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PAKISTAN DEMOGRAPHIC SURVEY 2001

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STATISTICS DIVISION
GOVERNMENT OF PAKISTAN

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FOREWORD

One of the most significant contribution of Pakistan Demographic Survey (PDS) being conducted during intercensal period is to provide reliable data on population dynamics such as its size, rate of growth with its two principal determinants i.e. birth rate & death rate and other demographic variables.

2. The present PDS report is fifteen in series started in 1984 which provides the detailed and reliable information on fertility & mortality for the year 2001 at national & provincial levels with urban-rural break down. I am sure , it will be useful to administrators, planners, policy makers, researchers and other users working in socio-economic and demographic fields.

3. Suggestions for improvement will be most welcome.

SYED MAZHAR HUSSAIN HASHMI
DEPUTY DIRECTOR GENERAL

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May, 2003.

SEX RATIO

The Sex Ratio was 106 in the year 2001 while the Sex Ratio at birth was 109 during the same period. The Sex Ratio of Census 1998 was 108.

CRUDE BIRTH RATE (C B R)

The crude birth rate calculated for the year 2001 was 27.8 per thousand population, which showed a considerable decline of 4 percent as compared to 29.1 in 2000. The Crude birth rate has declined 30 percent during the last 10 years but it is still high in Pakistan as compared to other countries of South and Central Asia as depicted by the following table:-

COUNTRY	CRUDE BIRTH RATE
Bangladesh	28
India	26
Iran	18
Srilanka	18
Tajikistan	19
Turkmenistan	19
Uzbekistan	22
Pakistan	28

Source :- 2001 World Population data Sheet,
Population Reference Bureau, Washington DC.

GENERAL FERTILITY RATE (G F R)

The general fertility rate derived for the year 2001 was 120.8 per thousand women which is about 5 percent lower as compared to 127.6 in 2000.

TOTAL FERTILITY RATE (T F R)

The total fertility rate was 4.1 children per woman of reproductive age (15-49 years) in 2001. The total fertility rate has declined about 5 percent as compared to 4.3 in 2000. The TFR in other countries of the region is given below:-

COUNTRY	TOTAL FERTILITY RATE
Bangladesh	3.3
India	3.2
Iran	2.6
Srilanka	2.1
Tajikistan	2.4
Turkmenistan	2.2
Uzbekistan	2.7
Pakistan	4.1

Source :- 2001 World Population data Sheet,
Population Reference Bureau, Washington DC.

CRUDE DEATH RATE (C D R)

The crude death rate was 7.2 persons per thousand population for the year 2001. The CDR has declined about 8 percent as compared to 7.8 in 2000. The crude death rate in rural areas was higher as compared to urban areas. The crude death rate has declined about 27 percent during last 10 years which is mainly

due to improved medical facilities made available in the country. The crude death rate of other countries of South and Central Asia is as under:-

COUNTRY	CRUDE DEATH RATE
Bangladesh	8
India	9
Iran	6
Srilanka	6
Tajikistan	4
Turkmenistan	5
Uzbekistan	5
Pakistan	7

Source :- 2001 World Population data Sheet,
Population Reference Bureau, Washington DC.

INFANT MORTALITY RATE (I M R)

About 77.1 infant deaths per thousand live births were recorded in the year 2001 which has declined about 3 percent as compared to 79.8 in 2000. The infant mortality rate has declined about 25 percent during the last 10 years. The infant mortality rate was significantly high in Pakistan as compared

to other countries of the region. Infant mortality rates of countries of South/ Central Asia are given below:-

COUNTRY	INFANT MORTALITY RATE
Bangladesh	66
India	70
Iran	30
Srilanka	17
Tajikistan	23
Turkmenistan	25
Uzbekistan	20
Pakistan	77

Source :- 2001 World Population data Sheet,
Population Reference Bureau, Washington DC.

NATURAL GROWTH RATE

The natural growth rate of population for the year 2001 was 2.06 percent per annum which is about 3 percent lower than 2.13 in the year 2000. It however, indicates declining trend in fertility, but it is still high as compared to other countries of the region. With this growth rate, population of the country

will be doubled in 34 years. The natural growth rates of other countries of South/ Central Asia are as follows:-

COUNTRY	NATURAL GROWTH RATE
Bangladesh	2.0
India	1.7
Iran	1.2
Srilanka	1.2
Tajikistan	1.4
Turkmenistan	1.3
Uzbekistan	1.7
Pakistan	2.1

Source :- 2001 World Population data Sheet,
Population Reference Bureau, Washington DC.

LIFE EXPECTANCY AT BIRTH

The life expectancy at birth was 64 years for males and 66 years for females in 2001.

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CHAPTER 1

INTRODUCTION

Traditional sources for vital statistics are the Civil Registration System (birth and death registration system) and population census. The Civil Registration System in Pakistan, as in several other developing countries appears to be highly deficient and inadequate to provide reliable birth and death statistics.

2. In the absence of efficient civil registration system and inability of decennial censuses to provide birth and death statistics, during the intercensal periods, several demographic surveys have been undertaken by the Federal Bureau of Statistics in the country since, early sixties either independently or in collaboration with other organizations. The latest series of demographic surveys, known as Pakistan Demographic Survey (PDS) was launched in 1984. This report pertains to the data collected through PDS during 2001.

OBJECTIVES

3. The main objectives of the PDS survey are :-

i) to collect statistics of births and deaths in order to arrive at various measures of fertility and mortality for Pakistan and its four provinces separately for rural and urban areas;

ii) to estimate current rate of natural increase of population at national and provincial level.

iii) to collect information on other selected characteristics of population. to asses the impact of family planning and other Socio-Economic development programme.

ADMINISTRATIVE SET UP OF THE COUNTRY

4. Pakistan is administratively divided into four provinces, namely, Punjab, Sindh, North West Frontier Province (NWFP) and Balochistan. Its population and area is unevenly distributed. Balochistan is the largest province with about 44 percent of total area but showed only 5 percent of the total population. Punjab is the most populous province; its population exceeds the aggregates of the other three provinces. Table 1.1 gives the distribution of area, population, annual growth rate and population density of the country as enumerated in the censuses of 1981 and 1998. Islamabad being the capital of Pakistan so its population is presented separately. The figures of Federally Administered Tribal Areas (FATA) are also shown separately.

Table 1.1 DISTRIBUTION OF AREA, POPULATION AND ANNUAL GROWTH RATE

PROVINCE	AREA		POPULATION (IN THOUSAND)				POPULATION DENSITY		ANNUAL GROWTH RATE
	(Sq.Km)	PERCENT	1981	PERCENT	1998	PERCENT	1981	1998	1998
PAKISTAN	796095	100.0	84254	100.0	132352	100.0	106	166	2.69
PUNJAB	205344	25.8	47293	56.1	73621	55.6	230	359	2.64
SINDH	140914	17.7	19029	22.6	30440	23.0	135	216	2.80
NWFP	74521	9.4	11061	13.1	17744	13.4	148	238	2.82
BALOCHISTAN	347190	43.6	4332	5.2	6566	5.0	12	19	2.48
ISLAMABAD	906	0.1	340	0.4	805	0.6	376	889	5.20
FATA	27220	3.4	2199	2.6	3176	2.4	81	117	2.19

PERCENTAGE DISTRIBUTION OF POPULATION BY PROVINCE, 1998 CENSUS

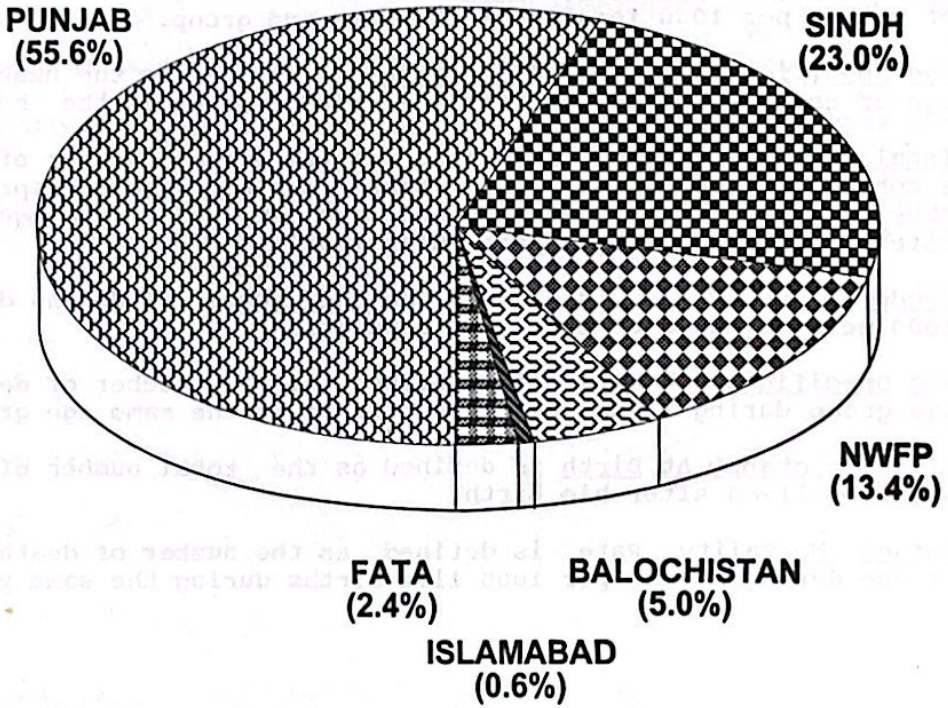

Figure: 1.1

CONCEPTS AND DEFINITIONS

5. Concepts and definitions used in the survey are as follows:-

I. Crude Birth Rate is defined as the number of births in a year per 1000 persons (based on mid-year population).

II. General Fertility Rate is defined as the number of births in a year per 1000 women of child bearing ages (Females of ages 15-49).

III. Age Specific Fertility Rate is defined as the number of births by age of mother per 1000 females in the same age group.

IV. Age Specific Marital Fertility Rate is defined as the number of births by age of mother per 1000 currently married females in the same age group.

V. Total Fertility Rate is defined as the average number of children which a cohort of 1000 women would bear during their reproductive span if they experience no mortality and are exposed to the age specific birth rates in effect during a particular year.

VI. Crude Death Rate is defined as the number of deaths during a year per 1000 persons(based on mid- year population).

VII. Age Specific Death Rate is defined as the number of deaths in a given age group during a year per 1000 persons in the same age group.

VIII. Life Expectancy At Birth is defined as the total number of years a person would be lived after his birth.

IX. Infant Mortality Rate is defined as the number of deaths under one year of age during a year per 1000 live births during the same year.

X. Neo-natal and Post-neo-natal Mortality Rates

a) Neo-natal mortality rate is defined as the number of deaths of infants under 1 month of age during a year per 1000 live births during the same year.

b) Post-neo-natal mortality rate is defined as the number of infant deaths at 1 through 11 months of age during a year per 1000 live births during the same year.

XI. Sex Ratio is defined as the number of males per hundred females.

XII. Dependency Ratio is defined as the proportion of children under 15 years and old persons aged 65 years and above to the population between ages 15 to 64 years. The ratio is expressed as percentage.

XIII. Literate is a person who can read and write a simple statement with understanding in any language.

XIV. Household is defined to be constituted of those persons who usually live together and share their meals. A household consists of one or more persons who may or may not be related to one another.

CHAPTER 2

SAMPLE DESIGN

UNIVERSE

The universe of this survey consists of all urban and rural areas of the four provinces of Pakistan defined as such by 1998 Population Census, excluding Federally Administered Tribal Areas (FATA), Military Restricted Areas and Protected Areas of N. W. F. P. The population of excluded areas constitutes about 2% of the total population.

SAMPLING FRAME

2. Federal Bureau of Statistics (FBS) has developed its own sampling frame for all urban areas. Each city/town has been divided into a number of Enumeration Blocks (E. Bs.). Each Enumeration block consists of 200 to 250 households on the average with well-defined boundries and maps. The list of Enumeration Blocks was updated

during 1995 and list of mouzas/dehs/villages prepared by the Population Census Organisation as a consequence of Population Census 1998 has been used as a sampling frame. Enumeration blocks and villages have been considered as primary sampling units (PSU's) for urban and rural domain respectively.

STRATIFICATION PLAN

(A) URBAN DOMAIN

(i) LARGE SIZED CITIES

3. Karachi, Lahore, Faisalabad, Rawalpindi, Multan, Hyderabad, Gujranwala, Peshawar, Quetta, Islamabad, Sargodha and Sialkot have been considered as large sized cities, keeping in view the recent population figures, economic and other demographic characteristics. Each of these cities constitutes a separate stratum which has further been sub-stratified according to low, middle and high income groups based on the information collected in respect of each Enumeration Block at the time of demarcation/up-dating of urban areas sampling frame.

(ii) **REMAINING AREAS**

4. After excluding the population of large sized cities from the population of respective defuncted administrative division, the remaining urban population of each defuncted administrative division of the four provinces has been grouped together to form a stratum .

(B) **RURAL DOMAIN**

5. In rural domain, each administrative district in the Punjab, Sindh & N.W.F. Provinces has been treated as an independent and explicit stratum, whereas, in Balochistan province, each administrative division constitutes a stratum.

SAMPLE SIZE AND ITS ALLOCATION

6. Considering the variability of the characteristics for which estimates are to be prepared, population distribution and field resources available, sample of about 31,491 households (SSU's) has been considered sufficient to provide reliable estimates of key variables at national and provincial levels with expected reliability within 5% co-efficient of variation at 95% degree of confidence. The sample households (SSU's) have been drawn from 704 primary sampling units (PSU's) out of which 308 are urban and 396 are rural. As urban population is more hetrogeneous, therefore, a higher proportion of sample

size has been assigned to urban domain. Similarly N.W.F.P and Balochistan being the smaller provinces and to get reliable estimates a higher proportion of sample size has also been fixed for these provinces. After fixing the sample size at provincial level, further distribution of sample PSU's and SSU's to different strata in rural and urban domain of each province has been made proportionately, keeping in view the minimum requirement of each stratum.

7. The distribution of sample PSU's and SSU's in urban and rural domain of the four provinces is as under:-

PROVINCE	NUMBER OF PRIMARY SAMPLING UNITS COVERED DURING 2001			NUMBER OF SAMPLE HOUSEHOLDS COVERED DURING 2001		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
PAKISTAN	704	308	396	31491	13849	17642
PUNJAB	364	158	206	16204	7102	9102
SINDH	160	80	80	7190	3601	3589
N.W.F.P.	112	42	70	5041	1888	3153
BALOCHISTAN	68	28	40	3056	1258	1798

SAMPLE DESIGN

8. A stratified two-stage sample design has been adopted for the survey.

SAMPLE SELECTION PROCEDURE

SELECTION OF PRIMARY SAMPLING UNITS (PSUs)

9. Enumeration Blocks in urban domain and Mouzas/Dehs/Villages in rural domain have been taken as primary sampling units (PSU's.) . In urban domain, sample PSU's from each ultimate stratum/sub-stratum have been selected with probability proportional to size (PPS) method of sampling scheme. In urban domain, the number of households in an enumeration block as per Quick Count Record Survey 1995 and population of village/Deh/Mouza according to population census 1998 have been considered as measure of size.

SELECTION OF SECONDARY SAMPLING UNITS (SSUs)

10. Households with in sample PSU's have been taken as secondary sampling units (SSU's). A specified number of households (i.e. approximately 45) from each urban and rural sample PSU have been selected with equal probability using systematic sampling technique with a random start.

CHAPTER 3

METHODOLOGY OF DATA COLLECTION

LISTING OPERATION - RURAL AREAS

Village/mouza/deh (as defined and published by the Population Census Organization in the 1998 census) constituted the Primary Sampling Unit (PSU) in each rural stratum. List of selected PSUs was supplied to the field staff by the headquarter.

2. Boundaries of the selected village/mouza/deh were identified by the enumerators with the help of revenue staff i.e. patwari, qanoongo, etc. Information regarding location of the village, its boundary, description and means of approaching the village, etc., was obtained by the field staff through personal visits.

3. Two types of maps, sketch and detailed maps, were prepared for each village/mouza/deh. The sketch map shows its general location and outer boundaries. The detailed map of the village/mouza/deh has been prepared by the enumerator with the help of revenue map, where such maps were available with the revenue authorities or Directorate of Land Records, incase revenue map was not available, then enumerator has prepared its own map demarcating clearly the boundaries of the area showing important land marks such as mosques, schools, shops, hospitals, etc.

Detailed instructions and guidelines in this respect were provided to the field staff by the headquarter.

4. Household listing and numbering of structures were carried out simultaneously. All the structures in the selected village/mouza/deh were serially numbered, starting from a prominent mark. This number was written clearly at a prominent place of the structure. In order to distinguish this number from other numbers on the structure, the letter 'PD' preceded it, for instance, PD-12, PD-432, etc. Each structure number was shown at the appropriate place in the detailed map. After the completion of household listing, in the selected village/mouza/deh 45 households were randomly selected from it. Identification particulars of the sample areas, serial number of structures, serial number of households and names of the head of households were copied in the PDS-5 Form.

LISTING OPERATIONS - URBAN AREAS

5. City/Town in each province has been divided by the field staff of the Federal Bureau of Statistics into Enumeration Block (EB), each block comprises about 200 to 250 households. An Enumeration Block has been taken as a PSU. List of the selected PSUs alongwith their identification in terms of Enumeration Block Codes was supplied to the field staff by the headquarter. Maps of these Enumeration Blocks

already prepared at the time of demarcation/updating however, were updated in case of new structures in any Enumeration Block. Household listing and structure numbering was carried out simultaneously.

TRAINING OF FIELD STAFF

6. Regular field staff of the Federal Bureau of Statistics posted at Regional and Field Offices throughout the country was utilized for the survey. Majority of the field enumerators and supervisory staff engaged in PDS work possessed long experience of surveys, including demographic surveys. However, training of the field staff was arranged in selected field offices, including the staff of other field offices of the nearest districts. Extensive training for filling the questionnaires/schedules was imparted to all enumerators and supervisors. Besides the emphasis was laid on the objectives of the survey, definitions of the terms used in the questionnaires/schedules, probing methods to achieve the correct information of vital events.

7. A Manual of Instructions for the enumerators and supervisory staff was developed and provided to the field staff. This Manual also contained detailed procedure for the collection of information on birth and death events and other

demographic characteristics with a reference period of last 12 months (from 1st January to 30th December, 2001) in January 2002 round.

SURVEY METHODOLOGY

8. In the previous surveys the methodology was used to collect, birth and death events on quarterly basis with a reference period of last six calendar months, providing an overlap period of three months. Birth and death events of overlaping period were matched on case to case basis and non-matched events were through field visits. Reports of the PGE 1962-65, PGS 1968-71, PGS 1976-79 and PDS 1984-97 have already been published and their detailed survey methodologies have been described in these reports. In PDS-1999, PDS-2000 and PDS-2001, a new methodology has been introduced and justification for using the same is given below:-

JUSTIFICATION FOR USING NEW METHODOLOGY

9. The experiences of previous methodologies revealed that much time and cost were involved in matching of birth and death events case to case basis for overlapping period and non-matched events through field reconcilation which also caused delay in publishing the important demographic indicators in time. Due to time lag these indicators were of no use for policy makers, researchers and scholars.

10. In order to minimize the time-lag and release the findings of the survey well in time, a one time survey with slightly changed methodology was adopted and tested for PDS-1999 with a reference period of last 12 months (i.e. 01-01-1999 to 31-12-1999). Instead of forming clusters, 45 households were randomly selected directly from PSUs. Births and deaths for the same period were recorded on PDS-3 and PDS-4 forms respectively. In PDS-2000, the survey was conducted in two phases with the same methodology adopted in 1999. In phase-I (July round), the reference period was from first January, 2000 to 30th June, 2000. In phase-II, (January round), the reference period was taken from 1st. July, 2000 to 31st. December, 2000. The births and deaths collected from these two rounds were combined. In PDS-2001, the methodology used for PDS-1999 has been used. In January, 2002, the births and deaths were enumerated with a reference period of last 12 months. The population were enumerated as on 1st. January, 2002. The population of Pakistan has been estimated taking into consideration of growth rate calculated by the said survey.

11. The Methodology adopted in the PDS-2001 is described below:-

POPULATION COVERAGE

12. In the PDS 2001, the coverage of the population was on dejure basis i.e. all persons who usually live in the sample areas, whether present or temporarily

absent at the time of enumeration (night prior to the date of enumeration) were included in the survey. On the other hand, any person who was present in the sample areas (night prior to the date of enumeration) but whose usual residence was out of the sample areas, was not enumerated in the survey. Students who were studying in any other village/town but living in the hostels or boarding houses were enumerated with their parent's household. However, if any such student was living with his relatives, friends or in a private house, then he was enumerated at the place where he was being studied. Population of institutions, such as patients admitted in the hospitals, inmates of prison houses were not covered. Instead, they were enumerated with their usual households, provided their period of absence was not more than six months.

13. The details of persons included and excluded in the survey are given below :-

PERSONS INCLUDED	PERSONS EXCLUDED
a) All persons usually residing in households in the sample area and found at their residence last night.	a) All persons who spent last night in sample households but were not usual members of those households. These might be relatives, friends, visitors, guests, etc.

PERSONS INCLUDED	PERSONS EXCLUDED
b) All usual members of households in the sample area who were temporarily absent last night due to vacation, visiting friends and relatives, on business, getting education in another village, town or city and were living in hostels, boarding houses, etc.	b) Persons who were residing in the premises of a foreign embassy.
c) A person found at his place of business within the sample area, provided it was his usual residence also.	c) Persons living in military barracks and other security or prohibited areas.
d) Persons (friends, relatives, etc.) who have come in the sample area from outside to acquire education and were staying with the households or in a separate house but not in hostel or boarding house.	d) Persons living in boarding houses, hostels which were located in the sample area.
e) Persons who were temporarily admitted to a hospital for medical treatment.	e) Married daughters who were temporarily residing in the parent's home for delivery of an expected birth or on a short visit.

PERSONS INCLUDED	PERSONS EXCLUDED
f) Married daughters whose husbands were in military service or working in a distant place but who were usual residents of sample households.	f) Persons who usually live at the place of their work but returned to their family on week-ends or during holidays.
g) Servants, who used to sleep and take meals in the sample households.	
h) Household members who were in jail and convicted for a period of less than six months or whose cases were not yet decided.	

COVERAGE OF BIRTH AND DEATH EVENTS

14. Birth and death events which occurred to the usual members of the selected household, were enumerated two times with a reference period of last 12 calendar months (i.e. 01-01-2001 to 31-12-2001) in January, 2002 visit.

15. For each live birth which occurred to a usual household member during the reference period i.e. from 1st January 2001 to 31st December 2001, a "Birth Enumeration Form" was filled-in. This form contains the information about the new born, such as sex, date of birth, whether or not birth had occurred in any medical institution, type of medical attendant at the time of birth, etc. It also recorded certain particulars of the parents. Similarly, for each death which occurred to a usual member of the sample household during the combined reference periods i.e. 01-01-2001 to 31-12-2001 , a "Death Enumeration Form" was filled-in.

CHAPTER 4

FINDINGS OF THE SURVEY

DEMOGRAPHIC CHARACTERISTICS

Although the main objective of the Pakistan Demographic Survey (PDS) was to collect data on birth and death events, information on important demographic characteristics of the sample population, such as age, sex, marital status, literacy and educational level were also gathered in the PDS 2001. Summary of the main findings based on these information is given in the subsequent paras.

AGE DATA

2. Data on age were obtained in completed years. For persons aged one year or over,the age was recorded in completed years; for children of one month and over but less than one year, in completed months and for babies less than one month, it was recorded in days only.

AGE MISREPORTING

3. Data on age in developing countries are subject to errors. Given the importance of correct age reporting, efforts were therefore, made to obtain correct enumerators. Numerous suggestions for eliciting accurate age from the

respondents were also incorporated in the Manual of Instructions for the field enumerators.

4. Despite best efforts, age misreporting is quite common due to low literacy level in the country. A common error in the age reporting is the tendency of rounding the ages to the nearest figure ending in '0' or '5' or to a lesser extent, in even numbers. Because of this tendency, commonly known as "digital preference", age heaping occurs at certain ages. This heaping of age is world-wide "phenomenon". Table 4.1 shows the percentage distribution of population by age and sex obtained from the PDS and from population census 1998.

Table 4.1 PERCENTAGE DISTRIBUTION OF POPULATION BY BROAD AGE GROUPS AND SEX,

SURVEY/CENSUS	TOTAL	UNDER 15 YEARS	15 - 64 YEARS	65 YEARS AND OVER
MALE				
PDS - 2001 a/	100.0	42.8	53.4	3.8
PDS - 2000 a/	100.0	43.0	53.3	3.7
CENSUS- 1998 b/	100.0	43.1	53.3	3.6
FEMALE				
PDS - 2001 a/	100.0	42.7	54.4	2.9
PDS - 2000 a/	100.0	43.0	54.1	2.9
CENSUS- 1998 b/	100.0	43.3	53.5	3.2

Note : a)= Survey data refers only to Survey Universe.
b)= Census data excludes the population of Federally Administered Tribal Areas (FATA), Military Restricted areas, Kohistan areas of Hazara Division and Provincially Administered Tribal Areas (FATA).

5. The above table shows a high proportion of children under 15 years i.e. about 43 percent for females and males. The census figures of 1998 shows a similar trend. This is indication of high fertility in the country. The proportion of old persons (65 years and over) was quite low. Only about 3 to 4 percent of population falls in this age group.

DEPENDENCY RATIO

6. Dependency ratio, defined as the proportion of children under 15 years and old persons aged 65 years and above to the population between 15 to 64 years, reflects the burden on economically active population. Table 4.2 indicates dependency ratios as obtained from PD survey and population census of 1998.

Table 4.2 DEPENDENCY RATIOS FOR PAKISTAN AND PROVINCES,

PROVINCE	DEPENDENCY RATIO		
	PDS - 2001	CENSUS 1998	PDS - 2000
PAKISTAN	85.5	87.3	86.3
PUNJAB	81.9	85.6	82.3
SINDH	87.8	83.4	87.7
NWFP	93.0	100.3	95.8
BALOCHISTAN	97.7	95.9	102.0

7. Compared with some other countries, both developed and developing, dependency ratios particularly youth dependency ratio (proportion of children less than 15 years to the population 15-64 years) is very high in Pakistan. Dependency ratios were generally higher in NWFP and Balochistan as compared to Sindh and Punjab during 2001. The same pattern was observed in the census of 1998.

SEX RATIO

8. Sex ratio at birth has been recorded as 109 for PDS 2001. Sex ratio at birth is high in rural areas as compared to urban areas. An analysis of data during 1951-2001 indicates that overall sex ratio has been steadily declining in Pakistan since the first Population Census in 1951. This can be attributed to relatively faster decline in the female mortality due to improved health facilities, availability of vaccine for various diseases and better female coverage in the censuses and surveys. In PDS 2001, the overall sex ratio was 106 . The sex ratio

for urban areas was higher as compared to rural areas (table 4.3). In the census 1998, the sex ratio for urban areas was considerably high, probably due to male-dominated migration from rural to urban areas for seeking employment.

Table 4.3 SEX RATIOS BY URBAN AND RURAL AREAS.

SURVEY/CENSUS	SEX RATIO		
	ALL AREAS	URBAN AREAS	RURAL AREAS
PDS - 2001	106	107	105
PDS - 2000	107	109	106
CENSUS - 1998	108	112	106

HOUSEHOLD SIZE

9. A household in the PDS 2001 was defined to be constituted of all those persons who usually live together and share their meals. A household consists of one person or more than one person who may or may not be related to each other.

10. The average household size as obtained from the PDS 2001 was 6.8 (table 4.4). This was higher to that reported in PDS-2000 and 3 percent in census 1998. The household size was larger in urban areas than in rural areas in all

the provinces in the year 2001 except in N.W.F.P. where the household size is higher in rural areas than in urban areas.

Table 4.4 AVERAGE HOUSEHOLD SIZE BY PROVINCE AND URBAN-RURAL RESIDENCE,

AREA	PDS-2001	PDS-2000	CENSUS-1998
PAKISTAN	6.8	6.4	6.6
URBAN	6.8	6.6	6.8
RURAL	6.7	6.3	6.6
PUNJAB	6.6	6.3	6.8
URBAN	6.7	6.5	6.9
RURAL	6.5	6.2	6.7
SINDH	6.7	6.2	5.8
URBAN	7.0	6.4	6.5
RURAL	6.5	6.0	5.3
NWFP	8.0	7.5	7.6
URBAN	7.5	7.2	7.2
RURAL	8.1	7.6	7.7
BALOCHISTAN	6.2	6.3	6.4
URBAN	7.2	7.1	7.4
RURAL	6.0	5.9	6.1

11. Percentage distribution of households by number of persons separately for urban and rural areas for the year 2001 is given in table 4.5. This table shows that the share of single person's household was 1 to 3 percent. The households with 5 or less persons constituted 38 percent of the total households in the survey of PDS 2001. The corresponding figures i.e. 36 percent in urban areas whereas 38 percent in rural areas were shown in PDS 2001 respectively. The households constituting 10 or more members in the survey were lying 15 to 17 percent.

Table 4.5 PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY NUMBER OF PERSONS AND URBAN - RURAL RESIDENCE.

DATA SOURCE/ AREA	ALL HOUSE-HOLDS	PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY NUMBER OF PERSONS									
		1	2	3	4	5	6	7	8	9	10 +
PDS - 2001											
ALL AREAS	100.0	1.8	5.5	7.4	10.2	12.8	14.0	13.2	11.2	7.8	16.1
URBAN AREAS	100.0	2.6	4.8	6.6	9.8	12.7	14.5	13.5	10.8	7.5	17.2
RURAL AREAS	100.0	1.3	5.9	7.8	10.4	13.0	13.7	13.0	11.5	8.0	15.4
PDS 2000											
ALL AREAS	100.0	2.6	6.4	8.6	10.5	13.1	13.6	13.2	10.3	7.6	13.8
URBAN AREAS	100.0	3.2	5.2	7.5	10.0	13.3	14.4	13.4	10.6	7.7	14.7
RURAL AREAS	100.0	2.1	7.3	9.4	10.9	12.9	13.5	13.0	10.1	7.6	13.2
1980 HOUSING CENSUS											
ALL AREAS	100.0	3.2	6.4	8.0	10.9	12.0	13.5	11.4	11.0	6.6	17.0
URBAN AREAS	100.0	4.2	6.1	7.0	9.8	11.1	13.1	11.7	10.9	7.2	18.9
RURAL AREAS	100.0	2.8	6.5	8.7	11.3	12.4	13.6	11.3	11.1	6.4	16.3

MARITAL STATUS

12. Age at first marriage and proportions of never married are among the important determinants of fertility in a population. Data on marital status was collected according to classification of never- married, married, widowed and divorced. A simple but important distribution of population by marital status was obtained by grouping the population into two broad marital status categories; never-married and ever-married by age and sex. For the age group 15-49

(after 49 only a small proportion of both sexes remain never-married), percentages of never-married by age both for males and females are given for the PDS 2001 in table 4.6.

Table 4.6 PERCENTAGE OF NEVER-MARRIED BY SEX AND AGE

SEX/AGE GROUP (YEARS)	PDS-2001	PDS-2000	CENSUS-1998
MALE			
15-19	97.1	97.2	93.9
20-24	75.7	76.7	70.0
25-29	37.1	36.7	37.1
30-34	13.0	13.6	16.1
35-39	4.6	4.5	8.1
40-44	2.5	2.2	5.4
45-49	1.9	1.5	3.8
FEMALE			
15-19	85.9	85.6	79.4
20-24	41.5	42.3	38.6
25-29	12.8	12.8	14.8
30-34	4.2	4.2	7.2
35-39	1.8	1.7	4.4
40-44	1.4	1.7	3.7
45-49	1.0	1.2	2.5

13. The above table indicates that in case of females, 1 percent remained unmarried after reaching the age of 49 years in 2001 survey, whereas, 1.9 percent

of males remained unmarried, It shows that marriage is almost universal in Pakistan for males and females. The rising proportion of never-married was observed among the age groups 15-19 to 25-29 years particularly for females. It indicates pattern of increase for age at first marriage. In PDS 2001, 86 percent females in the age group 15-19 were single as compared to 25 percent in the 1961 population census indicates more than 3 fold increase in 40 years.

14. Comparing the proportion of never married females by age for various data sources, it is evident that the age at marriage is rising. For instance, the proportions of never-married females in the age group of 15-19 years was increased about 8 percent in 2001 as compared to 1998. The percentage share of never-married females in the age group of 20-24 years was also increased by 8 percent for the same period. When compared with 1998 Census the corresponding proportions of these age groups for males showed a remarkable increase.

15. Table 4.7 gives Singulate Mean Age at Marriage calculated from the proportions of single upto age 50 years because the proportion for unmarried after 50 years is negligible to enter the wedlock for the first time.

Table 4.7 SINGULATE MEAN AGE AT MARRIAGE BY SEX,

Survey/Census	MALE (YEARS)	FEMALE (YEARS)
PDS - 2001	26.3	22.1
PDS - 2000	26.3	22.1
CENSUS - 1998	25.8	21.7

16. An analysis of data from 1961 to 2001 indicates an increasing trend for singulate mean age at marriage for both sexes. The age at marriage for males from 23.3 years in 1961 had raised to 26.3 years in 2001, similarly for females, the age at marriage increased from 16.7 to 22.1 years during the same period. The corresponding figures of the census 1998 shows a similar pattern. This increasing trend at marriage would contribute in fertility reduction in the country.

FERTILITY

17. Data on birth events were collected through Jan.,2002 visits by asking retrospective questions with a reference period of last 12 months (i.e., from 1st January to 31st.December, 2001). If a live birth has occurred to a usual member of the household in-or out-side the sample household, particulars of the child and those of the parents of the child were recorded in PDS-3 Form.

CRUDE BIRTH RATES

18. Crude Birth Rate (CBR) is the simple way of measuring current fertility level in any population. It is defined as the number of births in a year per 1000 (mid-year) population. Crude birth rates for Pakistan with urban-rural breakdown as obtained from the PD surveys are given in table 4.8. The crude birth rate as obtained from the PDS 2001 was 27.8 per 1000 persons .

19. Table 4.8 indicates that Rural-Urban differential exists in the fertility level ; rates for rural areas were higher than those of urban areas in both the surveys . The crude birth rate is about 18 percentage higher in rural areas as compared to urban areas.

Table 4.8 CRUDE BIRTH RATES BY URBAN-RURAL RESIDENCE

SURVEY	CRUDE BIRTH RATES (PER 1000)		
	ALL AREAS	URBAN AREAS	RURAL AREAS
PDS - 2001	27.8	25.0	29.4
PDS - 2000	29.1	25.8	31.8

GENERAL FERTILITY RATES

20. Crude Birth Rate (CBR),though a very useful index of fertility level, is subject to a number of limitations, as it includes in the denominator certain segments of population that are not "exposed to risk" of child-bearing. Another important summary measure of fertility level is the general fertility rate (GFR), defined as the number of births in a year per 1000 women of child-bearing ages (i.e. females of ages 15-49 years). It is a refined method to measure fertility as compared to crude birth

rate. Table 4.9 shows the general fertility rates as obtained from PDS 2001 and 2000. Area wise comparison indicates that general fertility rates were higher (about 28 percent) in rural areas as compared to urban areas of the country.

Table 4.9 GENERAL FERTILITY RATES BY URBAN - RURAL RESIDENCE

SURVEY	GENERAL FERTILITY RATES (PER 1000 WOMEN)		
	ALL AREAS	URBAN AREAS	RURAL AREAS
PDS - 2001	120.8	103.0	131.6
PDS - 2000	127.6	108.2	144.9

AGE SPECIFIC FERTILITY RATES

21. Age specific fertility rates is more refined way to measure fertility trends. In general, fertility is comparatively low among women of ages less than 20 years and after 39 years. It is concentrated at the ages 20-34 years as shown in table 4.10 and figures 4.1 .

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AGE SPECIFIC FERTILITY RATES (ASFR) BY URBAN / RURAL RESIDENCE PDS-2001

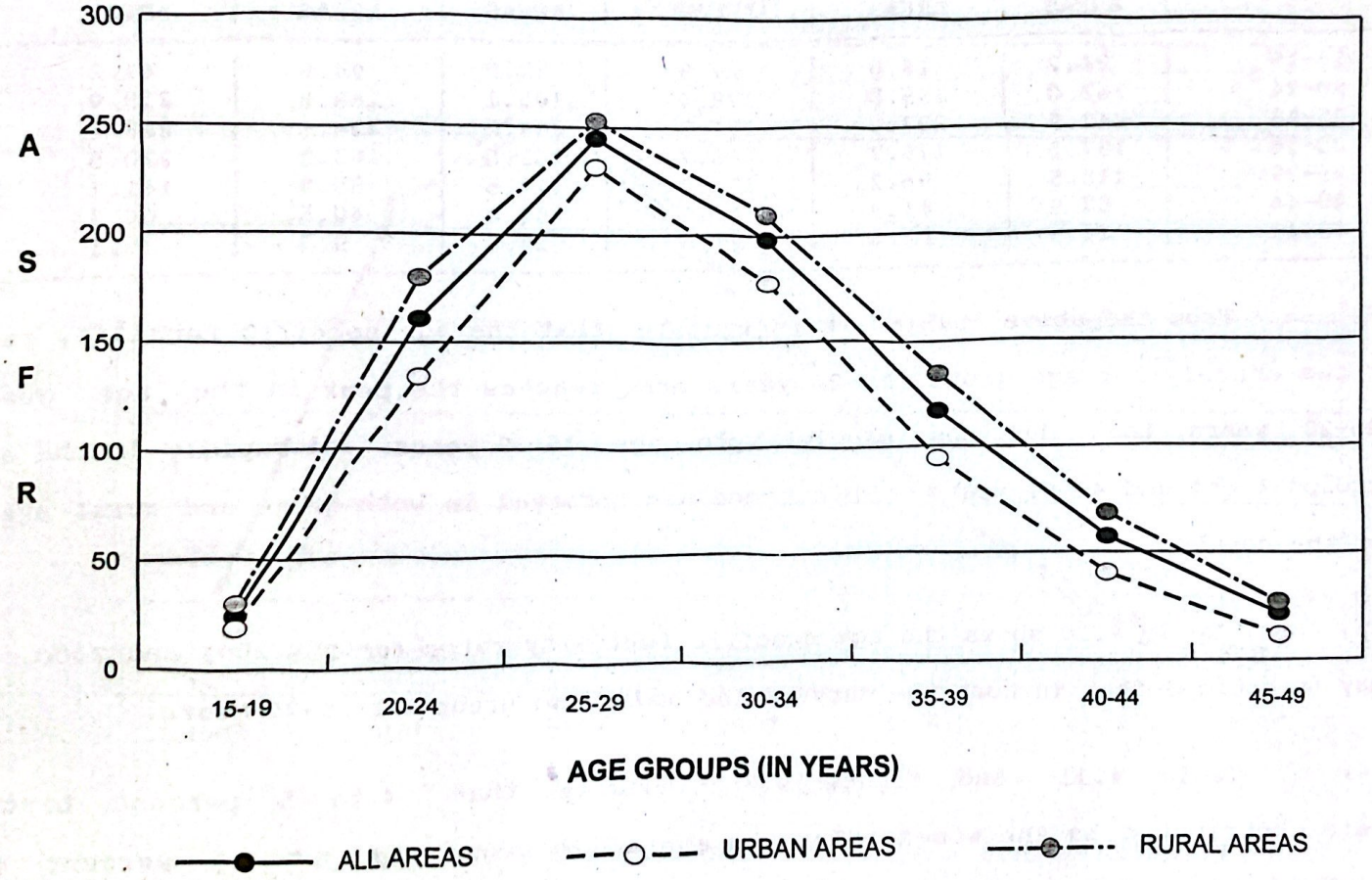

Figure: 4.1

Table 4.10 AGE SPECIFIC FERTILITY RATES (PER 1000 WOMEN) BY URBAN-RURAL RESIDENCE, PAKISTAN

AGE GROUP	PDS - 2001			PDS - 2000		
	ALL AREAS	URBAN AREAS	RURAL AREAS	ALL AREAS	URBAN AREAS	RURAL AREAS
15-19	24.2	18.6	27.8	32.9	24.0	41.2
20-24	162.0	135.8	178.4	195.1	168.8	219.0
25-29	242.9	227.9	251.3	244.2	226.9	258.7
30-34	197.2	176.7	208.7	203.8	183.3	220.5
35-39	118.5	96.2	133.0	114.5	85.9	141.1
40-44	57.9	41.9	67.1	54.4	40.5	66.3
45-49	21.9	12.6	27.3	22.9	9.3	35.1

22. From the above table it is visible that the age specific fertility rate rises sharply for age group 20-24 years and reaches the peak in the age group 25-29 years, then declines slowly upto age 35-39 years and rapidly in the age groups 40-44 and 45-49 years. This trend was observed in both urban and rural areas of the country.

23. Table 4.10 shows the age specific fertility rates for PDS 2001 and 2000. It may be noticed that in both the surveys the modal age group was 25-29 years.

24. Table 4.11 and figure 4.2 indicate that 4 to 5 percent births were contributed by the women below the age of 20 years and 1 to 5 percent of births had occurred to women of the ages 40 years or above in the survey of 2001.

PERCENTAGE DISTRIBUTION OF BIRTHS BY AGE OF MOTHER AND URBAN / RURAL RESIDENCE PDS-2001

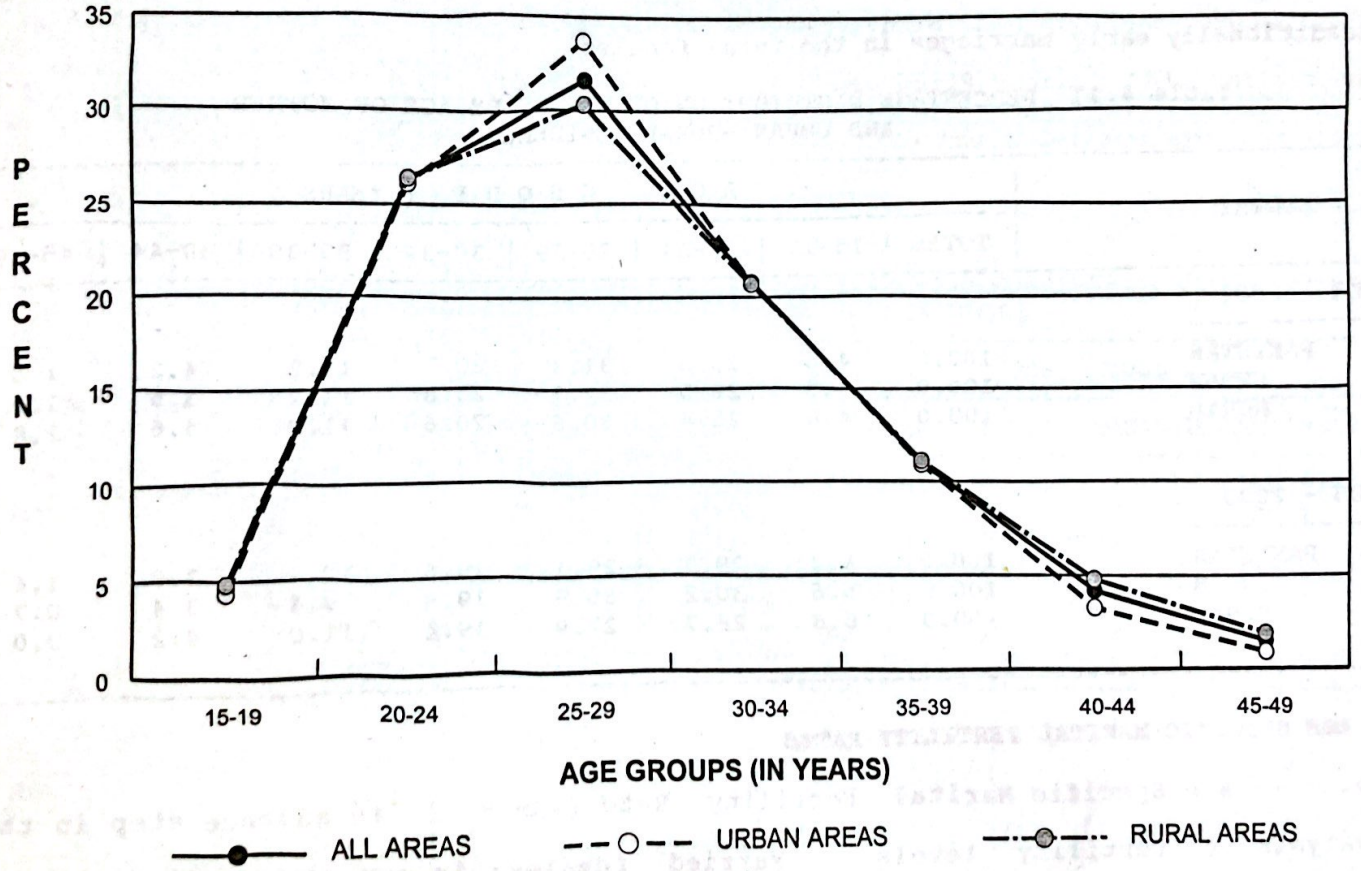

Figure: 4.2

About 89 to 91 percent births were contributed by the women aged 20 to 39 years. The percentage contribution of births is higher in urban areas than in rural areas in the age group of 20-34 years. The percentage distribution of births contributed by age group 15-19 years is higher in rural areas than in urban areas which shows the traditionally early marriages in the rural females.

Table 4.11 PERCENTAGE DISTRIBUTION OF BIRTHS BY AGE OF MOTHER AND URBAN -RURAL RESIDENCE

SURVEY	AGE GROUP (YEARS)							
	TOTAL	15-19	20-24	25-29	30-34	35-39	40-44	45-49
PDS - 2001								
PAKISTAN	100.0	4.6	26.5	31.3	20.7	11.2	4.2	1.5
URBAN	100.0	4.3	26.5	32.7	20.8	11.2	3.5	1.0
RURAL	100.0	4.8	26.4	30.6	20.6	11.2	4.6	1.8
PDS - 2000								
PAKISTAN	100.0	6.3	29.3	29.1	19.6	10.4	3.9	1.4
URBAN	100.0	5.6	30.2	30.9	19.8	9.4	3.4	0.7
RURAL	100.0	6.8	28.7	27.9	19.4	11.0	4.2	2.0

AGE SPECIFIC MARITAL FERTILITY RATES

25. Age Specific Marital Fertility Rate (ASMFR) is an advance step in the analysis of fertility levels. Married females in any age group in the reproductive period constitute the population actually exposed to the risk of

child-bearing as all reported births in PDS had occurred to married women only. In the age group 45-49 years about one percent women remained never married.

26. Table 4.12 indicates that ASMFR rised sharply from age group 15-19 years and reached the maximum value in the age group 25-29 years then declined gradually in the next age groups and rapidly after age group 35-39 years. This pattern was followed in the urban and rural areas in PDS 2001. Here the model age group is 25-29 years.

Table 4.12 AGE SPECIFIC MARITAL FERTILITY RATES (PER 1000 CURRENTLY MARRIED WOMEN) BY URBAN-RURAL RESIDENCE,

AGE GROUP (YEARS)	PDS - 2001			PDS - 2000		
	ALL AREAS	URBAN AREAS	RURAL AREAS	ALL AREAS	URBAN AREAS	RURAL AREAS
15 - 19	173.0	230.5	156.2	230.4	273.7	212.1
20 - 24	279.5	296.0	272.3	341.6	366.7	326.1
25 - 29	282.9	282.3	283.1	283.8	277.2	288.9
30 - 34	210.1	190.9	220.7	217.4	196.7	234.0
35 - 39	125.2	102.5	139.8	120.8	90.5	149.1
40 - 44	62.1	45.3	71.6	58.9	44.2	71.4
45 - 49	24.5	14.4	30.2	26.0	10.6	39.5

TOTAL FERTILITY RATES

27. Total Fertility Rate (TFR) is one of the summary measures of current fertility level. It indicates the number of children to be born to a woman during her reproductive span of life. The advantage of this measure is that it is less influenced by the age structure of the population. The TFRs depicted by the PDS 2001 and 2000 are given in table 4.13.

Table 4.13 TOTAL FERTILITY RATES

SURVEY	TOTAL FERTILITY RATE (PER WOMAN)
PDS - 2001	4.1
PDS - 2000	4.3

28. TFR in urban areas was lower than that in rural areas in all surveys.

MORTALITY

29. Information on death events was obtained through January, 2002 visit with a reference period of last 12 months (e.g., 1st January to 31th December,2001). In case of the death of usual member of the household during the reference period, detailed information in respect of the deceased was recorded in PDS-4 Form.

CRUDE DEATH RATE

30. Crude Death Rate (CDR) i.e. deaths per 1000 persons as obtained from PDS 2001 and 2000 for Pakistan with urban-rural breakdown are given in table 4.14.

Table 4.14 CRUDE DEATH RATES BY URBAN-RURAL RESIDENCE

SURVEYS	CRUDE DEATH RATES (PER 1000 POPULATION)		
	ALL AREAS	URBAN AREAS	RURAL AREAS
PDS - 2001	7.2	6.3	7.6
PDS - 2000	7.8	6.7	8.8

31. The crude death rate obtained from the PDS 2001 was 7.2 per thousand persons for Pakistan. The crude death rate was lower in urban areas than in rural areas in both the surveys.

SEX AND AGE SPECIFIC MORTALITY RATES

32. The impact of mortality on various age groups is not evenly distributed. The age curve of mortality (Figure 4.3) is bimodal i.e., it has two peaks. The Age Specific Death Rate (ASDR) starts at a very high peak immediately after birth, declines to a minimum value for the young age population (5-19 years) then rises gradually among the age groups 20-49 years and then rapidly at the advanced ages. This pattern had been observed both for males and females in all the surveys. The child mortality 0-4 (years) is very high in Pakistan i.e. about 39 percent of the total deaths.

Table 4.15 AGE SPECIFIC DEATH RATES BY SEX, PAKISTAN.

AGE GROUP (YEARS)	PDS - 2001			PDS - 2000		
	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE
All ages	7.2	7.4	6.9	7.8	8.2	7.4
Below-1	81.9	85.2	78.5	111.6	122.5	100.3
01 - 04	5.6	5.7	5.5	9.4	8.2	10.7
05 - 09	1.6	1.5	1.7	5.3	4.6	5.9
10 - 14	1.2	0.8	1.7	2.7	2.6	2.7
15 - 19	1.4	1.5	1.3	1.2	1.4	1.0
20 - 24	1.9	1.5	2.3	1.4	1.7	1.1
25 - 29	2.1	2.2	1.9	1.6	2.0	1.2
30 - 34	2.5	3.4	1.8	1.4	1.0	1.8
35 - 39	4.2	4.8	3.5	2.3	3.0	1.7
40 - 44	4.0	3.9	4.1	3.4	3.7	3.1
45 - 49	5.4	6.4	4.3	3.3	3.3	3.3
50 - 54	8.7	9.1	8.1	8.0	7.6	8.5
55 - 59	13.2	13.2	13.1	11.7	15.1	7.9
60 - 64	20.3	18.4	22.6	18.4	19.8	16.5
65 +	53.2	53.3	53.1	45.9	46.6	44.9

AGE SPECIFIC DEATH RATES (ASDR) BY SEX
PDS-2001

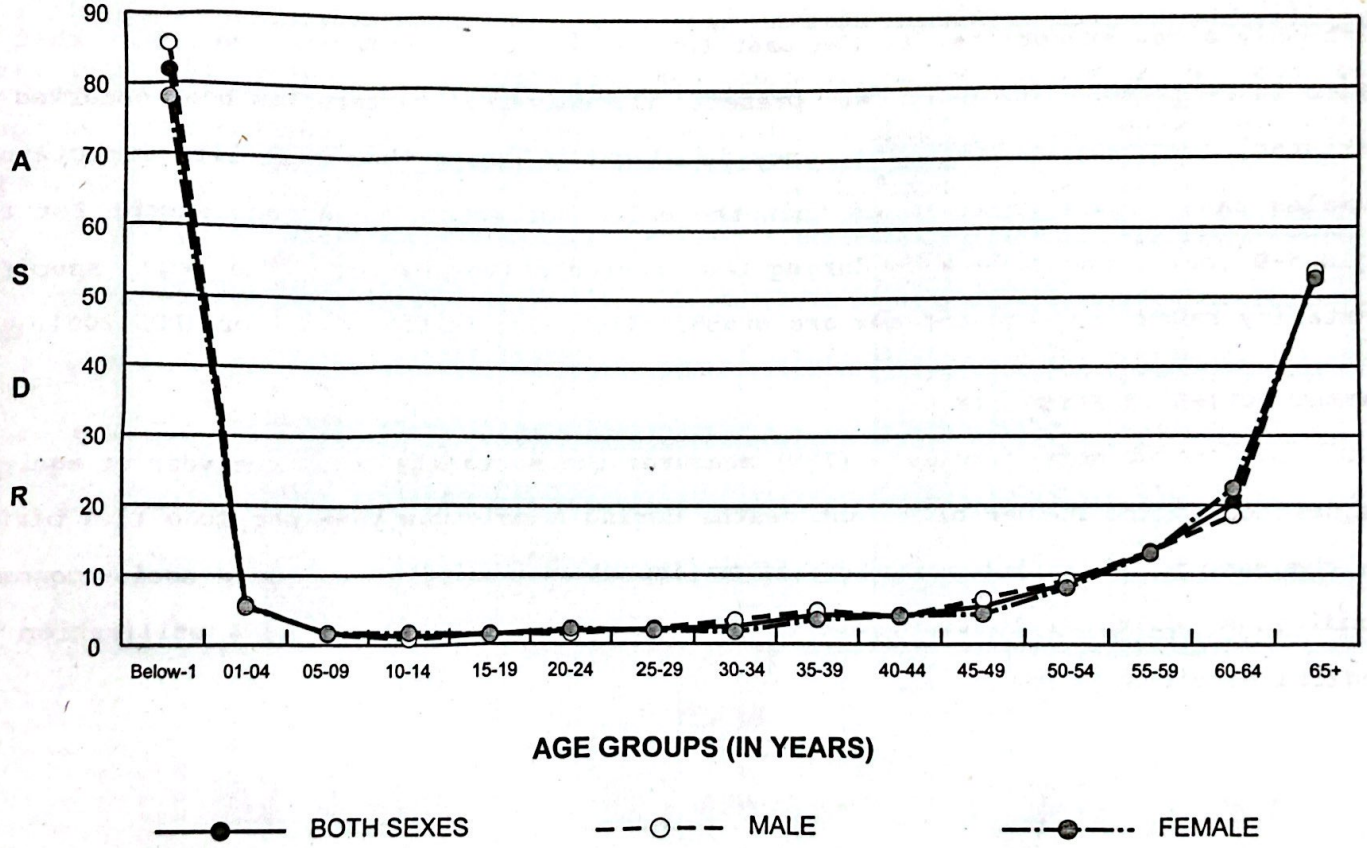

Figure: 4.3

33. The urban and rural differentials also depict the socio-economic development and medical facilities available in urban areas.

34. Females have higher chances of survivorship in all countries of the world, with only a few exceptions. In the past female life expectancy was lower than that of males in Pakistan. However, at present the universal pattern has been observed in Pakistan, i.e. female life expectancy is slightly higher than male life expectancy. Females have lower death rates than the males for most age groups except for the ages 5-9 years and some ages during the reproductive period. The age specific mortality rates by age and sex are graphically shown in fig. 4.3 for PDS 2001.

INFANT MORTALITY RATES (IMRS)

35. Infant Mortality Rate (IMR) measures the mortality below one year of age. It is defined as the number of infant deaths during a calendar year per 1000 live births in the same year. Infant mortality is an important indicator to judge socio-economic conditions, cultural factors, status of hygiene and availability & utilization of medical services.

INFANT MORTALITY RATES BY URBAN / RURAL RESIDENCE
PDS-2001

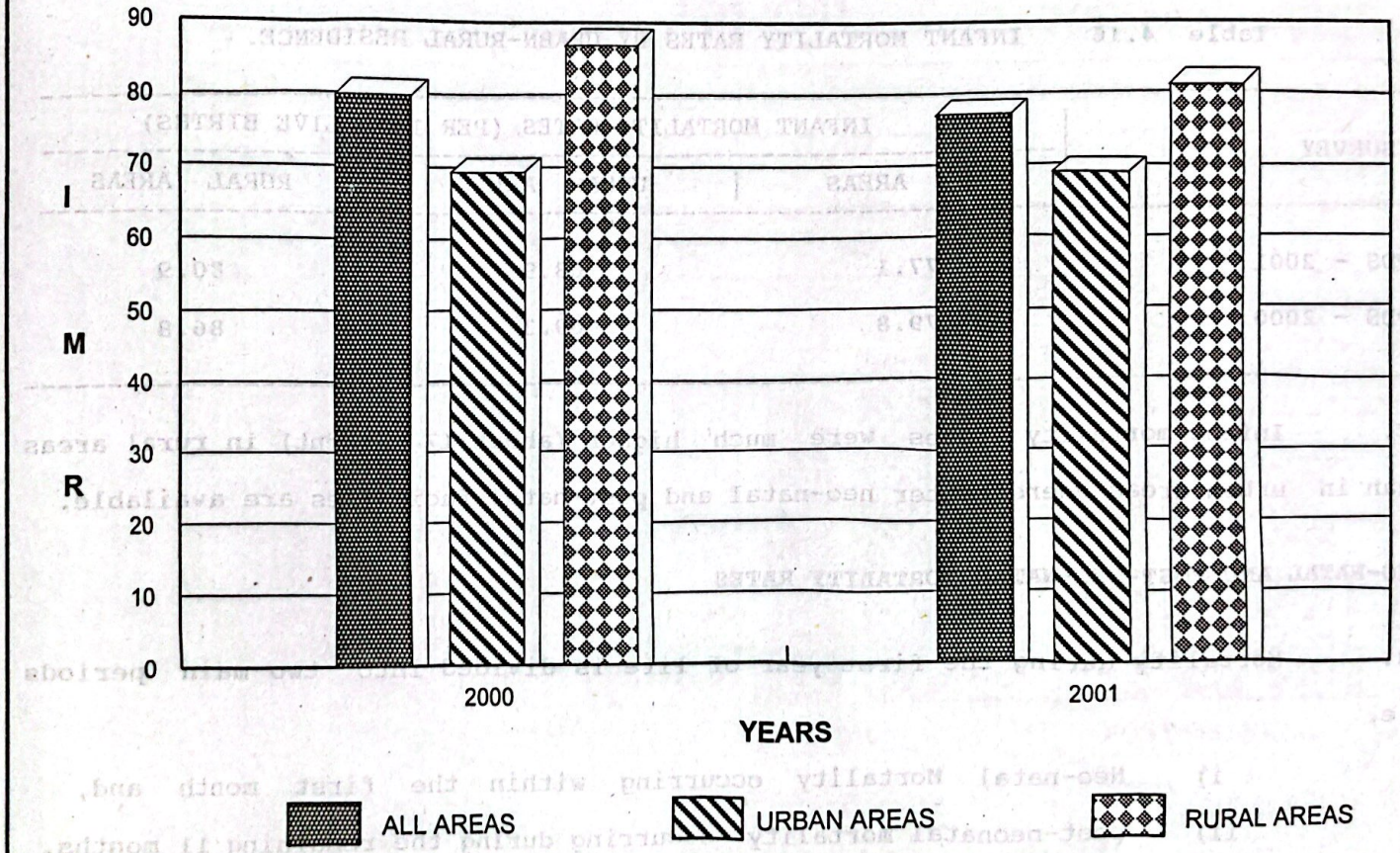

Figure: 4.4

36. Table 4.16 exhibits the infant mortality rates as obtained from PDS 2001 and 2000. Infant mortality rate has been declining in Pakistan but it is still high. The infant mortality rate has declined about 3 percent in 2001 as compared to 2000.

Table 4.16 INFANT MORTALITY RATES BY URABN-RURAL RESIDENCE.

SURVEY	INFANT MORTALITY RATES (PER 1000 LIVE BIRTHS)		
	ALL AREAS	URBAN AREAS	RURAL AREAS
PDS - 2001	77.1	68.9	80.9
PDS - 2000	79.8	69.3	86.8

37. Infant mortality rates were much higher (about 17 percent) in rural areas than in urban areas where better neo-natal and post-natal facilities are available.

NEO-NATAL AND POST-NEO-NATAL MORTALITY RATES

38. Mortality during the first year of life is divided into two main periods i.e.

i) Neo-natal Mortality occurring within the first month and,

ii) post-neonatal mortality occurring during the remaining 11 months.

This distinction is useful as the causes as well as the levels of mortality are quite

INFANT MORTALITY RATES, NEO-NATAL AND POST NEO-NATAL MORTALITY RATES BY URBAN / RURAL RESIDENCE PDS-2001

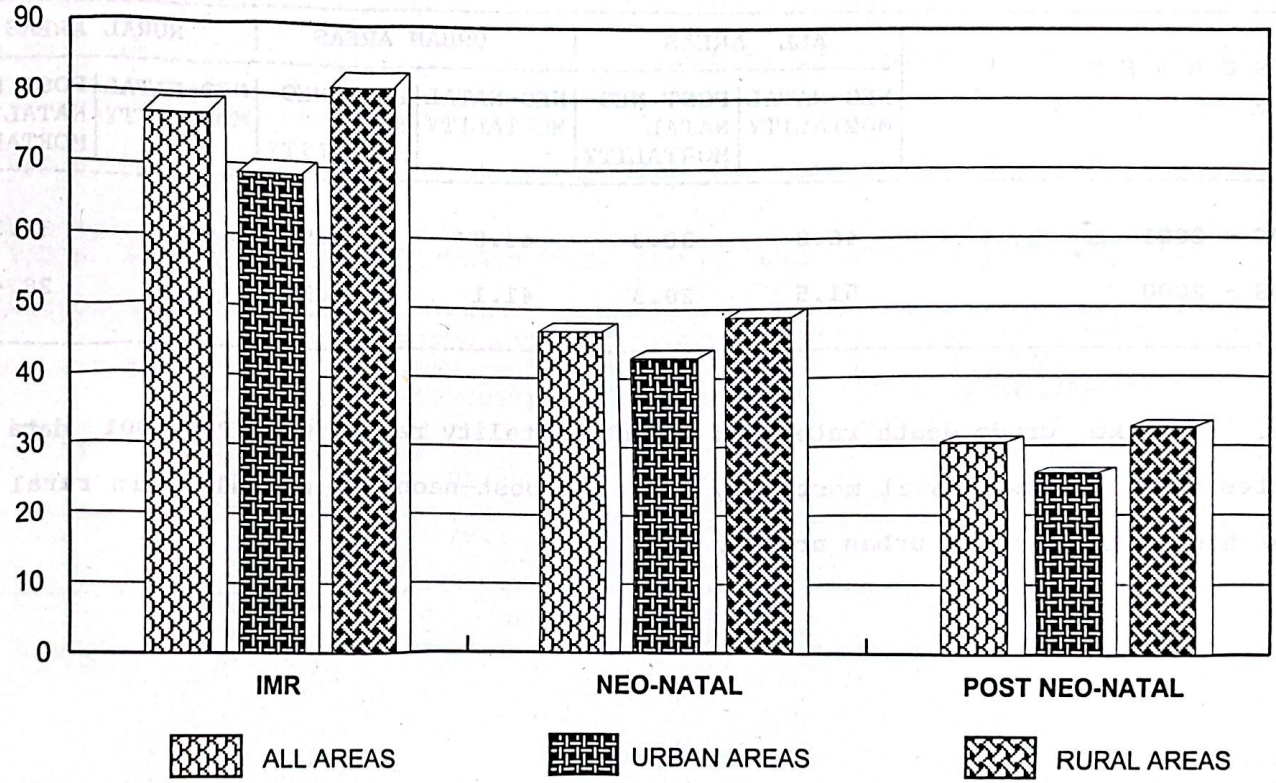

Figure: 4.5

different in these two periods. Table 4.17 and figure 4.5 shows that mortality within the first month after birth was very high in 2001.

Table 4.17 NEO-NATAL AND POST-NEONATAL MORTALITY RATES (PER 1000 LIVE BIRTHS) BY URBAN-RURAL RESIDENCE.

SURVEY	ALL AREAS		URBAN AREAS		RURAL AREAS	
	NEO-NATAL MORTALITY	POST NEO-NATAL MORTALITY	NEO-NATAL MORTALITY	POST NEO-NATAL MORTALITY	NEO-NATAL MORTALITY	POST NEO-NATAL MORTALITY
PDS - 2001	46.8	30.3	43.0	25.9	48.6	32.3
PDS - 2000	51.5	28.3	41.1	28.1	58.4	28.4

39. Like crude death rates and infant mortality rates, the PDS 2001 data indicates that the neo-natal mortality and the post-neonatal mortality in rural areas was higher than in the urban areas .

NATURAL GROWTH RATE

40. The natural growth rate as depicted from PDS 2001 was 2.06 percent per annum (Table 4.18). The growth rate has declined about 3 percent in 2001 as compared to 2000. High natural growth rate during the last few decades was the result of a steadily declining trend in mortality with only moderate decline in fertility. With this high growth rate, the population of the country will be doubled in 34 years.

Table 4.18 BIRTH RATES, DEATH RATES AND NATURAL RATES OF INCREASE

S U R V E Y	BIRTH RATE (PER 1000 PERSONS)	DEATH RATE (PER 1000 PERSONS)	NATURAL RATE OF INCREASE (PERCENT)
PDS - 2001	27.8	7.2	2.06
PDS - 2000	29.1	7.8	2.13

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