.7	36.5	31.4	3.7	5.2	7.8	12.6	16.1	14.6
Urban	24.6	27.2	24.7	2.8	4.7	5.7	8.8	11.0	8.9
Rural	30.0	39.7	34.0	4.0	5.3	8.6	13.8	17.8	16.8
Total	26.0	29.8	24.9	3.4	4.6	6.1	9.9	12.5	11.7

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 undernutrition at all points in time, while children in rural Upper Egypt consistently had the highest levels of both acute and chronic undernutrition throughout the period.

F. Infant and Child Mortality

Trends in Early Childhood Mortality

The maternal and child health indicators for which information was collected in the EIDHS-97 all have an impact on the mortality of young children. Increased family planning use also contributes significantly to improving child survival by reducing the numbers of births in which there is an elevated risk of mortality for the child.

Data on children's birth dates, survivorship status and age at death obtained in the birth histories collected in the EIDHS-97 can be used to estimate the levels and trends in mortality among children under the age of five in Egypt. Table 8.9 presents the information on early childhood mortality for a 15-year period prior to the survey. The results suggest that mortality among young children has fallen steadily during the period since 1985. Overall, under-five mortality has fallen steadily from an estimated level of 126 deaths per 1,000 births during the period 1983-1987 to 65 deaths per 1,000 births during the five-year period immediately prior to the EIDHS-97.

Table 8.9 Levels and trends in early childhood mortality

Early childhood mortality rates for the five-year periods before the 1997 EIDHS

Approximate calendar period	Neonatal	Post-neonatal	Infant	Childhood	Under-five
1993-1997	29.3	23.0	52.3	13.3	64.9
1988-1992	35.3	35.8	71.1	21.0	90.6
1983-1987	46.5	42.0	88.6	41.2	126.2

Differentials in Early Childhood Mortality

Although there has been a steady decline in mortality levels among young children in Egypt, Tables 8.10 and 8.11 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 8.10 shows that mortality levels are higher in rural areas than in urban areas. Place of residence is also associated with

Table 8.10 Early childhood mortality by socio-economic characteristics

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

Background characteristic	Neonatal	Post-neonatal	Infant	Childhood	Under-five
Urban-rural residence					
Urban	22.3	20.0	42.3	7.7	49.6
Rural	39.0	36.2	75.2	24.2	97.5
Place of residence					
Urban Governorates	18.7	9.8	28.4	4.9	33.2
Lower Egypt	30.3	22.5	52.9	12.7	64.9
Urban	23.8	19.5	43.4	8.3	51.3
Rural	32.4	23.5	55.9	14.3	69.4
Upper Egypt	40.5	45.6	86.1	28.3	111.9
Urban	26.8	36.4	63.8	12.0	75.0
Rural	45.6	49.0	94.6	34.7	126.1
Education					
No education	36.8	34.7	71.5	22.9	92.7
Some primary	32.5	37.0	69.6	21.8	89.9
Primary comp./Some sec.	32.1	28.2	60.3	12.1	71.7
Secondary comp./Higher	24.2	14.9	39.1	4.2	43.1
Total	32.4	29.7	62.1	17.4	78.4

mortality levels, with the highest levels observed in Upper Egypt, particularly in rural areas where the under-five mortality rate is 126. As expected, Table 8.10 also indicates that mortality levels are negatively associated with the educational level of the mother.

Table 8.11 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. Mortality levels are also significantly greater for children of birth order six or higher and for births to women under age 20.

Table 8.11 Early childhood mortality by demographic characteristics

Early childhood mortality rates for the ten-year period preceding the survey by selected demographic characteristics, Egypt 1997

Background characteristic	Neonatal	Post-neonatal	Infant	Childhood	Under-five
Sex					
Male	38.0	25.0	63.0	16.3	78.3
Female	26.4	34.7	61.2	18.4	77.5
Mother's age at birth					
Less than 20	59.4	48.9	108.3	19.1	125.4
20-34	27.9	25.3	53.2	17.3	69.6
35 or more	30.9	37.9	68.9	14.9	82.7
Birth order					
1	34.2	23.3	57.5	8.1	65.1
2-3	24.6	27.3	51.9	13.6	64.9
4-5	37.7	27.6	65.3	24.6	88.2
6+	41.4	55.3	96.6	29.6	123.4
Previous birth interval					
Less than 2 years	56.9	63.9	120.8	41.7	157.5
2-3 years	20.8	19.7	40.5	10.7	50.7
4 years or more	21.2	8.7	29.9	8.3	38.0

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APPENDIX A

ESTIMATES OF SAMPLING ERRORS

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the EIDHS-97 to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the EIDHS-97 is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the *standard error* for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the EIDHS-97 sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the EIDHS-97 is the ISSA Sampling Error Module (ISSAS). This module used the Taylor linearization method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The Taylor linearization method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y , and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$\text{var}(r) = \frac{1-f}{x^2} \sum_{h=1}^H \left[\frac{m_h}{m_h-1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - r \cdot x_{hi}, \text{ and } z_h = y_h - r \cdot x_h$$

where h represents the stratum which varies from 1 to H,
 m_h is the total number of enumeration areas selected in the h^{th} stratum,
 y_{hi} is the sum of the values of variable y in EA i in the h^{th} stratum,
 x_{hi} is the sum of the number of cases in EA i in the h^{th} stratum, and
 f is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers *all but one* of the clusters in the calculation of the estimates. Pseudo-independent replications are thus created. In the EIDHS-97, there were 934 non-empty clusters (2 clusters per PSU). Hence, 934 replications were created. The variance of a rate r is calculated as follows:

$$\text{var}(r) = \frac{1}{k(k-1)} \sum_{i=1}^k (r_i - r)^2$$

in which

$$r_i = k r - (k-1) r_{(i)}$$

where r is the estimate computed from the full sample of 934 clusters,
 $r_{(i)}$ is the estimate computed from the reduced sample of 933 clusters (i^{th} cluster excluded),
and
 k is the total number of clusters.

In addition to the standard error, ISSAS computes the design effect (DEFT) for each estimate, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. ISSAS also computes the relative error and confidence limits for the estimates.

Sampling errors for the EIDHS-97 are calculated for the country as a whole for selected variables considered to be of primary interest. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table A.1. Tables A.2 presents the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits ($R \pm 2SE$), for each variable. The DEFT is considered undefined when the standard error for a simple random sample is zero.

In general, the relative standard error for most estimates for the country as a whole is small, except for estimates of very small proportions. For example, for the variable *contraceptive use for currently married women age 15-49*, the relative standard errors as a percent of the estimated mean is 1.9 percent.

The confidence interval (e.g., as calculated for *contraceptive use for currently married women age 15-49*) can be interpreted as follows: the overall national sample proportion is 0.545 and its standard error is .01. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e. $0.545 \pm 2(.01)$. There is a high probability (95 percent) that the *true* average proportion of contraceptive use for currently married women age 15 to 49 is between 0.525 and 0.566.

Table A.1 List of variables selected for sampling error calculation, Egypt Interim DHS 1997

Variable name	Estimate	Base population
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 1997

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	0.430	0.014	5,554	5,554	2.034	0.031	0.403	0.457
Ever used any contraceptive method	0.758	0.010	5,152	5,157	1.605	0.013	0.739	0.777
Currently using any contraceptive method	0.545	0.010	5,152	5,157	1.493	0.019	0.525	0.566
Currently using a modern method	0.518	0.010	5,152	5,157	1.466	0.020	0.497	0.538
Currently using pill	0.102	0.005	5,152	5,157	1.183	0.049	0.092	0.112
Currently using IUD	0.346	0.010	5,152	5,157	1.443	0.028	0.327	0.365
Currently using injectables	0.039	0.003	5,152	5,157	1.234	0.086	0.032	0.045
Using public sector source	0.409	0.013	2,576	2,671	1.343	0.032	0.383	0.435
Want no more children	0.646	0.008	5,152	5,157	1.160	0.012	0.631	0.662
Want to delay at least 2 years	0.146	0.006	5,152	5,157	1.128	0.038	0.135	0.157
Mothers received tetanus injection	0.721	0.011	3,971	4,007	1.270	0.015	0.700	0.743
Mothers received medical care at delivery	0.564	0.016	3,971	4,007	1.653	0.029	0.532	0.596
Had diarrhea in last 2 weeks	0.149	0.008	3,749	3,783	1.221	0.051	0.134	0.164
Treated with ORS packets	0.384	0.023	561	564	1.089	0.060	0.338	0.431
Consulted medical personnel about diarrhea	0.490	0.023	561	564	1.042	0.047	0.444	0.536
Having immunization record	0.725	0.020	742	761	1.226	0.028	0.685	0.765
Received BCG vaccination	0.959	0.008	742	761	1.056	0.008	0.944	0.975
Received DPT vaccination (3 doses)	0.896	0.013	742	761	1.111	0.014	0.870	0.921
Received polio vaccination (3 doses)	0.913	0.011	742	761	1.099	0.012	0.891	0.936
Received measles vaccination	0.894	0.013	742	761	1.155	0.015	0.867	0.921
Received hepatitis vaccination (3 doses)	0.767	0.019	742	761	1.177	0.024	0.730	0.804
Fully immunized	0.828	0.016	742	761	1.138	0.019	0.797	0.860
Weight-for-height	0.061	0.005	3,328	3,328	1.174	0.082	0.051	0.071
Height-for-age	0.249	0.010	3,328	3,328	1.240	0.039	0.229	0.268
Weight-for-age	0.117	0.007	3,328	3,328	1.183	0.059	0.103	0.130
Total fertility rate (0-3 years)	3.249	0.081	NA	159,308	1.171	0.025	3.088	3.410
Neonatal mortality rate (0-9 years)	32.395	2.533	8,297	8,362	1.149	0.078	27.329	37.461
Postneonatal mortality rate (0-9 years)	62.084	3.514	8,320	8,383	1.176	0.057	55.057	69.111
Infant mortality rate (0-9 years)	17.354	1.952	8,326	8,388	1.164	0.112	13.449	21.259
Child mortality rate (0-9 years)	78.360	4.089	8,351	8,412	1.212	0.052	70.183	86.538
Under-five mortality rate (0-9 years)	26.689	2.356	8,318	8,381	1.175	0.079	24.976	34.401