

MMR in Different Geographic Areas of Balochistan

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The Thesis **“MMR In Different Geographical Areas of Balochistan”** is my own work.

Hissba Tus Saboor

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List of Acronyms

MMR	Maternal Mortality Ratio
PMDF	Proportion of Maternal Death to the total number of women's death in reproductive age.
SE	Standard Error
CI	Confidence interval
MDGs	Millennium Development Goals
FBS	Federal Bureau of Statistics
PDHS	Pakistan Demographic and Health Survey
MDHS	Measure Demographic Health Surveys
NIPS	National institute of Population Studies

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Maternal Mortality Ratio in different Geographical Areas of Balochistan

Background:

MMR is one of the basic health indicators that is used to understand the needs and improvements in the field of the Maternal Health practices of the country. According to an estimate in 2005, **536,000** women died of maternity reasons. 99% (533,000) of these deaths occurred in developing countries whereas developed world accounted for only 1% of all these deaths (WHO, UNICEF, UNFPA, The World Bank, 2006).

Pakistan is one of the *top ten countries* with highest MMR in the world. Pakistan is a country with a *poor health information system* in placed. *Pakistan Demographic and Health survey* was conducted between 2006-07 and data was collected by House hold surveys. Verbal autopsy was used to get the real cause of death of women in reproductive age 15-49 to classify as Maternal death. In the Final report they gave the National MMR of *276/100,000* live births and is used as reliable indicator for regular monitoring and evaluation by repeating the similar survey after regular interval (NIPS, 2008).

Pakistan has four provinces Punjab, Sindh, NWFP and Balochistan. Balochistan is the biggest province with smallest population and least development. The MMR in province of Balochistan is the *highest* in Pakistan. In the PDHS, 2006-07 MMR in Balochistan of *785/100.000* (NIPS, 2008). PDHS 2006-2007 was one of the *biggest house hold surveys* ever conducted in Pakistan and collected information about the number of births and deaths in 100,000 house holds. We decided to use PDHS data set to calculate MMR in different districts of Balochistan.

Objectives:

Calculate District specific MMR and PMDF for the districts of Balochistan. Assess the association between MMR and certain demographic characteristics of the districts i.e. Rural/Urban, Poverty, Literacy level.

Methodology.

Data was initially collected by PDHS by cross-sectional survey of 10,000 households in Balochistan and was provided to us on our request for calculation of District specific MMR. Data was imported into STATA and MS-office 2007 for analysis.

Results:

Total 9749 households were successfully interviewed in the whole province of Balochistan. Total of 159 female deaths reported through household questionnaire since 2003. 60 female deaths were identified as Maternal deaths. There were total 9902 births reported out of which 9712 were alive births since 2003. The

proportion of maternal deaths to the total female death was calculated as 38 %. The Maternal Mortality Ratio (MMR) was calculated as 618/100,000 live births for the province of Balochistan during years of 2003-2006.

The PMDF shows obvious increase from large city to rural areas. In capital cities only 19% of the total female deaths are due to maternal reason where as it is 39% in the rural areas of Balochistan.

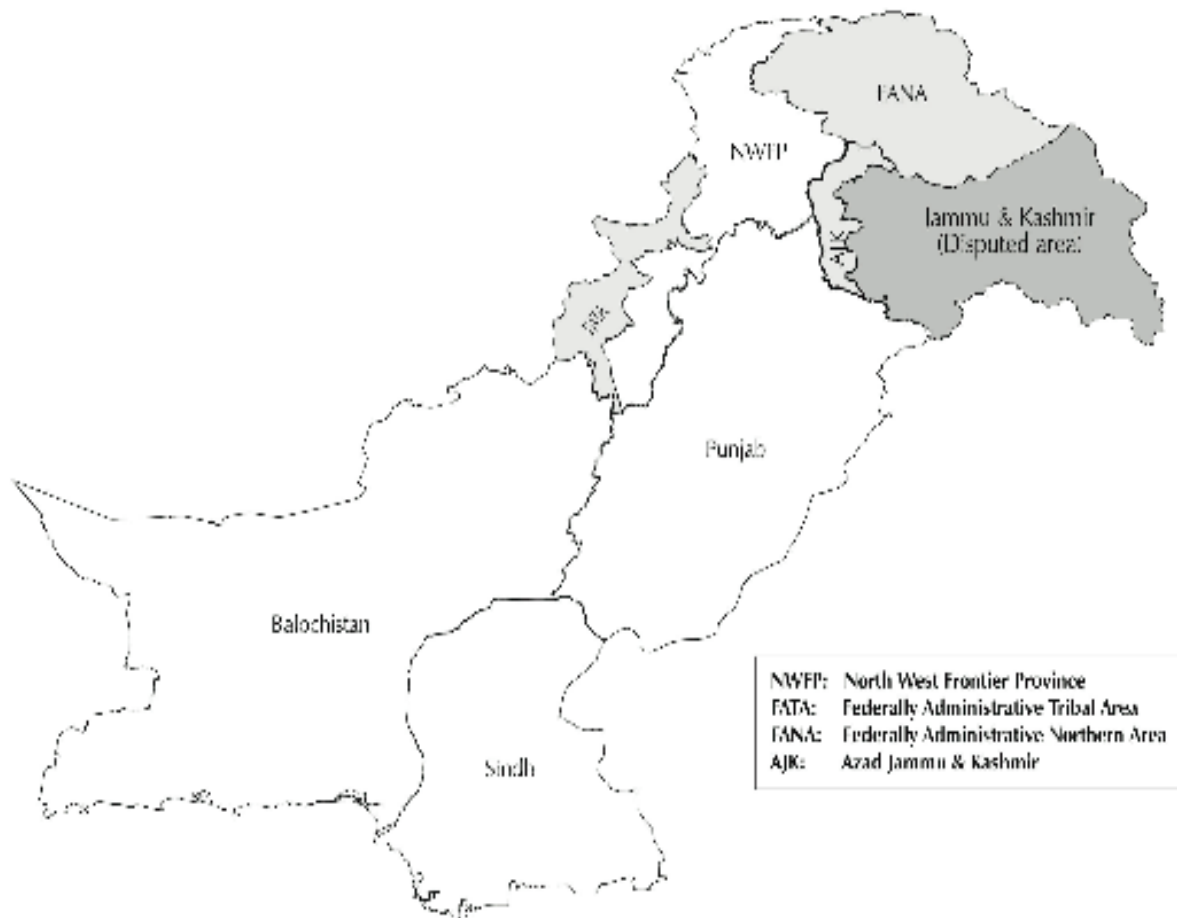
District Kalat has come up with the highest MMR of 990/100,000 live births. Kalat is followed by Khuzdar and Panjgur with the MMR of 952/100,000 and 931/100,000 live births respectively. The districts of Mosakhel and Pishin showed up with the MMR of 778/100,000 live births and 763/100,000 live births respectively. Districts of Sibi, Kech/Turbat and Gawadar has been observed to have MMR of 658/100,000live births, 652/100,000 live births and 631/100,000live births. Loralai has a MMR of 514/100,000 live births. District Bolan has 489/100,000 live births, Mastung has 448/100,000 live births, KillaSaifullah has 431/100,000 live births, Jaffarabad has 417/100,000 live births and Kharan has MMR of 400/100,000 live births. The districts of Brkhan, Zhob and Quetta has MMR of 368/100,000 live births, 320/100,000 live births and 308/100,000 live births respectively. District Ziarat with a MMR of 299/100,000 live births and District Naserabad with a MMR of 260/100,000 live births came up with the lowest MMR in Balochistan.

The regression analysis between the proportion of the rural population in districts and the MMR of the districts shows a p-value of 0.0429 and an ascending graph. Similarly the regression model between MMR and Poverty gives us an ascending graph with The p-value of 0.0467. The result of regression analysis between MMR and Literacy level still gives us an ascending graph but p-value stands at 0.0651. According to previous studies, personal experience and the results, association is present in demographic characteristics and MMR.

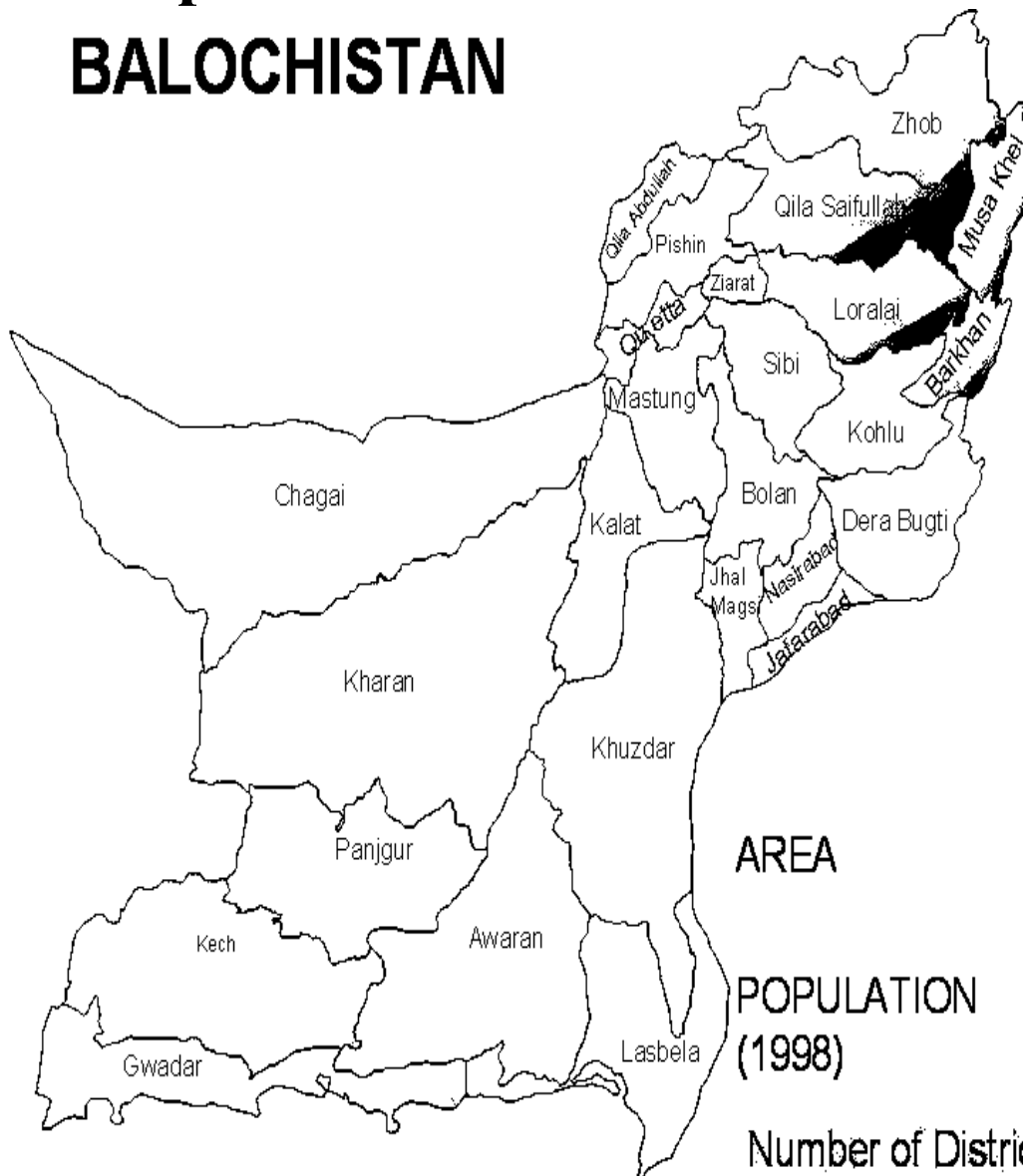
Conclusion: We strongly need a study with big sample size to calculate reliable estimate of MMR in each district of Balochistan with narrow confidence intervals. in Balochistan there is an urgent need of implementing good Maternal Health programs to improve the MMR on ground. Baloch districts have come up with very high MMR..A study with good Qualitative component can best answer this question. we strongly need to look for the reason of this difference between Baloch and Pashtoon districts.

MAP OF PAKISTAN

(Shaded areas were not surveyed in the 2010-12 Pakistan Demographic and Health Survey.)



Map of BALOCHISTAN



AREA

347,190 Km²
(44% of Pakistan)

**POPULATION
(1998)**

6.511 Million
(5.1% of Pakistan)

Number of Districts 27

Chapter 1: Introduction

1.1 Background

Become a mother Is an honor for a women and is a happy moment for a family but at the same time it can be turned into a grief moment when this news is attached along with the news of mother's death. The Maternal death is the most common preventable cause of death due to which about 536,000 women depart from this world every year. Maternal Death is defined as the death of women in reproductive age due to Maternal reasons i.e. during pregnancy, during child birth or within 6 weeks post delivery or due to conditions aggravated by maternity. Maternal mortality is believed to be the most sensitive health indicator of women's status in a society and of the quality and accessibility to maternal health services available to women. A maternal health is not only interpreted as a department of health's failure to provide it's women equally accessible health facility but it also indicates different social, cultural and economic flaws in the society to look after the lives and health of its mothers.(NIPS,2008).

The most common maternal health indicator used world wide is Maternal Mortality Ratio which is defined as number of Maternal deaths per 100,000 live births over a specified period of time. There are many ways to calculate the MMR according to the quality of available data at country level. In the countries where good records of deaths and births are present, calculation of MMR is easy whereas most of developing countries don't have any reliable registration system in placed which can give reliable information of number of births and maternal deaths. The countries with no vital registration system of births and deaths or Where vital registration data are not appropriate for the assessment of cause-specific mortality, the use of household surveys provides an alternative. However, household surveys

using direct estimation are very expensive and complex to implement, since large sample sizes are crucial to provide a statistically reliable estimate. According to an estimate in 2005, 536,000 women died of maternity reasons. 99% (533,000) of these deaths occurred in developing countries whereas developed world accounted for only 1% of all these deaths. Among developing world Sub-Saharan Africa and South Asia together accounted for 86% of global Maternal Deaths. (WHO, UNICEF, UNFPA, The World Bank, 2006).

Despite of the differences in MMR calculated over different periods of time the PMDF (Proportion of Maternal deaths to total number of women's death in reproductive age) remained remarkably stable across time periods. In year 2005 estimated number of Maternal death for the world was 515,000. of these over half (272,500) occurred in Africa, about 41%, (217,500) occurred in Asia, about 4% (22,000) occurred in Latin America and the Caribbean and less than 1% (2700) in Europe and North America. In terms of MMRatio being highest in Africa (1006), followed by Asia (276), Latin America (190), Oceania (119), Europe (28) and North America (11) per 100,000 live births during year 2005. Even in countries with highly developed statistical system, the MMRatio is thought to be underestimated by a substantial margin. (Kenneth Hill, Carla AbouZahr & Tessa Wardlaw, 2001)

Improving Maternal health and reduction in Maternal mortality has turned into a burning issue and has become a key concern Internationally. It has been on the table of international summits and conferences and has been fully covered since the late 1980s. Since the world has been discussing the global health at its first priority, many of the diseases which were never brought into a concern are brought onto agenda in Millennium Development Goals (MDG) in 2000 in millennium summit. The 5th MDG was then focused on Maternal health particularly and international community committed itself to reduce the Maternal Mortality Ratio

(MMR) by three quarters between 1990-2015. (United Nations Millennium Declaration,2001)

Pakistan is a country in South East Asia with a population of around 160 million as of mid-2007 with annual growth rate of 1.9% (Government of Pakistan,2007) Pakistan is one of the countries in the developing world with an estimation of very high MMR. Pakistan is also one of the signatory of the summit of MDGs but like other developing countries has the same crucial of planning and processing on the basis of non reliable MM estimates. Country must have some reliable estimate of MMR to plan strategies for improving sexual and reproductive health and periodic monitoring and evaluation of the programs. In the context of MDG5 , a reliable and internationally comparable estimate of MM is accessory to inform decision making concerning funding support for the achievement of MDGs internationally.(WHO,UNICEF,UNFPA,The World Bank,2005) .The country's targets for MDG-5 are to reduce the MMR to less than 140, and to increase skilled birth attendance to 90 percent by the year 2015(Ministry of Health [Pakistan]. 2005.).

In Pakistan a women dies of giving child birth every 20 min. Despite numerous initiatives, it is uncertain whether Pakistan will achieve Millennium Development Goals 4 and 5 by 2015.(Sadiqua jafarey, et.al, 2008). Government of Pakistan has launched large scaled Maternal Neonatal and child health programs to improve the quality and accessibility of health of emergency obstetrics and neonatal care and to increase the use of skilled birth attendance. To regularly monitor and evaluate these programs, a reliable MMR is mandatory. Most of the estimates which are available locally or internationally are rough estimates that are mostly calculated through statistical modeling or Hospital based data. The values give drastically different MMR over the same period of time.

MMRatio for Pakistan was estimated to be 201/100,000 live births during year 1995 by using statistical model. The PMOF was calculated to be 0.1899 of the total number of deaths of women as 54638 during year 2005 and the Gross fertility rate (GFR) was estimated as 167.(Kenneth Hill,Carla AbouZahr & Tessa Wardlaw ,2001). For the year 2005 an estimate was 320/100,00live births with the between 99-810 between lower and upper limits.(WHO, UNICEF, UNFPA, The World Bank, 2005). For the following year of 2006 the MMR was estimated as 500/100,000 live births (WHO,2007).

The previous calculated MMR values have been giving similar underestimated or over estimated values for national level MMR. Health professionals and governmental departments have been in the need of some reliable national level estimates for Pakistan. In the countries, Where medical certification of cause of death is not available, studies assign cause of death using verbal autopsy techniques.(WHO, UNICEF, UNFPA, 2001) In our country there is an urgent need to institute an efficient mode of operation to get accurate maternal mortality database. Verbal Autopsy method is cost effective and feasible approach for implementation in a country like Pakistan.(Nasir Farooq,et.al, 2003) Keeping in mind this need, It was decided that the scope of Pakistan's 2007 Demographic and Health Survey could be expanded to measure MMR using verbal autopsies. Pakistan Demographic and Health survey was conducted between 2006-07 and data was collected by House hold surveys. Verbal autopsy was used to get the real cause of death of women in reproductive age 15-49 to classify as Maternal death. In the Final report they gave the National MMR of 276/100,000 live births and will be used as reliable indicator for regular monitoring and evaluation by repeating the similar survey after regular interval (NIPS,2008). The causes of Maternal death in Pakistan are also established as Postpartum Hemorrhage is the leading cause

(27.2%) of Maternal deaths followed by Puerperal sepsis(13.7%) and eclampsia (10.4%). Big number of maternal deaths are attribute to iatrogenic cause (8.1%) caused by mismanagement of medical conditions during maternity. Eclampsia (6.0%) ,abortion related deaths(5.6%), Ante partum Hemorrhage (5.5%) and other direct causes (5.5%) are contributing Maternal deaths. Only 13% of maternal deaths are attributed to indirect causes.(PDHS,2006-07).

The gaps of reliable MMR is not only limited to national level . Limited no of studies are available at local levels to give information about the current status of MMR at district level. Pakistan has wide divergence among population, access to health care , level of education and many socio-economic levels among different regions of Pakistan. Pakistan is divided into four provinces, Panjab, NWFP, Sindh and Balochistan. The province of Balochistan is the biggest province of Pakistan but it is the most remote province of the country. 4% of the total population of the country inhabits in this province but constitutes the highest MMR among all four provinces. In general, Balochistan exhibits highest average MMR and Punjab stands at the lowest. The most important cause of the divergence is differences in access to emergency obstetric and neonatal care services (Midhet, F., S. Becker, and H.W. Berendes. 1998). In the PDHS,2006-07 the provincial specific MMR was also calculated which also indicated highest MMR in Balochistan of 785/100.000 (NIPS,2008). The MMR in Pakistan is 300-700/100,000 live births. Being highest in the districts of Province Balochistan i.e. District Khuzdar with a ratio of 690 and Loralai with a ratio of 610 per 100,000 live birth (UNFPA, 2003). This much high MMR in a province is an alarming sign for the Government and asks for special attention in the field of Maternal health from the Government .

To recommend governmental and different National and international non-governmental organization for implementation of interventions in the province of

such high MMR, there is a need of more elaborative or differential MMR for different areas within this big province. The use of this area specific MMR is to focus and allocate the resources more on the areas which come up with the higher MMR within the province. The upcoming MMR for different areas within Province of Balochistan should be same reliable as the national MMR. This area specific MMR must be able of use for regular monitoring and evaluation to check for any improvement in Maternal Health status.

Considering all this situation where there is an intense need of some good estimates of MMR in the province of Balochistan. we aimed to calculate MMR for different areas within Balochistan using data from Pakistan DHS 2006-2007 survey. Since in their final report they did not calculate the area specific MMR within Provinces, we will calculate it for the Province of Balochistan. We will also measure the association between MMR and different demographical characteristics of the districts.

Results of the Analysis will be shared with the policy makers and the health professionals to identify the areas with higher MMR. Governmental and non Governmental implementing authorities will be requested to initiate some special initiatives for reproductive and sexual health of women in reproductive age. Furthermore, recommendation will be made to do these type of surveys at regular intervals so that the current situation of Maternal health status can be evaluated.

1.2 Objectives of the Study

General Objective:

To identify and analyze different Reproductive Health indicators for different areas within Province of Balochistan depending on the place of residence i.e. Capital city, Small city , Town and Countryside.

Specific Objective:

1. District specific Proportion of Maternal deaths to total no deaths of women in reproductive age PMDF will be calculated for the different Districts in Balochistan.
2. District Specific MMR of different districts within the province of Balochistan will be calculated for three years (2006-2007)
3. Determine the strength of association between the Demographic characteristics i.e. Rural/Urban, Poverty, Literacy and the MMR in Districts.

1.3 Institutional Frame Work :

“The Ministry of Population Welfare executed the 2006-07 PDHS project, whereas the National Institute of Population Studies (NIPS) undertook the responsibility of implementing the project. A Steering Committee, chaired by the Secretary of the Ministry of Population Welfare and co-chaired by the Secretary of the Ministry of Health, included members from federal social sector ministries and provincial health and population departments. The Steering Committee provided guidance, administrative support, and facilitation during the survey process. A Technical Advisory Committee consisting of population professionals, experts, and researchers from relevant fields was formed to provide guidance and support at various stages of the survey. NIPS was responsible for planning, organizing, and overseeing the survey operations, including hosting meetings to discuss the survey with representatives from major users, technical institutions, and international bodies; recruiting, training, and supervising fieldworkers and data processing staff; and analyzing and writing this report. The Federal Bureau of Statistics (FBS) provided the sample design and household listings for the sampled areas across Pakistan.

Macro International Inc. provided technical assistance to NIPS for the design and implementation of the PDHS project. Funds for the project were provided by the United States Agency for International Development (USAID), while the United Nations Population Fund (UNFPA) and the United Nations Children’s Fund (UNICEF) provided logistic support for monitoring the survey operations”(PDHS, 2006-07) .

Methodology

2.1 Sample Design ;

The Pakistan Demographic Health survey (PDHS) 2006-2007 was the largest ever household survey conducted in Pakistan. The sample was designed to provide reliable estimates of different health and demographic indicators of people of Pakistan. It was specially designed to collect information regarding basic health indicator of Mothers and Newborns. To provide the National level estimates the sample size was calculated keeping in view the older available estimates. The overall sample size of 100,000 households was calculated to provide some reliable national level estimates of MMR. The sample was not spread geographically in proportion to the population; rather, urban areas as well as the smaller provinces (e.g., NWFP and Balochistan) were over-sampled. As a result, these unbalanced sample proportions, the sample taken by PDHS is not self-weighting at the national level.

In Balochistan, the Capital city of Quetta was taken as one cluster. After excluding the population of large-sized cities from the population of respective former administrative divisions, the remaining urban population within each of the former administrative divisions was grouped together to form a stratum. In Rural areas, each former administrative division was treated as a stratum. The survey had stratified, random sample design divided in two stages. The first stage involved selecting 100 Sample points (clusters) in Balochistan.

The FBS upgraded the listing of house holds in all clusters. This listing of households couldn't be completed in four areas of Balochistan due to unrest in those areas. The second stage sampling involved selection of 105 house holds in each cluster applying the simple random sample technique. This way a total of

105,00 house holds were selected in whole province. 10 out of 105 house holds were selected in each stratum to conduct long household interview and Women's Questionnaire.

2.2 Questionnaire;

Basically the PDHS used six type of Questionnaires to collect information regarding Demographic characteristics and health of the people. The questionnaire regarding our study are of three types ;

- Community Questionnaire
- Short Households Questionnaire
- Long Households Questionnaire

The Household and Women's Questionnaire was based on model Questionnaires developed by Measure DHS program. The Community Questionnaire was based on the pattern used by NIPS in their previous survey. NIPS developed the draft questionnaire after broad spectrum consultations with experts in the field of Health, technical experts, governmental agencies ,Family [planning](#), and HIV/AIDS. There were many round of meetings organized to receive feed back to finalize the questionnaire. Since Balochistan is the land of many languages, questionnaires were translated into Balochi,Pashto_

NIPS developed the draft questionnaires in consultation with a broad spectrum of technical experts, government agencies, and local and international organizations so as to reflect relevant issues of population, family planning, HIV/AIDS, and other health areas. A number of meetings were organized by NIPS to receive the inputs which were used to finalize survey questionnaires. These questionnaires were then translated into local language. The pretest was done in Peshawar to finalize the

questionnaire on the basis of feed back from the pretest.

2.3 Data Collection;

Community questionnaire was filled out for each stratum collecting information on various kind of availability of health and family planning services, education, transportation and communication facilities. The Short Household Questionnaires were administered in 105,000 house holds to collect information about the total number of household members and visitors. The Long Questionnaires were administered in 10,500 house holds and collected information about age, sex, marital status, education and relationship to the head of the household of each person listed. The long questionnaire also collected information about no. of births and death occurred in household since 2003 and any death to a women in reproductive age 12-49 since january,2003.

Staff training ,field work Data imputation..

The staff included was interviewers, quality control personnel, field coordinates and data entry staff. Whole staff undergone training during which they were demonstrated about different aspect of surveys trained for the practical aspects of the survey .All team also undergone a short field practice as well. The field work began in early september,06 and finished in February ,07.The data entry of survey started shortly after the survey started. The questionnaires were entered as soon as they get completed . The record for expected number of completed questionnaire from a cluster was kept cautiously.

2.4 Data Acquisition;

The data sets regarding any PDHS are available on the website of MDHS and can be obtained by posting the proposal with profile to the data distributing head office. The data of PDHS 2006-2007 was obtained by making request to PDHS . Data was available in all statistical software data files which could be easily used by any user. Contacts with different official authorities was made in MDHS head office in order to make better understanding of different variables in the data set. The contact with the authorities in NIPS and FBS was made to get the demographic details of the districts of Balochistan.

2.5 Data Analysis;

Data was imported and analyzed in STATA.10 and Microsoft Excel 2007. The p-value is set to be 0.05 and Confidence interval is decided to be 95%. The data is analyzed for district specific health indicators. The total number of Live birth were recorded in all the household in each district. The total number of women death in reproductive age 12-49 is calculated in each district. Each women death is than tagged as Maternal or Non-Maternal death regarding information provided by the household members. The sum of Women's death during pregnancy, within child birth and during 6weeks postpartum is considered as Maternal death . The PMDF is calculated as proportion of Maternal deaths to Total female deaths. MMR for the period of three years between 2003-2006 is calculated by applying formula of MMR.

The relationship between MMR and different demographic characteristics is ruled out. The characteristic of areas within each district as rural or urban. The percentage population within each district below poverty line . The level of literacy within district population. The liner regression is applied to measure the association

and graphs are plotted to show the results.

In a nutshell I calculated MMR in each district of Balochistan and in each geographical area of Balochistan. Regression analysis was also done between the different demographic characteristics i.e. Rural/Urban, Literacy and Poverty and MMR.

2.6 Ethical Issues;

Since the data is a secondary data. The data issued as further modified calculation of the same indicators that have already been calculated by the PDHS, this study doesn't need any further ethical permission.

2.7 Definitions;

Maternal Death ; is defined as death to a women in reproductive age during pregnancy, during delivery or within 6weeks postpartum.

PMDF; is defined proportion of Maternal deaths to the total number of women deaths in reproductive age due to any cause.

Maternal Mortality Ratio ; Number of Maternal death per 100,00 live births.

$$\text{MMR} = \frac{\text{No. of Maternal Deaths}}{\text{No. of Live births}} * 100,000$$

3. Results;

Out of 10,500 households , 9,749 households responded computing the response rate of 93% . One of the major reasons of decrease in number of households accessed was the failure in finding the house at its address. Another major reason of non-response was difficulty in finding the dwellers at home despite of many visits. Of the occupied houses 98% were successfully interviewed. There was also some problem in the areas of conflict to get surveyed. The areas of Kohlu and DeraBugti were not interviewed considering instability in those areas. Out of 27 districts of Balochistan 24 districts could be interviewed successfully.

Maternal Death is defined as the death of women that occurred to a women while she is pregnant ,or death during delivery of death occurred within 42 days after termination of pregnancy, irrespective of the site and duration of pregnancy. The cause of the death should be related to pregnancy or aggravated by the pregnancy or its management. It doesn't include the death during pregnancy due to incident or accident. In our data the maternal death was also classified according to the same definition of Maternal death by WHO.

3.1 : Provincial Maternal Mortality Rate:

Total 9749 households were successfully interviewed in the whole province of Balochistan. Total of 159 female deaths reported through household questionnaire since 2003. 60 female deaths were identified as Maternal deaths. There were 25 ladies pregnant when died. A total of 12 ladies died during childbirth. 23 women encountered death within 4 weeks after delivery and were classified as the maternal death during post partum period. There were total 9902 births reported out of which 9712 were alive births since 2003. The proportion of maternal deaths to the total female death was calculated as 38 %. The Maternal Mortality Ratio (MMR) was calculated as 618/100,000 live births for the province

of Balochistan during years of 2003-2006.

The PMFD and MMR has great variation from city to city and even from area to area within a city. The province Balochistan has also great variation between different regions. Table 3.1 shows the subdivision of Province as Capital cities, Small cities and Rural areas. Since availability of the health services vary widely between the urban and rural areas, it attributes to the difference of MMR between rural and urban areas. 82 % of maternal deaths are observed in the rural areas of Balochistan. The PMDF shows obvious increase from large city to rural areas. In capital cities only 19% of the total female deaths are due to maternal reason where as it is 39% in the rural areas of Balochistan which can be easily attributable to the large gaps between the socioeconomic status and accessibility to health facilities between rural and urban Balochistan.

Table 3.1 ; MMR in the Rural/Urban areas of Balochistan

Place of residence	Total	Total births	Total F.Death	Mdeath	Pregnancy	Delivery	Post Partum	PMFD	No.ofLive births	MMR
Capital cities	1005	675	16	3	1	2	0	0.19	653	459
Small cities	1680	1677	18	8	4	2	2	0.44	1641	488
Rural	7064	7550	125	49	20	8	21	0.39	7418	661
Total	9749	9902	159	60	25	12	23	0.38	9712	618*

*618/100,000 live births is the MMR for the Balochistan

3.2 : District specific MMR;

Since the data is secondary in nature, when the data was received it was already aggregated. While reviewing the data it was noticed that the districts of Awaran, Chaghi and Jhalmagsi had extensively small sample size to calculate MMR. Another two districts were also to be dropped out of district specific MMR calculation because there was no female death reported at all. This is taken as misreporting of the population or the MMR is so low in those areas that sample size was not enough to collect some reliable information. It is not possible that there are no female deaths occurring in those remote areas of Balochistan.

Table 3.2 shows the MMR for the following districts; Barkhan, Bolan, Gawadar, Jaffarabad, Kalat, Kech, Kharan, Khuzdar, Killa Saifullah, Loralai, Mastung, Mosakhel, Naserabad, Panjgur, Pashin, Quetta, Sibi, Zhob and Ziarat. District Kalat has come up with the highest MMR of 990/100,000 live births. Khuzdar is followed by Khuzdar and Panjgur with the MMR of 952/100,000 and 931/100,000 live births respectively. The districts of Mosakhel and Pishin showed up with the MMR of 778/100,000 live births and 763/100,000 live births respectively. Districts of Sibi, Kech/Turbat and Gawadar has been observed to have MMR of 658/100,000live births, 652/100,000 live births and 631/100,000live births. Loralai has a MMR of 514/100,000 live births. District Bolan has 489/100,000 live births, Mastung has 448/100,000 live births, KillaSaifullah has 431/100,000 live births, Jaffarabad has 417/100,000 live births and Kharan has MMR of 400/100,000 live births. The districts of Brkhan, Zhob and Quetta has MMR of 368/100,000 live births, 320/100,000 live births and 308/100,000 live births respectively. District Ziarat with a MMR of 299/100,000 live births and District Naserabad with a MMR of 260/100,000 live births came up with the lowest MMR in Balochistan.

The highest number of Female deaths, 23 were reported in the District of

Quetta followed by Pishin, 12 and Bolan and Kalat , 11 each. Although District of Quetta reported the highest number of Maternal death but PMFD is lowest, 13% in Quetta as compared to Mastung, Gawadar and Panjgur where 100% of female deaths were attributed to Maternal causes between 2003-2006. The lowest PMFD in Quetta can be attributable to it's being capital of Balochistan ,where we can expect that presence of maximum number of facilities for the health of Mothers. The PMFD was also very low 18% in Bolan as compared to the PMFD in Pashin 67%.

Table 3.2 ; District specific MMR

	District Name	No of HH	Tott. F.death ¹	Mdeath ²	PMDF ³	Live_Birth ⁴	MMR ⁵	SE ⁶	CI of MMR ⁷
1	Barkhan	210	8	1	0.13	272	367.65	366.971	1 - 1086.91
2	Bolan/kachi	507	11	2	0.18	409	489.00	344.927	2 - 1165.05
3	Gawadar	510	2	2	1.00	317	630.91	444.715	2 - 1502.56
4	Jaffarabad	392	6	2	0.33	480	416.67	294.013	2 - 992.93
5	Kalat	516	11	4	0.36	404	990.10	492.593	24.62 - 1955.58
6	Kech/turbat	604	9	3	0.33	460	652.17	375.303	3 - 1387.77
7	Kharan	308	3	1	0.33	250	400.00	399.199	1 - 1182.43
8	Khuzdar	410	4	3	0.75	315	952.38	547.233	3 - 2024.96
9	Killa saifullah	210	1	1	1.00	232	431.03	430.105	1 - 1274.04
10	Loralai	406	6	2	0.33	389	514.14	362.615	2 - 1224.86
11	Mastung	306	1	1	1.00	223	448.43	447.424	1 - 1325.38
12	Mosakhel	194	5	2	0.40	257	778.21	548.132	2 - 1852.55
13	Naserabad	296	5	1	0.20	384	260.42	260.077	1 - 770.17
14	Panjgur	282	2	2	1.00	219	913.24	642.804	2 - 2173.14
15	Pashin	608	12	8	0.67	1048	763.36	268.856	236.40- 1290.32
16	Quetta	1311	23	3	0.13	973	308.32	177.737	3 - 656.69
17	Sibi	407	6	2	0.33	304	657.89	463.669	2 - 1566.69
18	Zhob	519	8	3	0.38	937	320.17	184.555	3 - 681.90
19	Ziarat	310	3	1	0.33	334	299.40	298.953	1 - 885.35
Tottal		8306	126	44	0.35	8207	536.13	80.607	378.137- 694.118

1 = Total number of female deaths reported during 2003-2006

2 = The number of deaths reported due to maternity reasons during 2003-3006

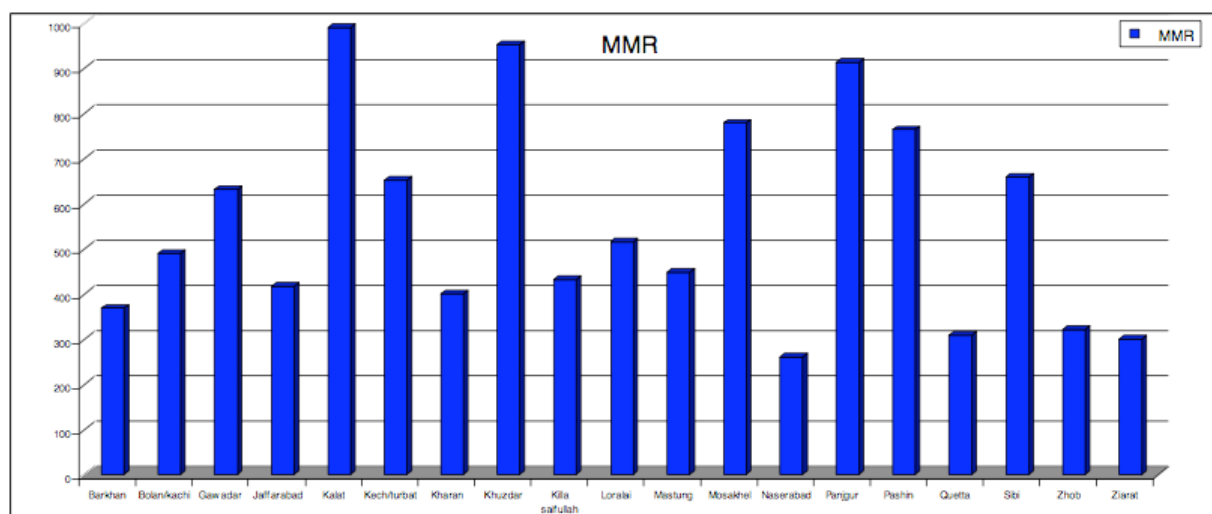
3 = Proportion of maternal death to total female deaths reported

4 = number of live births reported during 2003-2006

5 = Maternal mortality ratio = the number of maternal deaths / the number of live births * 100,000

6 = Standard Error calculated for MMR 0303003

Figure 3.1; District Specific MMR.



3.3: MMR Attributable to Demographic Characteristics ;

District of Balochistan has always been shown up as having very high MMR. There are wide gaps between the MMR of different regions within the province. There can be many explanations to these differences which need to be studied and evaluated. The long household questionnaire collected information on the demographic characteristics of the residents of the different districts so that we can find out reason of these differences in MMR between the districts. To check the associations between the demographic characteristics and MMR we have set the p-value=0.05.

Table 3.3 shows the Rural and Urban characteristics of the districts. The description of the Rural and Urban areas are provided by Federal Bureau of statistics. Some districts are 100 % Rural like Barkhan and Mosakhel whereas Killasaifullah has 50% of the both characteristics. Quetta is keeping the highest proportion of Urban area 77% in Balochistan as it is the capital of Balochistan. After Quetta only Killa Saifullah is showing 50% of its population in Urban areas whereas all other districts are dominated by Rural areas. Altogether 68.42% of the population of Balochistan lives in Rural areas.

Table 3.3 ; District specific Rural/Urban characteristics

	District Name	No of HH	Urban %	Rural%	MMR
1	Barkhan	210	0	100	367.65
2	Bolan/kachi	507	37.87	62.13	489.00
3	Gawadar	510	39.61	60.39	630.91
4	Jaffarabad	392	23.21	76.79	416.67
5	Kalat	516	18.6	81.4	990.10
6	Kech/turbat	604	34.27	65.73	652.17
7	Kharan	308	33.12	66.88	400.00
8	Khuzdar	410	25.37	74.63	952.38
9	Killa saifullah	210	50	50	431.03
10	Loralai	406	25.37	74.63	514.14
11	Mastung	306	31.37	68.63	448.43
12	Mosakhel	194	0	100	778.21
13	Naserabad	296	34.8	65.2	260.42
14	Panjgur	282	35.46	64.54	913.24
15	Pashin	608	31.25	68.75	763.36
16	Quetta	1311	76.66	23.34	308.32
17	Sibi	407	48.89	51.11	657.89
18	Zhob	519	20.23	79.77	320.17
19	Ziarat	310	33.87	66.13	299.40
Total		8306	31.58	68.42	536.13

Table 3.4 shows the regression analysis between the proportion of the rural population in districts and the MMR of the districts. The results are statistically significant with a p-value of 0.0429 which means there is a statistically significant association between the regions being rural and MMR. On the other hand if we look at the $R^2 = 0.054$ which is statistically insignificant due to scattered observation. Figure 3.1 shows the graphic representation of regression analysis.

Table 3.4 ; Table showing results of Regression Analysis of Rural/Urban Characteristics of districts

	Coefficient	Standard deviation	Standard coefficient	t- ratio	P-Value
Constant	-305.6443	605.5827	0.0000	-0.5047	0.3094
Rural%	14.8445	8.2536	0.3580	1.7988	0.0429

Figure 3.2 ; Regression model of Rural/Urban characteristic ad MMR

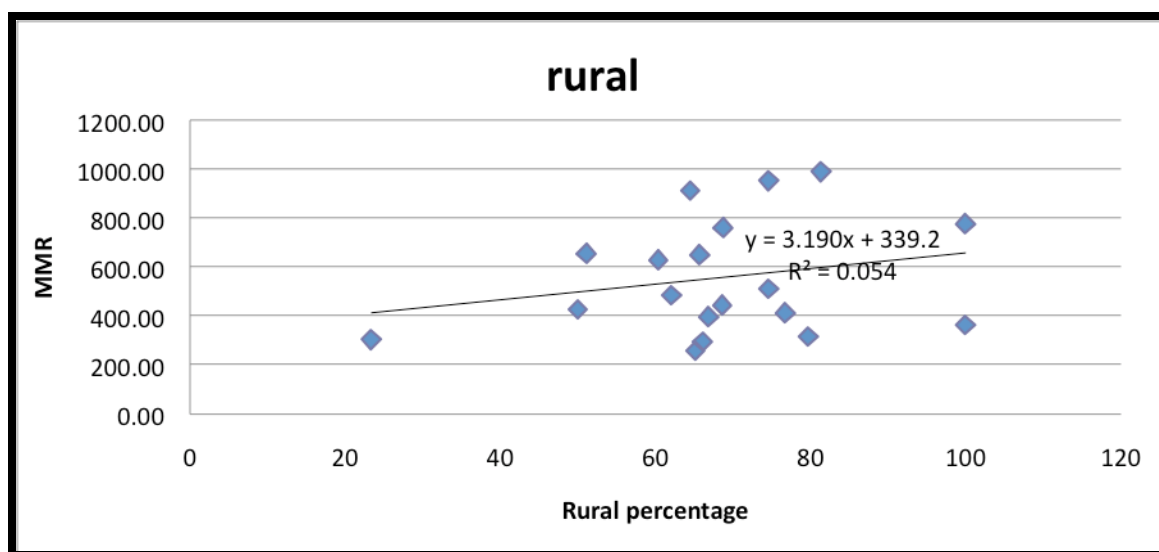


Table 3.5 shows the Poverty level in different districts of Balochistan. The districts of Barkhan and Mosakhel has come up with the 100% of population living under poverty line. In Khuzdar and Jaffarabad more than 80% of the population lives below the poverty line. District of Kalat is not so different from Khuzdar and Jaffarabad with a poverty of 79%. Almost all the district have 50% or more than 50% of population living below poverty line. Only Quetta is the district which has 16% of population ranked as poor. On the whole 63.59% of the Balochistan lives below poverty line.

Table 3.5 ; Poverty characteristic of each District in Balochistan

	District Name	No of HH	Poverty	MMR*
1	Barkhan	210	100.00%	367.65
2	Bolan/kachi	507	68.42%	489.00
3	Gawadar	510	50.00%	630.91
4	Jaffarabad	392	80.49%	416.67
5	Kalat	516	79.17%	990.10
6	Kech/turbat	604	56.76%	652.17
7	Kharan	308	58.33%	400.00
8	Khuzdar	410	80.43%	952.38
9	Killa saifullah	210	48.48%	431.03
10	Loralai	406	46.77%	514.14
11	Mastung	306	62.22%	448.43
12	Mosakhel	194	100.00%	778.21
13	Naserabad	296	60.78%	260.42
14	Panjgur	282	73.33%	913.24
15	Pashin	608	48.25%	763.36
16	Quetta	1311	15.71%	308.32
17	Sibi	407	73.33%	657.89
18	Zhob	519	54.65%	320.17
19	Ziarat	310	51.02%	299.40
Total		8306	63.59%	536.13

Table 3.6 shows the results of tests of statistical significance between percentage population of the districts classified as poor and the MMR. The regression analysis shows the strength of association between Poverty and MMR in districts. The p-value is calculated as 0.0467 which seems to be statistically significant. it means the MMR increases as the poverty increases. In the same test the value of R^2 stands 0.156 which makes the test statically insignificant. Figure 3.2 also shows the regression model between Poverty and MMR in graphical way.

Table 3.6 ; Results of Regression analysis of Poverty and MMR

	Coefficient	Standard deviation	Standard Co-efficient	t-ratio	P-Value
Constant	265.3327	171.9897	0.0000	1.5427	0.0707
Poverty	459.5580	258.5959	0.3958	1.7771	0.0467

Figure 3.3 ; Regression model of Poverty and MMR

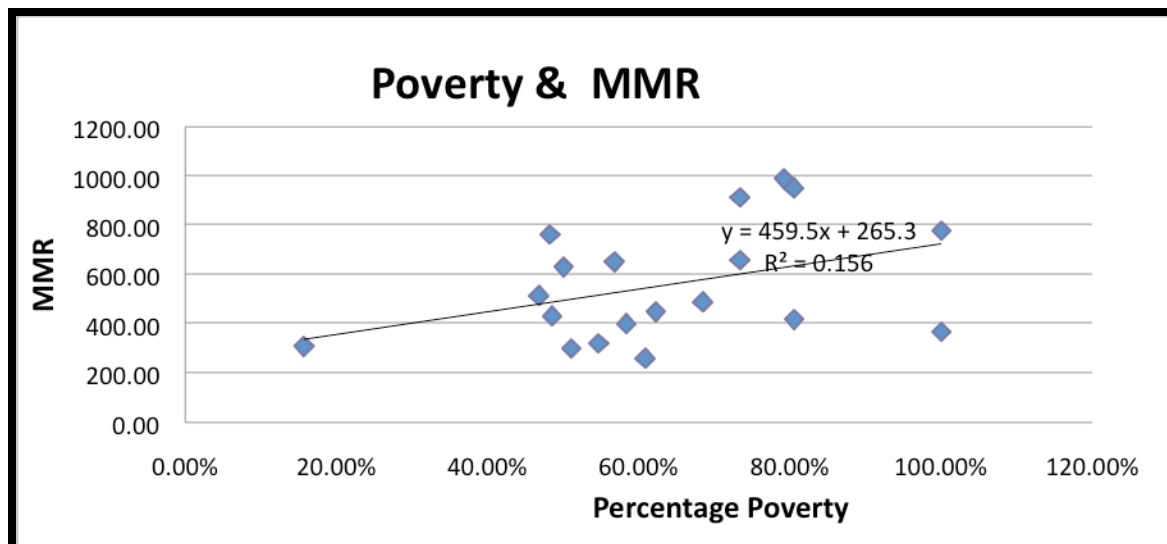


Table 3.7 shows another important characteristic of the population on which the health indicators of the community depend. The literacy level of the population of the districts are explained in percentages. Since it is very obvious that the cities have higher proportion of educated people as compared to the rural areas. Quetta has shown to have the lowest percentage of population 42.13% being uneducated. Quetta has also shown to have highest proportion of the people 14% being highly educated. Zhob is following Quetta with a 47.67% of population being illiterate. Mosakhel has displayed the worst scenario in the case of being uneducated population which is 95%. Mosakhel is followed by Barkhan with 82% illiteracy. Altogether seven districts have more than 75% of the population uneducated whereas ten of the districts have more than 50% of the population uneducated. Altogether we can say that 61.65% of the population living in Balochistan is uneducated whereas only 5.7% has undergone to higher education.

Table 3.7 ; Literacy level of each district in Balochistan

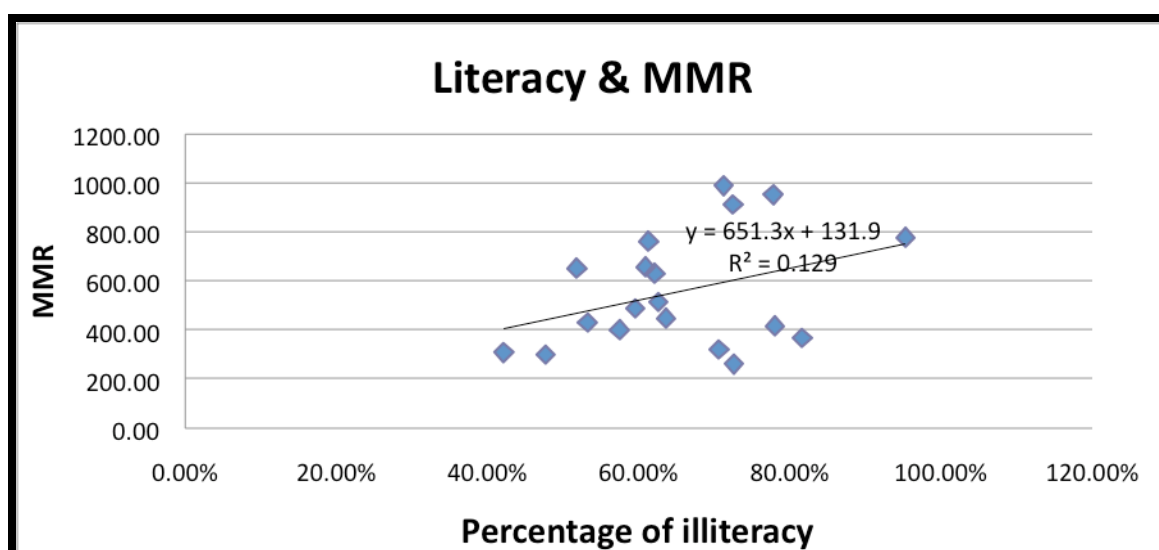
	District Name	No of HH	Un-Educated	Middle Education	HigherEducation	MMR [*]
1	Barkhan	210	81.58%	16.87%	1.56%	367.65
2	Bolan/kachi	507	59.56%	35.31%	5.31%	489.00
3	Gawadar	510	62.14%	34.22%	3.64%	630.91
4	Jaffarabad	392	77.99%	19.46%	2.55%	416.67
5	Kalat	516	71.24%	24.85%	3.92%	990.10
6	Kech/turbat	604	51.80%	41.68%	6.52%	652.17
7	Kharan	308	57.43%	34.88%	7.70%	400.00
8	Khuzdar	410	77.74%	20.29%	1.97%	952.38
9	Killa saifullah	210	53.19%	38.41%	8.40%	431.03
10	Loralai	406	62.59%	32.27%	5.14%	514.14
11	Mastung	306	63.61%	30.56%	5.83%	448.43
12	Mosakhel	194	95.25%	4.70%	0.05%	778.21
13	Naserabad	296	72.54%	25.06%	2.40%	260.42
14	Panjgur	282	72.45%	24.33%	3.22%	913.24
15	Pashin	608	61.26%	35.53%	3.21%	763.36
16	Quetta	1311	42.13%	43.88%	13.98%	308.32
17	Sibi	407	60.90%	34.23%	4.86%	657.89
18	Zhob	519	70.60%	25.75%	3.65%	320.17
19	Ziarat	310	47.67%	45.97%	6.36%	299.40
Tottal		8306	61.65%	32.63%	5.70%	536.13

Table 3.8 has shown the results of test of statistical association between the Illiteracy level of the districts and the MMR. According to the results the p-value stands at 0.0651 which is interpreted as there is no association between the education of population and MMR. There is no evidence that there is positive or negative trend in the levels of MMR if the education level of the population increase or decrease. It can be assumed as every one knows the importance of Maternal health care seeking but there is problem of accessibility or availability. R^2 has come up with a value of 0.129 which is making the test statically insignificant. The values are so scattered around the mean that it is difficult to declare the association significant. Figure 3.3 shows the graphic presentation of the Association.

Table 3.8 ; Results of Regression Analysis of Literacy Level and MMR

	Coefficient	Standard Deviation	Standard Coefficient	T - ratio	P- Value
Constant	131.9001	272.5187	0.0000	0.4840	0.3173
illiteracy	651.3266	49.5709	0.3599	1.5903	0.0651

Figure 3.4 ; Regression model of Literacy and MMR



4. Discussion

4.1 Discussion on main results;

We have noticed very high MMR over many districts . like Kalat, Khuzdar and Panjgur. Since all these three districts are Baloch districts and have shown remarkably high MMR, we need to understand the reason of this wide gap. Pashtoon districts have lower MMR as compared to Baloch districts. This difference can be attributed to different practices observed in different communities during Maternity. There can be great difference between communities' behaviour towards health seeking during Maternity. This difference Can be attributed to different behaviour of the household members such as Husband and Mother in Law towards health care seeking. In many communities the health seeking decisions are not taken by the female her self . they are dependent on their Husbands or mother in laws to make these decisions. Another important factor that can be the reason of this difference is the different level of health education. This can't be attributed to over all literacy rate as the Baloch districts like Zhob and Barkhan are Baloch districts and have higher Literacy rates as compared to Pashtoon districts but have shown up with very high MMR.

In all previous studies of MMR and Demographic characteristics association the major factors studied are Literacy levels, Poverty and Rural/Urban discrimination has proved associations. In our study we also collected information on all these three characteristics but none of the three has proved to have very strong association with the MMR. We strongly need to look for other factors that can give us some better understanding of these wide difference of MMR between the districts.

4.2 Public Health Implication;

Since our main purpose of this study was to calculate district specific MMR within the province of Balochistan which has been showing very high MMR in

Pakistan. Since there is no study available which could give us details of MMR in all the districts of Balochistan. Our main purpose of this study is to have some basic idea of the current situation in all districts using the existing data available. This pilot study can be used by the health care professionals to get an idea of the on ground situation in the regions and the differences. Although it is not providing the exact MMR in the districts but still it can be used by Public Health professional to look for the Health system weaknesses in the regions as a cause of the differences in MMR. Between regions. This study can be used as baseline to have some basic Public health interventions. All the major causes of maternal deaths are either preventable or treatable so the basic health system needed to be enhanced to improve the health of our mothers.

The study can be used as follow up for the programs that are implemented to improve Maternal health in the regions. We can use this study as a pilot study to have more elaborative and definite MMR in the regions.

4.3 Limitation of the study;

Despite having an exceptionally well-qualified and efficient technical team, extensively trained and closely supervised field interviewers and use of state-of-the-art technology for data editing, entry and analysis, this study has some constraints and limitations.

Since the data was secondary in nature so there was no prior sample size calculation. Since it is very expensive to conduct surveys so this data was selected to do some pilot study. The data has very small sample size which has made confidence interval very wide. The study gives just an overview of the situation on ground.

Recall for past three-year of births and deaths was used. The major problem is that the recall of deaths and births declined considerably for the second and third year before survey. Due to this recall bias there might be misreporting of dates or

composition of households. This issue was tried to be controlled by asking questions many people in household regarding cause of death of deceased women. Verbal autopsy could control this bias at much extend.

Due to cultural and religious sensitivities, direct questions regarding induced abortion were not asked as a cause of death. Another question needed to be asked with caution was investigating about the death of unmarried women with a suspicion of pregnancy related cause. The reported proportion of abortion related Maternal deaths was 6 percent which is relatively low. There were some young unmarried women's deaths were described as unclear cause of death. It might be a case that those were unreported abortion-related deaths.

It is possible that the above factors have resulted in an underestimate or overestimating of maternal mortality over the preceding three years. Notwithstanding the constraints and weaknesses discussed above, the data is valid and rich. It provides highly relevant basis for evidence-based policymaking.

3.6 Recommendations;

- We strongly recommend the public health professionals on ground to use this study when there is no other study available which can give the value of MMR at district level even. Make good policies and look at the functionality of health facilities in the regions with high MMR .
- All the programs that are implemented to improve health of mothers must be followed up so that we can improve the health situation.
- We strongly need some very good studies with big sample size to know the real MMR in each district.
- Since we studied four characteristics of each district to learn association between MMR and the characteristics of the districts but no association was found. We need some qualitative study to rule out the actual reason of this

high MMR in Balochistan.

- In past many studies in different countries showed that different cultural practices influences the MMR. There is need of some good anthropological study to rule out the reason of differences in MMR between Pashtoon and Baloch districts.

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NATIONAL INSTITUTE OF POPULATION STUDIES
PAKISTAN DEMOGRAPHIC AND HEALTH SURVEY 2006

COMMUNITY QUESTIONNAIRE
(FOR RURAL SAMPLE POINTS ONLY)

(IF MORE THAN ONE VILLAGE IN THE SAMPLE POINT, GET INFORMATION FROM THE LARGEST)

IDENTIFICATION		
PROVINCE (PUNJAB=1; SINDH=2; NWFP=3; BALUCHISTAN=4; FATA=5) _____ DISTRICT _____ TEHSIL _____ CLUSTER NUMBER		
INFORMATION ABOUT THE PARTICIPANTS	DATE / RESULT	
PEOPLE WHO PARTICIPATED TO PROVIDE INFORMATION (WRITE NAME AND POSITION, E.G., VILLAGE LEADER, NAZIM, COUNCILLOR, RELIGIOUS LEADER, CHOWKIDAR, LOCAL FEMALE OR MALE TEACHER, LHV OR LHW) 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ 8 _____	DAY MONTH YEAR 2 0 0 INT. NUMBER RESULT *	
*RESULT CODES: 1 COMPLETED 2 UNABLE TO FIND SUITABLE RESPONDENTS 9 OTHER _____ (SPECIFY)		
LANGUAGE OF QUESTIONNAIRE: ENGLISH		
INTERVIEWER/SUPERVISOR NAME _____ DATE _____	OFFICE EDITOR 	KEYED BY

1. GENERAL DESCRIPTION

NO.	QUESTIONS	CODING CATEGORIES	SKIP
101	How far is the district headquarters from this village? ASK FROM THE CENTER OF THE LARGEST VILLAGE	KILOMETERS 95 KMS. OR MORE 95	
102	Is the road to the district headquarters <u>mainly</u> a katcha road or a pukka road?	MAINLY KATCHA 1 MAINLY PUKKA 2	
103	How far is it from this village to the road that goes to the district headquarters? ASK FROM THE CENTER OF THE LARGEST VILLAGE	LESS THAN 1 KM. 00 KILOMETERS 95 KMS. OR MORE 95	
104	How do most people get from here to the road?	WALK 01 RICKSHAW 02 BICYCLE 03 MOTORBIKE 04 PRIVATE CAR / TAXI / SUZUKI VAN TRACTOR TROLLEY 05 TONGA/CATTLE CART 06 BUS / TRUCK 07 OTHER 96 (SPECIFY)	
105	If a woman in this village has a serious problem with her pregnancy, where would she go for treatment? _____ (NAME OF PLACE)	DHQ HOSPITAL 01 THQ HOSPITAL 02 MCH CENTRE 03 RHC 04 BHU 05 PRIVATE CLINIC / HOSPITAL 06 DAI / BIRTH ATTENDANT 07 LADY HEALTH WORKER 08	
106	How would she reach (NAME OF PLACE IN 105)?	WALK 01 RICKSHAW 02 BICYCLE 03 MOTORBIKE 04 PRIVATE CAR / TAXI / SUZUKI VAN TRACTOR TROLLEY 05 TONGA/CATTLE CART 06 BUS / TRUCK 07 OTHER 96 (SPECIFY)	→ 108
107	Is transport available during the night time?	YES 1 NO 2 DOES NOT KNOW/NOT SURE 8	
108	How long would it take to reach the facility using this means? GIVE TIME IN MINUTES ONLY.	MINUTES DOES NOT KNOW 998	
109	Is there a Lady Health Worker in this village?	YES 1 NO 2 DOES NOT KNOW/NOT SURE 8	→ 201

NO.	QUESTIONS	CODING CATEGORIES	SKIP
110	What services does she provide? CIRCLE ALL MENTIONED.	ANTENATAL CARE A DELIVERY B CHILD IMMUNIZATIONS C CHILD CARE SERVICE D FAMILY PLANNING E GENERAL AILMENTS F OTHER X (SPECIFY)	
111	Does the LHW make house visits on a regular basis?	YES 1 NO 2 DOES NOT KNOW/NOT SURE 8	

2. AVAILABILITY OF FACILITIES AND SERVICES

Now I would like to ask you about facilities and other services that may be in this village or at some distance.

	Type of facility/service	201 Is the (FACILITY / SERVICE) in this village?	202 How far away is (FACILITY/ SERVICE) from this village? IF >95 KMS, WRITE 95.
a.	Medical store?	YES . 1 NO 2 →	KMS.
b.	General store or shop?	YES . 1 NO 2 →	KMS.
c.	Motorized public transport?	YES . 1 NO 2 →	KMS.
d.	Non-motorized public transport?	YES . 1 NO 2 →	KMS.
e.	Post office?	YES . 1 NO 2 →	KMS.
f.	Bank?	YES . 1 NO 2 →	KMS.
g.	Primary school for boys ?	YES . 1 NO 2 →	KMS.
h.	Primary school for girls ?	YES . 1 NO 2 →	KMS.
i.	Secondary school for boys ?	YES . 1 NO 2 →	KMS.
j.	Secondary school for girls ?	YES . 1 NO 2 →	KMS.
k.	Any ambulance service?	YES . 1 NO 2 →	KMS.
l.	Ultrasound services for pregnant women?	YES . 1 NO 2 →	KMS.
m.	A waste water drainage scheme?	YES . 1 NO 2	
n.	A drinking water scheme?	YES . 1 NO 2	
o.	Television service?	YES . 1 NO 2	
p.	Cable television connections	YES . 1 NO 2	
q.	Any land-line telephone service?	YES . 1 NO 2	
r.	Mobile telephone coverage?	YES . 1 NO 2	
s.	Any public call office (PCO)?	YES . 1 NO 2	

3. AVAILABILITY OF HEALTH FACILITIES

NO.	QUESTIONS	CODING CATEGORIES	SKIP
301	Please tell me how far away each of the following facilities are from here? ASK FROM THE CENTER OF THE (LARGEST) VILLAGE	IF LESS THAN 1 KM PUT 00 IF 95 KMS. OR MORE PUT 95	
	a. Da?	KILOMETERS	
	b. A functioning* basic health unit (BHU)?	KILOMETERS	
	c. A rural health center (RHC)?	KILOMETERS	
	d. A government dispensary.	KILOMETERS	
	e. A functioning* MCH Centre.	KILOMETERS	
	f. A private doctor.	KILOMETERS	
	g. A dispenser or a compounder.	KILOMETERS	
	h. A family welfare center (FWC) or somewhere else to get family planning.	KILOMETERS	
	i. A hakeem or homeopath.	KILOMETERS	
	j. A hospital.	KILOMETERS	
302	Think back over the last 3 years, has any woman in this village died because of a problem of pregnancy or died during childbirth or within 6 weeks of childbirth?	YES 1 NO 2 DOES NOT KNOW/NOT SURE 8	☐ GPS
303	Please tell me about the death(s). WHO IT WAS, WHEN IT OCCURRED.	WHO WAS IT - NAME / WIFE OF: _____ _____ WHEN DID IT OCCUR: _____ _____ END OF INTERVIEW - NOTE GPS READING	

* **Functioning** facility: Presence of LHV to provide required services on regular basis.

**NATIONAL INSTITUTE OF POPULATION STUDIES
PAKISTAN DEMOGRAPHIC AND HEALTH SURVEY 2006**

SHORT HOUSEHOLD QUESTIONNAIRE

IDENTIFICATION				
PROVINCE (PUNJAB=1; SINDH=2; NWFP=3; BALUCHISTAN=4; FATA=5) _____ DISTRICT _____ TEHSIL _____ CLUSTER NUMBER _____ HOUSEHOLD NUMBER _____ IS HOUSEHOLD SELECTED FOR: (SHORT=1; WOMAN=2; VERBAL AUTOPSY=3; WOMAN AND VERBAL AUTOPSY= 4) NAME OF HOUSEHOLD HEAD _____				
INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY _____ MONTH _____ YEAR 2 0 0
INTERVIEWER'S NAME	_____	_____	_____	INT. NUMBER _____ RESULT _____
NEXT VISIT: DATE TIME	_____ _____	_____ _____		TOTAL NUMBER OF VISITS
*RESULT CODES: 1 COMPLETED 2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME 3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME 4 POSTPONED 5 REFUSED 6 DWELLING VACANT OR ADDRESS NOT A DWELLING 7 DWELLING DESTROYED 8 DWELLING NOT FOUND 9 OTHER _____ (SPECIFY)				TOTAL PERSONS IN HOUSEHOLD
LANGUAGE OF QUESTIONNAIRE: URDU				FEMALE DEATHS AGE 12-49 FROM Q. 39
SUPERVISOR NAME _____ DATE _____		FIELD EDITOR NAME _____ DATE _____		OFFICE EDITOR
KEYED BY 		SIGNATURE OF INTERVIEWER: _____ DATE: _____		
RESPONDENT AGREES TO BE INTERVIEWED 1 RESPONDENT DOES NOT AGREE TO BE INTERVIEWED 2 → END				

HOUSEHOLD SCHEDULE

Now we would like some information about the people who usually live in your household or who are staying with you now.

LINE NO.	LOCAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	IF AGE 12 OR OLDER	IF AGE 5 YEARS OR OLDER	
				Does (NAME) usually live here?	Or (NAME) stay here last night?		MARITAL STATUS	Has (NAME) ever attended school?	What is the highest class of school (NAME) completed?
	Please give the names of the persons who usually live in your household and guest of the household who stayed here last night, starting with the head of the household. AFTER LISTING NAMES, RELATIONSHIP AND SEX FOR EACH PERSON, ASK Qs. 3A-3C TO BE SURE THAT THE LISTING IS COMPLETE. THEN ASK QUESTIONS IN COLUMNS 5-11 FOR EACH PERSON.	What is the relationship of (NAME) to the head of the household?	Is (NAME) male or female?	Does (NAME) usually live here?	Or (NAME) stay here last night?	How old is (NAME)?	What is (NAME)'s current marital status? (SEE CODES BELOW)	Has (NAME) ever attended school? (SEE CODES BELOW)	What is the highest class of school (NAME) completed? (SEE CODES BELOW)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			M F	YES NO	YES NO	IN YEARS	M W D S N	YES NO	CLASS
01			1 2	1 2	1 2		1 2 3 4	1 2 NEXT	
02			1 2	1 2	1 2		1 2 3 4	1 2 NEXT	
03			1 2	1 2	1 2		1 2 3 4	1 2 NEXT	
04			1 2	1 2	1 2		1 2 3 4	1 2 NEXT	
05			1 2	1 2	1 2		1 2 3 4	1 2 NEXT	
06			1 2	1 2	1 2		1 2 3 4	1 2 NEXT	
07			1 2	1 2	1 2		1 2 3 4	1 2 NEXT	
08			1 2	1 2	1 2		1 2 3 4	1 2 NEXT	
09			1 2	1 2	1 2		1 2 3 4	1 2 NEXT	
10			1 2	1 2	1 2		1 2 3 4	1 2 NEXT	

CODES FOR Q. 3

RELATIONSHIP TO HEAD OF HOUSEHOLD:

- 01 = HEAD
- 02 = WIFE OR HUSBAND
- 03 = SON OR DAUGHTER
- 04 = SON-IN-LAW OR DAUGHTER-IN-LAW
- 05 = GRANDCHILD
- 06 = PARENT
- 07 = PARENT-IN-LAW
- 08 = BROTHER OR SISTER

- 09 = BROTHER/SISTER IN LAW
- 10 = NECE/NEPHEW
- 11 = GRANDPARENTS
- 12 = AUNT/UNCLE
- 13 = OTHER RELATIVE
- 14 = ADOPTED/FOSTER/STEPCHILD
- 15 = NOT RELATED
- 16 = DOMESTIC SERVANT
- 98 = DON'T KNOW

CODES FOR Q. 8

- 1 = MARRIED
- 2 = DIVORCED
- 3 = DIVORCED/SEPARATED
- 4 = NEVER MARRIED

CODES FOR Q. 11

EDUCATION CLASS:

- 00 = LESS THAN 1 YEAR COMPLETED
- 01 = CLASS 1
- 02 = CLASS 2
- 10 = MATRIC. CLASS 10
- 11 = CLASS 11
- 16 = MASTER'S DEGREE OR M.B.A., PH.D., M.P.H., D.B.A. (4 YEARS)
- 98 = DON'T KNOW

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	IF AGE 12 OR OLDER		IF AGE 5 YEARS OR OLDER	
				DOES (NAME) usually live here?	DID (NAME) stay here last night?		MARITAL STATUS	EDUCATION	WHAT IS (NAME)'S CURRENT MARITAL STATUS?	WHAT IS THE HIGHEST CLASS OF SCHOOL (NAME) COMPLETED?
	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household. AFTER LISTING NAMES, RELATIONSHIP AND SEX FOR EACH PERSON, ASK Qs. 2A-2C TO BE SURE THAT THE LISTING IS COMPLETE. THEN ASK QUESTIONS IN COLUMNS 9-11 FOR EACH PERSON.	What is the relationship of (NAME) to the head of the household? (SEE CODES BELOW)	Is (NAME) male or female?	Does (NAME) usually live here?	DID (NAME) stay here last night?	How old is (NAME)? IF LESS THAN 1 YEAR, WRITE 00. IF AGE 85 YEARS OR MORE, WRITE 99.	MARITAL STATUS What is (NAME)'s current marital status? (SEE CODES BELOW)	Has (NAME) ever attended school?	What is the highest class of school (NAME) completed? (SEE CODES BELOW)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
			M F	YES NO	YES NO	IN YEARS	M W D I S N	YES NO	CLASS	
11			1 2	1 2	1 2		1 2 3 4	1 2 NEXT		
12			1 2	1 2	1 2		1 2 3 4	1 2 NEXT		
13			1 2	1 2	1 2		1 2 3 4	1 2 NEXT		
14			1 2	1 2	1 2		1 2 3 4	1 2 NEXT		
15			1 2	1 2	1 2		1 2 3 4	1 2 NEXT		
16			1 2	1 2	1 2		1 2 3 4	1 2 NEXT		
17			1 2	1 2	1 2		1 2 3 4	1 2 NEXT		
18			1 2	1 2	1 2		1 2 3 4	1 2 NEXT		
19			1 2	1 2	1 2		1 2 3 4	1 2 NEXT		
20			1 2	1 2	1 2		1 2 3 4	1 2 NEXT		

TICK HERE IF CONTINUATION SHEET USED ☐

Just to make sure that I have a complete household listing:

2A: Are there any other persons such as small children or infants that we have not listed? YES ☐ ADD TO TABLE NO ☐

2B: Are there any other people who may not be members of your family, such as domestic servants, lodgers or friends who usually live here? YES ☐ ADD TO TABLE NO ☐

2C: Are there any guests or temporary visitors staying here, or anyone else who slept here last night, who have not been listed? YES ☐ ADD TO TABLE NO ☐

IF NO MORE MEMBERS, GO TO COLUMN 5.

CODES FOR Q. 11

EDUCATION CLASS:

00 = LESS THAN 1 YEAR COMPLETED

01 = CLASS 1

02 = CLASS 2

...

10 = MATRIC. CLASS 10

11 = CLASS 11

...

16 = MASTER'S DEGREE OR HIGHER

PH.D. M.F.A., etc. 14 YEARS

99 = DON'T KNOW

INFORMATION ABOUT BIRTHS AND DEATHS IN THE HOUSEHOLD IN THE PREVIOUS 3 YEARS

18 Now I would like to ask you about all the births that occurred in this household in the last 3 years, whether they were born alive or dead. Since January 2003, did any woman who was a usual resident of this household at that time give birth? I am interested in any birth, even stillbirths and children who did not survive. YES . 1 NO . 2 → 27																		
19 How many births occurred in this household in the last 3 years? 																		
NO.	What are the names of the babies born in the last 3 years? IF STILL BORN, WRITE 'BABY'.	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? IF MONTH DON'T KNOW RECORD '98'	Was (NAME) born alive?	Is (NAME) still alive?	LINE NUMBER FROM HOUSEHOLD ROSTER (RECORD '00' IF CHILD NOT LISTED IN HH ROSTER)												
20	21	22	23	24	25	26												
01	_____	BOY . 1 GIRL . 2	MONTH <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table> YR <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>0</td><td>0</td></tr></table>			2	0			0	0	YES 1 NO 2 NEXT ↙	YES 1 NO 2 NEXT ↙	<table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td colspan="2">NEXT ↙</td></tr></table>			NEXT ↙	
2	0																	
0	0																	
NEXT ↙																		
02	_____	BOY . 1 GIRL . 2	MONTH <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table> YR <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>0</td><td>0</td></tr></table>			2	0			0	0	YES 1 NO 2 NEXT ↙	YES 1 NO 2 NEXT ↙	<table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td colspan="2">NEXT ↙</td></tr></table>			NEXT ↙	
2	0																	
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NEXT ↙																		
03	_____	BOY . 1 GIRL . 2	MONTH <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table> YR <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>0</td><td>0</td></tr></table>			2	0			0	0	YES 1 NO 2 NEXT ↙	YES 1 NO 2 NEXT ↙	<table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td colspan="2">NEXT ↙</td></tr></table>			NEXT ↙	
2	0																	
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04	_____	BOY . 1 GIRL . 2	MONTH <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table> YR <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>0</td><td>0</td></tr></table>			2	0			0	0	YES 1 NO 2 NEXT ↙	YES 1 NO 2 NEXT ↙	<table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td colspan="2">NEXT ↙</td></tr></table>			NEXT ↙	
2	0																	
0	0																	
NEXT ↙																		
05	_____	BOY . 1 GIRL . 2	MONTH <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table> YR <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>0</td><td>0</td></tr></table>			2	0			0	0	YES 1 NO 2 NEXT ↙	YES 1 NO 2 NEXT ↙	<table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td colspan="2">NEXT ↙</td></tr></table>			NEXT ↙	
2	0																	
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06	_____	BOY . 1 GIRL . 2	MONTH <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table> YR <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>0</td><td>0</td></tr></table>			2	0			0	0	YES 1 NO 2 NEXT ↙	YES 1 NO 2 NEXT ↙	<table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td colspan="2">NEXT ↙</td></tr></table>			NEXT ↙	
2	0																	
0	0																	
NEXT ↙																		
07	_____	BOY . 1 GIRL . 2	MONTH <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table> YR <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>0</td><td>0</td></tr></table>			2	0			0	0	YES 1 NO 2 NEXT ↙	YES 1 NO 2 NEXT ↙	<table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td colspan="2">NEXT ↙</td></tr></table>			NEXT ↙	
2	0																	
0	0																	
NEXT ↙																		
08	_____	BOY . 1 GIRL . 2	MONTH <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table> YR <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>0</td><td>0</td></tr></table>			2	0			0	0	YES 1 NO 2 NEXT ↙	YES 1 NO 2 NEXT ↙	<table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td colspan="2">NEXT ↙</td></tr></table>			NEXT ↙	
2	0																	
0	0																	
NEXT ↙																		

CONTINUED (Additional Sheet)

27 Now I would like to ask you about any deaths that occurred in this household <u>in the last 3 years</u> . Since January 2003, God forbid, has any usual member of this household died?						YES . 1		
						NO . 2	→ 38	
28 How many deaths occurred to usual residents in this household <u>in the last 3 years</u> ?								
NO.	What were the names of the people who died in the last 3 years?	Was (NAME) male or female?	In what month and year did (NAME) die? IF MONTH DON'T KNOW RECORD '98'	How old was (NAME) when he/she died? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN 2 YEARS; OR YEARS.	CHECK 31 AND 33: WAS THIS A WOMAN AGE 12-49 WHEN SHE DIED?	Female, 12-49 years old		
						Was (NAME) pregnant when she died?	Did (NAME) die during childbirth?	Did (NAME) die within 6 weeks after delivery?
29	30	31	32	33	34	35	36	37
01		MALE 1 FEMALE 2	MONTH YR	DAYS . 1 MONTH . 2 YEARS . 3	YES . 1 NO . 2 NEXT	YES . 1 NEXT NO . 2	YES . 1 NEXT NO . 2	YES . 1 NEXT NO . 2
02		MALE 1 FEMALE 2	MONTH YR	DAYS . 1 MONTH . 2 YEARS . 3	YES . 1 NO . 2 NEXT	YES . 1 NEXT NO . 2	YES . 1 NEXT NO . 2	YES . 1 NEXT NO . 2
03		MALE 1 FEMALE 2	MONTH YR	DAYS . 1 MONTH . 2 YEARS . 3	YES . 1 NO . 2 NEXT	YES . 1 NEXT NO . 2	YES . 1 NEXT NO . 2	YES . 1 NEXT NO . 2
04		MALE 1 FEMALE 2	MONTH YR	DAYS . 1 MONTH . 2 YEARS . 3	YES . 1 NO . 2 NEXT	YES . 1 NEXT NO . 2	YES . 1 NEXT NO . 2	YES . 1 NEXT NO . 2

38. CHECK COLS. 32, 33 AND 34(23): NUMBER OF DEATHS TO CHILDREN UNDER 5 YEARS AND STILLBIRTHS IN 2005 OR AFTER

39. CHECK COLUMN 34 AND 32: NUMBER OF DEATHS TO WOMEN AGE 12-49 YEARS OLD IN 2003 OR AFTER

NATIONAL INSTITUTE OF POPULATION STUDIES
PAKISTAN DEMOGRAPHIC AND HEALTH SURVEY 2006

LONG HOUSEHOLD QUESTIONNAIRE

IDENTIFICATION				
PROVINCE (PUNJAB=1; SINDH=2; NWFP=3; BALUCHISTAN=4; FATA=5)				
DISTRICT				
TEHSIL				
CLUSTER NUMBER				
HOUSEHOLD NUMBER				
IS HOUSEHOLD SELECTED FOR ? (SHORT=1; WOMAN=2; VERBAL AUTOPSY=3; WOMAN AND VERBAL AUTOPSY= 4)				
NAME OF HOUSEHOLD HEAD				
INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE				DAY MONTH YEAR 2 0 0
INTERVIEWER'S NAME				INT. NUMBER
RESULT*				RESULT
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS
*RESULT CODES: 1 COMPLETED 2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME 3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME 4 POSTPONED 5 REFUSED 6 DWELLING VACANT OR ADDRESS NOT A DWELLING 7 DWELLING DESTROYED 8 DWELLING NOT FOUND 9 OTHER (SPECIFY)				TOTAL PERSONS IN HOUSEHOLD TOTAL ELIGIBLE WOMEN DEATHS UNDER 5 /55s FROM Q. 38 FEMALE DEATHS AGE 12-49 FROM Q. 39 LINE NO. OF RESPONDENT
LANGUAGE OF QUESTIONNAIRE: URDU				
SUPERVISOR NAME DATE		FIELD EDITOR NAME DATE		OFFICE EDITOR KEYED BY
Signature of interviewer: _____ Date: _____ RESPONDENT AGREES TO BE INTERVIEWED 1 RESPONDENT DOES NOT AGREE TO BE INTERVIEWED 2 → END				

HOUSEHOLD SCHEDULE

Now we would like some information about the people who usually live in your household or who are staying with you now.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	IF AGE 12 OR OLDER
				Does (NAME) usually live here?	Did (NAME) stay here last night?		MARITAL STATUS
	Please give me the names of the persons who usually live in your household and names of the household who stayed here last night, starting with the head of the household. AFTER LISTING NAMES, RELATIONSHIP AND SEX FOR EACH PERSON, ASK Qs. 2A-2C TO BE SURE THAT THE LISTING IS COMPLETE. THEN ASK QUESTIONS IN COLUMNS 5-17 FOR EACH PERSON.	What is the relationship of (NAME) to the head of the household? (SEE CODES BELOW)	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)? IF LESS THAN 1 YEAR, WRITE 00. IF AGE 95 YEARS OR MORE, WRITE 96.	What is (NAME'S) current marital status? (SEE CODES BELOW)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
01			M F 1 2	YES NO 1 2	YES NO 1 2	IN YEARS 	M W D S N 1 2 3 4
02			1 2	1 2	1 2		1 2 3 4
03			1 2	1 2	1 2		1 2 3 4
04			1 2	1 2	1 2		1 2 3 4
05			1 2	1 2	1 2		1 2 3 4
06			1 2	1 2	1 2		1 2 3 4
07			1 2	1 2	1 2		1 2 3 4
08			1 2	1 2	1 2		1 2 3 4
09			1 2	1 2	1 2		1 2 3 4
10			1 2	1 2	1 2		1 2 3 4

CODES FOR Q. 3
 RELATIONSHIP TO HEAD OF HOUSEHOLD:
 01 = HEAD
 02 = WIFE OR HUSBAND
 03 = SON OR DAUGHTER
 04 = SON-IN-LAW OR DAUGHTER-IN-LAW
 05 = GRANDCHILD
 06 = PARENT
 07 = PARENT-IN-LAW
 08 = BROTHER OR SISTER

09 = BROTHER/SISTER IN LAW
 10 = NEICE/NEPHEW
 11 = GRAND PARENTS
 12 = AUNT/UNCLE
 13 = OTHER RELATIVE
 14 = ADOPTED/FOSTER/STEPCHILD
 15 = NOT RELATED
 16 = DOMESTIC SERVANT
 98 = DON'T KNOW

CODES FOR Q. 8
 MARITAL STATUS
 1 = MARRIED
 2 = WIDOWED
 3 = DIVORCED/SEPARATED
 4 = NEVER MARRIED

ELIGIBILITY	IF AGE 5 YEARS OR OLDER		IF AGE 5-24 YEARS		IF AGE 0-17 YEARS SURVIVORSHIP OF BIOLOGICAL PARENTS		FOR ALL AGES REGISTRATION WITH NADRA	
	EDUCATION		CURRENT SCHOOLING		SCHOOLING DURING LAST YEAR			
CIRCLE LINE NUMBER OF ALL WOMEN AGE 15-49 WHO ARE MARRIED, WIDOWED OR DIVORCED OR SEPARATED	Has (NAME) ever attended school?	What is the highest class of school (NAME) completed?	Did (NAME) attend school at any time during the 2005 year?	During this school year, what class/grade is/was (NAME) attending?	Did (NAME) attend school at any time during the previous year 2005?	Is (NAME)'s natural mother alive?	Is (NAME)'s natural father alive?	Has (NAME) been registered with NADRA? IF YES - PROVIDE: Does (NAME) have NIC card or name entered onto a 'bav' form, or nothing at all? (SEE CODES BELOW)
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
01	YES NO 1 2 ↓ GO TO 15	CLASS 1 2 ↓ GO TO 15	YES NO 1 2 ↓ GO TO 14	CLASS 1 2 ↓ GO TO 14	YES NO 1 2	Y N DK 1 2 8	Y N DK 1 2 8	NIC BP NONE DK 1 2 3 8
02	YES NO 1 2 ↓ GO TO 15	CLASS 1 2 ↓ GO TO 15	YES NO 1 2 ↓ GO TO 14	CLASS 1 2 ↓ GO TO 14	YES NO 1 2	Y N DK 1 2 8	Y N DK 1 2 8	1 2 3 8
03	YES NO 1 2 ↓ GO TO 15	CLASS 1 2 ↓ GO TO 15	YES NO 1 2 ↓ GO TO 14	CLASS 1 2 ↓ GO TO 14	YES NO 1 2	Y N DK 1 2 8	Y N DK 1 2 8	1 2 3 8
04	YES NO 1 2 ↓ GO TO 15	CLASS 1 2 ↓ GO TO 15	YES NO 1 2 ↓ GO TO 14	CLASS 1 2 ↓ GO TO 14	YES NO 1 2	Y N DK 1 2 8	Y N DK 1 2 8	1 2 3 8
05	YES NO 1 2 ↓ GO TO 15	CLASS 1 2 ↓ GO TO 15	YES NO 1 2 ↓ GO TO 14	CLASS 1 2 ↓ GO TO 14	YES NO 1 2	Y N DK 1 2 8	Y N DK 1 2 8	1 2 3 8
06	YES NO 1 2 ↓ GO TO 15	CLASS 1 2 ↓ GO TO 15	YES NO 1 2 ↓ GO TO 14	CLASS 1 2 ↓ GO TO 14	YES NO 1 2	Y N DK 1 2 8	Y N DK 1 2 8	1 2 3 8
07	YES NO 1 2 ↓ GO TO 15	CLASS 1 2 ↓ GO TO 15	YES NO 1 2 ↓ GO TO 14	CLASS 1 2 ↓ GO TO 14	YES NO 1 2	Y N DK 1 2 8	Y N DK 1 2 8	1 2 3 8
08	YES NO 1 2 ↓ GO TO 15	CLASS 1 2 ↓ GO TO 15	YES NO 1 2 ↓ GO TO 14	CLASS 1 2 ↓ GO TO 14	YES NO 1 2	Y N DK 1 2 8	Y N DK 1 2 8	1 2 3 8
09	YES NO 1 2 ↓ GO TO 15	CLASS 1 2 ↓ GO TO 15	YES NO 1 2 ↓ GO TO 14	CLASS 1 2 ↓ GO TO 14	YES NO 1 2	Y N DK 1 2 8	Y N DK 1 2 8	1 2 3 8
10	YES NO 1 2 ↓ GO TO 15	CLASS 1 2 ↓ GO TO 15	YES NO 1 2 ↓ GO TO 14	CLASS 1 2 ↓ GO TO 14	YES NO 1 2	Y N DK 1 2 8	Y N DK 1 2 8	1 2 3 8

CODES FOR Q. 11 AND 13

EDUCATION CLASS:

00 = LESS THAN 1 YEAR COMPLETED

01 = CLASS 1

02 = CLASS 2

...

10 = MATRIC, CLASS 10

11 = CLASS 11

...

16 = MASTER'S DEGREE OR MBBB, PhD, MPHIL, BSc (4 YEARS)

98 = DON'T KNOW

CODES FOR Q. 17

(1) HAS NIC

(2) NAME ON 'BAY' FORM

(3) NEITHER OF THE ABOVE

(8) DOES NOT KNOW

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	IF AGE 12 OR OLDER
				Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)?	MARITAL STATUS
	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household. AFTER LISTING NAMES, RELATIONSHIP AND SEX FOR EACH PERSON, ASK Qs. 2A-2C TO BE SURE THAT THE LISTING IS COMPLETE. THEN ASK QUESTIONS IN COLUMNS 5-17 FOR EACH PERSON.	What is the relationship of (NAME) to the head of the household?	Is (NAME) male or female?			IF LESS THAN 1 YEAR, WRITE "0". IF AGE 95 YEARS OR MORE, WRITE "95".	What is (NAME)'s current marital status?
		(SEE CODES BELOW)					(SEE CODES BELOW)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
11			M F 1 2	YES NO 1 2	YES NO 1 2	IN YEARS 	M W D/S N 1 2 3 4
12			1 2	1 2	1 2		1 2 3 4
13			1 2	1 2	1 2		1 2 3 4
14			1 2	1 2	1 2		1 2 3 4
15			1 2	1 2	1 2		1 2 3 4
16			1 2	1 2	1 2		1 2 3 4
17			1 2	1 2	1 2		1 2 3 4
18			1 2	1 2	1 2		1 2 3 4
19			1 2	1 2	1 2		1 2 3 4
20			1 2	1 2	1 2		1 2 3 4
TICK HERE IF CONTINUATION SHEET USED ☐							
Just to make sure that I have a complete household listing: 2A) Are there any other persons such as small children or infants that we have not listed? YES ☐ ADD TO TABLE NO ☐ 2B) Are there any other people who may not be members of your family such as domestic servants, lodgers or friends who usually live here? YES ☐ ADD TO TABLE NO ☐ 2C) Are there any guests or temporary visitors staying here, or anyone else who slept here last night, who have not been listed? YES ☐ ADD TO TABLE NO ☐ IF NO MORE MEMBERS, GO TO COLUMN 5.							

ELIGIBILITY	IF AGE 5 YEARS OR OLDER		IF AGE 5-24 YEARS			IF AGE 5-17 YEARS SURVIVORSHIP OF BIOLOGICAL PARENTS		FOR ALL AGES REGISTRATION WITH MADRA
	EDUCATION		CURRENT SCHOOLING		SCHOOLING DURING LAST YEAR			
CIRCLE LINE NUMBER OF ALL WOMEN AGE 12-49 WHO ARE MARRIED, WIDOWED OR DIVORCED OR SEPARA- TED	Has (NAME) ever attended school?	What is the highest class of school (NAME) completed? (SEE CODES BELOW)	Did (NAME) attend school at any time during the 2008 year?	During this school year, what class/grade (below) NAME attending? (SEE CODES BELOW)	Did (NAME) attend school at any time during the previous year 2007?	Is (NAME) (s) natural mother alive?	Is (NAME) (s) natural father alive?	Has (NAME) been registered with MADRA? IF YES - PROBE: Does (NAME) have NIC card or name entered onto a 'bay' form, or nothing at all? (SEE CODES BELOW)
(06)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	YES NO	CLASS	YES NO	CLASS	YES NO	Y N DK	Y N DK	NIC BF NONE DK
11	1 2 ↓ NEXT		1 2 ↓ GO TO 14		1 2	1 2 8	1 2 8	1 2 3 8
12	1 2 ↓ NEXT		1 2 ↓ GO TO 14		1 2	1 2 8	1 2 8	1 2 3 8
13	1 2 ↓ NEXT		1 2 ↓ GO TO 14		1 2	1 2 8	1 2 8	1 2 3 8
14	1 2 ↓ NEXT		1 2 ↓ GO TO 14		1 2	1 2 8	1 2 8	1 2 3 8
15	1 2 ↓ NEXT		1 2 ↓ GO TO 14		1 2	1 2 8	1 2 8	1 2 3 8
16	1 2 ↓ NEXT		1 2 ↓ GO TO 14		1 2	1 2 8	1 2 8	1 2 3 8
17	1 2 ↓ NEXT		1 2 ↓ GO TO 14		1 2	1 2 8	1 2 8	1 2 3 8
18	1 2 ↓ NEXT		1 2 ↓ GO TO 14		1 2	1 2 8	1 2 8	1 2 3 8
19	1 2 ↓ NEXT		1 2 ↓ GO TO 14		1 2	1 2 8	1 2 8	1 2 3 8
20	1 2 ↓ NEXT		1 2 ↓ GO TO 14		1 2	1 2 8	1 2 8	1 2 3 8

CODES FOR Q. 11 AND 13
EDUCATION CLASS:

00 = LESS THAN 1 YEAR COMPLETED
 01 = CLASS 1
 02 = CLASS 2
 ...
 10 = MATRIC. CLASS 10
 11 = CLASS 11
 ...
 16 = MASTER'S DEGREE OR MBS, PHD, MPHIL BSc (4 YEARS)
 99 = DONT KNOW

CODES FOR Q. 17
(1) HAS NIC
 (2) NAME ON 'BAY' FORM
 (3) NEITHER OF THE ABOVE
 (8) DOES NOT KNOW

INFORMATION ABOUT BIRTHS AND DEATHS IN THE HOUSEHOLD IN THE PREVIOUS 3 YEARS

18 Now I would like to ask you about all the births that occurred in this household <u>in the last 3 years</u>, whether they were born alive or dead. Since January 2003, did any woman who was a usual resident of this household at that time give birth? I am interested in any birth, even stillbirths and children who did not survive. YES . 1 NO . 2 → 27																		
19 How many births occurred in this household in the last 3 years? 																		
NO.	What are the names of the babies born in the last 3 years? If STILL BORN, WRITE 'BABY'.	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? If MONTH DON'T KNOW RECORD '98'	Was (NAME) born alive?	Is (NAME) still alive?	LINE NUMBER FROM HOUSEHOLD ROSTER (RECORD '00' IF CHILD NOT LISTED IN HH ROSTER)												
20	21	22	23	24	25	26												
01	_____	BOY . 1 GIRL . 2	MONTH <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table> YR <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table>			2	0			2	0	YES 1 NO 2 NEXT ↙	YES 1 NO 2 NEXT ↙	<table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td colspan="2">NEXT ↙</td></tr></table>			NEXT ↙	
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07	_____	BOY . 1 GIRL . 2	MONTH <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table> YR <table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td>2</td><td>0</td></tr></table>			2	0			2	0	YES 1 NO 2 NEXT ↙	YES 1 NO 2 NEXT ↙	<table border="1" style="display: inline-table;"><tr><td> </td><td> </td></tr><tr><td colspan="2">NEXT ↙</td></tr></table>			NEXT ↙	
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CONTINUED (Additional Sheet)

27 Now I would like to ask you about any deaths that occurred in this household <u>in the last 3 years</u> . Since January 2003, God forbid, has any usual member of this household died?						YES . 1 NO . 2 → 38		
28 How many deaths occurred to usual residents in this household <u>in the last 3 years</u> ?								
NO.	What were the names of the people who died in the last 3 years?	Was (NAME) male or female?	In what month and year did (NAME) die? IF MONTH DON'T KNOW RECORD '98'	How old was (NAME) when he/she died? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN 2 YEARS; OR YEARS.	CHECK 31 AND 32: WAS THIS A WOMAN AGE 12-49 WHEN SHE DIED?	Female, 12-49 years old		
						Was (NAME) pregnant when she died?	Did (NAME) die during childbirth?	Did (NAME) die within 6 weeks after delivery?
29	30	31	32	33	34	35	36	37
01		MALE 1 FEMALE 2	MONTH YR	DAYS . 1 MONTH . 2 YEARS . 3	YES . 1 NO . 2 NEXT →	YES . 1 NEXT → NO . 2	YES . 1 NEXT → NO . 2	YES . 1 NEXT → NO . 2
02		MALE 1 FEMALE 2	MONTH YR	DAYS . 1 MONTH . 2 YEARS . 3	YES . 1 NO . 2 NEXT →	YES . 1 NEXT → NO . 2	YES . 1 NEXT → NO . 2	YES . 1 NEXT → NO . 2
03		MALE 1 FEMALE 2	MONTH YR	DAYS . 1 MONTH . 2 YEARS . 3	YES . 1 NO . 2 NEXT →	YES . 1 NEXT → NO . 2	YES . 1 NEXT → NO . 2	YES . 1 NEXT → NO . 2
04		MALE 1 FEMALE 2	MONTH YR	DAYS . 1 MONTH . 2 YEARS . 3	YES . 1 NO . 2 NEXT →	YES . 1 NEXT → NO . 2	YES . 1 NEXT → NO . 2	YES . 1 NEXT → NO . 2

38. CHECK COLS. 32, 33 AND 24/23: NUMBER OF DEATHS TO CHILDREN UNDER 5 YEARS AND STILLBIRTHS IN 2005 OR AFTER

39. CHECK COLUMN 34 AND 32: NUMBER OF DEATHS TO WOMEN AGE 12-49 YEARS OLD IN 2003 OR AFTER

HOUSEHOLD CHARACTERISTICS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO DWELLING 11 PIPED TO YARD/PLOT 12 PUBLIC TAP/STAND PIPE 13 TUBE WELL OR BOREHOLE 21 HAND PUMP 22 DUG WELL PROTECTED WELL 31 UNPROTECTED WELL 32 WATER FROM SPRING PROTECTED SPRING/KAREZ ... 41 UNPROTECTED SPRING 42 RAINWATER 51 TANKER TRUCK 61 CART WITH SMALL TANK 71 SURFACE WATER (RIVER/DAM/LAKE/ POND/STREAM/CANAL 81 BOTTLED WATER 91 OTHER 96 (SPECIFY)	→ 103
102	How long does it take to go there, get water, and come back?	MINUTES ON PREMISES 996 DONT KNOW 998	
103	Do you treat your water in any way to make it safer to drink?	YES 1 NO 2 DONT KNOW 8	→ 105
104	What do you usually do to the water to make it safer to drink? Anything else? RECORD ALL MENTIONED.	BOIL A ADD BLEACH/CHLORINE B STRAIN THROUGH A CLOTH C USE WATER FILTER (CERAMIC/ SAND/COMPOSITE/ETC.) D SOLAR DISINFECTION E LET IT STAND AND SETTLE F OTHER X (SPECIFY) DONT KNOW Z	
105	What kind of toilet facility do members of your household usually use?	FLUSH OR POUR FLUSH TOILET FLUSH TO SEWER SYSTEM 11 FLUSH TO SEPTIC TANK 12 FLUSH TO SOMEWHERE ELSE ... 13 FLUSH, DONT KNOW WHERE ... 14 PIT LATRINE VENTILATED IMPROVED PIT LATRINE (VIP) 21 PIT LATRINE WITH SLAB 22 PIT LATRINE WITHOUT SLAB/ OPEN PIT 23 BUCKET TOILET 41 HANGING TOILET/HANGING LATRINE 51 NO FACILITY/BUSH/FIELD 61 OTHER 96 (SPECIFY)	→ 107

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES		SKIP
106	Do you share this toilet facility with other households?	YES	1	
		NO	2	
107	Does your household have:	YES NO		
	Electricity?	ELECTRICITY	1 2	
	Radio?	RADIO	1 2	
	Television?	TELEVISION	1 2	
	Refrigerator?	REFRIGERATOR	1 2	
	Mobile telephone or land line telephone?	ANY TELEPHONE	1 2	
	Room cooler, air conditioner?	ROOM COOLER, AIR COND. .	1 2	
	Washing machine?	WASHING MACHINE	1 2	
	Water pump?	WATER PUMP	1 2	
	Bed?	BED	1 2	
	Chairs?	CHAIRS	1 2	
	Almirah / cabinet?	ALMIRAH/CABINET	1 2	
	Clock?	CLOCK	1 2	
	Sofa?	SOFA	1 2	
	Sewing machine?	SEWING MACHINE	1 2	
	Camera?	CAMERA	1 2	
	Personal computer?	PERSONAL COMPUTER ...	1 2	
108	What type of fuel does your household mainly use for cooking?	ELECTRICITY	01	
		CYLINDER GAS	02	
		NATURAL GAS	03	
		BIOGAS	04	
		KEROSENE	05	
		CHARCOAL	06	
		WOOD	07	
		STRAW/SHRUBS/GRASS	08	
		AGRICULTURAL CROP	09	
		ANIMAL DUNG	10	
		NO FOOD COOKED IN HOUSEHOLD	95	
		OTHER	96	
		(SPECIFY)		
109	MAIN MATERIAL OF THE FLOOR:	NATURAL FLOOR		
	RECORD OBSERVATION	EARTH / SAND / MUD	11	
		FINISHED FLOOR		
		CHIPS / TERRAZZO	31	
		CERAMIC TILES	32	
		MARBLE	33	
		CEMENT	34	
		CARPET	35	
		BRICKS	36	
		MATS	37	
		OTHER	96	
		(SPECIFY)		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																					
110	MAIN MATERIAL OF THE ROOF: RECORD OBSERVATION	NATURAL ROOFING THATCH / BAMBOO / WOOD / MUD 12 RUDIMENTARY ROOFING CARDBOARD / PLASTIC 21 FINISHED ROOFING IRON SHEETS / ASBESTOS ... 31 T-IRON / WOOD / BRICK 32 REINFORCED BRICK CEMENT/RCC 33 OTHER 96 (SPECIFY)																						
111	MAIN MATERIAL OF THE WALLS: RECORD OBSERVATION	NATURAL WALLS MUD / STONES 11 BAMBOO / STICKS / MUD 12 RUDIMENTARY WALLS UNBAKED BRICKS / MUD 21 PLYWOOD SHEETS 22 CARTON / PLASTIC 23 FINISHED WALLS STONE BLOCKS 31 BAKED BRICKS 32 CEMENT BLOCKS/ CEMENT ... 33 TENT 34 OTHER 96 (SPECIFY)																						
112	How many rooms in this household are used for sleeping?	ROOMS <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																						
113	Is this house rented, rent-free, mortgaged, or owned by a member of the household?	RENTED 1 RENT-FREE 2 MORTGAGED 3 OWNED 4 OTHER 6																						
114	Does any member of this household own:	<table border="0" style="width: 100%;"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>A watch?</td> <td>WATCH 1</td> <td>2</td> </tr> <tr> <td>A bicycle?</td> <td>BICYCLE 1</td> <td>2</td> </tr> <tr> <td>A motorcycle or motor scooter?</td> <td>MOTORCYCLE/SCOOTER ... 1</td> <td>2</td> </tr> <tr> <td>An animal-drawn cart?</td> <td>ANIMAL-DRAWN CART 1</td> <td>2</td> </tr> <tr> <td>A car or truck or Tractor?</td> <td>CAR/TRUCK 1</td> <td>2</td> </tr> <tr> <td>A boat with a motor?</td> <td>BOAT WITH MOTOR 1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	A watch?	WATCH 1	2	A bicycle?	BICYCLE 1	2	A motorcycle or motor scooter?	MOTORCYCLE/SCOOTER ... 1	2	An animal-drawn cart?	ANIMAL-DRAWN CART 1	2	A car or truck or Tractor?	CAR/TRUCK 1	2	A boat with a motor?	BOAT WITH MOTOR 1	2	
	YES	NO																						
A watch?	WATCH 1	2																						
A bicycle?	BICYCLE 1	2																						
A motorcycle or motor scooter?	MOTORCYCLE/SCOOTER ... 1	2																						
An animal-drawn cart?	ANIMAL-DRAWN CART 1	2																						
A car or truck or Tractor?	CAR/TRUCK 1	2																						
A boat with a motor?	BOAT WITH MOTOR 1	2																						
115	Does any member of this household own any land that can be used for agriculture?	YES 1 NO 2																						
116	Does this household own any livestock, herds, other farm animals, or poultry?	YES 1 NO 2	→ 118																					

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP														
117	How many of the following animals does this household own? Buffalo Milk cows or bulls? Camels? Donkeys, or mules or horses? Goats? Sheep? Chickens? IF NONE, WRITE '0'. IF > 95, WRITE '95'. IF UNKNOWN, WRITE '98'	BUFFALO COWS/BULLS CAMELS DONKEYS/MULES/HORSES .. GOATS SHEEP CHICKENS	<table border="1"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>														
118	Does your household have any mosquito nets that can be used while sleeping?	YES 1 NO 2	→ 120														
119	How many mosquito nets does your household have?	NUMBER OF NETS	<table border="1"> <tr><td></td></tr> </table>														

	ASK THESE QUESTIONS FOR TWO BEDNETS ONLY	NET #1	NET #2
120	When you got the net, was it already treated with an insecticide to kill or repel mosquitos?	YES 1 SKIP to 123 ← NO 2 NOT SURE 8	YES 1 (SKIP TO 123) ← NO 2 NOT SURE 8
121	Since you got the mosquito net, was it ever soaked or dipped in a liquid to kill or repel mosquitos?	YES 1 NO 2 (SKIP TO 123) ← NOT SURE 8	YES 1 NO 2 (SKIP TO 123) ← NOT SURE 8
122	How many months ago was the net last soaked or dipped? IF LESS THAN ONE MONTH, RECORD '00'.	MONTH AGO 25 OR MORE MONTHS AGO ... 95 NOT SURE 98	MONTH AGO 25 OR MORE MONTHS AGO ... 95 NOT SURE 98
123	Did anyone sleep under this mosquito net last night?	YES 1 NO 2 (SKIP TO 125) ← NOT SURE 8	YES 1 NO 2 (SKIP TO 125) ← NOT SURE 8
124	Who slept under this mosquito net last night? RECORD THE PERSON'S LINE NUMBER FROM THE HOUSEHOLD SCHEDULE.	NAME _____ LINE NO. NAME _____ LINE NO. NAME _____ LINE NO.	NAME _____ LINE NO. NAME _____ LINE NO. NAME _____ LINE NO.
125		GO BACK TO 120 FOR NEXT NET; OR, IF NO MORE NETS, GO TO 126.	GO TO 126.
126	Does your household do anything (else) to avoid mosquitos?		YES 1 NO 2 → 128
127	What do you do? CIRCLE ALL MENTIONED.		COIL A MATS B SPRAY C ELECTRIC SPRAY REPELLANT D INSECT REPELLANT E OTHER X (SPECIFY)
128	Do you have any medicines for treating malaria in your house now?		YES 1 NO 2 DOES NOT KNOW 8

