

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 census 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 current series of demographic surveys, known as Pakistan Demographic Survey (PDS) was launched in 1984. This report pertains to the data collected through PDS during 2005.

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 rural and urban areas;
 - ii. to estimate current rate of natural increase of population at national level.
 - iii. to collect information on other selected characteristics of population to assess the impact of family planning and other Socio-Economic development programmes.

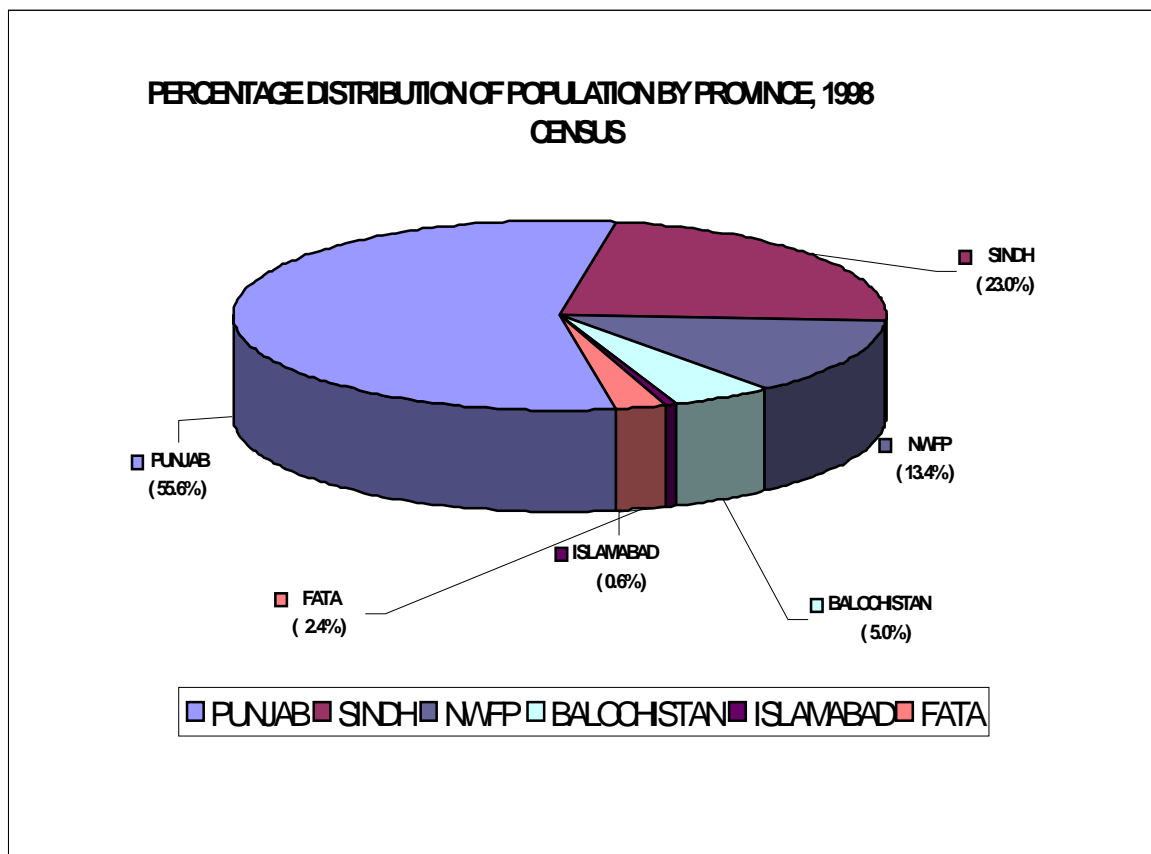
Administrative set up of the country

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 by area, with about 44 percent of total area however, contains 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 (also figure 1), annual growth rate and population density of the country as enumerated in the census of 1981 and 1998. Islamabad being the capital of Pakistan so its population is presented separately. The figures of Federally Administered Tribal Area (FATA) are also shown separately.

Table 1.1: Distributions of Area, Population by Province and Annual Growth Rate

PROVINCE	Area		Population [In thousand]				Population Density [Per sq km]		Inter Censal Annual Growth Rate %
	(Sq. Km)	%	1981	%	1998	%	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



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 childbearing 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 rate 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 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.
- xv. Whipple's Index reflects the preference for or avoidance of a particular terminal digit or of each terminal digit. It varies between 100-500 showing no preferences & high preferences of digit '0' and 5.

SAMPLE DESIGN

Universe

The Universe consists of all urban and rural areas of all four provinces of Pakistan defined as such by Population Census 1998, excluding FATA & Military restricted areas. The population of excluded areas constitutes about 3% of the total population.

Sampling Frame

2. Federal Bureau of Statistics has developed its own sampling frame for urban area. Each city / town has been divided into a number of enumeration blocks (EBs). Each enumeration block consists of 200-250 households on the average with well-defined boundaries and maps. The lists of enumeration blocks was updated during 2003 and the lists of villages/mouzas/dehs published /prepared by Population Census Organization have been undertaken as sampling frame. Enumeration blocks and villages have been considered as primary sampling units (PSUs) for urban and rural domain respectively.

Stratification Plan

a. Urban Domain

i. **Self Representing Cities**

Large size cities i.e. Karachi, Lahore, Gujranwala, Faisalabad, Rawalpindi, Multan, Sialkot, Sargodha, Hyderabad, Peshawar, Quetta and Islamabad have been considered as self-representing cities. 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/updating of urban area sampling frame.

ii. **Remaining Urban Areas**

After excluding the population of large cities, the remaining urban population of each district in all the provinces has been grouped together to form a stratum.

Rural Domain

3 In rural domain, each district in the Punjab, Sindh and NWFP Provinces has been considered as independent and explicit stratum, whereas in Balochistan Province each administrative division constitutes a stratum.

Sample Size And Its Allocation

4. Considering the variability of the characteristics for which estimates are to be prepared, population distribution and field resources available a sample size of about 31623 sample households (SSUs) have been considered appropriate to provide reliable estimates of key variables at National level with expected reliability within 5% coefficient of variation at 95% degree of confidence. The entire sample households (SSUs) has been drawn from 704 primary sampling Units (PSUs) out of which 308 are urban and 396 are rural. As urban population is more heterogeneous therefore, higher proportion of sample size has been assigned to urban domain. Similarly NWFP and Balochistan being the smaller provinces and to get reliable estimates, for these provinces higher proportion of sample has also been fixed to these provinces. After fixing the sample size at provincial level, further distribution of sample PSUs and SSUs to different strata in rural and urban domains in each province has been made proportionately, keeping in view the minimum requirement of each stratum.

5. The distribution of sample PSUs and SSUs in the urban and rural domain of the four provinces is as under: -

PROVINCE	Number of Primary Sampling Units Covered During 2005			Number of Sample Household Covered During 2005		
	Total	Urban	Rural	Total	Urban	Rural
Pakistan	704	308	396	31623	13818	17805
Punjab	364	158	206	16362	7097	9265
Sindh	160	80	80	7197	3598	3599
NWFP	112	42	70	5037	1889	3148
Balochistan	68	28	40	3027	1234	1793

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Selection Procedure

- a. **Selection of primary sampling Units (PSUs):** Enumeration blocks in urban domain and mouzas/dehs/villages in rural domain have been taken as primary sampling units (PSUs). In the urban domain, sample PSUs 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 enumeration block as per record of 2003 list sand population of village/deh/mouza/ according to population census 1998 have been considered as measure of size.
- b. **Selection of Secondary sampling Units (SSUs):** Household within sample PSUs has been taken as secondary sampling units (SSU). A specified number of households i.e. 45 from each urban and rural sample PSU have been selected with equal probability using systematic sampling technique with a random start.

Estimation Procedure

Estimation Procedure and formulae based on two stage sample design have been developed.

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 personals 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 staffs by 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 number on the structure, the letter 'PD' preceded it, for instant, 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, and 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 along with 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, 2005) in January 2006 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 overlapping period were matched on case to case basis and non-matched events were through field visits.

9. 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, PDS-2001, PDS-2003 and PDS-2005, a new methodology has been introduced and justification for using the same is given below: -

Justification for Using New Methodology

10. 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 reconciliation 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.

11. 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-2003, the methodology used for PDS- 1999 has been used. In

January 2004, the births and deaths were enumerated with a reference period of last 12 months. The population was enumerated as on 1st January 2004. This methodology of data collection was considered best for better findings of the survey well in time for the users and planners. In PDS-2005, the reference period was the last 12 months i.e. from 01-01-2005 to 31-12-2005. The population was enumerated as on 1st January 2006. The population of Pakistan has been estimated taking into consideration of growth rate calculated by the said survey.

12. The methodology adopted in the PDS-2005 is described below: -

Population Coverage

13. In the PDS 2005, the coverage of the population was on de jure 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.

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

Persons Included	Persons Excluded
<p>a) All persons usually residing in households in the sample area and found at their residence last night.</p> <p>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.</p> <p>c) A person found at his place of business within the sample area, provided it was his usual residence also.</p> <p>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.</p> <p>e) Persons who were temporarily admitted to a hospital for medical treatment.</p> <p>f) Married daughters whose husbands were in military service or working in a distant place but who were usual residents of sample households.</p> <p>g) Servants, who used to sleep and take meals in the sample households.</p> <p>h) Household member who were in jail and convicted for a period of less than six months or whose cases were not yet decided.</p>	<p>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</p> <p>b) Person who were residing in the premises of a foreign embassy.</p> <p>c) Person living in military barracks and other security or prohibited areas.</p> <p>d) Persons living in boarding houses, hostels that were located in the sample area.</p> <p>e) Married daughters who were temporarily residing in the parent's home for delivery of an expected birth or on a short visit.</p> <p>f) Persons who usually live at the place of their work but returned to their family on week-ends or during holidays.</p>

Coverage of Birth and Death Events

15. Birth and death events which occurred to the usual members of the selected household, were enumerated one time with a reference period of last 12 calendar months (i.e.01-01-2005 to 31-12-2005) in January-May 2006 visit.

16. For each live birth, which occurred to a usual household member during the reference period i.e. from 1st January 2005 to 31st December 2005, a “Birth Enumeration Form” was filled-in. This forms contains the information about the newborn, 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.01-01-2005 to 31-12-2005, a “Death Enumeration Forms “was filled-in.

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 collected in the PDS 2005. Summary of the main findings based on this information is given in the subsequent paragraphs.

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 information on age. This point was greatly stressed in the training sessions of 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 number. Because of this tendency, commonly known as “digital preference”, age heaping occurs at certain ages.

Whipple Index

5. Whipple's Index is a very effective measure of age accuracy so far as digit preference is concerned and has the advantage that it can be compared easily. It measures the preference for two digits ending 0 and 5.

SURVEY/CENSUS	WHIPPLE INDEX					
	ALL		URBAN		RURAL	
	Male	Female	Male	Female	Male	Female
PDS- 2005	191.7	188.6	181.5	183.9	200.4	192.3
PDS- 2003	216.7	212.2	201.1	204.1	230.5	218.9
CENSUS- 1998	172.5	200.9	150.8	175.9	185.4	213.8

6. The Whipple Indices of PDS Survey and Census 1998 show high degree of age heaping. The indices show that in PDS males have higher tendency of age heaping than females in rural areas where it has been observed reverse trend in urban areas.

7. Table 4.1 shows the percentage distribution of population by age and sex obtained from the PDS and from population census 1998.

Table No. 4.1: Percentage Distribution of Population by Broad Age Groups and Sex

SURVEY/CENSUS	TOTAL	UNDER 15 YEARS	15-64 YEARS	65 YEARS AND ABOVE
MALE				
PDS -2005 a/	100.0	41.8	54.6	3.6
PDS -2003 a/	100.0	42.3	54.0	3.7
CENSUS -1998 b/	100.0	43.1	53.3	3.6
FEMALE				
PDS-2005 a/	100.0	41.4	55.6	3.0
PDS-2003 a/	100.0	42.1	54.8	3.1
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).

8. The above table shows that in PDS-2005, the proportion of children under 15 years was 41.4 percent for females and 41.8 percent for males. The census figures of 1998 indicates slightly higher share i.e. 43.3 and 43.1 percent respectively. The decline in the under 15 years population share indicates a decline in 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

9. Dependency ratio, defined as the proportion of children under 15 years and old persons aged 65 year and above to the population between 15 to 64 years, reflects the burden on economically active population. Table 4.2 indicates dependency ratio as obtained from PDS-2005 and population census of 1998.

Table No. 4.2: Dependency Ratios for Pakistan and Provinces

PROVINCE	DEPENDENCY RATIOS		
	PDS-2005	PDS-2003	CENSUS-1998
Pakistan	81.5	83.8	87.3
Punjab	77.0	80.6	85.6
Sindh	84.4	84.2	83.4
NWFP	92.3	92.0	100.3
Balochistan	92.1	97.4	95.9

10. Compared with some other countries, both developed and developing, dependency ratios particularly youth dependency ratio (proportion of children less than 15 year to the population 15-64 years) is very high in Pakistan. Dependency ratios were higher in NWFP and Balochistan as compared to Sindh and Punjab during 2005. The same pattern was observed in the census of 1998.

Sex Ratio

11. Sex ratio at birth has been recorded as 112 for PDS 2005. Sex ratio at birth is high in rural areas as compared to urban areas .An analysis of data during 1951-2005 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 2005, the overall sex ratio was 106. The sex ratio for urban areas was higher as compared to rural areas (table 4.3).

Table No. 4.3: Sex Ratio by Urban and Rural Areas

SURVEY/CENSUS	SEX RATIO		
	All Areas	Urban Areas	Rural Areas
PDS-2005	106	107	105
PDS-2003	107	108	106
CENSUS-1998	108	112	106

Household Size

12. A household in the PDS 2005 was defined to be constituted of all those persons who usually live together and share their meals. A household may consists of one person or more than one person who may not be related to each other.

13. The average household size as obtained from the PDS 2005 was 6.8 (table 4.4). This was same to that reported in PDS-2003 and in the census 1998. This household size was larger in rural areas than in urban areas in Punjab, Sindh and N.W.F.P, while the household size was larger in urban areas of Balochistan in the year 2005.

Table No. 4.4: Average Household Sizes by Province & Urban-Rura Residence

A R E A	PDS-2005	PDS-2003	CENSUS-1998
PAKISTAN	6.8	6.8	6.8
URBAN	6.5	6.7	7.0
RURAL	6.9	6.9	6.8
PUNJAB	6.5	6.5	6.9
URBAN	6.4	6.5	7.1
RURAL	6.6	6.6	6.9
SINDH	6.7	6.9	6.0
URBAN	6.6	7.0	6.8
RURAL	6.8	6.8	5.5
NWFP	7.9	8.0	8.0
URBAN	7.6	7.6	7.9
RURAL	7.9	8.1	8.0
BALUCHISTAN	7.0	7.0	6.7
URBAN	7.5	7.6	7.8
RURAL	6.8	6.8	6.4

14. Percentage distribution of households by number of persons separately for urban and rural areas for the year 2005 is given in table 4.5. This table shows that the share of single person's household was 1 to 1.5 percent. The households with 5 or less persons constituted 37 percent of the total households in the survey of PDS-2005. The corresponding figures i.e. 39 percent in urban areas, whereas, 36 percent in rural areas were shown in PDS-2005 respectively. The households constituting 10 or more members in the survey were 13 to 17 percent.

Table No. 4.5: Percentage Distributions of Households by Number of Persons and Urban-Rural Residence

Data Source/Areas	All House Holds	Percentage Distribution of Households by Number of Persons									
		1	2	3	4	5	6	7	8	9	10
PDS-2005											
All Areas	100.0	1.2	4.8	6.9	10.5	13.9	14.9	13.6	11.2	7.8	15.2
Urban Areas	100.0	1.5	4.5	7.1	11.1	15.2	16.1	13.7	10.7	6.9	13.1
Rural Areas	100.0	1.0	4.9	6.8	10.1	13.1	14.2	13.5	11.5	8.4	16.5
PDS-2003											
All Areas	100.0	1.3	5.2	7.3	10.0	12.6	14.2	13.5	11.0	7.9	17.0
Urban Areas	100.0	1.9	4.5	7.0	10.1	13.2	15.3	12.8	10.5	7.7	17.0
Rural Areas	100.0	1.1	5.5	7.5	9.9	12.2	13.6	13.9	11.3	8.0	17.0
1998 CENSUS											
All Areas	100.0	2.8	7.6	8.0	9.8	11.6	12.8	11.4	9.7	7.7	18.6
Urban Areas	100.0	3.1	5.9	7.2	9.6	12.0	13.6	11.4	9.7	7.6	19.9
Rural Areas	100.0	2.8	8.4	8.3	9.9	11.3	12.4	11.1	9.8	7.8	18.2

Marital Status

15. 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, divorced and separated. 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), percentage of never-married by age both for males and females are given for the PDS-2005 in Table No. 4.6.

Table No. 4.6: Percentages of Never Married by Sex and Age Groups

SEX/AGE GROUP [YEARS]	PDS-2005	PDS- 2003	CENSUS 1998
MALE			
15-19	97.5	97.4	93.7
20-24	76.9	76.0	70.1
25-29	38.9	38.6	38.4
30-34	13.0	13.9	16.9
35-39	4.4	4.4	8.3
40-44	2.1	2.2	5.5
45-49	1.4	1.7	3.9
FEMALE			
15-19	88.3	86.6	78.9
20-24	45.1	43.5	38.8
25-29	14.3	13.3	14.8
30-34	4.4	4.4	7.1
35-39	2.2	2.1	4.3
40-44	1.5	1.4	3.4
45-49	1.0	0.9	2.5

16. The above table indicates that in case of females, 1 percent remained unmarried in the age group 45-49 years in 2005 survey, whereas, 1.4 percent of males remained unmarried, it shows that marriage is almost universal in Pakistan for males and females.

17. The rising proportion of never-married were 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 2005, 88 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 45 years.

18. Comparing the proportion of never married females by age for various data sources, it is evident that the age at marriage has increased. For instance, the proportions of never-married females in the age group of 15-19 years were increased about 12 percent in 2005 as compared to 1998 population census. The percentage share of never- married females in the age group of 20-24 years was

also increased by 16 percent for the same period. When compared with 1998 Census the corresponding proportions of these age groups for males also showed an increase of 4 percent and 10 percent respectively.

19. Table No. 4.7 gives singulate Mean Age at Marriage calculated from the proportions of single up to age 50 years because the proportion for unmarried after 50 years is negligible to enter the wedlock for the first time.

Table No. 4.7: Singulate Mean Age At Marriages By Sex

SURVEY/CENSUS	MALE [YEARS]	FEMALE [YEARS]
PDS-2005	26.4	22.5
PDS-2003	26.4	22.3
CENSUS-1998	25.8	21.7

20. An analysis of data from 1961 to 2005 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 risen to 26.4 years in 2005, similarly for females, the age at marriage increased from 16.7 to 22.5 years during the same period. This increasing trend in age at marriage would contribute in fertility reduction in the country.

Fertility

21. Data on birth events were collected through January 2006 visits by asking retrospective questions with a reference period of last 12 months (i.e. from 1st January to 31st December 2005). 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 Rate

22. 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 rate for Pakistan with urban-rural break down as obtained from the PDS surveys are given in table 4.8. The crude birth rate as obtained from the PDS 2005 was 26.1 per 1000 persons.

23. Table 4.8 indicates that rural-urban differentials exist 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 15 percent higher in rural areas as compared to urban areas. The crude birth rate has declined 26percent during the last 10 years, as it was 35.2 in 1996.

Table No. 4.8: Crude Birth Rates by Urban/Rural Residence

SURVEY	CRUDE BIRTH RATE		
	All Areas	Urban Areas	Rural Areas
PDS-2005	26.1	23.9	27.4
PDS-2003	26.5	24.1	27.9

General Fertility Rates

24. Crude Birth Rate (CBR), though a very useful index of measuring fertility, 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 2005 and 2003. Area wise comparison indicates that general fertility rates were higher (about 26 percent) in rural areas as compared to urban areas of the country. The general fertility rate has declined 33 percent as compared to 163.7 in 1996.

Table No. 4.9: General Fertility Rates by Urban/Rural Residence

SURVEY	GENERAL FERTILITY RATE		
	All Areas	Urban Areas	Rural Areas
PDS-2005	110.6	95.0	120.1
PDS-2003	114.5	97.9	124.5

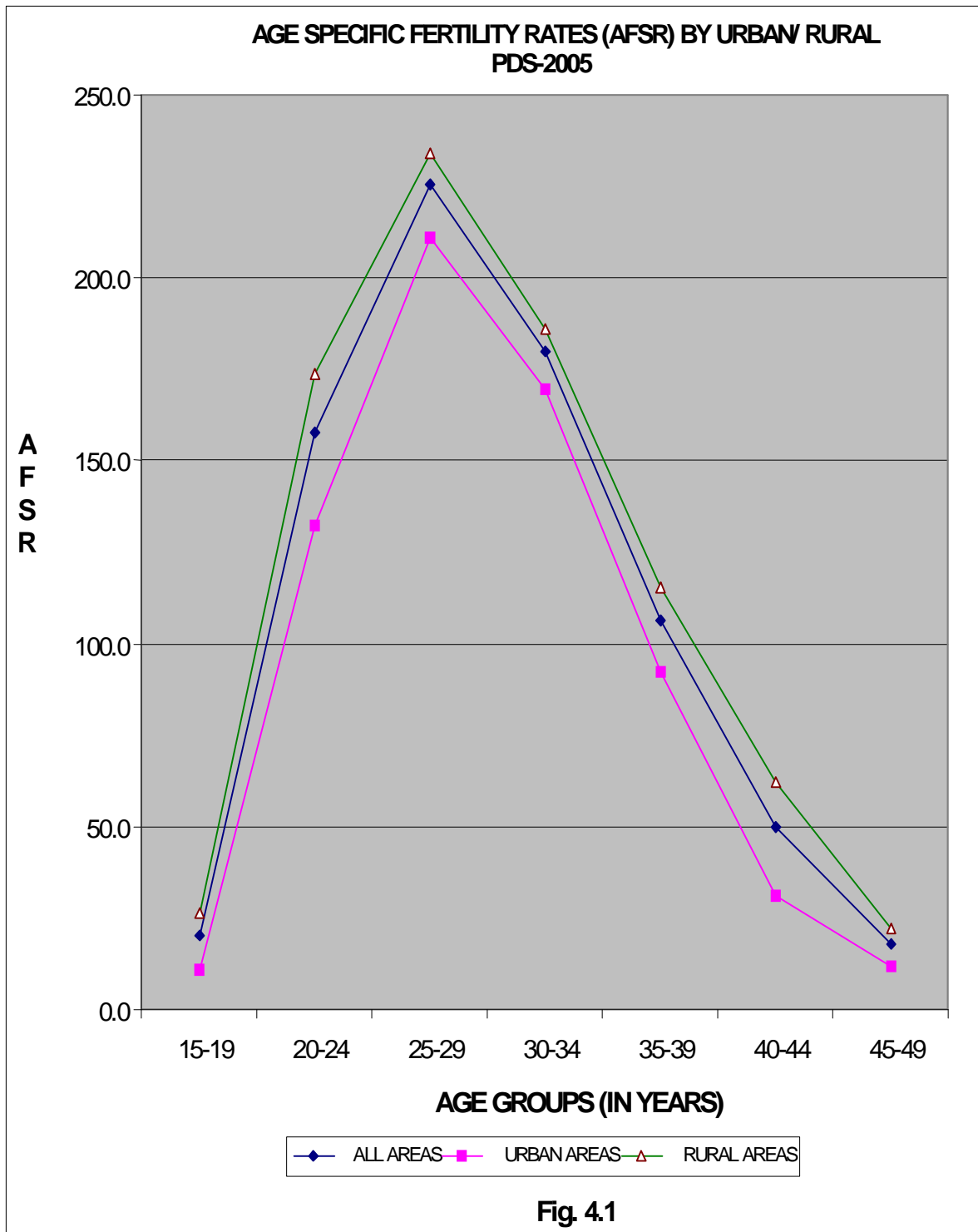
Age Specific Fertility Rates

25. Age specific fertility rate 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.

Table No. 4.10: Age Specific Fertility Rates (Per 1000 Women) By Urban-Rural Residence Pakistan

AGE GROUP	PDS – 2005			PDS – 2003		
	All Areas	Urban Areas	Rural Areas	All Areas	Urban Areas	Rural Areas
15-19	20.3	10.7	26.2	23.7	14.2	29.7
20-24	157.6	132.1	173.6	163.1	137.1	178.9
25-29	225.5	210.9	233.9	229.6	219.3	236.1
30-34	179.9	169.6	185.9	190.0	169.2	201.6
35-39	106.6	92.5	115.4	112.7	93.4	124.5
40-44	50.1	31.0	62.0	49.0	34.2	57.8
45-49	18.1	11.6	21.9	18.8	11.2	23.7

26. From the above table it is quite visible that the age specific fertility rate raises sharply for age group 20-24 years and reaches the peak in the age group 25-29 years, then declines slowly up to 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.



27. Table No. 4.10 shows the age specific fertility rates for PDS 2005 and 2003. It may be noticed that in both the surveys the modal age group was 25-29 years.

28. Table No. 4.11 indicate that 3 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 and above in the survey of 2005. The women aged 20-39 years contributed about 88 to 93 percent births. 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 show the traditionally early marriages in the rural females.

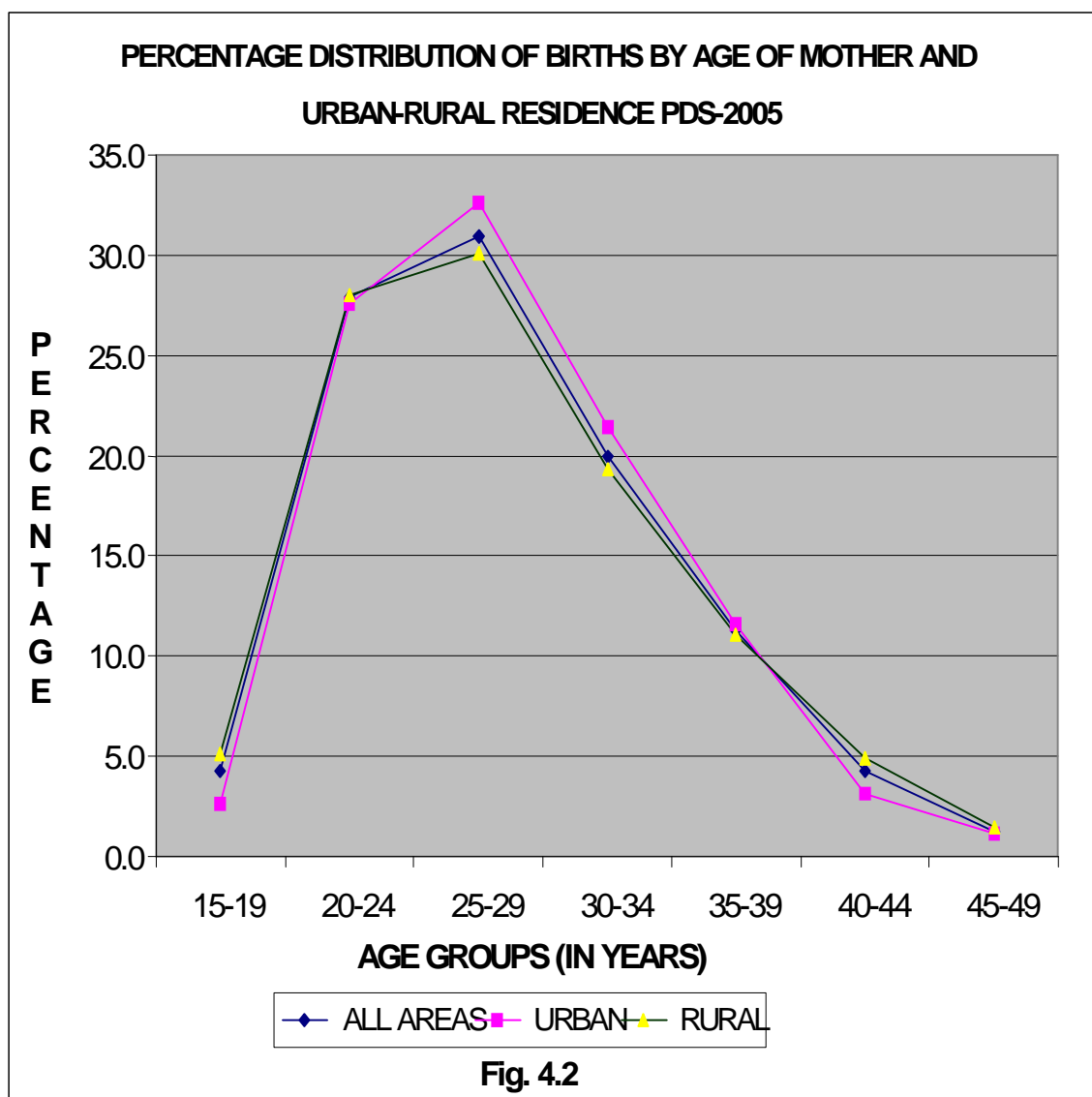


Table No. 4.11: Percentage Distribution of Births by Age of Mother and Urban-Rural Residence

SURVEY	AGE GROUP [YEARS]							
	TOTAL	15-19	20-24	25-29	30-34	35-39	40-44	45-49
PDS-2005								
All Areas	100.0	4.3	27.9	30.9	20.0	11.3	4.3	1.3
Urban	100.0	2.6	27.6	32.6	21.4	11.6	3.1	1.1
Rural	100.0	5.1	28.0	30.1	19.3	11.1	4.9	1.5
PDS-2003								
All Areas	100.0	5.0	27.6	30.2	20.4	11.4	4.0	1.4
Urban	100.0	3.5	27.1	34.2	20.0	11.0	3.2	1.0
Rural	100.0	5.6	27.9	28.4	20.6	11.6	4.3	1.6

Age Specific Marital Fertility Rates

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

30. Table 4.12 indicates that ASMFR rised sharply after age group 15-19 years in the next group to the maximum value in the age group 20-24 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-2005. Here the model age group is 20-24 years.

Table No. 4.12: Age Specific Marital Fertility Rates (Per 1000 Currently Married Women) By Urban-Rural Residence

AGE GROUP [YEARS]	PDS – 2005			PDS-2003		
	All Areas	Urban Areas	Rural Areas	All Areas	Urban Areas	Rural Areas
15-19	175.1	175.2	175.0	178.7	185.9	176.6
20-24	289.5	312.9	279.6	292.0	326.6	278.3
25-29	265.8	263.1	267.2	268.3	272.5	266.0
30-34	192.1	182.5	197.7	203.5	184.7	213.7
35-39	113.0	98.2	122.2	119.6	99.5	131.7
40-44	53.9	33.8	66.1	52.6	37.3	61.6
45-49	20.3	13.4	24.2	21.3	12.9	26.5

Total Fertility Rate

31. 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 2005 and 2003 are given in Table No. 4.13.

Table No.4.13: Total Fertility Rate

SURVEY	TOTAL FERTILITY RATE (PER WOMAN)		
	All Areas	Urban Areas	Rural Areas
PDS-2005	3.8	3.3	4.1
PDS-2003	3.9	3.4	4.3

32. TFR in urban areas was lower than that in rural areas in both surveys. Total fertility rater has also declined from 5.3 children per woman to 3.8 children per woman during the period 1996 to 2005.

Mortality

33. Information on death events was obtained through January, 2006 visit with a reference period of last 12 months (e.g., 1st January to 31st December, 2005) 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

34. Crude death rate (CDR) i.e. deaths per 1000 persons as obtained from PDS 2005 and 2003 for Pakistan with urban-rural breakdown are given in Table No. 4.14.

Table No. 4.14: Crude Deaths Rates By Urban-Rural Residence

SURVEY	CRUDE DEATH RATE								
	ALL AREAS			URBAN AREAS			RURAL AREAS		
	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE
PDS-2005	7.1	7.8	6.3	6.3	6.9	5.6	7.5	8.3	6.7
PDS-2003	7.0	7.5	6.4	6.2	6.8	5.6	7.4	7.9	6.9

35. The Crude death rate obtained from the PDS 2005 was 7.1 per thousand persons for Pakistan. The crude death rate was lower in urban areas than in rural areas in both the surveys. The crude death rate has slight raised from 7.0 per thousand persons in 2003 to 7.1 per thousand in 2005, which is due to earthquake disaster in Northern areas of Pakistan. Females have lower death rate than males in all the areas.

Sex And Age Specific Mortality Rates

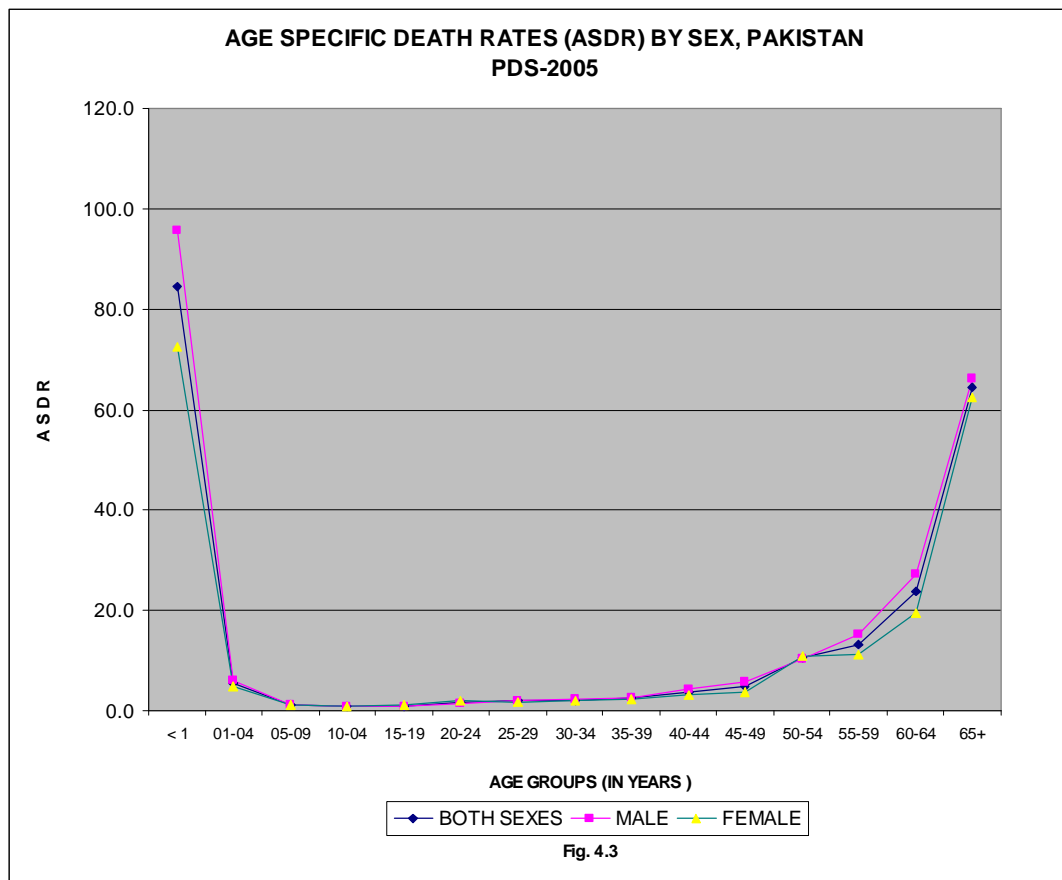
36. The impact of mortality on various age groups is not evenly distributed. The age curve of mortality (figure 4.3) is bimodal i.e., it has two peaks. The Age specific Death Rate (ASDR) starts at a very high peak immediately after birth, declines to a minimum value for the young age population (5-19 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 both the surveys. The child mortality 0-4 (years) is very high in Pakistan i.e. about 37 percent of the total deaths.

Table No. 4.15: Age Specific Death Rates by Sex, Pakistan

AGE GROUP [YEARS]	PDS-2005			PDS-2003		
	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE
ALL AGES	7.1	7.8	6.3	7.0	7.5	6.4
BELOW-1	84.4	95.6	72.5	81.8	86.6	76.5
01-04	5.4	5.9	5.0	6.2	6.8	5.6
05-09	1.1	1.1	1.0	0.8	1.1	0.6
10-14	0.8	0.8	0.8	0.4	0.7	0.1
15-19	1.0	0.8	1.2	0.9	0.6	1.3
20-24	1.7	1.5	2.0	1.7	1.4	1.9
25-29	1.9	2.0	1.8	1.8	1.9	1.6
30-34	2.0	2.2	1.9	2.0	2.3	1.7
35-39	2.6	2.7	2.4	2.6	2.7	2.6
40-44	3.8	4.3	3.2	3.5	3.8	3.1
45-49	4.7	5.6	3.8	4.8	5.6	4.1
50-54	10.5	10.2	10.9	11.4	10.0	12.9
55-59	13.3	15.1	11.2	15.8	16.7	14.7
60-64	23.7	27.3	19.5	23.7	26.3	20.7
65+	64.5	66.1	62.5	57.7	57.6	57.8

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

38. 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 some ages (15-24) during the reproductive period. The age specific mortality rates by age and sex are graphically shown in fig. 4.3 for PDS 2005.

Infant Mortality Rates (Imrs)

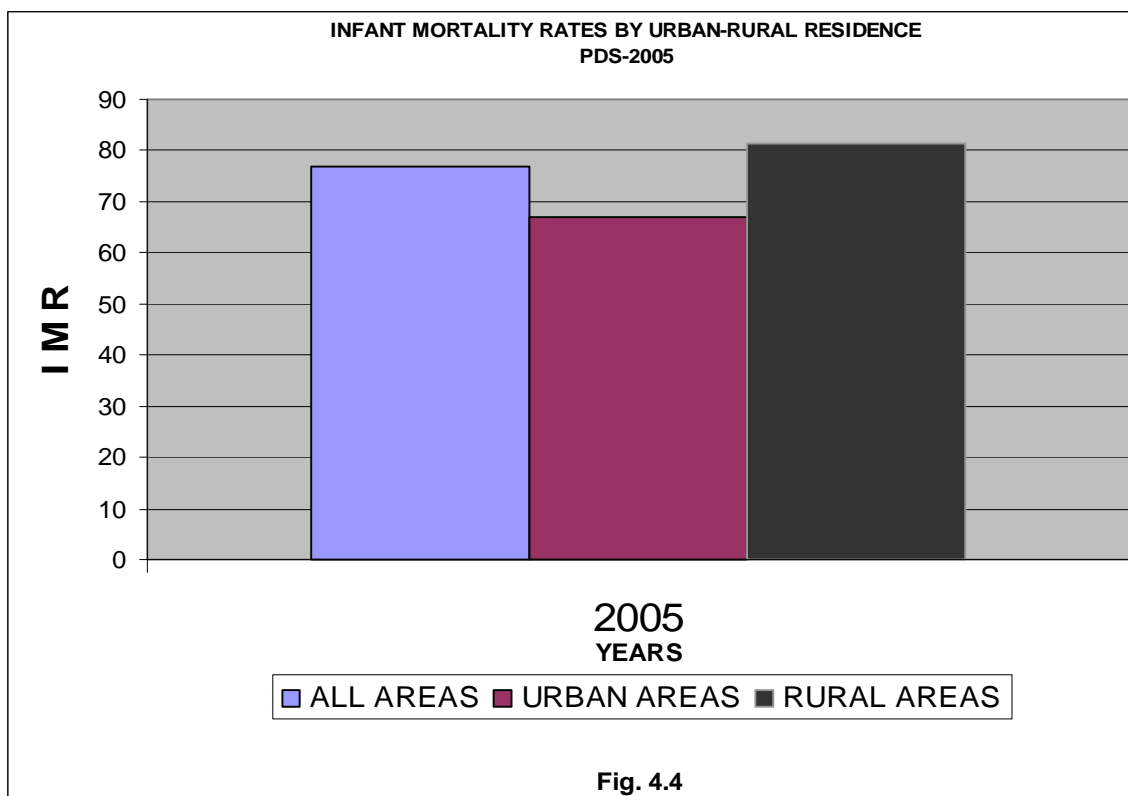
39. Infant Mortality Rate (IMR) measures the mortality below one year of age. It is defined as the number of infant deaths during a calendar year per 1000 live births in the same year. Infant mortality is an important indicator to judge

socio-economic conditions, cultural factors, status of hygiene and availability & utilization of medical services.

40. Table No. 4.16 exhibits the Infant mortality rates as obtained from PDS 2005 and 2003. Infant mortality rate has been declining in Pakistan but it is still high. The infant mortality rate has slightly raised in 2005 as compared to 2003.

Table No. 4.16: Infant Mortality Rates By Urban-Rural Residence

SURVEY	INFANT MORTALITY RATE								
	ALL AREAS			URBAN AREAS			RURAL AREAS		
	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE	BOTH SEXES	MALE	FEMALE
PDS-2005	76.7	84.8	67.6	67.1	76.2	56.7	81.2	88.9	72.7
PDS-2003	76.2	81.1	71.0	67.2	69.7	64.4	80.6	86.6	74.1



41. Infant mortality rates were much higher (about 32 percent) in rural areas than in urban areas where better neo-natal and post-natal facilities are available. Male Infant mortality rate is higher than female infant mortality rate in all the areas of Pakistan.

Neo-Natal And Post-Neo-Natal Mortality Rates

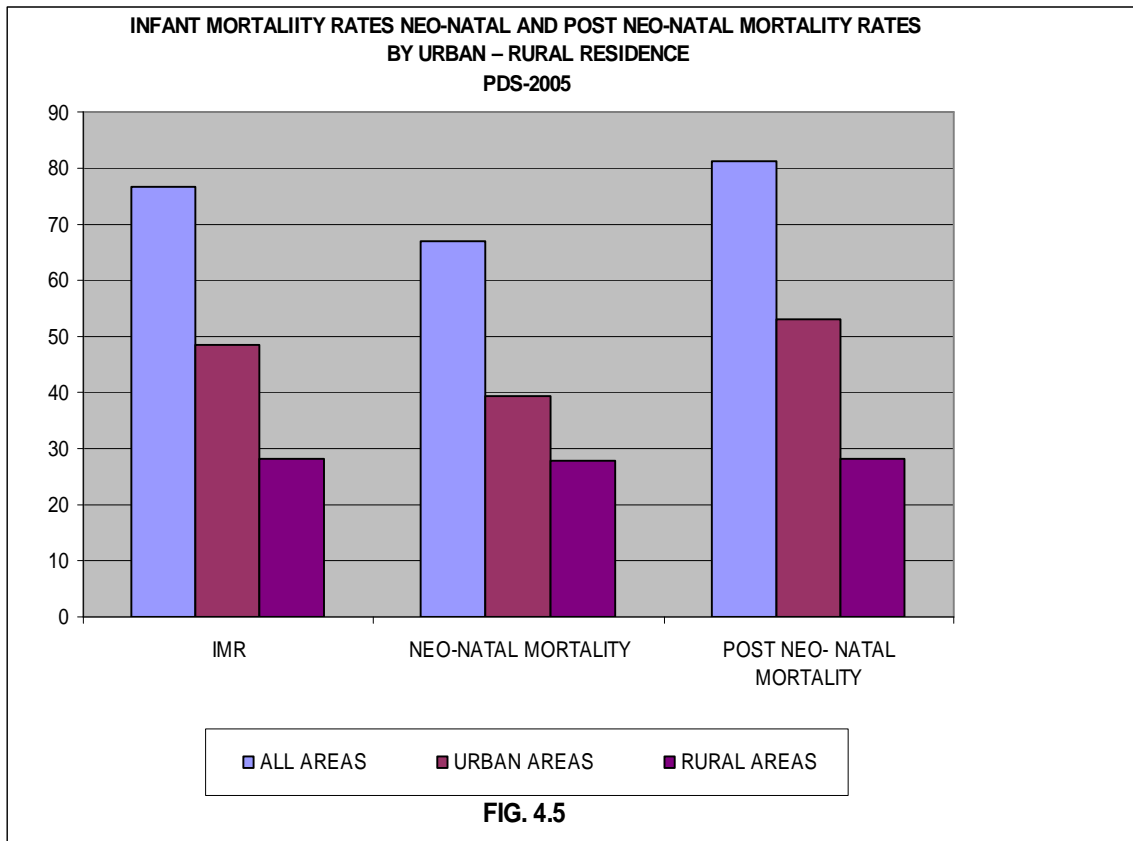
42. Mortality during the first year of life is divided into two main period's i.e.

- i. Neo-natal Mortality occurring within the first month and,
- ii. Post-neonatal mortality occurring during the remaining 11 months.

43 This distinction is useful as the causes as well as the levels of mortality are quite different in these two periods. Table 4.17 and figures 4.5 shows that mortality within the first month after birth was very high in 2005.

Table No. 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-2005	48.5	28.2	39.3	27.8	52.9	28.3
PDS-2003	42.8	33.4	32.8	34.4	47.6	33.0



44. Like crude death rates and infant mortality rates, the PDS-2005 data indicates that the neo-natal mortality in rural areas was about 35 percent higher than in the urban areas.

45. The maternal mortality rate as obtained from PDS 2005 is 283 per 100,000 live births.

Natural Growth Rate

46. The natural growth rate as depicted from PDS 2005 was 1.90 per annum (Table 4.18). The growth rate has declined about 3 percent in 2005 as compared to 2003. 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 36 years.

Table No. 4.18: Birth Rates, Death Rates and Natural Rates of Increase

SURVEY	BIRTH RATE [PER 1000 PERSONS]	DEATH RATES [PER 1000 PERSONS]	NATURAL RATE OF INCREASE [PERCENT]
PDS-2005	26.1	7.1	1.90
PDS-2003	26.5	7.0	1.95

Expectation of Life

47. The expectation of life at birth is a summary measure Index that is obtained from a life table. It shows the average number of years that persons can expect to live from the time of birth if they experience currently prevail the age specific death rates throughout their life. The expectation of life at birth is independent of the age structure of a population and therefore provides a more reliable index for international comparisons of the level of mortality, social and economic condition of a country.

48. From the Life Table of PDS 2005, it depicts that the expectancy of life at birth of males and females in Pakistan are 64 and 66 years respectively.

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