Chapter II
STUDY DESIGN

2.1 OBJECTIVES OF THE STUDY

The low utilisation of MCH and Family Planning Services in rural areas available through primary health centres is a matter of serious concern for health planners and the health system as a whole. The present study is an attempt to focus on this issue at micro level and synergies the outcomes to improve the utilisation. The findings will necessarily help make recommendations for concrete policy interventions with the vision to remove the bottlenecks and provide a happy and healthy life to mother and child and put significant check on rapidly growing population.

The broad objective of the study is to assess the utilisation pattern and to analyze different factors affecting the utilisation of MCH and Family Planning services available at primary health centres and sub-centres. The study envisages to give policy recommendations to improve the utilisation level. The study sets following objectives to be more specific:

1. to determine the extent of utilisation of MCH and family Planning services in rural areas of Rajasthan,
2. to identify the factors affecting utilisation of MCH and family Planning services, and
3. to determine how the utilisation can be increased.

2.2 HYPOTHESES

In the light of the above objectives and conceptual framework, certain hypotheses based on the conventional thought and previous trends are framed. The test of hypotheses will necessarily help reaching to more rational conclusions about the
genuinely set patterns and obvious interactions and impacts of social, economic and physical parameters of utilisation. This would help in making significant changes in our health care delivery services. Under the present study, following hypotheses are framed to understand the significance of inter-correlation and impact among utilisation and different independent parameters.

**H-1:** Irregular supplies causes low utilisation of the available services.

**Rationale:**
The supply of medicines, vaccines, contraceptives etc are usually not regular at PHCs and sub-centres. If a person goes to primary health centre and does not find a certain required medicine, he/she would develop a bad impression about the overall services and would be reluctant to visit the centre again in future. Thus the utilisation level gets affected because of irregular supplies.

**H-2:** The irregular presence of doctor/staff at PHCs and sub-centres negatively affects the utilisation of the available services.

**Rationale:**
Consultation with a Doctor requires lot of personal believe of patient in the health system. In such situation where doctor/staff is not regular, they would not be able to develop personal reputation with the patient and hence the patient will not have desired level of consultations with medical staff and optimum utilisation of services provided through primary health centres would be adversely affected.

**H-3:** The community’s satisfaction with the quality of services, positively affects the utilisation of the available services.

**Rationale:**
The quality includes the quality of supplies and the quality of doctor/staff in terms of knowledge, training and experience. The satisfaction of the community depends on the quality of services. Thus the higher level of quality satisfaction results in higher level of utilisation or the low level of satisfaction causes the low utilisation.
H-4: Regular visits/follow-up services by the health worker positively affect the utilisation level.

Rationale:
Follow up to health care services is considered as quality indicator of health care delivery system. For example, follow up after delivery or sterilization/Cu-T insertion develops a positive feeling in clients about care and concern of the health worker. Regular visits/follow-up services by health worker increases faith and satisfaction in the community towards health care delivery system and hence the utilisation level increases.

H-5: Utilisation level increases only after a threshold level of social and economic development of the people.

Rationale:
The people from better socio-economic background do have greater exposure and affordability which makes them more health conscience and familiar with the availability of services at the local level. Thus the socio-economic condition positively affects the utilisation level but only after a threshold level.

2.3 SAMPLE SELECTION

Barmer and Jaipur districts, one backward and other developed, have been selected as the study area for the present study. As per the District Rapid Household Survey (IIHMR, 1998-99) conducted at national level, Barmer falls far behind with women received 3 ANC check ups – 11.9 %, institutional delivery – 7.9%, complete child immunisation – 11.5 %, treatment for diarrhoea to children – 0.0 %, treatment for ARI – 21.0 % and use of any family planning method – 20.4 % in comparison of 29.2 %, 36.9 %, 42.5 %, 6.3 %, 38.0 % and 50.8 % respectively for Jaipur. This has been done with the purpose to have a comparative analysis to reach the findings more prominently. Jaipur is the capital of Rajasthan and the social and economic conditions are better in terms of overall education and
income level in comparison to Barmer. The female literacy is much higher in Rural Jaipur than in rural areas of Barmer. The employment opportunities and other health and basic facilities are far better in Jaipur than in Barmer.

Two Community Health Centres (CHCs), Chohattan from Barmer and Chaksu from Jaipur are selected for the present study. Two PHCs viz; Kotkhawada from Chaksu (Jaipur) and Kelnor from Chohattan (Barmer) are selected and then a multistage stratified sampling design has been adopted with sub-centres being the first stage units, villages as the second stage units. From each of two PHCs, two sub-centres are selected at random. Thus there are 4 sub-centres in the sample. Then, two villages are selected randomly from each of 4 sub-centres. Thus there are a total of 8 villages in the sample.

<table>
<thead>
<tr>
<th>Sample Selection</th>
<th>Jaipur</th>
<th>Barmer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Health Centre (CHC)</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Primary Health Centre</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sub-Centre</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Village</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

The selection of Community Health Centres (CHCs) and PHCs is based on purposive sampling. For the selection of sub-centres and villages, random sampling technique is adopted. A total of four sub-centres viz. Chndlai and Titria from Jaipur and Bijrad and Bhojaria from Barmer have been randomly selected. Similarly a total of 8 villages have been randomly selected from these four sub-centre areas. A detail sample design is presented in the following figure.
The elementary sampling units are the eligible couples. The selection of eligible couples is based on stratified random sampling design. The total sample size has been decided to be 300 eligible couples. A total of 150 eligible couples are covered from 4 villages of Jaipur and 150 from the 4 villages of Barmer. The sample allocation to each village is based on the proportional allocation with respect to the total number of eligible couples in respective villages. The help of eligible couple's register available at sub centre with ANM was used for selection of sample from both districts. The eligible couple register at sub centre is updated regularly through eligible couple survey conducted every year in the month of March-April. The survey for the current study was conducted during January-March, 1999 using the Eligible Couple Register updated in March, 1998.

In Jaipur, a sample of 150 eligible couples was selected by taking every sixth unit from eligible couple register comprising 913 eligible couples. Similarly, every fourth unit was selected from eligible couple register of selected area in Barmer to choose a sample of 150 eligible couples. The village-wise sample units selected for the study is presented in the following table.
Table 2.3: Elementary Sampling Units

<table>
<thead>
<tr>
<th>Villages</th>
<th>Total No of Eligible Couples</th>
<th>Sample Units</th>
<th>Villages</th>
<th>Total No of Eligible Couples</th>
<th>Sample Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chandlai</td>
<td>335</td>
<td>55</td>
<td>Bijrad</td>
<td>210</td>
<td>52</td>
</tr>
<tr>
<td>Udaipuria</td>
<td>163</td>
<td>27</td>
<td>Machharo Ka Tala</td>
<td>96</td>
<td>23</td>
</tr>
<tr>
<td>Titria</td>
<td>321</td>
<td>53</td>
<td>Bara Bhojaria</td>
<td>197</td>
<td>49</td>
</tr>
<tr>
<td>Bhojyand</td>
<td>94</td>
<td>15</td>
<td>Chhota Bhojaria</td>
<td>106</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>913</strong></td>
<td><strong>150</strong></td>
<td><strong>Total</strong></td>
<td><strong>609</strong></td>
<td><strong>150</strong></td>
</tr>
</tbody>
</table>

Since the factors responsible for low utilisation of MCH and Family Planning services belong to community as well as the service providers, the doctors/staff of two PHCs, and 4 sub-centres have also been interviewed apart from 300 eligible couples to know the management factors responsible for low utilisation of MCH and Family Planning services. The sample of service providers is based on the availability not on any fixed criterion. ANMs, LHV, Doctors and other health workers available with the two PHCs and 4 sub-centres have been included in the sample. For primary data collection, eligible women were contacted on priority. In case of social restrictions to contact women particularly in Barmer, male counterparts were contacted for the purpose. Well structured interview schedule was used for collection of primary data from eligible couples as well as a separate interview schedule was used for the qualitative interview of service providers. These two types of schedules are given in Appendix.

2.4 DATA AND METHODS

The primary data on the different aspects of utilisation of MCH and Family Planning services have been collected from 300 eligible couples distributed over 8 villages and doctor/staff available at 2 PHCs and 4 sub-centres. Two types of interview schedules, one for doctor/staff of Primary Health Centres to identify the management factors responsible for low utilisation and second for the eligible
couples to assess and analyze the utilisation pattern and related aspects of MCH and Family Planning services are used to collect the primary data.

The second type of schedule has separate parts dealing with utilisation of Maternal Health Care, Child Health Care and Family Planning Services. The reference period for utilisation of services has been taken as three years preceding the survey. Each of three care services has been dealt separately in way to analyze the utilisation in depth for each of them. These care services attain different level of importance. Moreover this categorization enables to identify the specific areas where the utilisation is low. Any eligible couple may cover more than one care services. The schedule has been framed in such a way as to cover the utilisation during last three years preceding the survey and the current status of utilisation level of MCH and Family Planing services.

Along with the primary survey, the study has widely used the secondary data to present the social, economic, demographic and health status of Rajasthan. Even the secondary sources like Rapid Household Survey has also been utilised to have a first hand information on utilisation which was very vital in analyzing survey findings.

The first main objective of the study is to assess the level of utilisation of MCH and Family Planning services. Since the utilisation may be in more than one of the care services, apart from giving the utilisation level for each care services, an attempt has been also made to develop some composite index indicating the over all utilisation of services. The second important objective is to identify the important factors responsible for low utilisation of MCH and Family Planning services. In way to categorize and analyze the factors responsibility for low utilisation; the statistical package SPSS has been used for data processing. To find general and combined level of utilisation, grouping of results, simple averages, logistic regression, multiple regression and other appropriate statistical tools have been applied as per requirement.
The Logistic Regression has been used to evaluate the impact of different socio-economic & physical variables on utilisation for different care services. [Retherford, R. D. and M. K. Choe (1993), "Statistical Models for Causal Analysis", New York: Wiley]. This has been applied looking to the dichotomous nature of response variables and predictor variables being the mixture of quantitative and categorical nature. Based on the findings of logit regression, multiple regression analysis has also been carried out for composite index of utilisation taking different combinations.