Timor-Leste 2003 Demographic and Health Survey

Ministry of Health
Dili, Timor-Leste

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Dili, Timor Leste

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The Timor-Leste 2003 Demographic and Health Survey (TL 2003 DHS) is the first comprehensive assessment of the demographic, health and nutrition status of the population of Timor-Leste since independence. The survey was similar to the surveys conducted in other countries as part of the worldwide program of Demographic and Health Surveys. It was designed to collect data on fertility, family planning, maternal and child health and nutritional status of adults and children.

The Government of Timor-Leste provided most of the survey costs as part of the activities of the Second Health Sector Rehabilitation and Development Project which was funded from the World Bank Trust Fund for East Timor. The survey data was collected by a team from the National Statistics Office, Ministry of Planning & Finance. Technical assistance was provided by the Centre for Clinical Epidemiology and Biostatistics, University of Newcastle, Newcastle, Australia, and the National Centre for Epidemiology and Population Health, The Australian National University, Canberra, Australia and the project activities were managed by ACIL Australia Pty Ltd.

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Recommended Citation

Ministry of Health and National Statistics Office, Timor-Leste, and University of Newcastle, The Australian National University, ACIL Australia Pty Ltd, Australia, 2004. *Timor-Leste 2003 Demographic and Health Survey,* University of Newcastle, Newcastle, Australia.

Chapter 1
Introduction

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1 Introduction

1.1 Geography, history and economy

1.1.1 Geography

Timor Leste occupies the eastern end of the island of Timor, the easternmost of the Lesser Sunda Islands. On two sides it is surrounded by the sea. To the north lies the Savu Sea and the Strait of Wetar and to the south, the Timor Sea. In the west, it has a direct border with the Indonesian province of Nusa Tenggara Timur and about 500 kilometres to the south lies Australia. Also included in the territory of Timor Leste is the enclave of Oecussi, in western Timor and the islands of Ataúro and Jaco.

The centre of Timor Leste consists of rugged hills and mountains with the highest peak at over 3,000 meters. The climate is tropical with an average temperature of 21°C and 80% humidity. There are two seasons and the wet season occurs between November and April. The southern coastal plain has two wet seasons and is able to support two harvests. In the recent past the island has been affected by the El Nino weather phenomena and experienced severe droughts.

1.1.2 History

There were three waves of migration to Timor, the first occurring between 40,000 to 20,000 years BC. This first group of people, the Vedo-Austroloide, settled in the mountainous interior of the country. Around 3000 BC, there was a wave of Melanesian migration and in about 2500 BC, people from South China and North Indochina arrived.

Timor Leste was known from an early period for its natural resources. A Chinese traveller in 1260 documented how the sandalwood forests of the region were generating substantial trade activity. Colonial involvement in the region began in 1515 when the Portuguese landed in what is now the region of Oecussi. However, it was not until the 1700s that they began to have a substantial impact on the region. Their overexploitation of sandalwood resulted in the near extinction of that plant in the area.

During World War II, the Japanese took an interest in Timor Leste. To begin with its occupation offered the potential to assist their southward expansion. Furthermore, Portugal was a relatively weak colonial power, and the oil and gas in the region were particularly attractive resources. Approximately 60,000 East Timorese were killed while assisting the Australian soldiers in defeating the Japanese (UNDP, 2002:70).

Portuguese rule after the defeat of the Japanese changed and they invested more in the colony resulting in modest growth in the economy. Nonetheless, traditional East Timorese society remained relatively untouched by the Portuguese who used a combination of direct and indirect methods to control the colony. Traditional power holders in East Timorese society were responsible for exercising the orders of the colonial leaders. In the

post WWII period Portuguese education became more widely accessible to East Timorese. Nonetheless, by the end of the Portuguese occupation only 5% of the population were literate (UNDP, 2002:47).

The Indonesian invasion of December 7, 1975 was the beginning of a new era of colonial rule for the East Timorese. Their new colonisers used a dramatically different approach to the Portuguese. In order to prove the legitimacy of the invasion, as well as to exercise control over the region, the Indonesian government embarked on an extensive program to develop the region. Infrastructure such as roads, health clinics and schools were developed, while the economy began to be less dependent on agriculture. Through the education system Indonesian language was introduced to the younger members of the population.

In 1991, the release of footage of the Santa Cruz massacre of protesters by the Indonesian military changed the international perception of the Indonesian occupation of East Timor. The East Timorese independence movement gathered support globally. Other events including the arrest of Xanana Gusmao, leader of the resistance movement, in 1992, and the awarding of the Nobel Peace Prize to Jose Ramos Horta and Bishop Carlos Ximenes Belo further strengthened the profile of the movement.

In 1998 with the fall of Suharto in Indonesia, there was substantial pressure on the newly appointed Habibie government to prove its commitment to democratic reform. As a result East Timorese were offered the opportunity to take part in a referendum to determine their independence. Seventy eight percent of the population voted yes to becoming independent in the referendum on August 30 1999 (UNDP, 2002:72).

The response from the pro-integration militia and the Indonesian armed forces to this decision was devastating. According to the UNDP Human Development Report, 80% of schools and health clinics were destroyed, in some places up to 90% of the electricity generating capacity was lost, telephone lines were ruined and government documents and archives were burned. One to two thousand people are reported to have been killed, while one third of the population was forced into refugee camps in West Timor (UNDP, 2002:72).

A few months after the multinational force of peacekeepers were sent to restore law and order in Timor Leste, the United Nations Transitional Administration in East Timor (UNTAET) was established. The two and half year UNTAET administration achieved amongst other things the establishment of basic public services, the rehabilitation of schools and the establishment of peace and order in the country (UNDP, 2002: 34). On May 20 2002 Timor Leste was officially declared independent.

1.1.3 Economy

Timor Leste is one of the world's least developed countries. Incomes are low, GDP is around US$480 per capita, and a considerable part of the population lives in poverty. Furthermore, legislation, regulations, laws and most administrative structures are yet to be formulated. Infrastructure is limited, and markets are generally not working efficiently.

Poverty is widespread in Timor Leste, with 41% of the population living below the income poverty level of US$0.55 per day (based on the results of the 2001 Poverty Assessment, with income allocated to nutrition of 2,100 kilocalories per day, plus non-food items including education, health, clothing and housing). As with most other indicators of well-being, the situation is worse in rural areas where a higher proportion of the poor live: 46% compared to 26% in the urban areas.

During Indonesian rule from about 1980 onwards, the economy expanded with annual GDP growth from 8% to 10% until 1996, and this growth was slightly higher than in other provinces of Indonesia. The 1997 Asian economic crisis slowed economic growth and the economy contracted by 2% in 1998. During the Indonesian era much of the economic growth was stimulated by grants from the Indonesian government and the beneficiaries were often government officials, the military or Indonesian migrants. However there were benefits for the local population with some public investments in roads, health and education infrastructure. Despite this economic growth, by 1996 the province of East Timor was still one of the poorest in Indonesia with GDP at less than half the Indonesian average and with 32% of households living in poverty, which was more than twice the Indonesian national average.

The violence and destruction that erupted after August 30 1999 further impoverished the people of Timor Leste. This violence led to the destruction of much of the social and administrative infrastructure in the country including the health care system, loss of livestock, forced movement of households, loss of communication systems, and destruction of electricity generating capacity and banking facilities. There was also a substantial loss of trained personal from the public and private sectors. The impact of the violence on the economy was dramatic and GDP fell by 33% between 1998 and 1999.

During the UNTAET administration, the restoration of peace and the substantial external funding stimulated an economic recovery across most sectors with growth of about 15% during the period 2000 to 2002. However, much of this growth was focused on Dili and there will likely be an economic contraction as the international personnel leave in the period 2003 to 2004. Moving the economy of Timor Leste ahead in the future will continue to require substantial investments, the diversification of the economic base, improving the productivity of the agricultural sector and the exploration and use of natural resources including oil and gas reserves. Underpinning this future economic growth will be the need for investments in the health, education and skills of the people of Timor Leste.

The main source of income for over 90% of households in Timor Leste is agriculture. There are three main types of agricultural subsistence communities; upland corn growers that are the poorest with little opportunity for cash income, the wetland rice growers that have the potential to sell surpluses and are the most secure group, and coastal fishing communities that also grow staple crops and some fruit and vegetables. In the uplands there is also a cash crop from coffee. The rural communities are currently in an uncertain situation with low food security and little cash income. These families are extremely vulnerable to health, economic and climatic shocks. There is an urgent need to diversify their crops and improve their farming practices.

1.2 Population

There is limited information about the population and basic demographic indicators for Timor Leste. Table 1.1 presents the total population recorded in two censuses held during the Indonesian occupation and the recent administrative census (Suco Survey) conducted in 2001. The first census following independence will be conducted in 2004.

Table 1.1 Population of Timor Leste 1980 - 2001

1980 Census	1990 Census	2001 Suco Survey
555,350	747,557	787,338

1.3 Health policies and priorities

The violence in Timor Leste following the August 1999 referendum led to an almost total collapse of the health system. There was extensive damage to the health care system infrastructure and considerable loss of skilled health care personnel. Despite investments in the health care sector during Indonesian rule, the province of East Timor remained one of the poorest, with some of the worst health status indices in Indonesia. Following independence the health sector has had to meet dual challenges of rebuilding a health care system while providing curative and preventative services to a population in great need.

To respond to the current challenges facing the health sector and to guide the future development of the health system, the Ministry of Health (MOH) has identified health policy development as a priority. A health policy working group was established in February 2001. At the time of the implementation of the Timor Leste 2003 Demographic and Health Survey (TL 2003 DHS) this working group had started to formulate key health policies for Timor Leste. However the TL 2003 DHS results offer a substantial evidence base for the formulation of the most appropriate health care and population policies and for establishing the main program priorities. The survey results also provide a baseline assessment for evaluating future progress in health development.

The health policy working group formulated a vision for health development in Timor Leste based around the concept of a "Healthy East Timorese people in a healthy Timor Leste". This statement "envisages a Timorese community enjoying a level of health that

will allow them to develop all their potentialities in a healthy environment" (MOH, 2002), and implies that a healthy Timor Leste will require contributions from other sectors including education, poverty reduction, housing, agriculture, water and sanitation. This vision also recognizes that health and poverty reduction are closely linked and improvements in both will propel the development process. "Only a healthy community will be able to achieve poverty alleviation." (MOH, 2002)

The mission of the Ministry of Health "is to strive to ensure the availability, accessibility and affordability of health services to all East Timorese people, to regulate the health sector and to promote community and stakeholders participation (including other sectors)" in health development (MOH, 2002).

The key priorities for the Ministry of Health have been the introduction of preventive and promotive interventions rather than increasing the capacity to deliver more complex curative services. However at the time of implementing the TL 2003 DHS the specific priorities for these preventative programs were only formulated in broad terms and included maternal and child health, reduction of malnutrition, control of tuberculosis, although notably no clear the role had been formulated for child spacing or family planning.

1.4 Survey objectives

The TL 2003 DHS is the first comprehensive assessment of the demographic, health and nutrition status of the population of this newly independent state. The province of East Timor was included in the samples of the 1991 and 1997 Indonesian Demographic and Health Surveys but only a small number of households were sampled. Following the establishment of the UN transitional administration, national planning efforts were constrained in part by the paucity of credible development planning information. Although the surveys conducted as part of the 2001 Poverty Assessment of Timor Leste resulted in improved development planning data, these surveys did not focus on the collection of the demographic, social, health and nutrition data required for planning and evaluating health care services.

The TL 2003 DHS aims to fill the information gap about the demographic, health and nutrition situation in the country, and provide the planning data needed to develop health services including reproductive health, maternal and child health, child spacing and nutrition programs.

The TL 2003 DHS was designed to fulfil the following specific objectives:

- Provide data concerning the basic demographic profile of the country including fertility and infant and child mortality rates needed for development planning,
- Assess the nutrition and anaemia situation of the adult and child populations to plan and prioritize future interventions,
- Provide baseline information about health and nutrition status of the population and use of health services for future evaluation of national health programs,
- Provide baseline information about fertility and contraceptive prevalence rates to evaluate future child spacing programs,
- Analyse factors associated with fertility and use of family planning methods, maternal and child health, use of health services and adult morbidity,
- Analyse factors associated with malnutrition and anaemia especially in women and children,
- Assess men's participation and utilization of health services, and their role in their family's utilization of health services,
- Create standard demographic, health and nutrition indicator information to facilitate cross-country comparisons for the program managers, policymakers, and researchers to assess the level of development in Timor Leste.

Chapter 2
Survey Methodology

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2 Survey Methodology

2.1 Survey design

A cross sectional household survey was conducted over a period of four months from May to August 2003 in which 4320 households were sampled from four different geographic areas in Timor Leste using a cluster sampling method.

2.2 Sampling

To facilitate comparisons with other household surveys conducted in Timor Leste, the TL 2003 DHS sampling design used the same sampling frame and similar analytical domains to those developed in two of the surveys of the 2001 Poverty Assessment of Timor Loro Sa'e. The first was an administrative census, the SSTL - Survey of Sucos in Timor Loro Sa'e (East Timor Transitional Administration, 2001a), which was conducted in all local administrative units across Timor Leste between February and April of 2001, and provided a sampling frame for national household surveys. The second was the TLSMS - Timor Loro Sa'e Household Survey (East Timor Transitional Administration, 2001b), a household expenditure survey of a nationally representative sample of 1800 households, in which basic analytical domains were defined for surveys in Timor Leste.

2.2.1 Sampling frame

Timor Leste is divided into 13 major units[1] called distritos (districts), which are further subdivided into 67 postos (sub-districts), 498 sucos (villages) and 2336 aldeias (sub-villages). The SSTL was an administrative census in which data were obtained on the number of households at suco and aldeia level throughout Timor Leste, based on reports of suco chiefs or other key local officials. The limitations of this sampling frame were reported in the TL 2002 MIC survey where a "tendency toward overstatement of both population and households in many areas" especially in Dili was noted. However, in the absence of census data the population estimates for suco and aldeia reported in the Suco Survey were used as the sampling frame for the TL 2003 DHS.

2.2.2 Analytical domains

The TL 2003 DHS was required to provide estimates of key demographic, health status and health service usage indicators at the national level, and for selected policy-relevant subgroups of the population based on geographic location (west, central and east), the nature of the district (urban versus rural), and major agro-ecologic zones (lowlands and highlands).

[1] Each of these units is uniquely identified by means of a numeric, hierarchical geocode with two digits for the district, two digits for the posto within the district, two digits for the suco within the posto and two digits for the aldeia within the suco.

The sample was stratified to ensure that a sufficient number of households were visited by the survey team in each of the key analytic domains. Thus in the TL 2003 DHS survey, four sampling strata were used based on location (west, central or east) and nature of district (urban versus rural). These strata included the following districts:

- Urban, including cities of Dili and Baucau, and other smaller district towns[2]
- Rural West (Oecussi, Bobonaro and Cova Lima districts)
- Rural Central (Aileu, Ainaro, Dili[3], Emera, Liquica, Manufahi and Manatuto districts)
- Rural East (Baucau, Lautem and Viqueque districts)

The ecological zones were defined by altitude above sea level, with highland households located at more than 1000 meters above sea level. Above 1000 meters the reduced levels of oxygen in the atmosphere begin to have an impact on haemoglobin levels and growth of children. The highland households were identified from readings of altitude taken by field survey supervisors at each respondent's home using a geographic positioning (GPS) reader (Garmin Etrex). The consistency of the altitude readings for households within each aldeia was checked and any apparent errors in readings of household altitude were replaced with the average altitude for the aldeia. As seen in Table 2.1 there is a very low percentage of households (<5%) in the urban and rural east located in the highland areas. About 10% of households in the rural west are located in the highlands but the highest percentage of highland households (40%) is in the rural central region.

Table 2.1 Distribution of households in ecological zones by strata
Percentage distribution of households in ecological zones defined as residences above or below 1000 meters of altitude by strata

Regions	Lowlands (≤ 1000)	Highlands (>1000)
	Percent	Percent
	(n)	(n)
Urban Areas	96.8	3.2
	(1045)	(35)
Rural East	99.9	0.1
	(1079)	(1)
Rural Centre	60.1	39.9
	(649)	(431)
Rural West	90.0	10.0
	(972)	(108)
Timor Leste	83.9	16.1
	(3745)	(575)

These strata and ecological zones differ from those used in the TLSMS in that the ratio of rural to urban households is greater, and more representative of the population

[2] See Appendix B for complete list of these district towns.

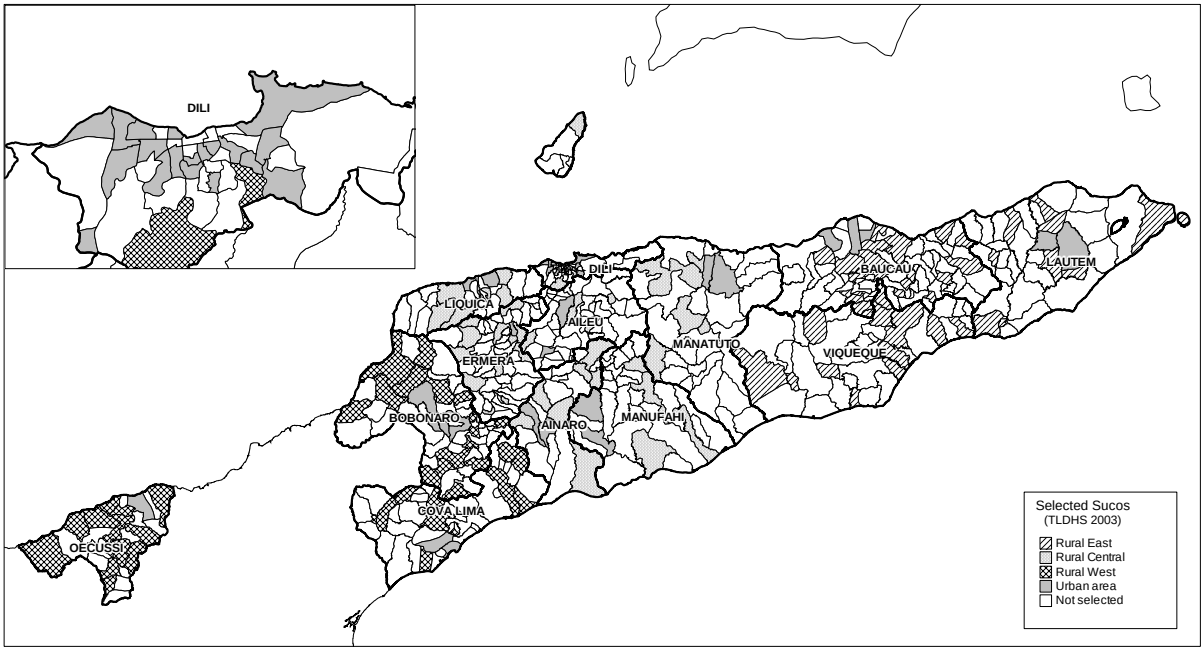
[3] Rural portions of the district of Dili including Ataúro Island see insert map in Figure 2.1

distribution within these areas. They also differ from the implied strata used in the TL 2002 MICS, where rural west included the districts of Emera and Liquica, which had been transferred from the rural central region. Furthermore, in both TLSMS and the TL 2002 MICS, highland communities were defined using 500 meters as the cut-off value for high altitude. Thus in the TL 2003 DHS, the highland sample is about half the size of the earlier surveys although the data exists to exactly replicate the earlier ecological zones if needed for future analyses.

2.2.3 Sampling procedure

A stratified cluster sampling procedure was used to select the sample of households for the TL 2003 DHS. Within each of the four strata, a three stage sampling procedure was used, which was similar to the scheme employed in the TLSMS survey. In stage one, 40 sucos were selected within each strata, using a probability proportional to size (PPS) method. Three aldeias were then selected from each suco, again using a PPS method. In the third stage 10 households were selected from each aldeia, using the list of households for each aldeia obtained from the suco office as the frame and simple random sampling. With this procedure each household had a similar probability of selection, and within each stratum the sample was approximately self-weighted.

Figure 2.1 Map of Timor Leste with selected sucos for TL 2003 DHS indicated by strata



The lack of recent census data and well defined census tracks for Timor Leste provided limitations for the sampling procedure. The sampling procedure used the administrative units of aldeia as the final sampling segments but it is usually recommended (DHS Sampling Manual) that segments of approximately equal size are used. However, in the TL 2003 DHS sampling procedure no attempt was made to adjust for the variation in size of the aldeia.

Figure 2.1 illustrates the geographic distribution of the sucos selected by this sampling procedure. In the map, each selected suco is highlighted by different patterns depending on the stratum from which the sample was taken.

2.2.4 Sample size

Based on experience with other DHS surveys (DHS Sampling Manual), it was estimated that a sample size of at least 1000 women aged 15-49 years within each strata was required to provide strata specific estimates of key demographic and health outcomes, including (but not limited to) fertility, maternal and child mortality and morbidity, and health service utilisation. Table 2.2 shows the sampling scheme and the expected versus the actual number of women 15-49 years, children under 5 years of age and children under 3 years of age in the study. The table reveals that the actual number of women 15-49 years sampled was slightly lower than expected, and the number of children <5 years and <3 years was higher than expected.

Table 2.2 Sampling scheme and expected versus actual number of women and children
The sampling scheme with the number of suco and aldeia to be sampled by strata and the expected versus the actual number of women 15-49 years, children < 5 years and < 3 years

Strata	No. of house-holds[1]	Number . sucos[1]	Number of suco to be sampled	Number of aldeiato to be sampled	Number of households to be sampled	Expected number of women 15-49 yrs[2]	Actual number of women 15-49 yrs	Expected number of children < 5 yrs[3]	Actual number of children < 5 yrs	Expected number of children < 3 yrs[4]	Actual number of children < 3 yrs
Urban	41454	71	40	120	1080	1108	1061	1117	1393	*738*	931
Rural East	45056	122	40	120	1080	1108	1058	1117	1419	*738*	907
Rural Central	61024	198	40	120	1080	1108	1030	1117	1331	*738*	888
Rural West	32749	107	40	120	1080	1108	1062	1117	1277	*738*	851
Total	180283	498	160	480	4320	4432	4177	4468	5420	*2952*	3577

[1] Based on results of Survey of Sucos in Timor Loro Sa'e (East Timor Transitional Administration, 2001a)

[2] Assumes women aged 15-49 years constitute 20% of the population, an average household size of 5.7 and a 10% non contact / non consent rate; thus giving an average of 1.16 women aged 15-49 years per household based on UNICEF MICS (4606/3982).

[3] Assuming an average of 1.12 children <5 years per household (4454/3982; UNICEF MICS) and a 10% non contact / non consent rate

[4] Assuming an average of 0.74 children <3 years per household (2963/3982; UNICEF MICS) and a 10% non contact / non consent rate

Based on the planned sample size, the precision of various outcomes within strata can be estimated ignoring the effects of the cluster sampling design. For example, for dichotomous outcomes, the precision of estimates will vary between 1% and 3% for outcomes for women 15-49 years, between 2-3% for children under 5 years of age and between 1.5% and 4% for children under 3 years of age, depending on the expected

prevalence. For continuous outcomes, the precision will be approximately 0.06 of a standard deviation for outcomes for women 15-49 years and for children under 5 years of age and approximately 0.07 of a standard deviation for children under 3 years.

However these precision estimates change if we take into account the likely affect of the cluster sampling design. For example with a design effect of 2, the precision of dichotomous outcomes will vary between approximately 2.5% and 4% for outcomes for women 15-49 years, between 2.2% and 5% for children under 5 years of age and between 3.3% and 5% for children under 3 years of age. For continuous outcomes, the precision will be approximately 0.08 of a standard deviation for outcomes for women 15-49 years and for children under 5 years of age and approximately 0.10 of a standard deviation for children under 3 years.

As revealed in Table 2.3 the estimated sample size for TL 2003 DHS has adequate power to detect important differences between strata for a variety of survey outcomes. For example, a sample size of 543 children in each stratum would be sufficient to detect a 10% difference in low height for age between two strata if the higher prevalence was 55%. The actual number of children under 3 years of age (see Table 2.2) is more than sufficient to detect this difference.

Table 2.3 Sample size calculations for differences between strata

Estimates for sample sizes for given power to detect differences between strata for a variety of survey outcomes

Outcome	Maximum estimate	Difference to be detected	Sample size per group	
			80% power	90% power
Malnutrition (% with BMI < 18.5)	35%	10% decrease	349	459
Percent ever heard of HIV / AIDS	40%	10% decrease	376	496
Percent with low height for age	50%	10% decrease	407	538
Percent with low height for age	55%	10% decrease	411	543
Percent with fever in past 2/52	30%	10% decrease	313	412
Percent with fever in past 2/52	35%	10% decrease	349	459
Variable with prevalence of 55%[1]	55%	10% decrease	411	543
Variable with prevalence of 55%	55%	9% decrease	505	669
Variable with prevalence of 55%	55%	8% decrease	637	844
Variable with prevalence of 55%	55%	7% decrease	827	1098
Variable with prevalence of 55%	55%	6% decrease	1120	1488
Variable with prevalence of 55%	55%	5% decrease	1605	2135
Any continuous outcome	n/a	1/4 SD[2]	251	336
Any continuous outcome	n/a	1/5 SD	392	525
Any continuous outcome	n/a	1/6 SD	565	757
Any continuous outcome	n/a	1/7 SD	769	1030
Any continuous outcome	n/a	1/8 SD	1005	1345

[1] Prevalence that provides maximum sample size

[2] SD = Standard deviation

n/a = Not applicable

2.3 Survey instruments

The TL 2003 DHS used four questionnaires: the Household Questionnaire, the Women's Questionnaire for ever-married women 15-49 years old, the Men's Questionnaire for ever-married men 15-54 years old; and the Nutrition Measurements form (Copies of survey questionnaires can be found in Appendix A). The survey instruments were based on the standard Demographic and Health Surveys (DHS) Model A Questionnaire for High Contraceptive Prevalence Countries[4], the Timor Loro Sa'e Living Standards Survey (TLSMS) (World Bank 2002), and standard WHO recommended nutritional status indicators for women and pre-school aged children (WHO 1995).

Initially the survey team reviewed existing DHS survey instruments including the Indonesian 2002/2003 DHS questionnaires, the TLSMS questionnaire and other instruments used in recent surveys in Timor Leste. The standard DHS questionnaires were modified to respond to the unique social, economic, historical and epidemiological situation in East Timor. The draft questionnaires were adjusted to reflect the health system in Timor Leste, and cover the key health and family planning issues through a process of consultation with members of the TL 2003 DHS Steering Committee, staff of the Ministry of Health and the National Statistics Office, and other stakeholders from organizations likely to use the survey results.

The questionnaires were drafted in English and Indonesian. The Indonesian version was used in field work with interviewers translating it into Tetum or other local languages as needed. The layout and formatting of the questionnaires followed the usual DHS standard but was optimized to facilitate use of the instruments by the field team during interviewing and field data editing in remote locations.

The Household Questionnaire was used to list and collect information on all the usual household members and visitors who stayed the night before the survey as well as their shared household level characteristics. The basic information collected for each person listed included: age, sex, education, and relationship to the head of the household. Also recorded were household facilities and assets, such as the source of water, type of toilet facilities, construction materials used for the floor and outer walls of the house, and ownership of various durable goods, which reflect the household's socioeconomic status. Additional information was gathered on household food security and household access to and use of health services. All of this information was solicited from the head of household or other responsible adult who usually resided in the household. A further function of the Household Questionnaire was to identify the adults eligible for individual interview, and the women, men and children eligible for measurement of anthropometry and haemoglobin.

[4] Model A Questionnaire with Commentary for High Contraceptive Prevalence Countries at http://www.measuredhs.com/pubs/

The Women's Questionnaire was used to collect information from all ever-married women aged 15-49 in the sampled households. These women were asked questions on the following topics: age, language use, religion, education, and media exposure in the section 'Respondent's Background'; a full birth history in the section on 'Reproduction'; marital status and recent sexual activity in the section 'Marriage and Sexual Activity'; knowledge and practice of family planning methods in the section 'Knowledge and Practice of Child Spacing'; the women's experiences in pregnancy, delivery and postnatal care and her infant feeding practices for all births since 1998 in the section 'Antenatal, Postnatal Care and Breastfeeding'; details on immunizations and disease history and recent food intake for all births since 1998 in the section 'Immunization, Child Health and Nutrition'; desire for more children and plans for use of family planning methods in the section 'Fertility Preferences'; her recent work history and type of income in section on 'Woman's Work'; awareness and behaviour regarding AIDS and other sexually transmitted infections in the section 'AIDS and Other Sexually Transmitted Diseases'; and recent functional morbidity experience and symptoms of tuberculosis in the section 'Adult Morbidity'. In the societies of Timor, marriage is often a multi-stage process, and thus details of when cohabitation, legal marriage, church marriage, and traditional marriage celebrations took place (if at all) were included in the section 'Marriage and Sexual Activity'.

The Men's Questionnaire was used to collect information, similar to that collected in the Women's Questionnaire but with less detail, from all ever married men aged 15-54 in every household. The men were asked questions on the following topics: age, language use, religion, education, and media exposure in the section 'Respondent's Background'; a brief history of the man's reproductive history in the section on 'Reproduction'; marital status and attitudes to women in the section 'Marriage and Attitudes to Women'; knowledge and practice of family planning methods in the section 'Knowledge and Attitude on Family Planning'; knowledge and participation in the pregnancy and health-seeking practices for their youngest living child born since 1998 in the section 'Pregnancy, Postnatal Care, Breastfeeding and Child Health'; desire for more children and plans for use of family planning methods in the section 'Fertility Preferences'; awareness and behaviour regarding AIDS and other sexually transmitted infections in the section 'AIDS and Other Sexually Transmitted Diseases'; and recent functional morbidity experience and symptoms of tuberculosis in the section 'Adult Morbidity'.

The Nutrition Measurements form was used to record the anthropometric and haemoglobin measurements of adults and children. For adults the following items were recorded: consent for the measurement, age in years, weight, height, left upper arm circumference, haemoglobin (for women), and referral information. For children the following items were recorded: parental consent for the measurement, date of birth, weight, height, left upper arm circumference, haemoglobin, and referral information. Details of the methods used to take these measurements are found in the following section of this chapter.

2.4 Nutritional status measurements

Anthropometry and haemoglobin measurements were taken by two members of the team in each region or stratum, who received special training for these measurements. The training was conducted over five days and covered demonstrations and practise of the techniques with volunteers at the National Hospital in Dili. A skills-based approach was used with participants having to successfully complete at least 10 examinations at each level of difficulty before proceeding to the next level, for example, demonstrate capability with adult anthropometry before proceeding to children 1 to 5 years. Anthropometry standardization exercises (Cogill 2003) were held during training and midway through data collection to identify anthropometrists who needed re-training.

2.4.1 Adult anthropometry

The anthropometric measurements of weight, height and mid upper arm circumference were collected from all consenting ever-married women 15-49 years and ever-married men 15-54 years who were interviewed in the sampled households. All anthropometric measurements were taken using standard methods (Cogill 2003) in the respondent's home. Body weight of adult respondents with light clothing was measured using standard techniques on an electronic scale (Tanita model HD-316) and read to the nearest 100 grams. Standing height of adults without shoes was measured to the nearest millimeter using a portable stadiometer with a moveable head-panel, which was placed on a flat floor surface. The portable stadiometer was used for adults and children, and was specifically designed to allow it to be hand carried to the respondent's home. Mid upper arm circumference (MUAC) was measured to the nearest millimeter using a flexible non stretch tape at the mid point between elbow and shoulder on the left arm.

2.4.2 Child anthropometry

The anthropometric measurements of weight, height and mid upper arm circumference were collected from all children under 6 years of age in the sampled households whose parent's consented to the examination All anthropometric measurements were taken using standard methods (WHO 1995) in the child's home. Body weight of naked or lightly clad children was measured using an electronic scale (Tanita model HD-316) and read to the nearest 100 grams. If the child was unable to stand on the scale, both the mother and child were weighed together and the weight of the mother subtracted from the combined weight. The electronic scale allowed automatic taring to secure the child's weight directly if the child had to be held by the mother. Height of children without shoes was measured to the nearest millimetre using a portable stadiometer with a moveable head-panel. Recumbent length was measured on all children less than 2 years of age and stature was measured on older children. The MUAC was measured to the nearest millimetre using a flexible non stretch tape at the mid point between elbow and shoulder on the left arm. The child's full date of birth was recorded.

2.4.3 Haemoglobin measurement

A capillary blood sample was collected from all consenting ever married women 15 -49 years and children less than 6 years of age and the haemoglobin concentration was measured using a portable haemoglobinometer ('HemoCue Hb201+ Analyser'). Survey participants received immediate feedback about their haemoglobin levels and those with haemoglobin less than 70 g/L were referred to the local health service.

2.5 Informed consent

Informed consent was obtained from survey participants at each stage of the survey. Initially consent was sought from the local suco leader before proceeding with the survey. At each household, consent was sought from the head of household before proceeding with the household listing. Similarly, consent was sought from the adults eligible for the individual interviews and again for the anthropometric and haemoglobin examinations. Information about the survey was read to the survey participants and their verbal consent noted by the interviewer and a local witness. Consent was recorded on each form for each type of interview or examination. The Human Research Ethics Committee, University of Newcastle, Australia reviewed and approved the informed consent procedures and all ethical aspects of the conduct of the survey.

2.6 Survey organization

The TL 2003 DHS was organized through a partnership of the Ministry of Health and the National Statistics Office, Ministry of Planning and Finance. The government of Timor Leste provided the funds for the survey through a grant from the World Bank as part of the Timor Leste, Health Sector Rehabilitation and Development Project.

A steering committee was establish under the leadership of the Ministry of Health and included representatives from the Ministry of Health, the National Statistics Office, the World Health Organization, UNICEF, UNFPA, representatives of bilateral donor organizations including European Union and AusAID, and technical staff of the ACIL-managed TL 2003 DHS project team from the University of Newcastle, Newcastle, Australia and the Australian National University, Canberra, Australia. This committee reviewed technical issues related to the survey including implementation plans and all questionnaires prior to the start of the survey. The questionnaires were developed by the TL 2003 DHS project team through consultation with members of the staff of the Ministry of Health, the Steering Committee and other non-government organizations involved in health and population in Timor Leste.

The National Statistics Office together with the TL 2003 DHS project team implemented the survey data collection and data processing. A special survey team was recruited and trained and their work was supervised by the project team and staff of the National Statistics Office.

2.6.1 Data collection

The TL 2003 DHS survey data were collected by six teams of field workers. Each field team consisted of one supervisor, one deputy supervisor, five male and five female interviewers and two drivers (all field survey team members are listed in Appendix E). In total, the field survey teams consisted of 84 people, of whom 35 women and 37 men participated in the survey as interviewers, physical examiners or field supervisors. The full survey team was trained over a two-week period from 7 April to 18 April 2003. The field supervisors received additional training in supervision, field data editing techniques, and use of GPS readers, and the anthropometrists and blood collectors received additional training in biological measurements from 19 April to 28 April 2003. Monitoring of fieldwork was conducted by six staff from the National Statistics Office and the project field manager.

Data collection took four months to complete starting 29 April 2003 and finishing 27 August 2003. Because of the difficulties in accessing the survey locations two four-wheel drive vehicles were required for each team. Approximately 10% of the sampled suco could not be reached by vehicles and the survey team had to walk in over two to three hours. About 25% of the sampled aldeia could only be accessed on foot or on horse back taking between 30 minutes and 2 hours. To facilitate the field team in reaching the correct locations, local guides were often provided by the suco chief.

Field data collection teams stayed in the field during the data collection period, but returned to Dili every two weeks for debriefings with supervisors and to gather additional supplies and questionnaires. When in the field, the survey teams started by contacting the District Administrator and the Head of the District Health Office to inform them of their survey activities in that district. Prior to the arrival of the full survey team, the deputy team leader contacted the head of each suco to prepare accommodation for the survey team and to list all households in the selected aldeia. The local officials contacted the sampled households to inform them of the pending survey. On the day of the survey the full team worked in the aldeia and completed the interviews and biological measurements in one day. This allowed ample time for return visits if eligible household members were not available for interview or data errors needed correcting before the team left the suco.

2.6.2 Data management

All forms were numbered and packaged according to cluster before the survey teams went to the field and this method of organizing the forms was maintained until data entry and archiving of the forms. A key element of the data management system was the process of field data editing, because the very difficult terrain precluded the field team from re-interviewing respondents once they left the sampled suco. To facilitate field editing, checklists were prepared to guide the interviewers and field team leaders as to how to edit the forms. These daily checks aimed to detect missing values, range errors, invalid values, errors with skips and internal inconsistencies.

The Census and Survey Processing System (CSPro) version 2.2 was used for entry, editing, and dissemination of census and survey data. The common CSPro procedure language was used to create data dictionaries, data entry screens with error checks, and batch and error check programs. External programs, linked to the standard CSPro program and data, computed the anthropometric indices and exported the dual language data dictionaries. Data entry was completed by four data entry staff and one supervisor who were trained over a five day period.

The survey data has a hierarchical data structure. The first level is the household questionnaire data and the biological measurements and the second level is the data from the women's and men's interview. A single questionnaire was completed for each household in the TL 2003 DHS sample, but the number of women's or men's questionnaires completed depended on the number of eligible women or men listed in the household questionnaire. Thus, for each household questionnaire there may be none or several of the individual interview questionnaires.

Within each level, there were one or more different types of records. In the first level, there were single household records (eg household characteristics) or multiple household records (eg household members listing, anthropometric and haemoglobin measurements). In the second level in the women's data, there were single records (eg the woman's individual characteristics or health behaviours) or multiple records (eg the listing of her births).

The CSPro data entry program followed this hierarchical data structure. Data entry started with the household questionnaire, and then followed with the other forms at the second level. This approach maintained the integrity of the data structure and ensured accurate linkage between levels and records. The data files produced were a mirror of the paper questionnaires. Each section of the questionnaire was defined as a record in the data file. The data files were stored as ASCII text files. Data dictionaries in English and Indonesian described the data files, and in the data screens the documentation appeared in both languages. Special purpose programs were developed to export the data dictionaries in English and Indonesian. Also, at data entry, a special purpose program calculated anthropometric indices for children using the WHO international growth reference and computer subroutines provided by the US Center for Disease Control (CDC). After data cleaning and correcting for anthropometric measurements and the child's age, these indices were recalculated. The data were read into the Nutrition module of Epi Info program and the indices were then calculated for both 1978 WHO and 2000 CDC growth references.

2.6.3 Summary of field data collection

Table 2.4 presents the results of the household and individual interviews, and anthropometric and haemoglobin examinations in the TL 2003 DHS by strata. All households sampled agreed to be interviewed, and the response rates for individual interviews and the examinations were also high. In the 4230 sample households there

were 4211 eligible ever-married women aged 15-49 years, and 4108 eligible ever-married men aged 15-54 years. The response rates for individual interviews with women (98.4%) were very high and similar across each stratum. The response rates for individual interviews with men (95.3%) were slightly lower than for women and varied by strata with lower response rates in the rural east (91.9%) and the urban (93.8%) regions.

Table 2.4 Results of interviews, and examinations

Response rates for household and individual interviews, and for anthropometric and haemoglobin examinations

Result	Region of Residence				Total
	Urban	Rural East	Rural Central	Rural West	
Household interviews					
Households selected	1080	1080	1080	1080	4320
Households response rate	100.0	100.0	100.0	100	100.0
Interviews with women					
Number of eligible women	1061	1058	1030	1062	4211
Number of eligible women interviewed	1049	1047	1023	1058	4177
Eligible women response rate	98.9	99.0	99.3	99.6	99.2
Interviews with men					
Number of eligible men	1012	1040	1012	1044	4108
Number of eligible men interviewed	949	956	982	1030	3917
Eligible men response rate	93.8	91.9	97.0	98.7	95.4
Anthropometry with women					
Number of eligible women	1061	1058	1030	1062	4211
Number of women examined	1046	1038	1018	1059	4161
Women's anthropometry response rate	98.6	98.1	98.8	99.7	98.8
Haemoglobin with women					
Number of eligible women	1061	1058	1030	1062	4211
Number of women examined	1040	990	1012	1056	4098
Women's haemoglobin examination rate	98.0	93.6	98.3	99.4	97.3
Anthropometry with men					
Number of eligible men	1012	1040	1012	1044	4108
Number of men examined	931	960	984	1,031	3906
Men's anthropometry response rate	92.0	92.3	97.2	98.8	95.1
Anthropometry with children < 60 months					
Number of eligible children	1393	1419	1331	1277	5420
Number of children examined	1357	1336	1293	1269	5255
Child anthropometry response rate	97.4	94.0	97.1	99.4	96.9
Haemoglobin with children < 60 months					
Number of eligible children	1393	1419	1331	1277	5420
Number of children examined	1332	1185	1251	1261	5029
Children's haemoglobin examination rate	95.6	83.4	94.0	98.7	92.8

As expected, the response rates for anthropometric and haemoglobin examinations in adults were slightly lower than for interviews. In children less than 60 months of age the response rate for anthropometry was higher (96.9%) than for haemoglobin examinations (92.8%). For both these types of examinations the response rates were lower in the rural east region, but especially for the haemoglobin examination (83.4%). Most of this lower level of participation in the haemoglobin examination occurred in a single district, Bacau,

where the response rate for the child haemoglobin examination was only 75% suggesting local problems with engaging this community in this part of the survey.

The overall high survey response rates reflect the high level of community support in Timor Leste for activities seen to contribute to national development. However, the field procedures also contributed to these high response rates. The interviewers were required to repeatedly revisit sampled households where potential survey participants were temporarily absent, until the interviews were secured. No substitution of sampled households was allowed if the household members were not at home on the first visit. In some instances the field team needed to return to a sampled aldeia to finally secure the interviews. It appears that the addition of the biological measurements to the survey had no impact on the participation of men and women in the interviews.

2.7 Data analysis

2.7.1 Approach to analysis

In the analysis of the TL 2003 DHS data the "Guide to DHS Statistics" (Rutstein & Rojas, 2002) was used to define complex numerators or denominators and as a source for methods of calculating complex demographic statistics (for example fertility and mortality rates) to ensure the survey results would be comparable with other demographic and health surveys conducted in other countries. Similarly for analyses of anthropometric data, WHO recommended approaches were used (WHO 1995).

The data were analyzed using the survey commands in Stata version 8.0 (StataCorp 2003) which allowed for adjustments for sampling weights and stratification of the cluster sampling. Sampling or probability weights were needed for national level estimates of survey parameters because of the variability in population size of each geographic stratum. If sampling weights were not used the point estimates for national level indicators would have been very biased.

2.7.2 Construction of household wealth index

A wealth index was constructed using methods recommended by the World Bank Poverty Network and UNICEF, and described by Filmer & Pritchett 1998. Information about this method can be found on the Multiple Indicators Country Surveys website (MICS 2003).

The method uses the principal components statistical procedure to determine the weights for a wealth index based on information collected about household assets and facilities. In the TL 2003 DHS this information was collected in the household questionnaire from interviews with the head of each sampled household, and the list of the items used to construct this index is presented in Table 2.5. As noted by Filmer & Pritchett 1998, the

index is based on the assumption that long-term household wealth is the major contributor to variation in the asset variables used to construct the wealth index.

Principal components analysis extracts from a "large number of variables those few orthogonal linear combinations of the variables that best capture the common information. The first principal component is the linear index of variables, with the largest amount of information common to all of the variables." (Filmer & Pritchett 1998)

The first principal component output was used as a scoring factor to weight each of the assets or facilities in the wealth index. The wealth index for each household (W_j) was calculated using the following formula:

$$W_j = f_1 \times (a_{j1} - a_1) / (s_1) + \ldots + f_N \times (a_{jN} - a_N) / (s_N)$$

where f_1 is the "scoring factor" for the first asset as estimated by the first principal component, a_{j1} is the jth household's value for the first asset and a_1 and s_1 are the mean and standard deviation of the first asset variable over all households. The score for each asset is summed over the N assets used to construct the index. The mean value of the index is zero by construction. The standard deviation in TL 2003 DHS data is 2.16.

Table 2.5 List of household assets and facilities used to construct wealth index

Question no.	Question
201a	House ownership
212b	Radio
212c	Television
212d	Video player
212e	Telephone
212f	Refrigerator
212a	Electricity
213	Main cooking fuel
202a	Main source of drinking water
211	Main material on dwelling floor
207	Main material in dwelling roof
203	Household toilet
214a	Bicycle
214b	Motorcycle
214c	Car or truck
214d	Rowboat/canoe
214e	Motorboat
215a	Number of pigs
215b	Number of goats
215c	Number of cattle
215d	Number of buffalo
215e	Number of horses

This index was divided into three categories and each household was assigned to one of these wealth index categories. The bottom 40% of households was arbitrarily referred to as poorest households, the next 40% as the middle households, and the top 20% as richest

households. These categories do not follow any of the usual definitions of "poverty" and the wealth index is not appropriate for use in poverty analysis. Nonetheless, it does provide a useful method to rank families by their wealth status based on their household assets. The variable was used to assess the relationship of wealth to various demographic, health and nutrition indicators.

2.7.3 Demographic indicators

The TL 2003 DHS measured fertility using questions asked of women of childbearing age and older. In particular, all women were asked about their pregnancy history including the date and sex of each live birth and the dates of any stillbirths, abortions and miscarriages. The fertility rate estimate for groups of women was made by calculating the number of births that occurred for a three year period prior to the survey, according to the age of mother at the time of birth and expressed in five year age groups. This was compared with the calculation of the number of women-years lived in each five-year age group for the time period. This is a direct method of calculating fertility estimates as opposed to the indirect estimates used in censuses, including the well-known "own-child" method of inferring fertility rates from the number and ages of children enumerated as living with their mothers in the household.

The following indicators of fertility were calculated in the survey analyses. The total fertility rate (TFR) is the demographic measure used to express the level of current fertility, and it was estimated by adding up the age specific fertility rates, multiplying by five (to account for the five year age groups) and dividing by 1000, to produce an average rate per woman. The general fertility rate (GFR), shows the annual number of births a group of 1000 women of childbearing age would produce. The other measure used to monitor fertility is the crude birth rate (CBR), which measures the annual number of births per 1000 head of population.

The direct mortality estimate was used in the analyses and was based on the deaths of children recorded in the birth history for each women interviewed. This direct method of estimating mortality requires complete birth histories, and cannot be used if this data is not collected. This will be the case in the current TL census and was also the case with the 2002 TL Multiple Indicators Survey. Where complete birth histories are not available, indirect estimates based on the number of children ever born and children surviving are used to estimate infant and child mortality rates. The differences in mortality estimates between these methods should be noted when comparing the direct mortality estimates presented in this report with other indirect estimates of infant and child mortality in Timor Leste. There is a potential for bias with indirect mortality estimates, and even when appropriate mortality models are used, the indirect estimations consistently produce higher mortality rates than the mortality estimates from the direct methods (Sullivan et al., 1994).

2.7.4 Anthropometric indicators in children

All the anthropometric indicators of child nutritional status used in the survey were expressed as Z-scores, namely the deviation of the individual anthropometric measurement from the median value of the WHO growth reference for that child's height or age divided by the standard deviation for the reference population (WHO 1995).

Weight for-age is an indicator of body mass relative to chronological age. It is influenced by both the height of the child, and the weight of the child relative to height thus making its interpretation complex. Low weight-for-age indicates insufficient weight gain relative to age or weight loss (underweight). While high weight-for-age indicates an excess gain of weight relative to age (overweight).

Height-for-age reflects achieved linear growth and its deficits indicate long-term, cumulative inadequacies of health or nutrition (WHO 1995). Low height-for-age or stunting indicates a pathological process that has impaired linear growth and is the result of both poor nutrition and poor health. Although some children with low height-for-age are genetically short, where the prevalence of low height-for-age is very high, it is assumed the majority of these children are stunted.

Weight-for-height reflects body weight relative to height. Low weight-for-height or wasting indicates an insufficient weight gain relative to height or a loss of weight. Wasting implies a recent severe process that has led to weight loss such as acute illness or acute starvation. Some children with low weight-for-height are normally thin but if the prevalence of low weight-for-height is high it may be assumed that most of these children are wasted. High weight-for-height or overweight indicates an excess weight gain relative to height, or an insufficient gain in height relative to weight.

Table 2.6 presents the definitions of low weight-for-age, height-for-age, and weight-for-height categories used in the survey tables. The percentage of children below (or above) the established cut-off values was not adjusted for the expected prevalence, for example 2.3% of the reference population will be below the -2 Z-score cut-off (WHO 1995).

Table 2.6 Z –score categories for child anthropometric indicators

Z-score range	Meaning
-2.00 to -2.99	Moderate underweight/stunting/wasting
< -3.00	Severe underweight/stunting/wasting

Table 2.7 presents a system for classifying the public health significance of different prevalence levels for child anthropometric indicators used to describe the survey results. This system is a modification of the recommendations of a WHO Expert Committee that reported on the use and interpretation of anthropometry (WHO 1995).

Table 2.7 Classification of public health significance of child anthropometry indicators

Category of public health significance	Prevalence ranges (% of children below - 2 Z-scores)		
	Low weight-for-age	Low height-for-age	Low weight-for-height
Low	< 10	< 20	<5
Medium	10 - 19	20 -29	5 - 9
High	20 - 29	30 -39	10 - 14
Very high	> 30	> 40	> 15

To visualize the relationship of the distribution of different anthropometric indicators with the growth reference, Z-score curves were constructed by calculating the frequency of observations in 0.5 Z-score intervals for the range -6.0 to +6.0 Z-score for each indicator. A similar set of frequencies for the reference curve were also generated. These frequencies were plotted against the midpoint of the Z-score intervals to allow the shape of the curves to be compared.

2.7.5 Anthropometric indicators in adults

Body Mass Index (BMI) is a frequently used anthropometric indicator to assess adult weight independent of height. In populations with marginal protein energy, nutritional status variations in BMI will reflect variations in lean body mass and other indicators of nutritional status of adults such as energy and protein reserves and iron status. In contrast, in populations with adequate protein and energy intakes, variations in BMI will reflect body fat and obesity. The index is defined as follows:

$$\frac{\text{Body weight (kg)}}{\text{Height}^2\ (\text{m}^2)}$$

BMI was used an indicator of thinness in adults in the survey. Table 2.8 presents the definitions of three grades of thinness or chronic energy deficiency (WHO 1995) used in tabulations of survey results.

Table 2.8 Classification of low body mass index (BMI)

BMI range	Meaning
18.49 to 17.00	Mild thinness
16.99 to 16.00	Moderate thinness
< 16.0	Severe thinness

High BMI or overweight was defined as a BMI >25 (WHO 1995) but higher grades of overweight were not defined because of the low prevalence of high BMI in the population.

Table 2.9 presents a system for classifying the public health significance of different prevalence levels for low BMI (<18.5 kg/m^2) in adults which was used in reporting the survey results. The table was based on the recommendations of a WHO Expert Committee that reported on use of anthropometry (WHO 1995).

Table 2.9 Classification of prevalence of low body mass index* in adults

Category of public health significance	Prevalence range (% of population)
Low prevalence	5 - 9
Medium prevalence	10 -19
High prevalence	20 - 39
Very high prevalence	> 40

* BMI <18.5 kg/m^2

2.7.6 Anaemia in women and children

Living at high altitude increases haemoglobin levels due to the lower oxygen concentration in the atmosphere. Thus the TL 2003 DHS haemoglobin values for both women and children were adjusted for altitude using a formula recommended by the International Nutritional Anemia Consultative Group (INACG) (Nestel 2002). The altitude in meters was taken from the GPS reading at the respondent's home.

$$\text{Adjusted Hb} = \text{Hb} - [-0.32 \times (\text{altitude in meters} \times 0.0033) + 0.22 \times (\text{altitude in meters} \times 0.0033)^2]$$

The haemoglobin values in pregnant women were also adjusted to account for the effects of pregnancy on haemoglobin levels. During pregnancy the blood volume expands and haemoglobin concentrations in the blood progressively fall to reach a nadir in the second trimester and then rise again in the third trimester (CDC 1989).

Normalisation of the survey population haemoglobin data against a reference population of pregnant women has recently been proposed for comparing Hb levels across studies in developing countries (Beaton and McCabe 1999). The adjustment for gestation was made by calculating a haemoglobin Z score (Scanlon et. al. 2000). Each specific haemoglobin observation in the TL 2003 DHS population of pregnant women was positioned within the distribution of the theoretical reference values and assigned a Z-score using the algorithm derived from the normal distribution theory as follows:

$$\text{Hb Z-score} = \frac{\text{Observed haemoglobin} - \text{Reference mean haemoglobin}}{\text{Reference standard deviation}}$$

The reference population used to normalise haemoglobin values was drawn from a series of studies conducted in northern Europe among iron supplemented pregnant women, combined with data from the US NHANES for the early weeks of pregnancy (Beaton & McCabe, 1999, Annex B, p.113) and Table 2.10 presents a selection of these reference values at four week intervals. As recommended by Beaton and McCabe, 1999, the standard deviation of haemoglobin used for the Z-score conversion was 9g/L.

Table 2.10 Reference mean Hb values by weeks of gestation

Gestation of pregnancy in weeks	Mean Hb (g/L)
0	135
4	130
8	126
12	122
16	118
20	116
24	116
28	118
32	121
36	125
40	129

Z score cut-off values equivalent to the traditional haemoglobin cut-off values were determined to be: Hb < 120 g/L equivalent to Hb Z < -1.67; Hb < 90 g/L equivalent to Hb Z < -5.0; Hb < 70 g/L equivalent to Hb Z < -7.2).

The cut-off values for haemoglobin used to define anaemia in children <5 years in the TL 2003 DHS were Hb < 110 g/L for any anaemia; Hb < 90 g/L for moderate and severe anaemia; and Hb < 70 g/L for severe anaemia. The cut-off values for haemoglobin used to define anaemia in non-pregnant women in the TL 2003 DHS were Hb < 120 g/L for any anaemia; Hb < 90 g/L for moderate and severe anaemia; and Hb < 70 g/L for severe anaemia.

Table 2.11 presents a system proposed by WHO for classifying the public health significance of different prevalence levels for anemia in women and children. These criteria were used to describe the anaemia results in the TL 2003 DHS.

Table 2.11 Classification of public health significance of anaemia prevalence levels
WHO proposed classification system based on prevalence estimated from blood levels of haemoglobin and using cut-off values of 110g/L for children < 5 years and 120 g/L for women

Category of public health significance	Prevalence of anaemia (%)
Severe	> or = 40
Moderate	20.0 – 39.9
Mild	5.0 – 19.9
Normal	< or = 4.9

Chapter 3

Housing, Population Characteristics and Economic Status of Households

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3 Housing, Population Characteristics and Economic Status of Households

This chapter describes the social and economic characteristics of the households, the population structure and condition of the households. The latter includes sources of drinking water, availability of electricity, sanitation facilities, building materials, and the possession of household durable goods.

A household was defined as a group of persons, related or unrelated, who live together in the same dwelling unit. Information was collected on all usual residents and visitors who spent the preceding night in the household.

3.1 Population characteristics

The TL 2003 DHS Household Questionnaire collected information on the demographic and social characteristics of all usual members of the household and visitors who had spent the previous night in the house. This provided data on both the de jure members of the household (those usually resident) and the de facto members (those who spent the previous night in the household). A household was defined as those who live together and share food. The de jure population was 25 297; the de facto population 25 118; and the combined population (de jure and de facto 25 340). There were 25 075 individuals normally resident and at home on the night before the survey, 222 normally resident but not at home on the previous night, and 43 who slept in the house on the night prior to the survey but who were not normally resident.

The distribution of the de jure household population is shown in Table 3.1 by five-year age groups, according to region of residence and sex. The numbers of males and females were roughly equal. Just over half the population (52%) was less than 15 years of age, but in contrast, the older population of age 65 years and older was extremely small (1.1%). This indicates an extremely youthful population reflecting high fertility and probably high past mortality. The urban population was almost as youthful as the rural population suggesting similar fertility and mortality characteristics.

Of note was the small number of individuals aged in their twenties, particularly among males. This absence was particularly evident in the rural populations, especially rural east and rural west. The Indonesian 1990 census for the province of 'Timor Timur' suggested there was a similar but smaller deficit for both sexes in the same age cohort 13 years earlier (see Table 3.2). It would appear the deficit has moved up the population pyramid as the relevant age group has aged. These findings indicate a birth deficit 20 to 30 years ago. This was the period immediately following the Indonesian annexation of Timor Leste when there was much disruption and warfare, marked most notoriously by Indonesian efforts to relocate populations into areas the military believed it was able to control. It is possible this was accompanied by a reduced birth rate and by increased infant and child mortality.

Nevertheless, the greater male deficit indicates there has been some movement of population or mortality, particularly of young adult males. While there were some deaths in the period following the 1999 referendum it was probably not of this magnitude. By August to September 2003, when the TLDHS was conducted, most of the refugees in camps in West Timor are believed to have returned to Timor Leste. A possible explanation is the high number of young Timorese who prior to 1999 went to study and work in Indonesia. Many of these people may not have returned to Timor Leste, possibly finishing their studies or waiting for the Timorese economy to improve. It may also reflect some level of international work migration to Indonesia and other countries. The low level of women-headed households, discussed below suggests there is not a high level of migration.

Table 3.1 Household population by age, residence and sex

Percent distribution of the de jure household population by five-year age groups, according to region of residence and sex, Timor Leste 2003

Age Group	Urban			Rural East			Rural Central			Rural West			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	19.8	21.7	20.7	21.5	21.3	21.4	19.8	21.4	20.6	23.1	22.1	22.6	20.9	21.6	21.3
5-9	16.8	17.2	17.0	17.8	16.6	17.2	17.5	18.1	17.8	18.3	18.0	18.1	17.6	17.6	17.6
10-14	12.2	11.8	12.0	12.7	13.4	13.0	14.7	13.2	14.0	11.9	11.1	11.5	13.1	12.4	12.7
15-19	10.6	10.0	10.3	7.4	7.3	7.3	8.6	8.3	8.4	6.2	6.6	6.4	8.3	8.1	8.2
20-24	6.2	6.9	6.5	3.4	6.5	5.0	4.7	6.3	5.5	3.4	5.4	4.4	4.5	6.3	5.4
25-29	6.0	7.4	6.7	5.1	7.3	6.2	5.0	6.3	5.7	6.4	8.5	7.5	5.6	7.5	6.5
30-34	7.7	7.6	7.7	7.9	8.2	8.0	7.4	6.6	7.0	8.5	7.9	8.2	7.8	7.5	7.6
35-39	6.2	5.6	5.9	8.3	7.5	7.9	5.5	5.9	5.7	6.7	6.3	6.5	6.4	6.2	6.3
40-44	4.7	4.4	4.6	6.3	4.3	5.3	5.4	4.3	4.9	5.0	4.6	4.8	5.3	4.4	4.8
45-49	3.2	3.4	3.3	3.8	3.5	3.6	3.7	4.0	3.9	3.1	3.3	3.2	3.5	3.6	3.5
50-54	3.5	1.6	2.5	3.0	1.1	2.1	4.3	2.0	3.1	3.0	2.0	2.5	3.6	1.7	2.7
55-59	1.2	0.8	1.0	1.1	0.8	1.0	1.5	1.0	1.3	1.0	1.1	1.1	1.3	0.9	1.1
60-64	0.8	0.7	0.7	0.8	1.0	0.9	1.0	0.9	1.0	1.5	1.6	1.5	1.0	1.0	1.0
65-69	0.6	0.4	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.9	0.6	0.7	0.6	0.5	0.6
70-74	0.3	0.3	0.3	0.2	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3
75-79	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.3	0.2	0.3	0.2	0.2	0.2
80+	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.3	0.3	0.1	0.2	0.1
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Number	3364	3320	6684	3009	2950	5959	3200	3259	6459	3112	3083	6195	12685	12612	25297

The extreme youthfulness of the population is exhibited clearly in Figure 3.1 and Figure 3.2. The small numbers of 20-year-olds stands out. It is apparent from Figure 3.1 that there is some age heaping on ages ending in 0 and 5. Age heaping refers to the tendency by respondents to give ages ending in certain digits, most commonly 0 and 5. This tendency is most common among the non-numerate in societies where many respondents have not been to school.

Figure 3.1 Number of persons reported at each age by sex

Number of persons in survey sample at each completed year of age by sex, Timor Leste 2003

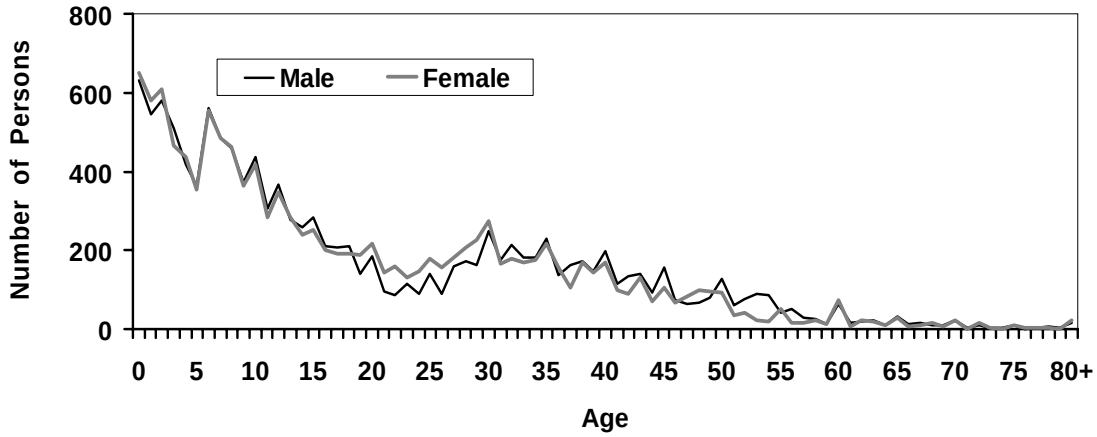


Figure 3.2 Population pyramid, Timor Leste 2003

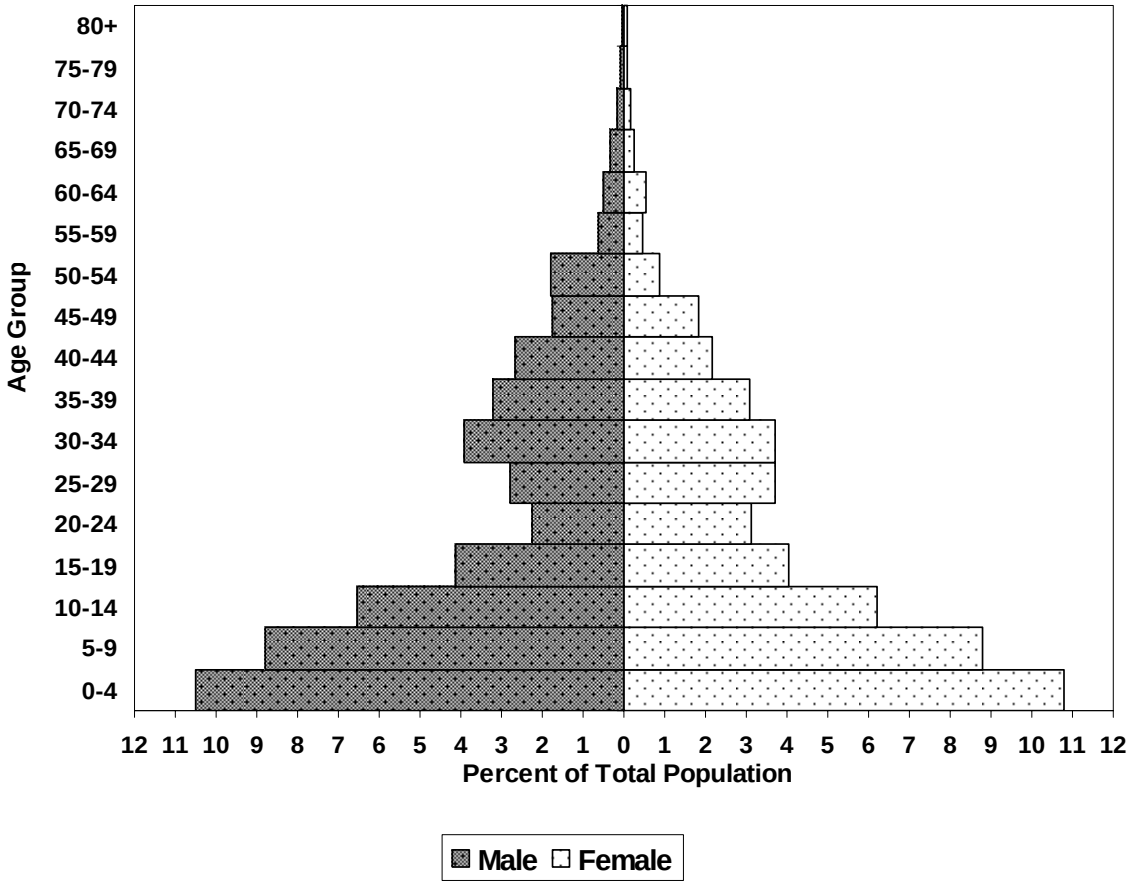


Table 3.2 Household population by age, residence and sex

Comparison of the percentage distribution of household population in five-year age groups by sex for selected surveys

5 year age groups to age 75	TL 2003 DHS			2002 MICS			1990 Census		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	20.9	21.6	21.3	17.8	18.1	18.0	18.2	17.9	18.1
5-9	17.6	17.6	17.6	14.5	14.2	14.3	15.2	14.4	14.8
10-14	13.1	12.4	12.7	9.7	8.7	9.2	10.0	8.8	9.4
15-19	8.3	8.1	8.2	10.2	9.4	9.8	10.3	9.5	9.9
20-24	4.5	6.3	5.4	9.1	9.7	9.4	8.5	9.1	8.8
25-29	5.6	7.5	6.5	8.9	9.6	9.2	7.7	8.9	8.3
30-34	7.8	7.5	7.6	7.4	7.6	7.5	6.7	7.5	7.1
35-39	6.4	6.2	6.3	5.7	5.5	5.6	5.7	5.7	5.7
40-44	5.3	4.4	4.8	4.2	4.9	4.5	4.3	5.1	4.7
45-49	3.5	3.6	3.5	3.9	3.9	3.9	4.1	4.0	4.1
50-54	3.6	1.7	2.7	3.1	2.8	3.0	3.3	3.0	3.1
55-59	1.3	0.9	1.1	2.0	2.0	2.0	2.2	2.2	2.2
60-64	1.0	1.0	1.0	1.5	1.7	1.6	1.7	1.8	1.7
65-69	0.6	0.5	0.6	1.0	0.9	1.0	1.1	1.0	1.0
70-74	0.3	0.3	0.3	0.5	0.7	0.6	0.6	0.7	0.6
75 and over	0.3	0.4	0.3	0.5	0.4	0.5	0.5	0.5	0.5
	100	100	100	100	100	100	100	100	100

Table 3.3 compares the age structure of the population recorded in the TL 2003 DHS with the Multiple Indicator Cluster Survey of 2002 (MICS 2002) survey and the 1990 Indonesian census for the province of 'Timor Timur'. Two counts are provided from the Indonesian census: one including all households; a second that includes only households where the household head was born in Timor Leste. The latter definition is considered to approximate the indigenous population, and hence to be comparable to the post-1999 population when almost all households of Indonesian origin had left.

Table 3.3 Population by age from selected sources

Percent distribution of the de facto population by age groups, for selected surveys

Age Group	TL 2003 DHS	MICS-2002	1990 Census–all	1990 Census – Timor Leste born household head
<15	51.6	50.3	40.9	41.9
15-59	46.2	46.7	55.7	54.2
60+	2.2	3.1	3.5	3.9
Total	100.0	100.0	100.0	100.0

The population age structure was roughly similar to that recorded by the MICS 2002 but was much younger than the 1990 Indonesian census results. While an increase in fertility might be theoretically possible, the size of the shift suggests this is unlikely to be the primary explanation. Massive mortality or massive emigration are both possibilities given the events of recent years but an alternative explanation may be that the Indonesian census did not properly record the population away from the main centres controlled by

the Indonesian army. If this is correct, it indicates that the Indonesian census as far as Timor Leste is concerned does not provide a reliable basis for comparison over time.

A contributing factor may also be the cohort affect, discussed above, where a reduced cohort was counted in 1990 as being under 15 years and hence reduced the numbers of the very young, while the same cohort is now counted as part of those over 15, reducing the number among the slightly older population.

3.2 Household composition, children's living arrangements and parental survival

Table 3.4 shows household composition by sex of the household head and household size. A female-headed household is regarded as a sign of potential deprivation. Large households are often crowded. Household composition can reflect fertility rates: higher fertility resulting in large nuclear families, but it can also reflect different family structures with, for example, kin outside the immediate nuclear family living together, and may also reflect a lack of alternate housing.

Table 3.4 Household composition

Percent distribution of households by sex of head of household, household size, and whether household includes foster children, according to region of residence, Timor Leste 2003

Characteristics	Urban	Rural East	Rural Central	Rural West	Total
Household headship					
Male	95.9	97.7	96.8	98.4	97.2
Female	4.1	2.3	3.2	1.6	2.8
Total	100	100	100	100	100
Number of usual members					
1	0.0	0.0	0.1	0.0	0.0
2	0.6	1.0	1.1	1.3	1.0
3	3.8	5.9	4.7	5.0	4.8
4	10.1	12.9	10.2	10.4	10.7
5	12.7	18.6	12.2	15.8	14.3
6	16.7	20.5	16.8	20.5	18.3
7	15.9	18.3	18.4	15.7	17.1
8	11.9	12.7	15.2	13.7	13.6
9+	28.3	10.1	21.4	17.7	20.2
Total	100	100	100	100	100
Mean size	6.8	6.4	6.6	6.1	6.5

Note: Table is based on de jure members, i.e., usual residents.

The proportion of female households (2.8%) was low by international comparison. For example, in Indonesia it is 11.8%. This suggests that there is little migration of male household heads, and what migration exists is usually whole households. The finding suggests that efforts at resettling displaced populations have been successful. It also suggests that Timorese are relatively reluctant to seek temporary labour migration either within Timor Leste or outside, perhaps because they have limited skills or few opportunities. It is also possible that communal land tenure systems involving patrilineal

rights may require women to live with male relatives or in-laws. If this is the case, it would make it difficult to identify war widows. It is also likely that many war widows have remarried.

Household size in Timor Leste was large with a mean of 6.5 and in urban areas of 6.8. The negligible proportion of households with one or two members was a slight concern and may suggest an issue with the definition of the household. Nevertheless, a comparison with the 1990 census (Table 3.5) suggests such households are very much a minority. The household size was over two members more than the Indonesian equivalent (4.3 in total, 4.5 in urban areas). The TL 2003 DHS figure was a slight rise on the 1990 census of 6.2 for the total population and 6.3 in households where the head was born in the province. One-fifth (20%) of all households and over one-quarter of urban households (28%) had nine or more household members. This compares to only 3.3% in Indonesia and 4.0% in urban Indonesia. While it is possible the destruction of housing may have led to some sharing of housing, this finding is in keeping with very high levels of fertility. This was implied by the fact that these figures were only slightly above the 1990 figures even though the latter records more very small households (see Table 3.5). Housing was rudimentary but there was little evidence that it was in short supply except possibly in the towns. Most people owned their own houses and apparently could build new ones when needed.

Table 3.5 Household composition
Percentage distribution of number of members of households in 1990 Census and TL 2003 DHS

	TL 2003 DHS	1990 Census	
		Indigenous Timor Leste	Non- indigenous Timor Leste
1	0.0	0.7	0.9
2	1.0	3.6	3.7
3	4.8	8.6	8.9
4	10.7	13.1	13.4
5	14.3	15.6	15.7
6	18.3	16.0	15.7
7	17.1	14.3	14.0
8	13.6	10.7	10.4
9+	20.2	17.4	17.3

The TL 2003 DHS data indicated that the great majority of households were nuclear families with outside kin or non-family members being a very small part of household composition (Table 3.6).

Table 3.7 provides information on children's living arrangements, specifically fosterhood and orphanhood. The great majority of children lived with both parents, (95% of children under 15 years), 2.5% with one parent, and 2.2% with neither. The equivalent Indonesian figures are 87.9%, 7.4% and 4.2% (BPS & ORC Macro, 2003).

Table 3.6 Household membership

Distribution of household membership in survey population, Timor Leste 2003

Relationship to head	Number	Percent
Head of household	4320	16.97
Wife or husband	4151	16.30
Child	14986	58.86
Son/daughter-in-law	42	0.16
Grandchild	129	0.51
Parent	541	2.12
Parent-in-law	255	1.00
Brother/sister	407	1.60
Other relative	361	1.42
Adopted child	226	0.89
Stepchild	39	0.15
Not related	3	0.01
Total	25460	100.00

The figures emphasise the intactness of first marriages in Timor Leste and the low rate of remarriage and hence step-parenting. The figures on orphanage (no parents 0.3%, father dead 2.3%, mother dead 0.8%) were slightly higher than those of Indonesia (no parents 0.2%, father dead 2.1%, mother dead 0.8%), consistent with slightly higher mortality rates.

Table 3.7 Child's living arrangements and orphanhood

Percent distribution of households by sex of head of household, household size, and whether household includes foster children, according to region of residence, Timor Leste 2003

Background characteristics	Living with both parents	Living with mother but not father		Living with father but not mother		Not living with either parent				Total	No. of children
		Father alive	Father dead	Mother alive	Mother dead	Both alive	Only father alive	Only mother alive	Both dead		
Age											
<2	98.3	0.3	0.6	0.0	0.3	0.4	0.1	0.1	0.0	100.0	2406
2-4	97.7	0.3	1.1	0.0	0.2	0.5	0.1	0.0	0.0	100.0	3020
5-9	95.1	0.1	1.8	0.0	0.6	1.6	0.3	0.3	0.3	100.0	4460
10-14	91.2	0.2	3.0	0.1	1.1	2.3	0.4	0.8	1.0	100.0	3217
Sex											
Male	95.0	0.3	1.9	0.0	0.6	1.2	0.3	0.3	0.4	100.0	6576
Female	95.6	0.1	1.6	0.0	0.5	1.4	0.2	0.4	0.3	100.0	6527
Residence											
Urban	94.1	0.3	2.3	0.0	0.3	1.6	0.4	0.5	0.5	100.0	3350
Rural East	95.7	0.1	1.8	0.0	0.7	1.0	0.2	0.3	0.3	100.0	3278
Rural Central	95.3	0.1	1.6	0.0	0.9	1.1	0.2	0.4	0.2	100.0	3389
Rural West	96.2	0.2	1.1	0.1	0.3	1.5	0.2	0.1	0.3	100.0	3086
Total	95.3	0.2	1.7	0.0	0.6	1.3	0.3	0.3	0.3	100.0	13103

3.3 Housing characteristics

Information on housing characteristics is provided in Table 3.8 (following). Many of the characteristics covered not only reflect the well-being of the household but have a direct relationship to health, eg sanitation and housing condition.

Only 27.7% of households were reported as having electricity, a figure inflated by the relatively high figure in the urban area (73.6%). In the rural areas the figures were much lower with only 3.2% of households in the rural west having electricity. These figures were among the lowest in the region, for example, the Indonesian 2002/3 DHS reported 90.7% of households as having electricity.

Overall, 53.1% of households obtained their drinking water from a protected source (either piped water, protected well or hand pump, tanker truck or bottle water), but this varied by region being highest in the urban region (76.3%) and lower in the rural areas (rural east 22.3%; rural central 55.7%; and rural west 60.6%). Piped water was the main source of water in all regions except rural east (see Figure 3.3). Springs were the main source in rural east and the second main source in rural central and rural west. For over one-third of households water was ten or more minutes away. This rose to over half for the rural east. This region had the lowest proportion of piped water and hence water on the premises. The only region where a majority of households had water on the premises was the urban one.

Seventy percent of households had inadequate toilet facilities, with 51% using open areas, particularly bush/forest/yard and 19% using pit toilets. Around 30% of households had a private toilet while 2% used shared public toilets. A much higher percentage of urban households than rural households had access to a private toilet (see Figure 3.3).

In one-quarter of cases where a household had a well it was less than 10 metres from a cesspool. In the urban region this was true for 36% and in 55% of cases the distance was less than 15 metres. The situation may be worse than these figures imply. Nearly 20% reported not knowing. This response came primarily from respondents who did not have a well on the premises and hence were less likely to know.

Sheet iron (64.1%) was the most common roofing material with most of the remainder having roofs made of leaves (34.1%). Leaf roofs were more common in rural areas with 51.8% of houses in rural east having them as compared to only 9.8% in the urban region. The main wall materials were palm fronds (38.4%), bamboo (33.3%) and brick (22.9%).

Table 3.8 Housing characteristics

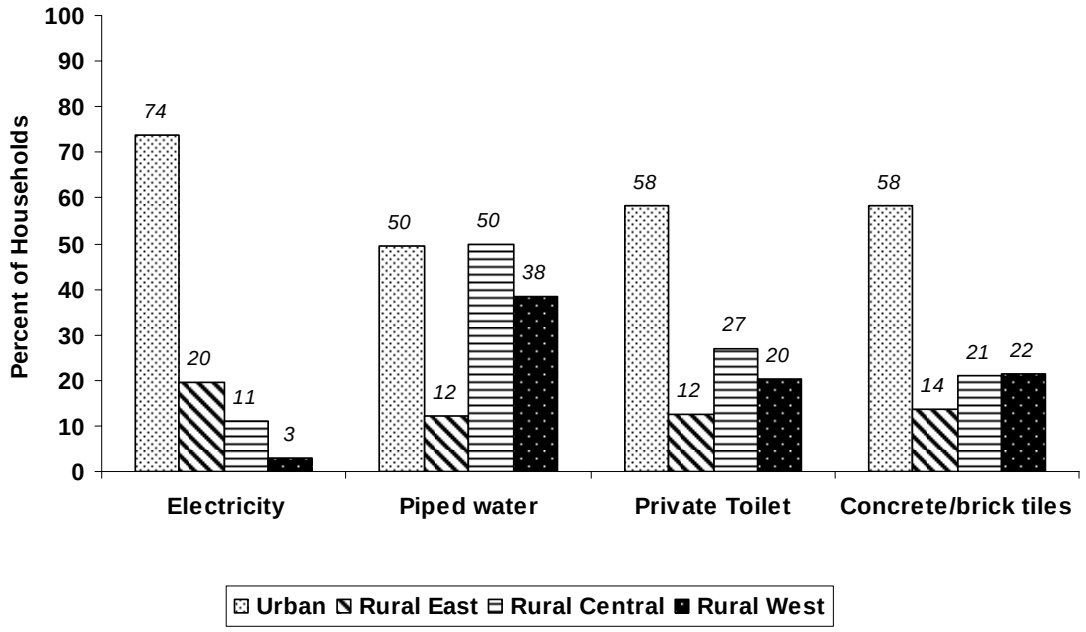
Percent distribution of households by housing characteristics, according to region of residence, Timor Leste, 2003

Housing characteristics	Urban	Rural East	Rural Central	Rural West	Total
Electricity					
Yes	73.3	19.5	11.2	2.8	26.1
No	26.7	80.5	88.8	97.2	73.9
Source of drinking water					
Piped water - in dwelling	5.4	0.2	1.0	0.6	1.8
- in yard	25.4	1.8	16.0	10.4	13.6
- public location	18.8	10.1	32.9	27.3	23.0
Water from well - protected	10.2	8.1	3.5	18.4	8.9
- unprotected	5.9	2.5	3.4	9.9	5.0
Hand pump well - protected	15.3	2.0	1.5	3.8	5.2
- unprotected	1.9	1.0	0.2	2.0	1.1
Spring	10.5	60.9	33.0	21.0	32.6
River/Stream	1.9	11.5	4.3	5.3	5.7
Pond/Lake	0.1	0.4	0.0	0.0	0.1
Rain water/Rain water tank	1.8	1.4	2.1	1.1	1.7
Tanker truck	0.7	0.1	0.3	0.1	0.3
Bottled water	0.5	0.0	0.5	0.0	0.3
Other	1.7	0.1	1.3	0.1	0.9
Time to water source					
On premises	57.7	10.1	23.8	27.5	28.9
1-4 minutes	14.7	16.7	17.5	19.4	17.0
5-9 minutes	10.7	20.3	23.5	21.6	19.4
10+ minutes	16.9	53.0	35.2	31.5	34.7
Don't know/Missing	0.0	0.0	0.0	0.0	0.0
Sanitation facility					
Private toilet - with septic	44.0	6.2	13.9	10.2	18.2
- no septic	14.3	6.2	12.9	9.9	10.9
Shared, public toilet	4.6	1.6	1.2	0.8	2.0
River, stream, creek	2.5	1.7	3.1	2.0	2.4
Pit	15.5	16.6	24.9	11.3	18.9
Bush/forest/yard	18.3	53.1	38.5	65.8	42.5
Pig yard	0.5	9.7	2.8	0.7	3.6
Other	0.4	5.0	2.7	0.0	2.2
Distance from well to cesspool					
< 10 metres	36.4	25.3	18.3	13.9	25.0
10-14 metres	18.9	15.8	20.4	20.1	19.0
15 meters and over	35.6	32.9	39.8	40.0	37.1
Don't know/missing	9.2	26.0	21.5	26.1	19.0
Floor material					
Earth	39.9	77.1	76.9	85.1	70.4
Bamboo	0.2	0.2	1.3	0.8	0.7
Wood	0.7	0.7	0.5	0.3	0.5
Concrete/Brick	53.9	21.3	20.7	13.3	26.6
Tile	0.2	0.0	0.0	0.0	0.0
Ceramic/Marble	4.3	0.3	0.4	0.2	1.2
Vinyl	0.6	0.2	0.2	0.1	0.2
Other	0.3	0.2	0.2	0.2	0.2
Floor area					
<=40m^2	25.4	43.9	40.4	55.1	40.5
40m^2+	74.6	56.1	59.6	44.9	59.5
Missing	0.0	0.0	0.0	0.0	0.0
Median area of floor	48	42	42	36	42
Number of households	1080	1080	1080	1080	4320

The great majority of houses in rural areas had earthen floors with most of the remainder having concrete/brick floors. The situation in the urban area was better with one-half of the houses having concrete/brick floors while 40% had earthen floors. The type of floor material not only reflects household wealth but has a direct relation to health as poorer floor materials are more difficult to keep clean. The floor area was considerably larger than that recorded by the Indonesian 1997 DHS (14.5m^2) but was in keeping with the 1990 census. Such figures must be treated with some caution, as they were roughly estimated by the interviewers. It should be noted that the rudimentary nature of many houses in Timor Leste and the availability of land for housing makes it a simpler task to build a relatively large house.

The differences by strata are illustrated by Figure 3.3.

Figure 3.3 Housing characteristics by region
Percentage of households with various facilities or characteristics by region, Timor Leste 2003



3.4 Economic status

Table 3.9 shows a number of markers of household wealth. Household possession of durable goods was low with, for example, only 9% of households having a television and 3% a refrigerator. In comparison, households in neighbouring countries are much more likely to possess such goods; the Indonesian 2002/3 DHS found 47.9% of households had a television and 11.3% a refrigerator. Timor Leste was also marked by a very sharp division in household wealth between urban and rural areas. This was particularly marked by possession of a television with one-third of households in the urban region possessing one

but less than one in a hundred in rural west region. This undoubtedly reflects the lack of television transmitters in rural areas. Ownership of a refrigerator was similarly affected by the lack of electricity, and of telephones by the lack of telephone lines. However, the urban-rural disadvantage also showed up for other goods, such as possession of bicycles where such external factors should be less important. This urban-rural difference was much greater than in Timor Leste's neighbours, such as Indonesia.

Table 3.9 Household durable goods, fuel and livestock by region

Percentage of households possessing various durable consumer goods, fuel and livestock by region, Timor Leste 2003

Household assets	Region				Total
	Urban	Rural East	Rural Central	Rural West	
Durable goods					
Radio	51.9	22.2	26.7	23.4	30.8
Television	32.0	2.8	1.1	0.9	8.6
VCD/DVD/VCR Player	23.8	1.7	1.1	0.7	6.4
Telephone	7.3	0.4	0.3	0.2	1.9
Bicycle	15.7	6.3	2.9	5.1	7.1
Rowboat/canoe	2.3	0.6	1.2	0.8	1.2
Motorcycle	12.4	2.5	1.7	1.6	4.4
Motorboat	1.1	1.7	1.9	1.7	1.6
Truck/Van/Private Car	4.8	0.7	0.4	0.6	1.5
Refrigerator	11.0	0.5	0.2	0.2	2.8
Fuel					
Electric	1.0	0.0	0.0	0.1	0.3
Gas	0.2	0.0	0.0	0.0	0.0
Kerosene	5.7	0.1	0.0	0.1	1.3
Coffee p	0.1	0.0	0.0	0.0	0.0
Charcoal	0.3	0.1	0.5	0.3	0.3
Firewood	92.7	99.8	99.5	99.5	98.0
Other	0.1	0.0	0.0	0.0	0.0
Livestock					
Pigs	63.0	86.8	70.8	60.4	71.6
Goats	12.8	19.3	15.5	11.7	15.1
Cattle/Cows	6.8	12.1	15.8	26.7	14.6
Buffaloes	4.2	15.2	6.7	6.3	8.1
Horses	3.4	20.1	11.3	4.0	10.2
Number of households	1080	1080	1080	1080	4320

Table 3.9 also shows the fuel used for cooking. Cooking fuel is an indicator of level of development. Type of fuel can also have health effects with certain bio-fuels, such as firewood, causing indoor pollution in poorly ventilated houses. However, bio-fuels may, if managed properly, be more environmentally sustainable. Firewood remained the overwhelming source of cooking fuel with only a small percentage reporting use of kerosene. In a largely rural economy like Timor Leste, a major indicator of household resources is the possession of livestock. Three-quarters of all households reported having pigs with many also reporting goats, cattle, horses and buffalo. Interestingly, almost as many households in the urban region as in the rural regions reported having pigs, goats and buffaloes.

A household wealth index was calculated according the Principle Component Method (Filmer, Deon and Pritchett, 1998). In Table 3.10 the wealth index is cross-tabulated by household ownership of durable goods, fuel used and ownership of livestock.

Table 3.10 Household durable goods, fuel and livestock by wealth index

Percentage of households possessing various durable consumer goods, fuel and livestock by wealth index, Timor Leste 2003

Household assets	Household wealth index			
	Poorest	Middle	Richest	Total
Durable goods				
Radio	10.9	30.8	71.7	30.8
Television	0.5	3.0	36.8	8.7
VCD/DVD/VCR Player	0.1	1.3	29.6	6.4
Telephone/Hand phone	0.0	0.2	9.3	1.9
Bicycle	1.6	6.0	20.7	7.1
Rowboat/Canoe	0.5	0.7	3.9	1.2
Motorcycle	0.2	1.9	18.0	4.3
Motorboat	0.9	1.4	3.5	1.6
Truck/Van/Private Car	0.1	0.3	7.0	1.5
Refrigerator	0.1	0.5	12.7	2.8
Fuel				
Electric	0.0	0.1	1.1	0.3
Gas	0.0	0.0	0.2	0.0
Kerosene	0.1	0.2	6.3	1.3
Coffee p	0.0	0.0	0.1	0.0
Charcoal	0.4	0.2	0.4	0.3
Firewood	99.5	99.6	91.8	98.0
Other	0.0	0.0	0.1	0.0
Livestock				
Pigs	58.9	76.8	84.3	71.6
Goats	7.1	15.3	31.2	15.1
Cattle/Cows	6.2	16.5	27.9	14.6
Buffaloes	3.7	8.7	16.1	8.1
Horses	5.7	10.7	18.0	10.2
Number of households	1750	1721	849	4320

Given that possession of durable goods and livestock was used to develop the index it is not surprising that ownership rises with wealth. Nevertheless, the consistency of the index with ownership of these items and also with fuel was striking. It was surprising nevertheless that rural wealth does not transfer into ownership of durable goods. This suggests that monetary wealth in Timor Leste is strongly linked to external funding, for example, from family members in Dili or elsewhere. Also, the lack of rural infrastructure may discourage families from buying these durable goods.

The community is a poor one even in comparison with its Southeast Asian neighbours. The situation reported, however, is in keeping both with other recent data, for example the 2002 MICS, and consistent with the 1990 Census. There has been a slight improvement over the 1990 figures for most indicators as is shown in Table 3.11.

Table 3.11 Household characteristics

Comparison of distribution of household characteristics in 1990 Census and TL 2003 DHS

Household assets	TL 2003 DHS	1990 Census-total	1990 Census (households where 'head' born Timor Leste)
Private toilet	29.1	28.5	24.4
Hard floor (Brick/Concrete/Tiles)	27.8	22.8	17.3
TV	8.6	8.8	5.6
Radio	30.8	26.6	22.7
Bicycle/Boat	8.3	4.4	3.5
Truck/Van/Car/Motor boat	1.5*	1.7	1.1

* Excludes motor boat

Respondents were asked how they perceived their own economic position. The question was: 'Imagine a nine-step ladder, the bottom represents the poorest people and the top the rich; on what step do you stand today?' Very few respondents placed themselves on the bottom level or the top three; most placing themselves in levels 3 (27.1%), 4 (23.8%) or 5 (24.4%). There were minor differences by region with urban region respondents were a little less likely to say they were in the very poorest categories. There were somewhat stronger associations with indices of household possessions.

Table 3.12 Provision of household needs

Percentage of households reporting the adequacy to which their needs are met, Timor Leste 2003

Type of household need	Region				Total
	Urban	Rural East	Rural Central	Rural West	
Food consumption over last month					
Less than adequate	37.4	53.1	57.3	54.8	50.7
Just adequate	61.34	46.9	42.2	44.4	48.7
More than adequate	1.2	0.1	0.5	0.8	0.7
Housing					
Less than adequate	44.3	56.6	62.7	65.7	57.3
Just adequate	61.4	46.9	42.2	44.4	48.7
More than adequate	1.2	0.1	0.5	0.8	0.7
Clothing					
Less than adequate	37.7	63.2	60.5	64.7	56.5
Just adequate	61.6	36.8	38.5	35.1	43.0
More than adequate	0.7	0.1	1.0	0.2	0.5
Healthcare					
Less than adequate	38.9	61.4	69.3	64.6	58.5
Just adequate	60.4	38.4	30.0	34.5	40.8
More than adequate	0.7	0.2	0.7	0.8	0.6
Income					
Less than adequate	60.1	74.1	79.1	83.2	74.1
Just adequate	39.0	25.7	20.5	16.7	25.4
More than adequate	0.9	0.3	0.5	0.2	0.5
Number of households	1080	1080	1080	1080	4320

The respondents were also asked whether they were able to adequately provide for a number of specified needs (Table 3.12). Answers were largely divided between less than adequately and just adequately with very few presuming to say more than adequately. A slight majority said they were not able to adequately meet needs, but for income, three-quarters said it was less than adequate. The urban region was the only one where respondents said they could adequately meet most of their needs, though even here income was seen to be inadequate.

3.5 Educational level of the household population

Education helps determine an individual's economic well-being and position in society. It has also been shown to be closely related to fertility control and mortality indicators, particularly of children. For a country, an educated population is a critical resource for development. Table 3.13 and Table 3.14 provide data on the educational attainment of the population.

Table 3.13 Education levels of males by background characteristics
Percentage distribution of education levels for males resident in household by background characteristics, Timor Leste 2003

Background characteristics	No education	Some primary	Completed primary	Some secondary or more	Total	Number
Age						
5-9	52.4	47.6	0.0	0.0	100	2244
10-14	11.6	80.2	0.8	7.5	100	2244
15-19	13.3	23.1	1.7	61.9	100	1646
21-24	18.3	18.5	6.0	57.2	100	1052
25-29	21.1	18.3	12.2	48.4	100	720
30-34	27.8	16.5	11.4	44.3	100	1001
35-39	37.4	21.3	6.8	34.5	100	848
40-44	50.6	24.9	8.1	16.5	100	681
45-49	64.1	18.3	10.6	7.0	100	441
50-54	74.2	13.2	6.2	6.4	100	443
55-59	89.5	4.4	2.0	4.1	100	157
60-64	89.1	8.4	2.5	0.0	100	127
65+	96.3	1.8	1.4	0.6	100	160
Region						
Urban	26.1	34.6	4.6	34.7	100	2725
Rural East	37.3	35.6	4.9	22.2	100	2424
Rural Central	41.3	35.6	4.2	18.9	100	2573
Rural West	43.2	34.7	4.7	17.4	100	2367
Ecological zones						
Highlands	43.6	34.5	4.3	17.6	100	1386
Lowlands	35.5	35.4	4.6	24.5	100	8703
Household wealth index						
Poorest	45.2	34.1	4.3	16.4	100	3997
Middle	36.9	36.5	4.6	22.0	100	3975
Richest	20.1	35.0	5.1	39.8	100	2117
Total	36.9	35.2	4.6	23.4	100	10089

The most remarkable result was the increase in education levels over time. In total numbers, a substantial proportion of the population had no education or only very limited education but this was in part an artefact of very low education levels amongst the older age group and a high proportion of no education amongst the youngest age group. The latter evidently reflected a late commencement of school attendance (see also 2002 MICS). Excluding the very youngest age group, the younger age groups showed impressive achievements in education attainment, especially when compared to age groups over 40 years. In particular, the age group 15-19 showed over 60% of males and females having some secondary education. This increase was particularly marked among women who had very low levels of education in older age groups but in younger groups were matching the impressive achievements of their male counterparts.

Table 3.14 Education levels of females by background characteristics

Percentage distribution of education levels for females resident in household by background characteristics, Timor Leste 2003

Background characteristics	No education	Some primary	Completed primary	Some secondary or more	Total	Number
Age						
5-9	52.2	47.8	0.0	0.0	100	2215
10-14	12.7	78.3	0.8	8.2	100	1571
15-19	15.4	20.8	3.4	60.4	100	1023
21-24	23.9	18.5	8.7	49.0	100	794
25-29	33.3	20.7	12.6	33.3	100	954
30-34	43.6	18.5	8.2	29.7	100	963
35-39	66.7	16.5	3.2	13.6	100	798
40-44	80.6	10.9	3.1	5.5	100	554
45-49	86.7	7.0	3.1	3.1	100	456
50-54	96.2	2.1	1.3	0.4	100	213
55-59	98.5	0.8	0.0	0.8	100	118
60-64	97.7	2.3	0.0	0.0	100	133
65+	97.6	1.8	0.6	0.0	100	152
Region						
Urban	31.6	32.8	3.4	32.2	100	2621
Rural East	44.4	33.9	3.9	17.8	100	2431
Rural Central	51.0	31.8	3.6	13.6	100	2567
Rural West	49.3	33.5	4.4	12.9	100	2325
Ecological zones						
Highlands	51.5	31.9	2.8	13.9	100	1354
Lowlands	43.0	33.0	4.0	20.0	100	8590
Household wealth index						
Poorest	52.7	31.9	3.8	11.6	100	3956
Middle	44.3	34.3	3.6	17.8	100	4011
Richest	27.1	31.6	4.2	37.1	100	1977
Total	46.7	32.7	3.8	16.7	100	9944

By region, ecological zone and wealth index the sub-groups showed variations in the expected directions, but less than might have been expected. This was probably an artefact of the rise in education, which affected all sub-groups. Even privileged groups at older ages had substantial numbers with no education while at younger ages even disadvantaged groups had substantial proportions with some education.

It will be important for Timor Leste to ensure that these rises in schooling are maintained and that education is provided to the minority among the school-going population who do not have appropriate access to schooling, and for older ages to have access to relevant adult literacy courses.

3.6 School attendance of young people

School attendance figures were impressive, especially for the main schooling ages 7 to 15 years (Table 3.15). However, a note of caution must be made. While the data for ages 7 to 12 was comparable to other data, notably the August 2002 MICS Survey, the DHS figures for older ages were far higher, indeed, much higher than would be anticipated in equivalent countries. Part of the high enrolment rates was due to students repeating grades. At younger ages, attendance by gender was similar but girls were less likely to attend educational institutions at later ages, especially 19 to 24 years.

Table 3.15 School enrolment

Percentage of the de jure household population age 5-24 years enrolled in school, by age group, sex and region of residence, Timor Leste 2003

Age group	Male					Female					Total				
	Urban	Rural West	Rural Central	Rural East	Total	Urban	Rural West	Rural Central	Rural East	Total	Urban	Rural West	Rural Central	Rural East	Total
5-6	24.7	16.1	14.4	14.6	17.2	33.7	22.5	14.6	16.3	21.6	29.5	19.1	14.5	15.4	19.4
7-12	84.4	76.2	70.8	72.6	75.6	86.4	74.6	66.4	75.7	74.4	85.4	75.4	68.6	74.1	75.0
13-15	82.7	86.7	77.9	82.0	81.7	87.8	82.6	70.7	75.1	78.5	85.3	84.8	74.6	78.6	80.2
7-15	84.0	78.7	72.7	75.0	77.1	86.8	76.4	67.4	75.6	75.4	85.4	77.6	70.1	75.3	76.3
16-18	69.4	67.5	70.8	58.4	68.2	69.9	68.4	50.7	57.7	64.8	69.7	68.0	61.3	58.1	64.8
19-24	34.5	26.8	31.9	30.7	31.7	25.9	16.5	17.6	7.5	17.9	30.0	20.4	23.5	16.2	23.7

Chapter 4

Background Characteristics of Respondent and Gender Issues

1. Contents

2. Tables

4 Background Characteristics of Respondent and Gender Issues

This chapter describes both the demographic and socio-economic profile of the respondents and the status of women in Timor Leste. The status of women in Timor-Leste is crucially important, especially after the vote for independence and the conflict that followed in 1999. Conflict and violence impacts greatly on women, because they carry much of the psychological and emotional burdens caused by the death of family members and relatives. The loss of many male members from violence leaves women facing economic loss, which must be overcome for survival's sake. For many women, this means rebuilding of lives and families, often from scratch.

Most East Timorese live in poverty, meaning the impact on women is even greater because women are held responsible for household financial difficulties, poor living conditions, poor sanitation and polluted water. Women are usually responsible for finding clean water for the family, and may travel two kilometres a day or more to fetch water. For women in rural areas the burden increases as they have to grow vegetables for daily cooking, find firewood and mind the family livestock. With poverty, limited access to clean water and a lack of health facilities, illness rates for adults and children alike are higher than normal. This leaves women spending valuable time looking after sick family members. These multiple hardships leave Timorese women susceptible to a range of emotional and physical burdens.

The chapter opens with a profile of the study respondents. Areas examined include a comparison of male and female education and literacy levels, access to information via the media, employment status, childcare availability, control of earning, household decision making, the husband's role in family planning decisions, the husband's presence during childbirth and antenatal care, and domestic violence. This last aspect of East Timorese family life has been determined by the rate at which ever-married women refuse to have sex with their husbands, because questions about violence against women were removed from the survey at the request of the TL 2003 DHS Steering Committee.

4.1 Language, ethnic group and religion

Table 4.1 and Table 4.2 show the distribution of the background characteristics for the ever-married female and male respondents. These tables include both the weighted and unweighted counts to provide the reader with an idea of the adjustments made to compensate for the equal sampling of each strata and the non-response rate. The weighted counts are used in tables throughout the report unless otherwise noted.

There were fewer male respondents than female in the younger age groups, reflecting a somewhat older age at marriage for males. High percentages of female respondents, especially, reported as having no education. This will be examined in more detail below.

Table 4.1 Distribution of respondents by age, marital status, residence and religion

Percent distribution of ever-married women and men by age, marital status, residence and religion, Timor Leste 2003

Background characteristics	Number of ever-married women			Number of ever-married men		
	Weighted percent	Weighted Count	Unweighted count	Weighted percent	Weighted	Unweighted
Age						
15-19	2.8	117	115	0.1	5	5
20-24	12.4	516	522	4.0	156	150
25-29	20.7	864	863	14.3	560	564
30-34	22.0	918	926	23.4	917	916
35-39	18.2	761	769	19.9	779	800
40-44	13.2	550	545	16.6	648	650
45-49	10.8	451	437	10.7	417	415
50-54	n/a	n/a	n/a	11.1	435	417
Marital status						
Married	97.1	4054	4057	99.1	3882	3886
Divorced	0.7	31	30	0.1	4	3
Widowed	2.2	92	90	0.8	31	28
Region						
Urban	23.0	962	1049	22.4	877	949
Rural East	24.8	1038	1047	23.3	911	956
Rural Central	33.9	1416	1023	34.9	1367	982
Rural West	18.2	762	1058	19.4	762	1030
Ecological zones						
Highlands	16.5	688	559	16.2	659	532
Lowlands	83.5	3489	3618	83.8	3258	3385
Religion						
Catholic	98.2	4102	4111	98.0	3839	3849
Protestant	1.5	62	52	1.7	65	56
Animist	0.0	1	1	0.1	5	4
Islam	0.2	7	8	0.1	4	4
Hindu	0.0	1	1	0.0	0	0
Buddhist	0.0	1	1	0.0	0	0
Confucian	0.1	2	3	0.1	5	4
Missing	0.0	0	0	0.0	0	0
Total	100	4177	4177	100	3917	3917

* Some ever-married women and men speak more than one official language

n/a = Not applicable

As seen in Table 4.2 the respondents spoke a variety of primary languages, with only 15% nominating, Tetum, the country's official indigenous language. Very few listed Portuguese, the other official language, or the two working languages, Bahasa Indonesia and English. However, nearly three-quarters of the women and four-fifths of the men said they were fluent in Tetum. Much smaller numbers said they were fluent in Indonesian, Portuguese or English.

Table 4.2 Distribution of respondents by education, primary and official language

Percent distribution of ever-married women and men by education, fluency in primary and official language, Timor Leste 2003

Background characteristics	Number of ever-married women			Number of ever-married men		
	Weighted percent	Weighted Count	Unweighted count	Weighted percent	Weighted	Unweighted
Education						
No education	52.8	2208	2184	41.7	1634	1612
Some primary	17.1	712	715	19.7	773	770
Completed primary	7.6	319	320	9.6	377	379
Some secondary or more	22.5	939	958	28.9	1134	1156
Primary language						
Tetum	14.8	619	649	13.1	512	550
Galole	2.7	115	104	3.0	116	103
Mambai	24.5	1023	815	26.6	1041	832
Tokodede	4.3	178	145	4.7	184	149
Bunak	8.4	349	440	8.8	343	423
Kemak	7.7	321	368	7.7	303	339
Makassae	13.7	572	583	12.4	487	512
Fataluku	4.9	206	212	5.3	206	218
Idate	1.9	79	58	2.0	77	57
Kairui	2.5	105	107	2.5	97	102
Midiki	0.6	24	25	0.4	17	19
Baikenu	5.9	248	337	6.5	254	336
Portuguese	0.0	1	2	0.1	2	2
Indonesia	0.6	25	27	0.0	4	4
Other	7.5	314	305	7.0	274	271
Fluent with official language*						
Tetum	74.4	3108	2979	80.5	3152	3063
Indonesia	24.8	1037	1088	34.4	1348	1392
Portuguese	1.5	63	64	2.9	114	118
English	0.3	11	12	0.3	11	12
Total	100	4177	4177	100	3917	3917

* Some ever-married women and men speak more than one official language

Catholicism was the dominant religion (98%) while 1.5% identified as Protestants and a further 0.2% nominated the Muslim faith. These figures differ from the 1990 census results for 'Timor Timur' when a much higher proportion of the population reported one of the minority religions – Table 4.3. A likely explanation for the difference could lie with rates of emigration by the non-Indigenous population (those born outside Timor Leste).

Table 4.3 Religion

Comparison of the distribution of the religion of respondents for TL 2003 DHS and the 1990 Census

Religion	TL 2003 DHS	1990 Census		
		Head born in East Timor	Head born outside East Timor	Combined
Catholic	98.0	95.4	36.3	88.4
Protestant	1.6	1.9	17.5	3.8
Animist	0.1			
Islam	0.1	.6	40.0	5.3
Hindu	0.1	.0	5.8	.7
Buddhist	0	.6	.3	.6
Confucian	0			100.0
Other	0.0	1.4		1.2
Missing	0			
Total	100	100	100	100

4.2 Educational level of respondents

Table 4.4 and Table 4.5 show education levels of male and female respondents according to background characteristics. Education levels were low across the board for the overall population (Table 4.1) and even lower for women. However, young Timorese people of both sexes were increasingly unlikely to have had no education, with women showing the greatest improvement, in part at least because they were most disadvantaged.

Table 4.4 Level of education of women

Percent distribution of ever-married women by the highest level of education attended, according to selected background characteristics, Timor Leste 2003

Background characteristics	Highest level of education				Total	Number of women
	No education	Some primary	Completed primary	Some secondary or more		
Age						
15-19	26.0	25.1	11.6	37.4	100	117
20-24	27.0	20.8	11.3	41.0	100	516
25-29	33.2	21.6	13.5	31.7	100	864
30-34	44.4	18.5	8.3	28.9	100	918
35-39	66.8	16.9	3.3	13.1	100	761
40-44	80.6	10.8	3.1	5.6	100	550
45-49	86.8	7.4	2.9	2.9	100	451
Region						
Urban	36.7	15.8	7.0	40.5	100	961
Rural East	50.5	20.0	7.8	21.7	100	1038
Rural Central	61.3	16.0	7.7	15.0	100	1416
Rural West	61.2	16.7	8.2	13.9	100	762
Ecological zones						
Highlands	62.8	15.4	6.3	15.6	100	688
Lowlands	51.0	17.4	7.9	23.7	100	3489
Household wealth index						
Poorest	63.4	16.7	7.5	12.5	100	1764
Middle	53.0	18.9	7.2	20.9	100	1655
Richest	28.3	14.2	9.0	48.6	100	758
Total	52.9	17.1	7.6	22.4	100	4177

The percentage of women and men with no education was highest in the rural central and rural west regions. As might be expected, the percentage of both men and women with some secondary or more education was highest in the urban region. The levels of education were lower for women and men from the highlands. Finally, women and men from the poorer households were the most likely to have had no education and the least likely to have experienced some secondary or more education. This difference is greatest in the male population, where 52.3% of male respondents from the poorest households have no education, compared with 17.2% in the richest households.

Table 4.5 Level of education of men

Percent distribution of ever-married men by the highest level of education attended, according to selected background characteristics, Timor Leste 2003

Background characteristics	Highest level of education				Total	Number of men
	No education	Some primary	Completed primary	Some secondary or more		
Age						
15-19	*	*	*	*	*	5
20-24	28.1	22.1	9.7	40.1	100	156
25-29	21.1	19.5	13.9	45.5	100	560
30-34	28.8	16.6	11.7	43.0	100	917
35-39	37.4	21.6	7.2	33.8	100	779
40-44	50.8	25.9	7.5	15.8	100	648
45-49	63.5	18.9	11.0	6.6	100	417
50-54	74.0	13.7	6.0	6.3	100	435
Region						
Urban	27.2	18.2	10.0	44.6	100	877
Rural East	35.3	22.6	10.8	31.4	100	761
Rural Central	50.3	19.6	8.9	21.3	100	1369
Rural West	50.8	18.4	9.1	21.8	100	910
Ecological zones						
Lowlands	40.0	19.7	9.7	30.7	100	3258
Highlands	50.5	19.9	9.2	20.5	100	659
Household wealth index						
Poorest	55.5	18.5	8.4	17.6	100	1594
Middle	39.7	22.3	9.9	28.1	100	1576
Richest	16.7	17.0	11.6	54.7	100	747
Total	41.7	19.7	9.6	28.9	100	3917

* Suppressed because fewer than 10 observations

4.3 Literacy achievement

I In the TL 2003 DHS literacy was defined as the ability of the respondent to read part or all of a sentence given by the interviewer in one of the four main languages (Tetum, Indonesia, Portuguese, and English). During the interview, each respondent was able to choose one of the four languages, and the appropriate reading test was administered by the interviewer. In determining the respondent's level of education, no other cross-referencing methods, such as checking school certificates, were used.

Table 4.6 compares an indicator of schooling with the percentage of respondents who could or could not read the sentence in the language test. The literacy rate was lower among the older age groups as they were more likely to have had no schooling. For

example, among women aged 45-49 years old, 3% had some secondary or more schooling (87% had no schooling; see Table 4.2). Just 7% of these women could read the complete sentence. For men in the same age group the percentage with some secondary or more schooling was 7% (64% had no schooling; see Table 4.2), while 20% could read a whole sentence.

Literacy rates were far higher for male and female respondents from the richest households than in the poorest households. Literacy rates for both sexes were higher in the urban and the rural east regions than they were in the other rural regions. Not all women and men with some secondary school or higher education were able to read the sentence provided by the interviewers. This can be seen in the younger age groups, where 45.5% of men aged 25-29 years had completed some secondary schooling or more, but only 17% could read the whole sentence, while 23% could not read at all.

Also Table 4.4 indicates that more than a third of the women aged 15-34 years have some secondary education or more, with a peak of 42% for women aged 20-24 years, a level slightly below that of men. However, of those aged 15-19 years, the percentage of women with some secondary schooling or more (38%) is more than double that of men (14%). This may reflect the tendency for men who have married in these ages to be the least educated in the population, although the small number of men in the survey limits the certainty of this interpretation.

It was estimated by UNDP (UNDP, 2002, p. 27) that Timor Leste could achieve 100% literacy by 2033 in the urban areas, although the task would take much longer (2075) in rural areas. UNDP also predicted that it would take until 2036 to achieve full male literacy, or nine years longer than the predicted year 2027 for the full female population. Reaching these literacy goals would be made harder by the poor condition of education facilities, the limited number of school teachers, and the struggle to increase the use of the official national languages, Portuguese and Tetum (Jones, 2001). On top of this, the government is still developing the national school curriculum. Even though the Indonesian government had built elementary schools in almost every village by the year 1985, the quality of education was poor and it was resisted for fear it would 'Indonesianise' the Timorese people (UNDP, 2002, p. 5).

Problems of education and literacy are tightly connected to poverty levels. Even though there are no school enrolment fees, there are other costs in sending children to school. Children in school represent a loss of labour for many families, since children have traditionally spent time helping with farming and household chores. Equal female access to education is another challenge, although it should be noted that as many girls as boys now go to primary school. In some cases girls may have an advantage, because boys are more likely to be kept out of school once they are old enough to work. Nonetheless, as other studies have shown, the higher the level of education, the lower was the level of female enrolment (Jones, 2001).

Table 4.6 Literacy

Percent distribution of ever-married women and men by level of schooling attended and by level of literacy, and percent literate, according to background characteristics, Timor Leste 2003

Background characteristics	Secondary school or more[1]	No schooling or attended only primary school				Total	Number	Percent literate[2]
		Can read a whole sentence	Can read part of a sentence	Cannot read at all	Unable to test			
EVER-MARRIED WOMEN								
Age								
15-19	37.5	15.1	20.4	23.9	3.2	100.0	117	72.8
20-24	41.1	13.5	15.3	24.1	6.0	100.0	516	69.1
25-29	31.7	14.6	17.8	30.0	5.9	100.0	864	64.1
30-34	28.9	11.0	15.1	35.2	9.9	100.0	918	52.6
35-39	13.0	7.3	11.2	54.9	13.6	100.0	760	30.2
40-44	5.7	7.3	6.6	67.3	13.1	100.0	550	18.8
45-49	3.0	6.8	4.3	71.5	14.5	100.0	451	13.6
Region								
Urban	40.8	11.9	11.3	29.0	7.1	100.0	961	63.2
Rural East	21.8	12.4	14.5	36.3	15.0	100.0	1038	48.6
Rural Central	15.2	8.7	13.2	55.2	7.7	100.0	1416	36.2
Rural West	13.9	9.7	11.8	53.5	11.1	100.0	762	35.1
Ecological zone								
Lowlands	23.8	12.9	11.4	41.8	10.2	100.0	3618	48.1
Highlands	15.7	12.4	6.5	56.4	9.0	100.0	559	34.6
Household wealth index								
Poorest	10.9	9.0	12.8	55.9	11.3	100.0	1676	33.8
Middle	21.7	11.0	13.7	42.7	10.9	100.0	1687	45.9
Richest	48.0	12.9	11.0	23.0	5.2	100.0	814	71.4
Total	22.5	10.6	12.8	44.2	10.0	100.0	4177	45.4
EVER-MARRIED MEN								
Age								
15-19	*	*	*	*	*	*	5	(45.5)
20-24	40.1	11.3	16.9	31.6	0.0	100.0	156	67.1
25-29	45.5	17.1	13.3	23.2	0.8	100.0	560	73.7
30-34	43.0	15.5	11.5	29.2	0.9	100.0	917	66.7
35-39	33.8	15.0	11.0	39.6	0.6	100.0	779	56.9
40-44	15.8	18.9	11.6	52.6	1.1	100.0	648	43.9
45-49	6.6	20.4	7.5	64.3	1.2	100.0	417	34.6
50-54	6.3	10.4	9.0	71.7	2.7	100.0	435	26.0
Region								
Urban	44.6	16.4	9.9	28.1	0.9	100.0	877	68.0
Rural East	31.4	16.5	14.1	35.6	2.4	100.0	762	59.4
Rural Central	21.3	14.2	10.5	53.5	0.6	100.0	1367	44.4
Rural West	21.8	18.3	10.5	49.2	0.3	100.0	911	49.5
Ecological zone								
Lowlands	30.7	10.9	16.7	40.7	1.1	100.0	3385	58.3
Highlands	20.5	12.7	12.8	53.4	0.6	100.0	532	46.0
Household wealth index								
Poorest	17.6	14.2	10.9	55.9	1.4	100.0	1594	44.0
Middle	28.1	16.9	12.8	41.3	0.9	100.0	1576	55.5
Richest	54.7	18.2	8.4	18.1	0.6	100.0	747	77.7
Total	28.9	16.0	11.2	42.8	1.0	100.0	3917	54.5

* Suppressed because fewer than 10 observations

[1] Not all of these respondents are necessarily literate. Of the 958 women and 1155 men with some secondary or more education, 28 women and 82 men could not read a sentence in Question 105 and 11 women and 1 man could not be tested in Question 105 as they had no ability in the four main languages, as reported in Question 103.

[2] Refers to respondents who can read a whole sentence or part of a sentence irrespective of level of education.

4.4 Access to mass media

Exposure to media is very low in Timor Leste (Table 4.7). The great majority of respondents of both sexes said they did not read a newspaper, listen to the radio or watch television—or if they did it was less than once a week. Indeed, a majority of women and a high proportion of men said they had no access to any of the three forms of media. Newspaper readership was particularly low with only 7% of women and 13% of men reading a newspaper more than once a week. Readership tended to fall with age presumably, because literacy showed the same trend. This meant that education and newspaper reading were strongly associated. The urban population was more likely to read, reflecting their greater literacy, economic power to buy a newspaper, and their physical access to the product.

Radio listening was higher than newspaper readership and more listeners than readers participated more than once a week. Radio has a clear advantage over newspapers, which are often hard to obtain and of little or no use to the many people who are illiterate or poorly literate. Radio listening showed less relationship to age for these reasons. Nevertheless, there was a strong geographical variation, with much higher listening rates in the urban region, indicating that access to radios, and the availability of radio reception, are important issues. Radio listening showed some association with education, but other data suggests that this is mainly the result of existing relationships between education levels, wealth and geographical region. Television too has an advantage over newspapers, being more accessible to the illiterate. However, like radio it depends on access both to sets and coverage. Television had only a small association with age but is strongly linked to region with higher levels of use in the urban areas. Again it is associated with level of schooling, but more strongly than with wealth.

Women were less likely to be exposed to the media than men but the difference by gender was less than by socio-economic characteristics. Nevertheless, Table 4.7 demonstrates that women (54%) were more likely to have no exposure at all to mass media than men (45%). As by regions, both women and men living in rural areas were more likely to have no exposure to media than those living in urban areas (26% for women and 20% for men). For example, 68% of women living in rural east had no media exposure of any sort.

Table 4.7 Exposure to mass media

Percent distribution of ever-married women and men who usually read a newspaper, watch TV or listen to radio less[1] or more[2] than once a week, & those with no exposure to mass media & those with exposure to all 3 types of mass media, by background characteristics, Timor Leste 2003

Background characteristics	Reads a paper or magazine		Listens to the radio		Watches television		No exposure to all form of mass media[3]	Exposed to all three types of mass media	Number
	Less than once a week	More than once a week	Less than once a week	More than once a week	Less than once a week	More than once a week			
EVER-MARRIED WOMEN									
Age									
15-19	19.4	4.4	19.7	22.2	17.8	7.5	53.9	11.2	117
20-24	21.3	7.8	22.3	25.3	14.4	10.8	47.6	11.5	516
25-29	17.1	7.7	17.2	26.4	10.6	10.8	51.6	8.6	864
30-34	17.0	8.0	20.6	28.0	12.7	11.9	48	8.7	918
35-39	8.4	8.2	17.1	21.1	6.9	9.9	57.9	5.9	760
40-44	6.2	5.3	16.2	20.3	9.0	9.4	59.4	4.5	550
45-49	5.8	4.7	13.8	19.8	6.5	9.1	63.5	2.7	451
Region									
Urban	25.3	18.2	18.4	51.5	17.2	37.8	25.6	18.8	961
Rural East	9.0	3.2	14.5	13.1	9.6	2.3	68.1	2.7	1038
Rural Central	10.4	4.6	18.7	17.6	8.3	2.3	59.5	4.8	1416
Rural West	10.1	3.2	21.6	16.2	6.8	1.9	59.6	4.3	762
Ecological zone									
Lowlands	13.9	7.8	17.6	25.4	10.9	12.2	47.0	8.0	3618
Highlands	11.1	3.7	20.9	17.0	7.7	1.4	42.0	4.2	559
Education									
No education	2.3	2.5	14.4	13.8	5.6	4.4	68.5	1.1	2207
Some primary	15.0	3.9	20.8	23.6	12.8	9.2	52.2	6.3	712
Completed primary	26.4	7.6	21.4	29.7	13.7	10.4	44.2	13.4	319
Some secondary or more	33.7	20.3	23.7	46.5	18.8	25.5	24.0	21.1	939
Total	13.4	7.1	18.1	24.0	10.4	10.4	46.2	7.4	4177
EVER-MARRIED MEN									
Age									
15-19	*	*	*	*	*	*	*	*	5
20-24	16.1	14.0	19.1	31.0	15.5	11.8	43.4	10.4	156
25-29	20.3	15.1	24.0	31.5	16.3	13.2	37.9	10.7	560
30-34	21.6	14.5	22.0	29.6	16.9	12.6	43.2	10.7	917
35-39	16.0	15.0	21.6	29.9	15.1	12.9	42.7	8.7	779
40-44	14.8	8.1	19.5	24.4	14.1	8.0	51.3	5.5	648
45-49	12.9	11.6	20.6	29.1	16.0	9.9	44.0	8.0	417
50-54	9.6	8.7	17.0	26.1	14.3	11.3	53.4	6.9	435
Region									
Urban	24.0	30.1	20.3	52.8	19.8	39.6	20.0	22.2	877
Rural East	17.3	8.0	17.9	21.9	9.1	5.8	53.5	4.3	911
Rural Central	13.5	8.5	22.7	24.9	20.1	3.0	48.3	5.4	1367
Rural West	13.4	5.5	22.2	15.8	10.4	1.5	57.2	4.5	762
Ecological zone									
Lowlands	17.7	13.8	21.4	30.4	15.2	13.8	42.5	9.5	3385
Highlands	11.8	7.1	19.0	20.0	17.6	0.5	56.8	5.1	532
Education									
No education	2.9	4.1	18.9	14.1	12.8	3.0	62.1	1.8	1634
Some primary	20.3	8.8	22.0	29.2	17.2	9.5	41.9	7.0	773
Completed primary	28.3	10.6	25.5	33.9	16.6	12.6	34.5	10.9	377
Some secondary or more	30.2	28.2	21.8	47.6	18.2	24.8	24.7	19.2	1133
Total	16.7	12.6	20.9	28.7	15.6	11.5	44.9	8.7	3917

[1] Includes all who answered 'less than once a week' but excludes those who answered 'Not at all' to questions on mass media exposure

[2] Includes those who answered 'at least once a week' or 'almost every day' to questions of frequency of mass media exposure

[3] Includes those who answered 'not at all' to frequency of exposure to newspapers and magazines and 'not at all' to frequency of exposure to radio and 'not at all' or 'no access' to frequency of exposure to television.

* Suppressed because fewer than 10 observations.

4.5 Employment, occupation, earnings and household decision-making

4.5.1 Employment status

The survey of ever-married women 15-49 asked if they had worked in the last 12 months, leaving aside housework, and whether or not they were paid for the work (Table 4.8). Two-fifths (41%) said they had undertaken such work but the figure was much higher in rural than urban areas.

Table 4.8 Employment status

Percentage distribution of ever-married women by employment status, according to selected background characteristics, Timor Leste 2003

Background characteristics	Employed in the 12 months preceding the survey		Not employed in 12 months preceding the survey	Total	Number
	Currently Employed	Not currently employed			
Age					
15-19	28.5	31.5	40.1	100.0	117
20-24	35.0	18.2	46.8	100.0	516
25-29	35.6	20.2	44.2	100.0	864
30-34	41.2	17.7	41.1	100.0	918
35-39	43.7	17.5	38.9	100.0	760
40-44	49.0	17.1	33.9	100.0	550
45-49	49.2	20.8	30.0	100.0	451
Marital status					
Married	41.0	18.7	40.4	100.0	4054
Divorced	31.4	34.1	34.5	100.0	31
Widowed	57.7	21.8	20.5	100.0	92
Number of living children					
0	43.4	25.2	31.4	100.0	120
1-2	38.1	18.3	43.6	100.0	1148
3-4	41.6	20.2	38.2	100.0	1415
5-6	44.3	16.7	39.0	100.0	991
7+	40.9	19.3	39.8	100.0	503
Strata					
Urban	31.0	8.4	60.6	100.0	961
Rural East	48.2	15.4	36.4	100.0	1038
Rural Central	41.1	30.6	28.4	100.0	1416
Rural West	45.1	15.0	39.9	100.0	762
Ecological zone					
Lowlands	41.1	15.5	43.4	100.0	3489
Highlands	42.1	36.0	21.9	100.0	688
Education					
No education	46.1	19.9	34.0	100.0	2207
Some primary	40.6	19.8	39.6	100.0	712
Completed primary	39.3	19.4	41.3	100.0	319
Some secondary or more	31.1	15.5	53.4	100.0	939
Household wealth index					
Poorest	45.1	24.7	30.2	100.0	1676
Middle	42.6	18.4	39.0	100.0	1687
Richest	30.5	8.0	61.5	100.0	814
Total	41.2	18.9	39.9	100.0	4177

In urban areas less than one-third of women had worked. The lower urban rates reflect the importance of farm work and perhaps a shortage of employment opportunities for urban women. Many rural women worked without paid income, but the distinction between paid and unpaid work may not be especially meaningful in a society with high rates of subsistence living.

Rates of working women were higher among the less educated, the poor and respondents living in the highlands. These factors are closely correlated, reflecting their greater need for income and their greater rural links. The proportion working also increased with age. This may be because young married women are more likely to be caring for young children, rather than working. The gradient, however, is less extreme than in some countries. In Indonesia, only 27% of ever-married women 15-19 worked and 33.8% of those aged 20-24 (BPS & OC Macro, 1997), much lower figures than in Timor Leste.

4.5.2 Occupation

Table 4.9 shows occupations for women. The dominant occupation was working in agriculture, usually on the household's own land. This was true not just in rural areas but also in urban areas. There were very few women working in professional or modern skilled occupations. Agriculture's dominance declined with level of education but even among those with secondary or more it was the major occupation. There was some increase in education among civil servants and teachers as well as those who fell into the category of 'unspecified occupation'.

Of the women working in agriculture, only 1% received cash income, as opposed to 25% for women not working in agriculture. Most women (96%) working in agriculture were employed by family members but this percentage was much lower for non-agricultural work (58%). Seventy per cent of women working in agriculture and 46% of women in non-agricultural work receive no cash income. Most women reported working part time. This was especially true for women working in the agricultural sector where much of the work was seasonal. Only 9% of women working in agriculture worked all year round and the majority (86%) worked as seasonal workers. Even in the non- agricultural sector, only half the women (52%) worked throughout the year: the rest worked part of the year (18%) or on an occasional basis (19%). No information on men's occupation was collected in the survey.

Table 4.9 Employment characteristics of women

Percent distribution of ever-married women employed in the last 12 months by type of earnings, employer and continuity of employment, according to type of employment, Timor Leste 2003

Employment characteristics	Type of employment		Total
	Agricultural	Non-agricultural	
Type of remuneration			
Cash	1.2	25.0	3.8
Cash and kind	1.7	3.8	1.9
In-kind only	27.3	15.1	26.0
Not paid	69.6	45.5	67.0
Missing	0.2	10.7	1.3
Total	100.0	100.0	100.0
Type of employer			
Family member	95.5	58.1	91.4
Someone else/Government	1.1	18.8	3.1
Self-employed	3.3	12.8	4.3
Missing	(0.0)	(10.3)	(1.2)
Total	100.0	100.0	100.0
Continuity of employment			
All year	9.2	52.2	13.9
Seasonally/Part of year	86.2	17.8	78.7
Occasional	4.5	19.4	6.1
Missing	0.1	10.7	1.3
Total	100.0	100.0	100.0
Number of women	2239	272	2511
Percent	89.2	10.8	100.0

Figures in parenthesis indicate result is based on <=30 observations

4.5.3 Women's control over earnings

Even when women do earn cash incomes, they rarely have full control of their earnings. The majority (79%) decide jointly with their husband how their earnings are used (Table 4.10). While this suggests a degree of consultation, it means that women rarely make an independent decision on how household cash earnings are used, even when they have earned it. It may also mean that the husband manages household money and the wife is only given the amount required for daily needs. Of the women interviewed, only 12% were able to make independent decisions on how their earnings were used. However, these findings have to be carefully interpreted as they are based on a small number of observations (N=136).

As seen in Table 4.11 there are no major variations in decision-making by background characteristic. However, older women, women with more children and urban women were a little more likely to make their own decisions. Older respondents were more likely to make independent decisions even though the chances of them contributing to the household cash earning was less. Women living in urban areas were more likely to decide on the way cash was used compared to those living in rural areas. Similarly, women who were more educated were more likely to make their own decisions about the way cash was used compared to those with no education.

Table 4.10 Women's control over earnings

Percent distribution of currently married women who received cash earnings for work in the past 12 months by person who decides how earnings are used, according to the extent the earnings contribute to household expenditures, Timor Leste 2003

Contributions to household expenditures	Self only	Jointly with husband	Jointly with someone else	Husband only	Someone else only	Missing	Total	Number of women
Almost none/ none	*	*	*	*	*	*	*	5
Less than half	(11.1)	(78.3)	(0.0)	(8.1)	(2.5)	(0.0)	(100.0)	29
Half or more	16.2	81.8	0.0	2.0	0.0	0.0	100.0	47
All	9.1	75.7	0.0	12.8	2.4	0.0	100.0	31
Don't know/Missing	(6.7)	(77.0)	(3.3)	(13.0)	(0.0)	(0.0)	(100.0)	28
Total	11.8	78.7	0.7	7.8	1.1	0.0	100.0	136

Figures in parenthesis indicate result is based on <=30 observations,

* Suppressed because fewer than 10 observations.

Table 4.11 Decision on use of earnings and contribution to household expenditure

Percent distribution of ever-married women employed in the last 12 months preceding the survey receiving cash earnings by the person who decides how the earnings are to be used, and by the extent the earnings contribute to household expenditures, by background characteristics, Timor Leste 2003

Background characteristics	Person who decides how earnings are to be used				Total	Proportion of household expenditures met by woman's income					Total	No. of women
	Self only	Jointly[1]	Some-one else only[2]	Don't know/ Miss-ing		Al-most none/ none	Less than half	Half or more	All	Don't know/ Miss-ing		
Age												
15-24	(14.6)	(69.3)	(16.1)	(0.0)	(100.0)	(0.0)	(46.2)	(21.6)	(17.6)	(14.6)	(100.0)	13
25-34	9.9	81.6	8.5	0.0	100.0	0.0	23.7	30.2	20.6	25.5	100.0	65
35-44	14.4	76.4	9.2	0.0	100.0	5.4	13.4	37.8	28	15.4	100.0	51
45+	(30.1)	(69.9)	(0.0)	(0.0)	(100.0)	(23.4)	(10.1)	(31.2)	(13.4)	(22.0)	(100.0)	14
Marital status												
Married	12.0	79.1	8.9	0.0	100.0	4.3	20.8	33.3	21.3	20.3	100.0	139
Widowed/Divorced	*	*	*	*	*	*	*	*	*	*	*	4
Number of living children												
0	*	*	*	*	*	*	*	*	*	*	*	3
1-2	20.7	70.3	9.0	0.0	100.0	6.2	28.7	31.2	16.6	17.3	100.0	44
3-4	10.5	78.8	10.8	0.0	100.0	3.4	18.7	29.4	20.1	28.4	100.0	41
5-6	9.0	88.4	2.6	0.0	100.0	2.6	10.7	39.9	24.5	22.2	100.0	36
7+	(16.9)	(71.0)	(12.1)	(0.0)	(100.0)	(4.8)	(19.4)	(27.4)	(36.3)	(12.1)	(100.0)	19
Residence												
Urban	18.3	76.1	5.6	0.0	100.0	2.8	15.5	36.6	31.0	14.1	100.0	67
Rural (all)	10.2	78.7	11.1	0.0	100.0	5.3	25.2	28.6	15.0	26.0	100.0	78
Education												
No education	5.0	80.4	14.7	0.0	100.0	7.7	21.9	28.5	16.1	25.8	100.0	48
Some education	18.4	76.1	5.6	0.0	100.0	2.4	20.3	34.1	25.4	17.9	100.0	95
Total	13.9	77.5	8.6	0.0	100.0	4.2	20.8	32.2	22.3	20.6	100.0	143

Figures in parenthesis indicate result is based on <=30 observations,

* Suppressed because fewer than 10 observations.

[1]Respondent with husband (majority) or respondent with someone else

[2] May be husband (majority) or someone else

4.5.4 Care of children under five years while mothers are working

Table 4.12 and Table 4.13 describe childcare arrangements for working mothers. Types of childcare can be divided into care provided by family members, husband, non-family members, others or taking the child/children to work (respondent).

Table 4.12 Childcare while working: background characteristics

Percent distribution of employed women by whether they have a child living at home with them under 5 years of age by person who cares for the child(ren) while the women is at work, according to background characteristics, Timor Leste 2003

Background characteristics	Employed women		Carer for child(ren) <5 while mother is at work									
	No child <5	One or more children <5	Respondent	Husband	Family members	Non-family member[1]	At school	Has not worked since last birth	Other	Missing	Total	Number of women
Age												
15-19	35.7	64.3	7.1	11.2	59.9	3.6	0.0	6.0	6.9	5.3	100.0	62
20-24	12.6	87.4	5.5	17.1	66.7	2.6	0.0	3.3	4.0	1.0	100.0	202
25-29	9.2	90.8	3.7	17.9	68.0	4.4	0.2	1.5	3.5	1.0	100.0	376
30-34	10.2	89.8	3.5	12.6	73.4	4.0	0.5	2.0	3.5	0.6	100.0	415
35-39	19.0	81.0	2.7	13.1	73.4	5.6	0.0	2.9	1.7	0.5	100.0	359
40-44	42.1	57.9	4.5	7.6	81.0	1.8	0.0	2.0	3.1	0.0	100.0	290
45-49	70.8	29.2	3.4	4.1	79.6	3.1	0.0	0.0	3.9	5.9	100.0	262
Region												
Urban	26.0	74.1	2.6	20.6	70.6	3.1	0.5	2.1	0.5	0.0	100.0	240
Rural East	21.4	78.6	10.5	3.5	72.5	7.3	0.3	0.0	3.1	2.8	100.0	572
Rural Central	28.0	72.1	3.0	16.6	73.1	1.7	0.0	3.2	1.5	0.9	100.0	891
Rural West	23.2	76.8	2.5	10.6	71.3	5.9	0.2	1.8	7.0	0.7	100.0	263
Ecological zone												
Lowlands	25.0	75.0	3.6	12.9	72.2	4.4	0.2	1.9	3.8	1.0	100.0	1516
Highlands	27.0	73.0	4.7	15.4	72.1	2.1	0.0	3.4	1.5	0.8	100.0	450
Education												
No education	33.3	66.7	3.8	10.6	74.1	4.1	0.0	2.6	3.9	1.0	100.0	1155
Some primary	15.3	84.8	5.1	10.3	75.7	3.6	0.0	1.3	3.4	0.6	100.0	348
Completed primary	16.1	83.9	3.2	26.0	58.1	5.0	0.8	2.0	2.9	1.8	100.0	140
Some secondary or more	12.3	87.7	3.0	19.3	69.0	3.3	0.3	2.3	1.6	1.1	100.0	323
Household wealth index												
Poorest	23.6	76.4	4.9	11.9	71.4	4.9	0.2	2.1	3.6	0.9	100.0	961
Middle	26.7	73.3	2.8	13.3	75.2	2.7	0.0	2.0	3.2	0.9	100.0	812
Richest	29.3	70.7	3.0	22.3	63.3	3.9	0.7	3.4	1.9	1.5	100.0	194
Total	25.5	74.6	3.9	13.4	72.2	3.9	0.2	2.2	3.3	1.0	100.0	1966
Number of women	501	1467	77	263	1419	77	4	43	65	20	1966	n/a

Figures in parenthesis indicate result is based on <=30 observations.
* Suppressed because fewer than 10 observations
n/a = Not applicable
[1] Includes friends, neighbours and servants

The results show that 75% of working women had one or more children under 5 years living with them. The majority of women (72%) depended on family members to look after their children and a much smaller number depended on their husband (13%). Women who were working in agriculture, occasional workers, paid in in-kind only, or who were employed by a family member, were most likely to use family members as care-givers. When women earned cash income, were employed by someone else, or worked for the government, the husband was more likely to be the child caregiver.

Table 4.13 Childcare while working: employment characteristics

Percent distribution of employed women by whether they have a child living at home with them under 5 years of age by person who cares for the child(ren) while the women is at work, according to type of employment, type of earnings and type of employers, Timor Leste 2003

Background characteristics	Employed women		Carer for child(ren) <5 while mother is at work									
	No child <5	One or more children <5	Respondent	Husband	Family members	Non-family member[1]	At school	Has not worked since last birth	Other	Missing	Total	Number of women
Type of employment												
Agricultural	25.4	74.6	3.9	12.6	72.9	3.9	0.2	2.2	3.4	1.0	100.0	1891
Non-agricultural	25.8	74.2	3.4	36.7	53.3	5.0	0.0	1.7	0.0	0.0	100.0	75
Continuity of employment												
All year	22.6	77.5	5.7	18.6	63.7	4.1	0.0	4.2	3.8	0.0	100.0	228
Seasonally or part of year	26.2	73.8	3.7	13.2	72.8	3.7	0.2	2.0	3.2	1.2	100.0	1656
Occasional	18.2	81.8	0.0	4.9	84.9	8.0	0.0	0.0	2.1	0.0	100.0	81
Missing	*	*	*	*	*	*	*	*	*	*	*	1
Type of earnings												
Cash	24.0	76.0	1.6	42.9	49.2	4.7	0.0	1.6	0.0	0.0	100.0	76
Cash and kind	(32.2)	(67.8)	(0.0)	(26.9)	(73.2)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	33
In-kind only	23.0	77.0	4.0	11.2	77.0	3.1	0.0	1.5	2.2	1.0	100.0	524
Not paid	26.2	73.8	3.9	12.3	71.6	4.3	0.3	2.6	4.0	1.0	100.0	1331
Missing	*	*	*	*	*	*	*	*	*	*	*	2
Type of employer												
Family member	25.0	75.0	4.0	12.1	73.2	3.8	0.2	2.1	3.5	1.1	100.0	1810
Someone else/ Government	24.7	75.4	3.0	38.2	53.8	3.3	0.0	1.7	0.0	0.0	100.0	73
Self-employed	37.1	62.9	1.8	21.6	65.4	6.0	0.0	5.3	0.0	0.0	100.0	82
Missing	*	*	*	*	*	*	*	*	*	*	*	1
Total	25.5	74.6	3.9	13.4	72.2	3.9	0.2	2.2	3.3	1.0	100.0	1966
Number of women	501	1467	77	263	1419	77	4	43	65	20	1966	n/a

Figures in parenthesis indicate result is based on <=30 observations

* Suppressed because fewer than 10 observations

n/a = Not applicable

[1] Includes friends, neighbours and servants

4.6 Gender relations

4.6.1 Decision making in the household

Major decisions regarding health, visits to families, large household purchases and daily household needs were usually made jointly with husband (Table 4.14). The health response may be interpreted as meaning that men were concerned about their wives' health but it also implies that these women did not have complete control over their own health. Husbands had a major say in daily household purchases and even when and how their wives travelled to visit family members. Women's power to make decisions within the household was limited and their main input concerned the daily menu and the purchase of daily needs.

Extended family members did not play a significant role in decision-making processes. This differs to family relationships in Indonesia. It is consistent, however, with the family structure discussed in Chapter 3.

Table 4.14 Decision making in the household

Percent distribution of currently-married women concerning who makes decisions in the respondents household about food to cook daily, household purchases (both large and those for daily needs), respondents health care and visits to family, according to reports by women, Timor Leste 2003

Person responsible for the decision	Decision				
	Food to cook daily	Household purchases (daily)	Household purchases (large)	Health care of respondent	Visits to family
Currently married women					
Respondent	88.2	44.1	7.5	30.1	15.0
Husband of respondent	3.1	10.2	15.0	11.7	6.4
Respondent and husband jointly	8.4	44.9	76.9	57.5	76.9
Someone else	0.0	0.2	0.1	0.2	0.1
Respondent and someone else jointly	0.1	0.1	0.1	0.5	0.0
Decision not made/Not applicable	0.2	0.5	0.3	0.1	1.6
Total	100.0	100.0	100.0	100.0	100.0
Number of women	4054	4054	4054	4054	4054

Table 4.15 describes decision making taking into account background characteristics of ever-married women in the survey. Women played a major role in deciding the preparation of food for cooking (88.4%) and daily household purchases (45.5%). Only about a third of the women interviewed were free to make decisions about their health care (31.8%), and even less regarding family visits (17.0%) and large household purchases (9.5%). Table 4.15 shows the age of the ever-married women affected their decision making apart from decisions on cooking. For example, the younger the woman, the more likely decision-making regarding health care was done jointly with the husband (60%). Women aged 30 years and older were slightly more likely to make their own decisions regarding health care. As for family visits, more women aged 15-19 years (84%) made joint decisions with their husband than older women (more than 70%). Younger women

were less independent in the decision-making process and more likely to seek their husbands' suggestions. A husband whose wife was younger had more control of his wife's decision-making and movement.

Table 4.15 Decision making in the household: background characteristics

Percent distribution of ever-married women regarding decision making in the household about food to cook daily, household purchases (both large and those for daily needs), respondents health care and visits to family, according to whether decisions are made by the respondent, her husband or jointly[1], by background characteristics, Timor Leste 2003

Background characteristics	Respondents health care			Household purchases (large)			Household purchases (daily)			Visits to family			Food to cook daily			Number of women
	Women	Husband	Jointly	Women	Husband	Jointly	Women	Husband	Jointly	Women	Husband	Jointly	Women	Husband	Jointly	
Age																
15-19	29.0	10.9	59.0	7.6	10.3	82.1	48.5	3.8	47.7	10.4	2.6	85.8	87.8	3.0	9.2	117
20-24	28.0	10.5	59.9	6.6	13.1	79.3	41.4	9.2	48.6	15.3	4.6	78.9	88.2	3.6	8.2	516
25-29	28.3	11.3	59.9	7.9	14.9	76.8	43.4	9.2	46.6	17.0	5.2	76.6	87.5	3.1	9.1	864
30-34	31.3	10.5	57.8	7.7	14.4	77.4	46.8	9.0	43.4	14.9	5.6	78.2	89.6	2.7	7.5	918
35-39	36.1	12.3	50.5	12.3	16.0	70.9	45.6	13.7	39.4	18.1	9.1	70.4	87.7	3.8	7.8	761
40-44	32.8	11.8	54.9	11.8	14.9	71.8	47.0	9.0	43.4	19.3	6.5	71.5	88.7	2.7	8.1	550
45-49	36.1	12.5	51.0	12.2	14.6	71.7	48.7	10.3	40.0	20.4	7.4	70.3	88.8	2.3	8.7	451
Region																
Urban	33.9	11.9	54.1	12.6	12.2	74.1	46.1	8.1	45.0	20.0	7.8	71.1	86.4	3.8	9.4	961
Rural East	28.1	5.1	66.5	11.7	6.4	80.9	53.0	2.5	43.5	11.5	1.8	84.9	90.7	1.3	7.7	1038
Rural Central	28.0	11.6	59.0	7.7	10.5	81.4	46.2	9.9	43.1	19.9	6.7	70.6	87.5	3.5	8.4	1416
Rural West	41.2	18.9	38.8	5.7	36.7	56.7	33.1	22.4	43.7	15.3	9.4	74.8	89.4	3.5	7.0	762
Ecological zones																
Lowlands	32.2	11.3	55.8	10.2	15.5	73.4	45.9	9.9	43.3	16.7	6.8	74.8	88.9	3.1	7.7	3489
Highlands	29.5	12.1	57.2	5.7	10.2	83.8	43.5	9.7	45.8	18.5	3.6	76.1	85.8	2.7	11.0	688
Education																
No education	33.6	12.7	53.2	9.7	17.4	72.0	43.8	12.5	42.6	18.0	7.2	72.6	87.6	3.6	8.4	2207
Some primary	33.5	8.9	56.8	8.5	12.7	78.1	44.8	9.1	45.6	13.6	5.5	78.6	90.1	2.6	7.3	712
Primary completed	27.2	10.5	61.1	8.6	11.9	79.0	51.4	7.4	40.5	18.6	6.0	74.4	89.1	4.2	6.5	319
Some secondary +	27.9	10.5	60.6	9.9	10.6	78.9	48.0	5.2	46.1	16.6	4.7	78.1	88.8	1.6	9.2	939
Household wealth index																
Poorest	33.6	11.1	54.3	8.0	16.4	74.7	45.0	11.5	42.6	16.3	5.5	75.8	90.4	3.2	6.2	1676
Middle	29.3	10.9	58.8	9.4	14.2	75.7	44.1	10.0	45.0	15.5	6.1	76.8	86.5	3.0	10.0	1687
Richest	32.2	12.9	53.9	12.7	11.8	74.6	49.3	6.6	43.4	21.7	8.2	69.7	88.1	2.8	8.8	814
Total	31.8	11.4	56.1	9.5	14.6	75.1	45.5	9.9	43.7	17.0	6.2	75.0	88.4	3.0	8.2	4177
Number of women	1328	476	2343	397	610	3137	1901	414	1825	710	259	3133	3692	125	343	n/a[2]

[1] Note that, for clarity, percentage of decisions made by someone else, respondent and someone else jointly and those who responded decision not made/not applicable (all classified as 'other') are not reported in this table. Thus percent distributions for each decision will not equal 100% and total number of women shown in the table answering each decision will vary (and not equal 4177, the total number) between decisions, due to varying numbers of women falling in the 'other' category

[2] This value is not shown as the total number of women represented in each decision category varies, and does not equal 4177 (see note above)

There was some differential in decision making processes by region. Over 50% of women in both rural and urban areas made decisions jointly with their husbands regarding health care except in the rural west where only 38% of women made decisions jointly with their husbands. According to the ecological zone division, it appeared that women in the highlands made more joint decisions with their husbands regarding health care, large and daily household purchases and family visits, as compared to women living in the low land. Education did not seem to have any association with decision-making. Economic status did not have a significant affect on the decision making process except for family visits, where women who were better-off were more likely to make their own decisions (21%) as compared to women who were poor (15%).

4.6.2 Discussion with husband on family planning

In Timor Leste, family planning is not an important issue for family discussion (see Table 4.16). More than 76% of ever-married women surveyed had never talked about family planning with their husband. The most remarkable finding was that irrespective of background, most couples had not discussed family planning.

Table 4.16 Discussions on family planning

Percent distribution of ever-married women having discussions with husband on family planning in the past year by background characteristics, Timor Leste 2003

Background characteristics	Discussion with husband on family planning				
	Never	Once or twice	More often	Total	Number
Age					
15-19	78.4	13.1	8.4	100	117
20-24	72.1	17.0	10.9	100	516
25-29	74.3	15.8	9.9	100	864
30-34	74.0	18.9	7.1	100	918
35-39	74,4	17.5	8.1	100	760
40-44	80.7	11.8	7.5	100	550
45-49	88.9	9.1	2.0	100	451
Region					
Urban	66.3	21.7	11.9	100	961
Rural East	83.6	12.9	3.5	100	1038
Rural Central	85.4	9.5	5.1	100	1416
Rural West	63.1	23.1	13.8	100	762
Ecological zones					
Highlands	74.8	16.5	8.7	100	3489
Lowlands	85.2	11.4	3.4	100	688
Education					
No education	82.9	11.8	5.4	100	2207
Some primary	72.7	19.3	8.0	100	712
Primary completed	69.6	18.8	11.6	100	319
Some secondary or more	66.8	20.9	12.4	100	939
Household wealth index					
Poorest	81.5	13.2	5.2	100	1676
Middle	77.4	14.8	7.8	100	1687
Richest	64.3	22.3	13.4	100	814
Total	76.5	15.6	7.9	100	4177

Younger women, especially those in the chief childbearing ages, were a little more likely to have discussed family planning with their husband. Educated women were more likely to talk about family planning than women with no education, but even amongst the most educated, only a third had ever discussed it. Women living in urban and rural west areas were most likely to have talked about family planning.

4.6.3 Husband's views on family planning

Sixty one percent of women believed their husbands disapproved of family planning and only 21% believed that their husband approved of family planning (see Table 4.17). A greater percentage of husbands approved of family planning for women aged less than 40 years. For example, in women 20-24 years, 25% of husbands approved of family planning in comparison to 11% of husbands of women aged 45-49 years. Timorese women's ideal family size averaged 5.7 children (Chapter 8 Fertility Preference). This large ideal family size helps explain why only a small percentage of women had talked about family planning with their husband.

Table 4.17 Husband's views on family planning

Percent distribution of ever-married women's perceptions of their husband's level of approval for family planning by respondent's background characteristics, Timor Leste 2003

Background characteristics	Husband's approval on family planning				Number
	Approves	Disapproves	Don't know	Total	
Age					
15-19	17.1	66.2	16.7	100	117
20-24	24.5	59.6	15.9	100	516
25-29	24.3	60.3	15.4	100	864
30-34	23.3	58.0	18.7	100	918
35-39	19.9	63.9	16.2	100	761
40-44	15.4	62.3	22.3	100	550
45-49	11.2	64.1	24.7	100	451
Region					
Urban	27.5	55.2	17.3	100	961
Rural East	16.4	61.7	21.9	100	1038
Rural Central	15.2	62.3	22.5	100	1416
Rural West	27.1	66.1	6.8	100	762
Ecological zones					
Highlands	21.7	60.8	17.5	100	3489
Lowlands	14.5	63.3	22.2	100	688
Education					
No education	15.0	63.9	21.1	100	2207
Some primary	23.4	59.1	17.4	100	712
Primary completed	27.2	56.2	16.6	100	319
Some secondary or more	29.0	58.2	12.9	100	939
Household wealth index					
Poorest	16.0	63.6	20.3	100	1676
Middle	20.6	60.8	18.6	100	1687
Richest	29.6	57.0	13.4	100	814
Total	20.5	61.2	18.3	100	4177

4.6.4 Husband's attendance during delivery and antenatal visits

Table 4.18 explores husband's participation during delivery. If the delivery of the last child was in the hospital or another health facility, the respondent was asked whether her husband was present during the delivery. In another question, the women were asked who assisted with the delivery. If the delivery was not in a health facility, this was used to examine whether the husband was present at the delivery. Of the women who delivered in a hospital or other health facility, 9% were accompanied by their husband during delivery. Younger women, women who lived in urban areas, the lowlands region, educated women and better-off women were more likely to have their husband present during the delivery of their last child.

Table 4.18 Husband presence during delivery

Percent distribution of ever-married women of whether a respondent's husband was present at the delivery of the last child born, according to whether the delivery occurred in a health care facility or elsewhere, by selected background characteristics, Timor Leste 2003

Background characteristics	Delivery in Health Facilities[1]		Delivery not in health facilities[2]		Total	Number of births
	Husband attended	Husband did not attend	Husband assisted at birth.	Husband did not assist at birth		
Age						
15-19	13.3	0.0	1.5	85.2	100.0	89
20-24	12.3	0.6	5.0	82.2	100.0	470
25-29	9.4	0.6	6.1	83.9	100.0	809
30-34	9.6	0.7	4.8	84.9	100.0	849
35-39	7.2	0.1	5.5	87.1	100.0	643
40-44	9.4	0.3	3.6	86.8	100.0	363
45-49	2.6	0.6	6.5	90.2	100.0	151
Region						
Urban	25.4	1.1	2.5	71.0	100.0	768
Rural East	4.2	0.0	3.6	92.1	100.0	613
Rural Central	3.4	0.5	6.8	89.3	100.0	1124
Rural West	5.9	0.2	6.4	87.5	100.0	869
Ecological zones						
Lowlands	10.5	0.5	5.1	83.9	100.0	2823
Highlands	2.8	0.3	5.1	91.8	100.0	551
Education						
No education	3.9	0.2	5.0	90.9	100.0	1623
Some primary	8.1	0.5	5.8	85.5	100.0	630
Primary completed	8.9	0.7	5.4	85.0	100.0	273
Some secondary or more	20.3	0.9	4.8	74.0	100.0	848
Household wealth index						
Poorest	2.5	0.1	6.2	91.2	100.0	1361
Middle	7.0	0.1	5.3	87.5	100.0	1370
Richest	28.3	1.9	2.3	67.4	100.0	643
Total	9.2	0.5	5.1	85.2	100.0	3374

[1] Health care facility includes both the public and private medical sector

[2] Not in health care facility includes the respondent's or someone else's home or "other" unspecified location of the delivery

Five percent of women having children outside a health facility were assisted by their husband during their last delivery. The presence of husbands during delivery in the non-medical sector is likely to have been underestimated as the husband may have *attended*, but *not assisted*, in delivery (see note 1). Additionally, the husband may have assisted in the delivery but been included by the interviewer as a "relative/friend".

Table 4.19 explores husband's attendance during antenatal visits. The percentage of husbands accompanying their wife to antenatal visits was low (33.6%). The highest percentage of husbands accompanying their wives was respondents with the highest level of education and from the wealthiest households. This must be seen in the context that many pregnant women do not attend antenatal visits due to the limited number of health facilities. In Timor Leste there are only 211 health facilities, of which half are community health centres without beds (104), and there are only 8 hospitals. The other health facilities consist of health posts (63), mobile clinics (27), and community health centres with beds (9). The number of births attended by midwives was only 335, compared to 1647 attended by traditional birth attendants (Suco Survey, 2001, p. 42).

Table 4.19 Husband attendance during antenatal care

Percent distribution of husband's attendance during antenatal care by respondent's background characteristics, Timor Leste 2003

Background characteristics	Last birth			
	Yes	No	Total	Number
Age				
15-19	49.7	50.3	100	56
20-24	38.4	61.6	100	324
25-29	36.8	63.2	100	544
30-34	32.5	67.5	100	534
35-39	28.0	72.0	100	373
40-44	29.8	70.2	100	216
45-49	33.6	66.4	100	73
Region				
Urban	36.9	63.1	100	622
Rural East	31.6	68.4	100	523
Rural Central	31.5	68.5	100	619
Rural West	34.5	65.5	100	356
Ecological zones				
Highlands	34.4	65.6	100	1861
Lowlands	28.4	71.6	100	259
Education				
No education	28.7	71.3	100	834
Some primary	34.1	65.9	100	416
Primary completed	28.5	71.5	100	204
Some secondary or more	41.1	58.9	100	666
Household wealth index				
Poorest	31.4	68.6	100	680
Middle	31.3	68.7	100	874
Richest	39.9	60.1	100	566
Total	33.6	66.4	100	2120

In Indonesia, husbands are encouraged to participate during their wife's pregnancy and delivery. Male participation in reproductive health related issues was strongly advocated during the Reform Era. In West Nusa Tenggara and Eastern Nusa Tenggara, village midwives strongly advocate husband participation during antenatal care, delivery and postnatal care. Based on the TL 2003 DHS survey results it seems that policy and programs to encourage male participation in reproductive health should be developed and promoted in Timor Leste.

4.6.5 Women's attitude towards refusing sex with husband

In the TL 2003 DHS, women were asked whether a wife is justified in refusing to have sex with her husband under four circumstances: she knows her husband has a sexually transmitted disease (STD); she knows her husband has sex with other women; she has recently gave birth; and she is tired or not in the mood. The question on women's attitude towards refusing sex with husband was the only question relating to domestic violence. The degree to which women have control over their sexual life may also directly affect their fertility and health.

Of Timor-Leste women, 52% said they would refuse sex with their husband if they were tired or not in the mood, and a higher proportion if they had recently gave birth (75%), knew that their husband had an STD (74%) or was having sex with another women (72%). Of the respondents, 46% agreed with all four specified reasons as justifying refusing sex with their husbands.

There was surprisingly little variation by background characteristic and even education had only a minimal or inconsistent affect. Women who completed primary school (54%) were more likely to agree with the four specified reasons for refusing sex with their husband than women with no education (46%) or some primary (43%). However, only 46% of women with secondary schooling or more agreed with all four reasons. The ability to earn cash income did not influence women agreeing with all four specified reasons (40%), but being paid in kind did (50%). However, this needs to be interpreted with caution due to the small number of women who received cash income. The only background characteristics which had a strong and consistent affect were household wealth, where women from richer households were more likely to agree with the specified reasons for refusing sex. To a lesser extent region was also important, with women living in the rural east being less likely to agree.

Women who did not participate in the household decisions (20.6%), who were not employed (9.5%), who had more than seven children (7.4%) and who were in the later stage of their reproductive life (45-49 years old, 7.1%) tended not to agree with the four specified reasons for refusing sex with their husband.

Table 4.20 Women's attitude towards refusing sex with husband

Percentage of ever-married women who believe that a wife is justified in refusing to have sex with her husband for specific reasons, according to background characteristics, Timor Leste 2003

Background characteristics	Wife is justified in refusing sex with her husband if she:				Percentage who agree with all 4 specified reasons	Percentage who agree with none of 4 specified reasons	No. of women
	Knows husband has a STD	Knows husband has sex with other women	Has recently given birth	Is tired or not in the mood			
Age							
15-19	83.6	84.3	79.3	55.3	50.6	4.0	117
20-24	77.0	75.8	77.0	53.0	48.0	5.1	516
25-29	75.7	72.9	75.8	49.0	43.5	6.4	864
30-34	76.1	73.1	76.6	52.0	45.9	5.8	918
35-39	72.1	70.9	74.2	49.8	44.6	5.8	761
40-44	70.7	70.2	73.7	55.7	48.9	7.2	550
45-49	69.3	66.4	70.8	53.7	46.9	6.9	451
Marital status							
Married	74.3	72.4	75.6	52.1	46.3	6.0	4054
Divorced	65.7	64.0	55.6	35.6	33.2	9.4	31
Widowed	69.1	64.2	61.1	45.9	39.8	9.5	92
Number of living children							
0	79.6	75.0	73.6	52.6	47.7	2.8	120
1-2	73.9	72.2	74.5	49.9	44.3	6.9	1148
3-4	76.3	74.4	77.1	52.3	46.6	5.0	1415
5-6	72.3	70.5	73.6	52.9	46.0	6.4	991
7+	70.9	68.8	74.0	52.7	48.3	7.4	503
Residence							
Urban	75.2	72.1	77.2	56.1	50.8	8.6	961
Rural East	81.3	81.4	74.6	41.7	37.5	8.4	1038
Rural Central	73.8	71.6	75.3	52.6	46.6	4.6	1416
Rural West	63.7	61.1	72.8	59.0	50.6	2.6	762
Education							
No education	71.1	69.5	73.0	51.7	46.1	5.7	2207
Some primary	76.3	74.8	75.0	50.6	45.0	5.3	712
Completed primary	81.8	77.3	84.4	57.0	50.2	2.9	319
Some secondary or more	77.0	74.9	76.9	51.4	45.4	8.7	939
Household wealth index							
Poorest	73.6	71.3	72.3	46.5	40.6	5.2	1676
Middle	73.0	71.9	75.4	53.1	46.8	5.9	1687
Richest	77.6	74.7	80.2	60.3	55.6	8.2	814
Employment							
Not employed	60.2	58.3	72.6	47.2	40.3	9.4	1666
Employed for cash[1]	64.4	60.3	69.0	54.0	39.4	5.6	143
Employed not for cash	84.7	82.8	77.3	54.9	50.4	3.7	2336
Missing	75.3	72.5	75.1	61.2	56.2	10.9	32
Number of decisions[2] in which women participates in[3]							
0	*	*	*	*	*	*	9
1-2	44.8	44.7	67.7	43.2	37.5	5.6	200
3-4	69.7	69.4	81.1	61.4	56.0	4.2	1016
5	77.7	75.1	73.6	49.2	43.2	6.7	2952
Total	74.1	72.2	75.1	51.9	46.1	6.1	4177

Figures in parenthesis indicate result is based on <=30 observations

* Suppressed because fewer than 10 observations.

[1] Includes women who are paid all in cash and those paid cash and in-kind

[2] Either by herself or jointly with others (including husband)

[3] The five situations listed in Q321, also listed in Table 4.9

4.7 Smoking

Smoking can have a negative impact on the smoker as well as the health status of the household members. The TL 2003 DHS collected information on tobacco use. Both female and male respondents were asked whether they smoked regularly, the type of tobacco they used and how much they had smoked in the past 24 hours. It was speculated that many respondents knew smoking was bad for their health and may have deliberately mislead the interviewer by underestimating the amount they smoke.

The following tables present the percentage of ever-married women (Table 4.21) and ever-married men (Table 4.22) who smoked cigarettes or tobacco, by the number of cigarettes smoked in the preceding 24 hours and according to their background characteristics. Only 4% of the ever-married women said they had smoked cigarettes (1.4%) or other tobacco (2.5%) (Table 4.21). In total, only 67 of the ever-married female respondents said they smoked tobacco. Of the women who smoked, 64% smoked less than six cigarettes per day. Even though the percentage and variation was very small, the older the respondents, the more likely it was for them to smoke. Ever-married women living in urban areas and those from wealthier households were more likely to smoke cigarettes, compared to those living in rural areas and coming from poorer households. However, women from poorer households were more likely to smoke other types of tobacco.

Among the men, 39% did not smoke at all, 21% smoked cigarettes, 34% other types of tobacco and only 6% smoked pipes (Table 4.22). Of those men who smoked, the younger respondents and those living in urban areas were more likely to smoke cigarettes while the situation was reversed for other types of tobacco use. There seemed to be a relationship between the level of education and the purchasing power to buy cigarettes. Those who were more educated and from the highest socio-economic group were more likely to smoke cigarettes compared to those with no schooling or only some primary education, who were from the poorest households. These groups were more likely to smoke other type of tobacco.

Table 4.21 Use of smoking tobacco, women

Percent of ever-married women who smoke cigarettes or tobacco, and percent distribution of cigarette smokers by number of cigarettes smoked in preceding 24 hours, according to background characteristics and maternity status, Timor Leste 2003

Background characteristics	Uses tobacco			Does not use tobacco	Number of women	Number of cigarettes[1]		Don't know/ Missing	Total	Number of smokers
	Cigar-ettes	Pipe	Other tobacco			0-6	7+			
Age										
15-19	0.0	0.0	0.6	99.4	117	*	*	*	*	0
20-34	0.8	0.1	1.1	98.0	2299	(61.9)	(38.1)	(0.0)	(100)	21
35-49	2.3	0.1	4.5	93.1	1761	64.5	35.5	0.0	100	46
Region										
Urban	2.7	0.0	1.0	96.4	962	(64.3)	(35.7)	(0.0)	(100)	26
Rural East	1.4	0.0	2.0	96.6	1038	(83.3)	(16.7)	(0.0)	(100)	15
Rural Central	1.2	0.2	4.1	94.5	1416	(43.8)	(56.3)	(0.0)	(100)	22
Rural West	0.4	0.0	2.5	97.2	762	*	*	*	*	4
Ecological zones										
Lowlands	1.5	0.0	2.4	96.0	3489	66.9	33.1	0.0	100	58
Highlands	0.9	0.2	3.5	95.4	688	*	*	*	*	9
Education										
No education	1.5	0.1	3.7	94.6	2208	59.2	40.8	0.0	100	39
Some primary	1.5	0.0	2.1	96.4	712	(88.3)	(11.7)	(0.0)	(100)	12
Primary completed	0.9	0.0	1.4	97.7	319	*	*	*	*	3
Some secondary or more	1.4	0.0	0.5	98.1	939	(54.2)	(45.8)	(0.0)	(100)	13
Household wealth index										
Poorest	1.1	0.1	3.3	95.5	1765	(64.6)	(35.4)	(0.0)	(100)	22
Middle	1.3	0.1	2.1	96.5	1654	(62.1)	(37.9)	(0.0)	(100)	24
Richest	2.6	0.0	1.8	95.6	758	(64.7)	(35.3)	(0.0)	(100)	21
Maternity status										
Pregnant	1.0	0.0	2.7	96.3	529	*	*	*	*	7
Breastfeeding (not pregnant)	1.0	0.1	1.9	97.0	1809	(53.2)	(46.8)	(0.0)	(100)	20
Neither	2.0	0.1	3.2	94.8	1839	67.3	32.7	0.0	100	40
Total	1.4	0.1	2.6	95.9	4177	63.7	36.3	0.0	100	67

[1] Mean number of cigarettes are unweighted

Figures in parenthesis indicate result is based on <=30 observations

* Suppressed because fewer than 10 observations.

Table 4.22 Use of smoking tobacco, men

Percent of ever-married men who smoke cigarettes or tobacco and percent distribution of cigarette smokers by number of cigarettes smoked in preceding 24 hours, according to background characteristics, Timor Leste 2003

Background characteristics	Uses tobacco			Does not use tobacco	Number of men	Number of cigarettes[1]				Don't know/ Missing	Total	Number of smokers
	Cigar-ettes	Pipe	Other tobacco			0-2	2- 5.	6-9.	10+			
Age												
15-19	*	*	*	*	5	*	*	*	*	*	*	3
20-34	24.9	4.5	28.3	42.3	1632	13.4	24.7	19.9	42.0	0.0	100	471
35-54	17.9	6.3	38.6	37.2	2280	14.4	24.6	18	43	0.0	100	431
Region												
Urban	37.6	2.6	14.8	45.0	877	7.5	19.1	19.7	53.6	0.0	100	350
Rural East	23.9	8.0	25.8	42.4	911	12.6	33.8	20.2	33.5	0.0	100	259
Rural Central	12.6	7.6	47.2	32.6	1367	11.1	26.4	21.5	41.0	0.0	100	213
Rural West	12.5	2.4	44.0	41.1	762	27.9	21.6	13.9	36.5	0.0	100	161
Ecological zones												
Lowlands	22.1	6	32.3	40.1	3258	13.5	24.6	18.2	43.7	0.0	100	869
Highlands	14.5	6	44.5	35.2	659	17.6	26.4	25.3	30.8	0.0	100	115
Education												
No education	11.3	7.5	46.2	35.1	1634	21.1	24.2	17.2	37.5	0.0	100	262
Some primary	21.5	5.9	35.7	36.9	773	12.6	29.1	17.5	40.8	0.0	100	206
Primary completed	22.9	4.3	33.9	38.8	377	6.9	23.5	18.6	51.0	0.0	100	99
Some secondary or more	33.4	3.0	16.5	47.1	1133	11.6	23.2	20.7	44.4	0.0	100	417
Household wealth index												
Poorest	13.4	7.6	42.4	36.7	1681	19.0	32.1	19.7	29.2	0.0	100	317
Middle	19.8	4.9	36.6	38.7	1543	16.7	24.7	16.7	41.9	0.0	100	371
Richest	41.1	2.2	9.8	46.9	693	5.1	17.3	20.7	57.0	0.0	100	296
Total	20.8	5.6	34.3	39.3	3917	13.9	24.8	18.9	42.5	0.0	100	984

[1] Mean number of cigarettes is unweighted

* Suppressed because fewer than 10 observations.

Chapter 5
Fertility

1 Contents

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5. Fertility

Fertility is one of the key demographic indicators for any nation. It is both the most important component in the determination of the rate of population growth and the most direct measure of women's family building behaviour. Over the past century the world has seen large variations in fertility both between nations and over time. Today all developed countries have fertility below the notional replacement level of just over two children per woman, and in much of Europe fertility is a full 25% below replacement levels. Large portions of the developing world are also at or below replacement levels, and China, the world's most populous nation, has fertility below 1.5 children per woman. Pockets of high fertility persist in countries of West and East Africa and the Middle East. In general, levels of fertility are inversely related to levels of development: poorer countries have higher fertility. The factors that promote development, like education, industrialization, and health services, also promote fertility control, though the relation is not always immediate or direct.

The TL 2003 DHS measured fertility using questions asked of women of childbearing age and older. In particular, all women were asked about their pregnancy history including the date and sex of each live birth and the dates of any stillbirths, abortions and miscarriages. The fertility rate estimate for groups of women can be made by calculating the number of births that occurred for a three year period before the survey was carried out, according to the age of mother at the time of birth, expressed in five year age groups. This is compared with the calculation of the number of women-years lived in each five-year age group for the time period. This is a direct method of calculating fertility estimates as opposed to the indirect estimates used in many census operations, including the well-known "own-child" method of inferring fertility rates from the number and ages of children enumerated as living with their mothers in the household.

5.1 Current fertility

The estimates for fertility rates from the TL 2003 DHS are shown in Table 5.1. Similar calculations can be made to estimate the rates of abortions, stillbirths and miscarriages, and these will be discussed in later chapters. The survey found that in the three years prior to the survey, fertility was at a level that was most probably the highest anywhere in the world. The total fertility rate (TFR) is the demographic measure most commonly used to express the level of current fertility, and this is estimated by adding up the age specific fertility rates, multiplying by five (to account for the five year age groups) and dividing by 1000, to produce an average rate per woman. Timor Leste women in the period from 2000 to 2003 were bearing children at a rate of 7.77 children per woman, if the current level of TFR were to be maintained over the entire reproductive life of the women. This is higher than the current fertility of any country listed in the most recent United Nations' assessment of demographic trends. This high fertility has not been recognised by observers because all internationally published estimates of Timor Leste since

Independence have been in the range of four to five births per woman – high for Asia, but below the levels of Africa. It is now clear that Timor Leste not only has the highest fertility in Asia, it has probably the highest in the world.

Table 5.1 Age specific fertility rate, TFR, GFR and CBR

Age specific fertility, Total Fertility Rate (TFR), General Fertility Rate (GFR) and Crude Birth Rate (CBR) for 36 months prior to survey, Timor Leste 2003

Age	Married women 15-49	All women 15-49	Number of women-years	Number of births	ASFR
15-19	167	1089	3790	297	78.3
20-24	507	715	2226	717	322.1
25-29	899	963	3080	1114	361.7
30-34	904	927	2595	853	328.7
35-39	753	769	2091	543	259.5
40-44	530	532	1414	195	137.7
45-49	417	418	868	57	65.8
Total	4177	5414	16064	3776	1553.8
TFR					7.77
GFR					248.4
CBR					52.1

Two additional summary measures of fertility are presented in Table 5.1. The General Fertility Rate (GFR) shows the annual number of births a group of 1000 women of childbearing age would produce. In the three years prior to the survey every 1000 Timor Leste women produced nearly 250 births on average – one birth for every four women each year. The other measure used by many analysts to monitor fertility is the Crude Birth Rate (CBR), which measures the annual number of births per 1000 head of population. In Timor Leste the CBR is 52 per 1000, again very high by the standards of Asia and the Pacific. If the death rate is 18 per 1000 (as estimated elsewhere in this report) then the rate of natural increase (CBR-CDR=NI) would be 39. This means that if the impact of international migration is ignored, the rate of population growth each year in the three years before the survey was 3.9%. At that rate the population doubles every 18 years.

The age specific fertility rates are notable for the very high level of childbearing for women from 20 to 35 years of age. About one third of Timor Leste women in the three five-year age groups covered in that range (20 to 24, 25-29 and 30-34) have a baby in any given year. By contrast, Indonesian women of the same age groups have much lower fertility. Only one in eight Indonesian women aged 20-24, one in seven women aged 25-29, and one in 10 of those aged 30-34 gives birth each year. This rate of childbearing represents a significant burden on young women, and a major competition for the use of their time. They are unlikely to be able to pursue higher education or become involved in formal employment if they spend two thirds of their time either pregnant or caring for infants.

5.2 Fertility trends

Most remarkably Timor Leste's fertility appears to be rising. The TFR in six month periods prior to the survey shows fertility falling in the 1990s to reach a low point in 1998, and then rising steadily from that point through the time of the survey (Table 5.2) Because the total number of women is relatively small, the trends revealed in the sequence of six month periods is subject to large sampling errors.

Table 5.2 Age specific & total fertility rates in 6-month intervals

Age specific fertility rate and total fertility rate for a period of 72 months prior to survey, in 6 month intervals, by women's age at interview, Timor Leste 2003.

Age	Number of months preceding April 2003											
	67-72	61-66	55-60	49-54	43-48	37-42	31-36	25-30	19-24	13-18	7-12	1-6
15-19	162	74	114	77	118	116	79	64	79	73	99	84
20-24	370	195	259	206	288	286	269	338	293	322	339	361
25-29	403	244	261	283	331	284	324	389	377	295	358	392
30-34	370	188	248	217	303	263	299	305	380	264	363	315
35-39	281	171	206	145	232	229	269	211	282	222	277	279
40-44	148	94	144	132	80	131	130	110	154	125	125	156
45-49	ua	ua	ua	ua	61	26	51	65	69	19	71	100
TFR	8.98*	5.04*	6.46*	5.58*	6.93*	6.68	7.10	7.41	8.17	6.60	8.15	8.43

Note: ASFRs are per 1000 women 15-49

* TFRs are based on assumption that the ratios of ASFR between age groups 45-49 and 40-44 are similar to those in earlier periods

ua = unavailable

Table 5.3 shows calculations of TFR for sequences of one full year for seven years prior to the survey. In both tables similar patterns are shown, as might be expected since they are both based on reports of the same women, leading to TFR above the level of eight births per woman for the most recent period. The calculation for the latest 12 months gives a TFR of 8.3, while the component of the latest six months shows a slightly higher TFR of 8.4.

Table 5.3 Age specific & total fertility rates in 12-months intervals

Age specific fertility rate and total fertility rate for a period of 7 years prior to survey, in 1 year intervals, by women's age at interview, Timor Leste 2003.

Age	Periods						
	Apr/96 - Mar/97	Apr/97 - Mar/98	Apr/98 - Mar/99	Apr/99 - Mar/00	Apr/00 - Mar/01	Apr/01 - Mar/02	Apr/02 - Mar/03
15-19	139	118	95	117	71	76	92
20-24	327	284	233	287	303	307	350
25-29	376	323	272	307	357	336	374
30-34	327	277	232	283	302	322	339
35-39	253	225	174	231	240	252	278
40-44	180	120	138	105	120	139	141
45-49	ua	ua	ua	38	58	43	86
TFR	8.41*	7.00*	6.03*	6.84	7.26	7.38	8.30

Note: ASFRs are per 1000 women 15-49

ua = unavailable

* TFRs are based on assumption that the ratios of ASFR between age groups 45-49 and 40-44 are similar to those in earlier periods

In Table 5.3 the one year period to the end of 2002 shows a TFR of 7.4. This is consistent with the results of the December 2002 MICS, a survey to assess the situation of household welfare in Timor Leste. Together these surveys produce the first reliable picture of Timor Leste's fertility levels and trends and show conclusively that fertility was not only very high, but it was also still rising when the interviewers carried out the TL 2003 DHS.

Table 5.4 condenses the time periods for age specific fertility rates into four-year durations, for the two decades prior to the survey, to give a more reliable and long-term picture of what has been happening to the fertility behaviour or women in the core reproductive ages. Because the reports of older women are often unreliable, fertility surveys seldom interview women over the age of fifty about their childbearing histories. This means the TFR over this long period of time cannot be confidently calculated. The TL2003 DHS used a cut-off of 49 years of age in selecting the women to be interviewed. This means that the experience of some of the women, who were in their forties over ten years ago, was not recorded. This is known as a truncation of the data and is indicated by placing the estimates based on truncated data in brackets. There are also table cells for which no women were interviewed because they were above 49 years of age, and these are indicated by the letter a in the table. When reading the ASFRs across the rows care must be taken when looking at the numbers in brackets since they are not strictly comparable with the other estimates on the same row.

Table 5.4 Trends in age-specific fertility rates

Age-specific fertility rates for four-year periods preceding the survey, by age of mother at the time of the birth, Timor Leste, 2003

Age	Number of years preceding the survey				
	0-3	4-7	8-11	12-15	16-19
15-19	84	117	119	105	88
20-24	310	287	271	256	256
25-29	350	323	324	324	280
30-34	316	283	286	273	[343]
35-39	252	220	233	[263]	
40-44	132	144	[231]	*	*
45-49	[64]	[59]	*	*	*

ASFRs are per 1000 women 15-49

Estimates in brackets [ ] are truncated.

* = Survey did not collect information from any women who were in the age group that long before the survey.

If the changing situations of women of different age groups over time are considered, it is easier to appreciate the impact of changing fertility levels on Timor Leste women. Adolescent fertility rates rose and then fell over the period from 1984 to 2003. These are discussed in greater detail below. Most dramatically, the fertility rates of young married women aged 20-24 rose to a peak in the early 1990s, then fell during the time of the referendum and subsequent disruption, and recently rose to an unprecedented level between 2000 and 2003. The remarkable implication of these age specific rates is the fact that one third of young women in Timor Leste are giving birth in any given year, and even one quarter of the women in their late thirties gave birth each year in the most recent

years. These are the dimensions of very high fertility, and they imply a major impact of fertility on the use of the women's time and energies.

The impact of changing fertility rates is also reflected in the number of children ever-born to women of different age groups, shown in Table 5.5. Perhaps the best way to read this table is to look at the rows showing the childbearing experience of women of the successive five-year age groups. In the section for "currently married women" the numbers in bold type are the largest percentage in each row and indicate the mode for the distribution of the number of children ever born for that age group. Looking down the rows for the currently married women, the mode moves from one child for women aged 15-19 to three children for women currently aged 25-29. Women start childbearing early and move quickly to multiple child families. By age group 30-34 nearly one in five women have five children. If all the numbers in the row to the right for the age group 30-34 are added, and the percentage in bold is included, that 50.4 % of these women have given birth to five or more children. In statistical terms that implies that while the mean number of children ever born to 30-34 year old women was 4.5, the mode and the median was five.

The table also shows that the rate of apparent primary sterility is also very low. Virtually all women over the age of 30 have given birth to at least one child, and only three or four percent of women at the end of their childbearing period (age 40-49) have never produced a live birth.

Table 5.5 Children ever born to ever-married & currently-married women
Percentage distribution of the number of children ever born to ever-married and currently married women aged 15 to 49 years, Timor Leste 2003

Age	Number of children ever born												Number of women	Mean no. of CEB
	0	1	2	3	4	5	6	7	8	9	10+	Total		
ALL WOMEN														
15-19	87.7	8.2	3.7	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1089	0.2
20-24	34.4	18.5	25.5	14.4	5.6	1.4	0.3	0.0	0.0	0.0	0.0	100.0	715	1.4
25-29	9.6	10.0	19.3	22.0	21.1	10.3	4.9	1.9	0.6	0.3	0.0	100.0	963	3.0
30-34	4.0	4.5	9.6	13.5	19.2	19.8	15.6	9.1	3.2	1.2	0.2	100.0	927	4.4
35-39	2.7	3.6	5.1	8.5	11.3	17.4	19.2	13.3	10.1	4.7	4.0	100.0	769	5.5
40-44	2.8	2.3	4.5	6.2	10.0	13.2	13.3	16.4	14.7	7.5	9.4	100.0	532	6.2
45-49	3.6	3.6	6.5	9.6	11.2	10.5	12.9	13.4	9.1	8.4	11.5	100.0	418	5.9
Total	25.5	7.6	10.9	10.7	11.2	10.0	8.6	6.4	4.2	2.3	2.4	100.0	5414	3.3
CURRENTLY MARRIED WOMEN														
15-19	19.8	**53.3**	24.0	2.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	100.0	167	1.1
20-24	7.5	26.0	**35.9**	20.3	7.9	2.0	0.4	0.0	0.0	0.0	0.0	100.0	507	2.0
25-29	3.1	10.7	20.7	**23.6**	22.6	11.0	5.2	2.0	0.7	0.3	0.0	100.0	899	3.2
30-34	1.5	4.6	9.8	13.8	19.7	**20.4**	16.0	9.3	3.3	1.2	0.2	100.0	904	4.5
35-39	0.7	3.7	5.2	8.6	11.6	17.8	**19.7**	13.5	10.4	4.8	4.1	100.0	753	5.6
40-44	2.5	2.3	4.5	6.2	10.0	13.2	13.4	**16.4**	14.7	7.5	9.4	100.0	530	6.2
45-49	3.4	3.6	6.5	9.6	11.3	10.6	12.9	**13.4**	9.1	8.4	11.5	100.0	417	5.9
Total	3.5	9.9	14.1	13.9	**14.6**	12.9	11.2	8.3	5.5	3.0	3.1	100.0	4177	4.3

5.3 Fertility differentials by key background characteristics

While fertility overall in Timor Leste is high and apparently rising, policy makers need to understand the issues of fertility in terms of the social and economic, as well as the geographic, dimensions of fertility problems. Table 5.6, Table 5.7 and Table 5.8 show TFRs and other indicators of fertility in terms of the four geographic and two ecological regions of the country, and broken down by the educational status of women and the wealth levels of their households. What is remarkable about all these measures is the lack of large differences. People in Timor Leste share a common pattern of fertility, irrespective of where they live, or their position in social hierarchies.

Table 5.6 summarizes the fertility differentials. The first panel looks at the four geographic regions. One way to read this is to round all the numbers up or down, to eliminate the decimal points. This will prevent the drawing of spurious conclusions on the basis of very small differences in numbers that are subject to sampling and other variations that have little to do with people's behaviour. Read this way, there is virtually no difference in TFR across the nation. Each region has a rounded TFR of eight, with only the urban region (largely Dili) showing the slightly lower rate of seven. Similarly, the completed family sizes reflected in the numbers of children ever born to women aged 40 – 49 are estimated to be six children per woman in each region.

Table 5.6 Fertility by background characteristics

Percentage of women aged 15 to 49 who are currently pregnant, the total fertility rate (TFR) and mean number of children ever born (CEB) by background characteristics, Timor Leste 2003

Background characteristics	Percentage currently pregnant*	TFR*	Number of women age 15-49	Mean number of CEB to women age 40-49
Region				
Urban Areas	8.3	7.4	1255	6.1
Rural East	13.6	7.7	1290	5.8
Rural Centre	8.8	8.0	1914	6.2
Rural West	8.5	7.7	954	5.6
Ecological zone				
Lowlands	9.9	7.6	4519	5.9
Highlands	9.0	8.5	894	6.3
Education				
No education	8.5	7.9	2596	6.0
Some primary	10.0	8.4	1044	6.3
Completed primary	9.7	8.6	444	6.3
Some secondary or more	12.1	7.5	1329	5.8
Wealth index				
Lower	10.6	8.1	2244	6.0
Middle	9.4	7.7	2193	5.8
Upper	8.7	6.9	977	6.0
Total	9.8	7.8	5414	6.0

* All women age 15-49 years

Only the percentage of women currently pregnant shows a meaningful difference between regions, but that shows 8% in the urban areas, 9% in the rural centre and west, and a remarkable 14% in the rural east. This latter figure should provoke further investigation to determine if there is indeed a very high desire for children in the east compared to the other regions. Certainly the proportion reporting current pregnancy in the region does not conform to the relative levels of TFR for the preceding three years as shown in Table 5.7.

Taking the same strategy of rounding to whole numbers in looking at the TFR and CEB for women, broken down by ecological zone, education or wealth, there is virtually no difference among Timor Leste women, perhaps because these social and economic measures do not indicate much difference in the conditions of their lives. Timor Leste women are largely poor and lack access to the social resources that might produce the demand, and provide the tools, to achieve smaller family sizes.

Table 5.7 ASFR, TFR, GFR and CBR by region

Age specific fertility rate (ASFR), total fertility rate (TFR), general fertility rate (GFR) and crude birth rate (CBR) by region for 36 months prior to survey

Age	Urban area	Rural East	Rural Centre	Rural West	Total
15-19	60	59	91	106	78
20-24	308	326	319	341	322
25-29	367	350	393	313	362
30-34	345	342	323	302	329
35-39	251	259	257	274	260
40-44	120	123	148	161	138
45-49	39	88	61	41	66
TFR	7.4	7.7	8.0	7.7	7.8
GFR	235.3	256.8	247.8	257.3	248.4
CBR	50.5	51.3	50.2	53.2	52.1

Note: ASFRs are per 1000 women 15-49

Table 5.8 hints that the differences of fertility according to wealth may be starting to grow. Already the TFR is eight, eight and seven, for the poorest, middle and richest families. But when the age specific fertility rates are examined, it seems that the youngest women in the wealthiest families are substantially less likely to give birth each year than those living in the poorest households. If this indicates a nascent fertility decline, it is still only a glimmer. However, future surveys will need to monitor the behaviour of these women to see if they begin to exhibit the signs of demand for lower fertility that has been achieved by their sisters across Indonesia and Southeast Asia.

Table 5.8 ASFR and TFR by selected background characteristics

Age specific fertility rate (ASFR) and total fertility rate (TFR) for 36 months prior to the survey, by background characteristics, Timor Leste 2003

Age	Education				Wealth index			Ecological zone	
	No education	Some primary	Completed primary	Some secondary or more	Lower	Middle	Upper	Lowlands	Highlands
15-19	132	87	129	55	101	73	61	78	87
20-24	323	317	361	315	328	329	307	320	349
25-29	360	378	383	345	369	357	347	357	380
30-34	308	361	365	344	332	326	308	323	336
35-39	253	303	334	223	276	259	211	254	277
40-44	139	118	149	148	134	141	127	125	188
45-49	62	114	--	78	74	62	26	61	74
TFR	7.9	8.4	8.6	7.5	8.1	7.7	6.9	7.6	8.5

Note: ASFRs are per 1000 women 15-49

5.4 Birth intervals

Consistent with the high and rising fertility patterns noted above, Table 5.9 shows there are few strong differences in the length of birth intervals according to the social and economic characteristics of mothers. At the same time, the expected patterns of biological and behavioural differences do show up, and there are a number of figures that point to important health challenges for Timor Leste women.

Looking at the distribution and median number of months since the last birth according to the age group of the mother, it is clear that birth intervals rise as women age. This means young women are less likely to have had the time to recover from one birth before they are pregnant again. In line with this, the births of higher parity, which tend to occur to older women, are associated with longer birth intervals.

Note that all of these are what can be called "closed" birth intervals – they measure the time taken between the two most recent live births, and are thus not affected by any proven infertility that begins to influence the fertility patterns of older women who are moving into menopause. What they indicate instead is that older women may be voluntarily delaying births, perhaps through periods of prolonged abstinence, or the use of some form of fertility control behaviours. Alternatively, the expansion in the duration of birth intervals could reflect involuntary influences on the likelihood of pregnancy, such as prolonged absence of husbands for work purposes or the reduction of the woman's biological readiness for conception and implantation.

Among the factors that influence the duration of birth intervals is the survival of the preceding birth. If that birth had died (normally in the neonatal period) the time to the next birth was three months shorter than if the child had survived. This reflects the well known contraceptive effect of prolonged breastfeeding which is nature's way of ensuring that one child thrives before another pregnancy comes along to place demands on the mother's energy stores.

Table 5.9 Birth interval by background characteristics

Percent distribution of non-first births in the five years preceding the survey by number of months since previous birth

Background characteristics	Number of months since previous birth						Median number of months since previous birth	Number of births in five years
	< 18	18-23	24-35	36-47	48+	Total		
Age of mother								
15-19	15.9	42.1	34.8	4.6	2.5	100	21.3	40
20-24	22.7	22.6	40.2	9.5	4.9	100	24.2	492
25-29	11.6	18.6	41.4	18.1	10.3	100	27.0	1282
30-34	9.5	17.9	38.7	17.3	16.6	100	28.8	1409
35-39	8.6	13.1	34.9	20.8	22.6	100	32.4	1000
40-44	6.1	12.8	32.7	20.2	28.1	100	34.4	474
45-49	11.1	13.8	25.4	17.8	31.9	100	34.9	172
Birth order								
2-3	13.7	18.2	36.3	16.3	15.5	100	27.9	1813
4-6	8.9	16.2	39.0	19.1	16.8	100	29.7	2139
7+	10.4	17.3	37.4	16.8	18.2	100	29.1	916
Sex of prior birth								
Male	10.9	17.0	37.6	17.4	17.2	100	29.1	2446
Female	11.1	17.3	37.8	17.9	15.9	100	28.7	2415
Both	0.0	10.7	46.1	14.8	28.4	100	28.5	7
Survival of prior birth								
Living	9.7	17.2	38.1	17.9	17.1	100	29.2	4343
Dead	21.9	16.4	34.2	15.6	11.9	100	26.3	525
Residence								
Urban Areas	15.1	18.3	36.7	14.5	15.5	100	27.5	1115
Rural East	8.8	16.5	38.5	21.1	15.2	100	29.8	1229
Rural Centre	10.2	18.3	39.8	16.9	14.9	100	28.3	1675
Rural West	10.3	14.5	33.8	18.2	23.1	100	31.6	849
Ecological zone								
Lowlands	11.5	16.9	36.2	18.3	17.2	100	29.3	4001
Highlands	8.6	18.4	44.8	14.5	13.7	100	27.8	867
Education								
No education	10.0	15.3	36.5	18.9	19.2	100	30.6	2403
Some primary	10.1	17.7	38.4	17.5	16.3	100	28.5	927
Completed primary	9.3	18.0	43.0	16.1	13.5	100	28.8	419
Some secondary or more	14.4	20.3	37.7	15.6	12.2	100	26.7	1119
Wealth index								
Lower	10.7	17.3	40.1	17.8	14.1	100	28.4	2150
Middle	9.6	16.9	36.4	18.0	19.1	100	29.9	1891
Upper	15.1	17.4	34.2	16.3	17.1	100	28.5	827
Total	11.0	17.2	37.7	17.6	16.5	100	28.9	4868

Regional differences are slight, but somewhat puzzling. While the national average duration of birth intervals was 29 months, the fact that urban areas had a duration of 27 months, and the rural west region an average of 32 months indicates some small but intriguing deviations from the norm that might be worth further investigation. The urban average is also linked to a slightly lower fertility and may show some incipient tendency for fertility decline that could be linked to some women wanting to stop any further births.

The rural west by contrast was slightly below average fertility, but had greater than average duration of birth intervals. This may indicate a pattern of indigenous fertility control through abstinence or other means that accord with mothers' desires to delay births.

The social characteristics of women had very little impact on the average duration of birth intervals, perhaps because a society with such high and consistent fertility levels is unlikely to show much difference in the patterns of birth interval duration. The fact that women with no education had longer intervals and those with completed secondary education had shorter intervals is more a reflection of the average age of those women than any difference in choices about the timing of births.

5.5 Age at first birth, teenage pregnancy and motherhood

In the nations of the Asia Pacific region that have experienced large fertility declines, the median age at first birth has risen in the preceding two or three decades, as reflected in older women having a lower median age than the younger women. In Timor Leste the opposite is the case. Table 5.10 shows that the median age at first birth for women aged 20-29 was 21 years, while for women aged 30-39 it was 22, and for the oldest women in the survey it was above 24 years of age.

Table 5.10 Age of women at first birth

Percent distribution of women 15-49 by age at first birth, according to current age, Timor Leste 2003

Current age	Women with no births	Age at first birth						Total	Number of women	Median age at first birth
		<15	15-17	18-19	20-21	22-24	25+			
15-19	87.7	0.4	7.3	4.6	n/a	n/a	n/a	100.0	1089	n/a
20-24	34.4	3.5	16.5	24.5	15.2	5.9	n/a	100.0	715	20.7
25-29	9.6	3.3	16.7	19.3	20.1	21.4	9.6	100.0	963	21.0
30-34	4.0	3.3	13.4	19.4	18.5	24.3	17.1	100.0	927	21.5
35-39	2.7	3.2	13.8	15.1	16.7	24.0	24.7	100.0	769	22.2
40-44	2.7	4.0	10.3	12.7	16.6	23.8	29.9	100.0	532	22.8
45-49	3.6	2.6	8.4	8.5	13.9	19.5	43.5	100.0	418	24.6
Total	25.5	2.7	12.5	15.0	13.8	16.0	14.4	100.0	5414	23.0

n/a =Not applicable

The median age at first birth is further displayed in Table 5.11, which shows the relatively small differences between women of different backgrounds. In this table it is important to remember that women who were young at the time of the survey may not have had their first births, and so display a much younger median age at first birth than those women over the age of 30 who would all have had a first birth, if they are capable of doing so. Nonetheless, it is clear from these figures that the older women tended to have later median ages at first birth. Assuming that the statements of their ages are correct, this would imply that younger women are having their first births earlier than did previous generations.

Table 5.11 Age at first birth among women 20-49 years

Percent distribution of women 15-49 by age at first birth, according to current age, and median age at first birth, by background characteristics, Timor Leste 2003

Background characteristics	Current age						Women age 20-49
	20-24	25-29	30-34	35-39	40-44	45-49	
Residence							
Urban Areas	21.4	21.3	22.4	21.81	22.9	22.3	21.9
Rural East	20.9	21.4	22.1	23.31	23.4	25.9	22.3
Rural Centre	20.5	20.8	21.0	21.83	22.4	24.7	21.6
Rural West	19.8	20.5	20.8	21.43	23.0	25.5	21.0
Ecological zone							
Lowlands	20.8	21.0	21.8	22.23	22.8	24.5	21.9
Highlands	19.8	20.8	20.0	22.13	22.8	25.4	21.4
Education							
No education	19.9	20.5	20.4	21.6	23.0	24.6	21.7
Some primary	19.6	20.4	20.9	21.12	21.7	25.5	20.9
Completed primary	19.1	20.1	22.0	24.05	22.5	20.1	20.7
Some secondary or more	21.7	22.4	23.4	24.76	22. 6	24.9	22.9
Wealth index							
Lower	19.6	20.6	21.6	22.17	23.3	24.9	21.6
Middle	20.7	21.2	21.0	22.29	23.0	25.4	21.8
Upper	22.5	21.7	22.8	22.13	21.7	22.1	22.1
Total	20.7	21.0	21.5	22.15	22.8	24.6	23.0

Note that in Table 5.11 the 15-19 age group is not displayed since few of them would have been married, and fewer than half would have had their first birth – therefore there is no meaningful median age at first birth for this group.

This tendency for a declining median age at first birth, in a society where marriage has traditionally been over the age of 20, is a further indication of the recent trends to higher levels of fertility, despite the many social, economic, and political problems besetting the nation. It may be that the instabilities at the national level have motivated young people to invest more of their time and resources in attempting to build large families at an early stage of their lives.

Table 5.12 demonstrates clearly that the onset of childbearing is not early in the adolescent period. Timor Leste's high fertility is not as high as it might have been were women to marry younger and begin their childbearing before the age of 18. As it is, even with the problems of poverty, malnutrition and low education that affect the women of Timor Leste, only about one in five adolescents face the additional burdens of childbearing, and these tend to be older rather than younger adolescents.

Table 5.12 Married women who are mothers or pregnant with their first child

Percentage of married women aged 15-19 years who are mothers or pregnant with their first child, by background characteristics, Timor Leste 2003

Background characteristics	Percentage who are:		Percentage who have already begun childbearing	Number of married women - 15-19
	Mothers	Pregnant with first child		
Age				
16	1.9	2.9	4.8	48
17	5.8	0.5	6.3	331
18	7.2	0.8	8.0	597
19	33.8	3.4	37.2	295
Residence				
Urban Areas	11.1	0.2	11.3	413
Rural East	10.0	3.5	13.4	229
Rural Centre	13.8	1.4	15.3	481
Rural West	16.9	1.3	18.3	161
Ecological zone				
Lowlands	12.8	1.5	14.2	992
Highlands	13.7	1.4	15.1	259
Education				
No education	21.6	0.0	21.6	221
Some primary	15.8	2.1	18.0	254
Completed primary	29.9	8.4	38.3	45
Some secondary or more	8.7	1.2	9.5	739
Wealth index				
Lower	15.9	1.7	17.6	454
Middle	11.5	1.7	13.1	517
Upper	11.3	0.5	11.8	274
Total	13.1	1.4	14.5	1245

Chapter 6
Fertility Regulation

Contents

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6 Fertility Regulation

6.1 Knowledge of contraception

In the TL 2003 DHS, data on knowledge of family planning methods were obtained by asking respondents to name the ways a couple can delay or avoid a pregnancy or birth. If the respondent could not mention a specific method spontaneously, the interviewer would read a list of methods and ask if the respondent recognised any of them. Methods included in the list were: rhythm (including calendar or periodic abstinence), withdrawal (sometimes called coitus interruptus), condom, injectable, pill, IUD (intrauterine devices), implant, diaphragm, lactational amenorrhea method (LAM), female sterilization (tubal ligation), and male sterilization (vasectomy). An open-ended question was asked to record other traditional methods respondents might think of as methods to prevent pregnancy such as *jamu* (herbal preparations either prepared at home or obtained through retail merchants) or *pijat* (abdominal massage undertaken by a traditional midwife or healer).

Table 6.1 shows respondents' knowledge of contraceptive methods. The panels show the responses of all ever-married women and ever-married men of childbearing ages. Their knowledge of contraceptive methods was very low. Over 60% of the women and 70% of the men failed to recognise any of the methods listed in the survey.

This was a surprising result given the long history of family planning work carried out under the Indonesian administration. In Indonesia, almost all ever-married women and currently married men know at least one method of family planning. Another perspective on this issue is revealed in the calculation of the mean number of methods identified by respondents. In the Indonesia 2002/2003 DHS, carried out just before the TL 2003 DHS, the mean number of methods known was 6.4 for ever-married women and 5.5 for currently married men. By comparison ever-married women in Timor Leste knew on average only one method and the men knew less than one method.

The most commonly known methods among ever-married Timorese women were the hormonal methods of injectables and pills. The few men who had any knowledge of contraception were most likely to mention injectables and condoms. While it might not be surprising that women were more likely to know methods of pregnancy control than were men, it was surprising that neither women nor men could recognise such methods as withdrawal, LAM, or sterilization, even when prompted. Because it is not possible in a large-scale survey to determine the dimensions of knowledge, or ignorance with any precision, these results suggest that more detailed investigations of people's knowledge about and attitudes toward contraception would be useful in designing programs to promote family planning. It is possible that some of the individuals were not open in responding to the interviewers' questions, or there could have been substantial problems encountered in the translation of the questions and the probes.

Table 6.1 Knowledge of contraceptive methods

Percentage of ever-married women and men who know specific contraceptive methods, Timor Leste 2003

Contraceptive method	Ever-married women					Ever-married men				
	Spontanously[1]	Recognise[2]	Do not know the method	Missing	Total	Spontaneously[1]	Recognise[2]	Do not know the method	Missing	Total
Rhythm/ Periodic abstinence	3.2	4.0	92.8	0.0	100.0	3.8	12.4	83.8	0.0	100.0
Withdrawal	1.0	1.6	97.4	0.0	100.0	1.0	4.0	95.0	0.0	100.0
Condom	3.3	2.9	93.8	0.0	100.0	5.6	9.3	85.1	0.0	100.0
Injectables	19.2	13.8	67.0	0.0	100.0	8.9	9.9	81.2	0.0	100.0
Pill	10.9	9.1	80.0	0.0	100.0	5.8	7.9	86.3	0.0	100.0
IUD	2.8	4.2	93.0	0.0	100.0	1.9	3.5	94.6	0.0	100.0
Implants	5.0	4.3	90.6	0.0	100.0	2.1	4.4	93.5	0.0	100.0
Diaphragm	1.2	2.0	96.8	0.0	100.0	0.7	2.1	97.2	0.0	100.0
LAM	3.0	2.7	94.3	0.0	100.0	1.3	2.9	95.8	0.0	100.0
Female sterilization	1.3	2.0	96.6	0.0	100.0	0.6	1.8	97.6	0.0	100.0
Male sterilization	0.9	1.5	97.6	0.1	100.0	0.7	1.7	97.6	0.0	100.0
Other	0.4	0.0	99.6	0.0	100.0	1.1	0.0	98.9	0.0	100.0
Knowledge of any method										
Percent	19.7	18.5	61.7	0.1	100	7.8	21.7	70.5	0	100
Number of respondents	823	773	2577	4	4177	305	850	2761	0	3916
Mean no. of methods known	0.5	0.5	n/a	n/a	1.0	0.3	0.6	n/a	n/a	0.9

n/a = Not applicable

[1] Respondent names method spontaneously (no prompting)

[2] Respondent recognizes method when named and briefly described by the interviewer

Looking at the background characteristics of the respondents in Table 6.2 it is clear that very young and older respondents (<20 or >45 years) were less likely to know of family planning methods than were women aged 20-34 years. This implies that the couples who were at the peak of childbearing were also those most likely to know at least one means of controlling fertility, though even this generalization must be tempered by the recognition that at all ages a majority, and often a large majority, of people showed no understanding of any methods of contraception. This is in stark contrast with all neighbouring countries. People in urban areas were more likely to recognise a method of contraception than those in the countryside. Similarly, people who were better off economically or had more education, were more likely to know about birth control. The breakdown according to the number of living children a person had reflected the data by age, since those with no children, who would also be the very young, were not familiar with contraceptive measures. It does not make sense to try to read special interpretations in the slight variations over the higher parity levels, or between men and women. In essence the community reported virtually no understanding of the range of contraceptive methods now taken for granted in most countries of Asia and the Pacific.

Table 6.2 Knowledge of contraceptive methods: background characteristics

Percentage of ever-married women and men who spontaneously name or recognise at least one contraceptive method, by selected background characteristics, Timor Leste 2003

Background characteristics	Ever-married women						Ever-married men					
	Spontaneously knows at least one method[1]	Recognises at least one method	Does not spontaneously name or recognise any method	Missing	Total	No. of women	Spontaneously know at least one method[1]	Recognises at least one method[2]	Does not spontaneously name or recognise any method	Missing	Total	No. of men
Age												
15-19	13.1	18.0	69.0	0.0	100.0	152	(7.9)	(15.3)	(76.7)	(0.0)	100.0	12
20-24	20.8	19.6	59.6	0.0	100.0	514	6.8	24.8	68.4	0.0	100.0	184
25-29	20.1	20.9	58.9	0.2	100.0	879	9.5	24.0	66.5	0.0	100.0	580
30-34	20.0	21.1	58.8	0.1	100.0	912	6.5	25.6	67.9	0.0	100.0	921
35-39	21.1	17.9	60.9	0.1	100.0	763	9.5	22.6	67.9	0.0	100.0	764
40-44	22.6	15.2	61.9	0.4	100.0	528	8.5	19.8	71.6	0.1	100.0	640
45-49	13.0	11.9	75.1	0.0	100.0	429	8.9	14.7	76.4	0.0	100.0	407
50-54	n/a	n/a	n/a	n/a	n/a	n/a	3.0	13.0	84.0	0.0	100.0	408
Region												
Urban	25.0	26.6	48.3	0.1	100.0	962	11.4	36.7	51.9	0.0	100.0	876
Rural East	17.8	19.7	62.3	0.3	100.0	1038	7.8	25.8	66.3	0.0	100.0	910
Rural Central	19.6	14.1	66.3	0.1	100.0	1416	4.3	14.6	81.2	0.0	100.0	1369
Rural West	15.8	14.7	69.5	0.0	100.0	761	9.8	10.4	79.7	0.1	100.0	761
Ecological zone												
Lowlands	19.4	20.1	60.3	0.2	100.0	3489	8.4	23.4	68.1	0.0	100.0	3257
Highlands	20.9	10.3	68.8	0.0	100.0	688	4.6	10.9	84.5	0.0	100.0	659
Education												
No education	15.9	11.5	72.5	0.1	100.0	2208	4.3	8.9	86.8	0.0	100.0	1637
Some primary	23.1	19.5	57.1	0.3	100.0	716	6.1	19.7	74.1	0.0	100.0	771
Completed primary	21.7	23.4	54.8	0.0	100.0	314	10.1	23.7	66.2	0.0	100.0	376
Some secondary +	25.3	32.4	42.2	0.1	100.0	939	13.2	39.6	47.3	0.0	100.0	1132
Household wealth index												
Poorest	18.0	13.1	68.7	0.2	100.0	1676	5.4	12.5	82.0	0.0	100.0	1594
Middle	18.6	17.0	64.4	0.1	100.0	1688	7.7	20.2	72.1	0.0	100.0	1575
Richest	25.4	32.6	41.9	0.1	100.0	813	12.9	42.3	44.7	0.0	100.0	747
No. of living children[3]												
0	11.1	13.2	75.7	0.0	100.0	146	10.5	12.9	76.2	0.4	100.0	170
1	17.2	16.0	66.8	0.0	100.0	414	8.9	26.2	64.9	0.0	100.0	428
2	17.3	21.7	60.8	0.2	100.0	588	8.0	21.7	70.2	0.0	100.0	659
3	16.6	23.2	60.1	0.2	100.0	582	7.5	23.8	68.6	0.0	100.0	646
4	19.7	20.8	59.2	0.3	100.0	607	6.4	22.9	70.7	0.0	100.0	647
5	22.0	18.7	59.4	0.0	100.0	540	6.4	22.3	71.2	0.0	100.0	518
6	21.0	17.5	61.5	0.0	100.0	468	7.5	15.5	76.9	0.0	100.0	377
7	27.6	14.9	57.5	0.0	100.0	346	10.9	19.4	69.6	0.0	100.0	235
8+	21.5	13.0	65.3	0.2	100.0	486	7.6	15.1	77.3	0.0	100.0	236
Total	19.7	18.5	61.7	0.1	100.0	4177	7.8	21.3	70.9	0.0	100.0	3916
Number	832	784	2608	5	4229	n/a	321	889	2889	0	3916	n/a

n/a = Not applicable ( ) Fewer than 30 observations

[1] Respondent names method spontaneously (no prompting)

[2] Respondent recognizes method when named and briefly described by the interviewer

[3] Includes current pregnancy

The fact that women were somewhat more likely to report a method than were men would accord with the fact that health services that provide contraception were oriented toward women patients attending maternal and child health clinics or delivery services. However, when less than 20% of women were aware of the contraceptive pill, the gender differential in Table 6.2 appears a hollow indicator of superior knowledge.

Table 6.3 Knowledge of sources of family planning: background characteristics

Percent distribution of ever-married female and male knowledge of sources of family planning methods, by selected background characteristics and current use of family planning methods, Timor Leste 2003

Background characteristics	Female					Male			
	Yes	No	Missing[1]	Total	Number	Yes	No	Total	Number
Age									
15-19	21.4	76.2	2.4	100.0	152	(7.7)	(92.3)	(100.0)	12
20-24	30.1	66.8	3.1	100.0	514	18.5	81.5	100.0	184
25-29	28.8	67.5	3.7	100.0	879	23.4	76.6	100.0	580
30-34	30.5	66.9	2.6	100.0	912	23.1	76.9	100.0	921
35-39	29.8	65.4	4.9	100.0	763	22.8	77.2	100.0	764
40-44	26.3	67.8	5.9	100.0	528	18.6	81.4	100.0	640
45-49	14.0	83.8	2.2	100.0	429	17.1	82.9	100.0	407
50-54	n/a	n/a	n/a	n/a	n/a	9.8	90.2	100.0	408
Region									
Urban	38.5	56.9	4.6	100.0	962	29.0	71.0	100.0	876
Rural East	23.0	72.6	4.4	100.0	1038	12.0	88.0	100.0	910
Rural Central	22.9	73.0	4.1	100.0	1416	16.1	83.9	100.0	1369
Rural West	27.8	71.5	0.8	100.0	761	26.6	73.4	100.0	761
Ecological zones									
Lowlands	28.8	67.6	3.6	100.0	3489	21.3	78.7	100.0	3257
Highlands	20.3	75.8	3.9	100.0	688	14.1	85.9	100.0	659
Education									
No education	19.4	77.7	2.9	100.0	2208	10.3	89.7	100.0	1637
Some primary	30.9	63.9	5.2	100.0	716	19.0	81.0	100.0	771
Primary completed	30.9	64.6	4.5	100.0	314	25.0	75.0	100.0	376
Some secondary or more	42.5	53.5	4.0	100.0	939	33.3	66.7	100.0	1132
Household wealth index									
Poorest	20.9	76.4	2.7	100.0	1676	14.2	85.8	100.0	1594
Middle	25.6	70.4	4.0	100.0	1688	19.3	80.7	100.0	1575
Richest	44.6	50.5	4.9	100.0	813	34.2	65.8	100.0	747
Use of contraception									
Ever-used	69.9	12.9	17.2	100.0	813	n/a	n/a	n/a	n/a
Never used	17.1	82.5	0.4	100.0	3364	n/a	n/a	n/a	n/a
Currently using[1]	63.0	3.7	33.4	100.0	413	57.9	42.1	100.0	523
Not currently using	23.6	75.9	0.5	100.0	3734	14.2	85.8	100.0	3393
Current use missing	100.0	0.0	0.0	100.0	31	0.0	0.0	0.0	0
Total	27.4	68.9	3.7	100	4177	20.1	79.9	100	3916
Number	1145	2877	155	4177	n/a	787	3129	3916	n/a

n/a = Not applicable ( ) Fewer than 30 observations

[1] Overall 3.7% of responses are missing (and 33.3% of those currently using contraception) because those using male and female sterilization and traditional methods of contraception were mistakenly instructed to skip Q429 on knowledge of sources of family planning. As some women did answer Q429, the data has been corrected to include all ever-married women, and women who have not answered Q429 (for any reason) are coded by a 'missing' value. As this problem did not occur in the men's questionnaire, no missing column is required for the right side of the table.

In Table 6.3 the respondents were asked whether they knew where to obtain contraceptives. As would be expected from the results on knowledge of any methods, the large majority of people reported they had no idea of any sources of contraceptives. Perhaps the most interesting aspect of this table relates to the reported awareness of a source of supply among those who also reported to be currently using some form of contraceptive device or practice. Unfortunately the questionnaire mistakenly directed women who had been sterilized, or who were using traditional methods to skip this question so the response pattern is somewhat confusing. However, if it is assumed that those women were likely to have knowledge of a source of supply, as indicated in their current use, then knowledge of where to obtain contraceptives is a strong determinant of use.

Three quarters of the women not using contraceptives had no knowledge of where to obtain a method – and most did not know of any methods. This is strong circumstantial evidence that a program of education on family planning could rapidly lead to a higher rate of use in Timor Leste, just as it has in other countries of the region.

The women and men who had some knowledge of contraception were likely to identify the source of methods to be from the public sector, specifically hospitals and primary health care clinics (see Table 6.4 and Table 6.5). When asked to name all the sources they could think of, they seldom mentioned private sector sources such as private hospitals, clinics, doctors, nurses, midwives, or pharmacies. This is not surprising since it reflects the perception of the source of any health care in a situation of great poverty and often great isolation from markets. The women who were somewhat more likely to think of a private facility as a source for contraceptive supplies were those more well-to-do women who lived in urban areas. This raises the question about what potential impact might be expected from a program promoting condom sales through market traders and small shops. This survey cannot answer such a question, but it does suggest there are many men and women in Timor Leste who might benefit from the opportunity to learn about family planning and gain supplies from institutions close to their homes, such as periodic markets, and small shops, as well as health workers or midwives conducting clinics.

Table 6.4 and Table 6.5 show that the most well known sources of family planning for both men and women were public hospitals and public health centres. Both ever-married women and men from urban areas were more likely to identify multiple sources of health facilities that provided family planning. Furthermore, it can concluded that ever-married women and men living in urban areas and/or lowlands, who were more educated and/or wealthier were more likely to also name private sector locations as sources of family planning. Males currently using family planning were more likely to name private sector locations than those who were not. The latter were more likely to name public sector locations as a source where family planning methods might be available.

Considering the fact that very few people had knowledge of contraception or the sources of supplies, it was not surprising to see in Table 6.6 and Table 6.7 that the key leaders and professionals in the community are seldom cited as sources of information.

Table 6.4 Female knowledge of specific sources of family planning

Percent distribution of ever-married women who know at least one source of contraception, within each specific source of family planning methods, according to selected background characteristics and current use of family planning methods, Timor Leste 2003

Background characteristics	Public sector			Private health sector				Other[5]	No.of women[6]
	Public hospital	Public health centre	Other public sector[1]	Private institution[2]	Health care worker[3]	Pharmacy	Other private sector[4]		
Age									
15-19	59.5	57.1	0.0	8.5	2.8	0.0	100.0	0.0	33
20-24	57.9	55.4	1.5	9.7	8.3	1.8	100.0	2.7	155
25-29	54.7	51.0	0.6	9.3	7.1	0.4	100.0	2.0	253
30-34	51.4	55.8	0.9	8.3	5.2	2.5	100.0	2.0	278
35-39	50.1	57.2	1.6	9.1	4.3	1.6	100.0	0.4	227
40-44	52.8	62.3	2.2	5.7	8.0	1.8	100.0	0.7	139
45-49	55.5	63.0	1.2	5.8	0.0	0.0	100.0	0.0	60
Region									
Urban	78.2	32.4	1.0	21.0	7.7	3.7	100.0	2.0	370
Rural East	29.9	58.9	0.4	0.4	10.4	0.4	100.0	1.2	239
Rural Central	45.7	73.1	1.7	2.6	3.4	0.4	100.0	1.3	324
Rural West	48.0	68.7	1.7	4.4	1.4	0.3	100.0	1.0	212
Ecological zones									
Lowlands	53.7	53.5	1.0	9.1	6.1	1.5	100.0	1.4	1005
Highlands	50.7	75.2	2.7	3.5	4.3	1.0	100.0	1.5	140
Education									
No education	50.5	62.4	1.2	4.7	3.1	0.6	100.0	1.3	1637
Some primary	42.0	57.6	1.1	5.5	6.1	0.8	100.0	1.7	771
Primary completed	55.9	62.3	0.9	6.6	5.3	2.4	100.0	0.7	376
Some secondary or more	62.0	47.2	1.3	14.5	8.9	2.5	100.0	1.6	1132
Household wealth index									
Poorest	37.5	70.3	0.8	1.7	3.6	0.3	100.0	0.8	350
Middle	51.0	57.2	1.6	4.7	5.2	0.6	100.0	1.1	432
Richest	71.3	41.3	1.1	19.3	8.8	3.7	100.0	2.6	363
Use of family planning methods									
Currently using	51.8	55.2	1.2	9.9	4.5	1.8	100.0	1.7	255
Not currently using	53.8	56.5	1.2	8.0	6.2	1.4	100.0	1.4	888
Current use missing	*	*	*	*	*	*	*	*	1
Total	53.3	56.2	1.2	8.4	5.9	1.5	100.0	1.5	1145
Number	621	650	14	99	68	17	0	17	n/a

n/a = Not applicable * Suppressed because fewer than 10 observations

[1] Includes public clinics, mobile clinics, fieldworkers and 'other, specify' (none specified)
[2] Includes private hospitals and clinics
[3] Includes doctors and nurse/midwife
[4] Includes 'other, specify' (none specified)
[5] Includes friends/relatives, shops and 'other, specify' (none specified)
[6] The number of women who know at least one source of family planning method

Table 6.5 Male knowledge of specific sources of family planning

Percent distribution of ever-married men who know at least one source of family planning methods, within each specific source of family planning methods, according to selected background characteristics and current use of family planning methods, Timor Leste 2003

Background characteristics	Public sector			Private health sector				Other[5]	No. of men[6]
	Public hospital	Public health centre	Other public sector[1]	Private institution[2]	Health care worker[3]	Pharmacy	Other private sector[4]		
Age									
15-19	*	*	*	*	*	*	*	*	1
20-24	58.7	49.3	0.0	2.7	4.1	2.7	0.0	2.7	34
25-29	62.8	54.3	2.4	10.9	0.0	1.4	0.0	2.9	135
30-34	48.9	56.0	3.6	11.7	2.0	1.3	0.4	4.8	213
35-39	54.4	57.4	3.6	8.2	2.9	1.1	0.0	0.8	174
40-44	61.6	55.1	3.9	6.2	4.1	0.8	1.2	1.4	119
45-49	66.2	73.0	1.1	14.8	4.4	1.1	0.0	4.7	70
50-54	61.6	51.9	3.5	8.1	2.3	2.3	2.3	3.5	40
Region									
Urban	75.3	23.6	2.2	22.2	4.4	3.3	0.7	2.9	254
Rural East	50.4	64.3	1.7	7.0	0.0	0.9	0.0	4.3	109
Rural Central	43.0	75.9	4.4	3.8	2.5	0.0	0.6	2.5	220
Rural West	53.3	74.1	3.3	1.8	1.5	0.4	0.0	2.6	203
Ecological zones									
Lowlands	57.5	55.6	2.9	10.2	2.8	1.4	0.5	3.1	693
Highlands	54.5	67.0	4.0	5.5	0.0	0.0	0.0	1.5	93
Education									
No education	54.7	69.4	2.5	4.4	0.5	0.0	0.0	2.1	169
Some primary	56.0	53.0	3.7	13.9	3.0	1.3	0.0	2.7	146
Primary completed	50.4	68.4	4.5	6.0	0.8	0.0	1.0	4.3	94
Some secondary or more	60.3	50.1	2.6	11.3	3.6	2.2	0.6	3.0	377
Household wealth index									
Poorest	47.9	76.5	2.0	3.5	2.0	0.0	0.0	2.8	227
Middle	54.8	61.3	3.7	4.5	1.2	0.0	0.0	4.0	304
Richest	68.1	34.4	3.1	21.3	4.6	3.9	1.3	1.7	255
Use of family planning methods									
Currently using	50.2	48.3	5.2	13.8	3.5	2.1	1.1	3.5	332
Not currently using	61.5	62.4	1.7	7.1	1.9	0.7	0.0	2.5	490
Current use missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Total	57.1	57.0	3.0	9.7	2.5	1.3	0.4	2.9	786
Number	469	461	24	81	20	11	3	24	n/a

n/a = Not applicable * Suppressed because fewer than10 observations

[1] Includes public clinics, mobile clinics, fieldworkers and 'other, specify' (none specified)
[2] Includes private hospitals and clinics
[3] Includes doctors and nurse/midwife
[4] Includes 'other, specify' (none specified)
[5] Includes friends/relatives, shops and 'other, specify' (none specified)
[6] The number of men who know at least one source of family planning method

Table 6.6 shows that in general, almost all women (more than 96%), regardless of their background characteristics, had not obtained any information from any of these community sources in the last six months. This highlights a lack of effective family planning programs in Timor Leste in the six months prior to the survey. Nevertheless, women using contraception were likely to have received family planning information in the last six months. Of the 413 women using family planning methods, only about one--fifth received family planning information from someone in the community. The sources were almost exclusively from medical professionals, nurses, midwives and doctors despite the fact that some methods, like condoms, rhythm, LAM, and withdrawal do not require educators with any particular medical skills.

Table 6.6 Female sources of family planning information: background characteristics
Percent of ever-married women who received family planning information in the last six months from various people/occupations, by respondent's background characteristics, Timor Leste 2003

Background characteristics	FP officer	Teacher	Relig-ious Leader	Doctor	Nurse /Midwife	Village leader	Women's group	Pharm-acist	No inform-ation	No. of women
Age										
15-19	0.6	0.0	0.0	0.0	1.2	0.0	0.0	0.0	98.8	150
20-24	2.3	0.0	0.4	1.4	5.0	0.1	0.0	0.0	93.6	515
25-29	1.7	0.0	0.5	0.8	2.8	0.1	0.3	0.2	95.9	879
30-34	1.6	0.0	0.6	0.8	2.4	0.4	0.0	0.1	96.5	914
35-39	1.4	0.3	0.3	0.7	2.9	0.2	0.1	0.4	95.4	763
40-44	0.2	0.0	0.3	0.0	0.9	0.0	0.0	0.0	98.8	528
45-49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	428
Region										
Urban	1.9	0.0	0.4	1.4	4.0	0.1	0.1	0.1	94.7	976
Rural East	2.5	0.1	0.5	0.9	4.3	0.6	0.1	0.3	94.2	772
Rural Central	0.6	0.1	0.5	0.3	0.9	0.1	0.1	0.1	98.1	1379
Rural West	0.8	0.0	0.2	0.2	1.7	0.0	0.0	0.1	97.8	1050
Ecological zones										
Highlands	1.5	0.1	0.3	0.7	2.7	0.2	0.1	0.1	96.2	3502
Lowlands	0.2	0.0	0.6	0.4	1.1	0.2	0.0	0.2	98.0	675
Education										
No education	0.9	0.1	0.4	0.4	1.6	0.2	0.0	0.2	97.5	2201
Some primary	0.8	0.0	0.5	0.3	2.8	0.3	0.0	0.0	96.5	720
Primary completed	0.9	0.0	0.7	1.0	2.5	0.2	0.0	0.3	96.6	314
Some secondary or more	2.6	0.0	0.1	1.4	4.1	0.0	0.2	0.1	94.4	943
Household wealth index										
Poorest	0.7	0.1	0.3	0.3	1.4	0.1	0.1	0.1	97.7	1759
Middle	1.3	0.0	0.4	0.4	2.5	0.2	0.0	0.1	96.5	1653
Richest	2.6	0.0	0.5	1.9	4.3	0.3	0.1	0.2	94.4	766
Use of contraception										
Currently using	7.9	0.0	1.3	3.6	16.6	1.1	0.6	0.4	78.4	413
Not currently using	0.5	0.1	0.3	0.3	0.9	0.1	0.0	0.1	98.5	3733
Current use missing	7.1	0.0	0.0	10.1	10.1	0.0	0.0	0.0	89.9	31
Total	1.3	0.1	0.4	0.6	2.4	0.2	0.1	0.1	96.5	4177
Number of women	54	2	16	27	103	7	3	6	4081	n/a

n/a = Not applicable

Table 6.7 Male sources of family planning information: background characteristics

Percent of ever-married men who received family planning information in the last six months from various people/occupations, by respondent's background characteristics, Timor Leste 2003

Background characteristics	FP officer	Teacher	Relig-ious leader	Doctor	Nurse /Midwife	Village leader	Women's group	Pharm-acist	No inform-ation from these sources	No of men
Age										
15-19	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	12
20-24	0.4	0.0	0.0	0.0	1.7	0.0	0.0	0.0	98.3	184
25-29	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	99.3	580
30-34	0.7	0.1	0.0	0.5	1.6	0.3	0.0	0.1	97.5	921
35-39	0.5	0.1	0.5	0.0	1.0	0.0	0.1	0.0	98.5	764
40-44	0.3	0.0	0.0	0.5	1.6	0.2	0.0	0.1	98.1	640
45-49	0.2	0.0	0.0	0.2	0.4	0.0	0.0	0.0	99.2	407
50-54	0.6	0.3	0.2	0.6	0.2	0.7	0.0	0.0	98.6	408
Region										
Urban	0.4	0.0	0.1	0.7	1.4	0.1	0.0	0.2	97.9	876
Rural East	0.6	0.0	0.1	0.0	2.5	0.3	0.0	0.0	97.2	761
Rural Central	0.4	0.1	0.1	0.2	0.5	0.3	0.0	0.0	99.1	1369
Rural West	0.6	0.2	0.2	0.2	0.3	0.0	0.1	0.0	99.0	910
Ecological zones										
Highlands	0.5	0.1	0.2	0.3	1.2	0.1	0.0	0.1	98.3	3257
Lowlands	0.6	0.2	0.0	0.4	0.3	0.6	0.0	0.0	98.8	659
Education										
No education	0.5	0.1	0.1	0.1	0.4	0.3	0.0	0.0	99.0	1637
Some primary	0.6	0.0	0.0	0.2	1.1	0.0	0.0	0.0	98.5	771
Primary completed	0.4	0.0	0.4	0.0	1.2	0.0	0.0	0.0	98.8	376
Some secondary or more	0.5	0.2	0.2	0.6	1.9	0.2	0.1	0.2	97.4	1132
Household wealth index										
Poorest	0.5	0.1	0.1	0.1	0.7	0.3	0.0	0.0	98.8	1594
Middle	0.3	0.1	0.1	0.2	1.0	0.1	0.0	0.0	98.6	1575
Richest	0.9	0.0	0.3	0.8	1.9	0.1	0.1	0.2	97.4	747
Use of contraception										
Currently using	1.9	0.0	0.4	1.2	4.7	0.5	0.0	0.2	93.9	523
Not currently using	0.3	0.1	0.1	0.2	0.5	0.1	0.0	0.0	99.1	3393
Current use missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Total	0.5	0.1	0.1	0.3	1.0	0.2	0.0	0.0	98.4	3916
Number of men	20	4	5	12	42	7	1	2	3916	n/a

n/a = Not applicable ( ) Fewer than 30 observations

With over 98% of ever-married men having received no family planning information in the last six months (see Table 6.7), the challenges for family planning service provision would appear to centre specifically on placing the issues of fertility control and reproductive health onto the national agenda. In many countries this was achieved in the 1950s or 1970s through arguments about the control of population growth that were used to mobilize the whole community into discussions about the need for birth control services. These discussions were neither limited to nor led by the health departments. In the 1990s, such strategies came under question as nations reflected on the failure of many

national programs to respect the human rights and personal needs of their citizens as they strove to lower fertility rates rapidly. The ICPD Programme of Action adopted in Cairo in 1994 recovered many of the original goals of family planning programs as it drew attention to the need to take a whole of life perspective to setting reproductive health priorities, and called on nations to work to guarantee human rights through the way they designed and provided services for women and men. One of the elements of such an approach is the recognition of quality family planning information and services and their importance as a foundation for the right of couples to determine the timing and number of births they have as they build their families. Given the data on knowledge of contraception found in this survey, Timor Leste faces a formidable challenge in the provision of family planning information.

Many people mistakenly assume that family planning is simply a matter of government providing hormonal contraceptives or IUDs to women. This is at the heart of some opposition to family planning programs by people who, for a variety of reasons, regard family planning as either an unwarranted intrusion on the decisions of couples to accept children as divine gifts, or a dangerous threat to women who might be susceptible to contraceptive side effects or complications. It is important to realize that quality family planning services offer a range of options geared to the individual needs of women, and provide services within a context of education that ensures women understand the workings of different methods. In this latter context, it is a goal of all reproductive health programs to ensure couples understand the reproductive cycle. This includes an understanding of the ways hormones control the onset and cycles of menstruation and ovulation over a woman's reproductive life. Ideally all citizens would learn about human biology during their time at school, but in many poor communities around the world people are unable to attend schools, and the schools lack the teachers and the materials to teach such curricula effectively. As discussed in previous chapters, people in Timor Leste lack the levels of education that would guarantee knowledge of reproductive biology. However, the experience of many nations has indicated, it is possible to provide a basic understanding of the key elements of the reproductive system through counselling and group training in health centres, even to illiterate women.

One crucial indicator of knowledge of reproductive biology is an understanding of the time in a menstrual cycle when ovulation occurs – the time at which sexual intercourse is likely to lead to a pregnancy. This fertile period is an important piece of information both for couples attempting to avoid pregnancy (by having intercourse only at other times in the cycle), and for the minority of couples who have had trouble conceiving, and who want to maximize their chances of pregnancy (by having intercourse at or just after ovulation). Table 6.8 reveals the understanding of the fertile period during the menstrual cycle among ever-married women and men. Their knowledge is very low, with just over one in ten ever-married men and just under one in five ever-married women correctly naming the time halfway between two menstrual periods as being the time when a woman is likely to ovulate.

There is a strange discrepancy between men and women concerning the reported current and ever-use of periodic abstinence. This might simply reflect the fact that family planning is not often discussed between husband and wife. The husband might think he was using a "periodic abstinence" method but not tell his wife about the matter. Whatever the reason, it is clear that Timor Leste couples claiming to use rhythm are insufficiently trained to be at all successful.

Men's knowledge of the fertile period is worse than women's, among those claiming to have ever used periodic abstinence. Only one in ten of the male users of periodic abstinence respectively correctly named the time halfway between two periods as being the fertile period compared to a quarter of the women who said they had used this as a method of controlling their fertility.

Table 6.8 Knowledge of the fertile period

Percent distribution of ever-married women and men by knowledge of the fertile period during the ovulatory cycle, according to ever and current use of periodic abstinence, Timor Leste 2003

Perceived fertile period	Women					Men				
	Users of periodic abstinence		Never users of periodic abstin-ence	All women	No. of women	Users of periodic abstinence		Never users of periodic abstin-ence	All men	No. of men
	Current users	Ever users				Current users	Ever users			
Just before period begins	6.8	5.9	5.1	5.1	214	15.1	15.1	7.7	7.9	326
During her period	0.0	1.1	0.8	0.8	34	0.0	0.0	1.0	1.0	36
Right after her period has ended	27.8	36.4	29.9	30.0	1254	20.9	19.4	11.6	11.7	479
Halfway between two periods	26.2	25.0	18.4	18.5	775	10.1	9.6	12.0	12.0	464
Other	0.0	0.0	0.0	0.0	2	0.0	0.3	0.0	0.0	1
Don't know when	4.9	3.8	1.3	1.3	56	0.6	0.8	0.7	0.7	26
No specific fertile period	15.5	10.7	17.6	17.5	728	8.5	13.2	23.2	23.2	876
Don't know if there is a specific fertile period	18.8	17.2	26.9	26.8	1114	44.9	41.7	43.8	43.6	1708
Total	100.0	100.0	100.0	100.0	4177	100.0	100.0	100.0	100.0	3916
Number of respondents	49	88	4089	4177		225	321	3595	3916	n/a

n/a = Not applicable

6.2 Current and ever-use of contraception

It is common for surveys of health and demography to collect detailed information on the contraceptive experience of women in the childbearing years. This is used to ascertain their success at determining the timing of births, and also to assess the impact of different contraceptive methods on the reproductive health of the women. By looking back over the contraceptive histories of respondents, surveys can track the development of efforts to provide quality family planning services. In many countries it is usually possible to see a transition from the use of simple reversible methods like condoms and withdrawal early in the women's reproductive careers, through modern hormonal methods as they begin building their families, through to the permanent methods of sterilization after they have reached their personal maximum family size.

The situation in Timor Leste in 2003 defied such patterns of analysis. Table 6.9 shows ever-use and current-use of contraception among ever-married women by a range of background characteristics. As anticipated from the information on women's knowledge of contraception, the patterns of use are most remarkable in recording the very low levels of ever-use and current-use. Less than one in five women had ever used any method (this is calculated by adding the current users and the current non-users under the columns for ever-use). The use of contraception among both ever-married and currently married women increased with age as might be expected, but it never reached substantial levels. The highest proportions of users were in the age group 35-39 which was also the age with the highest proportion of former users. Ever-users were concentrated in urban areas, and tended to come from better-off households. Nonetheless, use, was low in all socio-economic groups.

Women who had never used contraception were those in the youngest age group and those at the end of their reproductive life at age 45-49. The only social differential worth noting was related to the measure of economic status. The better off women, who also tend to be the educated women, and the women living in urban areas, were much more likely to have been exposed to contraceptive services, and more likely to be current-users, than are the bulk of the women living in poverty, deprivation and isolation. That finding was so strong that further analysis of the socio-economic characteristics of users, a common preoccupation of DHS type surveys, seems of little consequence. Even so, it may be worth looking at the figures, if only to consider them as a very low base from which future reproductive health programs might grow.

Table 6.9 Ever-use and current-use of contraception: background characteristics

Percent distribution of ever-married women by whether they are currently using or have ever-used contraception, according to selected background characteristics, Timor Leste 2003

Background characteristics	Women who have ever-used contraception			Never used contraception	Total	Number of women
	Currently users	Current non-users	Current use missing			
Age						
15-19	5.7	1.6	0.0	92.7	100.0	152
20-24	12.2	4.5	0.0	83.3	100.0	514
25-29	9.7	8.9	0.0	81.4	100.0	879
30-34	10.0	11.0	0.1	78.9	100.0	912
35-39	12.4	12.8	0.0	74.8	100.0	763
40-44	9.5	11.7	0.0	78.9	100.0	528
45-49	3.2	10.0	0.0	86.8	100.0	429
Region						
Urban	14.5	11.5	0.0	74.0	100.0	962
Rural East	5.7	11.1	0.0	83.2	100.0	1038
Rural Central	7.5	9.1	0.0	83.4	100.0	1416
Rural West	13.1	6.9	0.1	79.9	100.0	761
Ecological zone						
Lowlands	10.3	10.2	0.0	79.6	100.0	3489
Highlands	7.0	7.7	0.0	85.4	100.0	688
Education						
No education	7.5	8.1	0.0	84.4	100.0	2208
Some primary	11.4	11.2	0.0	77.4	100.0	716
Completed primary	11.1	12.8	0.2	75.8	100.0	314
Some secondary or more	13.1	11.5	0.0	75.4	100.0	939
Household wealth index						
Poorest	6.8	8.6	0.0	84.6	100.0	1676
Middle	9.9	8.7	0.0	81.4	100.0	1688
Richest	15.3	14.3	0.0	70.4	100.0	813
Number of living children[1]						
0	0.0	1.0	0.0	99.0	100.0	146
1	8.1	3.2	0.0	88.7	100.0	414
2	9.8	5.2	0.1	84.9	100.0	588
3	12.0	7.8	0.0	80.2	100.0	582
4	8.1	14.5	0.0	77.4	100.0	607
5	11.8	11.8	0.0	76.5	100.0	540
6	10.8	12.5	0.0	76.7	100.0	468
7	10.5	14.5	0.0	75.0	100.0	346
8+	9.1	11.7	0.0	79.2	100.0	486
Total	9.7	9.7	0.0	80.5	100.0	4177
Number	408	376	31	3361	4177	n/a

n/a = Not applicable

[1] Includes current pregnancy

As seen in Table 6.10, among the small number of women who did use contraceptives, the method of choice was the injectable contraceptive. This hormonal contraceptive requires medical assistance every three months, and can cause annoying side effects of breakthrough bleeding in many users.

Other hormonal methods, pills and implants, were less popular even though the pills would be much cheaper and do not require regular medical control, and the implants would be prohibitively expensive for most women in Timor Leste unless they were heavily subsidized by the government.

Table 6.10 Current-use of contraception

Percent distribution of ever-married women and of currently married women by contraceptive method currently used, according to age, Timor Leste 2003

	EVER MARRIED WOMEN																	
	Method currently used																	
Age Group	Any method	Female sterilization	Male sterilization	Pill	IUD	Injectables	Implants	Condom	Intravag/Diaphragm	LAM[1]	Rhythm/ Periodic abstinence	Withdrawal	Other	Missing	Not currently using	Missing	Total	No. of women
15-19	5.7	0.0	0.0	0.6	0.0	2.6	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	94.3	0.0	100.0	152
20-24	12.2	0.3	0.0	2.0	0.0	7.0	0.0	0.0	0.0	1.5	1.3	0.2	0.0	0.0	87.8	0.0	100.0	514
25-29	9.7	0.1	0.0	0.8	0.1	5.2	0.2	0.0	0.0	2.0	1.1	1.0	0.0	0.2	90.3	0.0	100.0	879
30-34	10.0	0.4	0.0	1.0	0.0	6.2	0.1	0.1	0.0	1.1	1.0	0.0	0.0	0.1	89.9	0.1	100.0	912
35-39	12.4	0.7	0.0	0.8	0.0	7.1	0.1	0.0	0.0	2.2	1.1	0.0	0.0	0.4	87.6	0.0	100.0	763
40-44	9.5	1.6	0.0	0.0	0.0	4.0	0.0	0.0	0.0	2.0	1.5	0.0	0.4	0.0	90.5	0.0	100.0	528
45-49	3.2	0.9	0.0	0.2	0.0	1.0	0.3	0.0	0.0	0.0	0.6	0.0	0.3	0.0	96.8	0.0	100.0	429
Total	9.7	0.6	0.0	0.8	0.0	5.3	0.1	0.0	0.0	1.6	1.0	0.0	0.1	0.1	90.3	0.0	100.0	4177
No. of women	405	25	0	33	0	221	4	0	0	67	42	0	4	4	3772	0	4177	n/a
	CURRENTLY MARRIED WOMEN																	
15-19	5.8	0.0	0.0	0.6	0.0	2.7	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	94.2	0.0	100.0	148
20-24	12.4	0.3	0.0	2.0	0.0	7.1	0.0	0.0	0.0	1.5	1.3	0.2	0.0	0.0	87.6	0.0	100.0	506
25-29	9.8	0.1	0.0	0.9	0.1	5.3	0.2	0.0	0.0	2.0	1.1	0.0	0.0	0.2	90.2	0.0	100.0	867
30-34	10.2	0.4	0.0	1.0	0.0	6.3	0.1	0.1	0.0	1.1	1.0	0.0	0.0	0.1	89.8	0.1	100.0	899
35-39	12.7	0.7	0.0	0.8	0.0	7.3	0.1	0.0	0.0	2.3	1.2	0.0	0.0	0.4	87.3	0.0	100.0	741
40-44	10.0	1.7	0.0	0.0	0.0	4.2	0.0	0.0	0.0	2.1	1.6	0.0	0.4	0.0	90.0	0.0	100.0	502
45-49	3.4	0.9	0.0	0.2	0.0	1.0	0.3	0.0	0.0	0.0	0.6	0.0	0.3	0.0	96.6	0.0	100.0	407
Total	10.0	0.6	0.0	0.8	0.0	5.5	0.1	0.0	0.0	1.6	1.1	0.0	0.1	0.1	90.0	0.7	100.0	4070
No. of women	407	24	0	33	0	224	4	0	0	65	45	0	4	4	3663	28	4070	n/a

Note: If more than one method is currently used, only the most effective method is considered in these tabulations

[1] Lactational amenorrhea method n/a = Not applicable

More women claim to be using rhythm than the pill, though as noted above, the quality of that method may be so low as to be totally discounted at present. In a country where nearly one third of peak reproductive age women are pregnant each year and breastfeeding exceeds one year in duration it would seem that lactational amenorrhea would be a major element of fertility control, but fewer than 2% of the women told the interviewers they were consciously using LAM to delay births. Remarkably in an era of HIV and concern over sexually transmitted infections, only one couple reported use of condoms for pregnancy control.

Table 6.11 Number of children at first use of contraception

Percent distribution of ever-married women who have ever used contraception by number of living children at time of first use of contraception, according to current age, Timor Leste 2003

Age	Number of living children at first use of contraception							Missing	Total	Number of women
	0	1	2	3	4	5	6+			
15-19	(0.0)	(78.0)	(13.1)	(0.0)	(0.0)	(0.0)	(0.0)	(9.0)	(100.0)	10
20-24	8.3	44.5	26.8	7.3	2.5	0.0	0.0	10.6	100.0	86
25-29	5.0	35.1	25.2	15.3	10.2	2.0	3.4	3.8	100.0	162
30-34	6.0	30.4	21.5	11.7	8.6	7.3	8.8	5.6	100.0	190
35-39	5.3	25.7	21.4	11.8	7.7	9.4	16.5	2.3	100.0	190
40-44	6.8	31.4	9.9	8.4	12.7	7.6	21.6	1.6	100.0	108
45-49	3.2	9.0	19.5	21.7	7.6	11.4	22.7	5.0	100.0	56
All ages	5.7	31.0	20.9	12.1	8.4	6.2	11.2	4.5	100.0	802

( ) Fewer than 30 observations.

Table 6.11 shows how age and the number of children impact on women's decision to use contraceptives to space or limit pregnancies. Younger women who had started using contraception had few children. By contrast, older women had three or more children before they made their decision to use contraception. What is notable about the table is found in the bottom row, which gives the absolute number of all users by the parity they had when they first began using. Among the few women who had ever used contraception, over half started when they had only one or two children regardless of their age. This would indicate that women in Timor Leste may be interested in adopting contraception early in their reproductive life rather than waiting until they have achieved their ideal family sizes. This finding implies that the major constraint on contraceptive use is lack of knowledge and supply of methods rather than lack of demand on the part of mothers.

Table 6.12 shows the sources of supply women rely on to obtain contraceptive services. The figures in this table have to be interpreted carefully considering there were fewer than 300 women currently using contraception in the whole sample. Some methods have very small numbers of users and in the case of IUD, implants and condoms the numbers are too small to make any meaningful assessment of differentials of sources of supply. Overall, the most recent source of supply of contraceptive methods for the vast majority of women was from public sector. The single most popular source of supply of family planning was the health centre. Those women using health centres were more likely to use injections while women going to public hospitals took the pill. Among the 30 women

who received their most recent contraceptive from the private sector, 23 got them from a private hospital or clinic, only three relied on the private practices of doctors or nurse/midwives, and four went to private pharmacies.

Table 6.12 Source of supply for modern contraceptive methods

Percent distribution of ever-married women who are currently using a modern contraceptive method, by most recent source of supply, according to specific methods, Timor Leste 2003

Source of Supply	Contraceptive Method							
	Female sterilization	Pill	IUD	Injection	Implants	Condom	Total	Number of women
Public Sector								
Hospital	(40.2)	50.1	*	31.9	*	*	34.7	99
Health Centre or Post	(0.0)	25.5	*	52.3	*	*	44.4	127
Public Clinic	(0.0)	0.0	*	0.4	*	*	0.3	1
Other	(0.0)	0.0	*	1.2	*	*	1.0	2
Total	(40.2)	75.6	*	85.8	*	*	80.4	229
Private medical sector								
Hospital	(0.0)	2.1	*	1.5	*	*	1.4	4
Clinic	(0.0)	14.8	*	6.2	*	*	6.6	19
Doctor	(0.0)	0.0	*	0.4	*	*	0.3	1
Nurse/Midwife	(0.0)	0.0	*	0.8	*	*	0.6	2
Pharmacy/Drug Store	(0.0)	5.4	*	0.8	*	*	1.3	4
Total	(0.0)	22.3	*	9.7	*	*	10.2	30
Other								
Shop	(0.0)	0.0	*	0.4	*	*	0.3	1
Friends/Relatives	(0.0	0.0	*	1.1	*	*	1.2	3
Other	(0.0)	2.1	*	0.4	*	*	1.1	3
Total	(0.0)	2.1	*	1.9	*	*	2.6	7
Missing	(59.8)	0.0	*	2.3	*	*	6.8	19
Total (overall)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	286
Number of women	24	34	1	221	4	1	286	n/a

( ) Fewer than 30 observations * Suppressed because fewer than 10 observations

As the number of current contraceptive users was very low, it was interesting to see whether it was hard and time consuming for ever-married women to reach the source of contraception facilities. Table 6.13 illustrates percent distribution of ever-married women currently using a modern form of contraception according to the time taken for them to reach the source of supply of the contraception. The number of missing responses was high (almost 30% of women using contraception) due to a weakness in the questionnaire that dropped many users from the question on distance to the source of supply. Essentially the data shows the time taken by women who rely on community health centres or other health facilities. By eliminating the missing data cases, over one third of the women relying on government health facilities for their supplies had to travel over an hour to receive contraceptives. Obviously this is a potential barrier for many women.

Table 6.13 Time taken to reach source of contraception: background characteristics

Time taken for ever-married women who are currently using a modern form of contraception to reach the source of contraception, according to selected background characteristics, Timor Leste 2003

Background characteristics	Time to reach source of contraception									
	0-29 mins	30-59 mins	1-1.5 hours	1.5-2 hours	2-2.5 hours	3+ hours	Source of contra-ception missing	Time taken to source missing[1]	Total	No. of women
Age										
15-19	*	*	*	*	*	*	*	*	*	6
20-24	26.4	12.8	9.9	0.0	8.1	10.3	6.9	25.7	100.0	48
25-29	33.4	14.7	14.6	0.0	6.4	0.0	4.6	26.3	100.0	56
30-34	33.2	13.4	14.8	0.0	10.9	2.9	3.9	20.8	100.0	72
35-39	27.8	12.5	12.9	0.0	11.8	4.2	4.3	26.5	100.0	66
40-44	(48.2)	(15.1)	(2.4)	(0.0)	(0.0)	(6.7)	(17.3)	(10.2)	(100.0)	29
45-49	*	*	*	*	*	*	*	*	*	9
Region										
Urban	36.9	12.3	5.7	0.0	3.3	0.0	10.7	31.1	100.0	112
Rural East	(13.0)	(4.3)	(13.0)	(0.0)	(13.0)	(8.7)	(17.4)	(30.4)	(100.0)	23
Rural Central	30.0	12.5	15.0	0.0	7.5	15.0	2.5	17.5	100.0	55
Rural West	32.8	15.7	19.4	0.0	12.7	3.7	2.2	13.4	100.0	96
Ecological zones										
Lowlands	31.7	13.9	12.4	0.0	8.4	4.2	6.8	22.4	100.0	264
Highlands	(38.9)	(0.0)	(15.9)	(0.0)	(3.3)	(12.6)	(6.3)	(23.1)	(100.0)	22
Education										
No education	26.1	14.5	16.0	0.0	12.4	3.6	5.9	21.5	100.0	118
Some primary	36.1	13.8	5.8	0.0	5.4	11.1	8.8	19.0	100.0	53
Primary completed	(16.9)	(9.7)	(36.8)	(0.0)	(10.3)	(5.8)	(6.9)	(13.6)	(100.0)	24
Some secondary or more	42.2	10.9	6.2	0.0	3.3	2.6	6.7	28.1	100.0	91
Household wealth index										
Poorest	29.4	10.2	13.6	0.0	13.0	5.2	5.6	22.9	100.0	73
Middle	27.5	17.5	18.5	0.0	9.2	8.4	2.1	16.8	100.0	112
Richest	39.7	9.6	5.7	0.0	3.2	0.7	12.8	28.4	100.0	101
Method of contraception										
Female sterilization	(18.4)	(3.0)	(0.0)	(0.0)	(0.0)	(0.0)	(59.8)	(18.7)	(100.0)	24
Hormonal				0.0						
- Injectables	34.5	13.0	13.0	0.0	9.5	5.9	2.3	21.7	100.0	222
- Pill	30.7	21.1	15.0	0.0	5.4	2.1	0.0	25.7	100.0	34
- Other	*	*	*	*	*	*	*	*	*	5
Barrier	*	*	*	*	*	*	*	*	*	1
Source of contraception										
Public sector	35.4	15.6	15.2	0.0	10.0	6.0	0.0	17.8	100.0	230
Private sector	(37.6)	(3.1)	(4.7)	(0.0)	(0.0)	(0.0)	(0.0)	(54.6)	(100.0)	29
Other	*	*	*	*	*	*	*	*	*	7
Missing	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	(0.0)	(100.0)	20
Total	32.3	12.8	12.7	0.0	8.0	4.8	6.8	22.5	100.0	286

( ) Fewer than 30 observations; * Suppressed because fewer than 10 observations.

[1] The source of contraception (Q428 of ever-married women's questionnaire) was not included in either primary health care provider (Q301-Q308 in household questionnaire) or nearest health facility (Q307-Q314 in household questionnaire), thus time taken to reach the source of contraception could not be determined.

Table 6.14 Contact of non-users with potential family planning providers

Percentage of ever-married women who are not using contraception, and in the 6 months preceding the survey visited a health facility and encountered a staff member who spoke about family planning, or were visited by a fieldworker who discussed family planning, by selected background characteristics, Timor Leste 2003

Background characteristics	Visited a health facility	Staff member at a health facility spoke about family planning				Fieldworker visited to discuss family planning				Number of women
		Yes	No	Missing	Total	Yes	No	Missing	Total	
Age										
15-19	46.9	0.0	100.0	0.0	100.0	0.7	99.3	0.0	100.0	143
20-24	44.9	1.2	98.6	0.2	100.0	0.4	99.4	0.2	100.0	452
25-29	46.8	1.1	98.5	0.4	100.0	0.3	99.3	0.4	100.0	794
30-34	46.4	1.9	98.0	0.2	100.0	0.6	99.2	0.2	100.0	820
35-39	38.1	0.4	99.0	0.6	100.0	0.2	99.2	0.6	100.0	669
40-44	39.8	1.0	97.9	1.1	100.0	0.9	98.1	1.1	100.0	478
45-49	37.5	0.8	98.5	0.7	100.0	0.5	98.8	0.7	100.0	415
Region										
Urban	47.8	1.4	98.3	0.2	100.0	0.1	99.7	0.2	100.0	822
Rural East	44.4	0.4	98.9	0.7	100.0	0.5	98.8	0.7	100.0	978
Rural Central	48.9	0.8	98.5	0.6	100.0	0.4	98.9	0.6	100.0	1310
Rural West	23.3	2.1	97.9	0.0	100.0	1.0	99.0	0.0	100.0	661
Ecological zones										
Lowlands	42.4	1.1	98.3	0.5	100.0	0.5	98.9	0.5	100.0	3131
Highlands	46.3	0.8	99.2	0.0	100.0	0.1	99.9	0.0	100.0	640
Education										
No education	38.7	0.9	98.6	0.6	100.0	0.5	99.0	0.6	100.0	2041
Some primary	42.7	1.4	98.0	0.5	100.0	0.3	99.1	0.5	100.0	635
Primary completed	50.6	0.7	99.0	0.3	100.0	0.0	99.7	0.3	100.0	279
Some secondary or more	51.5	1.5	98.4	0.2	100.0	0.7	99.1	0.2	100.0	816
Household wealth index										
Poorest	37.4	0.7	99.1	0.2	100.0	0.5	99.3	0.2	100.0	1561
Middle	45.4	1.3	98.1	0.6	100.0	0.3	99.1	0.6	100.0	1521
Richest	50.6	1.5	97.8	0.7	100.0	0.7	98.6	0.7	100.0	689
Number of living children										
0	36.6	0.0	99.3	0.7	100.0	0.5	98.8	0.7	100.0	146
1	42.1	0.8	98.9	0.3	100.0	0.4	99.3	0.3	100.0	381
2	47.8	0.8	98.5	0.6	100.0	0.1	99.2	0.6	100.0	529
3	48.2	0.8	98.8	0.4	100.0	0.1	99.5	0.4	100.0	512
4	45.2	1.3	98.2	0.5	100.0	0.3	99.2	0.5	100.0	558
5	43.8	2.1	97.0	1.0	100.0	1.0	98.0	1.0	100.0	477
6	43.4	1.1	98.9	0.0	100.0	0.7	99.3	0.0	100.0	417
7	38.1	1.4	98.6	0.0	100.0	0.4	99.6	0.0	100.0	310
8+	33.6	0.6	98.8	0.5	100.0	0.7	98.8	0.5	100.0	441
Total	43.0	1.1	98.5	0.5	100.0	0.5	99.1	0.5	100.0	3771

Did the non-users have any contact with people who could give them information about family planning? According to Table 6.14 in the last six months before the survey, about half the women had visited a health facility, however virtually none of them had received any information about family planning. While the survey asked about information from fieldworkers, there were virtually no respondents who could remember talking about family planning with any fieldworkers in the last six months. In the language of health service delivery researchers, these represent missed opportunities to assist women with reproductive health problems, including the potential need for contraceptive information and services.

Table 6.15 Reason for not using contraception

Percent distribution of fertile[1], currently married women and men who are not using a contraceptive method and do not intend to use in the future, by main reason for not using, according to age, Timor Leste 2003

Reason for not using contraception	Women				Men			
	Age		Total	Number of women	Age		Total	Number of men
	15-29	30-49			15-34	35-49		
Fertility-related reason								
Not having sex	2.1	2.1	2.1	61	0.3	0.4	0.4	11
Menopause/Hysterectomy	0.2	1.8	1.2	34	0.3	1.4	0.9	26
Subfecund / Infecund	0.5	1.8	1.3	38	2.9	2.8	2.9	81
Wants as many children as possible	22.7	16.2	18.7	542	19.7	12.6	15.8	445
Total	25.4	21.8	23.2	675	23.3	17.2	19.9	563
Opposition to use								
Respondent opposed	13.7	15.6	14.9	431	18.5	19.1	18.8	531
Husband/wife opposed	9.8	6.4	7.7	223	1.0	1.1	1.1	30
Other opposed	0.1	0.1	0.1	3	0.1	0.2	0.2	4
Religious prohibition	5.8	6.6	6.3	183	7.4	11.3	9.5	270
Total	29.4	28.7	29.0	840	27.1	31.7	29.6	835
Lack of knowledge								
Knows no method	6.7	8.9	8.0	232	22.0	23.9	23.1	651
Knows no source	2.0	2.7	2.4	70	2.3	1.6	1.9	54
Total	8.6	11.6	10.4	302	24.3	25.5	25.0	705
Method related reason								
Health concerns	4.7	6.0	5.5	159	1.1	1.3	1.2	34
Fear of side effects	25.1	23.6	24.2	703	19.4	17.6	18.4	519
Too far	0.8	1.2	1.0	30	0.4	0.3	0.3	9
Costs too much	0.0	0.2	0.1	4	0.0	0.0	0.0	1
Inconvenient to use	1.0	1.7	1.4	40	1.2	0.8	1.0	26
Gain/Loss weight	0.4	0.8	0.6	19	0.0	0.2	0.1	3
Total	32.1	33.5	33.0	955	22.0	20.2	21.0	592
Other (not specified)	0.8	2.4	1.8	51	1.2	1.7	1.5	42
Don't know	3.7	2.1	2.7	77	2.1	3.6	2.9	83
Missing	0.0	0.0	0.0	n/a	0.1	0.1	0.1	2
Total (overall)	100.0	100.0	100.0	2901	100.0	100.0	100.0	2822

n/a = Not applicable

[1] Determined by a women stating she is not able to get pregnant in Q402 or Q403 (ever-married women's questionnaire) or a man stating 'can't get pregnant' to Q609 or Q610 (ever-married men's questionnaire)

There were obviously many potential barriers to contraceptive use, including the issues of distance and poverty mentioned above. From the viewpoint of service providers, the women of greatest interest were those who might be expected to use contraception, but who had not done so. The survey identified nearly 700 women fitting this description. When they were asked directly why they were not using contraceptives to control their fertility, the responses focused on the nature of the contraceptives. Table 6.15 shows the breakdown of their responses. The most common answers were method related reasons and fertility related reasons. Specifically, they were afraid of the side effects (nearly a quarter of the respondents) or had related health concerns.

Similar percentages of men and women give 'fertility-related reasons' and 'opposition to use' as reasons for not using contraception. A quarter of men cited 'lack of knowledge' as a reason for not using contraception where only one in ten women regarded this as the main reason for their non-use. Far more women gave method related reasons for not using contraception than did men. While 8% of women stated spousal opposition as their main reason for not using contraception only 1% of men reported this as a reason for their non-use. Only 6% of women and 10% of men explicitly cited religious prohibition as a reason for not using contraception. Over one in five women aged 15 to 29 did not use family planning because they wanted as many children as possible.

Reports of intention to use contraception at some time in the future among currently-married women were very low regardless of the number of children they already had (Table 6.16).

Table 6.16 Future use of contraception

Percent distribution of fertile[1], currently married women and men who are not currently using contraception by intention to use contraception in the future, according to number of living children

Intend to use contraception in the future	Number of living children[2]									Total
	0	1	2	3	4	5	6	7	8+	
Women										
Yes	5.6	12.9	12.8	12.7	15.7	12.6	11.0	9.1	8.5	12.0
No	83.5	76.1	75.7	76.9	72.3	75.3	74.8	78.1	79.5	76.1
Don't know	10.9	11.0	11.5	10.4	12.0	12.1	14.2	11.8	12.0	11.8
Missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	111	329	477	467	502	415	360	268	370	3299
Men										
Yes	4.7	5.8	10.1	7.9	7.0	5.4	6.7	8.0	5.0	7.1
No	78.4	76.0	74.7	76.9	80.7	78.7	77.4	73.8	77.8	77.3
Don't know	17.0	18.3	15.2	15.2	12.3	15.9	15.9	18.2	17.2	15.6
Missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	134	340	524	483	516	412	290	171	168	3038

[1] Determined by a women stating she is not able to get pregnant in Q402 or Q403 (ever-married women's questionnaire) or a man stating 'can't get pregnant' to Q609 or Q610 (ever-married men's questionnaire)

[2] Includes current pregnancy

More men than women were undecided about using contraception in the future but more women than men expected to use contraception in the future. Overall, just on 12% of women (or 402 respondents) indicated that despite their current non-use of contraception, they intended at some time in the future to take actions to adopt birth control.

Table 6.17 shows the preferred method of contraception for future use for women was overwhelmingly injectables. This was both the most popular method of contraception currently being used by women in the community, and also one of the most famous methods inherited from the family planning program administered by the Indonesians in the 1980s and 1990s. A handful of women indicated they would be interested in traditional methods, though this may be a reflection of concern over side-effects of hormonal methods, and lack of awareness of alternatives.

Table 6.17 Preferred method of contraception for future use
Percentage of fertile, currently married women who are not using a contraceptive method but who intend to use a method in the future by preferred method, according to current age, Timor Leste 2003

Preferred method of contraception	Age		Total
	15-29	30-49	
Sterilization (total)	0.0	0.5	0.3
Hormonal			
- Injection	77.1	70.4	73.9
- Pill	10.6	11.7	11.1
- Other	2.8	2.5	2.7
Hormonal (total)	90.5	84.5	87.7
Traditional/other (total)	9.5	14.4	11.8
Unsure	0.0	0.5	0.3
Total[1]	100.0	100.0	100.0
Number of women	208	187	395

[1] The figures exclude the one respondent who intends to use a contraceptive method in the future but did not respond what method she intends to use

Overall, the TL 2003 DHS showed low rates of use of contraceptives of any sort, and high rates of concern over the potential side-effects of contraceptive methods. This was certainly a key element explaining the high and rising levels of fertility prevailing in the nation. In the context of poverty and poor health indicators, the lack of basic measures to preserve reproductive health poses a major challenge for health care providers. If this situation were to prevail for even a decade, the women of Timor Leste would be carrying a burden unprecedented in the Asia-Pacific Region, and the nation would necessarily face the challenges of a huge wave of children needing food, schooling, health care, and eventually employment.

Chapter 7

Other Proximate Determinants

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7 Other proximate determinants

The term 'proximate determinants' has become well known within the social sciences but it remains a mystery in other disciplines and to the general public. It refers to a theory of human fertility first developed in the 1950s by demographers who worried that public discussion of population trends often threw up speculations with no basis in human behaviour. The most obvious of these was contained in the idea that introducing electricity into a community would cause the fertility rates to fall. There is no direct relation between electric appliances and fertility. It might be true that households becoming richer and gaining electricity have fewer children, but the only way fertility falls is if a number of key behaviours change. These are the proximate (or direct) determinants of successful reproduction. The most important of these is contraceptive use, as described in Chapter 6. Others relate to the likelihood of a woman being sexually active and susceptible to pregnancy. They include the rates of amenorrhea, infecundity, and menopause. At the centre of this discussion are sexual relations that, in Timor Leste as in most societies of the Asia-Pacific region, are shaped by the institutions of marriage.

7.1 Marital status

Western concepts of marriage that have long dominated social statistics do not adequately explain the formation of families in Timor Leste. Like many places in the Asia-Pacific region, Timor Leste displays a pattern of stages of marriage rather than a single clear-cut event. The TL 2003 DHS attempted to capture the process of marriage by asking about different types of marital partnership, including relationships recognised through customary ceremony, those blessed in a church, and those recorded in a civil register. While these three types of officiation are not hierarchical, there is a tendency for customary union to precede church or civil ceremonies. In recent years, religious leaders have worked to ensure the church sacrament was related to a 'legal' marriage. These categories accord with the definitions of marriage contained in the Draft Law on Domestic Violence[1]:

- Marriage according to the state law is marriage that is conducted according to current laws or regulations of the state.
- Marriage according to religion is marriage that is conducted according to the couple's religion and before a religious leader.
- Marriage according to tradition is marriage that is conducted according to traditional procedures and customs or marriage that is agreed by the parents and/or families of the parties.

One of the reasons for a distinction between different types of marriage is the barrier between customary and other unions arising out of the difficulty of arranging and

[1] http://www.jsmp.minihub.org/Legislation/LegEng/3Draft_Domwestic_vio_English.pdf

resolving the traditional bride price expected by the parents of the young woman. The customs followed in most parts of Timor Leste are similar to those found in the western part of the island, among the indigenous *Atoni Meto* and other Timorese language groups.

The custom of *barlaque* or *belis* (dowry) involves the negotiation of an appropriate payment by the groom's family to the bride's. The negotiation may have minimal involvement of the couple, and follows a strict set of discussions and procedures which, if not carried out properly, can involve lengthy delays in the finalisation of the marital union. For this reason, couples are unable to complete the formalities of their marriage until their respective families resolve differences about the dowry. However, this does not mean they are not married. In fact, in Timor Leste as in west Timor, couples sometimes have many children and even grandchildren before they are able to complete the church and legal formalities of marriage, but in the eyes of the community they are 'married' even as their families engage in the process of finalising their marriage.

Table 7.1 shows the age and sex distribution of marital status for all people aged 15 to 49 according to the household survey. The results were remarkable in four ways. First, the proportion of people either divorced or widowed in any age group was low in comparison with neighbouring countries and unexpected in a nation that has endured such a long period of serious social disruption.

Table 7.1 Current marital status on women and men

Percentage distribution of the current marital status of women and men based on marital status information in the household listing, Timor Leste 2003

Age groups	Never Married	Married (customary)	Married (church)	Married (legally registered)	Total Married	Divorced	Widowed	Total	Number of persons
Female									
15-19	88.5	6.8	4.2	0.2	11.2	0.3	0.0	100	1,036
20-24	34.9	24.6	38.1	1.0	63.7	0.7	0.7	100	799
25-29	8.2	19.0	70.7	0.4	90.1	0.7	1.0	100	951
30-34	2.6	12.9	82.6	0.4	95.9	0.5	1.0	100	953
35-39	2.2	7.7	85.8	0.5	94.0	1.1	2.7	100	787
40-44	0.3	6.2	87.9	0.0	94.1	0.5	5.1	100	561
45-49	0.2	5.0	87.4	0.0	92.4	0.8	6.6	100	463
Total	23.8	12.4	60.9	0.4	73.7	0.6	1.9	100	5,550
Male									
15-19	99.4	0.3	0.3	0.0	0.6	0.0	0.0	100	1,060
20-24	72.0	14.2	13.3	0.5	28.0	0.0	0.0	100	578
25-29	17.5	28.9	52.6	0.5	81.9	0.2	0.3	100	718
30-34	3.4	17.6	77.3	0.9	95.9	0.3	0.5	100	999
35-39	1.6	12.6	85.5	0.2	98.4	0.0	0.0	100	825
40-44	0.6	6.5	91.6	0.3	98.4	0.0	1.0	100	677
45-49	0.6	7.6	88.3	0.6	96.6	0.3	2.5	100	443
Total	30.98	12.29	55.73	0.42	68.4	0.11	0.47	100	5,299

Source: Household data, weighted by household weights. Totals will not accord with numbers from the individual questionnaires.

Second, the overall proportion currently married was very high, with the country fitting firmly into the pattern of 'universal marriage'. Among the women in the peak reproductive ages of 30-39, only 5-10% were unmarried, and in ages 35-44, less than 6% of the women were unmarried. Third, the proportion of men currently married was almost 100% in the age groups over 35. There were more available women than men of the appropriate age to become suitors. Finally, the institution of marriage varied over the life cycle of women and men. Younger people were likely to be in a customary union without benefit of church or legal recognition of their relationship. As they aged it was more likely for the marriage to be formalised. It was notable that less than 1% of the unions were exclusively civil registry bonds. Instead, the pattern was to move from customary union to church wedding once the bride price had been resolved.

Table 7.2 shows that virtually all women had a customary wedding, irrespective of the region or the social class. It is interesting to see that, as of the date of the survey, a large proportion of women were living in unions where the *belis* had not been resolved.

Table 7.2 Details of marriage: background characteristics

Percent distribution of ever-married women who had a customary wedding, details of the *belis*[1], and other marriage details, by background characteristics, Timor Leste 2003

Background Characteristic	Had customary wedding	*Belis* [1] been resolved	Form of *Belis*[1]					Husband living with respondent	Respondent married more than once
			Nothing	Money	Gold	Live-stock	Other		
Age									
15-19	79.8	25.0	1.0	89.7	26.4	75.6	6.4	95.5	0.0
20-24	82.9	29.5	1.2	90.4	22.8	78.3	4.5	95.4	0.2
25-29	87.1	31.7	0.9	85.9	22.0	77.6	7.2	96.7	0.5
30-34	88.0	36.0	1.0	90.8	28.2	77.4	6.4	97.4	1.7
35-39	87.4	37.3	1.7	87.3	28.2	78.1	6.8	95.8	2.3
40-44	88.8	40.1	1.6	85.9	28.8	79.3	6.4	94.2	2.2
45-49	88.4	45.9	0.6	86.4	22.5	83.2	6.9	93.7	4.1
Region									
Urban	84.0	31.2	0.9	91.8	29.3	71.8	4.8	95.0	1.4
Rural East	84.7	27.9	1.6	80.7	11.9	88.9	3.9	96.6	2.2
Rural Central	90.6	42.6	1.3	92.3	29.3	81.7	9.2	95.2	1.1
Rural West	87.1	39.3	0.5	84.7	40.5	65.1	6.9	97.2	2.1
Ecological zones									
Highlands	91.0	49.5	1.1	91.5	26.7	79.6	7.1	95.9	1.3
Lowlands	86.1	33.0	1.2	87.1	26.9	78.2	6.4	95.9	1.7
Educational Status									
No Education	89.4	38.6	1.2	88.0	29.6	79.1	6.7	95.5	2.0
Some Primary	86.2	32.9	1.7	86.5	20.7	81.4	6.7	96.6	1.7
Completed Primary	82.3	31.3	0.0	94.2	23.6	78.5	5.6	95.6	2.4
Some Secondary +	83.3	32.1	1.0	86.6	25.6	74.4	6.1	96.2	0.5
Household Wealth Index									
Poorest	87.5	37.8	1.0	88.1	27.3	80.6	7.5	95.9	1.7
Middle	87.1	34.3	1.2	86.8	25.2	79.0	6.2	95.7	1.8
Richest	85.2	33.8	1.3	80.2	29.5	72.3	4.7	96.2	1.0
Total	86.9	35.6	1.2	87.9	26.9	78.5	6.5	95.9	1.6

[1]Dowry or bride price, also called *barlaque.*

This implies that formalisation of unions in a church does not rely solely on the resolution of the *belis* but rather is a matter of degree and negotiation between families. The *belis* usually involves exchange of livestock and money, and less frequently money and other objects of value. There were few substantial social or regional differences in the form of *belis* except for the fact that people in the rural western areas of the country were more likely to exchange gold than livestock.

According to Table 7.3, the younger respondents to the survey were more likely to have married under the age of 20 than were the older women. This indicates a *falling* age at marriage, in contrast to the trends found in much of the world where the growth of schooling fosters social and economic roles for girls that offer incentives to delay marriage. In Timor Leste, the school system has not been sufficiently advanced to see major enrolments of teenage girls, and the social situation in the past inhibited early marriages. Women looking for partners twenty years ago were disadvantaged as young men were involved in the struggle against the colonial powers. In recent years, the cessation of hostilities and the process of nation building have been good for marriage, and many relatively young women have entered customary or church unions.

Table 7.3 Age at first marriage for all women in Timor Leste, 2003

Age group	Percentage of women first married by exact age:					Don't Know	Never married	Median age	Number of women
	15	18	20	22	25				
15-19	2.2	n/a	n/a	n/a	n/a	0.2	85.7		1070
20-24	7.6	34.2	53.8	n/a	n/a	0.7	35.0	20.5	798
25-29	9.1	32.9	54.5	69.3	86.8	1.0	8.2	20.6	966
30-34	7.8	28.3	48.7	65.8	83.0	1.3	2.7	21.2	947
35-39	8.0	30.2	46.5	59.6	81.3	1.4	2.2	21.6	789
40-44	8.0	22.8	41.3	57.1	75.0	2.5	0.4	22.2	539
45-49	5.8	18.3	34.5	45.1	65.7	3.0	0.2	23.8	441
20-49	7.9	29.0	48.2	n/a	n/a	1.5	9.0	21.3	4480
25-49	8.0	27.9	47.0	61.6	80.4	1.6	3.4	21.4	3682
Total	6.8	25.7	41.6	52.6	65.3	1.2	23.8	22.6	5550

n/a = Not applicable

Table 7.4 shows the age at which half the women of different current age groups were 'married' according to the region of residence and socio-economic status. The first column of numbers show the median ages of marriage for women currently age 25-29. The differences by region of residence are relatively small with less than a year between the urban centres and the rural hinterlands. However, the pattern by education and wealth index is more distinct. Attainment of schooling is related to later ages of marriage.

The pattern reflected in Table 7.4 suggests the spread of schooling might result in delays in the age of marriage. Similarly, girls from wealthier households were more likely to delay their marriages than those from poor households. This may simply be a reflection that girls from wealthier households are more likely to be in school, so the policy implication still centres on the expansion of education.

Table 7.4 Median age at first marriage for all women by background characteristics

	Current age					Women 25-49	Number of women 25-49
	25-29	30-34	35-39	40-44	45-49		
Region							
Urban Areas	21.2	22.0	21.8	22.3	22.0	21.8	869
Rural East	20.8	21.7	22.5	22.3	24.7	22.0	947
Rural Centre	20.3	20.6	21.5	22.2	24.4	21.3	1209
Rural West	20.2	20.3	20.5	21.8	23.6	20.7	657
Ecological zone							
Lowlands	20.6	21.5	21.7	22.2	23.5	21.5	3069
Highlands	20.4	19.9	21.3	22.0	24.8	20.9	589
Education							
No education	20.4	20.3	20.9	22.3	23.9	21.3	2103
Some primary	19.8	20.3	21.0	21.7	24.3	20.5	593
Completed primary	19.3	21.6	20.7	21.9	20.5	20.4	251
Some secondary or more	22.0	22.6	24.3	22.1	23.9	22.7	734
Household Wealth index							
Poorest	20.2	21.1	21.4	22.6	23.5	21.2	1531
Middle	20.6	20.6	21.7	22.3	24.5	21.4	1451
Richest	21.4	22.4	22.1	21.0	22.3	21.9	676
All Women 25-49	20.6	21.2	21.6	22.2	23.8	21.4	3682

The table also provides an idea of trends in age at marriage from the more recent times (experiences of the 25-29 year olds) to the early years of the Indonesian occupation when the women who are today in their 40s were first contemplating marriage. The older women married at relatively older ages in the 1980s than is currently the fashion throughout Timor Leste.

7.2 Pre-marital sexuality

In the context of marriage as a process rather than a single event, the notion of 'pre-marital sexuality' is problematic and even confusing. In Table 7.5 the median ages of first sexual intercourse for ever-married women indicates sexuality tends to precede formal marriage in all regions, all educational levels, and women from all wealth index groups. This may be because the process of moving from the initial coupling through community recognition, and on to religious recognition implies there is no single 'age' of marriage, but rather a band of ages encompassing the whole process. Thus a woman may be betrothed at 18, have a customary marriage at 19, a long period of family negotiation of *belis*, and eventually a church recognised union at 21, after the birth of her first child.

In West Timor, the Governor of East Nusa Tenggara Province has for some years implemented a policy of promoting legal marriage to overcome the delays in the resolution of *belis* obligations. He offered free ceremonies for large numbers of couples bussed in for the day, with a state financed reception in the Governor's Residence. Similar activities have been carried out across the Province. Sometimes the mass weddings contain three generations of couples who have never formally wed due to *belis* problems.

The generations of grandparent, parent and child stand together for the ceremony, and in many cases this process resolves longstanding disagreements about the *belis* obligations.

Table 7.5 Median age at first sexual intercourse among ever married women

Median age in years at first sexual intercourse among ever-married women, by background characteristics, Timor Leste 2003

Background characteristics	Current age					
	25-29	30-34	35-39	40-44	45-49	25-49
Region						
Urban	19.2	19.6	19.1	19.6	20.2	19.3
Rural East	19.9	21.9	17.9	19.9	20.4	19.7
Rural Central	19.2	19.4	19.4	20.3	20.1	19.6
Rural West	18.4	19.6	19.7	18.9	20.0	19.7
Ecological zones						
Low land	19.2	19.7	19.5	20.1	20.2	19.6
High land	18.9	18.9	19.3	19.9	19.9	19.3
Education						
No education	18.8	19.0	19.3	20.0	20.1	19.4
Some primary	18.6	19.0	19.0	20.5	21.6	19.1
Complete primary	18.7	19.6	19.4	19.7	19.9	19.2
Some secondary or more	20.1	20.7	21.7	20.2	21.9	20.6
Household wealth index						
Poorest	18.8	19.6	19.5	20.2	20.0	19.4
Middle	19.4	19.1	19.5	20.2	20.5	19.6
Richest	19.6	20.3	19.2	19.4	19.8	19.7
Total	19.8	20.5	20.6	21.4	22.4	20.7

7.3 Sexual activity of currently married women

Currently married women were asked about their recent sexual activity including their most recent sexual intercourse. The results of this question are presented in Table 7.6. It shows that over half the women in all age groups had sexual relations within the previous week, with little significant variation across the age range from 15 to 49. The median number of days since last intercourse ranged from just over two and a half days before the interview, to just short of five days according to the age group, but there was no clear trend across the age range. The women in the rural east region were more likely have had substantial durations since last sex, but whether this reflects a real difference or a difference in the quality of reporting is impossible to know. Also the time since last intercourse according to duration of marriage showed remarkably little variation over age groups in contrast with international data that tend to show declines in coital frequency as people age.

On the surface these tables show high rates of women in Timor Leste having sexually active cohabiting marital unions, and being sexually active throughout their reproductive lives, uninterrupted by divorce, separation or widowhood. These proximate determinants would support the high fertility rates currently prevailing in the nation.

Table 7.6 Recent sexual activity reported by currently married women

	Timing of last intercourse					Median (days)	Number of currently married women
	Less than 7 days ago	2-4 weeks	2-12 months	One year or more	Total		
Age							
15-19	54.9	9.4	27.2	8.4	100	3.31	162
20-24	56.0	14.1	20.4	9.5	100	2.62	499
25-29	51.3	16.6	19.6	12.5	100	4.94	884
30-34	57.9	15.0	18.3	8.8	100	2.87	890
35-39	56.7	17.8	15.4	10.1	100	2.96	732
40-44	53.3	18.4	19.3	9.0	100	4.36	504
45-49	57.9	19.7	12.5	9.9	100	3.34	395
Total							4066
Strata							
Urban Areas	56.0	17.2	17.4	9.4	100	3.22	933
Rural East	38.9	22.2	27.0	11.8	100	6.68	1013
Rural Centre	56.5	13.8	16.5	13.2	100	2.67	1372
Rural West	74.6	12.3	10.6	2.5	100	1.22	748
Ecological zone							
Lowlands	54.9	16.7	18.5	9.8	100	3.66	3400
Highlands	57.4	14.8	16.6	11.2	100	2.58	666
Education							
No education	56.9	16.7	17.1	9.4	100	3.00	2132
Some primary	53.8	17.1	17.4	11.8	100	3.82	701
Completed primary	56.6	17.5	14.8	11.0	100	2.85	307
Some secondary or more	52.6	15.0	22.6	9.9	100	4.34	925
Wealth index							
Lower	54.3	16.0	19.9	9.9	100	3.68	1717
Middle	55.6	16.7	17.3	10.4	100	3.54	1604
Upper	57.2	16.8	16.4	9.7	100	2.82	745
Total	55.3	16.4	18.2	10.0	100	3.42	4066
Duration of marriage							
0-4 years	53.5	12.2	24.0	10.3	100	3.67	785
5-9 years	53.4	19.2	17.3	10.2	100	4.12	894
10-14 years	56.1	16.0	17.6	10.3	100	3.22	921
15-19 years	57.0	16.6	16.2	10.2	100	2.95	678
20-24 years	58.4	18.4	15.3	7.9	100	2.84	474
25+ years	55.1	16.6	16.4	11.9	100	4.30	245
Married more than once	57.4	18.0	17.7	7.0	100	3.64	67
Total	55.4	16.4	18.2	10.0	100	3.42	4064
Current contraception method							
Female sterilisation	45.7	33.5	10.2	10.6	100	6.19	18
Pill	78.5	4.8	11.4	5.3	100	0.96	34
Injection	70.7	13.6	8.0	7.7	100	1.56	219
Lactational amenorrhea	30.3	13.9	15.1	40.7	100	152.53	65
Periodic abstinence	58.8	15.8	9.3	16.1	100	3.65	43
Other methods	75.6	24.4	0.0	0.0	100	2.35	11
No method	54.8	16.7	18.7	9.8	100	3.57	3610
Currently pregnant	40.9	14.5	44.7	0.0	100	6.77	65
Total	55.3	16.4	18.2	10.0	100	3.41	4064

Note: there are some missing cases in duration of marriage and contraception method.

If a woman using more than one contraception method then the first method in order above is selected.

7.4 Post-partum amenorrhea and post-partum abstinence

Breastfeeding and sexual abstinence are two behaviours that influence the risk of pregnancy after a birth in women not using contraception. The return of the menses following the birth, or the period of amenorrhea, can be prolonged by frequent breastfeeding and delaying the introduction of supplementary food for the infant. Prolonging the period of postpartum amenorrhea can reduce the risk of a subsequent conception and delay the next pregnancy. Another approach to reducing the risk of conception following a birth is to abstain from sexual relationships, which also prolongs the period of postpartum protection. Women can be insusceptible to pregnancy (i.e., not at risk of conception) because of postpartum amenorrhea or sexual abstinence following a birth.

Table 7.7 shows the percentage of births in the three years preceding the survey for which the mother was postpartum amenorrheic, abstaining, and insusceptible, by the number of months since the birth. During the first three months following the birth almost all women were insusceptible to pregnancy due to both post partum amenorrhea and abstinence. The protective effect of amenorrhea appeared to extend for up to eight months for the majority of women, but protection from abstinence decreased rapidly by three months after the birth.

Table 7.7 Postpartum amenorrhea, abstinence and insusceptibility
Percentage of births in the three years preceding the survey for which mothers are postpartum amenorrheic, abstaining and insusceptible, by number of months since birth, and median and mean duration, Timor Leste 2003

Months since birth	Percentage of births for which mothers are:			Number of birth
	Amenorrheic	Abstaining	Insusceptible	
<2	82.6	69.8	90.6	149
2-3	80.1	55.4	86.2	276
4-5	70.5	34.0	76.2	244
6-7	67.0	29.2	71.8	209
8-9	49.2	22.6	56.8	199
10-11	46.9	20.2	54.5	213
12-13	30.3	21.6	39.9	208
14-15	25.4	19.2	35.3	224
16-17	23.8	15.2	29.0	210
18-19	19.5	14.5	25.2	159
20-21	16.7	12.8	23.3	180
22-23	10.0	12.2	16.1	180
24-25	8.2	10.8	14.7	231
26-27	10.5	6.9	14.2	247
28-29	7.4	5.5	11.1	217
30-31	7.3	5.2	9.3	193
32-33	7.1	4.3	9.2	141
34-35	3.5	3.5	5.8	172
Total	32.7	20.6	38.5	3652
Median	7.3	3.1	11.5	n/a
Mean	10.1	6.2	12.0	n/a

n/a = Not applicable

Figure 7.1 is a plot of the data in Table 7.7 and illustrates the more rapid decline in abstinence as opposed to amenorrhea following birth. In Timor Leste women abstain from sex for about three months, and three-quarters have resumed sexual relations within half a year after the birth. Beyond 18 months postpartum approximately 75% of woman were again susceptible to pregnancy.

Figure 7.1 Duration of amenorrhea and abstinence for births in the last three years

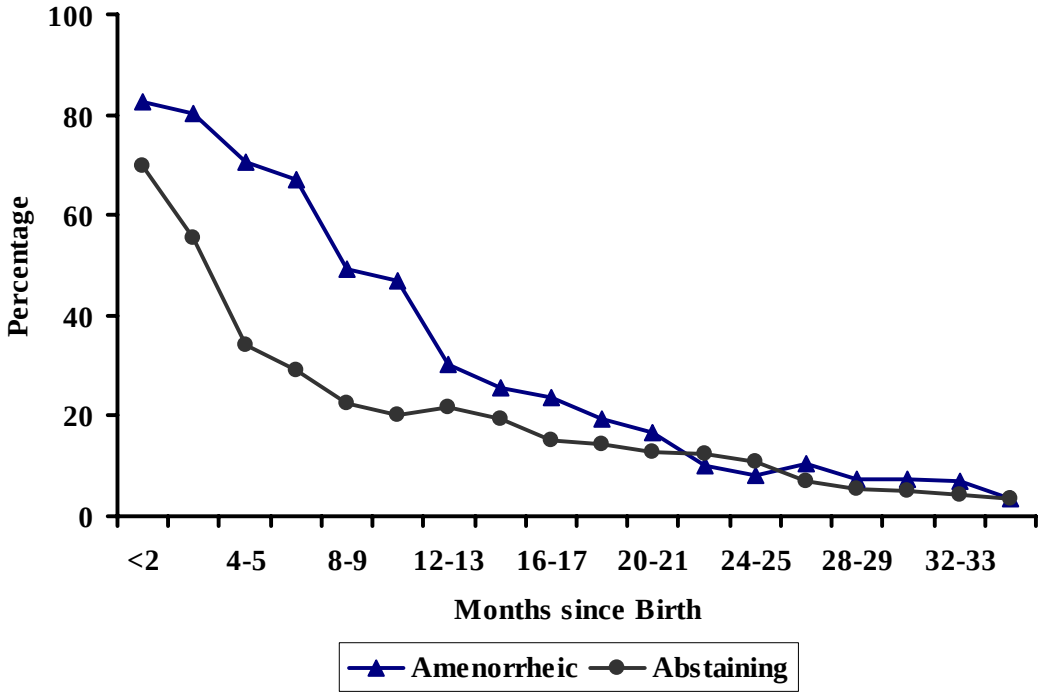

Table 7.8 presents the median durations of postpartum amenorrhea, abstinence, and insusceptibility for births in the three years preceding the survey by background characteristics of women. Following childbirth the median time by which women resume their regular menstrual periods was seven months of giving birth and the median period they were insusceptible to the risk of pregnancy was 11.5 months.

There was no difference in the insusceptible to the risk of pregnancy period for women younger or older than 30 years. Women from urban and rural west regions had a shorter insusceptible period than women from the rural east or rural central regions. Women with some secondary or more education were insusceptible for a much shorter period (7.4 months) than women with primary education or no education (13.4 to 11.5 months). Similarly, women from wealthier households were insusceptible for a much shorter period than women from poorer households. The contribution of amenorrhea to the insusceptible period was far greater than the contribution of abstinence for all groups.

Table 7.8 Median duration of postpartum amenorrhea, abstinence, and insusceptibility
The median number of months mothers are postpartum amenorrheic, abstaining, and insusceptible for births in the three years preceding the survey, by selected background characteristics, Timor Leste 2003

Background characteristics	Median number of months mothers are:			Number of births
	Amenorrheic	Abstaining	Insusceptible	
Age				
<30	8.2	3.0	11.4	1726
30+	9.2	3.2	11.5	1654
Region				
Urban	7.4	1.1	9.5	946
Rural East	11.3	3.4	11.5	913
Rural Central	11.4	3.1	11.5	910
Rural West	7.0	1.0	7.4	883
Education				
No education	9.7	3.2	11.5	1608
Some primary	9.4	1.0	11.5	722
Complete primary	11.4	0.8	13.4	300
Some secondary or more	7.3	3.2	7.4	1022
Ecological zones				
Low land	7.3	3.2	11.5	3133
High land	11.4	2.7	12.4	519
Household wealth index				
Poorest	11.3	3.2	11.4	1429
Middle	7.2	3.0	11.4	1485
Richest	7.5	3.1	9.6	738
Total	7.3	3.1	11.5	3652

7.5 Termination of exposure

Finally, at the end of a reproductive life a woman ceases to menstruate and goes through a process of menopause. In Indonesia the proportion of menopausal women climbs from around 9% in the 30-34 year age group, to 29% in the 46-47 year age group and 47% in the 48-49 year age group. The Timor Leste, data shown in Table 7.9 gives a different picture. In comparison to the situation in Indonesia, there was nearly double the percentage of women in Timor Leste who were menopausal in the 30-34 age group (16%), but a similar percentage who had ceased menstruation at age 46-49 (29%). Again this may be indicative of problems with age statement, or it could reflect, in part, the impact of poor nutritional status on the reproductive health of women.

In many areas of the world, women who feel they are infertile, or who have reached the stage of being grandmothers, enter a period of their lives where they stop having sexual relations entirely. Table 7.9 indicates that only 1% of currently married women over the age of 30 were engaged in long-term abstinence.

Table 7.9 Termination of exposure to the risk of pregnancy
Indicators of menopause and long-term abstinence among currently married women age 30-49, by age Timor Leste 2003

Age	Menopausal		Long-term abstinence	
	Percent	Number	Percent	Number
30-34	16.3	924	0.5	924
35-39	14.7	767	0.9	767
40-41	13.9	238	0.8	238
42-43	15.9	207	1.4	207
44-45	18.3	175	1.7	175
46-49	29.2	319	1.6	319
Total	17.3	2630	1.0	2630

Chapter 8

Fertility Preferences Among Ever-Married and Currently Married Women

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8 Fertility Preferences Among Ever-Married and Currently Married Women

8.1 Fertility preferences

The survey results showed that the women of Timor Leste have the highest fertility rates in Asia; rates which were last seen in Niger, Uganda, Yemen, and Mali in the late 1980s. Not only do they have high numbers of children, they also reported a desire for even more children. Table 8.1 shows that half of all currently married women wanted more children, despite women who reached the end of their reproductive years in 2003 having given birth to 5.9 children, of whom 4.9 were still alive. Only 17% of the sample wanted no more children, which was much lower than the worldwide average of DHS findings that one-third of women would like to cease childbearing (Measure DHS 2004).

Table 8.1 Fertility preferences by number of living children

Percent distribution of currently married women by desire for (more) children, according to number of living children, Timor Leste 2003

Desire for more children	Number of living children[1]									Total
	0	1	2	3	4	5	6	7	8+	
Have another soon[2]	38.1	50.4	43.3	37.4	31.4	22.8	20.5	16.8	16.2	32.4
Have another later[3]	2.6	11.6	11.9	15.2	10.8	8.7	8.2	6.4	5.9	10.5
Have another, undecided when	2.0	9.3	8.7	7.7	9.3	6.7	4.1	4.7	0.8	7.0
Have another child	42.6	71.2	64.0	60.3	51.4	38.3	32.8	28.0	22.9	49.9
Undecided	21.4	18.5	21.9	21.7	23.4	28.2	24.3	26.7	29.0	23.6
Says can't get pregnant[4]	34.9	6.9	7.9	7.1	7.8	9.5	12.9	8.2	11.7	9.4
Want no more	1.1	3.4	6.2	11.0	17.4	24.0	30.0	37.2	36.4	17.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	122	410	706	699	695	539	419	247	229	4066

[1] Includes current pregnancy

[2] Want next birth within 2 years

[3] Want to delay birth for 2 or more years

[4] Includes those who want another child, but say they can't get pregnant

Almost one-quarter (24%) of women from Timor Leste were undecided about whether they would like a/another child. This may reflect the uncertainty and instability in Timor Leste over the past few years, or a sense of fatalism that more children are inevitable in a setting where family planning services are not readily accessible.

Table 8.2 presents the breakdown of fertility preferences according the current age of the respondent. Consistent with other countries around the world (DHS Measure 2004), the higher the number of living children a women had, and/or the older she was, the less likely she was to want another child, and the less likely she was to want it "soon".

Table 8.2 Fertility preferences by age

Percent distribution of currently married women by desire for more children, according to age, Timor Leste 2003

Desire for more children	Age of women							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Have another soon[1]	50.9	51.6	44.0	35.8	24.2	16.3	4.7	32.4
Have another later[2]	18.8	16.7	18.0	11.0	5.0	2.5	2.1	10.5
Have another, undecided when	10.1	10.0	7.7	8.2	6.5	4.6	2.3	7.0
Have another child	79.8	78.3	69.7	55.0	35.7	23.4	9.2	49.9
Undecided	18.7	17.4	18.9	24.7	28.2	26.8	28.2	23.6
Says can't get pregnant[3]	0.6	2.0	3.7	4.8	8.1	19.3	34.3	9.4
Want no more	0.9	2.3	7.7	15.5	28.0	30.5	28.4	17.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	145	512	867	907	744	495	396	4066

[1] Want next birth within 2 years

[2] Want to delay birth for 2 or more years

[3] Includes those who want another child, but say they can't get pregnant

In DHS surveys "soon" is defined as a birth within the next two years (Table 8.1 and Table 8.2). Similarly, as parity and age increased, so did the number of women who were not physically able to become pregnant and the number of women who were undecided about having more children. As seen in Table 8.2, by age 45-49 almost the same percentage of women reported they were undecided about having another child (28.2%), as those clearly stating they wanted no more children (28.4%). This suggests that older women in Timor Leste were much less certain than their younger sisters about their desire for further childbearing, indicating they were the age group most likely to be interested in information and services for fertility control.

8.2 Desire for more children

Table 8.3 shows marked differences in stated desire for more children according to the region of residence. While 47-49% of those in the urban and rural central regions, and 64% in the rural east region said they wanted more children, only 35% in the rural west expressed the same desire. A considerable 40% of currently married women in the rural west region were undecided about having more children, compared to only 12-24% in the other regions of Timor Leste. While there was little difference in desire for children between those in different ecological zones and between categories of household wealth, as education level increased a higher percentage of women wanted a/another child. However, it is important to note those with higher education were also younger and had fewer children than the older women who had little or no education. This is further illustrated in Table 8.4, where 21% of the population with no education wanted no more children, compared to 13% of those with some education. This result reinforces the need to consider women's age when interpreting patterns of fertility or fertility preference.

Table 8.3 Desire for more children: background characteristics

Percent distribution of currently married women about their desire for more children, by selected background characteristics, Timor Leste 2003

Background characteristics	Desire for more children				Total	Number of women
	Yes	No	Undecided	Says can't get pregnant		
Age						
15-19	79.8	0.9	18.7	0.6	100.0	145
20-24	78.3	2.3	17.4	2.0	100.0	512
25-29	69.7	7.7	18.9	3.7	100.0	867
30-34	55.0	15.5	24.7	4.8	100.0	907
35-39	35.7	28.0	28.2	8.1	100.0	744
40-44	23.4	30.5	26.8	19.3	100.0	495
45-49	9.2	28.4	28.2	34.3	100.0	396
Region						
Urban	47.0	20.5	21.8	10.7	100.0	1013
Rural East	64.1	17.5	12.3	6.1	100.0	1023
Rural Central	49.4	15.5	24.0	11.1	100.0	993
Rural West	35.3	15.0	40.3	9.4	100.0	1037
Ecological zones						
Lowlands	49.7	17.7	23.2	9.3	100.0	3523
Highlands	51.0	13.7	25.6	9.7	100.0	543
Education						
No education	38.1	20.8	26.9	13.9	100.0	2109
Some primary	56.7	16.4	20.6	6.2	100.0	705
Primary completed	57.0	12.9	25.8	4.2	100.0	309
Some secondary or more	69.0	10.5	17.3	3.2	100.0	943
Household wealth index						
Poorest	52.5	16.8	21.5	9.2	100.0	1669
Middle	48.2	16.4	26.0	9.4	100.0	1623
Richest	47.7	19.3	23.1	9.9	100.0	774
Total	49.9	17.1	23.6	9.4	100.0	4066

8.3 Desire to limit childbearing

Table 8.4 demonstrates the link between the number of living children, background characteristics, and reported desire for more children. In this table, as the number of children increased, the number of women saying they wanted to stop childbearing also increased. Overall 17% of the population wanted no more children, however, about 20% of those from urban areas and/or from the richest segment of the population wanted no more children. This highlights another group likely to be interested in birth control services.

Table 8.4 Desire to limit childbearing: background characteristics

Percentage of currently married women who want no more children, by number of living children and selected background characteristics, Timor Leste 2003

Background characteristics	Number of living children[1]									Total
	0	1	2	3	4	5	6	7	8+	
Region										
Urban	(0.0)	2.9	9.2	10.3	23.9	32.0	32.0	36.0	42.5	20.5
Rural (all)	1.5	3.6	5.3	11.1	15.5	21.8	29.5	37.6	33.7	16.0
Education										
No education	2.2	7.2	7.7	13.2	21.0	24.1	29.4	36.8	35.5	20.8
Some education	0.0	1.3	5.3	9.1	13.6	23.9	31.2	38.1	39.3	13.0
Household wealth index										
Poorest	0.0	3.2	4.9	11.3	15.9	24.6	30.7	35.5	40.0	16.8
Middle	3.2	4.8	7.0	10.7	16.7	21.2	26.3	39.8	30.1	16.4
Richest	0.0	1.2	7.5	10.5	22.0	28.3	38.7	35.2	43.2	19.3
Total	1.1	3.4	6.2	11.0	17.4	24.0	30.0	37.2	36.4	17.1

( ) Fewer than 30 observations

[1] Includes current pregnancy

Using a regional comparison of the percentage of currently married women who wanted no more children (Table 8.5), in countries where DHSs have been recently conducted, only Cambodian and Papua New Guinean women have even remotely similar fertility preferences to those of Timor Leste women. At least 50% of currently married women from the remaining countries did not want any more children, compared to 37% in Cambodia, 38% in PNG and 17% in Timor Leste. However, perhaps the most striking feature of this data was that the majority, and in Vietnam, the vast majority, of currently married women with two living children who did not want any more children, compared to only 6% of women with two children in Timor Leste.

Table 8.5 Desire to limit childbearing: regional comparison

Percentage of currently married women who want no more children, from the most recent demographic health surveys conducted in South and Southeast Asia, from 1996-present

Country[2]	Number of living children[1]							
	0	1	2	3	4	5	6	Total
Timor Leste 2003[3]	1.1	3.4	6.2	11.0	17.4	24.0	33.7	17.1
Cambodia 2000	3.0	7.8	28.3	44.1	51.5	51.0	51.6	36.8
Papua New Guinea 1996	7.3	11.4	29.7	41.0	52.5	59.7	70.6	38.2
Indonesia 2002/2003	2.8	11.3	58.4	79.4	88.9	90.4	89.2	54.2
Bangladesh 1999/2000	1.1	11.1	66.0	83.1	90.8	92.7	89.4	58.9
Philippines 1998	1.4	16.8	53.2	74.6	84.8	87.1	89.1	61.9
India 1998/99	2.1	18.1	72.3	84.2	87.7	86.8	83.7	63.6
Nepal 2001	1.9	16.2	71.8	86.5	91.2	89.0	88.6	65.6
Vietnam 2002	1.6	15.7	91.9	93.9	94.6	96.2	91.2	75.4

[1] Includes current pregnancy

[2] Information reported by Measure DHS 2004, IIPS and ORC Macro 2000, and National Statistics Office PNG 1997.

[3] Unlike the other countries in this table, the figure for Timor Leste does not automatically include sterilized women or sterilized partners as wanting no more children. This will be corrected in future analysis, although the impact should be slight due to the low prevalence of sterilization in Timor Leste

On a worldwide scale of DHSs conducted in the past five years, only Niger and the Dominican Republic have lower percentages of women who wanted no more children (Measure DHS 2004). In Timor Leste at the time of the survey there was a very strong desire to have children, with little or any disadvantage associated with having large families. It remains to be seen whether this trend can and will be maintained as increasing economic pressures may dampen the enthusiasm of women to have large numbers of births.

8.4 Need for family planning services

Table 8.6 displays the met, unmet and total demand for family planning, broken down into needs for both spacing and limiting, and selected background characteristics. The total demand for family planning by currently married women was only 13%, far lower than the demand in Indonesia of 70% (BPS and ORC Macro 2003). Of this 13%, the demand for spacing of children was far higher than for limiting children (10% compared to 3%), which was the reverse of the situation in Indonesia (BPS and ORC Macro 2003). The demand for family planning was greater in the urban and rural west regions than the rural central and rural east (16-17% of the population compared to 8-12%), however satisfaction of demand was also higher in the urban and rural west regions.

Overall, only three-quarters of the total demand for family planning was being met in Timor Leste, suggesting a demonstrable need for increased provision of family planning services, particularly in the urban regions. Over time it is likely the demand for family planning will rise as education of girls increases, and the much hoped for economic development is achieved. More importantly, the experience of other countries shows governmental supply of contraceptives to be a major factor in generating a demand for contraception among women of all ages.

Table 8.6 Need for family planning services: background characteristics

Percentage of currently married women with unmet need for family planning, met need for family planning, and the total demand for family planning services, by selected background characteristics, Timor Leste 2003

Background characteristics	Unmet need for family planning[1]			Met need for family planning (current user)[2]			Total demand for family planning[3]			No. of women	Percent of demand satisfied
	For spac-ing	For limit-ing	Total	For spac-ing	For limit-ing	Total	For spac-ing	For limit-ing	Total		
Age											
15-19	1.0	0.0	1.0	5.8	0.0	5.8	6.8	0.0	6.8	145	81.8
20-24	3.4	0.0	3.4	11.8	0.0	11.8	15.1	0.0	15.1	512	78.2
25-29	3.5	0.0	3.5	7.3	2.1	9.4	10.6	2.1	12.8	867	75.0
30-34	3.2	0.1	3.3	6.8	3.0	9.8	9.7	3.2	12.9	907	77.8
35-39	5.5	0.3	5.8	6.1	6.0	12.1	10.9	6.2	17.2	744	72.3
40-44	3.3	0.0	3.3	5.2	3.2	8.5	7.6	3.2	10.8	495	78.8
45-49	4.9	0.0	4.9	0.8	1.9	2.7	2.9	1.9	4.8	396	55.6
Region											
Urban	3.4	0.3	3.8	9.4	3.9	13.4	12.4	4.2	16.6	1013	80.5
Rural West	3.4	0.0	3.4	8.8	4.1	12.9	11.6	4.1	15.8	1037	81.7
Rural Central	4.4	0.0	4.4	4.7	2.8	7.6	8.5	2.8	11.3	993	67.0
Rural East	3.4	0.0	3.4	4.6	0.8	5.4	7.6	0.8	8.4	1023	64.0
Ecological zones											
Lowlands	3.9	0.1	4.0	6.9	3.0	9.9	10.3	3.0	13.3	3523	75.6
Highlands	2.9	0.0	2.9	4.6	2.0	6.6	7.1	2.0	9.1	543	72.3
Education											
No education	3.5	0.1	3.6	4.7	2.6	7.3	7.5	2.7	10.1	2109	74.0
Some primary	4.3	0.3	4.6	6.9	4.0	11.0	10.9	4.3	15.2	705	73.4
Primary completed	3.8	0.0	3.8	7.3	3.0	10.3	10.7	3.0	13.8	309	76.7
Some secondary or more	3.7	0.0	3.7	10.3	2.3	12.5	13.8	2.3	16.1	943	78.2
Household wealth index											
Poorest	3.7	0.0	3.7	4.6	2.5	7.1	7.8	2.5	10.3	1669	71.9
Middle	3.5	0.0	3.5	6.4	2.6	9.1	9.5	2.6	12.1	1623	75.4
Richest	4.3	0.4	4.8	11.2	3.8	15.0	14.9	4.2	19.1	774	79.3
Total	3.7	0.1	3.8	6.5	2.8	9.4	9.8	2.9	12.6	4066	75.3
Number of women[4]	128	3	131	281	119	400	409	122	531	n/a	n/a

n/a = Not applicable

[1] Unmet need for spacing includes
- Pregnant women whose pregnancy was mistimed
- Women who are not pregnant or amenorrheic and are not using any family planning method and want to wait two or more years for their next birth
- Women who are unsure if they want another child and are not using a family planning method
- Women who want another child but are unsure when and are not using a family planning method
- Amenorrheic women whose last birth was mistimed (unable to determine from the data collected)

Unmet need for limiting includes
- Pregnant women whose pregnancy was unwanted
- Women who are not pregnant or amenorrheic and are not using any family planning method and who want no more children
- Amenorrheic women whose last child was unwanted (unable to determine from the data collected)

Note that pregnant and amenorrheic women who became pregnant while using a method of family planning are excluded from the unmet need category (as they are in need of better contraception). Also excluded from unmet need are women who are menopausal or infecund (defined as women who are not pregnant or postpartum amenorrheic and haven't menstruated for 6+ months and have not had a child in the last five years).

[2] Currently using 'For spacing' includes women who are using a method of family planning and either want another child or are undecided about having another child. Currently using 'For limiting' includes women who are using a method of family planning and who want no more children. Note the specific methods are not taken into account here.

[3] Total demand has not included pregnant and amenorrheic women who became pregnant while using a method (method failure) but this should have little impact on the total (e.g. in Indonesia it was <1% of all currently married women)

[4] Refers to the number of married women who do not want any more children

8.5 Ideal and actual number of children

Table 8.7 reveals the ideal family size for ever-married women was 5.7, far higher than the 2.9 reported in Indonesia (BPS and ORC Macro 2003), ranking Timor Leste equal sixth highest worldwide in the reported mean ideal number of children on DHS surveys over the past five years (Measure DHS 2004). Over half of the women reported an ideal family size of five or more, with a sizeable 18% reporting their ideal was a family with eight or more living children (data not shown).

Table 8.7 Ideal and actual number of children

Percent distribution of ever-married women by ideal number of children, and mean ideal number of children for ever-married women and for currently married women, according to number of living children, Timor Leste 2003

Ideal number of children	Number of living children[1]									Total
	0	1	2	3	4	5	6	7	8+	
Numeric responses (80.1% of total)										
0	1.1	0.3	0.2	0.4	0.2	0.4	0.5	0.5	0.9	0.4
1	0.0	3.2	0.7	0.1	0.0	0.0	0.5	0.0	0.0	0.5
2	6.9	5.0	8.9	1.8	0.8	0.9	0.5	0.9	0.0	2.9
3	5.8	6.5	3.5	10.3	1.9	1.5	0.3	0.6	0.4	3.8
4	28.4	28.8	26.2	17.1	20.2	10.9	7.9	6.3	3.4	17.5
5	11.5	11.7	12.1	11.4	7.2	20.5	7.0	5.3	3.9	10.8
6	13.5	16.8	19.0	24.4	28.9	20.4	28.2	19.0	13.7	22.0
7	5.1	1.8	2.3	3.6	2.6	7.0	6.9	15.8	4.6	4.7
8+	5.9	6.1	7.9	12.1	15.8	20.4	26.3	33.0	52.0	17.4
Non-numeric responses (19.9% of total)										
Up to God	6.2	4.4	4.0	4.5	5.2	5.2	7.4	4.0	2.9	4.8
No plans	0.0	2.6	2.9	3.6	3.3	2.3	3.4	2.6	3.1	3.0
It depends	6.0	7.7	7.9	6.6	9.0	5.5	6.5	7.3	7.4	7.3
Whatever	0.0	0.5	0.7	1.2	0.5	0.8	1.0	0.6	0.0	0.7
As many as possible	0.0	0.2	0.0	0.0	0.0	0.3	0.2	0.0	0.4	0.1
Can't become pregnant/Sterile	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Don't know/Alternate response	0.8	0.9	0.0	0.0	0.0	0.0	0.3	1.0	0.0	0.2
Other not specified	5.5	3.3	3.6	3.0	4.3	3.8	3.1	2.6	7.3	3.8
Missing	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	123	438	721	721	711	550	429	252	232	4177
Ever-married women										
Mean ideal number	4.7	4.6	4.9	5.4	5.8	6.1	6.6	7.1	8.0	5.7
Number of women	96	351	576	577	548	444	330	206	183	3311
Currently married women										
Mean ideal number	4.7	4.7	4.9	5.4	5.8	6.1	6.6	7.1	8.0	5.8
Number of women	95	329	566	559	535	435	324	202	182	3227

Note: The means exclude women who gave non-numeric responses

[1] Includes current pregnancy

Consistent with other countries (Measure DHS 2004), as parity and/or age increased women reported a higher ideal family size. Also like the rest of the world, women with more education and/or greater wealth, desired fewer children, although the difference between groups was not nearly as great as that seen in other countries (Measure DHS 2004) and further highlights the desire for many children in Timor Leste.

However, unlike the common pattern seen in most of the Asia-Pacific Region, women from urban areas in Timor Leste did not desire fewer children than those from rural areas. While women reported rather large ideals, at least part of this reflected the fact they already had large families, and it would have been unusual to report an ideal smaller than their current family sizes. This situation of large ideal numbers of children is further discussed in Table 8.8, where the data are broken down into respondent age categories and other background characteristics.

On a regional basis, women from the rural central and rural east regions reported ideals of slightly more children (5.7-5.8) than those from the urban and rural west regions (5.1-5.4), although the differences were not large. Overall, there was a trend of those with higher education and/or greater wealth to report slightly lower numbers of ideal children, although once again this difference was quite small.

Table 8.8 Mean ideal number of children: background characteristics

Mean ideal number of children for ever-married women, by age and selected background characteristics, Timor Leste 2003

Background characteristics	Age of women							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Region								
Urban	5.0	4.5	5.3	5.3	5.6	5.9	6.3	5.4
Rural West	*4.0*	4.5	4.6	5.2	5.7	5.6	5.4	5.1
Rural Central	*4.9*	5.3	5.6	5.7	5.9	6.3	5.6	5.7
Rural East	*5.0*	5.0	5.5	6.0	6.1	6.1	6.0	5.8
Ecological zones								
Lowlands	(4.7)	4.8	5.3	5.6	5.8	6.0	5.9	5.5
Highlands	*(4.9)*	5.4	5.8	6.1	6.2	6.0	(5.6)	(5.8)
Education								
No education	*(4.7)*	5.2	5.5	5.8	6.0	6.0	5.8	5.8
Some primary	*4.9*	4.9	5.4	6.0	5.9	6.2	*5.9*	5.6
Primary completed	*4.7*	5.0	5.5	5.2	*6.2*	*6.0*	*(4.9)*	5.4
Some secondary or more	4.9	4.7	5.2	5.3	5.2	*6.1*	*6.1*	5.1
Household wealth index								
Poorest	4.7	5.2	5.5	5.8	6.0	6.1	5.8	5.7
Middle	4.9	4.9	5.3	5.7	5.9	6.0	5.7	5.6
Richest	*5.0*	4.3	5.2	5.3	5.4	6.0	6.1	5.3
Total	4.8	4.9	5.4	5.6	5.9	6.0	5.8	5.6

Note: Figures in parentheses are unweighted

Figures in ***italics*** indicate result is based on <=30 observations.

Table 8.9 demonstrates that while 91% of the population expressed a gender preference for their children, there was no marked difference in a preference for boys and girls, which was similar to that reported previously in Southeast Asia and Sub-Saharan Africa (Arnold, 1997).

Table 8.9 Ideal child gender preference: background characteristics

Mean number of ideal children, boys and girls reported by ever-married women who expressed a child gender preference, according to selected background characteristics

Background characteristics	Percent who expressed a gender preference[1]	Ideal number of children (mean)[2]	Ideal number of boys (mean)	Ideal number of girls (mean)
Age				
15-19	93.8	4.9	2.2	2.1
20-24	93.6	5.0	2.2	2.2
25-29	90.7	5.5	2.3	2.2
30-34	90.1	5.7	2.5	2.3
35-39	90.1	6.1	2.6	2.5
40-44	90.1	6.4	2.7	2.5
45-49	90.8	6.1	2.6	2.4
Region				
Urban	91.7	5.6	2.4	2.3
Rural East	88.9	6.0	2.5	2.4
Rural Central	92.8	5.9	2.6	2.5
Rural West	89.1	5.2	2.1	2.1
Ecological zones				
Highlands	89.8	5.7	2.4	2.3
Lowlands	96.5	(6.0)	(2.8)	(2.6)
Education				
No education	90.3	6.0	2.6	2.4
Some primary	89.7	5.8	2.4	2.3
Primary completed	92.4	5.5	2.4	2.3
Some secondary or more	92.6	5.2	2.3	2.2
Household wealth index				
Poorest	90.0	5.9	2.5	2.4
Middle	91.0	5.7	2.4	2.4
Richest	92.6	5.4	2.4	2.3
Total[3]	90.9	5.7	2.4	2.4
Number of women	3783	3309	3376	3377

Note: Figures in parentheses are unweighted

[1] This was determined by assuming that women had a child gender preference if a non-zero value was placed in 'male' or 'female' in Q615, thus indicating the existence (but not direction of) a child gender preference

[2] Only includes those who gave a numeric response and also subsequently expressed a child gender preference

[3] Indicates that 2.4 is the minimum number of boys and the minimum number of girls that are desired by parents with child gender preferences, with no gender preference for the remaining 0.9 'child' (thus total number of ideal children is 5.7)

8.6 Fertility planning status

The strong desire for many children in Timor Leste was again seen in Table 8.10 in the area of "Wanted and Unwanted Fertility". Only a small percentage (0-4%) of births in the past five years were reported to be 'Not wanted', although mothers said they would have liked to have delayed 8-11% of the births. The vast bulk of births - over 85% - were reported to be wanted at the time of conception, far more than in other national DHS over the past five years, where the average report of wanted births was about 66% (Measure DHS 2004). When broken down by number of living children (Table 8.11), the more living children a woman had, the less likely she was to have wanted the most recent birth; however this figure rarely dropped below 80% in Timor Leste.

Table 8.10 Fertility planning status

Percent distribution of current pregnancy, last birth and next-to-last birth in the five years preceding the survey, by fertility planning status and mean number of children, according to birth order and mother's age at birth, Timor Leste 2003

Birth order and mother's age at birth	Planning status of birth			Total	Number	Number of living children (mean)[1]
	Wanted then	Wanted later	Not wanted			
Birth order						
Current pregnancy	87.1	12.3	0.0	100.0	525	3.0
Last birth	85.8	10.6	3.6	100.0	3375	3.9
Next-to-last birth	91.9	7.7	0.0	100.0	2270	4.2
Age at last birth						
<20	87.9	10.9	1.2	100.0	223	1.5
20-24	88.1	10.6	0.4	100.0	575	2.2
25-29	85.6	12.6	1.8	100.0	944	3.4
30-34	84.1	10.1	5.8	100.0	814	4.4
35-39	84.3	9.8	5.9	100.0	542	5.6
40-44	88.2	4.7	7.1	100.0	229	5.9
45-49	77.6	15.0	7.4	100.0	47	7.0
Total	85.8	10.6	3.6	100.0	3374	3.9
Age at next-to-last birth						
<20	95.3	4.7	0.0	100.0	218	2.2
20-24	92.7	7.3	0.0	100.0	563	3.0
25-29	93.5	6.2	0.4	100.0	703	4.0
30-34	88.0	11.2	0.8	100.0	464	5.2
35-39	90.9	7.9	1.3	100.0	246	6.3
40-44	88.9	9.8	1.3	100.0	70	6.3
45-49	85.5	14.5	0.0	100.0	6	(6.5)
Total	91.9	7.7	0.5	100.0	2270	4.2

Note: Figures in parentheses are unweighted

[1] Not including current pregnancy

Table 8.11 Fertility planning status by number of living children

Percent distribution of current pregnancy, last birth and next-to-last birth in the five years preceding the survey, by number of living children, according to fertility planning status, Timor Leste 2003

Planning status of birth	Number of living children[1]									Total
	0	1	2	3	4	5	6	7	8+	
Current pregnancy										
Wanted then	100.0	86.1	88.4	88.2	85.4	87.2	77.3	(75.5)	(80.1)	87.1
Wanted later	0.0	13.9	11.6	11.8	13.4	12.8	22.7	(24.5)	(6.6)	12.3
Not at all	0.0	0.0	0.0	0.0	1.0	0.0	0.0	(0.0)	(13.2)	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	(100.0)	(100.0)	100.0
Number	49	95	96	86	75	59	32	20	13	525
Last birth										
Wanted then	(91.3)	87.9	88.3	85.9	86.6	83.9	81.7	84.1	84.1	85.8
Wanted later	(8.7)	11.4	11.3	12.6	9.9	11.0	10.2	7.9	5.3	10.6
Not at all	(0.0)	0.7	0.4	1.4	3.5	5.1	8.1	8.0	10.5	3.6
Total	(100.0)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	16	396	603	598	595	450	336	199	181	3375
Next-to-last birth										
Wanted then	*	91.0	94.2	91.6	93.7	91.7	86.1	93.2	88.5	91.9
Wanted later	*	9.0	5.8	8.2	5.5	7.7	13.4	6.2	9.5	7.7
Not at all	*	0.0	0.0	0.2	0.7	0.6	0.4	0.6	2.0	0.5
Total	*	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	4	45	487	441	446	334	229	151	134	2270

( ) Fewer than 30 observations

* suppressed because fewer than 10 observations

[1] Not including current pregnancy

8.7 Summary and conclusion

Women from Timor Leste clearly expressed strong desires to have many children, and had among the highest desired family sizes ever recorded in a DHS. Based on fertility levels presented in Chapter 5, the population of Timor Leste is already set to double in 17 years. If all the children women say they want are born in the coming years, the population will grow at unprecedented rates. It will be crucial for the future of Timor Leste for the government to consider the implications of these high levels of fertility and fertility desires, both on the economic prospects of the nation, and the welfare of individual families.

Despite desire for many more children, certain segments of the population, such as urban and wealthier women, women older than 35 years of age and those with many living children articulated a desire for family planning services, particularly to space births more effectively. At the time of this report being written this demand was not being met. As Timor Leste develops, and younger generations of women gain higher levels of education, the demand for fertility regulation could increase markedly, especially if the educated women enter the formal labour force. The challenge for health planners is to respond with culturally and socially appropriate family planning programs to cope with present and future demand for contraceptive information, supplies and services.

Chapter 9

Infant and Child Mortality

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9 Infant and Child Mortality

Infant and child mortality rates are key indictors for evaluating the effectiveness of maternal and child health programs and policies, and for monitoring the demographic situation in a country. They can also be used to identify sub groups in the population with increased mortality risk. Furthermore, these indicators reflect the level of socioeconomic development in a country, and contribute to the calculation of development indices and population projections.

In the TL 2003 DHS, all ever-married women aged 15–49 years were asked to recall the complete history of their births including the sex, month and year of birth, and the survival status for each live birth. For children who had died, the age at death was recorded in days for children dying in the first month of life, in months for other children dying before their second birthday, and in years for children dying at later ages. Using this information the following direct estimates of infant and child mortality were calculated.

Neonatal mortality: The probability of dying within the first month of life;

Post-neonatal mortality: The probability of dying after the first month of life but before the first birthday;

Infant mortality ($_1q_0$): The probability of dying before the first birthday

Child mortality ($_4q_1$): The probability of dying between the first and fifth birthdays

Under-five mortality ($_5q_0$): The probability of dying before the fifth birthday

9.1 Assessment of data quality

To assess the reliability of the direct estimates of infant and child mortality reported in this chapter, it is necessary to evaluate the quality of the retrospective birth history data collected in the TL 2003 DHS. These birth histories and the calculated mortality estimates are subject to both sampling and non-sampling errors. The sampling errors for a selection of mortality rates are presented in Appendix C. Thus this assessment of the quality of the data used to calculate direct mortality estimates will focus on non-sampling errors.

There are three main sources of non-sampling or data collection errors in retrospective birth histories which can potentially bias the estimates of infant and child mortality. The first possible data collection error is underreporting of deaths, especially in early childhood, which would result in an underestimate of mortality. The second is

misreporting of age at death, which could distort the age patterns of infant and child mortality. And the third is misreporting of date of birth which may distort the levels of infant and child mortality in different five-year periods. In general, all these problems are less serious for recent time periods than for those in the more distant past. The following are results from an examination of the TL 2003 DHS data, which presents evidence for the presence and extent of these biases in the data.

Underreporting of deaths is usually a more serious problem for deaths in early infancy, including those in the first week and the first month of life, than at older ages. Failure to report these deaths will result in neonatal mortality estimates that are too low. Furthermore, if underreporting is more severe for infants born in the distant rather than recent past, any decline in mortality will be underestimated. Underreporting of neonatal deaths can result in abnormally low ratios of early neonatal deaths (deaths before seven days of age) to all neonatal deaths, and neonatal to all infant deaths. Significant changes in these ratios over time will indicate if underreporting is greater in the past.

An examination of the data in Table D 7 (Appendix D) indicates that the ratios of deaths under one month of age to all infant deaths is low (0.31 for period 0 to 19 years prior to the survey), and there is only a modest decline in this ratio for progressively more distant time periods before the survey (0.37, 0.30, 0.30, 0.28 for 0-4, 5-9, 10-14, and 15-19 years prior to the survey respectively). A further examination of the distribution of reported age of deaths indicates that approximately 30% of the deaths were reported to occur in each of the first two age groups, thereafter an average of 4% of the deaths occur at each month age interval through to 11 months. These results indicate a heaping of reported deaths at one month of age due to rounding up of the age of death. This heaping may have occurred because the interviewers failed to adequately probe, when mothers reported deaths at exactly one month of age, to determine if the death had occurred earlier.

This heaping of reported deaths at one month of age would result in an underestimate of the neonatal and perinatal mortality rates, although it will have no effect on infant and under five mortality estimates. Therefore, a systematic random sample of 80% of the deaths reported to occur at one month have been included in the estimates of neonatal and perinatal mortality. Table D 8 (appendix D) presents the adjusted age-of-death data used in neonatal and perinatal mortality estimates. In this chapter both the adjusted and unadjusted neonatal mortality estimates are presented in selected tables. Once the heaping of age-of-death at one month was adjusted, Table D8 reveals that the ratios of neonatal to all infant deaths are consistently high (between 50 to 58%) for each of the time periods preceding the survey, and only declined slightly for more distant time periods.

Table D 6 (Appendix D) presents the distribution of age-of-death in days for infants whose mothers reported they died at less than 1 month of age. For these women the ratios of deaths under seven days to all neonatal deaths are high[1] (0.75 for period 0 to 19

[1] A ratio of less than 25% indicates likely underreporting of early neonatal deaths

years prior to the survey). Furthermore, there is only a modest decline in this ratio for progressively more distant time periods before the survey (0.77, 0.77, 0.74, and 0.69 for 0-4, 5-9, 10-14, and 15-19 years prior to the survey respectively). The estimates of perinatal mortality reported in this chapter have used all neonatal deaths rather than early neonatal deaths, because of the heaping of age-of-death at one month of age. This use of all neonatal deaths will have resulted in an overestimation of perinatal mortality.

Another common source of error in the reporting of children's age at death is the tendency for mothers to round the age-of-death to the nearest six months, which can result in heaping of age-of-death at 6, 12 and 18 months. To reduce this type of error, interviewers were instructed to probe for exact age at death in months when it was reported as "one year" or "12 months." All deaths under 2 years were reported in months. An examination of the data in Tables D 7 & 8 (Appendix D) reveals no heaping at six month intervals. Significant misreporting or heaping of age-of-death at 12 months could result in biased estimates of infant and child mortality. However, in this report there was no need to adjust estimates of infant and child mortality for this type of misreporting. Thus, all deaths reported to have occurred at 12 months of age have not been included in the calculation of the infant mortality rate.

The misreporting of date of birth is another potential source of error and can be assessed by examining the distribution of births and deaths since 1994. Table D 5 (Appendix D) reveals a deficit of births in calendar year 1998 (819) and an excess in calendar year 1997 (1300). An examination of the proportion of deaths to births indicates a decrease from 13.9% in 1994, to 5.1% in 2002, but with a disjunction between 1997 and 1998 suggesting an underreporting of deaths in the most recent five year period. Similar patterns have been reported in DHS surveys from Indonesia including the most recent 2003/2003 IDHS survey. This drop in births at five years prior to the survey is thought to be the consequence of interviewers moving births out of the recall period for which the calendar and detailed maternal and child health data are required (i.e., January 1998 through to the date of the survey) to reduce their workload. No adjustment has been made for this disjunction in births between 1997 and 1998.

The limitations of the data used in this report to establish trends in infant and child mortality need to be recognized. First, women over 49 years of age were not interviewed in the survey and there is no data on the survival of any of their births during the period of time used to calculate mortality rates. With more distant time periods, this censoring of child and infant survival information becomes progressively greater. For example, the mortality rates for 10–14 years prior to the survey do not include any births for women aged 40–49 even though these excluded births to older women would be at greater risk of dying than births to younger women. The result of this censoring would a slight underestimation of mortality rates in this time period. To minimize this bias, estimates of mortality in this report have been restricted to the last 15 years prior to the survey. Second, as noted above there may be differences in the completeness of reports of death related to particular time periods prior to the survey, as illustrated by the disjunction in

the ratio of deaths to births between 1997 and 1998. Third, the accuracy of reports of age at death and of date of birth are both likely to have deteriorated with increasing recall periods. Finally, sampling variability of mortality rates will be high especially for groups of women with relatively few births. To reduce the problem of limited numbers of events, the mortality estimates presented for the TL 2003 DHS have been calculated for five or ten-year periods.

The direct mortality estimates presented in this report are based on the deaths of children recorded in the birth history for each women interviewed. These direct methods of estimating mortality require complete birth histories, and cannot be used if this data is not collected. This will be the case in the current TL census and was also the case with the 2002 TL Multiple Indicators Survey. Where complete birth histories are not available indirect estimates based on the number of children ever born and children surviving are used to estimate infant and child mortality rates. The differences in mortality estimates between these methods should be noted when comparing the direct mortality estimates presented in this report with other indirect estimates of infant and child mortality in Timor Leste. There is a potential for bias with indirect mortality estimates, and even when appropriate mortality models are used the indirect estimations consistently produce higher mortality rates than the mortality estimates from the direct methods (Sullivan et al., 1994).

In summary, this examination of the birth history data in the TL 2003 DHS is of similar quality to other DHS surveys. However, heaping of age-of-death at one month was observed in the data, and if unadjusted would result in an underestimate of neonatal and perinatal mortality but have no effect on estimates of infant, child and under five's mortality. The results presented in this chapter have been adjusted to include deaths at one month of age in the estimates of neonatal mortality, and estimates of perinatal mortality have been based on all neonatal deaths rather than early neonatal deaths (deaths 0 to 6 days of age).

9.2 Levels in infant and child mortality

Estimates of childhood mortality in Timor Leste for three five-year periods preceding the survey are presented in Table 9.1, and show that under five mortality has decreased by 50% from 165 deaths per 1000 live births in the period 1989-1993, to 83 per 1000 in the period 1999-2003. The majority of childhood deaths during this 15 year period were infant deaths. The decline in post-neonatal mortality was greater (59%) than the decline in neonatal mortality (45%) with the result that in the most recent five-year period, 55% of the infant deaths were neonatal deaths, up from 48% in the period from 1989-1993.

Table 9.1 Early childhood mortality rates

Neonatal, post neonatal, child, and under-five mortality rates (per 1000) for five-year periods preceding the survey, Timor Leste 2003

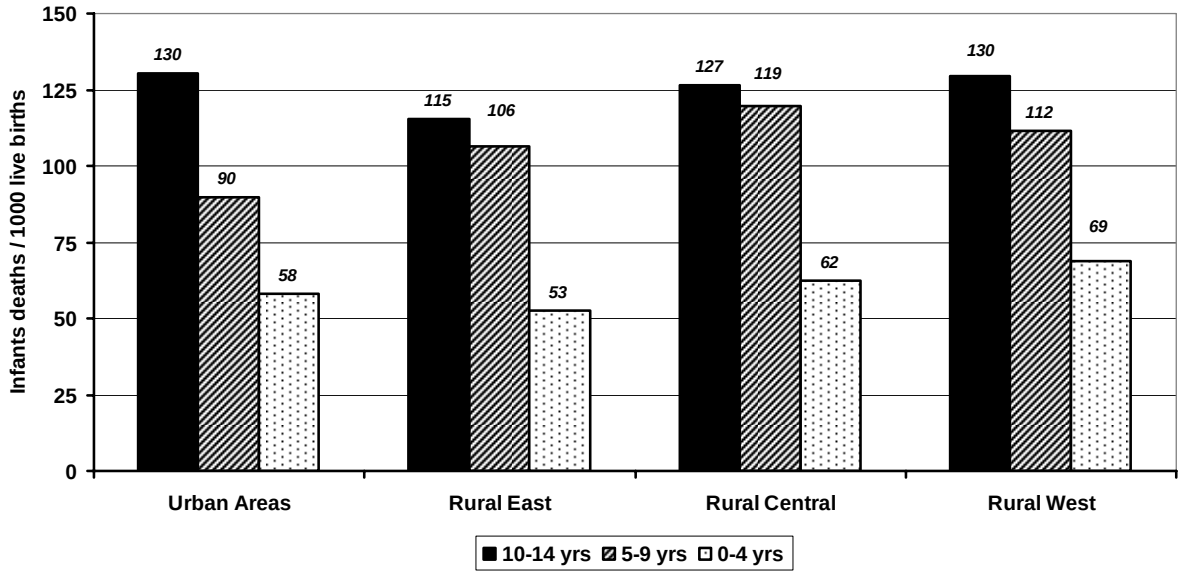
Year preceding survey	Approximate calendar years	Neonatal mortality (NN)[1]	Post-neonatal mortality (PMN)[2]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
0-4	1999-2003	33	27	60	23	83
5-9	1994-1998	52	57	108	27	135
10-14	1989-1993	60	65	126	40	165

[1] Adjusted for heaping of age-of-death at 1 month; unadjusted values are 21, 31 & 36 for 0-4, 5-9 & 10-14 years preceding survey.

[2] Computed as the difference between the infant and neonatal mortality rates

As seen in Figure 9.1 the decline in infant mortality over the 15 years preceding the survey was greatest in the urban (55%) and rural east (54%) regions and least in the rural west (47%). In the five years preceding the survey the lowest infant mortality rates were observed in the rural east and urban regions.

Figure 9.1 Infant mortality for five-year periods preceding the survey by strata



There are few other prior reports of childhood mortality for Timor Leste. The TL 2002 MIC Survey using indirect methods estimated infant mortality at 88 per 1000 live births for a period about four years before the survey or approximately 1998. Using direct methods with the TL 2003 DHS data, the infant mortality for 1998 was 84 per 1000 live births. In contrast, the 1997 Indonesia DHS survey reported much lower estimates of infant mortality (33 per 1000 live births) and child mortality (17 per 1000 live births) for the province of East Timor over the 10 years prior to that survey. However, these results are inconsistent with the infant and child mortality rates reported from the TL 2003 DHS for similar time periods (Table 9.1). Also the 1997 mortality rates for East Timor were much lower than the mortality rates reported in the same survey for the neighbouring province, East Nusa Tenggara (infant mortality rate 60 per 1000 live births and child mortality 32 per 1000 live births).

9.3 Mortality differentials - socioeconomic characteristics

Infant and child mortality is influenced by a wide range of socioeconomic, environmental, and biological factors. These factors can be divided in broad socioeconomic determinants and proximate or immediate determinates of child mortality (Moseley & Chen 1984). In this and the next section of the chapter, the relationships between some of these factors and the child mortality rates in Timor Leste are examined.

Table 9.2 presents childhood mortality rates in Timor Leste for the ten-year period preceding the survey (approximately 1994 to 2003) by socioeconomic characteristics including place of residence, ecological zone, maternal education, and household wealth index. As noted earlier, the lowest mortality rates were found in the urban and rural east regions while the highest rates were in the rural central and rural west regions. There was a marked difference in the mortality rates between children from the lowlands versus the highlands. Overall, children living in the highlands had a 28% higher probability of dying before their fifth birthday than children living in lowlands. This difference may be related to the greater availability of health facilities in lowland communities.

Maternal education was negatively associated with post-neonatal, and child mortality but only weakly associated with neonatal mortality. For example, the infant mortality rate for children whose mother had no education was 89 deaths per 1000 live births, compared with 69 deaths per 1000 live births for children whose mothers had secondary or higher education. In contrast, the neonatal mortality rate for children whose mother had no education was 43 deaths per 1000 live births, compared with 41 deaths per 1000 live births for children whose mothers have secondary or higher education. This small difference in neonatal mortality across maternal education categories most probably reflects the high rates of women's malnutrition (see Chapter 13) and the limited access to antenatal care and delivery services (see Chapter 10), even amongst educated women.

Table 9.2 Early childhood mortality rates by socioeconomic characteristics

Neonatal, post neonatal, child, and under-five deaths per 1000 live births for the 10-year period preceding the survey (1994-2003), by socio-economic characteristics, Timor Leste 2003.

Background characteristics	Neonatal mortality (NN)[1]	Post-neonatal mortality (PMN)[2]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Region					
Urban	35	37	72	14	86
Rural East	33	44	77	26	103
Rural Central	48	42	90	27	117
Rural West	49	39	88	34	122
Ecological zones					
Highlands	51	55	106	24	130
Lowlands	40	38	77	25	102
Maternal education					
No Education	43	46	89	30	119
Some Primary	39	40	79	27	106
Completed primary	40	37	77	17	93
Some Secondary+	41	28	69	12	81
Household wealth index					
Poorest	44	46	89	32	121
Middle	41	38	78	23	101
Richest	38	35	73	13	86
Timor Leste	42	41	82	25	107

[1] Adjusted for heaping of age-of-death at 1 month: unadjusted value for Timor Leste is 26 deaths per 1000 live births.

[2] Computed as the difference between the infant and neonatal mortality rates

As expected, infant and child mortality declines with increasing household wealth. For example, children in wealthier households have an infant mortality rate of 73 deaths per 1000 live births and an under-five mortality rate of 86 deaths per 1000 live births; the corresponding rates for children in the poorest households are 89 and 121 per 1000 live births, which are 20% and 40% higher respectively.

9.4 Mortality differentials - demographic characteristics

Table 9.3 presents childhood mortality rates by demographic characteristics. The table shows that rates for males are higher than for females for all indicators except for child mortality (4q1). For example, the neonatal and infant mortality rates for males are 15% and 20% higher respectively than the rates for females, but the child mortality rate for males is 20% higher than for females.

No association was observed between the mother's age at childbirth and the child mortality rates. However, birth order did exhibit a U-shaped relationship to infant and child deaths, with first births and high-order births having elevated infant and under-five mortality rates. The higher mortality rates of the first births might be related to the younger age of the mother and the associated pregnancy and delivery complications, while the increase with higher birth orders may reflect more competition of the child for the mother's time and care, and for appropriate feeding.

Table 9.3 Early childhood mortality rates by demographic characteristics

Neonatal, post neonatal, child, and under-five mortality rates for the 10-year period preceding the survey (1994-2003), by demographic characteristics, Timor Leste 2003

Demographic characteristics	Neonatal mortality (NN)[1]	Post-neonatal mortality (PMN)[2]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Child's sex					
Male	45	45	90	23	113
Female	39	36	75	27	102
Mother's age at birth[3]					
<20	25	24	49	19	69
20-29	41	42	84	21	105
30-39	44	41	85	24	109
40-49	36	39	75	30	105
Birth order					
1	57	40	97	21	118
2-3.	40	39	79	21	100
4-6.	36	41	77	34	111
7+	41	47	87	17	104
Previous birth intervals					
<2	61	52	112	30	141
2 years	31	41	71	26	97
3 years	28	25	54	11	65
4+ years	12	17	29	18	46
Birth size[4]					
Small or very small	36	22	58	na	na
Average or larger	25	21	47	na	na
Don't know[5]	37	49	86	na	na
Antenatal care/delivery assistance[4]					
Both ANC and DA	12	8	20	na	na
ANC only	14	13	27	na	na
DA only	35	28	63	na	na
Neither ANC nor delivery	35	29	65	na	na

[1] Adjusted for heaping of age-of-death at 1 month

[2] Computed as the difference between the infant and neonatal mortality rates

[3] Women aged < 20 years only account for 0.9% of the births

[4] Calculated only for births in the 5 years preceding the survey

[5] 6.7% of women could not categorise the birth size of their infant

The timing of successive births has a strong effect on child survival and childhood mortality rates decline as the birth interval increases. All child mortality indicators are sharply higher for birth intervals less than two years. For example, the infant mortality rate for children born less than two years after a previous birth is nearly four times higher than the rate for children born after an interval of four or more years (112 compared with 29 deaths per 1000 live births). Thus it appears the length of the birth interval directly affects the mortality risk.

Another important determinant of child survival is birth weight. Low birth weight infants (under 2500 grams) have a substantially increased risk of mortality. Because most babies in Timor Leste are not weighed at birth, mothers in the TL 2003 DHS were asked about

the child's size at birth. Although birth size is a subjective measure it has been shown to correlate with the birth weight. Table 9.3 revealed higher mortality levels for children perceived by their mother to have been small or very small at birth in comparison to other children. For example, the neonatal mortality rates for infants who were thought to be small or very small at birth by their mothers were 40% higher than for infants who were reported to be average or larger at birth (36 compared with 25 deaths per 1000 live births). Interestingly, the highest mortality was for children whose mothers could not identify their infant's birth size.

The relationship between infant and child mortality and the type of pregnancy and delivery care is also presented in Table 9.3. Neonatal and infant mortality rates are much lower for women who received any antenatal care, in comparison to women who received only delivery assistance or no pregnancy care or delivery assistance.

9.5 Perinatal mortality

The ever-married women aged 15 to 49 years interviewed in the TL 2003 DHS were asked to report all pregnancy losses and the duration of the pregnancy at time of loss in the five years prior to the survey. In this report, perinatal deaths include pregnancy losses occurring after seven completed months of gestation (stillbirths) and deaths to live births within the first thirty days of life (neonatal deaths). The perinatal mortality rate is the sum of the number of stillbirths and neonatal deaths divided by the number of pregnancies of seven or more months duration. Usually only early neonatal deaths (deaths within the first seven days of life) are included in the estimate of perinatal mortality but as noted in the section on data quality there is significant heaping of age-of-death at one month in the TL 2003 DHS birth history data. It is not possible to determine when in the neonatal period the deaths heaped at one month occurred. Based on the distribution of neonatal deaths where the mother reported the age of death in days (Table D 6, Appendix D) approximately 77% of these deaths were reported to occur within the first seven days of life. A similar percentage of early neonatal deaths was reported in the Indonesian 2002/2003 DHS and the India 1998/1999 NFHS. Therefore the approach of using all neonatal deaths will overestimate the perinatal mortality rate by approximately 15% but excluding the neonatal deaths would underestimate the perinatal mortality rate by approximately 75 to 80%.

The perinatal mortality rate is a useful indicator of the state of delivery services, in terms of both the use of these services and the capacity of the services to ensure the delivery of a healthy baby. The results reported in Chapter 10 indicate a low usage of antenatal care services (14% received an adequate number of ANC examinations at appropriate times) and most women delivered at home (90%) with untrained birth attendants (81%). The results reported in Chapter 13 indicate a high level of malnutrition (38% of women with body mass index <18.5 kg/m^2) and anaemia (32% of non-pregnant and 37% of pregnant women with Hb <120 g/L) amongst ever-married women of aged 15 to 49 years in Timor

Leste. The combination of these findings suggests that perinatal mortality rates should be high in Timor Leste.

Table 9.4 Perinatal mortality by background characteristics

Number of stillbirth and neonatal deaths, and the perinatal mortality rate for the five-year period preceding the survey, by background characteristics, Timor Leste, 2003

Background characteristics	Number of stillbirths[1]	Number of neonatal deaths[2]	Perinatal mortality rate[3]	Number of pregnancies of ≥ 7 months duration
Mother's age at birth				
<20	(0)	(4)	(25)	161
20-29	25	79	43	2394
30-39	23	95	46	2551
40-49	6	15	32	666
Previous pregnancy interval in months				
First pregnancy	26	53	90	879
<15	5	10	56	266
15-26	10	61	41	1728
27-38	7	43	33	1512
39+	6	24	22	1387
Region				
Urban	12	42	40	1342
Rural East	12	33	31	1469
Rural Central	21	78	51	1959
Rural West	9	40	49	1002
Ecological zones				
Highlands	14	34	48	997
Lowlands	40	158	41	4775
Education				
No Education	24	95	44	2677
Some Primary	10	29	35	1101
Completed primary	5	17	45	491
Some Secondary or more	15	51	44	1504
Household wealth index				
Poorest	27	86	45	2520
Middle	21	72	41	2246
Richest	6	35	41	1005
Total	54	192	43	5772

[1] Stillbirths are fatal deaths in pregnancies lasting ≥ 7 months

[2] Neonatal deaths are deaths at age 0-30 days among live-born children

[3] The sum of the number of stillbirths & neonatal deaths divided by the number of pregnancies of ≥ 7 months duration per 1,000

Table 9.4 shows there were 54 stillbirths and 192 neonatal deaths reported in the survey, resulting in a perinatal mortality rate in Timor Leste of 43 per 1000 pregnancies. As with other childhood mortality rates, no clear association was observed between the mother's age at childbirth and the perinatal mortality rates. However, duration of the previous pregnancy interval did exhibit a strong influence on the perinatal mortality rate. First pregnancies had the highest perinatal mortality rate perhaps reflecting the higher percentage of younger women, a group with high rates of malnutrition (see Table 13.10 in Chapter 13) and increased likelihood of pregnancy complications. There was a

progressive decline in perinatal mortality from 56 pregnancy losses or neonatal deaths per 1000 pregnancies for women falling pregnant within 15 months of a previous birth, to 22 pregnancy losses or neonatal deaths per 1000 pregnancies for women falling pregnant greater than 39 months from the previous birth.

As with other childhood mortality indicators, the lowest perinatal mortality rates were found in the rural east and urban regions while the highest rates were in the rural central and rural west regions. Also the perinatal mortality rates for pregnancies of women from the highlands are 17% higher than the rates for women from the lowlands. This difference might be explained by the lower levels of use of antenatal care and delivery services by women from the highlands in comparison to the lowlands. For example, 53% of highland women received no antenatal care for pregnancies during the five years prior to the survey, in comparison to 34% for women from lowlands (Table 10.1, Chapter 10). Similarly, 97% of women from highlands delivered at home (Table 10.7, Chapter 10) with less than 10% of the deliveries being assisted by a medically qualified birth attendant (Table 10.8, Chapter 10), while the corresponding figures for women from the lowlands were 89% and 19% respectively.

The women's level of education had little effect on the perinatal mortality rate, with the lowest rate for women with some primary schooling. Women from the poorest households had higher perinatal mortality rates than women from wealthier households.

9.6 High-risk fertility behaviour

Maternal fertility patterns have a strong effect on child survival, with chances of survival being lower for children born to mothers who are too young or too old, or if the birth interval is too short, or if the child is of high birth order. These child survival risk factors are all avoidable at relatively low cost.

As can be seen from Table 9.5, the following criteria were used in the analysis of these fertility-related, child survival risk factors. Women are classified as too young if less than 18 years, and too old if over 34 years at the time of delivery. Birth intervals less than 24 months after the preceding birth are regarded as too short, and birth orders of four or higher are regarded as too high. First births are commonly associated with high mortality risk even if there occur in women who are between 18 and 34 years old. However, they are classified as an unavoidable risk if occurring in women aged 18 to 34 years; otherwise they have been classified as high risk based on the maternal age limits.

The results of this analysis of high-risk fertility behaviours, related to child survival, are presented in Table 9.5. The table consists of three columns: the first column shows the percentage of births occurring during the five-year period preceding the survey according to high mortality risk groups; the second column shows the ratio of the proportion dead among births in a specific high-risk group to the proportion dead among births "not in any high-risk" group; while the third column presents the distribution of currently married women according to increased risk group if they were to conceive at the time of

the survey. In the third column, all women interviewed were included even though many were protected from conception through the use of family planning, postpartum insusceptibility, or prolonged abstinence. The exception was sterilized women, who were included in the 'not in any high-risk' group.

Table 9.5 High risk fertility behaviour

Percent distribution of children born in the five years preceding the survey by elevated mortality risk groups and the risk ratio, and percent distribution of currently married women by risk group if they were to conceive a child at the time of the survey, Timor Leste 2003

Risk group	Births in the 5 years preceding the survey		Percentage of currently married women[2]
	Percentage of Births	Risk Ratio[1]	
Not in any high risk group	28.2	1.00	26.1[a]
Unavoidable risk group			
First order births between ages 18 and 35years	12.5	1.56	14.7
Single high-risk group			
Mother's age < 18	0.0	n/a	0.0
Mother's age > 34	2.9	1.23	3.5
Birth interval < 24 months	0.4	0.74	0.3
Birth order > 3	19.4	1.13	18.6
Subtotal	22.7	1.14	22.4
Multiple high-risk group			
Mother's age < 18 & birth interval < 24 months[3]	0.4	n/a	0.5
Mother's age > 34 & birth interval < 24 months	0.7	1.91	0.6
Mother's age > 34 & birth order > 3	20.5	0.76	23.8
Mother's age > 34 & birth interval < 24 months & birth order > 3	6.0	2.04	4.9
Birth interval < 24 months & birth order > 3	9.1	1.41	6.9
Subtotal	36.7	1.15	36.8
In any avoidable high-risk group	59.3	1.14	59.1
Total	100.0	n/a	100.0
Number of births	5718	n/a	4177

[1] Risk ratio is the ratio of the proportion dead among births in a specific high-risk group to the proportion dead among births NOT in any high-risk group

n/a = Not applicable

[2] Women are assigned to risk groups according to the status they would have at the birth of a child if they were to conceive at the time of the survey: current age less than 17 years and 3 months or older than 34 years and 2 months, latest birth less than 15 months ago, or latest birth being of order 3 or higher.

[3] Includes the groups mother's age < 18 and birth order > 3

[a] Includes sterilized women

The analysis revealed that 59% of births in Timor Leste had an elevated mortality risk that was avoidable, 13% had an elevated risk as a first pregnancy that was unavoidable, and 28% of the births had no increased risk. The births in the elevated risk category can be divided into those births for which there is a single high risk factor or for which there are multiple high risk factors. Among those births with increased risk, 23% fell into the group with a single risk, while 37% fell into one of the multiple risks groups that combine maternal age, birth order or birth interval risk groups.

The single high-risk group with the highest percentage of births was for mothers with a birth order greater than three (19%). The increased mortality risk (or relative risk) for this group in comparison to the births with no elevated risk can be seen from the second column and indicated a 13% increased mortality risk. Mortality risks were most elevated for the single-risk groups of mothers >34 years and birth order >3, with 3% and 19% of births falling into these categories, respectively.

Among the multiple high-risk groups, births of mothers aged >34 years and with birth order >3 was the largest group (21%). Surprisingly this group did not have an elevated risk in comparison to the births in the group with no elevated risk. Among the multiple high-risk groups there were three groups with substantially higher risk (Mother's age >34 and birth interval <24 months and birth order >3; Mother's age >34 and birth interval <24 months; Birth interval <24 months and birth order >3), and all included the risk factor of birth interval <24 months. These groups accounted for approximately 16% of the births and were associated with an increased mortality risk ranging from 41% to 104% in comparison to births not in any high-risk group.

An examination of the third column reveals that 59% of the currently married women were at risk of conceiving a child with an elevated risk of dying; 22% because of a single high-risk factor; and 37% because of multiple high-risk factors. The most common single high-risk is birth order >3 (18% of currently married women), and the most common multiple high risk factor is mother's age >34 and birth order >3 (24% of currently married women).

Chapter 10
Maternal Health

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10 Maternal Health

This chapter presents the results from several different areas that are of importance to maternal health including antenatal care, delivery and postnatal care, complications during pregnancy and delivery and finally, problems women have in accessing health care.

The information presented in this chapter will aid in planning improvements to pregnancy, delivery and postnatal health care services. The tables assist in the identification of sub groups of women who do not utilize, or are unable to access, these services. Antenatal care services are described in terms of the type of provider, the number of antenatal care checks, the timing for the first exam, and the distribution of checks throughout pregnancy, as well as the content and information provided to women using these services. Delivery services are described in terms of where the delivery took place, which provider or person assisted and the type of delivery. Postnatal care is described for those women who did not deliver in a health care facility. Findings are also presented about records or birth weight or the mother's perception of the baby's size at birth.

The information in this chapter will help provide an evidence basis for guiding policy and programmatic decisions about safe motherhood programs in Timor Leste.

10.1 Antenatal care

10.1.1 Antenatal care coverage

Table 10.1 shows the percent distribution of women who a had a live birth in the five years preceding the survey by the type of antenatal care provider during the most recent birth according to background characteristics. Antenatal care (ANC) in this case has been defined as pregnancy related health care provided by a medical professional (i.e. general practitioner, obstetrician, gynaecologist, nurse, or midwife).

The table shows that 3338 of the 4245 women interviewed had a live birth in the five years preceding the survey. Sixty one percent of these mothers received antenatal care from a medical professional: 56% received care from a nurse or midwife, 2% received care from an obstetrician and 2% received care from a general practitioner.

The table also shows that more than one third of women (37%), who had a live birth in the last five years, did not receive any antenatal care. The proportion of women not receiving ANC was much higher in rural than in urban areas.

Women 35 years and older were more likely to have gone without ANC than younger women, as were mothers of higher birth order. Women in urban areas were much more likely to receive ANC, and tended to receive care from a nurse or midwife. Women from

all rural areas were much less likely to receive ANC; however those that did were more likely to receive care from a nurse or midwife. Women from the highlands were less likely than women from the lowlands to receive ANC.

Table 10.1 Antenatal care

Percent distribution of women who had a live birth in the five years preceding the survey by antenatal care (ANC) provider during pregnancy for the most recent birth, according to background characteristics, Timor Leste 2003

Background characteristic	General Pract-itioner	Obste-trician	Nurse /Midwife	Traditional birth attendant	No one	Missing	Total	Number of women
Mother's age at birth								
15-19	2.3	0.0	61.6	0.8	34.7	0.6	100.0	119
20-34	1.8	2.5	59.3	1.3	33.6	1.4	100.0	2122
35-49	1.5	2.5	50.1	1.2	43.0	1.6	100.0	1097
Birth Order								
1	2.2	3.6	59.9	0.5	32.5	1.2	100.0	345
2-3	2.0	2.6	61.8	1.7	30.3	1.7	100.0	988
4-5	1.3	2.5	58.9	1.2	35.2	0.9	100.0	968
6+	1.7	1.9	47.8	1.1	45.7	1.8	100.0	1037
Region								
Urban	4.4	7.6	66.5	1.0	18.9	1.6	100.0	756
Rural East	1.7	2.0	52.6	1.6	40.4	1.7	100.0	861
Rural Central	0.7	0.5	53.1	0.7	43.8	1.1	100.0	1113
Rural West	0.4	0.2	55.2	1.9	40.9	1.4	100.0	608
Ecological zones								
Highlands	0.0	0.8	45.5	0.0	52.7	0.9	100.0	544
Lowlands	2.1	2.8	58.5	1.5	33.6	1.5	100.0	2794
Mother's education								
No education	1.4	1.2	46.3	1.6	47.9	1.7	100.0	1598
Some primary	1.6	1.2	59.2	1.9	34.4	1.7	100.0	628
Completed primary	1.1	3.0	72.4	0.3	22.6	0.6	100.0	266
Some secondary or more	2.8	5.5	68.2	0.4	21.9	1.1	100.0	846
Household wealth index								
Poorest	0.9	0.2	45.4	1.5	50.6	1.4	100.0	1427
Middle	1.5	2.2	60.5	1.4	33.1	1.3	100.0	1323
Richest	4.4	8.5	73.8	0.3	11.2	1.8	100.0	588
Total	1.7	2.4	56.4	1.2	36.7	1.4	100.0	3338

Increasing levels of education corresponded to an increasing use of ANC. Women with some secondary or more education were more likely to receive ANC from a general practitioner or obstetrician than women with less education. A slightly higher proportion of women with lower education accessed traditional birth attendants for ANC than women with higher levels of education.

There was a relationship between economic status and receiving ANC. Fifty one percent of women in the poorest household wealth index category received no ANC, while only 11% of women in the richest household wealth index category received no ANC. The type of ANC received according to economic status followed the same pattern as that of

education: wealthier women were more likely to receive ANC from a general practitioner or obstetrician, while poorer women were more likely to receive ANC from a traditional birth attendant.

10.1.2 Place of antenatal care

Table 10.2 shows the percent distribution of women who had a live birth in the five years preceding the survey and received antenatal care by the place antenatal care was obtained during the most recent pregnancy. The places of antenatal care are divided into public and private sector facilities, and the majority of women, 86%, used public sector facilities. Health centres or health posts were the most frequently used public sector facilities with 49% of women using them for ANC. Hospitals were the next most frequently used with 36% of women accessing this facility. Ten percent of women used private sector facilities with similar usage of private hospitals (5%) and private clinics (4%). In both the public and private sectors, older women were less likely to go to hospitals, and more likely to use health centres or private clinics. There was no pattern relating birth order to place of antenatal care.

There was a striking difference between the places of ANC chosen by women from urban areas compared to women from rural areas. Sixty nine percent of women in urban areas used public hospitals, while only 26% of women in the rural east, 17% of women in the rural central and 28% of women in the rural west used public hospitals. The reverse pattern occurred for the choice of the health centres in the public sector. Ten percent of urban women attended health centres for ANC, while 65% of rural women went to health centres or health posts. Urban women had a higher level of usage of the private sector facilities for antenatal care than rural women and the pattern of usage between hospitals or health centres differed in each stratum. These patterns of use of public versus private facilities are most likely a reflection of the type of facilities accessible to the women in different geographic areas.

Having some secondary education or more influenced the place of ANC, especially for women using public sector services. Women with some secondary education or more were more likely to go to the public hospitals than women with less education. Women with less education were more likely to use health centres. This pattern was not seen in the choice between hospitals and private clinics in the private sector. While the percentage was small (2%), a greater proportion of uneducated women used mobile clinics than more educated women.

Higher economic status was associated with a greater chance of using a public hospital, while lower economic status was associated with a greater chance of using a public health centre. While the percentage was small (2%), a greater proportion of poorer women used mobile clinics than better off women. There was no relationship between economic status and choice of ANC facility in the private sector.

Table 10.2 Antenatal care: Place of care by background characteristics

Percent distribution of women who had a live birth in the five years preceding the survey and receive antenatal care by place of antenatal care during pregnancy for the most recent birth, according to background characteristics, Timor Leste 2003

Background characteristic	Public sector			Private sector					Total	No. of women
	Hospital	Health centre or health post	Mobile Clinic/ Other	Hospital	Private Clinic	Doctor's practice	Midwife/ Other	Other		
Mother's age at birth										
15-19	43.7	42.8	0.0	5.9	1.2	0.0	3.0	0.0	100.0	77
20-34	36.8	48.0	1.0	4.7	3.9	0.3	0.8	0.5	100.0	1379
35-49	33.7	50.7	0.6	4.2	3.7	0.0	1.1	0.6	100.0	607
Birth Order										
1	44.1	43.2	1.2	4.1	2.0	0.0	2.5	0.0	100.0	229
2-3	35.7	48.7	0.8	4.7	4.0	0.6	0.3	0.9	100.0	672
4-5	33.3	51.8	1.1	4.2	3.9	0.0	1.2	0.1	100.0	618
6+	36.6	47.1	0.4	5.2	4.0	0.0	0.9	0.7	100.0	544
Region										
Urban	68.9	9.5	0.0	10.2	7.3	0.5	0.5	0.2	100.0	601
Rural East	25.8	65.4	0.2	2.0	0.8	0.2	1.4	0.8	100.0	499
Rural Central	17.4	64.6	2.3	3.8	4.5	0.0	1.4	0.5	100.0	613
Rural West	27.5	63.9	0.6	0.2	0.4	0.0	0.6	0.8	100.0	350
Ecological zones										
Highlands	20.3	61.4	0.8	2.4	8.9	0.0	0.5	0.5	100.0	252
Lowlands	38.4	46.8	0.8	4.9	3.0	0.2	1.0	0.5	100.0	1812
Mother's education										
No education	29.3	56.3	1.4	3.2	2.5	0.0	1.1	0.6	100.0	806
Some primary	33.1	51.5	1.0	3.9	3.5	0.2	1.6	0.7	100.0	402
Completed primary	29.5	55.6	0.0	8.3	2.9	0.0	0.7	0.4	100.0	204
Some secondary or more	48.7	35.0	0.2	5.7	5.7	0.4	0.5	0.4	100.0	651
Household wealth index										
Poorest	19.2	65.6	2.0	3.2	2.5	0.0	1.1	0.5	100.0	685
Middle	35.5	52.7	0.4	2.6	2.9	0.1	1.1	0.9	100.0	867
Richest	60.0	18.8	0.0	10.0	6.7	0.5	0.5	0.0	100.0	512
Total	36.2	48.6	0.8	4.6	3.7	0.2	1.0	0.5	100.0	2064

10.1.3 Number of antenatal care visits and timing of first visit

It is recommended that pregnant women have at least four antenatal care visits during pregnancy, according to the following schedule: at least one visit in the first trimester, at least one visit in the second trimester, and at least two visits in the third trimester.

Table 10.3 shows that 13.9% of mothers in Timor Leste met the recommended schedule for number and timing of ANC visits. Urban women were much more likely to have an adequate number and timing of ANC visits than rural women. The lowest percentage of women receiving adequate levels of ANC was in the rural central region.

Also revealed in Table 10.3 and Figure 10.1 (A) is that less than one in four women had their first antenatal care visit during the first trimester as recommended, i.e. when they were less than four months pregnant. As for other indicators of the adequacy of ANC, there was a higher percentage of urban than rural women making their first ANC visit in the first trimester. The median gestation in months of the first ANC visit of the women receiving ANC was four months. This indicates that less than 50% of the women who received ANC had their first visit in the first trimester. The median age of first ANC visit was highest in the rural west region.

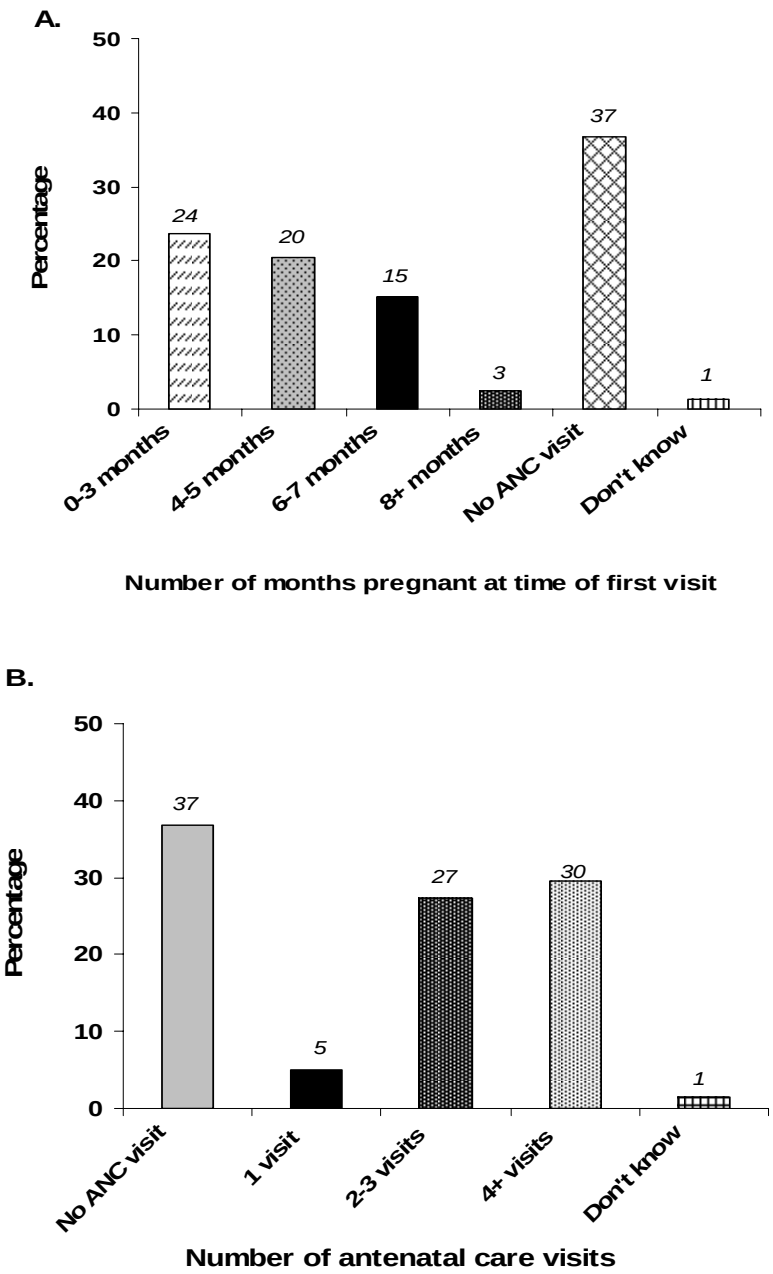
Table 10.3 Number of antenatal care visits and timing of first visit
Percent distribution of women who had a live birth in the five years preceding the survey by number of antenatal care (ANC) visits for the most recent birth, and by number of months pregnant

Number and timing of ANC visits	Region				Total
	Urban	Rural East	Rural Central	Rural West	
Number of ANC visits					
None	18.9	40.4	43.8	41.0	36.8
1	4.2	4.7	5.2	5.8	5.0
2-3	29.8	27.5	27.2	23.8	27.3
4+	45.7	26.7	22.3	26.9	29.6
Don't know/missing	1.3	0.7	1.5	2.5	1.4
Total	100.0	100.0	100.0	100.0	100.0
Adequate number & timing of ANC visits*	24.0	12.7	8.5	12.9	13.9
Number of months pregnant at first ANC visit					
No antenatal care	18.9	40.4	43.8	41.0	36.8
<4	35.7	26.6	17.8	15.9	23.8
4-5	27.3	15.8	18.3	22.3	20.4
6-7	14.6	13.2	16.3	16.6	15.2
8+	2.5	3.2	1.7	2.8	2.5
Don't know/missing	1.0	0.8	2.1	1.4	1.4
Total	100.0	100.0	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	4.0	4.0	4.0	5.0	4.0
Number of women	756	861	1113	608	3338

* At least one visit in first trimester, at least one in second trimester, and at least two visits in third trimester

Table 10.3 and Figure 10.1 (B) show that only 30% of women had the recommended four or more ANC checks with a trained provider and that an even higher proportion of women had no ANC. Urban women had considerably more ANC visits than rural women.

Figure 10.1 Number (A) and Timing (B) of Antenatal Care Visits



10.1.4 Components of antenatal care

In any antenatal care visit, a woman should be informed of the signs of the pregnancy complications, have her weight measured, and give blood and urine samples. Table 10.4 shows that the services most often received by women in Timor Leste during antenatal care visits were abdominal examination (54%), followed closely by having weight measured (54%). Just over a third of the women had their blood pressure taken, and one quarter were informed of signs of pregnancy complications. In general women in a higher household wealth index, with a higher level of education, and living in an urban area had a higher chance of receiving a more comprehensive ANC service than other women. The women who participated in the TL 2003 DHS were asked whether they received iron tablets during the course of their pregnancy. Just under half of the women interviewed (47%) said that they received iron tablets. In general, women in a higher household wealth index, with more education, living in urban areas, and with a lower birth order were most likely to receive the iron tablets.

Table 10.4 Components of antenatal care

Among women with a live birth in the five years preceding the survey who received antenatal care for the most recent birth, the percentage who received specific antenatal care services and percentage of women with a live birth in the five years preceding the survey who received iron tablets for the most recent birth, according to background characteristics, Timor Leste 2003

Background characteristic	Content of care among women who received antenatal care							Percent of women who received iron tablets	Number of Women
	Informed of signs of pregnancy complica-tions	Weight measured	Height measured	Blood pressure measured	Urine sample taken	Blood sample taken	Abdom-inal examin-ation		
Mother's age at birth									
15-19	28.0	56.4	12.2	32.3	9.1	11.2	56.8	48.7	119
20-34	26.1	56.8	20.9	36.6	12.1	15.8	57.9	50.8	2122
35-49	21.3	47.3	17.9	29.9	10.8	13.4	47.4	40.7	1097
Birth Order									
1	27.0	56.7	19.2	37.0	12.2	15.7	62.2	52.4	345
2-3	28.1	59.5	21.2	38.3	13.2	15.7	60.5	52.9	988
4-5	25.2	56.0	21.8	34.9	11.4	15.6	54.6	50.1	968
6+	19.9	44.9	16.0	28.9	9.9	13.0	45.8	38.0	1037
Region									
Urban	33.3	73.3	26.4	51.3	24.1	26.1	73.5	56.5	756
Rural East	25.8	50.2	21.2	36.0	5.5	11.5	49.4	48.9	861
Rural Central	20.9	45.8	13.3	24.6	8.3	10.2	45.0	40.1	1113
Rural West	18.8	48.6	20.4	30.5	10.3	14.0	53.3	47.3	608
Ecological zones									
Highlands	19.5	41.3	9.0	20.7	8.2	9.8	40.4	31.2	544
Lowlands	25.6	56.1	21.7	36.9	12.2	15.8	57.1	50.5	2794
Maternal education									
No education	18.6	42.0	14.8	25.2	8.5	11.6	42.6	36.3	1598
Some primary	25.3	53.4	21.0	37.1	9.4	14.6	55.1	52.5	628
Completed primary	34.5	69.7	25.3	43.7	18.5	22.6	70.9	60.1	266
Some secondary or more	32.3	70.8	26.6	46.2	16.7	18.6	71.0	60.5	846
Household wealth index									
Poorest	17.0	39.2	14.2	24.1	4.1	7.9	39.9	37.0	1427
Middle	26.9	57.4	20.2	35.3	12.4	16.3	57.9	51.6	1323
Richest	37.9	80.4	31.6	56.6	27.8	28.4	81.6	63.3	588
Total	24.6	53.7	19.6	34.3	11.6	14.8	54.4	47.4	3338

10.1.5 Tetanus toxoid injections

It is recommended that women receive two tetanus toxoid (TT) injections during the first pregnancy. Booster injections are recommended once during each subsequent pregnancy to maintain full protection.

Table 10.5 shows that close to half the women who had a live birth in the five years preceding the survey did not receive a tetanus toxoid injection. However, a substantial number, 43%, received two or more injections. Those who did not receive an injection tended to be older, to have delivered a child of higher birth order, come from rural areas, have little or no education, and be from a lower economic status.

Table 10.5 Tetanus toxoid injections

Percent distribution of women who had a live birth in the five years preceding the survey by number of tetanus toxoid injections received during pregnancy for the most recent birth, according to background characteristics, Timor Leste 2003

Background characteristic	None	One injection	Two or more injections	Don't know/missing	Total	Number of women
Mother's age at birth						
15-19	46.8	8.6	44.5	0.0	100.0	119
20-34	45.0	7.7	46.0	1.3	100.0	2122
35-49	55.9	7.6	35.6	0.9	100.0	1097
Birth Order						
1	43.3	7.3	48.9	0.5	100.0	345
2-3	41.2	8.0	48.8	1.9	100.0	988
4-5	48.8	8.0	42.5	0.7	100.0	968
6+	57.3	7.3	34.4	1.0	100.0	1037
Region						
Urban	33.1	9.3	57.0	0.6	100.0	756
Rural East	48.7	6.3	44.0	1.0	100.0	861
Rural Central	58.2	6.6	33.7	1.5	100.0	1113
Rural West	50.5	9.6	38.5	1.4	100.0	608
Ecological zones						
Highlands	66.2	4.7	28.5	0.6	100.0	544
Lowlands	45.2	8.3	45.2	1.3	100.0	2794
Mother's education						
No education	59.9	6.5	32.1	1.4	100.0	1598
Some primary	46.8	7.8	44.1	1.4	100.0	628
Completed primary	33.5	7.8	57.8	0.9	100.0	266
Some secondary or more	33.5	9.8	56.1	0.6	100.0	846
Household wealth index						
Poorest	61.0	6.6	31.4	1.0	100.0	1427
Middle	45.3	7.7	45.5	1.6	100.0	1323
Richest	26.3	10.3	62.6	0.7	100.0	588
Total	48.7	7.7	42.5	1.2	100.0	3338

10.1.6 Complications of pregnancy

To identify complications associated with pregnancy, respondents were asked about certain signs and symptoms they had experienced in association with their last birth. Table 10.6 shows that over three quarters of women reported no complications during pregnancy. Premature labour was the most likely complication to be reported. Fever (8%) and convulsion or fainting (6%) were the next most likely complications. There was no relationship between the number of ANC visits and the likelihood of reporting any of the complications. Having reported a complication made it more likely that the women had her delivery assisted by a health care provider compared to those who did not have any complications. They were most likely to have a delivery assisted by a health provider if the complication they reported was a fever.

Table 10.6 Complications of pregnancy

Percentage of last births in the five years preceding the survey for which the mother had complications associated with the pregnancy, by type of complications according to maternity care indicators, Timor Leste 2003

Background characteristic	Premature labour	Excessive bleeding	Fever	Convulsions / fainting	Other	None	Number of births
Number of ANC visits							
None	11.9	1.9	4.2	5.9	6.5	81.5	1081
1	15.2	2.0	8.6	7.6	10.9	72.3	166
2-3	19.0	2.3	11.7	4.8	5.9	75.1	910
4+	16.8	2.3	8.0	8.6	6.1	75.7	987
Missing	6.4	1.5	1.9	3.4	0.0	51.4	194
Actions taken for complications							
Nothing	26.3	23.0	16.6	43.4	40.9	0.0	359
Rest	65.9	57.0	69.3	48.0	53.6	0.0	766
Take medication	44.3	53.5	57.1	35.2	42.5	0.0	862
Take herbs	5.7	2.3	0.6	2.1	5.2	0.0	55
See TBA	(3.3)	(7.3)	(1.5)	(4.8)	(1.8)	(0.0)	40
See midwife	24.9	31.4	38.8	30.7	13.2	0.0	303
See a doctor	(1.7)	(9.0)	(2.4)	(2.5)	(3.3)	(0.0)	31
Went to health care facility	11.9	14.3	17.2	17.6	11.1	0.0	155
Don't know / Other	(0.9)	(4.8)	(0.5)	(1.6)	(1.3)	(0.0)	11
Baby died within 1 month of birth	(14.0)	(0.0)	(14.0)	(0.0)	(3.6)	(73.2)	38
Delivery assisted by health provider	27.4	3.1	20.7	7.9	4.3	63.7	611
Delivery by C-section	(29.0)	(0.0)	(0.0)	(8.3)	(12.5)	(71.0)	11
Total	15.4	2.1	7.6	6.4	6.4	77.2	3338

( ) Figures in parentheses are based on less than 50 cases

10.2 Delivery

10.2.1 Place of delivery

Table 10.7 shows the percent distribution of live births in the five years preceding the survey according to the background characteristics of the mother. Ninety percent of live births in the five years preceding the survey occurred at the home of the mother. Just under 10% of births occurred in the public sector health facility, and 1% occurred in the private sector health facility (see also Figure 10.2).

Table 10.7 Place of delivery

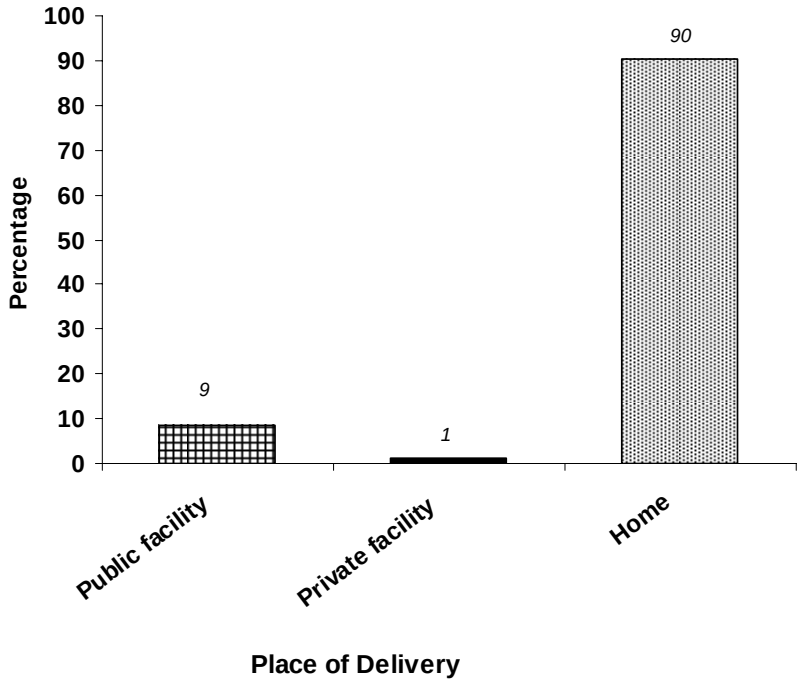
Percent distribution of live births in the five years preceding the survey by place of delivery, according to background characteristics, Timor Leste 2003

Background characteristic	Health facility		Home	Missing	Total	Number of births
	Public sector	Private sector				
Mother's age at birth						
15-19	13.2	1.5	85.3	0.0	100.0	119
20-34	9.3	1.4	89.3	0.0	100.0	2122
35-49	6.8	0.7	92.5	0.0	100.0	1097
Birth Order						
1	17.8	2.2	80.0	0.0	100.0	345
2-3	10.3	1.2	88.5	0.0	100.0	988
4-5	5.9	1.2	92.9	0.0	100.0	968
6+	6.5	0.8	92.7	0.0	100.0	1037
Region						
Urban	23.2	3.8	73.1	0.0	100.0	756
Rural East	5.6	0.6	93.8	0.0	100.0	861
Rural Central	3.5	0.5	96.0	0.0	100.0	1113
Rural West	4.3	0.0	95.7	0.0	100.0	608
Ecological zones						
Highlands	3.1	0.0	96.9	0.0	100.0	544
Lowlands	9.7	1.4	88.9	0.0	100.0	2794
Mother's education						
No education	3.8	0.4	95.8	0.0	100.0	1598
Some primary	7.4	1.0	91.6	0.0	100.0	628
Completed primary	7.8	2.3	89.9	0.0	100.0	266
Some secondary or more	18.9	2.5	78.7	0.0	100.0	846
Antenatal care visits						
None	1.2	0.2	98.6	0.0	100.0	1078
1	6.5	0.0	93.5	0.0	100.0	166
2-3.	9.5	1.5	88.9	0.0	100.0	910
4+	17.0	2.3	80.6	0.0	100.0	986
Don't know/missing	4.7	0.0	95.3	0.0	100.0	194
Household wealth index						
Poorest	2.4	0.2	97.4	0.0	100.0	1427
Middle	7.1	0.7	92.2	0.0	100.0	1323
Richest	27.3	4.5	68.2	0.0	100.0	588
Total	8.6	1.2	90.2	0.0	100.0	3338

Home births were more likely to occur with women from the oldest age group, with births of higher order, in rural areas, and with women of little or no education. Almost all women who had not received any ANC, delivered at home. Similarly, almost all women from the poorest household wealth index category delivered at home.

Of the women using public sector facilities to deliver babies, the largest proportions came from the youngest age group, were delivering babies of low birth order, came from urban areas and tended to have some secondary education or more. They also were the most likely to have received ANC, and were more likely to be from the richest household wealth index.

Figure 10.2 Place of Delivery



10.2.2 Assistance during delivery

Table 10.8 shows the distribution of births by the most qualified person providing assistance during delivery. This is the person to whom the woman may have been referred if she had any problems during pregnancy. The majority of births were assisted by a relative or friend (61%). Nineteen percent of births in the five years preceding the survey were assisted by medical staff: 16% by nurses or midwives, 2% by an obstetrician, and less than 1% by a general practitioner.

Women in the lowest household wealth index were much more likely to be assisted by a friend or relative than to receive assistance from another source (73% of women in this category received assistance from a relative or friend). Women from the richest household wealth index category were approximately equally as likely to get assistance from a friend or relative as from a nurse or midwife.

Level of education was less strongly associated with the type of assistance during delivery. For example, 53% of women with some secondary school or more compared with 69% of women with no education were assisted by a friend or relative.

Table 10.8 Assistance during delivery: most qualified person

Percent distribution of live births in the five years preceding the survey by place of delivery, according to background characteristics, Timor Leste 2003

Background characteristic	General Practi-tioner	Obste-trician	Nurse/ Midwife	Traditional birth attendant/ other	Relative/ Friend	No one	Miss-ing	Total	Number of births
Mother's age at birth									
15-19	0.0	0.8	24.3	16.1	58.8	0.0	0.0	100.0	120
20-34	2.5	0.7	15.6	18.4	61.1	1.5	0.2	100.0	2120
35-49	1.8	0.6	14.3	19.7	61.7	1.6	0.3	100.0	1094
Birth Order									
1	4.2	1.6	24.1	15.9	53.6	0.0	0.6	100.0	346
2-3	2.7	0.3	18.6	20.2	57.2	1.1	0.1	100.0	987
4-5	1.1	0.8	13.5	21.1	61.9	1.3	0.3	100.0	966
6+	2.0	0.6	11.5	16.2	66.9	2.6	0.2	100.0	1035
Region									
Urban	6.4	1.7	32.0	15.0	43.4	1.2	0.2	100.0	756
Rural East	2.0	0.7	11.2	22.2	61.7	2.0	0.3	100.0	857
Rural Central	0.5	0.2	10.3	16.9	70.0	1.9	0.1	100.0	1113
Rural West	0.2	0.1	10.4	21.8	66.6	0.6	0.2	100.0	608
Ecological zones									
Highlands	0.5	0.0	8.9	4.9	83.6	2.2	0.0	100.0	544
Lowlands	2.5	0.8	16.8	21.5	56.9	1.4	0.3	100.0	2790
Mother's education									
No education	1.1	0.3	9.2	20.3	67.6	1.2	0.4	100.0	1595
Some primary	1.8	1.0	13.6	18.4	62.2	2.8	0.3	100.0	628
Completed primary	1.3	0.5	21.0	22.2	53.2	1.8	0.0	100.0	266
Some secondary or more	4.8	1.2	27.0	15.0	50.9	1.1	0.0	100.0	845
Household wealth index									
Poorest	0.6	0.3	6.0	18.4	73.3	1.3	0.1	100.0	1425
Middle	1.2	0.2	16.3	21.2	59.1	1.6	0.4	100.0	1320
Richest	8.3	2.6	36.7	14.0	36.5	1.8	0.2	100.0	589
Total	2.2	0.7	15.5	18.7	61.2	1.5	0.2	100.0	3334

Table 10.9 shows the distribution of births by the least qualified person providing assistance during delivery. The percentage of women who had a friend or relative to assist with the delivery as the least qualified person was 70.4% (Table 10.9). This number dropped to 62.6% if the friend or relative was the most qualified person (Table 10.8).

This change seems to be accounted for in the rise of the percentage of women who had a traditional birth attendant assist with the delivery (11.4% of women had a TBA as least qualified person compared with 17.7% who had a TBA as the most qualified person). This suggests that TBAs are more likely to be consulted than a medical professional to provide assistance during delivery.

Table 10.9 Assistance during delivery: least qualified person

Percent distribution of births in the five years preceding the survey by least qualified person providing assistance during delivery, according to background characteristics, Timor Leste 2003

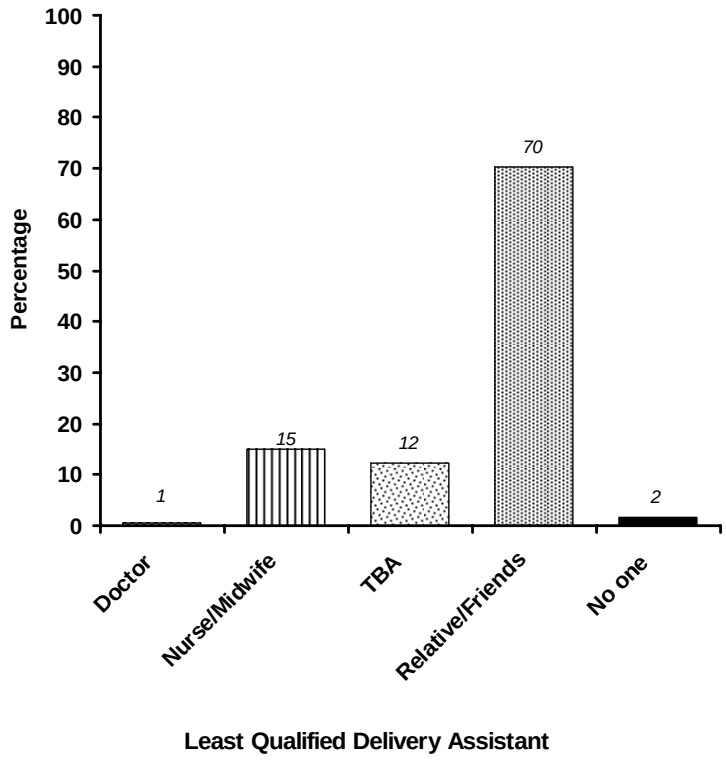
Background characteristic	General Practi-tioner	Obste-trician	Nurse /Midwife	Traditional birth attendant/ other	Relative/ Friend	No one	Miss-ing	Total	Number of births
Mother's age at birth									
15-19	0.8	0.0	21.6	11.3	66.3	0.0	0.0	100.0	120
20-34	0.3	0.3	15.5	12.3	69.8	1.5	0.2	100.0	2120
35-49	0.2	0.3	13.4	12.2	72.1	1.6	0.3	100.0	1094
Birth Order									
1	0.3	0.3	24.8	9.7	64.4	0.0	0.6	100.0	346
2-3	0.2	0.2	17.4	14.2	67.0	1.1	0.1	100.0	987
4-5	0.4	0.4	12.9	13.6	71.1	1.3	0.3	100.0	966
6+	0.2	0.3	11.7	9.9	75.2	2.6	0.2	100.0	1035
Region									
Urban	0.5	0.8	33.5	9.3	54.4	1.2	0.2	100.0	756
Rural East	0.5	0.2	10.6	18.5	67.9	2.0	0.3	100.0	857
Rural Central	0.1	0.0	9.8	8.8	79.2	1.9	0.1	100.0	1113
Rural West	0.0	0.1	8.1	13.2	77.8	0.6	0.2	100.0	608
Ecological zones									
Highlands	0.0	0.3	9.1	2.8	85.6	2.2	0.0	100.0	544
Lowlands	0.3	0.3	16.2	14.1	67.5	1.4	0.3	100.0	2790
Mother's education									
No education	0.2	0.1	8.7	13.4	76.0	1.2	0.4	100.0	1595
Some primary	0.2	0.1	14.4	13.7	68.5	2.8	0.3	100.0	628
Completed primary	0.5	0.3	19.0	11.2	67.2	1.8	0.0	100.0	266
Some secondary or more	0.5	0.7	26.2	9.2	62.4	1.1	0.0	100.0	845
Household wealth index									
Poorest	0.2	0.1	5.4	11.7	81.3	1.3	0.1	100.0	1425
Middle	0.1	0.1	14.8	13.9	69.1	1.6	0.4	100.0	1320
Richest	0.9	1.1	39.2	9.8	47.1	1.8	0.2	100.0	589
Total	0.3	0.3	15.1	12.2	70.4	1.5	0.2	100.0	3334

10.2.3 Delivery characteristics

Table 10.10 shows that only 0.3% of women reported having caesarean sections and none in the rural east region or highlands. The rate was slightly higher for women delivering their first child (0.9%), for urban women (1.0%) and women from the highest household wealth index category (1.5%).

The data on birth weight was of limited use because such a high percentage of births were not weighed (87%). Babies were more likely to be weighed if they came from urban areas, if they were born to women who had some secondary education or more, and if they fell into the highest household wealth index category. For example, while only 5% of births to women in the poorest household wealth index category were weighed, the corresponding percentage for births to women in the highest household wealth index was 38%.

Figure 10.3 Least Qualified Delivery Assistant



In the TL 2003 DHS, respondents were asked about their perceptions of the size of their newborn. Seventeen percent of births were perceived by their mothers to be very small or smaller than average. Most births were perceived by their mothers to be average or larger (77%). There is a difference in the background characteristics of births to be perceived to very small or smaller than average compared to average or larger. Births which were perceived by their mothers to be very small or smaller than average were more frequent in women 15-19 years, first births, from rural east region, and women with little or no

education and from the poorest middle household wealth index groups. Births perceived to be average or larger by their mothers tended to occur more frequently in the urban and rural west regions, and with women who had more education or were from the highest household wealth index category.

Table 10.10 Delivery characteristics

Percentage of births in the five years preceding the survey delivered by caesarean section and percent distribution by birth weight and by mother's estimate of baby's size at birth, according to background characteristics, Timor Leste 2003

			Birth weight				Size of child at birth					
Background characteristic	Delivery by C-section	Not weighed	Less than 2.5 kg	2.5 kg or more	Don't know / Missing	Total	Very small	Smaller than average	Average or larger	Don't know/ Missing	Total	No. of births
Mother's age at birth												
15-19	0.8	80.3	20.1	76.0	3.9	100.0	4.2	14.2	78.4	3.1	100.0	120
20-34	0.3	85.5	10.7	70.4	18.9	100.0	6.2	9.5	78.1	6.2	100.0	2120
35-49	0.3	89.4	13.7	56.2	30.1	100.0	8.8	9.5	74.9	6.9	100.0	1094
Birth Order												
1	0.9	77.3	14.8	74.8	10.4	100.0	6.4	14.7	74.7	4.2	100.0	346
2-3	0.3	84.5	10.5	70.8	18.8	100.0	5.1	9.6	79.4	5.9	100.0	987
4-5	0.2	88.6	11.0	62.2	26.8	100.0	6.1	9.1	78.6	6.2	100.0	966
6+	0.3	89.8	13.1	60.5	26.4	100.0	9.7	8.5	74.2	7.6	100.0	1035
Region												
Urban	1.0	68.0	11.7	77.3	11.0	100.0	4.8	9.5	80.1	5.6	100.0	756
Rural East	0.0	92.1	7.3	49.0	43.8	100.0	6.8	13.9	72.0	7.3	100.0	857
Rural Central	0.2	93.9	12.2	42.9	44.9	100.0	7.0	8.7	74.5	9.8	100.0	1113
Rural West	0.1	88.6	17.4	72.5	10.1	100.0	9.0	8.1	81.2	1.7	100.0	608
Ecological zones												
Highlands	0.0	96.3	13.7	57.6	28.7	100.0	7.5	4.6	80.0	7.9		544
Lowlands	0.4	84.7	11.9	67.4	20.7	100.0	6.9	10.6	76.5	6.0	100.0	2790
Mother's education												
No education	0.2	92.5	11.5	40.8	47.6	100.0	8.1	10.1	73.9	7.9	100.0	1595
Some primary	0.2	87.1	14.2	67.0	18.8	100.0	8.1	10.6	74.5	6.9	100.0	628
Completed primary	0.3	86.1	9.8	74.9	15.3	100.0	6.0	7.8	81.8	4.4	100.0	266
Some secondary or more	0.6	75.3	11.8	80.6	7.6	100.0	4.3	8.6	83.6	3.5	100.0	845
Household wealth index												
Poorest	0.0	94.6	14.0	38.2	47.8	100.0	8.0	8.8	76.8	6.4	100.0	1425
Middle	0.2	88.6	10.4	63.6	26.0	100.0	6.6	11.2	76.0	6.2	100.0	1320
Richest	1.5	62.7	12.4	79.4	8.3	100.0	5.2	8.2	80.2	6.3	100.0	589
Total	0.3	86.6	12.0	67.0	21.1	100.0	7.0	9.6	77.1	6.3	100.0	3334

10.2.4 Preparation for delivery

To ensure the safety of the mother and infant at the time of delivery, certain preparations need to be made. These include deciding who is going to assist in the delivery, where the delivery is going to take place, how the woman is going to get to this place, how much the delivery is going to cost, and identification of blood donors. In the TL 2003 DHS, respondents were asked whether they had discussed any of these specific topics during the pregnancy. Just over half the women interviewed reported discussing at least one topic related to preparation for delivery. Table 10.11 shows that the most discussed issue was who was going to assist with the delivery (47%). Less discussed topics included transportation (22%) and blood donation (11%).

Table 10.11 Preparation for delivery – women

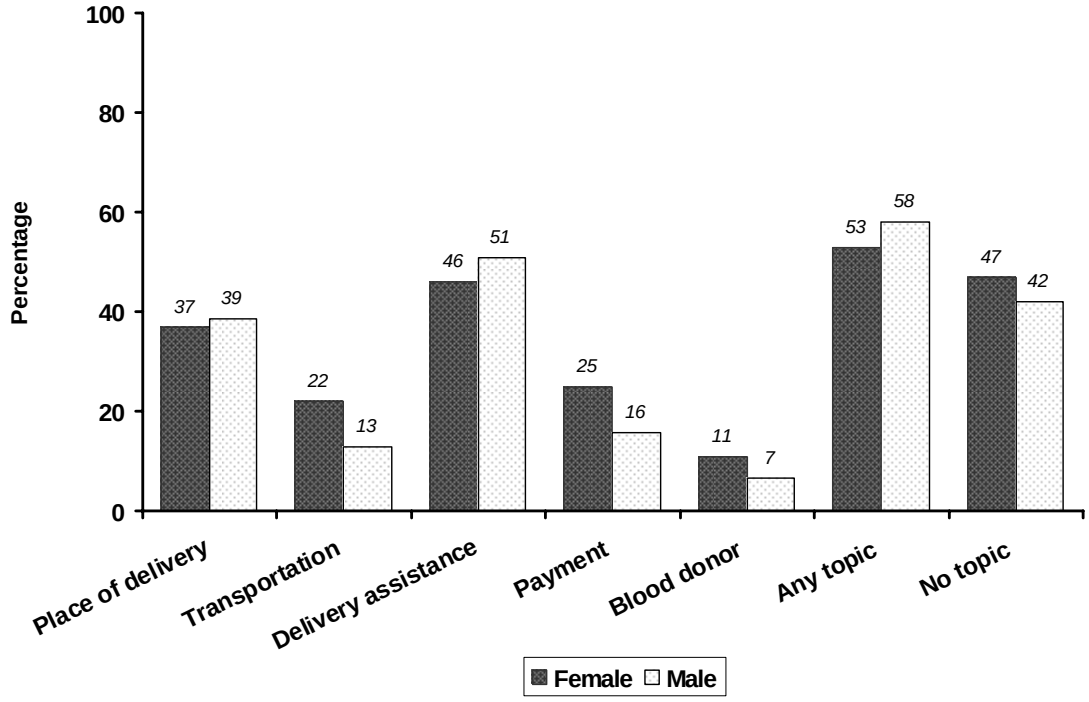
Percentage of women who had a birth in the five years preceding the survey who discussed specific topics during pregnancy for the most recent birth, by background characteristics, Timor Leste 2003.

Background characteristic	Topics discussed						No topics discussed	Number of births
	Place to deliver	Transport-ation	Delivery assistance	Payment	Blood donor	Any topic		
Mother's age								
15-19	43.3	24.9	52.8	21.2	9.8	60.6	39.4	120
20-24	40.9	24.5	50.6	27.5	11.0	57.3	42.7	468
25-29	39.5	24.1	48.6	27.1	12.2	56.5	43.5	818
30-34	39.1	24.3	50.9	25.5	13.1	57.7	42.3	834
35-39	34.4	18.9	43.4	22.5	9.1	49.3	50.7	633
40-44	28.7	18.2	39.0	22.2	9.7	46.1	53.9	328
45-49	28.6	13.6	39.2	20.9	8.2	43.4	56.6	133
Mother's marital status								
Married	37.4	22.3	47.4	25.1	11.3	54.2	45.8	3288
Divorced/widowed	29.8	18.8	41.5	10.2	2.0	48.8	51.2	46
Region								
Urban	53.3	36.1	55.3	34.8	17.1	65.8	34.2	756
Rural East	26.9	17.5	50.3	24.3	9.9	43.7	56.3	857
Rural Central	36.1	15.7	43.8	20.0	7.6	51.5	48.5	1113
Rural West	34.0	23.7	39.6	22.5	12.2	54.7	45.3	608
Ecological zones								
Highlands	33.7	13.3	35.5	16.9	8.8	43.3	56.7	544
Lowlands	37.9	24.0	49.6	26.5	11.6	56.3	43.7	2790
Mother's education								
No education	31.3	17.6	41.7	20.7	9.4	47.5	52.5	1595
Some primary	34.4	18.7	45.4	21.1	8.7	52.4	47.6	628
Completed primary	45.6	27.5	52.6	31.8	15.3	60.8	39.2	266
Some secondary or more	48.1	31.9	57.5	33.6	15.2	65.9	34.1	845
Household wealth index								
Poorest	26.7	13.8	40.5	16.7	6.4	46.5	53.5	1425
Middle	19.2	22.6	48.6	28.0	13.3	55.2	44.8	1320
Richest	58.4	41.9	60.7	38.1	18.1	70.2	29.8	589
Total	37.3	22.2	47.1	24.9	11.2	54.1	45.9	3334

Generally, younger married women, living in urban areas, who had more education and who tended to be from the wealthier household wealth index category were more likely to discuss issues of preparation for delivery. For example, 70% of women from the richest household wealth index were likely to have discussed any topic about preparation for delivery compared to 45% of women in the poorest household wealth index.

Currently married men interviewed in the survey who had a child in the five years preceding the survey were also asked whether they held any discussions regarding preparations for that child's delivery. These findings are presented in Chapter 16. Figure 10.4 compares the responses obtained from the mothers and the fathers. Fathers were almost as likely as mothers to take part in discussions about preparation for delivery. Interestingly, some topics, such as delivery assistance and place of delivery, were more likely to be discussed by fathers than mothers.

Figure 10.4 Discussions on Preparation for Delivery



10.2.5 Complications during delivery

To identify complications associated with delivery, respondents were asked about certain signs and symptoms they had experienced during their most recent birth in the five years prior to the survey. Table 10.12 shows that only 19.6% reported having no complications during delivery. A high proportion of women reported having experienced a complication in delivery over the last five years. There was no clear relationship between the type of delivery care and the percentage of reported complications.

Prolonged labour and excessive bleeding were the most commonly reported complications. Furthermore, the reported prevalence of convulsions and loss of consciousness was very high given the serious nature of these symptoms. These high complication rates may reflect a misinterpretation of the symptoms asked. Nonetheless, it is also possible the lack of delivery services combined with the high rates of malnutrition (see Chapter 13) might explain these high rates of reported delivery complications.

Table 10.12 Complications during delivery

Percentage of last births in the five years preceding the survey for which the mother had complications associated with delivery by type of complications and maternity care indicators, according to maternity care indicators, Timor Leste 2003

Background characteristic	Prolonged labour	Excessive bleeding	Fever	Convulsions or loss of consciousness	Other	None	Number of births
Antenatal care/delivery assistance						.	
Both ANC and DA	63.4	47.8	46.8	39.1	10.0	20.2	564
ANC only	55.0	49.3	35.7	33.7	4.1	20.1.	1459
DA only	(64.6)	(50.5)	(40.8)	(49.7)	(13.9)	(20.9.)	47
No ANC and no DA	55.0	51.7	39.0	36.5	3.0	18.6	1268
Baby died within one month of birth	87.5	59.4	30.5	26.9	4.8	5.1	104
Delivery by C-section	(82.8)	(46.2)	(33.7)	(45.5)	(20.7)	(0.1)	11
Total	56.6	50.0	38.9	35.9	4.8	19.6	3338

ANC = Any antenatal care

DA = Delivery assistance by trained health provider

( ) Figures in parentheses are based on less than 50 cases

10.3 Postnatal care

Postnatal care (PNC) is important both for the mother and for the child to treat complications arising from the delivery as well as to provide the mother with important information on how to care for herself and her child. The postnatal period is defined as the time between the delivery of the placenta and 42 days (6 weeks) following delivery. The timing of postnatal care is important, and the first two days after delivery are critical, since most maternal neonatal deaths occur during this period.

In the TL 2003 DHS, women who had given birth outside a health facility were asked if they had received postnatal care. The vast majority of women (85%) did not receive a postnatal check up. Table 10.13 shows that of those who did, 12% received it within two days of delivery, 2% within three to six days of delivery, and less than 1% in seven to 41 days after delivery.

The likelihood of receiving a postnatal check up decreased with age. Table 10.13 shows that 88% of women aged 35-49 did not receive a postnatal check up compared to 78% of women aged 15-19. Similarly, the higher the birth order, the less likely it was that a postnatal check up occurred. Women in urban areas and lowland areas were more likely to receive a post natal check up, as were women with higher levels of education and those in the richer household wealth index categories.

Table 10.13 Postnatal care by background characteristics

Percentage of women who had a non-institutional live birth in the five years preceding the survey by timing of postnatal care for the most recent non-institutional birth, according to background characteristics, Timor Leste 2003

Background characteristic	Timing of first postnatal check up				Did not receive postnatal checkup[1]	Total	Number of women
	Within 2 days of delivery	3-6 days after delivery	7-41 days after delivery	Don't know/ missing			
Mother's age at birth							
15-19	19.6	2.4	0.0	0.0	78.0	100.0	119
20-34	13.2	1.8	0.6	0.0	84.4	100.0	2122
35-49	10.1	1.3	0.3	0.2	88.1	100.0	1097
Birth Order							
1	19.3	4.4	0.0	0.0	76.3	100.0	345
2-3	15.0	1.2	0.9	0.0	82.9	100.0	988
4-5	11.0	1.7	0.6	0.2	86.5	100.0	968
6+	9.0	1.2	0.2	0.1	89.5	100.0	1037
Region							
Urban	25.7	3.0	0.8	0.4	70.1	100.0	756
Rural East	13.6	1.4	0.7	0.0	84.3	100.0	861
Rural Central	4.9	0.9	0.1	0.0	94.0	100.0	1113
Rural West	8.1	1.8	0.5	0.0	89.6	100.0	608
Ecological zones							
Highlands	2.9	0.0	0.0	0.0	97.1	100.0	544
Lowlands	14.3	2.0	0.6	0.1	83.0	100.0	2794
Mother's education							
No education	6.4	1.2	0.4	0.0	92.0	100.0	1598
Some primary	14.0	1.1	0.6	0.2	84.2	100.0	628
Completed primary	13.4	2.4	1.7	0.4	82.1	100.0	266
Some secondary or more	22.4	2.8	0.2	0.1	74.4	100.0	846
Household wealth index							
Poorest	6.1	1.2	0.4	0.0	92.3	100.0	1427
Middle	11.5	1.4	0.6	0.1	86.6	100.0	1323
Richest	30.9	3.7	0.5	0.3	64.5	100.0	588
Total	12.4	1.7	0.5	0.1	85.4	100.0	3338

[1] Includes women who received the first postnatal check up after 41 days

10.4 Problems in accessing health care

Many factors can prevent women from getting medical advice or treatment for themselves when they need it. In this survey all women were asked if obtaining medical advice or treatment for themselves was or was not big problem with respect to the following: knowing where to go, getting permission to go, getting money needed for treatment, distance to the health facility, having to take transport, not wanting to go alone, and concern that there may not be a female health provider. Table 10.14 shows the percentage of ever-married women who reported having big problems in accessing health care by background characteristics.

Table 10.14 Problems in accessing health care

Percent of ever-married women who reported that they have "big problems" in accessing health care for themselves when they are sick, by type of problem and background characteristics, Timor Leste 2003

Background characteristic	Knowing where to go	Getting permission to go	Getting money for treatment	Distance to health facility	Having to take transport	Not wanting to go alone	Concern about no female provider	Any of the specified problems	Number of women
Age									
15-19	29.8	20.6	60.9	61.2	61.1	21.0	2.5	76.0	120
20-24	25.7	16.5	53.9	59.3	59.6	20.4	3.4	70.4	468
25-29	27.1	16.0	57.2	62.4	59.2	19.6	4.3	75.0	820
30-34	26.0	17.9	59.5	65.0	65.3	20.2	4.4	76.2	834
35-39	30.3	20.7	65.4	66.5	64.7	23.3	5.1	78.9	634
40-44	22.6	17.5	58.0	61.6	60.1	24.8	5.4	76.2	329
45-49	22.7	20.3	64.0	70.0	64.2	33.1	4.8	84.1	133
Number of living children									
0	*	*	*	*	*	*	*	*	3
1	*	*	*	*	*	*	*	*	4
2	28.4	18.9	55.2	60.1	57.9	19.5	5.1	71.4	96
3	25.7	16.2	56.4	58.6	58.5	17.6	3.1	71.9	389
4	25.7	16.5	57.2	61.1	62.5	20.6	4.5	75.3	577
5	27.9	19.5	61.4	65.4	63.5	20.7	4.5	76.0	561
6	25.6	18.0	60.6	62.5	61.5	22.0	4.0	76.0	571
7	27.7	18.4	62.0	68.3	65.7	23.0	4.1	79.5	417
8+	27.3	18.4	59.3	65.6	62.2	25.0	5.3	77.2	720
Marital status									
Married	26.8	18.1	59.2	63.6	62.1	21.8	4.4	75.9	3292
Divorced/widowed	(19.5)	(5.2)	(69.9)	(65.6)	(66.7)	(9.2)	(2.0)	(79.2)	46
Region									
Urban	15.3	12.0	42.7	42.6	42.1	19.8	6.2	62.8	756
Rural East	20.9	10.1	62.2	69.5	69.4	16.2	2.9	77.3	608
Rural Central	24.6	13.2	59.7	67.9	63.8	23.4	4.6	79.5	1113
Rural West	53.0	45.2	75.4	73.5	74.1	28.7	3.9	83.7	861
Ecological zones									
Highlands	27.8	16.2	59.4	66.4	62.2	26.0	2.3	79.9	544
Lowlands	36.5	18.3	59.3	63.1	62.2	20.8	4.8	75.1	2794
Mother's education									
No education	30.0	19.3	65.0	67.2	65.7	21.3	4.3	79.4	1598
Some primary	27.9	17.5	59.1	68.0	66.2	20.8	5.1	76.3	628
Completed primary	22.0	18.5	55.6	59.8	58.9	28.5	5.9	76.4	266
Some secondary or more	21.0	15.5	49.9	54.7	53.6	20.8	3.5	68.8	846
Household wealth index									
Poorest	34.2	19.6	66.3	73.9	71.6	21.7	4.7	81.2	1427
Middle	24.3	18.1	61.1	62.9	62.1	22.3	3.5	77.7	1323
Richest	14.1	13.5	38.4	40.0	39.6	20.0	5.6	59.1	588
Employment									
Not employed	20.5	62.2	62.7	62.7	63.5	20.7	6.5	76.8	1390
Working for cash	19.4	44.7	45.8	45.8	48.3	26.9	3.7	65.6	74
Not working for cash	23.7	45.2	59.9	59.9	54.9	17.8	1.7	69.4	529
Total	26.7	17.9	59.3	63.6	62.2	61.7	4.4	75.9	3338

* Suppressed because fewer than 10 observations ( ) Based on fewer than 50 observations

Three quarters of the women reported they had at least one big problem getting medical advice or treatment if they were sick. Older women (84% in the 45-49 age group) were more likely to report having a big problem than younger women (76% in the age group 15-19). Women in the lower household wealth index category were also more likely to report having a problem (81%) than women in the higher household wealth index category (59%).

The main problem reported in accessing medical advice or treatment was the distance women had to travel to reach the health facility (64%), and this was slightly more of problem for women from the highlands. This was followed closely by having to take transport (62%), not wanting to go alone (62%) and getting money for treatment (59%). Concern about whether or not a female health provider would be available was the least reported problem (4%).

10.5 Birth registration

In the TL 2003 DHS, for all children born since January 1998, mothers were asked if their child had been registered. Mothers who gave a positive response to this question were asked to show any records for their children, which could be one or more of the following documents: a hospital record, a record issued by the village office, a proof of birth issued by the regency or municipality office as a substitute for birth certificate, and a birth certificate, a legal document issued by the civil registrar. Table 10.15 shows the distribution of births in the five years preceding the survey by whether it was registered and the type of certificate obtained.

Overall, 53% of births were reported to be registered. Among births reported to have a registration document, 41% had a hospital record, and 22% had a village record. Only 9% showed a birth certificate. Ten percent of births were reported to be registered however the interviewer was not shown any papers.

Hospital records were most likely to be presented by women in the rural west (58%) and urban areas (45%), whereas a village record was most likely presented in the rural central (33%) and rural east (20%). The hospital record was more likely to be presented by women in the richest household wealth index category; however, the village record was more likely to be presented by a woman in the poorer category.

Given the high percentage of home deliveries, the level of registration was higher than expected and the level of hospital documentation of the birth was much higher than the percentage of women who reported delivering in hospitals. It is possible that the women received the hospital certificate during a postnatal check, or infant health check subsequent to delivery.

Table 10.15 Birth registration

Percent of births in the last five years before the survey that were registered and, of those registered, percent distributed by type of certificate, according to background characteristics, Timor Leste 2003

Background characteristic	Percent-age of registered births	Number of births	Not seen	Hospital record	Village record	Proof of birth	Birth certifi-cate	Total	Number of births registered
Age									
15-19	51.2	120	6.8	33.4	39.0	17.1	3.8	100.0	61
20-24	48.9	468	5.9	42.4	28.0	15.0	8.6	100.0	226
25-29	53.8	818	8.3	38.2	26.0	17.5	10.1	100.0	441
30-34	55.5	834	10.1	43.4	18.7	18.9	9.0	100.0	462
35-39	50.7	633	12.7	45.7	17.7	15.7	8.2	100.0	320
40-44	53.5	328	12.3	36.7	19.0	20.3	11.7	100.0	176
45-49	58.9	133	11.8	42.9	15.2	20.5	9.5	100.0	79
Region									
Urban	55.4	756	11.8	45.1	14.2	14.4	14.4	100.0	419
Rural East	44.6	857	10.1	28.6	19.7	22.6	19.0	100.0	382
Rural Central	56.5	1113	4.0	37.9	33.0	20.5	4.6	100.0	628
Rural West	55.6	608	17.6	57.6	14.1	10.5	0.2	100.0	336
Ecological zones									
Highlands	59.4	544	6.0	34.9	31.0	24.8	3.3	100.0	323
Lowlands	51.8	2790	10.6	42.8	20.1	16.0	10.5	100.0	1442
Mother's education									
No education	48.9	1595	10.4	43.1	21.5	17.6	7.4	100.0	780
Some primary	55.5	628	10.3	40.0	23.9	17.9	8.0	100.0	347
Completed primary	60.9	266	7.2	36.7	29.4	16.1	10.6	100.0	161
Some secondary or more	56.5	845	9.2	41.0	19.3	17.9	12.6	100.0	477
Household wealth index									
Poorest	48.8	1425	9.6	39.8	23.5	21.5	5.6	100.0	696
Middle	53.9	1320	8.8	40.5	26.4	14.8	9.5	100.0	708
Richest	61.4	589	12.0	45.9	10.9	15.6	15.7	100.0	361
Total	53.0	3334	9.8	41.3	22.1	17.6	9.2	100.0	1765

Table 10.16 shows the distribution of births that were not registered by reason for not registering according to background characteristics. The most often cited reason for not registering was distance (40%). Distance was reported to be a problem particularly for women from the highlands and women who had low levels of education as well as those in a low economic status. Not being aware of the need to register (16%) was also widely reported.

Table 10.16 Reasons for not registering births

Percent of births in the last five years before the survey that were registered and, of those registered, percent distributed by type of certificate, according to background characteristics, Timor Leste 2003

Background characteristic	Costs too much	Too far	Didn't know child has to be registered	Late, did not want to pay fine	Did not know where to register	Other	Total	Number of births not registered
Age								
15-19	6.1	25.4	32.2	3.9	3.4	28.9	100.0	58
20-24	9.8	37.2	16.6	5.4	6.4	24.6	100.0	236
25-29	11.4	36.1	15.4	7.1	6.1	24.0	100.0	378
30-34	14.4	41.9	14.8	5.6	3.5	19.7	100.0	370
35-39	12.1	41.7	13.3	8.8	7.1	17.1	100.0	312
40-44	12.3	45.1	20.7	2.3	4.7	14.8	100.0	153
45-49	16.0	43.6	12.0	5.0	3.5	19.9	100.0	54
Region								
Urban	15.2	19.6	23.9	7.1	9.5	24.7	100.0	335
Rural East	20.7	34.0	9.0	3.8	6.5	26.1	100.0	475
Rural Central	6.3	49.0	18.6	4.3	2.6	19.2	100.0	483
Rural West	3.2	57.1	13.9	12.6	3.5	9.7	100.0	268
Ecological zones								
Highlands	4.8	50.8	22.6	1.6	1.6	18.6	100.0	220
Lowlands	13.7	36.7	14.7	6.2	5.7	23.1	100.0	1341
Mother's education								
No education	11.8	45.9	15.2	5.8	5.3	16.0	100.0	812
Some primary	11.7	39.1	13.4	6.3	5.7	23.7	100.0	279
Completed primary	13.5	30.0	25.7	8.1	3.8	19.0	100.0	104
Some secondary or more	12.5	28.2	17.2	6.3	5.9	30.0	100.0	366
Household wealth index								
Poorest	11.7	47.1	13.3	4.3	3.2	20.3	100.0	729
Middle	12.0	37.2	16.4	7.1	6.5	20.9	100.0	605
Richest	13.3	21.2	23.8	9.5	9.6	22.5	100.0	227
Total	12.1	39.5	16.0	6.2	5.4	20.9	100.0	1561

Chapter 11
Immunization of Children

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11 Immunization of Children

It is recommended that all children receive immunizations against the six major preventable childhood diseases: a BCG vaccination against tuberculosis; three doses of DPT vaccine to prevent diphtheria, pertussis, and tetanus; four doses of polio vaccine; and a measles vaccination. Ideally all of the recommended vaccinations should be given before children are 12 months of age.

Infants brought to a health care centre for postnatal care are issued with a health card on which feeding, growth and immunization information can be recorded. Field vaccinators maintain information such as the type and date of the vaccinations in a registration book. The cards are designed to allow mothers to monitor their children's growth and to keep a record of immunization schedules, however not all infants have a health card. Infants who do not receive postnatal care are likely to not have cards, and in some cases mothers have not kept the cards.

In this survey, immunization information was collected for children born in the five years before the survey. When a health card was available, the interviewer copied the vaccination dates onto the questionnaire. If the child had never received a health card, or if the mother was unable to show the card to the interviewer, the mother was asked questions about the types of immunizations her children received (specifically, BCG, DPT, polio, and measles).

11.1 Immunization coverage

Figure 11.1 shows the percentage of children aged 12-23 months who received vaccinations against the six major preventable childhood diseases at any time before the survey. This figure summarizes the immunization cover of children in Timor Leste. Ideally, the coverage presented would be for children who had been vaccinated by 12 months of age but information on the precise age at vaccination was not available for those children who did not have health cards. Eighteen percent of the children aged 12-23 months had not received immunisations against any of the diseases, while the same percentage of the children had been immunised against all the diseases. The highest coverage was for polio 0 (77%) and BCG (75%), followed by polio 1 (69%) and DPT 1 (68%). Children were more likely to be fully immunized against DPT than polio (38% had received the full course of DPT doses, while only 27% had received the course of polio doses).

An indicator of the success of an immunization program can be obtained by measuring the percentage of children who start but do not complete all of the doses of DPT or polio. For the purposes of this report this will be called the dropout rate and is defined as the percentage of children who received the first dose but did not receive the third dose in the series. Table 11.1 shows the percentages of children who dropped out before receiving all doses of DPT or polio by region. Overall, the drop out rate was high at 77% for DTP and 72% for polio. The lowest drop out rate for both vaccines was in the urban region.

Figure 11.1 Children aged 12-23 months vaccinated at anytime before survey
The information presented is based on vaccination recorded on health cards and from mother's reports

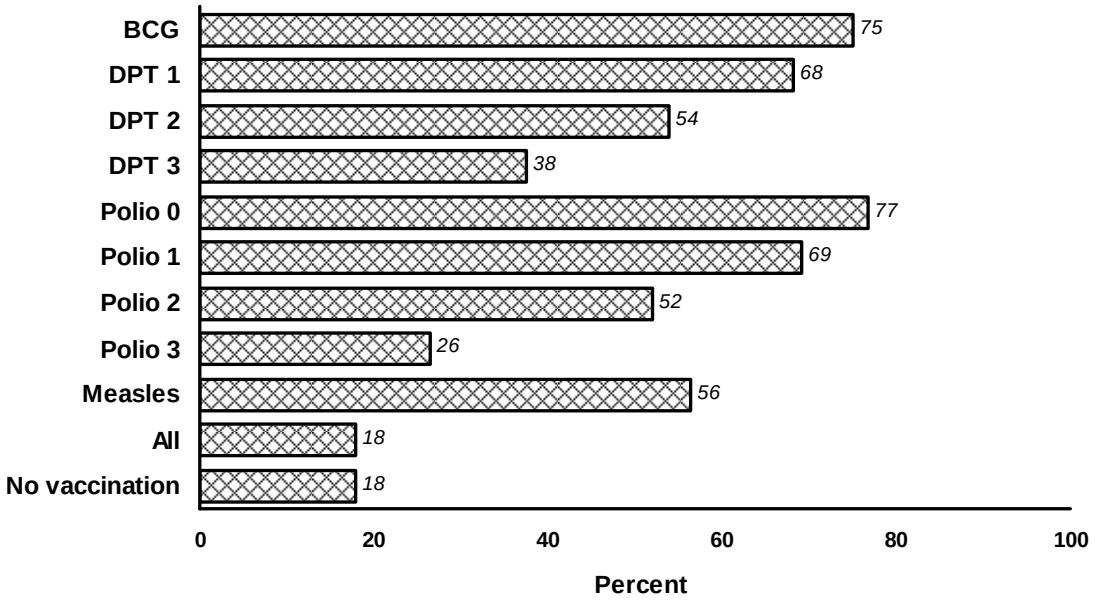


Table 11.1 Drop out rate for DTP and polio vaccinations
Percentage of children age 12-23 months who received first DTP or polio dose but did not complete all of the doses (according to health card or mother's report) by region, Timor Leste 2003

Region	DTP			Polio			N
	Completed	Dropped out	Total	Completed	Dropped out	Total	
Urban	29.2	70.8	100.0	39.3	60.7	100.0	136
Rural East	25.0	75.0	100.0	28.7	71.3	100.0	128
Rural Central	18.0	82.1	100.0	23.8	76.2	100.0	151
Rural West	20.6	79.4	100.0	23.5	76.5	100.0	86
Timor Leste	22.7	77.3	100.0	28.4	71.6	100.0	501

11.2 Immunization by background characteristics

Table 11.2 shows vaccination coverage for the six major preventable childhood illnesses according to information recorded on health cards (top panel), information from mother's reports (middle panel) and information from both sources (bottom panel). The table shows that only 12% of children aged 12-23 months had their health cards available at the time of the interview, which was similar to that reported in the 2002 TL MIC survey (10%). Children of mothers who came from an urban area, who had a higher level education and were from wealthier households, were most likely to have a health card. These background characteristics correspond to the characteristics of women who received postnatal care (see Table 10.13).

Among children whose health cards were seen (Table 11.2, top panel), 40% had received none of the recommended vaccinations, while 35% had received all of them. Children who were of a higher birth order, who lived in the rural west region, and came from wealthier families, were more likely to have received all the vaccinations. Children from poorer economic backgrounds were the group most likely to have received none of the recommended vaccines. Interestingly, the rural west was the region with both the highest coverage of all vaccines and none, suggesting that coverage was good only in selected areas in this zone. The highest vaccine coverage, as seen from health care cards, was polio 1 (89%) and polio 2 (80%). The lowest coverage according to health cards was for measles (40%).

Overall, the percentage of children who were fully immunized according to the mother's report (Table 11.2, middle panel) was much lower than that observed from health cards (17% compared to 34%). The percentage of children vaccinated against specific diseases according to mothers' reports was equal to or higher than that observed on the health cards for the first in the series of vaccinations, and substantially lower for subsequent doses in the series. For example, the percentage who received Polio 0 and DPT1 vaccine according to the mother's report were 74% and 63% respectively. The corresponding percentages for that observed on the health card were 57% and 64%. By the final dose in the series, the percentage who received polio 3 according to the mothers report was 18% compared to 48% for that observed on the health card, and the percentage who received DPT3 according to the mothers report was 30% compared to 51% for that observed on the health card. The highest coverage according to mother's report was polio 0 (74%) and lowest coverage was of polio 3 (18%). These differences in the vaccination coverage by card versus mother's report may be related to the characteristics of the women who had vaccination cards, namely they were more likely to be from the urban region, have higher education levels and come from wealthier families.

The final panel of Table 11.2, where both information on cards and mother's reports are combined, shows that girls were just as likely as boys to have been fully immunized against the six preventable childhood diseases. However immunization coverage varied according to other background characteristics. A higher percentage of first born children were likely to have been through a complete immunization schedule. The same applied to children from urban areas, and whose parents have a higher level of education. Being wealthy also increased the chance that the child had received a complete immunization schedule.

The percentage of children who received no vaccinations also varied widely by demographic and socioeconomic background characteristics. Higher birth order, coming from the rural west region and coming from a poorer household wealth index category all increased the chance that the child had received no immunizations.

Table 11.2 Vaccinations by background characteristics

Percentage of children age 12-23 months who received specific vaccines at any time before the survey (according to health card or mother's report) and percentage with a vaccination card, by background characteristics, Timor Leste 2003

Background characteristic	Percentage of Children who received:											Percent with health card	Number of Children
		DPT			Polio								
	BCG	1	2	3	0	1	2	3	Measles	All[1]	No Vaccin-ations		
	HEALTH CARD												
Sex													
Male	66.6	68.2	55.8	45.8	60.6	91.1	74.9	45.2	35.2	30.3	9.0	100.0	69
Female	57.2	59.7	57.8	55.0	54.1	86.7	85.1	51.4	45.0	39.3	7.9	100.0	75
Birth Order													
1	68.5	75.0	73.2	54.0	67.7	83.6	86.1	47.4	39.2	36.4	13.8	100.0	34
2-3	57.5	59.0	55.4	49.7	54.8	92.0	80.5	48.6	38.0	29.8	8.4	100.0	41
4-5	46.3	50.9	38.6	38.6	43.5	83.5	79.7	41.6	29.7	23.8	8.0	100.0	33
6+	74.4	70.5	59.7	59.7	62.7	95.1	74.8	55.8	54.3	50.3	6.0	100.0	35
Region													
Urban	79.1	69.8	69.8	65.1	69.8	88.4	88.4	58.1	51.2	48.8	8.5	100.0	39
Rural East	64.9	81.1	67.6	59.5	64.9	89.2	86.5	62.2	37.8	27.0	9.1	100.0	37
Rural Central	33.3	33.3	30.0	23.3	26.7	83.3	70.0	20.0	20.0	16.7	9.1	100.0	41
Rural West	75.7	78.4	64.9	59.5	75.7	97.3	75.7	59.5	59.5	54.1	6.1	100.0	27
Maternal Education													
No education	54.3	57.0	45.8	42.9	53.0	86.2	76.0	41.2	28.3	24.2	7.5	100.0	49
Some primary	74.4	69.2	69.2	59.4	66.5	100.0	94.8	59.4	45.9	43.2	6.9	100.0	26
Completed primary	45.2	62.2	45.2	39.4	51.0	81.4	77.1	39.4	37.8	31.9	9.6	100.0	12
Secondary or more	65.7	67.3	63.2	55.6	57.8	87.3	77.7	51.5	48.8	41.2	10.8	100.0	56
Ecological zones													
Highlands	72.3	67.0	49.8	33.0	78.0	83.3	71.8	33.0	38.8	33.0	4.5	100.0	12
Lowlands	60.7	63.4	57.5	52.3	55.2	89.3	81.1	49.9	40.5	35.2	9.2	100.0	132
Household Wealth Index													
Poorest	36.0	51.5	47.6	43.0	41.2	85.0	82.8	39.0	27.2	17.0	7.5	100.0	45
Middle	61.9	63.5	54.4	45.6	57.9	92.2	78.2	47.3	37.5	36.3	9.3	100.0	60
Richest	91.7	78.6	71.6	67.4	75.0	87.9	80.4	61.4	60.3	54.3	9.1	100.0	39
Total	61.7	63.8	56.9	50.6	57.2	88.8	80.3	48.4	40.3	35.0	8.4	100.0	144

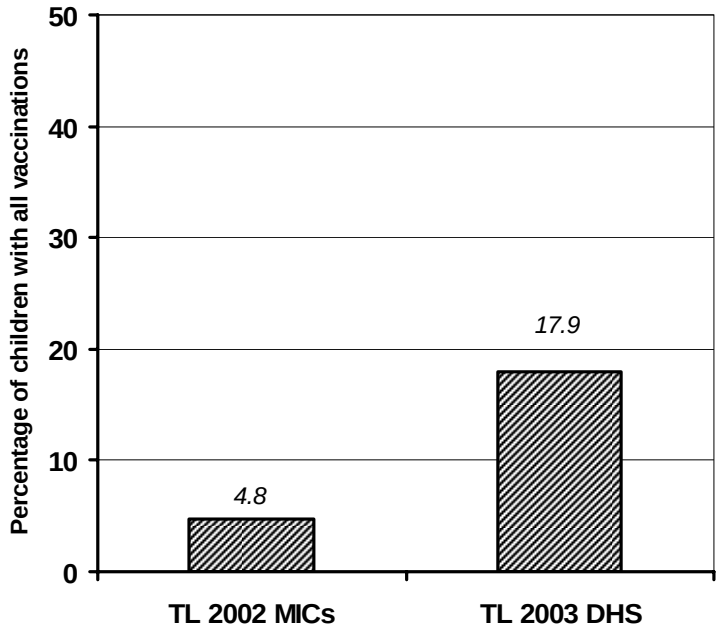
Background characteristic	Percentage of Children who received:											Percent with health card	Number of Children
		DPT			Polio								
	BCG	1	2	3	0	1	2	3	Measles	All[1]	No Vaccin-ations		
	MOTHER'S REPORT												
Sex													
Male	70.2	62.9	47.1	29.1	71.7	60.5	40.6	16.8	50.5	17.1	18.3	0.0	278
Female	72.3	63.2	47.8	30.5	75.2	63.0	43.1	18.7	53.8	16.5	14.3	0.0	300
Birth Order													
1	78.1	68.3	51.7	30.4	78.3	56.2	40.5	18.2	54.2	17.8	17.9	0.0	76
2-3	74.0	66.1	49.8	33.5	76.2	63.8	44.3	18.8	53.2	18.1	14.9	0.0	184
4-5	69.3	64.2	50.0	29.1	73.7	67.0	42.7	19.3	54.5	16.0	15.9	0.0	177
6+	67.6	55.0	39.3	25.7	67.3	55.9	38.7	14.4	46.8	15.5	16.8	0.0	141
Region													
Urban	78.1	67.3	50.0	31.6	80.0	66.2	50.0	16.1	58.2	20.7	14.2	0.0	134
Rural East	68.6	62.6	44.7	32.9	69.3	57.6	41.4	24.0	48.5	18.9	20.5	0.0	152
Rural Central	66.4	58.4	46.0	27.6	68.9	61.2	40.6	19.6	47.1	15.5	17.5	0.0	206
Rural West	76.7	68.1	51.6	27.0	81.7	63.4	33.3	5.6	61.1	12.1	9.4	0.0	86
Maternal Education													
No education	64.0	56.3	41.0	21.8	69.2	56.8	35.7	12.8	44.9	11.0	16.6	0.0	236
Some primary	70.1	57.2	48.2	34.6	70.7	64.7	46.1	20.6	48.5	17.8	17.0	0.0	107
Completed primary	82.5	70.6	50.1	25.0	80.8	64.4	41.2	18.9	55.8	13.5	11.6	0.0	54
Secondary or more	78.0	73.1	54.9	38.8	78.5	65.9	47.7	22.2	62.9	27.0	16.1	0.0	181
Ecological zones													
Highlands	66.1	58.7	41.6	27.5	71.3	60.0	36.7	14.1	43.9	14.0	15.8	0.0	90
Lowlands	72.2	63.9	48.6	30.3	73.9	62.1	42.9	18.5	53.7	17.4	16.2	0.0	488
Household Wealth Index													
Poorest	64.3	54.0	40.4	25.3	67.0	54.3	33.7	16.1	42.7	12.6	17.5	0.0	253
Middle	73.5	68.1	52.3	32.8	76.8	68.9	50.2	21.2	56.8	18.5	14.9	0.0	213
Richest	82.6	72.7	53.3	33.6	81.2	64.9	43.4	15.0	63.3	25.1	15.2	0.0	112
Total	71.2	63.0	47.5	29.8	73.5	61.8	41.9	17.8	52.2	16.8	16.1	0.0	578

Background characteristic	Percentage of Children who received:											Percent with health card	Number of Children
		DPT			Polio								
	BCG	1	2	3	0	1	2	3	Measles	All[1]	No Vaccin-ations		
HEALTH CARD AND MOTHER'S REPORT													
Sex													
Male	74.4	68.3	53.4	64.0	75.3	68.1	50.0	24.8	54.2	17.7	20.3	11.4	324
Female	75.7	68.0	54.5	61.1	78.1	70.1	53.8	27.9	58.4	18.4	15.5	12.9	343
Birth Order													
1	81.7	76.5	64.0	43.4	83.4	68.9	58.2	31.6	60.5	21.2	12.3	13.6	100
2-3	76.9	70.0	55.3	40.1	78.8	70.4	53.1	26.6	56.7	18.4	15.2	11.9	207
4-5	71.7	67.3	53.3	33.8	75.7	71.8	50.6	25.1	56.9	15.6	19.0	12.5	192
6+	72.7	61.7	46.9	35.1	71.6	64.7	48.3	24.4	52.8	18.1	21.7	10.5	168
Region													
Urban	82.2	72.8	58.3	42.2	83.3	73.3	60.6	27.8	63.3	24.2	19.4	15.4	165
Rural East	72.9	68.9	52.5	41.2	73.5	65.5	52.0	33.9	52.5	17.9	21.9	10.3	175
Rural Central	68.6	61.0	49.1	30.8	70.4	67.3	48.4	22.6	49.1	14.3	18.4	11.5	220
Rural West	81.1	74.3	59.5	37.8	85.1	72.3	46.0	19.6	66.9	17.3	8.9	12.7	107
Maternal Education													
No education	67.6	61.0	46.0	28.1	72.3	63.7	44.8	19.5	47.8	11.3	18.8	9.0	263
Some primary	74.8	63.4	55.7	42.8	74.8	72.1	56.8	30.5	53.5	19.2	19.6	13.5	127
Completed primary	84.2	74.4	54.8	31.1	82.8	70.4	50.6	25.5	59.3	15.7	12.1	15.7	60
Secondary or more	81.8	77.8	62.2	47.6	81.7	73.6	58.2	32.6	67.6	28.4	15.5	19.3	218
Ecological zones													
Highlands	69.2	62.2	45.3	30.6	74.1	64.3	42.5	17.7	46.7	13.7	19.8	6.3	99
Lowlands	76.1	69.2	55.4	38.7	77.2	70.0	53.6	27.9	58.0	18.7	17.3	13.5	568
Household Wealth Index													
Poorest	66.5	58.1	45.3	30.8	69.3	60.8	43.0	21.6	45.3	11.7	18.6	8.1	269
Middle	77.4	72.9	58.5	40.2	80.0	75.8	59.6	30.2	60.7	20.1	14.9	13.5	251
Richest	86.8	78.3	62.1	45.3	84.9	73.0	55.4	28.7	69.1	29.5	23.4	20.2	148
Total	75.1	68.1	53.9	37.5	76.8	69.1	52.0	26.4	56.4	17.9	17.8	12.2	667

It is worth noting that the immunization coverage reported in the TL 2003 DHS was much higher than that reported by the TL 2002 MIC survey. For example, the percentage of children who received DTP 1 (both on card and by report) in the TL 2003 DHS was 68%, in contrast the DTP1 coverage in the TL 2002 MIC survey was 35%. Figure 11.2 reveals that the percentage of children who had completed all vaccinations increased more than three times during the time period between the surveys.

This difference can be explained by the timing of national immunizations campaigns. The TL 2002 MIC survey was conducted in August 2002 prior to the national immunization campaigns that were conducted in September and October 2002. These campaigns did have an impact on vaccination coverage. For children aged 12 to 23 months at the time of the TL 2003 DHS, Polio 1 and measles vaccinations were 47% and 66% respectively of the vaccinations recorded on cards, and 67% and 77% respectively of those reported by mothers were received during the national vaccination campaign.

Figure 11.2 Percentage of children with all vaccinations
Percentage of children aged 12 to 23 months at time of interview who had received all vaccinations (BCG, measles, and 3 doses of DTP and polio vaccines) as reported in the TL 2002 MIC survey (August 2002) in comparison to the TL 2003 DHS (May to August 2003)



Chapter 12
Childhood Diseases

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12 Childhood Diseases

This chapter examines the prevalence of childhood illnesses based on maternal reports of recent symptoms in their children less than five years of age. Three main types of childhood morbidity were assessed, acute respiratory illnesses, fever and diarrhoea. Also examined was the source and type of treatments sought by parents for their ill children. The level of childhood morbidity provides information about the immediate causes of childhood deaths. However it is also important for nutritional status because of the well recognized cyclic interaction between childhood infections and malnutrition. How children are treated and fed during diarrhoea can also have an important impact on the extent of nutritional damage caused by the illness event.

In the TL 2003 DHS, women were asked if their children less than five years of age had experienced fever, cough or diarrhoea at any time during the two weeks prior to the interview. If cough was reported additional questions were asked about nature of the child's breathing and the source and type treatment. If fever was also reported, the drugs used to treat the child were recorded, however no questions were asked about the specific causes of fever.

Acute respiratory tract infection (ARI), which is characterized by cough with difficult or short rapid breathing, is a common cause of morbidity among children less than five years of age. Hospitalisation is recommended for severe ARI; otherwise, ambulatory treatment with antibiotics is recommended. Many deaths caused by ARI can be prevented by early diagnosis and treatment with antibiotics. Fever is a symptom of various infectious diseases in children. In Timor Leste, the most prevalent infectious diseases accompanied by fever include malaria, dengue fever, respiratory and gastrointestinal infections, measles and typhoid. However, it is not possible to assign specific diagnoses for febrile illness events in children based on maternal recall of symptoms alone. Hence the symptom of fever itself is reported rather than a specific type of morbidity. Diarrhoea in children under five was recorded based on maternal reports as well as the care for their ill children including what breastfeeding, food and drinks were offered during the illness.

Childhood morbidity fluctuates by season and the information reported here may have captured differing stages of the seasonal patterns of morbidity in the various strata across the country. This is likely given that the data were collected over a four month period from May until August 2003.

12.1 Prevalence and treatment of acute respiratory infections and fever

Table 12.1 shows the percentage of children whose mothers reported they had symptoms of ARI or a fever within the two weeks preceding the survey, and the percentage for whom treatment was sought. The table reveals that 14% of children were reported to have symptoms of ARI.

Table 12.1 Prevalence and treatment of acute respiratory infections and/or fever

Percentage of children under five years of age who had a cough accompanied by short, rapid breathing (symptoms of ARI), percentage of children who had a fever in the two weeks preceding the survey, and percentage of children with symptoms of ARI and/or fever for whom treatment was sought from a health facility or provider, Timor Leste 2003

Background characteristics	Prevalence of ARI and/or fever among children with symptoms of ARI			Treatment among children with symptoms of ARI and/or fever	
	Percentage of children with symptoms of ARI	Percentage of children with fever	Number of children	Percentage for whom treatment was sought from a health facility or provider[1]	Number of children
Age in months					
<6	12.8	19.8	656	17.2	112
6-11	18.0	37.4	605	29.1	176
12-23	16.1	38.1	1114	30.3	339
24-35	13.8	30.9	1130	23.6	269
36-47	12.6	26.7	959	22.2	214
48-59	11.1	22.4	770	18.0	139
Sex					
Male	14.5	29.9	2576	24.0	621
Female	13.6	29.7	2657	23.5	627
Residence					
Urban	12.4	29.5	1214	28.1	341
Rural East	22.6	32.4	1352	25.5	348
Rural Central	12.5	30.2	1772	22.5	399
Rural West	6.4	25.3	895	17.9	161
Ecological zones					
Highlands	12.2	26.9	906	18.8	170
Lowlands	14.4	30.4	4328	24.8	1078
Education					
No education	13.7	27.5	2398	20.1	485
Some primary	14.2	31.8	1008	23.9	241
Completed primary	15.8	33.5	446	29.2	130
Some secondary or more	14.0	31.1	1381	28.3	392
Household wealth index					
Poorest	15.3	30.3	2285	20.6	472
Middle	13.1	29.5	2058	25.0	516
Richest	13.0	29.2	891	29.1	260
Total	14.0	29.8	5233	23.8	1248

[1]Excludes pharmacy, shop and traditional practitioner

The highest prevalence of ARI was found among children aged 6 to 11 months (18%), and 11 to 23 months (16%). Males were slightly more likely to have symptoms of ARI (15%) compared to females (14%). There was a marked regional pattern with much lower prevalence in the rural west than in other regions. Levels were slightly higher in lowland areas and among children from the poorest households. There was tendency for women with some education to more often report ARI symptoms than women with no education. This might relate to differing perceptions about ARI symptoms between women with at least some education versus those with no education. The prevalence of ARI in Timor Leste was approximately twice that reported in the Indonesian 2002/2003 DHS, although lower than the rate reported in the Vietnam 2002 DHS (19.5%). However, these cross county comparisons are of limited use because the surveys have not been seasonally matched, and there may be varying perceptions about the symptoms in different societies.

According to Table 12.1 the prevalence of fever in children under five years in the two weeks preceding the survey was high at 30%. Similar to symptoms of ARI, the highest prevalence of fever was in the 6 to 11 and 11 to 23 months age groups (37 and 38% respectively). There were no gender differences in the prevalence of fever in the two weeks preceding the survey. There was a slightly higher prevalence of fever in the rural east region, the lowlands ecological zone and in children from the poorest households. As with ARI symptoms, mothers with some education were more likely to report fever than women with no education.

Less than one quarter of children with symptoms of fever or ARI were taken to a health facility for treatment. However, children in the age groups most likely to have had reported symptoms of ARI or fever (6 to 23 months) were the most likely to be taken to a health facility for treatment, as were children from urban areas, whose mothers had completed primary school, and who were from the wealthiest households.

Table 12.2 Drugs taken for fever

Percentage of children under five years who were ill with fever during the two weeks preceding the survey, by type of drug taken, according to residence, Timor Leste 2003

Drugs	Residence				Total
	Urban	Rural East	Rural Central	Rural West	
Anti-malarial drugs					
Fansidar	6.4	11.1	1.4	4.7	5.0
Chloroquine / Nivaquine	13.8	14.9	11.6	17.5	14.3
Any non anti-malarial drug	67.0	62.2	53.9	60.9	60.1
Aspirin	7.4	9.4	8.7	4.4	7.2
Acetaminophen / Paracetamol	73.6	77.0	67.5	68.7	70.7
Ibuprofen	2.1	2.1	0.7	0.0	1.1
Antibiotics	5.9	1.3	0.5	1.6	2.2
Other	18.7	7.2	13.4	14.9	14.3
Don't know/missing	14.4	7.2	22.4	15.8	16.4
No drug	13.8	6.0	17.1	12.7	13.5
Number of children	358	438	534	227	1558

The types of drugs given to children with fever are presented in Table 12.2. In Timor Leste malaria is endemic and is likely to be an important contributory cause of death in infancy and childhood. In settings were malaria is endemic, so called 'presumptive treatment' of fever with antimalarial medication is often advocated. The most common drug to be administered to children in Timor Leste with reported fever was acetaminophen or paracetamol (71%), and overall 60% of the children received any non anti-malarial drug. There was a similar level of usage of chloroquine or nivaquine across the four regions but with slightly higher usage in children from the rural west region. Fansidar usage was much higher in the rural east region. Children from the rural east region were the least likely to be given no drugs, while children from the rural central were the most likely to be given no drugs. Children from urban regions were more likely to receive antibiotics or other drugs than children from other regions.

12.2 Disposal of children's stools

The spread of infectious diseases, especially diarrhoeal diseases, is strongly related to the level of faecal contamination in the environment surrounding homes where young children often play. Thus the appropriate disposal of children's faeces is a key health-related behaviour that can help prevent the spread of infectious diseases. If children's faeces are disposed of using methods that result in their containment, the level of environmental contamination is greatly reduced either from direct faecal contamination or from secondary dispersion of potential pathogens by animals.

Table 12.3 presents the reported disposal of children's stools, by background characteristics, including type of sanitation facilities in the household. It shows the majority of mothers who lived with their youngest child under five years, disposed of their children's stools using a method that left the stools uncontained. Only 4% of the children were reported to regularly use a toilet/latrine, and 10% of the mothers reported throwing the stools into the toilet/latrine. The most common reported methods of disposal were to throw the stools outside the dwelling (21%) or outside the yard (19%), both of which are uncontained methods of disposal.

Mother's education and the level of household wealth were related to the likelihood of stools being contained. It appears that the higher the mother's education, the higher the percentage of children whose stools were contained, and vice versa. Similarly, mothers from wealthier households were more likely to contain the stools of their children than mothers from poorer households. Mothers from the urban areas were more likely to contain their children's stools than mothers from rural areas. The method of stool disposal was also related to the sanitation facilities available to the family. Containment of the stools was more likely if the family had access to a private toilet as opposed to a shared or public toilet or no toilet. Diapers (disposable or washable) were used by 24% of mothers, and were more likely to be used in households with a shared toilet or with no toilet. Also diapers were slightly less likely to be used by mothers from the wealthier households than from poorer households.

Table 12.3 Disposal of children's stools.

Percent Distribution of mothers who are living with their youngest child under five years, by way in which child's faecal matter is disposed of, according to background characteristics and type of toilet facilities in household, Timor Leste 2003.

Background characteristics	Stools contained			Stools uncontained			Use diapers					
	Child always uses toilet/ latrine	Thrown into toilet/ latrine	Buried in yard	Thrown outside dwelling	Thrown outside yard	Rinsed away	Use disposable diapers	Use wash-able diapers	Not disposed of	Other	Total	Number. of mothers
Residence												
Urban	11.5	18.8	8.2	17.5	10.8	7.6	0.7	21.3	0.0	3.6	100.0	679
Rural East	2.9	9.3	2.9	17.7	19.1	13.4	1.3	26.0	0.0	7.5	100.0	779
Rural Central	2.8	8.3	5.4	24.9	14.4	10.0	0.7	28.3	0.1	5.0	100.0	997
Rural West	0.4	5.2	9.1	21.5	38.4	3.4	0.0	10.8	0.3	11.0	100.0	555
Ecological zone												
Highlands	2.1	5.7	3.8	27.3	16.2	10.5	0.6	28.0	0.3	5.5	100.0	499
Lowlands	4.8	11.3	6.5	19.4	19.8	8.8	0.7	21.9	0.1	6.6	100.0	2511
Education												
No education	3.5	7.4	5.9	22.7	22.6	7.8	0.5	23.5	0.2	5.9	100.0	1397
Some primary	4.4	8.0	6.4	21.0	19.4	9.2	0.7	23.7	0.1	7.2	100.0	577
Completed primary	5.2	9.1	9.5	17.5	15.2	11.5	0.6	22.1	0.0	9.4	100.0	249
Some secondary or more	5.5	17.7	5.2	18.1	14.5	10.6	1.1	21.5	0.0	5.9	100.0	788
Household wealth index												
Poorest	2.1	4.6	4.7	24.0	21.6	9.3	0.4	25.7	0.1	7.6	100.0	1298
Middle	3.1	11.3	7.4	19.2	21.2	8.6	1.1	21.1	0.1	6.9	100.0	1188
Richest	12.8	22.6	6.6	16.0	9.0	9.6	0.6	20.0	0.0	2.8	100.0	524
Sanitation facilities												
Private with septic	9.4	20.7	6.2	14.0	13.9	12.1	0.3	18.9	0.0	4.4	100.0	524
Private no septic	6.9	22.8	7.4	14.8	19.7	7.2	0.0	16.7	0.0	4.4	100.0	322
Shared, public toilet	1.5	10.6	7.3	37.8	6.9	1.5	4.8	22.6	0.0	7.0	100.0	61
River, stream, creek	5.7	3.6	7.7	28.1	24.3	7.9	0.0	19.1	0.0	3.6	100.0	65
Pit	4.0	9.7	8.2	26.2	12.4	9.5	0.4	23.8	0.4	5.5	100.0	551
Bush/Forest/ Yard	2.5	3.9	5.2	22.5	24.1	7.4	1.0	25.4	0.1	8.0	100.0	1299
Pig Yard	0.0	10.3	3.0	12.8	22.2	15.8	0.9	25.6	0.0	9.4	100.0	108
Other	0.0	7.8	1.3	13.2	22.5	18.9	1.3	27.0	0.0	7.9	100.0	75
Total	4.3	10.4	6.1	20.7	19.2	9.1	0.7	22.9	0.1	6.5	100.0	3010

12.3 Prevalence of diarrhoea

Without treatment, watery diarrhoea in children can lead to dehydration and in many developing countries is a major cause of death in infancy and childhood. The important contribution of diarrhoea to child mortality makes information about the prevalence of childhood diarrhoea and the appropriateness of the treatment and the feeding of the ill child a priority for child survival programs. Table 12.4 shows the period prevalence of diarrhoea for children less than five years during the two weeks preceding the interview according to background characteristics. The validity of this indicator was affected by the mother's perception of diarrhoea as an illness and her capacity to recall the events. The prevalence of diarrhoea varies seasonally and this seasonality may vary in different geographic areas of Timor Leste. The fieldwork was carried out from May to August, and should be taken into account in interpreting the findings. Table 12.4 shows that 10% of children less than five years had diarrhoea in the two weeks preceding the survey. The prevalence of diarrhoea was highest among children age 6 to 11 and 12 to 23 months. Males were slightly more likely than females to have had diarrhoea. The prevalence of diarrhoea was higher in the rural east and urban areas. Diarrhoea prevalence did not vary by the mother's education or household wealth category; however, it did vary according to the source of drinking water. Children whose source of drinking water was an open well were more likely to have diarrhoea than other children.

Table 12.4 Prevalence of diarrhoea
Percentage of children under five years with diarrhoea in the two weeks preceding the survey, Timor Leste 2003

Background characteristics	Diarrhoea during two weeks before survey	Number of children
Age in months		
<6	7.4	655
6-11	15.1	604
12-23	13.4	1108
24-35	10.7	1129
36-47	7.4	959
48-59	6.2	770
Sex		
Male	11.1	2573
Female	9.2	2652
Residence		
Urban	10.5	1213
Rural East	11.8	1346
Rural Central	9.5	1770
Rural West	8.5	895
Ecological zone		
Highlands	9.9	906
Lowlands	10.2	4319
Mother's education		
No education	9.4	2394
Some primary	10.7	1007
Completed primary	12.4	445
Some secondary or more	10.3	1379
Household wealth index		
Poorest	9.3	2280
Middle	10.8	2056
Richest	10.7	889
Source of drinking water		
Piped	8.7	2000
Protected well	11.2	711
Open well	15.2	295
Surface	10.4	2166
Other/Missing	11.1	53
Total	10.1	5225

12.4 Knowledge of diarrhoea care

Oral rehydration therapy is a simple, effective treatment for dehydration and can prevent many of these infant deaths. Oral rehydration therapy (ORT) of children with diarrhoea includes solutions prepared from pre-packaged rehydration salts, or solutions prepared at home from appropriate proportions of salt, sugar and water, or by simply increasing the intake of fluids. In the TL 2003 DHS, a mother was classified as knowing about ORT if she reported ever hearing about the commonly available packages of oral rehydration salts (ORS).

Table 12.5 shows the percentage of mothers who gave birth in the five years preceding the survey and who know about ORS packets. Overall 81% of mothers know about the ORS packets. Knowledge about the ORS packets decreased as the women's age increased (83% for the youngest age bracket, compared to 64% for the eldest). Women in the rural east were less likely to know about the ORS packets compared to women in other areas. Women from the poorest households were less likely to know about ORS packets than mothers from wealthier households. Similarly, level of education was positively associated with knowledge about the ORS packets.

Table 12.5 Knowledge of ORS packets
Percentage of mothers with births in the five years preceding the survey who know about ORS packets for treatment of diarrhoea, by background characteristics, Timor Leste 2003

Background characteristics	Percentage of mothers who know about ORS packets	Number of mothers
Age		
15-19	82.0	116
20-24	85.4	454
25-29	83.4	775
30-34	82.9	758
35-39	76.6	545
40-44	77.2	275
45-49	69.8	86
Residence		
Urban	86.2	679
Rural East	70.7	779
Rural Central	82.1	997
Rural West	88.9	555
Ecological zone		
Highlands	79.5	499
Lowlands	81.7	2511
Education		
No education	75.1	1397
Some primary	84.1	577
Completed primary	83.3	249
Some secondary or more	89.8	788
Household wealth index		
Poorest	76.1	1298
Middle	83.2	1188
Richest	89.9	524
Total	81.3	3010

12.5 Diarrhoea treatment

Information about the treatment for children with diarrhoea in the two weeks preceding the survey is presented in Table 12.6. It examines the percentage of children treated at health care facilities and the percentage of children receiving various treatments for diarrhoea. The use of ORT, including solutions prepared from ORS packets, recommended home fluids and use of increased fluids are a particular focus of the table.

Table 12.6 reveals that only 15% of children less than five years with diarrhoea in the two weeks preceding the survey were taken to a health facility or provider for treatment. There was no consistent age pattern for the use of health facilities or providers, although children aged between 24 and 35 months had the highest use of these facilities. Females were less likely to be taken to a health provider than males. Children living in urban areas or whose mother had some secondary education or more were also more likely to be taken to a health facility or provider. Children from the poorest households and from highlands were less likely to seek treatment.

The key treatment recommendation for children who have diarrhoea is that there be given suitable fluids preferably a solution prepared from ORS packets, or alternatively appropriate homemade fluids, or at least increased fluids or a combination of these treatments. A surprisingly high percentage of children with diarrhoea were treated with ORS packets (60%), which was the most frequently used treatment. Seventy five percent of children were given either ORS, recommended homemade fluids or increased the intake of fluids. In contrast, with this high use of appropriate rehydration solutions, over 40% of mothers reported reducing fluid intakes suggesting inadequate amounts of fluids were being given even though appropriate solutions were used.

The second most popular treatment of diarrhoea was unspecified homemade and other remedies which may not be appropriate for young children ill with diarrhoea. Furthermore, just less than one quarter of the children were not given any treatment for their diarrhoea, and it appears the percentage untreated was higher amongst the youngest children. About 40% of children were treated with pills or syrup, and most of these treatments were presumably purchased without medical advice.

Children from the urban and rural central regions were more likely to be given appropriate rehydration solutions than children from the other regions and lowest use of recommended fluids was from the rural west region. Mother's education and the household wealth index were associated with the type of treatment for diarrhoea. Mothers with less education and those from poorer households were less likely to use the recommended fluids for their children with diarrhoea. Home remedies were more likely to be used by women from poorer households.

The percentage of mothers reporting their child was treated with "intravenous solutions" was very high and not consistent with the percentage being treated in health care facilities. This may reflect a misunderstanding of this type of treatment by respondents.

Table 12.6 Diarrhoea treatment

Among children under five years of age who had diarrhoea over the two weeks before the survey, percentage taken for treatment, percentage who received oral rehydration therapy, and percentage given other treatments, according to background characteristics, Timor Leste 2003

Background characteristics	Percent-age taken to a health facility or provider[2]	Oral Rehydration Therapy[1]						Other Treatments						
		Oral rehydration salts (ORS) packets	Recommended home made fluids (RHF)	Either ORS or RHF	Less fluid	More fluid	ORS, RHF or more fluids	Pill or syrup	Injection	Intravenous solution	Home Remedy /other	Missing	No treatment	Number of children with diarrhoea
Age in months														
<6	(17.1)	(36.3)	(38.6)	(55.9)	(46.4)	(9.0)	(60.8)	(43.7)	(22.8)	(20.6)	(41.3)	(0.0)	(49.4)	48
6-11	16.7	58.7	42.2	72.5	40.3	5.5	73.6	41.7	11.5	17.0	52.5	0.0	24.4	91
12-23	11.2	57.5	39.0	70.2	43.6	6.4	72.3	35.3	7.0	9.1	60.7	1.1	22.1	150
24-35	19.4	67.6	51.8	83.4	42.2	8.3	85.4	44.5	10.9	15.0	57.2	2.9	19.2	121
36-47	11.5	63.5	39.4	73.6	46.3	6.3	75.9	43.5	13.2	14.6	54.2	0.0	20.3	72
48-59	(12.8)	(65.5)	(48.3)	(72.3)	(45.5)	(9.9)	(77.4)	(40.7)	(10.7)	(18.2)	(55.5)	(0.0)	(18.2)	48
Sex														
Male	16.5	62.4	43.7	74.8	45.4	7.4	76.7	46.5	12.3	16.0	50.1	0.7	25.0	287
Female	12.7	56.3	42.8	70.8	41.3	6.9	73.9	34.3	9.3	12.3	62.4	1.2	22.7	243
Residence														
Urban	30.4	70.1	40.9	75.4	33.3	7.2	76.8	40.6	15.1	18.9	53.8	0.7	22.6	127
Rural East	12.5	49.4	39.1	70.0	46.9	9.4	71.9	39.5	14.9	18.4	59.7	0.0	29.2	160
Rural Central	5.0	63.6	52.1	81.7	45.0	6.7	84.2	28.9	6.2	9.3	63.3	1.7	17.7	167
Rural West	15.1	54.7	36.8	58.5	50.0	3.8	61.3	74.3	6.8	9.5	32.4	1.9	28.9	76
Ecological Zone														
Highlands	6.8	57.5	52.8	75.4	43.3	7.7	78.5	29.7	6.8	20.6	56.2	1.5	22.6	90
Lowlands	16.5	60.0	41.4	72.9	43.5	7.1	74.8	43.1	11.8	13.0	55.7	0.9	24.2	440
Mother's Education														
No education	12.5	48.2	38.5	64.5	48.0	6.4	67.4	34.2	12.2	11.3	62.8	0.4	27.2	225
Some primary	17.1	61.0	39.8	73.9	38.8	6.6	74.8	47.4	13.0	15.8	50.1	0.7	30.0	108
Completed primary	4.7	66.9	67.2	78.6	39.2	15.9	83.6	57.7	8.0	22.7	34.1	5.0	22.3	55
Some Secondary+	20.6	73.9	44.5	84.6	41.6	5.5	85.3	40.1	9.0	14.4	57.3	0.5	14.8	142
Household Wealth Index														
Poorest	13.2	51.1	43.4	70.2	43.4	9.4	73.7	37.2	8.7	8.9	59.0	0.0	27.0	212
Middle	16.1	63.8	41.0	74.9	47.7	6.6	75.8	43.5	13.9	19.4	51.6	2.3	21.9	222
Richest	15.5	68.7	48.5	76.4	33.9	3.9	78.3	42.4	8.7	13.5	58.7	0.0	21.8	96
Total	14.8	59.6	43.3	73.3	43.5	7.2	75.4	40.8	10.9	14.2	55.8	1.0	23.7	530

[1]ORT includes solution prepared from oral rehydration salt (ORS) packets, recommended homemade fluids (RHF) or increased fluids

[2]Excludes pharmacy, shop, and traditional practitioner

( ) Based on less than 50 unweighted observations.

Both knowledge and use of ORS varied by maternal education (Figure 12.1) and household wealth index (Figure 12.2). Overall, 81% of women knew about ORS but only 60% used it when their children were ill with diarrhoea. The level of knowledge and use of ORS progressively increased with increasing education and wealth, and the gap between them reduced.

Figure 12.1 Knowledge and use of ORS packets by level of maternal education.
The percentage of mothers giving birth in the last five years who knew about ORS packets compared to the percentage of mothers with a child less than five years having diarrhoea in the two week prior to interview, who used ORS packets, according to level of maternal education.

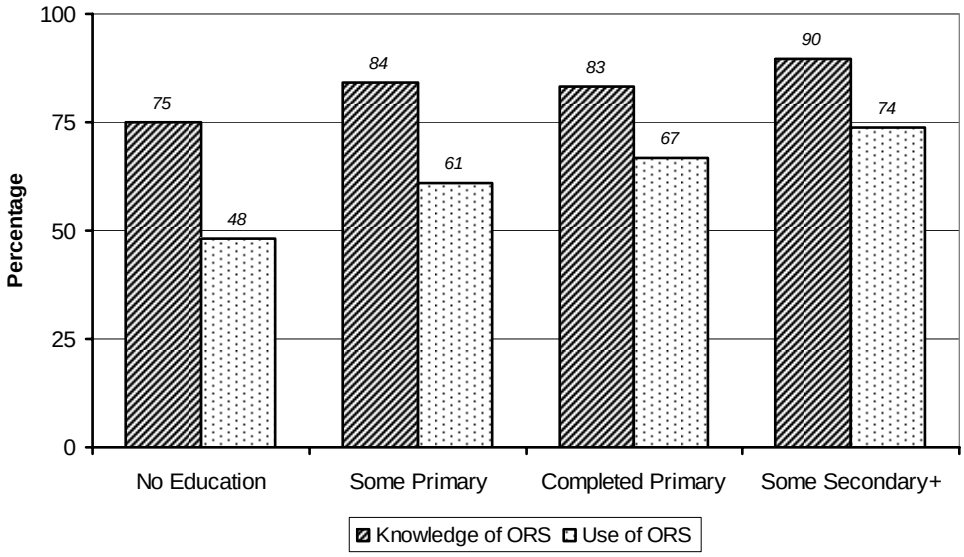
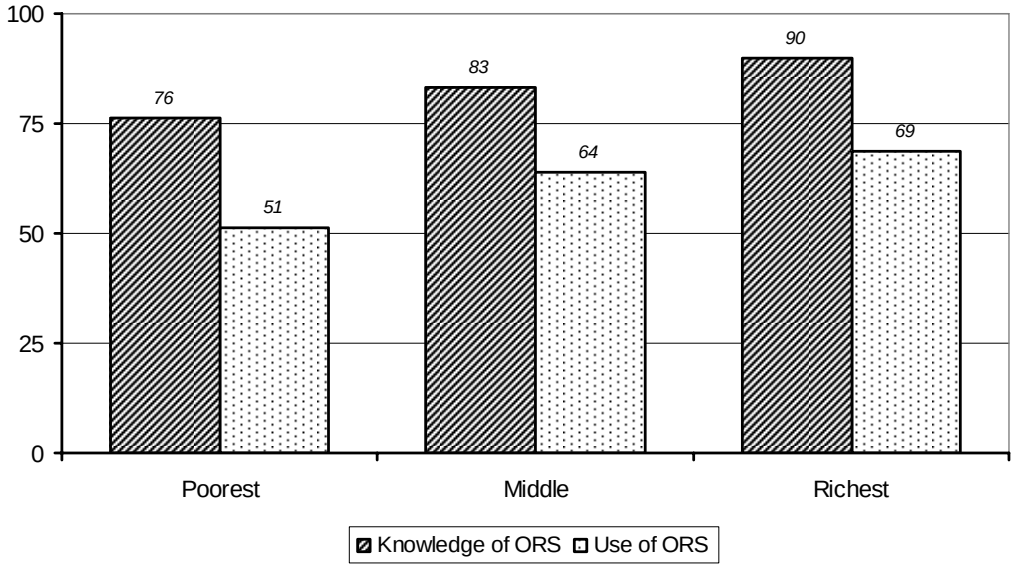


Figure 12.2 Knowledge and use of ORS packets by household wealth index
The percentage of mothers giving birth in the last five years who knew about ORS packets compared to the percentage of mothers with a child less than five years having diarrhoea in the two week prior to interview, who used ORS packets, according to household wealth index



12.6 Feeding practices during diarrhoea

An essential aspect of the treatment of childhood diarrhoea is the need for additional fluids. However, repeated episodes of diarrhoea can contribute to child malnutrition. The extent of nutritional damage can be limited by appropriate feeding during and after the diarrhoea episode. Table 12.7 presents information about the practices of offering fluids and food to children who had diarrhoea in the two weeks prior to the survey. Only 7% of the children with diarrhoea were given more fluids than usual, while disturbingly 43% percent of children were given less fluid or none at all. These results suggest a need in Timor Leste to promote more appropriate practices related to giving more fluids to children during diarrhoea.

Anorexia and vomiting during episodes of diarrhoea make it difficult to continue giving children food during the episode because the child may refuse food. Given the difficulties of feeding children during diarrhoea it is not surprising that Table 12.7 reveals only 4% of children were given more food than usual. Of greater concern is the high percentage of children (63%) who were given less food or none at all. Given these results and the high levels of childhood malnutrition (see Chapter 13), there appears to be a need in Timor Leste for community promotion of appropriate feeding of children during diarrhoea.

Table 12.7 Feeding practices during diarrhoea
Percentage of children under five years who had diarrhoea in the two weeks preceding the survey, by amounts of fluids and food offered, compared with normal practice, Timor Leste 2003

Feeding Practices	Percentage
Amount of fluids offered	
Same as usual	49.3
More	7.2
Somewhat less	29.0
Much less	11.6
Stopped fluids	2.2
Don't know/Missing	0.8
Total	100.0
Amount of food offered	
Same as usual	34.6
More	3.2
Somewhat less	33.7
Much less	24.6
Stopped food	1.5
Don't know/Missing	1.7
Never gave food	0.6
Total	100
Number of Children	530

12.7 Hand-Washing Practices

Personal hygiene, in particular washing of hands is important when preparing food in order to reduce transmission of diarrhoeal and respiratory diseases through contaminated food. It is also important to prevent direct transmission of pathogens when feeding children by hand. In the TL 2003 DHS, respondents were asked whether they washed their hands before preparing meals for their family.

Table 12.8 shows that overall 92% of women washed their hands before preparing meals. Younger women were more likely to wash their hands than older women. The percentage of women washing their hands was lower in the rural west in comparison to other regions. There was a positive association between high household wealth and the percentage of women who washed their hands. For example, 89% of those in the poorest households washed their hands, compared to 97% in the wealthiest households. Mothers from households with piped water or a protected well, and from households with water sources on the premises or less than five minutes away were also more likely to wash their hands.

Table 12.8 Hand washing practices

Percentage of women who washed their hands before preparing a meal for their family the last time, according to background characteristics, Timor Leste 2003

Background Characteristics	Washed hands	Did not wash hands	Never prepared meals	Total	Number of Women
Age					
15-19	95.2	4.8	0.0	100.0	116
20-24	95.1	4.7	0.2	100.0	454
25-29	92.4	7.5	0.1	100.0	775
30-34	92.8	7.0	0.2	100.0	758
35-39	88.7	10.9	0.4	100.0	545
40-44	91.1	8.9	0.0	100.0	275
45-49	86.8	10.7	2.4	100.0	86
Residence					
Urban	96.5	3.4	0.1	100.0	679
Rural East	91.1	8.5	0.4	100.0	779
Rural Central	95.0	4.9	0.1	100.0	997
Rural West	82.8	16.7	0.5	100.0	555
Ecological Zone					
Highlands	98.2	1.8	0.0	100.0	499
Lowlands	90.9	8.8	0.3	100.0	2511
Household Wealth Index					
Poorest	88.9	10.8	0.3	100.0	1298
Middle	93.4	6.4	0.2	100.0	1188
Richest	96.9	2.6	0.4	100.0	524
Source of Drinking Water					
Piped	93.5	6.2	0.4	100.0	1150
Protected Well	93.9	6.1	0.0	100.0	421
Open Well	89.4	9.7	1.0	100.0	179
Surface	90.3	9.5	0.2	100.0	1230
Other/Missing	100.0	0.0	0.0	100.0	30
Time to get water					
On premises	93.8	6.1	0.1	100.0	809
1-4 minutes	95.3	4.2	0.5	100.0	540
5-9 minutes	90.5	9.0	0.5	100.0	599
10+ minutes	90.0	9.9	0.2	100.0	1061
Total	92.1	7.7	0.3	100.0	3010

Chapter 13
Nutrition and Anaemia

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13 Nutrition and Anaemia

This chapter focuses on nutrition of men, women and their young children and examines infant and child feeding practises, intake of micronutrients of women and children, household food security, and the consequences of inadequate nutrition by assessing the anthropometric status of men, women and children. Also presented are the results of haemoglobin testing of women and children to assess the extent and distribution of anaemia in these susceptible populations in Timor Leste.

13.1 Infant and child feeding practises

The survival, growth, development, health and nutrition of infants and young children are closely related to the way they are feed as infants. The nutritional status of the mother during pregnancy and lactation also has an impact on the health and nutritional status of her infant. Breastfeeding is universally accepted as the most appropriate way to feed infants as it offers the most health and nutrition benefits to the infant. Breastfeeding, apart from providing an optimal combination of nutrients for the growing infant, also protects the infant from environmental contamination that can occur with infant formula, water based liquids and solid foods. The extent of the benefits from breastfeeding is related to the duration and intensity of breastfeeding, as well as the timing of introduction of other liquids and solid foods.

Exclusive breastfeeding until six months of age is recommended for infants as a way to reduce exposure to environmental pathogens and the subsequent risk of infections, which can have an adverse nutritional impact on the growing child and even lead to death. The United Nations Children's Fund (UNICEF) and the WHO recommend that solid food should only be given after six months of age and that breastfeeding should continue into the second year of life. Prolonged breastfeeding and breastfeeding of adequate intensity also increase the duration of postpartum infertility and impact on the woman's fertility and the length of birth intervals. Longer birth intervals have a positive impact on the health and nutrition of women by allowing them sufficient time to recover from the physical and nutritional demands of pregnancy.

13.1.1 Initial breastfeeding

Both mother and infant benefit from the early initiation of breastfeeding. An infant sucking on the breast releases the hormone oxytocin which increases uterine contractions and improves expulsion of the placenta and reduces the risk of haemorrhage following delivery. The infant benefits from the first breast milk called colostrum which is rich in nutrients and immunologically active components that help protect against infection.

In the TL 2003 DHS, for all children born in the five years before the survey, mothers were asked how soon after birth the baby was given breast milk. They were also asked whether the child was given anything other than breast milk during the first three days of life before the mother started breastfeeding regularly. Table 13.1 shows a very high

percentage (97%) of children born in the five years preceding the survey, were breastfed. This percentage dropped slightly if the child was born in a public sector health facility (93%), and even further if the child was born in a private sector health facility (90%). This drop corresponds with the lower percentage of children who were breastfed who came from wealthier families (94%). Presumably wealthier families had greater access to health care facilities. Comparably high levels of initiation of breastfeeding were reported in the TL 2002 MIC survey and the Indonesian 1997 DHS for the province of East Timor.

Table 13.1 Initial Breastfeeding

Percentage of all children who were ever breastfed, and percentage who started breastfeeding within one hour and within one day of birth, among children born in the five years before the survey, by background characteristics, Timor Leste 2003.

Background characteristics	Among all children		Among children ever breastfed, percentage who started breastfeeding:		Percentage of children who received a prelacteal liquid	Percentage who received prelacteal semisolid food	Number of children ever breastfed
	Percent ever breastfed	Number of children	Within 1 hour of birth	Within 1 day of birth			
Sex of child							
Male	96.3	2954	46.4	86.6	10.4	8.1	2841
Female	97.2	3034	47.5	86.9	10.7	5.9	2948
Region							
Urban	94.2	1380	41.6	85.5	11.6	6.3	1297
Rural East	96.7	1517	35.4	92.9	8.9	0.2	1470
Rural Central	97.7	2024	48.6	89.0	10.4	6.2	1976
Rural West	98.1	1068	66.6	75.2	11.8	18.1	1047
Ecological zones							
Highlands	98.2	1048	50.9	91.9	9.0	0.0	1029
Lowlands	96.4	4940	46.1	85.6	10.9	8.2	4761
Education							
No education	97.1	2812	48.4	87.3	10.4	8.4	2729
Some primary	97.0	1144	49.3	86.7	10.0	7.0	1109
Primary completed	97.8	508	43.6	88.4	10.4	8.8	496
Some secondary or more	95.4	1525	43.5	85.0	11.3	4.4	1455
Household wealth index							
Poorest	97.8	2624	47.5	87.8	9.7	7.0	2565
Middle	96.7	2326	48.1	84.7	11.2	6.7	2250
Richest	93.9	1037	42.5	88.6	11.2	7.7	974
Assistance at delivery							
Health professional1	94.4	879	35.4	87.9	15.4	6.6	831
Traditional birth attendant	95.1	511	44.5	88.9	16.7	35.6	486
Relative/Friend	97.6	4047	48.2	85.6	9.3	1.9	3947
Other or none	95.8	528	57.8	91.3	6.2	1.4	507
Place of delivery							
Home (own or other)	97.1	5456	47.5	86.8	10.4	7.0	5299
Public health facility	92.8	463	41.6	85.8	13.0	6.5	429
Private health facility	89.9	64	34.0	87.8	9.6	12.1	58
Other	*	4	*	*	*	*	4
Total	96.7	5988	46.9	86.7	10.6	7.0	5790

[1] - Doctor, nurse, midwife or village midwife

* Fewer than 10 observations

Close to half the children born in the five years preceding the survey were breastfed within the first hour of birth (47%), while 87% were breastfed within the first day. These high rates of early initiation of breastfeeding might be related to the high percentage of home deliveries (90% see Table 10.7) that occur in Timor Leste. The corresponding figures in the Indonesia 2002-2003 DHS were much lower, where it was found that only 4% of children born in the five years preceding the survey were breastfed within the first hour of birth, and 27% within the first day. However, they were similar to the rates reported in the Vietnam 2002 DHS which were respectively 57% and 87%.

The timing of introduction of complementary foods in addition to breast milk has important health benefits for both the child and mother. Early introduction of foods low in energy and nutrients and are prepared under unhygienic conditions can result in poor nutrition, infection with pathogenic organisms, and lowered immunity for the baby. A baby receiving complementary foods will breastfeed less, thus reducing suckling frequency and the quantity of milk produced. This in turn may shorten the duration of mother's postpartum amenorrhea period and may result in an earlier subsequent pregnancy.

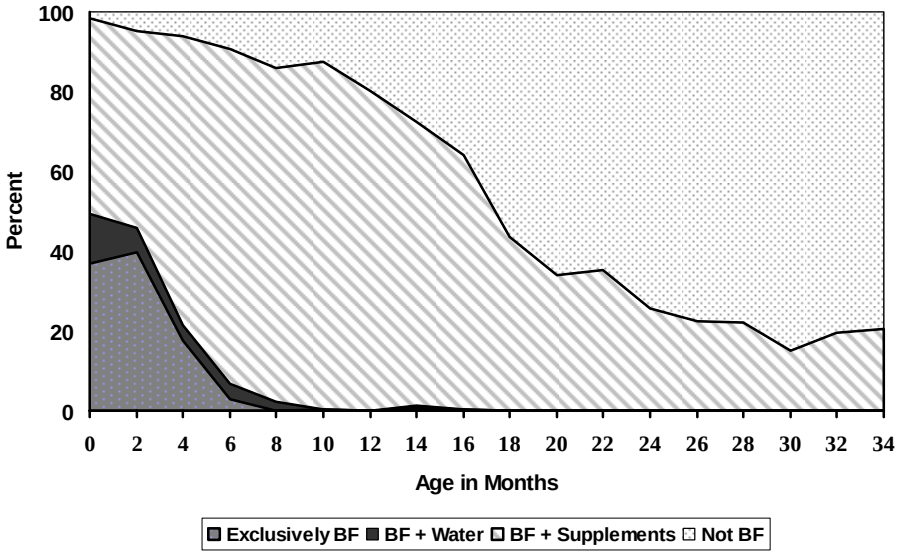
A delay in starting breastfeeding indicates some prelacteal feed is given during the period between birth and initiation of breastfeeding. Table 13.1 shows that 32% of babies received a prelacteal liquid. This happened more often if the baby was delivered with the assistance of a health professional or traditional birth attendant (50% and 46% respectively).

The percentage of babies given prelacteal semi-solid food was significantly lower (7%). Babies whose births were assisted by traditional birth attendants (TBAs) were most likely to receive prelacteal semi-solid foods. For example, 35% of births delivered by a TBA were given prelacteal semisolid foods, compared to 7% for a health professional, 2% for a relative or friend, and 1% if there was no assistance. Babies delivered in the rural west region were also more likely to have received prelacteal semi-solid food than in any other region (18% compared to 0 to 6% in other regions). Additionally, babies born in the private health sector were more likely than those born in other facilities to have received prelacteal semi solid foods.

13.1.2 Age pattern of breastfeeding

Mothers who were currently breastfeeding were asked whether they had given various types of liquids or solid foods to the child in the last 24 hours. Children are classified as being exclusively breastfed if they received breast milk only in the last 24 hours. Full breastfeeding was defined as receiving plain water only in addition to breast milk. Figure 13.1 and Table 13.2 reveal the breastfeeding status of children from birth up to three years of age in Timor Leste.

Figure 13.1 Distribution of Children by Breastfeeding Status, According to Age



From Figure 13.1 and Table 13.2 information can be obtained about five key indicators of breastfeeding performance: the percentage of children less than 4 months of age who were exclusively breastfed; the percentage of children less than 6 months of age who were exclusively breastfed; the percentage of breastfed children aged 6-9 months receiving at least some complimentary food, and the percentages of children aged 12-15 months and 20-23 months who were still being breastfed.

It is recommended that infants are exclusively breastfed for up to six months. Table 13.2 shows that 39% of children less than four months of age were exclusively breastfed, but that this percentage dropped to 31% for children under 6 months[1]. The drop in exclusive breastfeeding in the youngest age group (<2 months) was related to the introduction of both "other milk" and complimentary foods, but thereafter was mainly related to a rapid increase in the percentage of children being given complementary foods, rather than plain water alone, water based liquids or other milk.

Overall, 82% of children aged 6-9 months who were breastfed were receiving complimentary food and 76% of children aged 12-15 months, and 66% of children aged 20-23 months, were still being breastfed.

The use of a bottle with a nipple increases the chance of contamination, and it is recommended that children be fed with a spoon instead. Table 13.2 shows that the percentage of children being fed using a bottle with a nipple progressively increased from the youngest age group peaking in children aged 16 months to 21 months. This

[1] The TL 2002 MIC survey reported higher levels of exclusive breastfeeding with 53% for children <4 months, and 44% for children <6 months. However the location and sequence of questions about breastfeeding and consumption of foods and liquids differed between the surveys.

corresponds with the progressive increase in the percentage of children who were not breastfed and suggests that breastfeeding was being progressively replaced by bottle feeding.

Table 13.2 Breastfeeding status by child's age

Percent distribution of the youngest children under three years living with the mother by breastfeeding status, and percentage of children under three years using a bottle with a nipple, according to age in months, Timor Leste 2003

Age in months	Not breast-feeding	Exclusively breast-fed	Breastfeeding and consuming:				Total	Number of living children < 3 years	Using a bottle with a nipple[1]	Number of children < 3 years
			Plain water only	Water-based liquids/ juice	Other milk	Complementary foods				
<2	1.7	36.7	12.7	0.7	23.2	24.9	100.0	123	3.3	139
2-3	4.8	39.9	6.1	0.8	10.9	37.6	100.0	244	10.4	270
4-5	5.9	17.7	3.7	0.0	6.4	66.2	100.0	228	12.7	233
6-7	9.3	2.9	3.8	0.4	2.0	81.8	100.0	201	13.9	205
8-9	14.0	0.0	2.3	0.0	1.1	82.6	100.0	171	16.0	179
10-11	12.5	0.4	0.0	0.0	0.4	86.8	100.0	193	15.2	204
12-13	19.8	0.0	0.0	0.4	0.8	79.0	100.0	179	18.7	187
14-15	27.4	0.7	0.4	0.0	0.0	71.4	100.0	204	15.8	208
16-17	35.9	0.4	0.0	0.0	0.4	63.3	100.0	172	20.7	177
18-19	56.5	0.0	0.0	0.0	0.0	43.5	100.0	128	20.3	129
20-21	66.0	0.0	0.0	0.9	0.0	33.2	100.0	115	20.4	116
22-23	64.6	0.0	0.0	0.0	0.0	35.4	100.0	125	17.5	126
24-25	74.4	0.0	0.0	0.0	0.0	25.6	100.0	147	11.3	150
26-27	77.6	0.0	0.0	0.0	0.0	22.4	100.0	149	12.9	149
28-29	78.0	0.0	0.0	0.0	0.0	22.0	100.0	93	14.2	97
30-31	85.0	0.0	0.0	0.0	0.0	15.0	100.0	72	12.2	72
32-33	80.5	0.0	0.0	0.0	0.0	19.5	100.0	48	12.6	48
34-35	79.6	0.0	0.0	0.0	0.0	20.4	100.0	45	16.4	49
<4 months	3.7	38.8	8.3	0.7	15.0	33.4	100.0	367	8.0	409
<6 months	4.6	30.7	6.5	0.5	11.7	45.9	100.0	595	9.7	642
6-9 months	11.5	1.6	3.1	0.2	1.6	82.1	100.0	372	14.9	384
Total	34.5	7.3	1.9	0.2	3.0	53.0	100.0	2637	14.6	2740

Breastfeeding status in this table refers to the 24 hours prior to interview (yesterday & last night). It presents the cumulative percentages of children divided into six mutually exclusive feeding pattern groups: exclusive breastfeeding (only breast milk); breast milk plus plain water only; breast milk plus other water based liquids (can include plain water but excludes other milks); breast milk plus other milk (includes infant formula & cows milk but can also consume other water based liquids); breast milk plus complimentary solid or semi-solid foods (can also consume other milk & water based liquids); and no breast milk. [1] Based on all children under three years of age

13.1.3 Duration and frequency of breastfeeding

Table 13.3 shows the differentials in duration and frequency of breastfeeding by background characteristics. The overall mean and median duration of any breastfeeding was 17.7 and 18.5 months respectively, the mean and median duration of exclusive breastfeeding was 1.3 and 0.0 months respectively, and of predominant breastfeeding were both 0 months. The duration of any breastfeeding in Timor Leste was shorter than reported in the Indonesian 2002-2003 DHS (22.3 months) and the India 1998-99 NFHS-2 (25.2 months) but similar to that reported in the Vietnam 2002 DHS (18.0 months).

Table 13.3 Median duration and frequency of breastfeeding

Median duration of any, exclusive and predominant breastfeeding among children born in the three years prior to the survey, and the percentage of children under six months of age living with their mother who were feed six times or more in the 24 hours prior to interview, and the mean number of feeds (day/night), according to background characteristics, Timor Leste, 2003

Background characteristics	Median duration (months) of breastfeeding				Breastfeeding children under six months[1]			
	Any breast-feeding	Exclusive breast-feeding	Predominant breast-feeding[2]	Number of children	Percentage breastfed 6+ times in last 24 hours	Mean number of day feeds	Mean number of night feeds	Number of children
Sex of child								
Male	17.6	0.0	0.8	1276	96.9	5.6	5.0	304
Female	17.6	0.0	0.0	1361	96.9	5.5	4.9	307
Region								
Urban	17.7	0.0	0.0	605	95.9	5.8	5.4	141
Rural East	15.6	0.0	0.9	652	97.8	5.1	4.4	165
Rural Central	20.3	0.0	2.7	897	96.2	5.3	4.8	212
Rural West	21.8	0.0	0.0	483	98.2	6.4	5.5	92
Ecological zones								
Highlands	21.5	0.0	2.0	458	95.4	5.4	5.2	110
Lowlands	17.7	0.0	0.0	2179	97.2	5.6	4.9	500
Education								
No education	17.7	0.0	0.0	1200	97.0	5.5	4.9	276
Some primary	17.6	1.0	1.2	516	97.2	5.6	5.3	122
Primary completed	19.0	0.0	2.2	215	97.3	6.0	5.0	47
Some secondary +	19.6	0.0	0.0	706	96.3	5.4	4.7	165
Household wealth index								
Poorest	17.6	0.0	0.8	1131	96.8	5.5	5.1	257
Middle	17.7	0.0	0.0	1052	97.6	5.5	4.7	259
Richest	19.5	1.4	0.0	455	95.3	5.8	5.1	95
Total	17.7	0.0	0.0	2637	96.9	5.5	5.0	611
Mean for all children	18.5	1.3	1.7	n/a	n/a	n/a	n/a	n/a

Note: mean and median duration are based on current breastfeeding status.

[1] Excludes children with missing or invalid data for number of times of breast feeds

[2] Either exclusively breastfed or breastfed and plain water only.

The duration of any breastfeeding was longer in the rural central and rural west regions and in the highlands. The duration of predominant breastfeeding was also longer in rural central region and the highlands. There were important differences in the duration of breastfeeding by maternal education status and household wealth index. Women with higher levels of education and those from wealthier households had longer durations of any breastfeeding. This trend contrasts with results from DHS surveys in Indonesia, and India where women with higher levels of education had shorter durations of breastfeeding. However, the duration of breastfeeding of women with the highest level of education was similar in both Indonesia and Timor Leste. Presumably the high levels of fertility in Timor Leste have an impact on the duration of breastfeeding.

Overall frequency of daytime and night-time feeds was very similar and a high percentage of women breastfed their children under six months of age more than six times in the 24 hours prior to interview.

13.1.4 Types of complimentary foods consumed by children

Table 13.4 shows the percentage of children under three years living with their mother who consumed specific foods in the day or night preceding the interview according to their breastfeeding status and age. A high percentage of the children who were breastfed were also given infant formula including children less than six months of age. Surprisingly, the only food consumed by a higher percentage of breastfeeding children than by non-breastfeeding children was infant formula.

From 2 to 3 months of age a rapidly increasing percentage of breastfeeding children consumed solid or semisolid foods, mostly foods from grains, although the variety of foods offered also increased with age. As expected, at the same age a higher percentage of non-breastfed children consumed solid or semisolid foods, and the variety foods consumed remained relatively consistent across all age groups.

The percentage of breastfed child being offered any solid or semi-solid food in Timor Leste was similar to that reported in the Indonesia 2002-2003 DHS, but in contrast to the percentage of breastfeeding children being given infant formula, was higher in Timor Leste. (Other DHS surveys in Vietnam and India have not recorded the types of supplementary foods). The patterns of infant feeding revealed in the TL 2003 DHS highlight the need for more communication with mothers in Timor Leste about the most appropriate foods for infants and in particular the importance of breastfeeding and exclusive breastfeeding for healthy growth in children.

Table 13.4 Foods consumed by children in the day or night preceding the interview

Percentage of children less than three years of age living with the mother who consumed specific foods in the day or night preceding the interview, by breastfeeding status and age, Timor Leste 2003

Child's age in months	Infant formula	Other milk/ cheese/ yogurt	Other liquids	Solid/semisolid foods						Fruits and vegetables rich in vitamin A	Any solid or semi-solid food	Number of children
				Food made from grains	Fruits/ vegetables	Food made from roots/ tubers	Food made from legumes	Meat/ fish/ shellfish/ poultry/ eggs	Food made with oil/fat/ butter			
BREASTFEEDING CHILDREN												
<2	32.5	3.3	3.9	17.3	9.0	8.2	4.6	4.6	3.4	9.0	18.3	137
2-3	23.0	2.4	6.2	31.3	15.5	8.4	4.5	6.3	1.9	15.1	31.3	257
4-5	31.7	4.4	9.1	63.6	28.3	10.7	6.0	9.5	4.1	26.3	64.9	219
6-7	32.0	3.9	25.9	83.6	37.0	18.8	8.7	15.5	13.8	36.0	84.1	185
8-9	36.0	5.8	25.5	88.9	54.7	36.2	16.2	22.6	12.4	51.5	90.1	152
10-11	29.6	8.1	31.2	92.6	62.1	42.1	21.6	33.5	18.0	60.0	94.0	179
12-15	33.0	8.1	30.9	95.2	77.7	50.8	21.0	33.4	24.6	74.4	96.0	300
16-19	32.3	7.1	41.3	95.3	80.8	61.8	32.3	39.3	26.3	75.2	96.7	172
20-23	39.4	12.6	46.9	96.0	70.2	53.3	32.7	29.9	27.0	68.2	97.2	85
24-35	41.1	17.6	37.4	96.8	85.1	67.9	30.3	45.7	23.1	84.6	99.4	124
<4	26.3	2.7	5.4	26.4	13.2	8.3	4.5	5.7	2.4	13.0	26.8	394
<6	28.2	3.3	6.7	39.7	18.6	9.2	5.1	7.1	3.0	17.7	40.4	613
6-9	33.8	4.7	25.7	86.0	45.0	26.7	12.1	18.7	13.2	43.0	86.8	338
Total[1]	32.0	6.6	24.0	74.6	50.5	33.7	16.3	23.0	14.7	48.4	75.6	1810
NON-BREASTFEEDING CHILDREN												
6-7	(60.0)	(28.2)	(42.8)	(100.0)	(92.3)	(54.8)	(31.4)	(22.3)	(32.5)	(92.3)	(100.0)	19
8-9	(44.4)	(6.8)	(49.7)	(92.1)	(86.3)	(58.7)	(43.4)	(47.7)	(36.0)	(86.3)	(92.1)	24
10-11	(33.9)	(26.9)	(51.1)	(95.9)	(87.3)	(47.5)	(32.0)	(52.2)	(34.7)	(81.6)	(100.0)	24
12-15	26.9	17.3	46.0	97.4	85.0	57.9	34.6	48.8	34.6	84.2	99.0	92
16-19	16.4	15.4	39.0	99.3	89.6	64.6	30.8	44.1	30.1	88.8	100.0	134
20-23	20.4	13.3	48.9	99.4	91.3	67.4	29.8	49.2	31.1	88.3	100.0	157
24-35	16.8	15.2	49.2	98.9	92.1	70.8	37.3	49.8	31.4	90.2	99.3	438
<4	(34.6)	(14.7)	(0.0)	(36.0)	(14.7)	(14.7)	(8.8)	(14.7)	(5.8)	(14.7)	(36.0)	16
<6	(35.5)	(20.5)	(9.0)	(47.8)	(36.3)	(22.6)	(4.7)	(11.3)	(6.5)	(36.3)	(47.8)	29
6-9	(51.2)	(16.2)	(46.7)	(95.5)	(88.9)	(57.0)	(39.6)	(36.6)	(34.5)	(88.9)	(95.5)	43
Total[1]	21.0	15.6	46.0	97.0	88.8	65.2	33.7	47.0	30.9	87.1	97.7	916

( ) indicates estimate is based on less than 50 observations

[1] Includes 0 through 35 months

13.1.5 Frequency of foods consumed by children

Table 13.5 shows the number of times various foods were consumed in the 24 hours prior to the interview by children less than three years living with their mothers. The most frequently consumed foods by non-breastfeeding children were food made of grains, other liquids, and other milk/ cheese / yoghurt. A similar pattern was found in breastfeeding children, and apart from infant formula, the most frequently eaten foods were those made of grains, other liquids, and other milk/ cheese / yoghurt. The frequency of foods consumed by children who were breastfeeding remained fairly constant across all age groups. For non-breastfeeding children the frequency of consumption of most foods, except infant formula was slightly higher then breastfeeding children.

Table 13.5 Frequency of foods consumed by children

Mean number of times specific foods were consumed in the day or night preceding the interview by children less than three years of age living with the mother, by breastfeeding status and age, Timor Leste 2003

Child's age in months	Infant formula	Other milk/ cheese/ yogurt	Other liquids	Solid/semisolid foods						Fruits and vegetables rich in vitamin A	Number of children
				Food made from grains	Fruits/ vegetables	Food made from roots/ tubers	Food made from legumes	Meat/fish/ shellfish/ poultry/ eggs	Food made with oil/fat/ butter		
BREASTFEEDING CHILDREN											
<2	4.9	2.5	4.5	2.9	9.3	1.9	2.7	1.9	2.0	7.2	137
2-3	4.7	1.6	2.6	3.0	5.1	2.1	1.7	1.7	2.3	4.2	257
4-5	4.3	4.1	3.2	2.8	6.1	1.8	1.8	1.7	1.4	4.6	219
6-7	4.2	4.4	2.4	2.9	5.7	2.0	2.0	1.4	2.0	4.4	185
8-9	4.0	2.7	2.5	3.1	5.0	2.0	1.7	1.6	2.0	4.1	152
10-11	4.2	3.2	2.5	3.0	5.9	1.8	1.8	1.5	1.9	4.7	179
12-15	4.1	3.3	2.7	3.1	6.2	1.9	1.7	1.6	1.9	4.7	300
16-19	3.9	3.2	2.4	3.0	5.2	1.7	1.6	1.4	2.0	4.2	172
20-23	4.2	3.3	2.7	3.3	5.4	2.0	1.8	1.7	1.7	4.1	85
24-35	3.8	4.6	3.4	3.1	6.3	1.9	2.4	1.9	2.4	5.0	124
<4	4.8	2.0	3.1	3.0	6.1	2.1	2.0	1.8	2.1	4.9	394
<6	4.3	3.0	3.2	2.8	6.1	1.8	1.8	1.7	1.4	4.8	613
6-9	4.1	3.4	2.4	3.0	5.3	2.0	1.8	1.6	2.0	4.3	338
Total	4.2	3.5	2.7	3.0	5.8	1.9	1.8	1.6	1.9	4.6	1810
NONBREASTFEEDING CHILDREN											
6-7	(3.4)	(3.9)	(3.5)	(3.0)	(7.3)	(2.5)	(2.8)	(3.4)	(2.8)	(5.3)	19
8-9	(3.0)	(11.4)	(2.7)	(3.1)	(7.9)	(2.8)	(2.3)	(2.5)	(2.5)	(5.7)	24
10-11	(3.3)	(3.1)	(2.9)	(3.3)	(6.1)	(2.9)	(2.5)	(1.5)	(2.3)	(5.4)	24
12-15	2.9	3.2	2.7	3.1	6.2	2.2	2.2	1.8	2.6	5.0	92
16-19	2.7	3.6	2.9	3.1	5.2	2.0	1.8	1.6	2.2	4.1	134
20-23	2.3	2.5	2.2	3.1	5.0	1.6	1.6	1.5	2.1	4.0	157
24-35	2.8	4.0	2.8	3.2	5.4	1.9	1.8	1.6	2.1	4.4	438
<4	(3.8)	(5.8)	(0.0)	(2.8)	(6.6)	(2.4)	(1.0)	(1.4)	(1.0)	(5.2)	16
<6	(3.4)	(4.5)	(2.5)	(3.2)	(5.2)	(3.4)	(0.0)	(1.0)	(1.0)	(4.5)	29
6-9	(3.2)	(5.7)	(3.1)	(3.1)	(7.6)	(2.6)	(2.5)	(2.8)	(2.6)	(5.5)	43
Total	2.8	3.0	2.7	3.1	5.5	1.9	1.9	1.7	2.2	4.4	916

( ) indicates estimate is based on less than 50 observations

13.2 Micronutrient intake

13.2.1 Micronutrient intake among children

In children vitamin A deficiency can lead to increased risk of blindness, morbidity and mortality. Preventing vitamin A deficiency in children is a key child survival intervention. Table 13.6 presents the percentage of children in Timor Leste consuming micronutrient-rich foods within the seven days preceding the survey, and the percentage receiving high dose vitamin A within six months preceding the survey. Sixty two percent of children consumed foods rich in vitamin A, and 34% received vitamin A supplements.

As the age of the child increased, the likelihood of them consuming vitamin A rich foods increased, but the coverage of vitamin A supplements declined slightly. Overall, the coverage of vitamin A supplements was similar to that reported in the TL 2002 MIC survey. The level of intake of vitamin A rich foods in Timor Leste was similar to that reported in the Indonesian 2002-2003 DHS, but the coverage of vitamin A supplements was approximately half that reported for Indonesia. Living in an urban area increased the likelihood of consuming both vitamin A rich foods and vitamin A supplements, as did increased levels of mother's education. Gender and birth order had no apparent impact on the likelihood of consuming either vitamin A rich foods or supplements. Children from households that reported having food shortages in the last week were slightly less likely than households that had no reported shortages to have consumed vitamin A rich foods, and to have consumed a vitamin A supplement in the six months prior to the survey. A similar pattern was found with household wealth status, where the likelihood of consuming vitamin A rich foods or receiving vitamin A foods was much lower for children from poorer households. Mother's age at birth presented a different pattern. As the age of the mother increased, the likelihood of the child consuming vitamin A rich foods increased, but the likelihood of consuming vitamin A supplements decreased.

13.2.2 Micronutrient intake among mothers

Anemia in pregnancy can increase the risk of maternal mortality, preterm delivery and low birth weight. Anemia in pregnant women in developing countries is mainly caused by inadequate dietary iron intake and can be prevented by providing iron supplementation during antenatal care. Vitamin A deficiency in pregnancy has been associated an increased risk of maternal morbidity and mortality. Adequate maternal vitamin A stores at birth are needed to ensure that breast milk vitamin A levels are sufficient to protect the newborn during the first six months of life.

Table 13.7 shows the micronutrient intake among mothers in Timor Leste by background characteristics. Overall, 23% of women received vitamin A postpartum. Younger women with more education, and belonging to a wealthier household wealth index were more likely to receive vitamin A supplements after birth. Women who had fewer children, lived in urban areas and had not reported any food shortages in the last week were also more likely to have received a supplement.

Table 13.6 Micronutrient intakes of children

Percentage of youngest children under three living with the mother who consumed vitamin A rich fruits and vegetables during seven days before the survey, and percentage of children age 6-59 months who received vitamin A supplements in the six months preceding the survey, by background characteristics, Timor Leste 2003

Background characteristics	Consumed vitamin A rich fruits and vegetables	Number of children < 3 years	Consumed vitamin A supplements	Number of children < 5 years
Age in months				
<6	18.7	648	n/a	0
6-9.	47.9	387	38.9	402
10-11.	63.2	207	31.9	219
12-23.	79.4	966	35.9	1165
24-35	88.3	572	36.4	1202
36-47	n/a	n/a	30.5	1043
48-59	n/a	n/a	31.6	839
Sex of child				
Male	60.0	1783	34.6	2401
Female	62.9	1873	33.8	2469
Birth order				
1	59.9	293	37.5	698
2-3	61.0	842	35.5	1581
4-5	62.7	812	34.3	1337
6+	61.4	833	30.6	1253
Breastfeeding status				
Breastfeeding	48.4	1807	36.9	1237
Not breastfeeding	87.2	909	38.1	1226
Region				
Urban	70.2	637	39.8	1123
Rural East	60.5	708	32.7	1239
Rural Central	57.9	926	34.1	1643
Rural West	58.6	508	29.1	865
Ecological zones				
Highlands	56.9	2313	26.4	837
Lowlands	62.4	466	35.8	4033
Education				
No education	60.6	1268	28.1	2264
Some primary	60.3	540	33.7	931
Primary completed	63.2	225	36.0	418
Some secondary or more	63.4	747	45.0	1256
Household food shortage				
None reported in last week	63.0	1859	36.1	2474
Any reported in last week	60.0	1797	32.3	2396
Household wealth index				
Poorest	56.6	1187	28.6	2149
Middle	63.2	1106	36.0	1881
Richest	69.8	486	44.5	840
Mother's age at birth				
15-19	44.3	115	36.4	121
20-24	56.7	429	37.5	693
25-29	60.4	726	35.1	1298
30-34	62.9	709	35.8	1284
35-39	64.1	486	31.5	898
40-44	71.8	241	28.9	425
45-49	63.1	72	26.6	150
Total	61.5	2779	34.2	4870

n/a= Not applicable

Table 13.7 Micronutrient intake among mothers

Percentage of women who gave birth in the five years preceding the survey who received a vitamin A dose in the first two months after delivery, percentage who suffered from night blindness during pregnancy and percentage who took iron tablets for specific numbers of days, by background characteristics, Timor Leste 2003

Background characteristics	Received vitamin A dose postpartum	Suffered night blindness during pregnancy		Number of days took iron tablets during pregnancy				Don't know/ missing	Number of women
		Reported	Adjusted[1]	None	<60	60-89	90+		
Mother's age at birth									
15-19	30.7	10.5	9.7	51.3	39.0	0.8	2.0	6.9	120
20-24	26.5	9.7	9.1	42.7	45.0	1.2	5.9	5.2	468
25-29	24.6	12.8	11.7	49.1	39.9	1.4	5.2	4.4	817
30-34	22.5	13.9	13.2	51.7	39.5	0.9	3.7	4.2	827
35-39	20.6	16.2	14.9	57.3	34.2	1.0	3.4	4.1	630
40-44	22.5	13.4	13.4	60.2	32.7	1.8	1.9	3.6	327
45-49	16.2	16.0	15.0	64.1	29.7	0.0	0.8	5.5	133
Women's current BMI									
BMI < 18.5	21.7	14.0	13.3	52.5	38.8	1.1	3.7	4.0	1081
BMI > 18.5	24.1	13.3	12.3	52.1	38.0	1.2	4.1	4.7	2220
Number of children ever born									
0	*	*	*	*	*	*	*	*	3
1	*	*	*	*	*	*	*	*	4
2	33.0	13.1	11.7	41.6	50.3	2.1	4.6	1.5	96
3	28.1	11.2	9.9	46.7	41.8	0.8	4.3	6.4	389
4	24.6	11.9	11.1	46.9	39.8	1.8	6.3	5.2	577
5	21.9	9.9	9.3	48.0	39.5	1.5	6.2	4.8	557
6	22.8	17.8	16.4	53.5	38.2	0.7	2.8	4.7	566
7	23.0	15.7	15.4	51.2	40.8	1.5	2.9	3.7	414
8+	20.0	13.8	13.2	63.4	31.4	0.6	1.5	3.1	717
Region									
Urban	33.5	10.1	9.3	43.4	46.7	0.6	2.7	6.7	755
Rural East	20.1	18.0	17.5	50.8	37.1	3.0	7.4	1.7	854
Rural Central	20.3	12.3	10.9	59.6	31.0	0.6	4.3	4.5	1107
Rural West	20.3	12.8	12.4	51.8	42.8	0.0	0.0	5.4	607
Ecological zones									
Highlands	13.7	10.8	9.1	68.6	23.8	0.3	3.6	3.8	544
Lowlands	25.2	13.9	13.2	49.0	41.1	1.3	4.0	4.6	2779
Education									
No education	18.3	15.0	14.1	63.3	29.9	0.9	2.6	3.3	1593
Some primary	21.1	14.0	13.2	47.0	42.6	1.4	4.1	5.0	624
Primary completed	28.6	13.6	12.4	39.1	48.4	0.9	6.4	5.2	266
Some secondary or more	32.5	9.9	9.1	39.4	47.5	1.4	5.6	6.0	841
Household food shortage									
None reported in last week	25.3	11.4	10.9	53.1	37.9	0.7	1.7	6.5	1705
Any reported in last week	21.1	15.5	14.3	51.3	38.6	1.5	6.3	2.3	1618
Household wealth index									
Poorest	17.8	15.1	14.0	62.8	29.8	1.1	3.1	3.2	1424
Middle	22.6	12.5	11.9	47.8	41.2	1.1	5.2	4.7	1312
Richest	38.0	11.3	10.4	36.4	52.4	1.0	3.3	6.9	587
Total	23.3	13.4	12.5	52.2	38.3	1.1	3.9	4.5	3323

[1] Women who reported night blindness but did not report any difficulty with vision during the day

In the TL 2003 DHS, women were asked whether they experienced night-blindness while pregnant. The prevalence of maternal night-blindness during their most recent pregnancy, after adjustment for women experiencing difficulties with vision during the day, was very high at 12.5%. It was higher among women who were older, poorer, had less education and who lived in rural areas, especially the rural east region. In contrast, the prevalence of maternal night-blindness reported in the Indonesian 2002-2003 DHS was only 1.7%.

Table 13.7also indicates the percentage of mothers receiving an iron supplement during pregnancy. More than half the women (52%) did not receiving an iron supplement during pregnancy. The majority of women who did take supplements took them for less than 60 days. These women tended be younger, have less children, live in urban areas, have higher levels of education, and come from wealthier households. A very low percent of women took the supplements for more than 60 days (1% of women took supplements for 60-89 days and 4% for 90 days or more).

13.3 Household food security

13.3.1 Household crops

Table 13.8 shows the percentage of households that reported farming a crop, according to household background characteristics. Just under half of all urban households reported having no crops, as did just over half of the households in the highest household wealth index. Maize was the most frequently reported household crop. Just under half the households in the poorest and middle household wealth index category reported growing maize. The main crop in the highlands was coffee.

Table 13.8 Household crops.
Percentage of households reporting crops farmed, by background characteristics, Timor Leste 2003.

	Household crops						Number of households
	None	Rice	Maize	Cassava	Coffee	Other	
Region							
Urban	44.2	15.1	30.0	2.2	6.8	1.8	988
Rural East	6.3	52.1	39.0	1.8	0.2	0.6	1064
Rural Central	6.3	11.3	38.0	6.9	34.4	3.1	1396
Rural West	8.0	25.2	65.0	1.3	0.1	0.4	782
Ecological zones							
Highlands	5.0	2.6	37.6	5.4	46.6	2.7	3547
Lowlands	17.5	29.4	42.0	3.2	6.4	1.5	683
Household wealth index							
Poorest	5.8	24.5	46.6	4.3	17.5	1.4	1783
Middle	9.9	29.0	42.4	3.4	13.1	2.1	1674
Richest	50.9	15.6	25.3	1.9	4.5	1.8	772
Total	15.3	24.7	41.2	3.5	13.5	1.7	4230

13.3.2 Household food shortages

Table 13.9 shows the percentage of households reporting food shortages in the week preceding the survey. Forty nine percent of households reported having any food shortage in this time period. Households in the rural east were most likely to report having any food shortages, while households in the rural west were least likely to report food shortages. The percentage of households that reported a food shortage for men or women was much greater than the percentage of food shortages for children. For example, 48% of households reported food shortages for adult men, and 47% reported food shortages for adult women, compared to 36% of households reporting food shortages for children aged over 6 years and 7% of households reporting food shortages for children less than 6 years. Household wealth index affected the likelihood of food shortages being reported. For almost all reports of food shortages, the wealthier households had a lower percentage of reporting. The only exception was for food shortages for children under 6 years of age. In this category the wealthier families were more likely to report a child under 6 having a food shortage.

Table 13.9 Household food security

Percentage of households reporting food shortages in the week prior to the survey, by background characteristics, Timor Leste 2003

Background characteristics	No reported food shortage for children or adults	Any reported food shortage for children or adults	Any reported food shortage for adult men	Any reported food shortage for adult women	Any reported food shortage for children ≥6 years	Any reported food shortage for children <6 years	Number of households
Household farms crops							
None	61.2	38.8	38.4	35.8	28.1	7.5	657
Rice	50.4	49.6	49.4	47.3	34.8	6.7	1046
Maize	48.0	52.0	50.7	49.8	41.1	8.3	1759
Cassava	39.9	60.1	59.0	59.6	36.6	2.9	156
Coffee	54.6	45.4	45.1	43.0	32.3	2.5	536
Other	44.1	56.0	56.0	56.0	43.6	10.1	74
Region							
Urban	56.5	43.5	43.4	41.0	32.1	10.7	988
Rural East	31.6	68.4	68.1	66.9	49.6	8.1	1064
Rural Central	48.7	51.3	50.8	48.6	37.6	3.4	1396
Rural West	76.1	23.9	21.3	21.9	20.4	6.8	782
Ecological zones							
Highlands	47.3	52.8	51.4	51.7	35.2	4.6	683
Lowlands	52.0	48.0	47.4	45.5	41.2	7.3	3547
Education							
No education	50.5	49.5	48.6	47.0	37.3	6.8	2235
Some primary	46.3	53.7	53.6	52.0	41.8	6.6	723
Primary completed	56.7	43.3	42.8	42.4	31.0	5.0	323
Some secondary or more	54.2	45.8	45.0	43.2	31.5	7.4	950
Household wealth index							
Poorest	43.7	56.3	55.3	53.9	42.0	5.1	1783
Middle	55.0	45.0	44.4	42.9	34.2	8.1	1674
Richest	60.8	39.2	38.8	36.7	26.6	8.3	772
Total	51.1	48.9	48.1	46.6	36.2	6.8	4230

13.4 Nutritional status of women

In the TL 2003 DHS, the ever-married women interviewed were invited to be weighed and have their height measured. These measurements were used to calculate indicators of nutritional status including, body mass index (BMI), an indicator of thinness or fatness, and short stature. Low body mass index (BMI <18.5kg/m^2) can be used as an indicator of chronic energy deficiency (CED) and several levels of severity of CED are defined: mild CED is BMI 17.00-18.49kg/m^2, moderate CED 16.00-16.99kg/m^2, and severe CED <16.00kg/m^2. The health implications of low BMI for adult women are not clearly defined; however women with CED are more likely to deliver low birth weight babies.

Short stature of women (defined as height <145 cm) can be used to identify women with an increased risk of delivery complications because a short stature is associated with small pelvic size making delivery difficult. The risk of delivering a low birth weight baby is higher for women of very short stature.

Table 13.10 reveals that 38% of the non-pregnant women had a low BMI or evidence of chronic energy deficiency. The prevalence of low BMI demonstrated a U shaped relationship with age where by both younger and older women had higher levels. However, the highest prevalence of low BMI in any sub group was observed in women 45-49 years (52%). he prevalence of low BMI was high in the rural west and rural central regions and in the highlands. The levels were also very high in women with no education and women from the poorest households. With increasing levels of maternal education and household wealth, the prevalence of low BMI decreased, although even in the richest households 25% of the women had evidence of CED. Overall, slightly more than 6% of women had severe CED or BMI <16 kg/m^2, with the highest levels observed in the rural west region and among women 45-49 years.

The prevalence of low BMI observed in the TL 2003 DHS was far higher than that observed in the Vietnam 2000 General Nutrition Survey which reported a prevalence of low BMI in 26% in non-pregnant women aged 20-49 years and only 2% with severe CED. However, the prevalence of low BMI in Timor Leste was similar to that observed in the India 1998-99 NFHS-2 where 36% of ever-married non-pregnant women aged 15-49 years had a low BMI.

The prevalence of high BMI (BMI $\geq$25 kg/m^2) or overweight was low (3%) with the highest levels in women from the urban areas, wealthier households and older women.

Overall, a high percentage of women in Timor Leste have short stature (13%), with the highest prevalence found in women from the poorest households, the highland areas, and the rural central region, and women with less education. Age was not associated with short stature. The higher prevalence of short stature in women from highland areas has been observed in other populations living at altitudes higher than 1000 meters and may have its origins in reduced growth in childhood from the effects of hypoxia. In this report no attempt was made to adjust for the effects of altitude on stature in adults.

The proportion of women with low stature and the mean height of women in Timor Leste was similar to that observed in the India 1998-99 NFHS-2 where 13.2% of ever-married women aged 15-49 years were short (<145 cm) and their mean stature was 151.2 cm.

These findings from the TL 2003 DHS indicated that women of reproductive age in Timor Leste had poor nutritional status and a high prevalence of nutritional risk factors for maternal pregnancy and delivery complications and low birth weight.

Table 13.10 Body mass index of non-pregnant women

Percentage of ever-married non-pregnant women aged 15 to 49 years in body mass index (BMI) categories, and mean BMI, and the percentage of ever-married women aged 15 to 49 years with height less than 145cm, and mean height in centimetres according to background characteristics, Timor Leste 2003

Background characteristics	BMI (kg/m²)								Number of non-pregnant women	Percent <145 cm	Mean height (cm)	Number of women
	<16.00	16.00-16.99	17.00-18.49	<18.5	18.50-24.99	≥ 25.00	Total	Mean BMI				
Age												
15-19	5.0	10.8	24.7	40.5	59.5	0.0	100.0	19.1	121	13.1	150.9	146
20-24	4.8	6.6	24.0	35.4	63.1	1.5	100.0	19.4	412	12.4	150.5	513
25-29	3.7	9.1	21.3	34.1	63.8	2.1	100.0	19.6	733	13.6	150.8	870
30-34	4.9	6.2	23.0	34.0	62.2	3.8	100.0	19.8	777	13.2	150.9	912
35-39	7.1	7.0	21.8	35.9	59.0	5.1	100.0	19.7	689	14.0	150.8	760
40-44	7.7	12.1	21.3	41.0	55.9	3.1	100.0	19.2	492	11.5	150.9	514
45-49	13.6	10.8	27.5	51.8	45.5	2.7	100.0	18.8	417	12.6	151.0	411
Region												
Urban	4.7	6.4	20.2	31.3	61.0	7.7	100.0	20.2	879	11.0	151.1	1046
Rural East	4.1	8.4	22.9	35.3	62.4	2.3	100.0	19.5	874	11.4	151.0	1038
Rural Central	6.9	7.9	24.1	39.0	59.9	1.1	100.0	19.2	1223	16.5	150.1	1018
Rural West	10.9	11.7	24.1	46.7	51.5	1.8	100.0	18.9	699	12.0	151.3	1059
Ecological zones												
Highlands	9.7	9.9	20.7	40.3	59.1	0.6	100.0	18.9	598	19.8	150.0	556
Lowlands	5.8	8.2	23.2	37.2	59.2	3.6	100.0	19.6	3055	11.8	151.0	3586
Education												
No education	7.8	10.0	23.9	41.6	56.5	1.9	100.0	19.1	1996	14.5	150.4	2160
Some primary	5.3	5.4	25.7	36.4	59.6	4.0	100.0	19.7	613	11.8	151.1	707
Completed primary	5.5	6.8	21.9	34.2	62.6	3.2	100.0	19.7	275	12.9	150.9	313
Some secondary +	4.3	7.4	18.4	30.0	64.3	5.6	100.0	20.1	787	10.8	151.5	946
Household food shortage												
None in last week	7.5	8.6	21.0	37.0	59.5	3.4	100.0	19.5	1954	12.3	151.1	2272
Any in last week	5.3	8.1	25.1	38.5	58.7	2.7	100.0	19.5	1720	14.0	150.6	1889
Household wealth index												
Poorest	6.9	9.7	24.5	41.1	57.8	1.1	100.0	19.1	1526	15.0	150.3	1696
Middle	6.8	8.8	24.2	39.8	57.9	2.3	100.0	19.3	1448	13.0	151.0	1661
Richest	5.0	4.9	15.9	25.8	65.0	9.3	100.0	20.7	680	8.7	151.7	785
Total	6.4	8.4	22.9	37.7	59.2	3.1	100.0	19.5	3639	13.1	150.8	4161

13.5 Nutritional status of men

Table 13.11 presents the prevalence of low BMI in ever-married men aged 15 to 54 years. The overall prevalence of low BMI (26.4%) was high, although it was substantially lower than for women of reproductive age. Similar to women, the prevalence of low BMI demonstrated a U shaped relationship with age although the curve was less pronounced.

As with women, the prevalence of low BMI was highest in the rural west and rural central regions and in the highlands. However the relationship between education and household wealth, and low BMI was less clear in men in comparison to women. There was a tendency for the prevalence of low BMI to decrease with increasing levels of education. Men from the richest households had a lower prevalence of low BMI in comparison to other sub groups, although the level of CED was still high at 20%. Overall, slightly more than 2% of men had severe CED or BMI <16 kg/m^2, with the highest levels observed in the urban region, the highlands and among older men 45-54 years.

The prevalence of low BMI in men observed in the TL 2003 DHS was higher than that observed in the Vietnam 2000 General Nutrition Survey which reported a national prevalence of low BMI for men aged 20 - 54 years of 21.9% with range from 19.6% in men aged 40-44 years to 28% in men aged 50-54 years. There is no data for BMI of men in the India 1998-99 NFHS-2.

The prevalence of high BMI (BMI ≥25 kg/m^2) or overweight was low in men (2%) with the highest levels in men from the urban areas, wealthier households and the age group 35-39 years.

The differences in the prevalence of low BMI between men and women in Timor Leste might be related to differences in the distribution of food within the household, although the level of reported food shortages was similar for men and women. It could also be related to differences in the work loads of men and women. Women, especially in poorer households, have to collect water, fire wood, cook, care for children and elderly family members, and provide food for men in the fields. Further investigation of these gender differences in adult nutrition status is needed.

Table 13.11 Body mass index of men

Percentage of ever-married men aged 15 to 54 years in body mass index (BMI) categories and mean BMI, according to background characteristics, Timor Leste 2003

Background characteristics	BMI (kg/m^2)						Missing	Total	Mean BMI	Number of men
	< 16.00	16.00-16.99	17.00-18.49	<18.5	18.50-24.99	≥ 25.00				
Age										
15-19	0.0	0.0	25.1	25.1	74.9	0.0	0.0	100.0	19.7	12
20-24	2.6	3.2	18.6	24.4	75.0	0.5	0.0	100.0	19.7	184
25-29	1.5	1.8	17.9	21.2	75.9	1.4	1.4	100.0	19.9	572
30-34	1.4	4.2	18.8	24.4	72.8	1.9	0.9	100.0	19.8	913
35-39	1.1	4.7	18.6	24.4	71.8	2.7	1.1	100.0	19.9	757
40-44	2.4	4.8	21.6	28.9	68.0	1.8	1.3	100.0	19.6	632
45-49	3.7	6.4	24.4	34.5	62.8	1.7	1.0	100.0	19.3	402
50-54	3.7	6.2	21.1	30.9	65.7	1.1	2.2	100.0	19.4	398
Region										
Urban	2.6	4.2	17.7	24.5	68.1	4.3	3.1	100.0	20.0	823
Rural East	1.0	2.8	15.4	19.3	78.7	1.5	0.6	100.0	20.1	922
Rural Central	2.4	4.9	23.7	31.1	67.3	0.9	0.7	100.0	19.4	1351
Rural West	2.0	5.8	21.5	29.3	69.2	0.9	0.6	100.0	19.5	773
Ecological zones										
Highlands	2.5	4.0	23.1	29.6	69.5	0.7	0.2	100.0	19.5	655
Lowlands	2.0	4.5	19.3	25.7	70.8	2.0	1.4	100.0	19.8	3215
Education										
No education	2.4	5.4	21.3	29.0	69.1	1.0	1.0	100.0	19.5	1625
Some primary	2.8	4.8	18.8	26.4	70.7	1.9	1.1	100.0	19.6	763
Completed primary	1.4	3.7	19.7	24.8	71.0	2.8	1.4	100.0	20.0	371
Some secondary +	1.3	3.1	18.8	23.1	72.7	2.6	1.5	100.0	20.0	1111
Household food shortage										
None last week	2.0	4.7	20.6	27.3	69.5	2.0	1.2	100.0	19.7	2042
Any last week	2.1	4.1	19.1	25.3	71.9	1.6	1.2	100.0	19.7	1829
Household wealth index										
Poorest	2.2	4.5	20.8	27.5	71.4	0.5	0.6	100.0	19.5	1681
Middle	2.3	4.8	20.9	28.0	69.6	1.5	0.9	100.0	19.6	1533
Richest	1.3	3.3	15.5	20.2	71.0	5.6	3.3	100.0	20.4	656
Total	2.1	4.4	19.9	26.4	70.6	1.8	1.2	100.0	19.7	3869

13.6 Nutritional status of children

Nutritional status of children is an important determinant of their health and well-being. Poor nutritional status in children under five years of age is associated with an increased risk of morbidity and mortality. Usually there is little catch up growth in older childhood years or adolescent in children who experience growth retardation under three years of age. Thus malnutrition in young children leads to short stature in adults which is associated with reduced productivity and for women, increased obstetric risks. Poor nutritional status in young children is related to maternal malnutrition low birth weight, inadequate breastfeeding and weaning diets and high levels of infectious disease morbidity. Improvements in nutritional status of children will reduce the severity of common childhood illness, and reduce the risk of death.

In the TL 2003 DHS, nutritional status of children was assessed using weight and height measurements using standardized measurement method. Weight was measured with a digital scale to the nearest 100 grams and height was measured using a portable measuring board to nearest 1mm. Children under two years of age were measured lying down and older children were measured standing upright.

Three anthropometric indices were calculated from the weight and height measurements.

Weight-for-age is an indicator of body mass relative to chronological age. It is influenced by both the height of the child, and the weight of the child relative to height thus making its interpretation complex. Low weight-for-age or *underweight* can be used as a general indicator of child health and mortality risk.

Height for age reflects achieved linear growth and its deficits indicate long-term, cumulative inadequacies of health or nutrition. Low height-for-age or *stunting* indicates a pathological process that has impaired linear growth and is the result of both poor nutrition and poor health. This indicator changes slowly over time and does not vary by season. Altitude also affects linear growth with the reduced levels of oxygen at altitudes higher than 1000 meters impairing child growth. No adjustments for the effects of altitude on linear growth have been made in this report.

Weight-for-height reflects body weight relative to height. Low weight-for-height or *wasting* indicates an insufficient weight gain relative to height or a loss of weight. Wasting implies a recent severe process that has led to weight loss such as acute illness or acute starvation. This indicator can vary by season depending on the availability of food and incidence of acute morbidity in the child population.

These indices were calculated by comparing the weight and height measurements or combinations of these measurements with the WHO international growth reference (Dibley 1987). The use of this reference is based on the observation that well-nourished child populations from different countries and ethnic group have similar growth patterns.

Socioeconomic differences, rather than ethnicity, account for most of the variations in child growth observed around the world (WHO 1995).

All the anthropometric indicators of child nutritional status used in the survey were expressed as Z-scores, namely the deviation of the individual anthropometric measurement from the median value of the WHO growth reference for that child's height or age divided by the standard deviation for the reference population. Children who were more than two standard deviations from the reference median of the international growth reference for their age or height (<-2 Z) were considered *undernourished*, and those more than three standard deviations below the reference median (<-3 Z) were regarded as *severely undernourished*. The validity of these indices was influenced by the accuracy of the anthropometric measurements, the quality of the age data and coverage of the child population being assessed. These issues are discussed in more detail in the appendix on data quality.

13.6.1 Underweight in children

Table 13.12 shows the prevalence of low weight-for-age or *underweight* in children less than five years of age by sex and according to background characteristics. Overall, 45.8% of the children under five were underweight and 14.9% were severely underweight. There were no differences in the prevalence of underweight between girls and boys. Children of mothers who had short stature or low BMI were more likely to be underweight. Underweight was highest in the rural west region but only slightly higher in children from the highlands. There was a steady decrease in underweight as household wealth increased, but the relationship with maternal education status was less clear. Children with average or large birth size were less likely to be underweight than children with small birth size. Reports of recent household food shortages were not related to underweight.

Table 13.12 Prevalence of underweight in children < 5 years

Percentage of children under 5 years who are underweight (weight-for-age < - 2 Z) and severely underweight (weight-for-age < - 3 Z) by sex and background characteristics, Timor Leste 2003

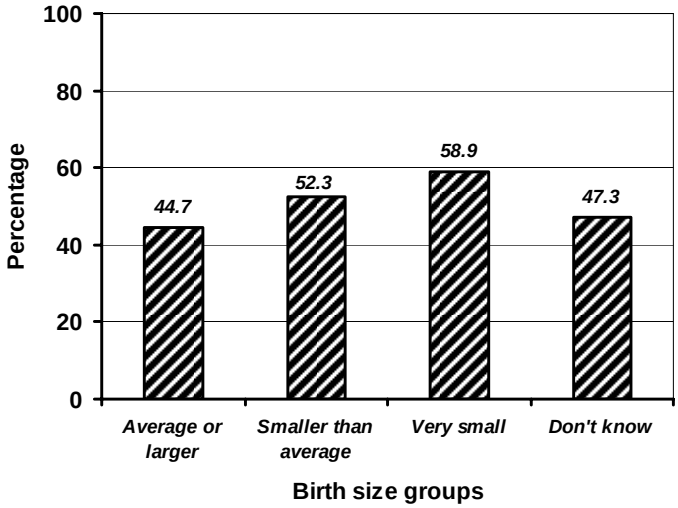
Background characteristics	Males			Females			All children		
	Weight for age		Number of boys	Weight-for-age		Number of girls	Weight for age		Number of children
Age in months	<-2 Z	<-3 Z		<-2 Z	<-3 Z		<-2 Z	<-3 Z	
0-5	2.9	0.5	299	1.9	0.3	290	2.4	0.4	589
6-11	28.0	9.0	317	25.1	5.4	302	26.6	7.2	619
12-17	54.5	21.6	302	51.2	16.2	338	52.8	18.7	640
18-23	59.3	20.0	226	50.4	15.6	260	54.5	17.7	486
24-29	64.9	26.2	326	58.3	20.0	330	61.6	23.2	656
30-35	55.1	16.2	220	57.5	21.2	227	56.4	18.8	447
36-41	54.3	17.7	288	60.7	21.3	262	57.4	19.5	550
42-47	51.4	13.8	211	50.6	16.7	204	51.0	15.2	415
48-53	51.3	12.9	246	56.5	16.0	258	54.0	14.5	504
54-59	50.4	15.3	180	47.6	13.6	169	49.0	14.5	349
Size at birth									
Average or larger	45.8	14.2	1939	44.9	13.8	1901	45.4	14.0	3840
Smaller than average	53.9	26.0	228	46.9	16.7	231	50.4	21.3	459
Very small	50.7	20.7	145	48.5	19.9	188	49.5	20.2	333
Don't know/missing	42.1	12.9	303	44.1	13.1	320	43.1	13.0	623
Birth order									
1	44.8	15.8	349	47.8	14.5	362	46.4	15.2	711
2-3	47.1	14.5	858	46.3	12.2	830	46.7	13.4	1688
4-5	46.3	16.7	708	43.9	14.5	692	45.1	15.6	1400
6+	46.8	15.2	622	43.6	16.8	697	45.1	16.0	1319
Maternal Height									
<145 cm	56.5	22.8	302	53.7	21.7	357	55.0	22.2	659
>145 cm	45.2	14.4	2222	43.6	13.2	2199	44.4	13.8	4421
Maternal BMI status									
< 18.5	53.7	20.6	842	51.6	17.6	834	52.6	19.1	1676
> 18.5	43.2	13.0	1682	42.0	12.9	1722	42.6	12.9	3404
Maternal education									
No education	50.1	17.9	1161	48.9	17.3	1182	49.5	17.6	2343
Some primary	40.5	12.2	494	41.9	15.0	485	41.2	13.6	979
Primary completed	53.2	16.5	206	44.7	9.4	224	48.7	12.8	430
Some secondary +	42.4	13.2	676	40.9	10.5	690	41.7	11.9	1366
Region									
Urban	41.6	13.2	658	42.2	11.7	699	41.9	12.5	1357
Rural East	44.5	12.0	690	42.9	12.2	646	43.7	12.1	1336
Rural Central	45.4	15.7	619	44.2	15.6	674	44.8	15.6	1293
Rural West	56.6	22.4	648	55.1	18.8	621	55.9	20.7	1269
Ecological zones									
Highlands	48.3	19.8	352	49.9	17.6	376	49.1	18.6	728
Lowlands	46.0	14.5	2263	44.3	13.7	2264	45.1	14.1	4527
Household food shortage									
None in last week	47.6	16.4	1673	45.9	13.6	1705	46.7	15.0	3378
Any in last week	44.2	13.7	942	44.2	15.7	935	44.2	14.7	1877
Household wealth index									
Poorest	49.1	17.4	1067	48.8	18.0	1117	49.0	17.7	2184
Middle	46.4	15.4	1063	43.7	12.9	1023	45.1	14.2	2086
Richest	39.5	10.4	485	39.9	8.8	500	39.7	9.6	985
Total	46.3	15.4	2615	45.3	14.4	2640	45.8	14.9	5255

13.6.2 Stunting in children

Table 13.13 shows the prevalence of low height-for-age or *stunting* in children less than five years of age by sex and according to household and maternal characteristics. Overall, 49.4% of the children under five were stunted and 28.2% were severely stunted. The prevalence of stunting was slightly higher in the boys compared to girls. Children of mothers who had short stature or low BMI were more likely to be stunted. The prevalence of stunting was highest in the rural west region (see Figure 13.4) and in children from the highlands. There was a steady decrease in stunting as household wealth and maternal education levels increased. Reports of recent household food shortages were not related to stunting.

As seem in Table 13.13 and Figure 13.2, birth size appeared to be associated with stunting as the prevalence of stunting increased with decreasing reported birth size. This relationship was clearer when the analysis was restricted to children aged 12 to 17 months when stunting becomes more prevalent and at an age when birth size might still be expected to influence nutritional status.

Figure 13.2 Stunting and birth size for children aged 12-17 months.
Percentage of children aged 12-17 months who are stunted according to their reported birth size category, Timor Leste 2003.



The age-specific prevalence of stunting is also of interest. Because of the well-established artefact in the WHO international growth reference that distorts estimates of low height-for-age around 24 months of age (Dibley 1987), the age specific prevalence of stunting was also calculated using the CDC 2000 growth reference (CDC 2000). Figure 13.3 reveals the expected artefact of a peak of stunting at 24 months when using the WHO international growth reference. However, with indices calculated from either reference there was a further peak in the prevalence of stunting at 30-35 and 36-41 months, followed by a decline. This appears to be a cohort effect and corresponds to the cohort of children whose mothers were pregnant and gave birth in 1999 or 2000, and may reflect the impact of political social disruptions that occurred in Timor Leste at that time.

Table 13.13 Prevalence of stunting in children < 5 years

Percentage of children under 5 years of age who are stunted (height-for-age <-2 Z) and severely stunted (height-for-age <-3 Z) by sex and background characteristics, Timor Leste 2003

Background Characteristics	Males			Females			All children		
	Height for age		Number of boys	Height for age		Number of girls	Height for age		Number of children
Age in months	<-2 Z	<-3 Z		<2 Z	<-3 Z		<-2 Z	<-3 Z	
0-5	21.8	7.1	299	11.7	3.9	290	16.8	5.5	589
6-11	29.9	17.1	317	27.2	13.4	302	28.6	15.3	619
12-17	48.3	30.9	302	46.4	24.7	338	47.3	27.6	640
18-23	65.1	41.8	226	57.6	32.9	260	61.1	37.0	486
24-29	58.2	34.5	326	51.3	30.4	330	54.8	32.5	656
30-35	65.2	37.0	220	60.3	33.4	227	62.6	35.1	447
36-41	65.5	42.6	288	64.0	36.0	262	64.8	39.4	550
42-47	61.2	35.4	211	58.4	31.3	204	59.8	33.4	415
48-53	55.9	32.6	246	55.5	30.6	258	55.7	31.6	504
54-59	51.4	28.0	180	60.5	36.5	169	55.9	32.2	349
Size at birth									
Average or larger	51.0	29.9	1939	48.1	26.2	1901	49.6	28.1	3840
Smaller than average	54.9	35.0	228	45.9	26.1	231	50.3	30.5	459
Very small	52.2	33.0	145	54.1	31.7	188	53.3	32.3	333
Don't know/missing	47.9	25.7	303	43.2	24.0	320	45.5	24.8	623
Birth order									
1	52.1	29.2	349	52.8	27.8	362	52.5	28.5	711
2-3	52.2	30.4	858	48.3	25.8	830	50.3	28.1	1688
4-5	51.2	32.1	708	43.0	23.2	692	47.1	27.7	1400
6+	48.2	27.5	622	49.4	29.2	697	48.8	28.4	1319
Maternal Height									
<145 cm	62.4	41.1	302	57.7	32.3	357	59.8	36.3	659
>145 cm	49.3	28.4	2222	45.9	25.2	2199	47.6	26.8	4421
Maternal BMI status									
< 18.5	52.9	32.1	842	50.6	28.9	834	51.7	30.5	1676
> 18.5	50.0	29.0	1682	46.2	24.9	1722	48.0	26.9	3404
Maternal education									
No education	51.8	31.6	1161	50.8	29.7	1182	51.3	30.6	2343
Some primary	52.1	30.2	494	47.7	28.4	485	49.9	29.3	979
Primary completed	52.8	32.1	206	45.0	19.8	224	48.6	25.6	430
Some secondary +	47.7	26.2	676	43.6	21.3	690	45.6	23.7	1366
Region									
Urban	43.3	22.3	658	42.1	19.7	699	42.7	21.0	1357
Rural East	53.6	31.0	690	48.8	29.0	646	51.3	30.0	1336
Rural Central	52.7	32.0	619	48.5	26.6	674	50.5	29.2	1293
Rural West	54.0	34.9	648	52.8	31.4	621	53.4	33.2	1269
Ecological zones									
Highlands	57.5	37.0	352	52.4	30.5	376	54.8	33.7	728
Lowlands	49.8	28.7	2263	46.8	25.4	2264	48.3	27.1	4527
Household food shortage									
None in last week	51.5	29.9	1673	46.9	25.7	1705	49.2	27.7	3378
Any in last week	50.2	30.3	942	49.2	27.5	935	49.7	28.9	1877
Household wealth index									
Poorest	55.6	36.0	1067	54.3	31.8	1117	54.9	33.8	2184
Middle	50.6	27.5	1063	44.0	24.2	1023	47.4	25.8	2086
Richest	40.9	21.6	485	39.6	17.4	500	40.2	19.5	985
Total	51.0	30.0	2615	47.8	26.3	2640	49.4	28.2	5255

Figure 13.3 Age-specific prevalence of stunting

A comparison of the age specific prevalence of stunting (height-for-age <-2 Z) when the anthropometric index is calculated using the WHO international growth reference versus the CDC 2000 growth reference

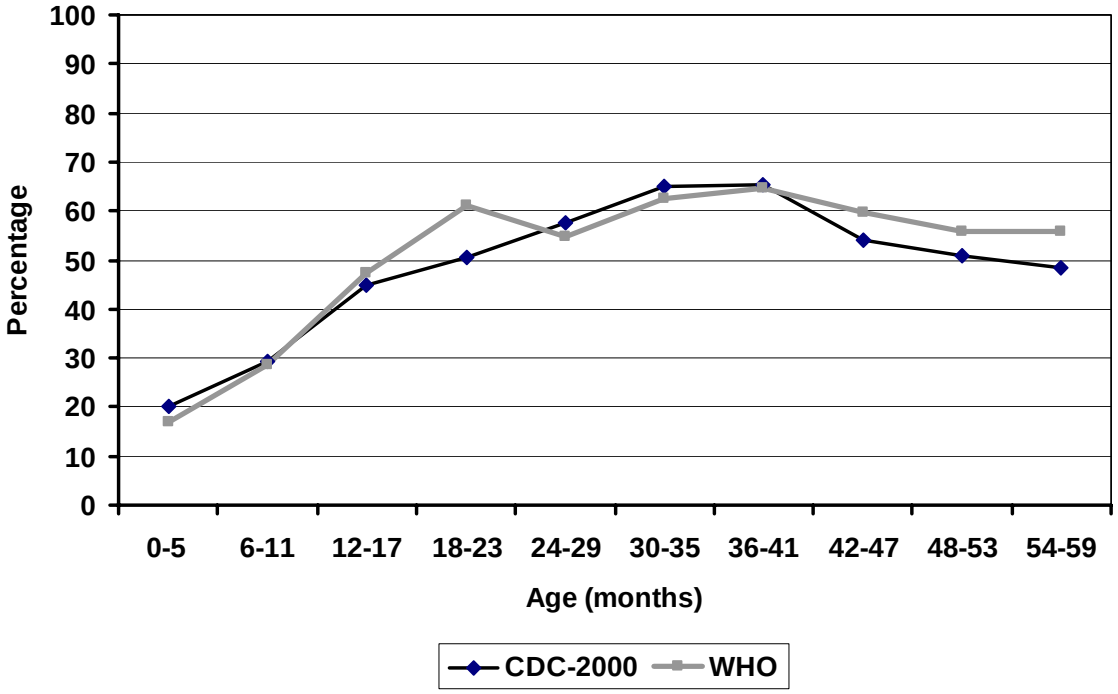
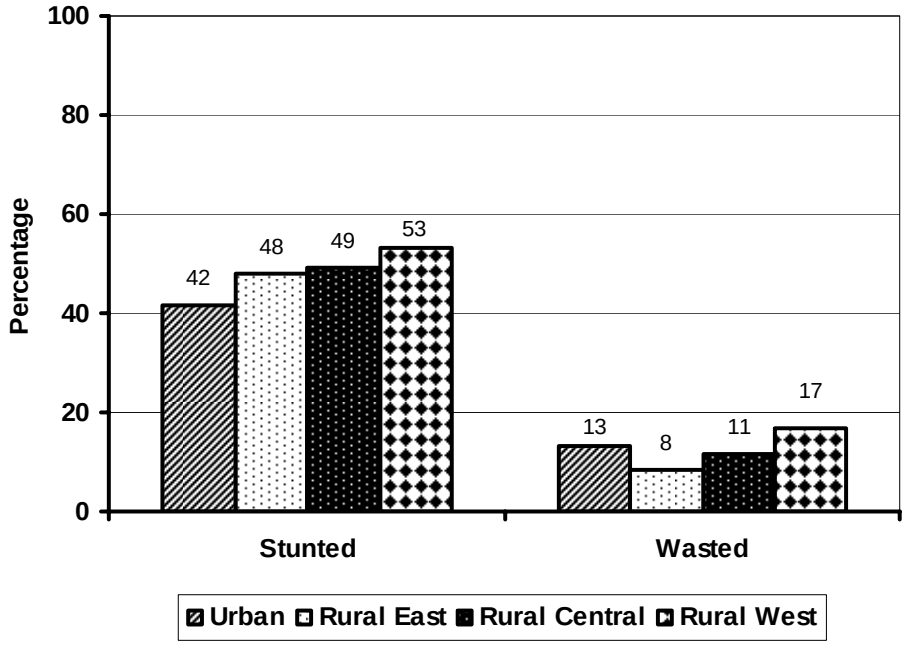


Figure 13.4 Distribution of wasting and stunting by geographic regions

A comparison of the prevalence of stunting (height-for-age < -2Z) and wasting (weight-for-height < -2Z) by the four geographic regions, Timor Leste, 2003



13.6.3 Wasting in children

Table 13.14 shows the prevalence of low weight-for-height or *wasting* in children less than five years of age by sex and according to household and maternal characteristics. Overall, 12.4% of the children under five were wasted and 2.8% were severely wasted. The prevalence of wasting was slightly higher in the boys compared to girls. There was a peak in the prevalence of wasting in children between ages 12 and 29 months which corresponded to the time of weaning and an age group when acute infectious diseases are common.

Children of mothers who have low BMI were much more likely to be wasted than children of mothers with adequate BMI. Children whose mothers had short stature were slightly more likely to be wasted. The prevalence of wasting was highest in the rural west region but was also high in the urban region (see Figure 13.4). The differences in the prevalence of wasting in the four regions may be related to different seasonal patterns in food availability and morbidity. There was no relationship between maternal education, household wealth, or reported household food shortages and the prevalence of wasting.

As seen in Figure 13.5 the "Waterlow" cross classification of wasting and stunting reveals about 8% of the girls and boys are wasted alone. These children had most probably recently suffered from an acute illness and with appropriate feeding would recover rapidly. It indicated a relatively high level of acute childhood morbidity in the child population. About 4% of the children were both wasted and stunted and these children represented a very vulnerable sub group of children at high risk of further illness and with increased mortality risk. Approximately 44% of the children were stunted alone indicating both long term dietary inadequacy and recurrent illness. The group labelled "normal" were not-wasted and not-stunted but may also not have been growing to their full genetic potential.

Figure 13.5 "Waterlow" classification of wasting and stunting in children
Comparison of the prevalence of children under five who are wasted alone, wasted and stunted, stunted alone or not wasted or stunted, Timor Leste 2003

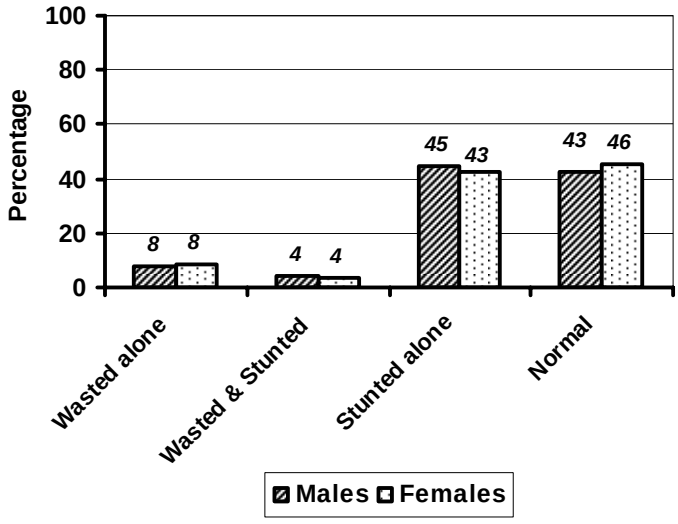


Table 13.14 Prevalence of wasting in children < 5 years

Percentage of children under 5 years of age who are wasted (weight-for-height <-2 Z) and severely wasted (weight-for-height <-3 Z) by sex and background characteristics, Timor Leste 2003

Background Characteristics	Males			Females			All children		
	Weight for height		Number of boys	Weight for height		Number of girls	Weight-for-height		Number of children
Age in months	<-2 Z	<-3 Z		<2 Z	<-3 Z		<-2 Z	<-3 Z	
0-5	7.8	2.8	299	7.4	1.9	290	7.6	2.3	589
6-11	13.3	1.7	317	7.7	1.8	302	10.5	1.8	619
12-17	14.0	4.2	302	21.3	5.7	338	17.9	4.9	640
18-23	17.0	4.8	226	16.0	4.6	260	16.5	4.7	486
24-29	14.8	2.7	326	13.4	2.7	330	14.1	2.7	656
30-35	8.2	2.8	220	11.8	2.0	227	10.1	2.4	447
36-41	13.4	1.6	288	9.9	1.9	262	11.7	1.7	550
42-47	11.0	3.6	211	7.6	0.8	204	9.3	2.2	415
48-53	12.3	3.6	246	13.1	2.7	258	12.7	3.1	504
54-59	15.4	2.4	180	8.3	1.2	169	11.9	1.8	349
Size at birth									
Average or larger	15.0	4.5	1939	12.3	1.8	1901	13.6	3.1	3840
Smaller than average	12.2	2.2	228	11.9	2.3	231	12.1	2.3	459
Very small	13.5	2.8	145	12.8	3.3	188	13.2	3.1	333
Don't know/missing	11.8	3.2	303	11.0	2.9	320	11.3	3.1	623
Birth order									
1	12.3	2.9	349	11.5	2.6	362	11.9	2.7	711
2-3	15.6	3.7	858	12.1	2.6	830	13.8	3.2	1688
4-5	17.6	3.5	708	15.0	3.2	692	16.2	3.3	1400
6+	11.0	2.9	622	13.5	2.8	697	12.3	2.9	1319
Maternal Height									
<145 cm	13.9	2.9	302	13.0	2.1	357	13.4	2.5	659
>145 cm	12.7	3.0	2222	11.8	2.8	2199	12.2	2.9	4421
Maternal BMI status									
< 18.5	18.0	3.8	842	15.6	3.2	834	16.8	3.5	1676
> 18.5	10.3	2.6	1682	10.2	2.4	1722	10.3	2.5	3404
Maternal education									
No education	13.8	3.9	1161	12.3	3.2	1182	13.1	3.5	2343
Some primary	9.0	1.3	494	11.7	3.0	485	10.3	2.1	979
Primary completed	16.1	3.0	206	10.2	2.0	224	13.0	2.5	430
Some secondary +	13.0	2.5	676	12.0	1.9	690	12.5	2.2	1366
Region									
Urban	14.9	2.3	658	12.3	1.9	699	13.6	2.1	1357
Rural East	8.7	2.5	690	9.3	2.2	646	9.0	2.3	1336
Rural Central	12.1	3.1	619	11.6	2.2	674	11.8	2.6	1293
Rural West	16.8	4.5	648	16.6	5.5	621	16.7	5.0	1269
Ecological zones									
Highlands	11.9	3.5	352	11.9	3.1	376	11.9	3.3	728
Lowlands	12.9	2.9	2263	12.1	2.6	2264	12.5	2.7	4527
Household food shortage									
None in last week	13.7	3.0	1673	12.8	2.7	1705	13.2	2.8	3378
Any in last week	11.1	3.0	942	10.9	2.7	935	11.0	2.8	1877
Household wealth index									
Poorest	12.2	3.7	1067	11.1	3.0	1117	11.6	3.4	2184
Middle	13.4	2.7	1063	13.1	2.4	1023	13.3	2.5	2086
Richest	12.4	1.9	485	12.2	2.5	500	12.3	2.2	985
Total	12.7	3.0	2615	12.1	2.7	2640	12.4	2.8	5255

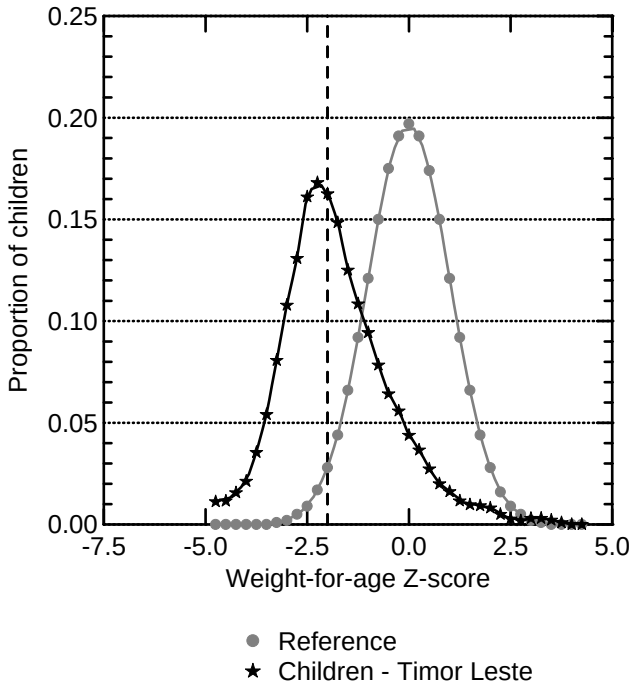
13.6.4 Anthropometric Z score curves

Plotting the Z score values for each anthropometric index provides a useful tool to compare the nutritional status of a population to the reference population or to compare different populations from different regions.

The mean weight-for-age Z-score for children 0 to 59 months in Timor Leste was -1.78 indicating that the distribution of this anthropometric indicator was shifted significantly below zero, the expected value of the reference distribution. The mean weight-for-age Z-score for girls (-1.76) was slightly higher than for boys (-1.80). The shift of the entire weight-for-age distribution for children 0 to 59 months below the reference is illustrated in Figure 13.1. It should be noted that the shape of the weight-for-age Z-score curves was very similar to the shape of the reference curve although they descend more rapidly on the lower side of the curve.

Figure 13.6 Weight-for-age Z-score distribution

Weight-for-age Z score curve for children aged 0-59 months in Timor Leste 2003, compared to the curve for the WHO international growth reference. The vertical dotted line is the -2 Z score cut off to define underweight



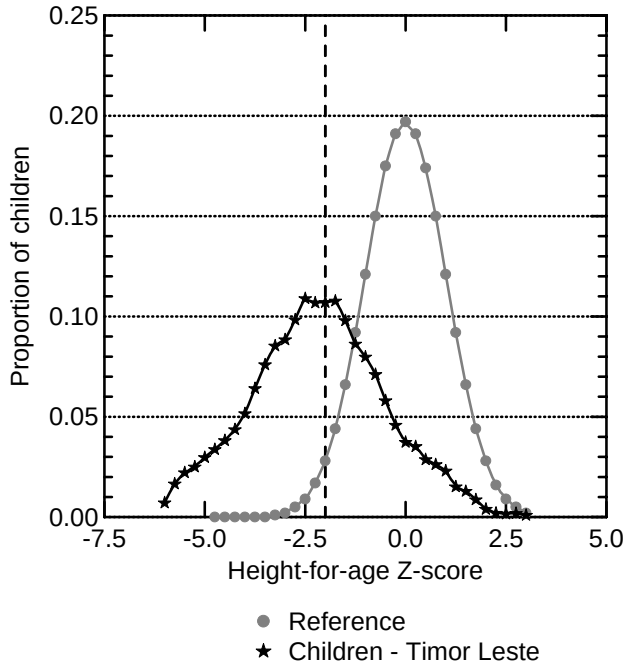
The mean height-for-age Z-score for children 0 to 59 months in Timor Leste was -2.17 indicating that the distribution of this anthropometric indicator was shifted very significantly below zero, the expected value of the reference distribution. The mean height-for-age Z-score for girls (-2.17) was slightly higher than for boys (-2.23). The shift of the entire height-for-age distribution for children 0 to 59 months below the reference is illustrated in Figure 13.7.

It should be noted that the shape of the height-for-age Z-score curve although similar to the shape of the reference curve is considerably wider. Furthermore, the shape of the

weight-for-age Z-score curve (see Figure 13.6) more closely matches the reference curve suggesting that weight was measured more accurately than height in the survey. Other factors might have influenced the shape of the height-for-age Z score curve including the impact of altitude on height. The mean height-for-age Z-score for children from lowlands (-2.13) was considerably higher than for children from highlands (-2.35).

Figure 13.7 Height-for-age Z score distribution

Height-for-age Z score curve for children aged 0-59 months in Timor Leste 2003, compared to the curve for the WHO international growth reference. The vertical dotted line is the -2 Z score cut off to define stunting



The mean weight-for-height Z-score for children 0 to 59 months in Timor Leste was -0.94 indicating that the distribution of this anthropometric indicator was significantly below zero, the expected value of the reference distribution. The mean height-for-age Z-score for girls (-0.63) was almost identical to that for boys (-0.63). The shift of the entire weight-for-height distribution for children 0-59 months below the reference is illustrated in Figure 13.8, however it should be noted that the shift is less than that for the other anthropometric indicators. Furthermore, the shape of the weight-for-height Z-score curves was similar to the reference curve although not as close as the weight-for-age Z score curve.

Figure 13.9 compares the weight-for-age Z score curve of children 0 to 59 months in Timor Leste 2003 with the weight-for age Z score curve for children 0 to 59 months who were measured in an annual national nutrition survey in Vietnam in 2003. The Z score curve for the WHO international growth reference is also included on the graph. The weight-

for-age Z score curve for children in Timor Leste is shifted further to the left than the curve for children from Vietnam. This indicates the level of child malnutrition is greater in Timor Leste than in Vietnam, which has some of the highest levels of childhood malnutrition in Southeast Asia.

Figure 13.10 compares the prevalence of underweight and severe underweight in children aged 0 to 59 months from Timor Leste with similar data collected in two other Southeast Asian countries, Indonesia and Vietnam. The data presented from Indonesia is from a nationally representative sample of 77 274 children 0 to 59 months collected in SUSENAS (Household economic survey) collected in 2003. While the data presented from Vietnam is from a nationally representative sample of 77 274 children 0 to 59 months collected in the 2003 National Nutrition Survey. The figure reveals that the prevalence of underweight is 57% higher in Timor Leste compared to Indonesia and Vietnam, while the level of severe underweight is respectively 75% and 180% higher.

Finally, it should be noted that the levels of childhood malnutrition reported in the TL 2003 DHS were almost identical to the levels reported in TL 2002 MIC survey.

Figure 13.8 Weight-for-height Z score distribution

Weight-for-height Z score curve for children aged 0-59 months in Timor Leste 2003, compared to the curve for the WHO international growth reference. The vertical dotted line is the -2 Z score cut off to define wasting

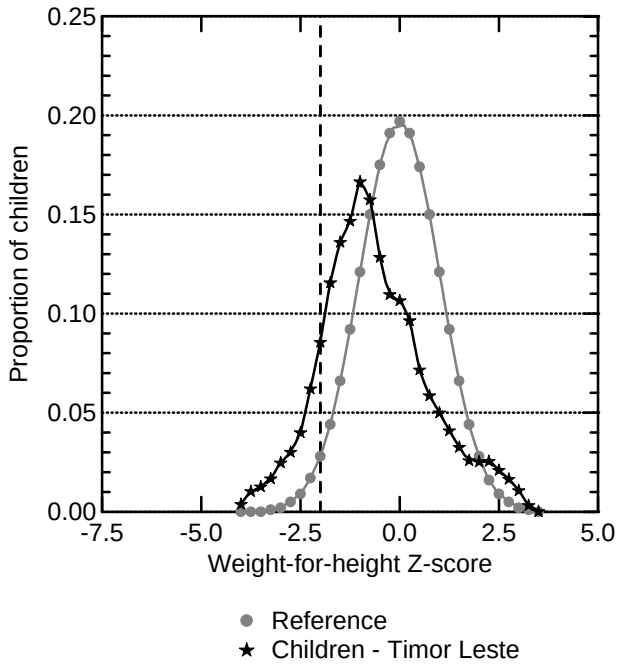


Figure 13.9 Comparison of weight-for-age Z score curves from Timor Leste and Vietnam
The weight-for-age Z score curve for children aged 0-59 months in Timor Leste 2003, compared to weight-for-age Z score curve for children aged 0-59 months in Vietnam and the curve for the WHO international growth reference. The vertical dotted line is the -2 Z score cut off to define underweight

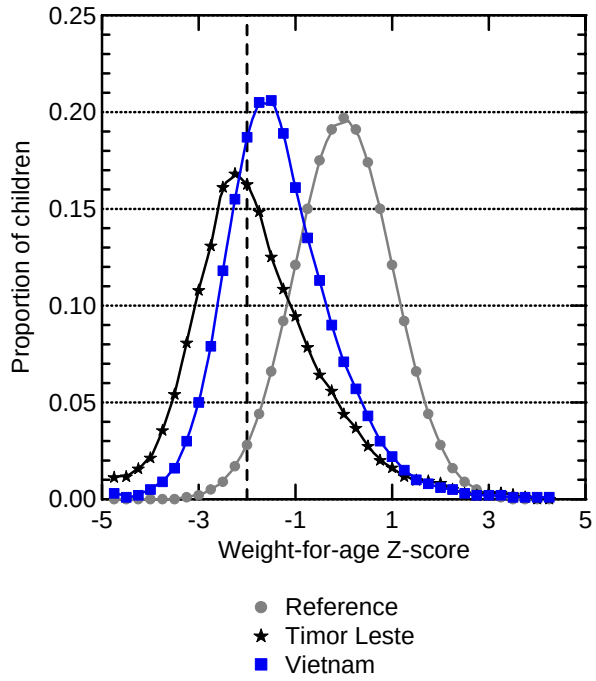
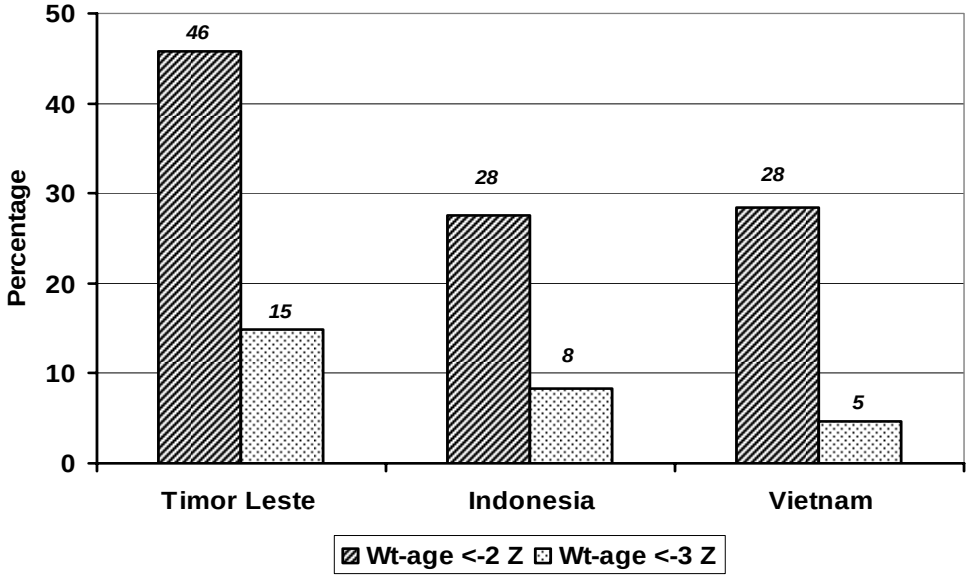


Figure 13.10 Comparison of underweight in Timor Leste, Indonesia and Vietnam
Percentage of children aged 0-59 months with underweight (weight-for-age <-2 Z) and severe underweight (weight-for-age <-3 Z) from TL 2003 DHS, Indonesia 2003 SUSENAS and Vietnam 2003 National Nutrition Survey.



13.7 Anaemia

Iron deficiency anaemia is a global problem and is the most common form of micronutrient malnutrition in the world. Anaemia in developing countries is mainly due to inadequate absorption of dietary iron and the consequent iron deficiency leads to reduced production of haemoglobin and anaemia. In pregnant women, folate deficiency also plays a role in causing anaemia but to a lesser extent than iron deficiency. Iron deficiency anaemia is more common in young children and women of reproductive age, especially pregnant and lactating women. These population sub-groups are more susceptible to anaemia because of their increased iron needs due to growth, pregnancy and lactation. Women of reproductive age also have increased iron losses from menstrual blood flow.

The TL 2003 DHS, directly measured haemoglobin levels of all ever-married women aged 15-49 years and their children under five years of age. Hemocue instruments which are portable haemoglobinometers were used to measure the haemoglobin level of consenting survey participants in their home. Several studies have established the validity of hemocue measurements of haemoglobin in field settings (Sari et al 2001; Krenzischeck & Tanseco 1996; McNulty et. al. 1995). Women and children with severe anaemia were referred to their local health service and encouraged to seek treatment.

13.7.1 Anaemia in children

In children, iron deficiency anaemia impairs mental and motor development and the behaviour of infants. The apathy associated with anaemia in young children adversely affects their social development and their learning. Children born at full term to mothers who are iron deficient have reduced iron stores which may not be corrected by breastfeeding leading to early onset of anaemia. Low birth weight babies are born with reduced iron stores and have additional requirements for catch up growth. These additional iron requirements cannot be met by breast milk and if iron supplements are not provided for these babies will also have an increased risk of early onset of anaemia.

Table 13.15 presents the prevalence of anaemia in children aged 0 to 59 months by sex and according to maternal and household characteristics. Overall, 31.5% of the children had anaemia (Hb <110 g/L), 6.1% had moderate to severe anaemia (Hb <90 g/L), and 0.8% had severe anaemia (Hb <70 g/L). The level of anaemia in children was similar to that seen in non-pregnant women (see Table 13.16). The haemoglobin values were adjusted for altitude using a formula recommended by the International Nutritional Anemia Consultative Group (INACG) (Nestel, 2002). (See Figure 13.12 for illustration of effect of adjustment on anaemia).

The highest prevalence of anaemia was seen in children aged 0 to 23 months, with a peak at age 6 to 11 months. The prevalence of anemia was slightly higher in boys than in girls. The rural west and rural east regions had the highest prevalence of anaemia and moderate to severe anaemia. Children from households reporting any food shortage in

the week prior to interview had a slightly higher prevalence of anemia at all levels of severity. Anaemia levels did not appear to be related to household wealth, and the rates appeared to be slightly higher in children whose mothers had higher education. These findings might be confounded by the relatively high rate of anaemia in urban where the level of maternal education and household wealth was higher. There was little impact of altitude on the prevalence of anaemia suggesting that most of the anaemia seen in children was related to iron deficiency rather than malaria. The higher rates of anaemia in children, whose mothers have low BMI, also suggested a relationship of childhood anaemia with poor diet.

Children who were smaller than average at birth or very small overall had a slightly higher prevalence of anaemia. However, this relationship became clearer when the analysis was restricted to children 0 to 5 months of age and stratified by maternal anaemia status. As can be seen in Figure 13.11, over 50% of the children who were very small at birth and whose mothers were anaemic at the time of the survey, had anaemia compared to 34% of the children who were very small at birth and whose mothers were not anaemic. This figure illustrates the importance of maternal haemoglobin status in protecting low birth weight newborns from anaemia. Finally, birth order was not associated with childhood anaemia.

Figure 13.11 Anaemia in children 0-5 months by birth size and maternal anaemia

The prevalence anaemia (haemoglobin < 110 g/L) in children 0-5 months by reported birth size and according to maternal anaemia status (haemoglobin < 120 g/L). All haemoglobin values have been adjusted for altitude.

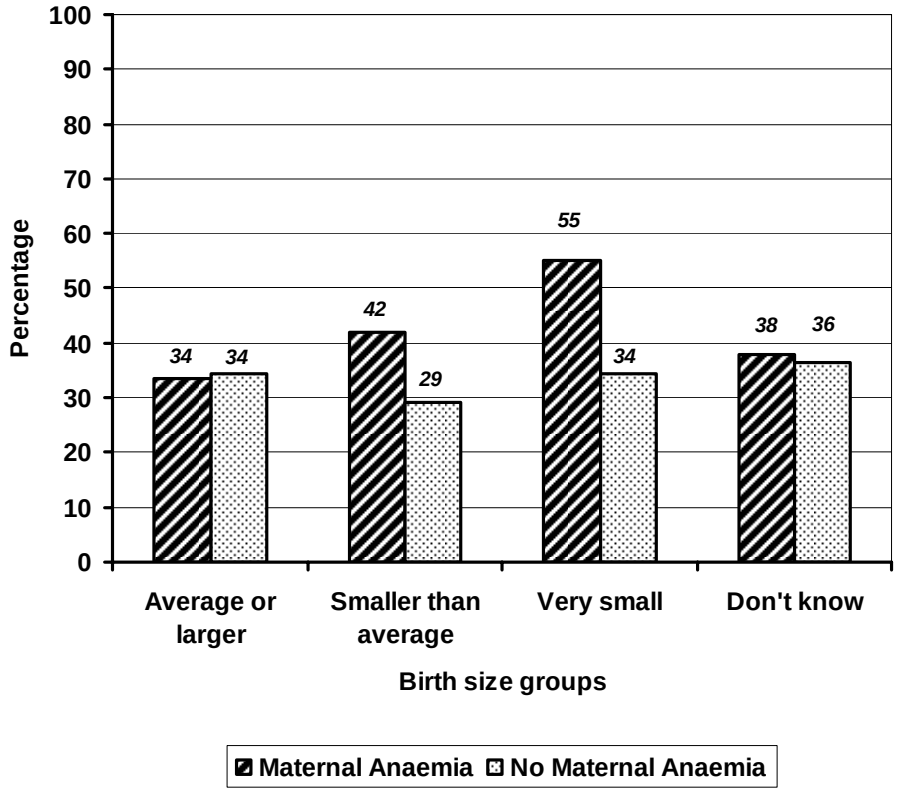


Table 13.15 Prevalence of anaemia in children

Percentage of children under 5 years of age who are anaemic (haemoglobin <110 g/L), moderately anaemic (haemoglobin <90 g/L) and severely anaemic (haemoglobin <70 g/L) by sex and background characteristics, Timor Leste 2003

Background characteristics	Males				Females				All children			
	Hb <110 g/L	Hb <90 g/L	Hb <70 g/L	Number of boys	Hb <110 g/L	Hb <90 g/L	Hb <70 g/L	Number of girls	Hb <110 g/L	Hb <90 g/L	Hb <70 g/L	Number of children
Age in months												
0-5	46.7	8.3	0.0	258	41.0	6.4	1.3	257	43.8	7.3	0.7	515
6-11	50.2	9.3	0.8	301	40.7	7.7	0.7	283	45.5	8.5	0.8	584
12-17	44.5	10.5	1.6	291	33.6	7.0	0.8	321	38.8	8.7	1.2	612
18-23	37.1	8.3	2.0	219	35.2	7.0	0.0	253	36.1	7.6	0.9	472
24-29	31.5	4.8	0.6	320	30.9	5.2	0.4	319	31.2	5.0	0.5	639
30-35	28.7	6.6	0.4	213	25.8	4.6	0.8	214	27.2	5.6	0.6	427
36-41	24.8	4.9	1.2	282	22.8	4.4	0.4	253	23.9	4.7	0.8	535
42-47	19.1	4.6	1.3	206	20.2	4.5	1.0	196	19.6	4.6	1.1	402
48-53	19.5	4.7	1.2	243	17.2	3.7	0.8	255	18.3	4.2	1.0	498
54-59	18.7	4.1	1.6	177	23.6	2.2	0.0	168	21.1	3.1	0.8	345
Size at birth												
Very small	33.3	6.8	0.8	1851	30.0	5.5	0.5	1805	31.7	6.2	0.6	3656
Smaller than average	39.4	9.5	2.2	223	34.8	6.4	1.4	223	37.1	8.0	1.8	446
Average or larger	34.4	8.5	1.4	140	31.2	6.3	2.0	184	32.6	7.3	1.8	324
Don't know/missing	27.8	4.0	1.8	296	24.8	3.9	0.3	307	26.3	4.0	1.1	603
Birth Order												
1	29.5	6.7	1.0	335	28.0	6.9	0.6	341	28.7	6.8	0.8	676
2-3	34.2	6.8	1.1	818	30.8	5.3	0.8	786	32.5	6.1	0.9	1604
4-5	31.9	5.2	0.6	680	29.1	6.0	0.6	669	30.5	5.6	0.6	1349
6+	35.1	8.8	1.3	601	31.3	4.7	0.4	668	33.1	6.7	0.8	1269
Maternal BMI status												
< 18.5	36.7	7.8	1.2	817	30.7	6.5	0.8	813	33.7	7.1	1.0	1630
> 18.5	31.4	6.3	0.9	1607	30.0	5.1	0.5	1630	30.7	5.7	0.7	3237
Maternal education												
No education	31.5	6.4	0.9	1120	27.7	4.9	0.4	1129	29.6	5.6	0.6	2249
Some primary	33.9	8.6	1.2	470	28.7	5.1	0.8	474	31.3	6.8	1.0	944
Primary completed	31.2	7.3	1.0	200	36.9	5.8	0.4	216	34.2	6.5	0.7	416
Some secondary +	36.1	6.1	0.9	644	32.9	7.1	0.9	645	34.5	6.6	0.9	1289
Region												
Urban	32.4	5.3	0.9	643	28.0	6.2	0.4	689	30.1	5.8	0.7	1332
Rural East	37.2	9.0	1.3	621	34.4	10.3	1.6	564	35.9	9.6	1.4	1185
Rural Central	29.0	4.8	1.0	601	26.0	1.7	0.3	650	27.4	3.2	0.6	1251
Rural West	36.4	9.0	0.9	645	34.3	5.8	0.3	616	35.4	7.5	0.6	1261
Ecological zones												
Highlands	33.9	5.7	0.9	340	33.3	3.7	0.2	361	33.6	4.7	0.9	701
Lowlands	33.1	7.0	1.1	2170	29.1	5.8	0.7	2158	31.1	6.4	0.5	4328
Household food shortage												
None in last week	32.5	6.3	0.9	1612	28.5	4.9	0.5	1622	30.5	5.6	0.7	3234
Any in last week	34.5	7.5	1.3	898	32.1	6.4	0.8	897	33.3	7.0	1.1	1795
Household wealth index												
Poorest	30.7	6.1	0.6	1021	27.2	4.6	0.6	1051	28.9	5.3	0.6	2072
Middle	37.1	8.2	1.4	1019	32.4	6.9	0.8	978	34.8	7.6	1.1	1997
Richest	30.5	5.2	1.2	470	30.9	4.6	0.4	490	30.7	4.9	0.8	960
Total	33.2	6.8	1.0	2510	29.8	5.5	0.6	2519	31.5	6.1	0.8	5029

Note: Haemoglobin was adjusted for altitude using the following formula recommended by INACG

Adjusted Hb = Hb – [-0.32 x (altitude in meters x 0.0033) + 0.22 x (altitude in meters x 0.0033)^2

13.7.2 Anaemia in women

Anaemia also affects adults. The fatigue resulting from anaemia impairs work performance and endurance even for tasks that require only moderate levels of activity. Thus anaemia can result in reduced household productivity especially where many household tasks which require high levels of effort, such as gathering water and fuel, are mainly the responsibility of women. Severe anaemia in pregnancy has been shown to increase the risk of maternal mortality, and in Asia, approximately 25% of maternal mortality has been attributed to severe anaemia (Allen and Gillespie, 2001). Maternal anaemia in pregnancy increases the risk of preterm and low birth weight and subsequent risk of anaemia in the infant.

Table 13.16 presents the anemia levels of ever-married women aged 15 to 49 years who reported they were not pregnant at the time of haemoglobin measurement. Overall, 31.5% of the non-pregnant women had anaemia (Hb <120 g/L), 5.3% had moderate to severe anaemia (Hb <90 g/L), and 1.0% had severe anaemia (Hb <70 g/L).

Figure 13.12 Effect of adjustment for altitude on haemoglobin values
Comparison of the prevalence of anaemia (haemoglobin < 120 g/L) in non-pregnant women living in the highlands (elevation of residence > 1000 m) in comparison to women living lowlands (elevation of residence ≥ 1000 m) before after adjustment of haemoglobin for altitude. Haemoglobin was adjusted for altitude using the following formula recommended by INACG: Adjusted Hb = Hb – [-0.32 x (altitude in meters x 0.0033) + 0.22 x (altitude in meters x 0.0033)2]

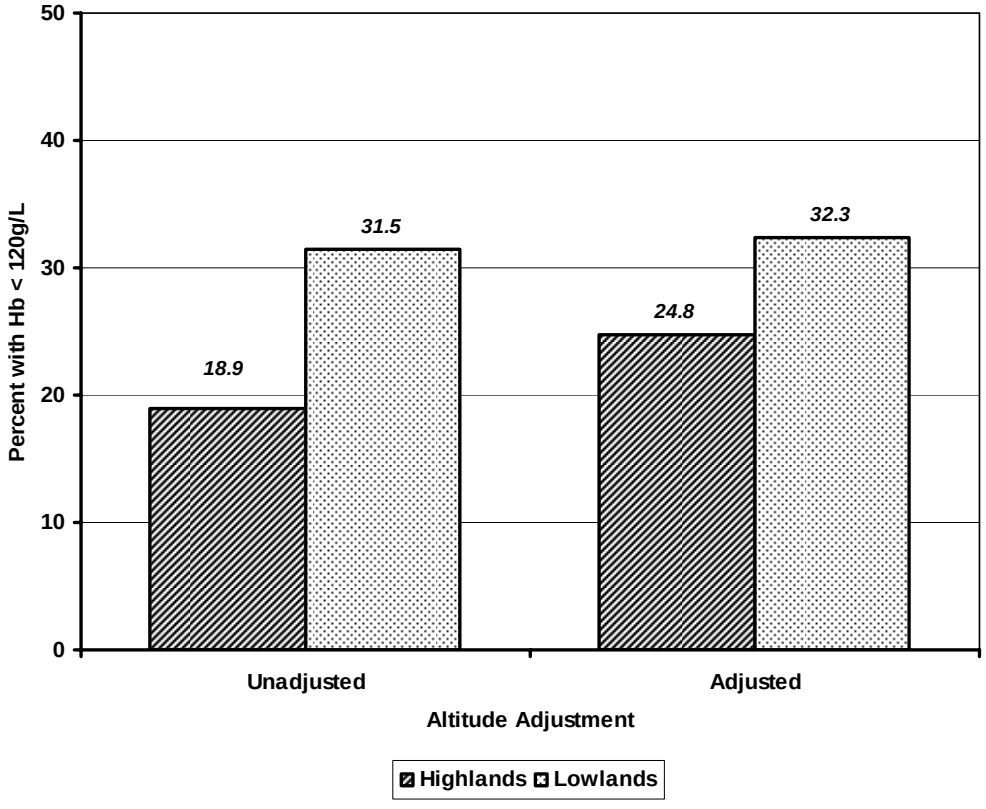


Table 13.16 Prevalence of anaemia in non-pregnant women

Percentage of non-pregnant women aged 15-49 years who are anaemic (haemoglobin < 120 g/L), moderately anaemic (haemoglobin < 90 g/L) and severely anaemic (haemoglobin < 70 g/L) by sex and background characteristics, Timor Leste 2003.

Background characteristics	Hb < 120 g/L	Hb < 90 g/L	Hb < 70 g/L	Number of non-pregnant women
Women's age				
15-19	25.6	4.7	1.1	123
20-24	28.2	4.8	0.5	428
25-29	33.3	5.4	1.1	754
30-34	32.9	6.2	1.3	799
35-39	29.6	5.0	0.9	707
40-44	32.9	4.1	0.4	505
45-49	32.1	5.1	1.4	429
Number of births				
0	(23.0)	(0.0)	(0.0)	17
1	28.9	4.4	0.7	342
2	28.7	6.2	1.0	518
3	32.6	5.7	1.1	522
4	32.3	5.9	0.8	548
5	34.0	5.3	1.1	491
6	34.0	3.2	0.8	429
7	27.4	5.9	1.4	323
8+	33.2	5.4	1.1	468
Region				
Urban	33.1	5.6	1.0	885
Rural East	35.4	9.3	1.8	929
Rural Central	28.9	2.5	0.5	1232
Rural West	26.7	3.3	0.4	699
Ecological zones				
Highlands	24.8	2.2	0.2	608
Lowlands	32.3	5.7	1.1	3136
Women's education				
No education	31.5	5.2	1.0	2036
Some primary	32.3	5.7	0.6	627
Completed primary	31.2	4.4	0.7	280
Some secondary or more	31.1	5.0	1.2	802
Household food shortage				
None reported in last week	29.4	4.9	1.0	1969
Any reported in last week	32.9	5.4	0.9	1775
Household wealth index				
Poorest	29.0	4.2	0.8	1569
Middle	33.5	5.7	1.1	1483
Richest	30.8	6.0	1.0	693
Total	31.5	5.3	1.0	3745

Note: Haemoglobin was adjusted for altitude using the following formula recommended by INACG

Adjusted Hb = Hb – [-0.32 x (altitude in meters x 0.0033) + 0.22 x (altitude in meters x 0.0033)^2]

No adjustment was made for smoking because of the very low prevalence of smoking in women.

The haemoglobin values were adjusted for altitude using a formula recommended by the International Nutritional Anemia Consultative Group (INACG) (Nestel, 2002). The effect of this adjustment on the prevalence of anaemia in non-pregnant women living in the highlands (elevation of residence > 1000m) and the lowlands is presented in Figure 13.12. Living at high altitude increases haemoglobin levels due to the lower oxygen concentration in the atmosphere. The prevalence of anaemia increased by 31% following the adjustment, from 18.9% to 24.8%.

As seen in Table 13.16, even after adjustment the prevalence of anaemia in the lowlands was higher than in the highlands. This difference might be related to a higher prevalence of malaria in the lowlands. It can also be seen that anaemia is not clearly associated with household wealth index. All levels of severity of anaemia were highest in the middle wealth index category. This analysis may be confounded by the elevation of the residence. Possibly the poorest households are at the highest elevations where malaria is of much lower prevalence. Anaemia was more common in women from households reporting any food shortages in the week prior to interview. Women's education level was not associated with anaemia.

Table 13.17 shows the prevalence of anaemia in women who reported they were pregnant at the time of measurement of haemoglobin according to maternal and household characteristics. The haemoglobin values used for this analysis were further adjusted to account for the effects of pregnancy on haemoglobin levels. During pregnancy, the blood volume expands and haemoglobin concentrations in the blood progressively fall to reach a nadir in the second trimester and then rise again in the third trimester (CDC, 1989). The adjustment for gestation was made by calculating a haemoglobin Z score and the cut off values were the equivalent Z score value for traditional cut off values: Hb <120 g/L equivalent to Hb Z <-1.67; Hb <90 g/L equivalent to Hb Z <-5.0; Hb <70 g/L equivalent to Hb Z <-7). Overall, 36.5% of the pregnant women had anaemia (Hb <120 g/L), 7.0% had moderate to severe anaemia (Hb <90 g/L), and 1.3% had severe anaemia (Hb <70 g/L).

The prevalence of anaemia in these pregnant women, using the fixed cut off value of haemoglobin <120 g/L with unadjusted haemoglobin values to define anaemia, was 48.7%. The major difference between gestational adjusted and unadjusted haemoglobin was in the second and third trimesters.

As seen in Table 13.17, the patterns of the prevalence of anaemia were similar to those seen with non-pregnant women. Anaemia was higher in woman from lowland areas, the urban and rural east regions, and women from households reporting any food shortages in the week prior to survey. Lower birth orders were also associated with higher prevalence of anaemia. Women of short stature also had a higher prevalence of anaemia including severe anaemia, indicating these women had increased risk of delivery complications and pregnancy associated mortality.

Table 13.17 Prevalence of anaemia in pregnant women

Percentage of pregnant women aged 15-49 years who are anaemic (haemoglobin < 120 g/L), moderately anaemic (haemoglobin < 90 g/L) and severely anaemic (haemoglobin < 70 g/L) by sex and background characteristics, Timor Leste 2003

Background characteristics	Hb < 120 g/L (Hb Z < -1.67)	Hb < 90 g/L (Hb Z < -5.0)	Hb < 70 g/L (Hb Z < -7.2)	Number of pregnant women
Women's age				
15-19	27.9	0.0	0.0	12
20-24	36.2	7.8	0.0	80
25-29	36.5	6.0	2.1	142
30-34	36.5	8.5	2.3	127
35-39	40.4	7.9	1.0	72
40-44	39.6	9.7	0.0	29
45-49	26.1	0.0	0.0	10
Gestation				
First trimester	33.1	7.8	2.7	122
Second trimester	39.4	7.9	0.0	209
Third trimester	35.7	5.8	1.8	219
Maternal Height				
<145 cm	38.3	7.9	4.0	80
≥145 cm	36.2	6.9	0.8	469
Birth order				
1	41.9	10.2	0.0	81
2-3	39.8	7.7	2.1	155
4-5	36.5	7.2	2.4	133
6+	31.9	5.5	0.0	104
Region				
Urban	44.3	8.0	0.0	107
Rural East	49.2	12.4	3.4	190
Rural Central	21.3	1.6	0.0	168
Rural West	28.3	4.4	0.9	84
Ecological zones				
Highlands	22.5	0.0	0.0	81
Lowlands	38.9	8.2	1.5	469
Women's education				
No education	37.0	6.6	0.8	229
Some primary	37.0	7.5	1.0	109
Completed primary	46.1	7.2	2.4	45
Some secondary or more	32.9	7.4	1.9	167
Household food shortage				
None reported in last week	34.6	5.0	0.4	267
Any reported in last week	38.3	9.0	2.2	282
Household wealth index				
Poorest	33.0	4.6	1.2	247
Middle	39.8	9.9	2.0	215
Richest	38.3	6.8	0.0	88
Total	36.5	7.0	1.3	549

Note: Haemoglobin was adjusted for altitude using the following formula recommended by INACG

Adjusted Hb = Hb – [-0.32 x (altitude in meters x 0.0033) + 0.22 x (altitude in meters x 0.0033)^2]

Further adjustment for gestation was made by calculating haemoglobin z scores (Scanlon et. al. 2000).

Maternal education was not associated with anaemia. Household wealth index was inversely associated with anaemia with more anaemia in the women from richest households. This anomalous finding was most probably related to confounding from the very high levels of anaemia in women from urban areas where household wealth was highest.

The lower levels of anaemia in women from the highlands partially accounts for the marked geographic pattern seen in the prevalence of anaemia. This pattern suggests that malaria, which is more common in the lowlands, is an important contributor to anaemia in pregnancy; especially severe anaemia. Further research is needed to clarify the role of non-dietary risk factors for anaemia in women especially in pregnancy in order to design the most appropriate and effective interventions to control anaemia in women in pregnancy.

The prevalence of anaemia in women in Timor Leste was considerably lower than that reported in the India 1998-99 NFHS-2 for ever-married women aged 15 to 49 years of whom 51.8% were anaemic, although the prevalence of severe anaemia was similar (1.9% in India versus 1.0% in Timor Leste). However, the prevalence of anaemia from a nationally representative sample of non-pregnant women in Vietnam in 2000 was lower than that observed in the non-pregnant women in the TL 2003 DHS (24.3% in Vietnam versus 31.5% in Timor Leste).

Chapter 14

HIV/AIDS and Other Sexually Transmitted Infections

Contents

Tables

14 HIV/AIDS and Other Sexually Transmitted Infections

The infectious Human Immunodeficiency Virus (HIV) and its deadly sequel Acquired Immune Deficiency Syndrome (AIDS) were first detected in the United States in 1978. Over the next quarter of a century it progressed from a disease characterised as incurable, to an epidemic that the world is beginning to live with, albeit unhappily. The disease is preventable through an array of behavioural changes and the application of tight controls of health care work to ensure that blood and semen are not transmitted from an infected to an uninfected person. Unfortunately, these measures are often costly, both in terms of the educational effort needed and the provision of expensive equipment in health facilities.

More tragically, some of the most common modes of infection—through sexual relations or the sharing of tainted needles by injecting drug users—are related to behaviours that are very resistant to change, because they spring from intractable human cravings and demands. This means the effort to prevent the spread of infection needs to be comprehensive, with efforts to prevent risky sexual and drug use behaviours. If that is impossible, interventions to reduce the risk involved in such behaviour need to be implemented. The key to all preventive measures is that the population must understand HIV and AIDS, and know how to prevent the transmission of the virus.

Timor Leste was free of HIV during most of the time that developed countries, such as Australia and the United States, were compiling measures to fight the epidemic among groups regarded as high risk for infection, including men who have sex with men, injecting drug users who share needles, and infected people who have unprotected heterosexual intercourse. It was only in December 2001 that the first case of AIDS was reported in the Dili National Hospital, and the spouse and one child of the patient were found to be HIV positive. Before that foreigners who had worked in Dili after 1999 were found to be HIV positive during their exit medical checks in Darwin[1]. Recognising that a nation with a severely depleted health sector would be particularly susceptible to the epidemic, in September 2002 the government developed a National Strategic Plan for a Comprehensive and Multi-Sectoral Response to HIV/AIDS/STI 2002-2005. The TL 2003 DHS therefore provides what might be regarded as a baseline measurement for the Plan, with a series of HIV/AIDS related questions asked of a nationally representative sample of ever-married women and men.

14.1 Knowledge of HIV/AIDS

The TL 2003 DHS unfortunately revealed that the married women and men in Timor Leste were almost totally ignorant of both the disease and the means to prevent it (see Table 14.1). When 70% of men and 80% of women have never even heard of HIV, any

[1] Huffam, S., BJ Currie, P. Knibbs, J. Savage, and V. Krause. "HIV-1 infection in foreign nationals working in East Timor." *Lancet*. August 3, 2002. 360(9330): 416.

efforts to prevent behaviours that spread the infection are unlikely to be understood. Information has to start with knowledge of what the acronym means, and the dangers and threats of the disease. Only then will the demands for changes in sexual behaviour be listened to or heeded.

Table 14.1 Knowledge of HIV/AIDS

Percentage of ever-married women and men who have heard of HIV/AIDS and percentage among them who believe there is a way to avoid HIV/AIDS, Timor Leste, 2003

Background characteristics	Ever married women who			Ever married men who		
	Have heard of HIV/AIDS	Believe there is a way to avoid HIV/AIDS	Number	Have heard of HIV/AIDS	Believe there is a way to avoid HIV/AIDS	Number
Age						
15-19	25.6	13.2	152	(5.0)	(2.0)	12
20-24	28.0	13.6	515	38.6	16.3	184
25-29	25.5	11.5	879	42.8	23.3	580
30-34	21.3	9.4	912	37.0	18.3	920
35-39	17.2	7.9	763	35.5	17.0	764
40-44	14.8	7.8	528	22.6	8.6	640
45-49	12.3	6.8	429	16.4	5.4	407
50-54	n/a	n/a	n/a	15.6	6.8	409
Marital Status						
Married	20.7	9.9	4070	31.1	14.6	3881
Widowed	16.3	4.2	71	(8.9)	(9.3)	32
Divorced	(16.9)	(5.6)	36	*	*	3
Region						
Urban	47.4	24.4	962	58.3	31.5	877
Rural East	13.7	7.0	761	27.8	13.3	911
Rural Central	15.4	6.9	1416	23.1	9.7	1367
Rural West	6.4	2.2	1038	17.9	5.4	761
Ecological zone						
Lowlands	22.7	10.7	3489	33.4	15.8	3258
Highlands	10.4	4.9	688	18.7	7.6	658
Education						
Non-formal education	8.0	3.0	2208	9.1	1.8	1637
Some Primary	17.0	6.7	716	26.0	8.3	771
Primary completed	25.4	14.6	314	37.2	14.6	376
Some Secondary or more	51.6	26.3	939	63.7	36.0	1132
Household Wealth Index						
Poorest	8.0	2.2	1764	18.5	7.8	1679
Middle	17.5	7.9	1655	27.8	11.2	1545
Richest	57.2	31.3	758	68.2	38.6	692
Total	20.7	9.7	4177	30.1	14.6	3916

* Fewer than 10 unweighted cases

( ) Fewer than 50 unweighted cases

The differences in recognition of the term HIV/AIDS according to social class and region pose large challenges to health and education programs. The people in urban areas were more likely to be familiar with the disease than those in the countryside. There was a strong correlation between knowledge and education, but not all those who had completed secondary school were conversant with the problem. A third of men who had completed high school education had no idea of what was HIV. This provides an insight

into how difficult it will be to inform the community when the most educated group in the society is so out of touch with daily newspapers, books and other information sources which constantly discuss the nature of the epidemic. The areas of the country with the lowest proportions of people knowing of HIV were in the mountains and the rural west region but these were just the extremes of a more widespread problem. There are no bright spots in these numbers. Young people were more likely to recognise the disease than the old, but less than 30% of women in any age group knew about HIV.

14.2 Knowledge of ways to prevent HIV/AIDS

With so little familiarity with the disease it is not surprising that the bulk of the population had no idea of how to prevent the spread of the infection. Although the majority of the women and men from the wealthiest households knew about HIV, most were unaware of any means of stopping the spread of the virus. Yet this was the group with the highest awareness of both the term and the prevention. All other groups were less knowledgeable.

Table 14.2 shows the proportion of the population who could name specific behaviours as means of preventing HIV. Among those who know at least one method, there was a tendency to cite actions often recommended by doctors, such as limiting the number of sexual partners by being faithful to their spouses and avoiding prostitutes. Relatively few people mentioned the use of condoms. There were also some problematic beliefs, such as avoiding injections or blood transfusions. They did not realise that the risk of contracting HIV is very low if syringes are clean, and blood carefully screened.

Table 14.2 Knowledge of ways to avoid HIV/AIDS

Percentage of ever-married women and men who have some understanding of ways to avoid HIV, Timor Leste, 2003

Knowledge Items	Ever-married Women	Ever-Married Men
Knowledge of HIV/AIDS and ways of prevention of the disease		
Does not know of HIV/AIDS or if the disease can be prevented	79.3	69.1
Knows about HIV/AIDS but doesn't know how to prevent it	11.0	16.4
Believes that HIV/AIDS can be prevented if you:		
Abstain from sex	1.2	0.6
Use condoms	1.9	2.1
Limit number of sexual partners	4.8	6.5
Limit sex to one partner/stay faithful to one partner	3.2	4.7
Avoid sex with prostitutes	6.2	10.4
Avoid sex with persons who have many partners	3.8	4.0
Avoid sex with homosexuals	1.0	0.6
Avoid sex with persons who inject drugs intravenously	1.2	1.1
Avoid blood transfusions	0.8	2.5
Avoid injections	0.7	0.9
Avoid sharing razor/blades	0.2	0.8
Avoid kissing	0.3	0.6
Avoid mosquito bites	0.4	0.2
Seek protection from traditional healer	0.1	0.1
Other	0.1	0.0
Number of women/men	4177	3916

14.3 Awareness of programmatic messages to prevent HIV transmission

The understanding of HIV and the means of prevention are minimal in Timor Leste. In the context of the National Strategy, the purpose of any educational intervention is to ensure people gain an understanding of medically sound ways to stop the transmission of HIV. To gauge this Table 14.3 provides responses to the knowledge question in terms of the number of programmatically important methods to avoid contracting HIV. These were, abstention from sex, using condoms when having sex, and limiting the number of sexual partners, usually in terms of being faithful to only one partner. Less than one in ten people could identify even one of these methods.

Table 14.3 Knowledge of programmatically important ways to avoid HIV/AIDS
Percentage of ever-married women and men by knowledge of three programmatically important ways to avoid HIV/AIDS, Timor Leste 2003

Background characteristics	Knowledge of programmatically important ways to avoid HIV/AIDS							
	Women				Men			
	None[1]	One way	Two/three ways	Number of women	None[1]	One way	Two/three ways	Number of men
	Total: 100%				Total: 100%			
Age								
15-19	91.3	8.1	0.6	152	92.1	7.9	0.0	12
20-24	90.3	7.7	2.0	515	87.4	11.6	1.0	184
25-29	91.7	6.6	1.7	879	84.2	13.2	2.7	580
30-34	92.6	5.6	1.8	912	87.2	10.8	2.0	921
35-39	93.2	5.6	1.2	763	88.3	10.5	1.2	764
40-44	93.2	5.1	1.7	528	92.9	6.1	0.9	640
45-49	95.8	3.4	0.8	429	96.1	3.1	0.9	407
50-54	n/a	n/a	n/a	n/a	94.8	4.3	0.9	408
Region								
Urban	80.9	14.1	5.0	962	78.1	18.2	3.7	877
Rural East	97.2	2.6	0.2	761	95.7	4.0	0.3	761
Rural Central	94.3	4.9	0.8	1416	93.6	6.1	0.3	1367
Rural West	97.8	1.8	0.4	1038	89.8	8.0	2.2	911
Ecological zone								
Lowlands	92.0	6.3	1.7	3489	88.6	9.7	1.7	3258
Highlands	96.2	3.5	0.3	688	95.0	4.7	0.3	658
Education								
No education	97.4	2.1	0.5	2208	98.1	1.5	0.4	1637
Some Primary	95.1	3.3	1.6	716	93.8	5.6	0.6	771
Primary completed	89.7	8.4	1.9	314	90.3	9.3	0.5	376
Some Secondary or more	80.5	15.9	3.6	939	74.3	21.7	4.0	1132
Household Wealth Index								
Poorest	97.9	1.9	0.2	1764	94.9	4.4	0.7	1679
Middle	94.8	4.2	4.2	1655	91.9	7.1	1.0	1545
Richest	75.4	18.9	18.9	758	71.7	23.6	4.7	692
Total	92.6	5.9	1.5	4177	89.5	9.0	1.5	3916

[1] Programmatically important ways are abstaining from sex, using condoms, and limiting the number of sexual partners (Refers to limiting number of sexual partners or limiting sex to one partner/staying faithful to one partner).

In any country where the infection has settled in to an inexorable spread through heterosexual transmission, it is particularly important that people are aware of multiple means of protection. This is particularly the case when behaviours vary so much, across different social groups, the life cycle, and regionally. Only a small proportion of the educated urbanites know even one method, and none of the groups were aware of multiple messages.

14.4 Knowledge of symptoms of other sexually transmitted infections

Dili's history as a port city goes back over four centuries and throughout that period people have faced the risks of sexually transmitted diseases brought by sailors from all corners of the world. Gonorrhoea, syphilis, and other infections that cause chancres and inflammation were endemic throughout the ports of South-East Asia. In the nineteenth century, colonial health services concentrated much of their attention on the treatment of these conditions, so as to ensure the fitness of their armies, navies and bureaucracies. Because the diseases were often linked with commercial sex, or with illicit sex outside of marriage, rumours about the causes and treatments of the infections were whispered between confidantes. The knowledge and fear of the diseases would have been widespread but not necessarily highly publicised.

It is interesting to see the results of Table 14.4 showing the responses to questions about knowledge of sexually transmitted infections (STIs) and the common symptoms of such diseases. Virtually no women and only a handful of men admitted to knowing about STIs, and consequently only a small proportion of the population recognized the symptoms. It is possible the people surveyed were not comfortable with this question. Alternatively, the terms and explanations used in the survey might not have been familiar to the respondents. Even so, the fact so few people were able to identify symptoms of STIs indicates a gap in education that needs to be addressed.

Just as with HIV, there was a tendency for men to be more knowledgeable about STIs than women. People in urban areas, with higher education were more likely to have heard about STIs and know at least one symptom. There were no social groups where even 25% of the respondents had acceptable levels of knowledge.

Table 14.4 Knowledge of sexually transmitted infections

Percentage of ever-married women and men who heard of sexually transmitted infections (STIs) other than HIV/AIDS and could mention common symptoms[1] of sexually transmitted infections, Timor Leste 2003

Background characteristics	Knowledge of STIs and STI symptoms									
	Women					Men				
		STI symptoms					STI symptoms			
	Have heard of STIs	No symptoms mentioned	One symptom mentioned	Two/three symptoms mentioned	Number of women	Have heard of STIs	No symptoms mentioned	One symptom mentioned	Two/three symptoms mentioned	Number of men
		100%					100%			
Age										
15-19	4.1	96.5	3.0	0.5	152	7.9	92.1	7.9	0.0	12
20-24	6.5	94.8	3.7	1.5	515	11.7	90.8	6.5	2.8	184
25-29	6.9	94.0	4.2	1.8	879	16.7	87.5	8.5	4.0	580
30-34	6.0	95.3	3.4	1.3	912	17.2	86.0	9.8	4.3	921
35-39	5.0	95.3	3.5	1.1	763	16.3	86.9	9.9	3.2	764
40-44	4.9	96.1	2.6	1.2	528	13.2	89.6	8.1	2.3	640
45-49	4.7	95.9	3.5	0.6	429	13.3	89.2	8.8	2.1	407
50-54	n/a	n/a	n/a	n/a	n/a	9.7	92.3	4.2	3.5	408
Region										
Urban	11.0	91.0	5.7	3.2	962	20.0	84.9	10.9	4.2	877
Rural East	1.8	98.7	0.7	0.6	761	7.4	94.1	4.2	1.7	761
Rural Central	6.2	94.4	5.0	0.6	1416	15.7	87.4	9.3	3.3	1367
Rural West	3.6	97.0	2.0	1.0	1038	14.6	87.7	8.7	3.6	911
Ecological zone										
Lowlands	5.5	95.4	3.2	1.4	3489	14.7	88.4	8.4	3.2	3258
Highlands	6.8	94.0	5.3	0.7	688	15.3	87.4	9.2	3.4	658
Education										
No education	3.6	96.8	2.7	0.5	2208	10.3	92.0	5.7	2.3	1637
Some primary	3.3	96.9	2.8	0.3	716	12.1	90.8	5.6	3.6	771
Primary completed	9.1	92.6	5.3	2.1	314	16.5	85.6	11.1	3.3	376
Some secondary +	11.4	90.9	5.6	3.5	939	22.5	81.9	13.6	4.5	1132
Household Wealth Index										
Poorest	3.3	97.1	2.6	0.3	1764	14.9	88.1	8.7	3.2	1679
Middle	5.1	95.7	3.2	1.1	1655	11.5	91.1	6.4	2.5	1545
Richest	12.7	89.6	6.4	4.0	758	22.1	81.8	12.6	5.6	692
Total	5.7	95.2	3.5	1.3	4177	14.8	88.2	8.5	3.3	3916

[1] Common STI symptoms include genital discharge, genital ulcer and lower abdominal pain

14.5 Condoms as a means of preventing infection

Along with low rates of contraceptive use (See Chapter 6) and awareness of STIs and HIV, there was also a widespread lack of knowledge about condoms as a means of infection control among ever-married men (see Table 14.5). Less than one in six men said they were familiar with condoms. This could reflect the lack of community debate about the use of condoms to prevent the spread of infections. The issue is sometimes placed in the context of 'either-or' with fidelity or total abstinence suggested as ways to ensure young people in particular are not infected. In successful programs of prevention around the world a different argument is used: prevention of infection needs to cater to the wide variety of patterns of behaviour found in the community. Some people may respond to one means of prevention while others will not. There needs to be a variety of measures appropriate to the variety of needs that people display. The key to promoting such a policy is to ensure that all people are aware of the risks and the options available to overcome them.

In mid 2003, only 0.5% of Timor Leste men said they had ever used condoms. The question did not distinguish between the uses of condoms for infection control or pregnancy prevention. Despite this low use rate, around 7% of men believed that condoms prevent disease. While the men said they had no experience with the devices, around 4% said condoms were inconvenient or reduced sexual pleasure. This apparent contradiction is a subject worthy of future investigation.

Table 14.5 Men's reported opinions on condoms and condom usage

Percentage distribution of all ever-married men's (n=3916) reported opinions on statements about condoms and condom usage, Timor Leste 2003

Reported opinions	Yes	No	Don't know	Total
Has ever heard of condom	15.4	84.6	n/a	100.0
Has heard of condom and has never used condom	14.9	85.1	n/a	100.0
Has heard of condom and has used condom	0.4	99.6	n/a	100.0
Condom protect against diseases	7.2	3.3	89.5	100.0
Condom helps to prolong pleasure	1.5	6.7	91.8	100.0
Condom diminish sexual pleasure	4.4	5.0	90.6	100.0
Condom is inconvenient to use	3.4	6.0	90.6	100.0
Condom can be reused	1.2	9.1	89.7	100.0
Women has no right to tell a man to use condom	1.7	7.3	91.0	100.0

14.6 Infectious diseases and reproductive health

The extraordinarily low rate of awareness of HIV and STIs in Timor Leste is of great concern to medical personnel working in the field of infectious disease prevention. Programs of education, diagnosis and treatment must start from the foundation that there is virtually no understanding of these topics in the community. At the same time it is important to recognise the implications such infections have for other health issues.

HIV is very expensive to diagnose and treat. The costs may increase if HIV positive people do not receive appropriate medication as opportunistic infections can greatly reduce their quality of life. Some of these infections, for example tuberculosis, can be easily spread to people with whom they have close contact.

Pregnant women who have HIV or serious STIs risk passing the infection on to the newborn. Some STIs cause infecundity, while others produce a wide range of painful and dangerous impacts on body organs if they are not adequately treated. For these and many other clinical reasons, the early diagnosis and effective control of all STIs, including HIV, is a high priority for any comprehensive reproductive health service.

There is also the problem that stigmatised diseases are likely to be hidden. In this survey the levels of awareness of diseases and treatments appeared extremely low. This may mean that people are hesitant to admit to knowledge as a result of shyness, shame or discomfort. It may also reflect problems in the translation of terms, or the shyness of the interviewers. Given the threats posed by HIV and STIs to the health and well-being of the population, these results imply a need for strong initiatives in the fields of health education, and public discussion.

Chapter 15
Adult Morbidity

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2. Tables

15 Adult morbidity

This chapter presents data on morbidity of adults in Timor Leste and their association with various individual and household characteristics. Combinations of functional and medical indicators have been used in this assessment of adult morbidity.

Functional indicators define illness in terms of an individual's inability to perform their usual tasks. In the Timor Leste 2003 DHS, functional morbidity was assessed by asking the interviewed adults if they had any illness that restricted their usual activities or resulted in them being restricted to bed or being hospitalized during the month prior to interview. Additional questions were asked about the duration of the event(s), if the event was related to an accident or injury, and if the event was accompanied by fever.

The survey respondents were also asked about medical indicators of tuberculosis morbidity, that is, symptoms characteristic of tuberculosis of the lungs experienced during the month prior to the survey. These symptoms included persistent cough, coughing of blood and loss of body weight.

The assessment of adult morbidity was specifically requested by the TL 2003 DH steering committee. This type of assessment is not usually included in DHS surveys making it difficult to find similar national level data from other countries for comparison.

15.1 Restricted-day morbidity

The prevalence of restricted-day morbidity in the ever-married adults interviewed in the TL 2003 DHS is presented in Table 15.1. The prevalence of restricted-day illness was nearly twice as high in men as in women. A similar pattern has been reported in a rural population in Vietnam (Do et. al., 2004). Although this disparity might represent a real difference in gender specific functional illness rates, it may also be accounted for by gender differences in perception of illness sufficient to restrict activity or divergent social roles and work patterns that influence the ease with which activities can be restricted by illness. There was a tendency for higher rates of restricted-day illness in older age groups.

Injuries or accidents accounted for approximately 10% of the restricted-day illness, and as expected, the rate was more than twice as high in males as in females. Nearly 75% of the restricted-day morbidity was associated with fever. The prevalence of restricted-day morbidity with fever in both sexes increased as the level of Body Mass Index (BMI) decreased with the rates approximately twice as high in those adults with BMI <17.0 kg/m2 in comparison to those with an adequate BMI (18.50 to 24.9 kg/m2). There was little difference in the prevalence of restricted-day morbidity by region or ecological zone. The prevalence of restricted-day morbidity with fever was higher in adults from the poorest households although this trend was more apparent for women than for men. Smoking tobacco was not clearly associated with increased restricted-day morbidity although this association might have been distorted by higher levels of tobacco use among

adult males from wealthier households. The median duration of restricted-day illness with any symptoms was slightly longer for males than females.

Table 15.1 Restricted-day adult morbidity

Percentage of women and men who reported illness, which restricted their daily activities during the month prior to the survey and the median duration in days of the restricted-day illness, according to background characteristics, Timor Leste 2003

Background characteristic	Women					Men				
	Restricted-day illness				Number of women	Restricted-day illness				Number of men
	Any symptoms	Due to injury or accident	With fever	Median duration		Any symp-toms	Due to injury or accident	With fever	Median duration	
Age										
15-19	3.0	0.0	3.0	5.0	117	(19.5)	(0.0)	(19.5)	(7.0)	12
20-24	6.3	0.2	5.7	4.0	516	12.8	2.0	8.4	6.0	184
25-29	5.8	0.6	5.0	5.0	864	12.3	0.8	9.1	5.0	580
30-34	7.5	0.8	5.4	5.0	918	14.7	1.1	10.7	6.0	920
35-39	8.0	1.3	5.8	6.0	761	16.5	2.1	12.9	7.0	764
40-44	8.5	0.5	5.9	7.0	550	15.8	1.9	11.0	7.0	641
45-49	8.6	1.3	6.7	6.0	451	18.1	1.7	10.2	7.0	407
50-54	n/a	n/a	n/a	n/a	n/a	12.1	1.9	9.6	7.0	408
Smoke Tobacco										
Yes	9.3	2.2	8.0	5.0	170	13.7	1.3	9.7	6.0	2378
No	7.1	0.7	5.4	5.0	4008	16.7	2.0	12.3	7.0	1539
BMI Status										
< 16.00	12.1	0.7	10.0	7.0	241	20.5	4.4	13.8	7.0	81
16.00-16.99	11.3	0.9	7.9	5.0	316	22.1	2.3	18.7	6.0	172
17.00-18.49	6.6	0.3	4.5	7.0	884	18.5	1.7	12.7	5.0	777
18.50-24.99	6.4	0.8	5.3	5.0	2527	13.4	1.5	9.6	7.0	2759
> 25.00	6.6	0.0	2.7	4.0	144	12.2	0.0	9.6	6.0	71
Region										
Urban	7.3	0.7	4.2	5.0	961	14.0	2.2	10.0	7.0	877
Rural East	5.3	0.3	4.5	6.0	1038	14.9	1.4	11.7	7.0	910
Rural Central	7.9	1.1	6.5	6.0	1416	16.6	1.2	11.1	6.0	1369
Rural West	8.2	0.8	7.0	5.0	762	12.8	1.7	9.5	5.0	760
Ecological zones										
Highlands	7.6	1.0	6.5	6.0	688	17.2	1.3	10.6	6.0	658
Lowlands	7.1	0.7	5.3	5.0	3489	14.4	1.6	10.7	6.0	3258
Education										
No education	7.1	0.9	5.4	6.0	2208	14.5	1.7	10.4	6.0	1637
Some primary	7.1	0.5	6.3	5.0	712	15.9	2.7	11.9	7.0	771
Completed primary	9.6	0.4	7.3	5.0	319	14.9	0.9	8.8	7.0	376
Some secondary or more	6.7	0.6	4.7	5.0	938	14.7	0.8	10.9	5.0	1132
Household wealth index										
Poorest	7.6	0.9	6.7	6.0	1764	15.9	1.3	11.1	6.0	1681
Middle	6.8	0.6	5.3	5.0	1655	15.0	2.0	11.2	6.0	1543
Richest	6.9	0.6	3.6	4.0	758	12.3	1.3	8.5	7.0	692
Total	7.2	0.7	5.5	5.0	4177	14.9	1.6	10.7	6.0	3916

( ) Fewer than 50 observations

15.2 Tuberculosis symptoms and treatment

Table 15.2 presents the prevalence one month prior to interview of three symptoms often found in pulmonary tuberculosis in adults, persistent cough, coughing blood and weight loss. At least two of the three symptoms were reported by 7.1% of the women and 5.6% of the men.

Table 15.2 Prevalence of tuberculosis symptoms

Percentage of women and men who reported tuberculosis symptoms during the month prior to the survey, according to background characteristics, Timor Leste 2003

Background characteristic	Women					Men				
	Persistent cough	Cough blood	Weight loss	At least 2 symptoms	Number of women	Persistent cough	Cough blood	Weight loss	At least 2 symptoms	Number of men
Age										
15-19	9.2	1.6	10.2	4.3	117	(19.5)	(0.0)	(19.5)	(19.5)	12
20-24	16.0	0.4	15.1	7.7	516	14.1	1.5	8.1	4.4	184
25-29	15.1	0.8	13.9	7.2	864	16.9	1.3	10.1	4.5	580
30-34	15.7	1.3	13.8	6.6	918	16.7	2.2	9.3	6.1	920
35-39	14.5	1.3	13.4	7.0	761	17.8	2.5	10.0	5.7	764
40-44	15.4	1.6	14.8	8.9	550	17.3	2.6	9.4	6.7	641
45-49	15.8	1.6	10.5	6.3	451	18.6	2.0	8.8	5.2	407
50-54	n/a	n/a	n/a	n/a	n/a	15.3	2.3	8.2	5.0	408
Smoke tobacco										
Yes	14.6	0.6	12.4	4.4	170	17.0	1.8	8.8	5.2	2378
No	15.2	1.2	13.6	7.2	4008	16.8	2.6	10.2	6.3	1539
BMI Status										
< 16.00	22.8	3.2	17.0	11.9	242	27.9	6.7	12.7	11.2	82
16.00-16.99	16.3	2.7	16.8	10.0	317	18.6	3.7	14.7	8.7	174
17.00-18.49	15.8	1.0	14.5	7.3	887	21.5	2.6	11.3	7.7	783
18.50-24.99	14.5	0.8	12.9	6.5	2535	15.3	1.8	8.3	4.7	2761
> 25.00	7.3	0.0	2.2	0.6	144	11.4	1.1	7.7	2.4	70
Region										
Urban	11.5	0.7	10.5	4.2	961	13.1	1.8	8.2	5.0	877
Rural East	15.5	1.0	16.0	9.9	1038	25.4	2.8	15.3	10.2	910
Rural Central	16.1	1.5	11.9	7.4	1416	17.3	2.0	5.6	4.2	1369
Rural West	16.8	1.4	17.1	6.2	762	10.7	1.8	10.4	3.7	760
Ecological zones										
Highlands	17.0	1.8	11.8	9.5	688	17.2	1.4	6.2	3.6	658
Lowlands	14.8	1.0	13.9	6.6	3489	16.9	2.3	10.0	6.1	3258
Education										
No education	15.2	1.2	13.8	7.7	2208	17.8	2.2	8.7	5.9	1637
Some Primary	15.2	1.3	11.8	6.8	712	17.2	3.0	8.8	6.3	771
Completed primary	17.6	0.5	15.4	8.4	319	17.3	1.5	8.7	5.2	376
Some Secondary +	14.0	1.0	13.7	5.4	938	15.5	1.6	10.9	4.9	1132
Household wealth index										
Poorest	17.7	1.3	14.6	9.1	1764	20.0	2.4	9.8	6.3	1681
Middle	14.8	1.1	13.1	6.7	1655	16.1	2.2	9.5	5.2	1543
Richest	9.9	0.7	11.9	3.3	758	11.7	1.5	8.0	5.0	692
Total	15.1	1.1	13.5	7.1	4177	17.0	2.1	9.4	5.6	3916

( ) Fewer than 50 observations

The highest prevalence of the individual symptoms, and the combination of symptoms, was in men and women from the lowest BMI group and from the poorest households. The prevalence of at least two symptoms was highest in the rural east region, and there was a modest tendency for them to peak at 40-44 years of age.

Table 15.3 reveals that of the adults who reported at least two of the symptoms during the month prior to the survey, a far smaller percentage of the women (23%) than the men (53%) sought treatment. The percentage of men who were diagnosed with tuberculosis and who received tuberculosis treatment was higher than for women. Men mainly sought treatment from nurses and doctors, while women most frequently consulted with midwives. Treatment for both women and men was mostly obtained from public sector health care facilities.

Table 15.3 Treatment sought for tuberculosis symptoms

Treatment sought by women and men who reported two or more tuberculosis symptoms during the month prior to the survey, according to background characteristics, Timor Leste 2003

Treatment sought	Women		Men	
	At least two symptoms	Number of women	At least two symptoms	Number of men
Consulted health care provider	23.2	68	52.9	117
Type of provider				
Midwife	42.8	29	15.3	18
Nurse	33.9	23	59.0	69
Doctor	16.0	11	22.5	26
Traditional Healer / Other	7.4	5	3.2	4
Location of services				
Home	6.7	5	9.3	11
Provider's Home	7.0	5	2.5	3
Community Health Center / Mobile Clinic	43.5	30	35.5	41
Private Clinic	18.1	13	27.7	32
Government Hospital	24.7	17	25.1	29
Diagnosis offered				
Pneumonia	4.7	3	4.5	5
Bronchitis	14.2	10	16.5	19
Tuberculosis	21.9	15	37.3	44
No diagnosis	50.4	35	36.6	43
Other	8.9	6	5.1	6
Treatment received				
None	5.8	4	2.9	3
Traditional Medicine	10.0	7	0.6	1
Antibiotics	20.3	14	13.2	15
TB treatment	22.8	16	37.9	44
Medicine to stop cough	31.2	22	32.2	38
Don't know/Other	9.9	7	13.3	16

Chapter 16

Father's Participation in Health Care

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16 Father's Participation in Family Health Care

A key issue in developing effective primary health care is to involve men in family health care decisions and actions. Men's participation should cover a wide range of family health care issues including family planning, antenatal care, preparations for delivery, children's immunization and nutrition. This section examines men's knowledge and actions in these areas of family health care in Timor Leste.

16.1 Advice or care during antenatal, delivery, and postnatal periods

In the TL 2003 DHS, currently married men who had at least one child in the last five years were asked several questions regarding the pregnancy care of the mother of the last-born child and the health care of the child. Table 16.1 shows the percentage of last births in the five years preceding the survey for which mothers received advice or care (based on father's report) from a doctor or a health provider during the pregnancy, delivery or the six week period after delivery.

According to father's reports, there was a striking difference between the percentage of mothers who received care during pregnancy (57%), and the percentage of mothers who received care during delivery (22%) or the six week period after delivery (23%). A greater proportion of men reported that the mother of the last-born child received any kind of care if they were younger and if they lived in an urban rather than a rural area. Men of higher education and higher economic status were also more likely to report that the last-born child's mother had received any kind of care.

The mothers reported a similar level of care during pregnancy (63%) to that reported by the fathers (57%). The level of care reported by the mothers during delivery (37%) was higher than that reported by the fathers but for postnatal care the mothers reported less (15%) than the fathers (23%).

Table 16.1 Care received by mother during pregnancy, delivery and after delivery

Percentage of last births in the five years preceding the survey for which mothers received advice or care from a health care provider (based on father's report), by type of advice or care and father's background characteristics, Timor Leste 2003

Background characteristics	Received advice or care			Number of fathers
	During pregnancy	During delivery	During the six weeks after delivery	
Age				
15-19	66.4	36.7	36.7	8
20-24	62.7	26.5	29.6	160
25-29	64.0	26.7	24.1	521
30-34	57.9	23.4	25.0	868
35-39	58.1	21.2	22.2	689
40-44	52.8	19.6	21.9	515
45-49	49.9	15.9	19.0	256
50-54	47.5	15.3	13.2	175
Father's marital status				
Married	57.3	22.0	23.0	3177
Divorced/widowed	34.0	11.6	6.5	15
Region				
Urban	78.7	42.4	40.2	714
Rural East	60.4	22.8	25.7	760
Rural Central	50.1	10.7	13.5	1093
Rural West	40.9	17.4	16.1	625
Ecological zones				
Highlands	41.0	7.2	8.1	531
Lowlands	60.4	25.0	25.9	2661
Father's education				
No education	42.1	12.3	13.4	1214
Some primary	58.9	20.9	24.1	639
Completed primary	62.2	22.6	24.0	323
Some secondary or more	72.4	34.2	33.1	1015
Household wealth index				
Poorest	45.3	12.0	14.4	1389
Middle	58.7	21.3	21.7	1253
Richest	83.6	48.8	47.1	550
Total	57.2	22.0	22.9	3192

16.2 Knowledge about children's immunization

Married men were also asked if their last living child born in the five years preceding the survey has been immunized against tuberculosis (BCG), polio, DPT, and measles. Table 16.2 shows that the highest reported immunization was against polio (52%), followed closely by BCG (47%), and the lowest was for measles (26%). These reported levels of immunizations were much lower than those found from the interview of the mother and the examination of the health cards (see Chapter 11). For example, BCG vaccination from the health card and the mother's report was 75% versus 47% from the father's reports. Also, the coverage of measles vaccinations from the health card and the mother's report was nearly twice as high as that reported by the fathers (56% versus 26%).

Children of men living in urban areas, having a higher level of education and from a household with a higher wealth index were more likely to have been immunized with each of the vaccines. For example, on the basis of fathers' reports, 70% of children whose fathers came from the richest households received a polio vaccine, compared with 43% from the poorest households. There was no clear pattern of the age of the father being associated with the likelihood of the child having been immunized.

Table 16.2 Specific vaccines received by children under five

Percentage of last living children born in the five years preceding the survey who received specific vaccines (based on father's report), by background characteristics, Timor Leste 2003

Background characteristic	BCG	Polio	DPT	Measles	Number of fathers
Age					
15-19	61.3	48.2	36.3	0	8
20-24	55.6	58.2	46.4	25	155
25-29	48.6	53.4	37.9	24.2	503
30-34	50.3	55.1	40.5	26.4	847
35-39	47.3	51.8	40.3	29.3	673
40-44	39.9	46.3	33.6	23.2	503
45-49	47.7	52.6	40.7	26.5	249
50-54	41.6	47.7	36.1	25.9	168
Father's marital status					
Married	47.3	52.2	39.1	26	3091
Divorced/widowed	43.6	50.1	25.5	22.4	15
Region					
Urban	64.4	66.4	50.7	36.3	693
Rural East	41.7	49.7	35.7	25.2	736
Rural Central	42.5	49.6	34.3	20.2	1065
Rural West	42.7	43.8	37.9	25.5	613
Ecological zones					
Highlands	38.9	44.7	30.8	17.3	519
Lowlands	48.9	53.7	40.6	27.8	2587
Father's education					
No education	34	39.9	27.8	16.9	1174
Some primary	47.8	53.7	37.2	26.3	620
Completed primary	48.6	54.5	43.5	28.7	322
Some secondary or more	62.2	65.1	52	35.8	990
Household wealth index					
Poorest	36.7	42.6	29.5	19.1	1353
Middle	48.7	55	40.9	26.9	1220
Richest	70.7	70.2	58.9	41.2	533
Total	47.2	52.2	39.0	26.0	3106

16.3 Contact with health care providers

Male respondents were asked whether they talked to a health care provider about the pregnancy care or about the health of the mother of their last child born in the five years preceding the survey. They were also asked specifically about the topics they discussed during such contacts with a doctor or health provider. These questions were asked in order to measure the men's involvement in their wife's pregnancy and care.

Table 16.3 Father's contact with a health provider about wife's health and pregnancy
Percentage of last births in the five years preceding the survey whose father discussed with a health care provider about the health of the mother or the pregnancy, and among these, the percentage who discussed specific topics, according to father's background characteristics, Timor Leste 2003

Background characteristic	Topics of Discussion				Number of fathers
	Talked with a health care provider	Type of foods eaten during pregnancy	How much rest she should have during pregnancy	Type of health problems for which she should get immediate medical attention	
Age					
15-19	48.5	48.5	48.5	48.5	8
20-24	30.4	26.0	27.2	27.2	160
25-29	28.9	26.8	27.8	27.6	521
30-34	26.8	24.4	24.8	24.8	868
35-39	21.9	21.0	21.0	20.4	689
40-44	19.8	18.8	17.8	17.9	515
45-49	19.7	17.4	18.5	18.5	256
50-54	19.9	17.2	18.0	18.0	175
Father's marital status					
Married	24.3	22.4	22.7	22.6	3177
Divorced/widowed	5.1	5.1	5.1	5.1	15
Region					
Urban	35.1	33.5	33.5	33.6	714
Rural East	33.3	30.5	30.9	30.4	760
Rural Central	14.3	15.3	15.8	15.8	1093
Rural West	13.2	12.2	12.3	11.9	625
Ecological zones					
Highlands	14.6	12.5	13.1	13.1	531
Lowlands	26.2	24.3	24.6	24.2	2661
Father's education					
No education	14.4	12.4	12.7	12.6	1214
Some primary	25.7	24.8	24.3	24.4	639
Completed primary	23.4	22.0	22.4	22.4	323
Some secondary or more	35.2	32.8	33.5	33.0	1015
Household wealth index					
Poorest	18.2	16.5	16.8	16.3	1389
Middle	24.5	22.3	22.6	22.8	1253
Richest	38.9	37.4	37.4	37.4	550
Total	24.2	22.4	22.6	22.5	3192

Table 16.3 shows that less than one quarter of men interviewed (24%) spoke to a doctor or health provider about the pregnancy care or health of the mother of their last child in the five years preceding the survey. Of those fathers who did speak to a doctor or health care provider, an approximately equal proportion talked about the type of foods eaten during pregnancy (22%), how much rest the mother should have during pregnancy (23%) and the types of health problems for which the mother should get immediate medical attention (23%).

Fathers who were younger, living in urban areas, had secondary education or higher and were from the richest households were more likely to speak to a doctor or health care provider about the pregnancy care or health of the mother of their last child in the five years preceding the survey.

16.4 Preparations for delivery

For the safety and well being of mothers and their newborn babies, decisions are needed on various aspects of delivery, such as deciding the place and person to assist with the delivery, transportation to the place of the delivery, cost associated with the delivery and identifying a possible blood donor, if needed. In the TL 2003 DHS, fathers were asked whether they discussed these aspects of delivery with anyone during the pregnancy of the mother of their last born child in the five years preceding the survey.

Table 16.4 shows that overall 58% of men discussed any topic related to delivery with someone. Assistance with delivery was the most frequently reported topic of discussion (51%), while blood donation was the least frequently reported (7%).

Younger men were more likely to discuss any of the topics than older men (76% of men in the 15-19 age group, compared with 56% in the 50-54 age group). Men living in urban areas were also more likely to have discussed any of these topics. Having a higher level of education as well as coming from a wealthier economic status also increased the chance that the men would have discussed these topics with someone.

Table 16.4 Preparation for delivery

Percentage of men who discussed specific topics during pregnancy for the most recent birth in the five years preceding the survey, by background characteristics, Timor Leste 2003

Background characteristics	Topics discussed						No topics discussed	Number of births
	Place to deliver	Transport	Delivery assistance	Payment	Blood donor	Any topic		
Father's age								
15-19	48.5	12.2	75.9	24.5	12.2	75.9	24.1	8
20-24	41.8	13.6	48.8	15.5	3.1	60.0	40.0	160
25-29	42.6	17.4	55.0	17.5	6.4	62.1	37.9	521
30-34	40.0	14.1	55.0	15.4	7.6	61.4	38.6	868
35-39	40.3	12.0	49.4	15.2	7.1	57.2	42.8	689
40-44	33.1	9.6	45.0	14.1	4.9	51.1	48.9	515
45-49	30.8	11.2	48.1	17.2	6.4	52.4	47.6	256
50-54	38.7	8.4	48.4	13.7	5.6	55.6	44.4	175
Father's marital status								
Married	38.8	12.9	51.1	15.6	6.5	57.9	42.1	3177
Divorced/widowed	16.7	5.1	37.1	19.1	0.0	42.1	57.9	15
Region								
Urban	52.3	27.0	57.3	24.8	10.2	67.5	32.5	714
Rural East	48.1	13.7	59.7	16.2	8.0	66.3	33.7	760
Rural Central	33.4	6.5	52.4	13.4	5.0	59.2	40.8	1093
Rural West	20.9	7.0	30.7	8.0	2.8	34.3	65.7	625
Ecological zones								
Highlands	20.0	4.4	43.5	11.4	4.5	48.7	51.4	531
Lowlands	42.4	14.6	52.5	16.4	6.8	59.7	40.3	2661
Father's education								
No education	30.9	7.9	43.7	12.9	4.8	49.9	50.1	1215
Some primary	38.7	9.8	49.6	11.4	5.7	57.4	42.6	639
Completed primary	41.4	12.8	53.6	16.5	4.2	60.3	39.7	323
Some secondary or more	47.1	20.8	59.8	21.0	9.7	66.9	33.1	1015
Household wealth index								
Poorest	32.4	6.4	48.6	11.9	4.5	54.7	45.3	1389
Middle	38.2	12.2	47.5	14.5	6.3	54.9	45.1	1253
Richest	55.7	30.8	64.8	27.1	11.6	72.6	27.5	550
Total	38.7	12.9	51.0	15.6	6.5	57.9	42.1	3192

Chapter 17
Utilization of Health Services

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2 Tables

17. Household Utilization of Health Care Services

As part of the household level data collection, the TL 2003 DHS asked the head of the household about household health seeking behaviour. The questions covered the usual first health care provider consulted for ill members of the household, household use of the nearest health care facility, the level of satisfaction with the services provided by the nearest health care facility and the use of a variety of health care providers by the household during the year prior to the interview. Questions were also asked about the distance to usual health care providers, the mode of transport to the provider, the costs of transport and the cost of services. These questions were prepared in response to the requests of the TL 2003 DHS Steering Committee and are specific to this survey.

17.1 Usual first health care provider

Table 17.1 presents the percentage distribution of the usual first health care provider contacted when a household member was ill. The main first-contact health provider in the three rural areas was the local nurse, but local midwives were also important in the rural west region. In the urban region doctors and nurses were equally important.

Table 17.1 Usual first health care provider and time since last consultation

Percent distribution of the usual first health care providers contacted for ill household members, and time since last consultation, according to background characteristics, Timor Leste 2003

Background characteristics	Usual first health care provider							Mean time since last consultation (weeks)	Number
	Traditional healer	Midwife	Nurse	Doctor	Consult no provider	Other	Total		
Region									
Urban	0.7	10.5	38.2	39.4	11.0	0.3	100.0	5.7	997
Rural East	1.4	28.2	46.7	8.1	14.4	1.3	100.0	5.4	784
Rural Central	0.4	13.2	67.4	4.7	13.4	0.8	100.0	6.0	1461
Rural West	1.3	8.7	67.9	12.5	9.1	0.6	100.0	6.3	1078
Ecological zones									
Highlands	0.2	14.2	66.8	3.8	13.8	1.2	100.0	6.4	695
Lowlands	1.0	14.2	55.1	17.5	11.6	0.6	100.0	5.7	3625
Household wealth index									
Poorest	0.9	14.2	62.5	5.4	16.2	0.8	100.0	5.8	1828
Middle	0.9	14.9	58.9	16.0	8.8	0.7	100.0	5.9	1715
Richest	0.7	12.7	39.9	36.9	9.1	0.7	100.0	5.6	777
Total	0.9	14.2	57.0	15.3	12.0	0.7	100.0	5.8	4320

A small percentage of households in all regions reported using traditional healers as the first-contact health care provider. Doctors were more frequently used as the first-contact health care provider in the lowlands and the wealthiest households. The dominance of nurses and midwives over doctors in rural areas probably relates to the structure of the government health system which is based on health post nurses and midwives providing the initial point of contact for the community and the placement of these health posts in rural communities. Approximately one in 10 households did not consult any health care provider when a household member was ill, and as might be expected, these were the poorest households (16%). This finding indicates the need to improve access to health care services for poorer families.

The mean time since the last consultation was 5.8 weeks and this was slightly higher in the highlands than in the lowlands, and in the rural central and rural west regions. There was little effect of household wealth index on time since the last consultation.

Table 17.2 shows that most first-contact health care services were received in community health centres and health posts, followed by government hospitals. Use of private clinics, that is any non-government health care service, was the third most common location of first-contact health care services. In rural areas, the dominant facility where first-contact health care services were provided was the community health centres (including health posts). In contrast, in the urban region, hospitals were the main facility used, followed by community health centres and private clinics. Hospitals and private clinics were more often used by the wealthiest households.

Table 17.2 Location of first health care provider for ill household members

Percent distribution of the location of the first health care contact for ill household members, according to background characteristics, Timor Leste 2003

Background characteristics	Location of consultation					Total	Number*
	At health care provider's home	Mobile clinic	Community health centre**	Private clinic	Govern-ment hospital		
Region							
Urban	3.0	1.1	18.8	19.6	57.4	100.0	887
Rural East	2.6	0.3	69.5	12.5	15.1	100.0	671
Rural Central	2.4	4.7	71.3	10.6	11.0	100.0	1265
Rural West	4.4	1.1	73.2	0.6	20.7	100.0	981
Ecological zones							
Highlands	3.7	2.3	67.7	12.8	13.6	100.0	599
Lowlands	2.8	2.1	57.3	11.2	26.6	100.0	3205
Household wealth index							
Poorest	3.8	2.5	72.9	9.5	11.3	100.0	1533
Middle	2.1	2.1	59.3	8.9	27.7	100.0	1565
Richest	3.0	1.3	27.9	21.3	46.6	100.0	707
Total	3.0	2.1	58.9	11.4	24.6	100.0	3804

* Not included are 517 households that reported not usually seeking a consultation for ill household members

** Community health centres includes health posts

The different modes of transport used to reach the usual first-contact health provider are presented in Table 17.3. The main mode of transport in all regions was walking, and as expected, nearly all households in the highlands reported walking to health care providers. In the urban and rural east regions, trucks and cars were the second most important mode of transport, and buses were also important in the urban and the rural west regions. Buses, trucks and cars were more likely to be used by the wealthiest households.

Overall, 25% of households had to travel two hours or more to reach their usual first health care provider. The rural central and rural east regions had the highest percentage of households travelling two hours or more. The poorest households were five times more likely to have to travel two hours or more to reach their usual first health care provider than the wealthiest households. The median time to access first-contact health care facilities was lower for urban households than for rural households. There was a marked gradient of decreasing time to access first-contact health care facilities as household wealth increased.

Table 17.3 Modes of transportation and travel time to usual first health care provider
Percent distribution of modes of transportation used to reach the first health care provider and median time in minutes to reach usual first provider, according to background characteristics, Timor Leste 2003

Background characteristics	Mode of transport							Number*	Percent travelling ≥ 2 hours	Median travel time (minutes)
	Walking	Bicycle	Horse	Bus	Motor-bike	Truck or car	Boat or ship			
Region										
Urban	72.7	0.9	0.2	16.7	4.7	20.8	0.0	887	8.5	20
Rural East	86.5	0.4	0.4	3.1	1.1	19.1	0.2	981	30.4	60
Rural Central	93.3	0.1	1.0	4.3	0.7	5.9	0.4**	1265	32.6	53
Rural West	91.4	0.4	0.4	10.3	0.8	4.3	0.0	671	26.7	60
Ecological zones										
Highlands	95.4	0.0	1.1	4.6	1.1	2.4	0.0	599	30.0	40
Lowlands	84.7	0.5	0.4	8.5	1.9	14.4	0.2	3205	24.5	35
Household wealth index										
Poorest	92.8	0.1	1.0	4.0	0.1	8.5	0.0	1533	34.5	60
Middle	89.5	0.4	0.3	7.2	0.5	11.1	0.3	1565	24.7	40
Richest	65.6	1.3	0.3	17.9	8.3	24.5	0.4	707	6.8	15
Total	86.4	0.4	0.5	7.9	1.8	12.5	0.2	3804	25.3	35

* Not included are 517 households that reported not usually seeking a consultation for ill household members
** This strata includes non-urban portions of Dili District which covers the island of Atauro.

The costs of transport and services for the usual first-contact health care providers are presented in Table 17.4. The mean cost of transport once walking is excluded was highest in the urban and rural west regions. The urban region included the island of Atauro which may have contributed to the higher transportation costs in this region. Transport costs were similar for the poorest and richest households (see Table 17.3). The mean cost of services was highest in urban areas and for wealthier households, reflecting the greater use of private health care services by these households. For those who did not walk, the

costs of transportation was approximately three times higher than the costs of the service, and the greatest difference was observed in the rural central region and highlands. The survey did not estimate the opportunity costs of walking, which required a median time of 45 minutes to reach the usual first health care provider.

Table 17.4 Cost of transport and services of usual health care provider.
Mean cost of transport to usual health care provider, and mean cost of services, according to background characteristics, Timor Leste 2003.

Background characteristics	Mean cost of transport (US$)	Mean cost of transport (US$) if not walking*	Mean cost services (US$)	Number**
Region				
Urban	0.47	0.66	0.33	887
Rural East	0.20	0.57	0.15	981
Rural Central	0.05	0.58	0.09	1265
Rural West	0.25	0.80	0.20	671
Ecological zones				
Highlands	0.23	0.33	0.04	599
Lowlands	0.22	0.66	0.21	3205
Household wealth index				
Poorest	0.14	0.52	0.10	1533
Middle	0.14	0.82	0.19	1565
Richest	0.57	0.55	0.31	707
Total	0.22	0.64	0.18	3804

* Includes those who used other modes of transport besides walking and those who walked but also used other modes of transport
** Not included are 517 households that reported not usually seeking a consultation for ill household members

17.2 Health care facilities closest to respondent's home

Respondents were asked about the health care facility located closest to their home - Table 17.5. Community Health Centres and Health Posts were the most common (63%) health care facility located near the respondent's homes, followed by hospitals and private providers.

Although the types of health care facilities used for usual first-contact care (see Table 17.2) were similar to the health care facility closest to respondents' homes, there were some differences. First, a slightly lower percentage of households used Community Health Centres and Health Posts for their usual first contact compared to the percentage of households that reported Community Health Centres as the closest health care facility to their home. Secondly, a higher percentage of households used hospitals as their usual first contact compared to the percentage of households that reported hospitals as the closest health care facility to their home. This suggests that some households bypassed their local Community Health Centres or Health Posts in preference to the nearest hospital.

In urban areas 28% of households reported private clinics as the closest heath care facility, but a lower percentage (20%) used these facilities as their first contact for care. A high percentage of urban (50%) and wealthy households (38%) reported private clinics as their closest health care facility. These results indicated a clustering of private health care

services in the wealthiest communities in Timor Leste, mainly in urban areas. In the rural west region, 18% of households reported hospitals as the closest health care facility and this was refected in the high percentage of households (21%) using hospitals as the first-contact health care facility in that region.

Table 17.5 Type of health facility closest to respondent's home

Percent distribution of the type of health facility which is located closest to the respondent's home, according to background characteristics, Timor Leste 2004

Background characteristics	Closest health care facility						Total	Number
	Mobile clinic	Health Post	Community health centre	Private clinic	Government hospital	Other		
Region								
Urban	2.2	5.1	13.4	28.2	49.8	1.3	100.0	997
Rural East	0.8	33.3	46.1	11.5	6.5	1.8	100.0	1078
Rural Central	6.7	27.9	45.7	10.1	8.9	0.8	100.0	1461
Rural West	2.4	38.2	37.5	0.8	18.0	3.1	100.0	784
Ecological zones								
Highlands	4.5	23.3	46.7	13.1	10.5	1.9	100.0	695
Lowlands	3.2	26.3	35.0	12.9	21.1	1.5	100.0	3625
Household wealth index								
Poorest	4.0	31.1	46.3	9.0	7.8	1.8	100.0	1828
Middle	3.2	26.0	36.2	9.6	23.4	1.6	100.0	1715
Richest	2.4	13.0	16.2	29.4	37.8	1.1	100.0	777
Total	3.4	25.8	36.9	12.9	19.4	1.6	100.0	4320

Table 17.6 reveals that a high percentage of households (84%) had used the services provided by the health care facility closest to their home. The level of usage of the closest health care facility was greatest for urban and wealthy households, and least for the poorest households and those in the rural east and rural central regions.

Sixteen percent of households reported never using the services of the closest health care facility to their home and the reasons for this are presented in Table 17.7. The two dominant reasons were the service was too far away and difficulty with transportation. These reasons were particularly important for the poorest households, and households from the rural east region.

Other reasons for not using the nearest health facility included lack of availability of medical staff (14%), being too expensive (11%) and inadequate opening hours (9%). Expense and operating hours were more important for wealthier households, perhaps reflecting their greater expectations of services.

Table 17.6 Usage of closest health care facility to respondent's house

Percent distribution of households having ever used the health care facility closest to their house, according to background characteristics, Timor Leste, 2004

Background characteristics	Household use of this facility			Number
	Ever used	Never used	Total	
Region				
Urban	90.7	9.4	100.0	997
Rural East	82.4	17.6	100.0	1078
Rural Central	81.3	18.7	100.0	1461
Rural West	85.0	15.0	100.0	784
Ecological zones				
Highlands	82.7	17.3	100.0	695
Lowlands	84.7	15.3	100.0	3625
Household wealth index				
Poorest	79.4	20.6	100.0	1828
Middle	87.1	12.9	100.0	1715
Richest	90.4	9.7	100.0	777
Total	84.4	15.6	100.0	4320

Table 17.7 Reasons for never using closest health care facility

Percent distribution of reasons for never using the closest health care facility to the respondent's home, according to background characteristics, Timor Leste 2003

Background characteristics	Too far away	Transportation difficult	Medical staff often not available	Too expensive	Inadequate opening hours	Personnel not friendly	Administration difficult	Facility not clean	Do not trust modern medicine	Other	Number*
Region											
Urban	33.7	21.8	8.9	34.7	12.9	8.9	3.0	1.0	3.0	4.0	93
Rural East	85.2	47.4	22.1	8.9	15.3	7.9	5.8	3.2	0.5	1.1	190
Rural Central	68.3	48.5	15.4	6.4	7.4	1.5	0.0	0.5	1.0	1.0	273
Rural West	60.0	42.0	2.5	4.3	0.6	0.0	0.0	0.0	1.2	3.7	118
Ecological zones											
Highlands	66.1	50.2	16.6	10.3	5.6	0.0	0.0	1.1	1.7	0.6	120
Lowlands	63.7	41.9	13.6	10.8	10.0	4.9	2.5	1.2	1.1	2.2	554
Household wealth index											
Poorest	73.9	49.8	14.0	8.7	6.8	1.4	2.4	0.3	1.2	1.1	377
Middle	58.7	39.7	15.0	9.3	9.8	8.2	0.9	2.9	0.7	1.6	222
Richest	31.2	21.7	12.1	24.5	19.2	5.0	3.7	1.2	2.5	6.7	75
Total	64.1	43.4	14.1	10.7	9.2	4.1	2.0	1.2	1.2	1.9	674

* Not included are 517 households that reported not usually seeking a consultation for ill household members

17.3 Satisfaction with health care services

In the TL 2003 DHS, respondents were asked about their overall level of satisfaction with the services provided by the health care facility closest to their home. Their responses were recorded in a continuous scale out of 10, explained to the respondents as follows. A score of 10 out of 10 indicated the service was very good (*they were very pleased*); a score of 5 out of 10 indicated the service was acceptable (*not very good yet also not very bad*); but a score 1 out of 10, indicated the service was poor (*they were very disappointed or discontented*). As shown in Table 17.8, the median satisfaction score (5.8) indicated a modest satisfaction with services which varies little by region, ecological zone or household wealth index.

It should be noted that less than 1% of households were "very dissatisfied" with the services they received, compared to 9% who were "very satisfied". The median satisfaction scores were similar across all the background characteristics.

Table 17.8 Satisfaction with services provided by closest health care facility
Percent distribution of satisfaction scores which cover gradations of overall satisfaction with services from the health care service closest to the respondent's home, according to background characteristics

Background characteristic	Satisfaction scores*													
	1	2	3	4	5	6	7	8	9	10	Miss-ing	Total	Number	Median score
Region														
Urban	0.6	1.9	5.4	9.1	37.7	14.6	10.9	4.2	2.2	13.3	0.0	100.0	904	6.0
Rural East	0.1	4.8	9.3	3.9	43.8	18.0	9.0	6.0	0.8	4.3	0.0	100.0	666	5.4
Rural Central	0.6	3.0	5.5	13.7	38.4	10.7	6.4	4.2	5.2	12.3	0.1	100.0	1188	5.8
Rural West	0.0	2.2	3.3	9.2	35.5	13.7	16.7	12.6	1.5	5.2	0.1	100.0	889	6.0
Ecological zones														
Highlands	0.7	1.9	3.8	11.6	36.9	9.9	9.9	4.8	5.8	14.7	0.0	100.0	575	6.1
Lowlands	0.3	3.2	6.4	8.9	39.4	14.8	10.1	6.4	2.2	8.3	0.1	100.0	3072	5.7
Household wealth index														
Poorest	0.1	3.4	6.3	8.0	36.9	13.4	10.5	8.3	4.7	8.2	0.1	100.0	1451	5.9
Middle	0.5	3.3	5.9	11.0	40.6	13.5	9.6	5.1	1.4	9.0	0.0	100.0	1493	5.6
Richest	0.6	1.7	5.3	8.5	39.9	16.3	9.9	4.2	1.5	12.1	0.0	100.0	702	5.9
Total	0.4	3.0	6.0	9.3	39.0	14.0	10.0	6.2	2.7	9.3	0.1	100.0	3646	5.8

* The satisfaction scores range from 1 indicating the respondent was very dissatisfied with the service, to 5 indicating average services, and through to 10 indicating the respondent was very satisfied with the service.

17.4 Use of health care providers

Respondents in the TL 2003 DHS were asked about any healthcare providers they or members of their household consulted in the year prior to the interview. Table 17.9 presents the level of household usage of ten different types of health care providers in the year prior to the survey. The results in this table contrast with those reported in Table 17.1, which only referred to the usual first health care provider for ill members of the household.

Table 17.9 Usage of various health care providers by household members
Percent distribution of any household member consulting with various health care providers over the year prior to the survey, according to background characteristics, Timor Leste 2003

Background characteristics	Types of Health Care Providers										
	Traditional Healer	Traditional Birth Attendant	Pharmacist	Midwife in Government Health Facility	Midwife in Private Clinic	Nurse/Paramedic in Government Health Facility	Nurse/Paramedic in Private Clinic	Doctor in Government Health Facility	Doctor in Private Clinic	Dentist	Number of House-holds
Region											
Urban	4.9	3.9	6.0	24.7	13.9	42.5	13.6	35.0	11.0	2.3	997
Rural East	10.7	4.5	3.0	20.6	7.4	66.9	15.2	13.9	5.2	1.1	1078
Rural Central	4.1	2.4	0.7	18.3	4.5	55.5	11.4	7.7	2.3	0.2	1461
Rural West	12.1	6.9	0.4	21.8	1.3	38.0	0.6	8.8	0.3	0.3	784
Ecological zones											
Highlands	4.0	1.0	0.6	16.5	6.0	49.4	13.4	7.2	2.1	0.3	695
Lowlands	8.0	4.7	2.8	21.8	7.0	52.7	10.4	17.4	5.2	1.0	3625
Household wealth index											
Poorest	9.0	3.4	1.0	18.8	4.3	54.6	11.0	8.8	2.9	0.3	1828
Middle	6.7	5.3	2.2	20.9	5.9	53.5	9.1	16.5	3.3	0.8	1715
Richest	4.8	3.1	6.4	26.2	14.7	43.5	14.5	30.4	11.9	2.6	777
Total	7.4	4.1	2.4	21.0	6.8	52.2	10.9	15.7	4.7	0.9	4320

In Timor Leste the health care providers most frequently consulted were nurses or paramedics in government health care facilities (52%), followed by midwives in government health care facilities (21%) and doctors in government health care facilities (16%). The level of usage of health care providers (nurses, paramedics, midwives and doctors) in the private sector was lower than for the corresponding categories in the public sector. The level of usage of dentists was very low and less than 1% of households consulted a dentist in the year prior to the survey.

Traditional healers were most frequently consulted in the rural east and rural west regions, and least frequently by households in the highlands. The poorest households were more likely to seek services from traditional healers. Traditional birth attendants were most frequently consulted by households from the rural west and rural east regions,

and least frequently by households in the highlands. Consultations with traditional birth attendants were not related to household wealth status.

Households from the urban region and the wealthiest households most frequently consulted pharmacists. The usage of midwives in government health care facilities varied little across the regions but was lowest in the highlands and highest among the wealthiest households. Private midwives were most frequently consulted by urban and wealthiest households. Consultations with nurses or paramedics in government facilities were highest in the rural areas and there was only a slight gradient of decreasing use with increasing household wealth. Consultations with private nurses or paramedics were lowest in the rural west region but of a similar level for the other regions. The level of usage of doctors in government health care facilities was much higher in the urban region and there was a marked gradient of increasing use with increasing wealth. Similarly for private doctors, the level of usage was much higher in urban and wealthiest households. These results suggest significant inequality by household wealth in accessing physicians even in the public sector. More detailed inequality analyses of the TL 2003 DHS data will be required to reveal all the factors associated with access to health care services.