Chapter 3 - Research Methodology

Design is the heart of research. The following aspects have been discussed in details which are concerned with the design of the present study entitled “A COMPARATIVE STUDY OF SOME SOCIO-ECONOMIC AND DEMOGRAPHIC FACTORS AFFECTING MATERNAL HEALTH CARE UTILIZATION: A STUDY OF MAJOR CITIES OF GUJARAT”

Research Methodology involves the systematic procedures by which the researcher starts from the initial identification of problem to its final conclusions. The role of the methodology is to carry on the research work in scientific and valid manner. The methodology consists of procedures and techniques for conducting a study. Research procedures are of little value unless they are used properly. The tools and techniques will not get work done. The proper use of research method must be learned by the researcher. Research Methodology involves such general activities as identifying problems, review of literature, formulating hypothesis, procedures for testing hypothesis, measurement, data collection, and analysis of data, interpreting results and drawing conclusions.

The main focus of this chapter is the research design for this study. It describes the methods used and how the data was collected to address the aims and questions of the research. It begins with the statement of the problem. Need and scope of the study, objectives of the study, Nature of Research, The Hypothesis, Unit of the study, Sample Selection, Sources of Data, Data collection method, Data collection tools, Tools and Techniques of Data analysis.

3.1 Statement of the Problem

The identification and analyzing a research problem is the first and most crucial step of research process. A problem cannot be solved effectively unless a researcher possesses and insight to isolate and understand the specific factors giving rise to difficulty. The destiny of India is being shaped into the very basic elements of individual i.e. health, in which the doctors/nurses play an important role. There is a dire need to identify the conditions necessary to mitigate the health problems in the working situation of human being.
However, being more specific to maternal health care where mothers and children are getting dead just because of lack of knowledge, they are not getting proper health care utilization etc. **In this thesis, Researcher has focused to study the Maternal Health Care Utilization and the effect of Socio-demographic and economic factors in Major Cities of Gujarat.**

### 3.2 Objectives of the Study

1. To study the descriptive statistical analysis of the Maternal Health Care Utilization in Major Cities of Gujarat.
2. To find out the association between Maternal Health Care Utilization and Socio-demographic factors in each selected cities of Gujarat.
3. To find out the association between Maternal Health Care Utilization and Socio-economic factors in each selected cities of Gujarat.
4. To find out the differences in all selected major cities of Gujarat in terms of the Maternal Health Care Utilization.
5. To find out the satisfaction level towards Maternal Health Care Services and Attendant (Doctor/Nurse/Trained Medical Personnel) they received.
6. To find out the impact of socio-demographic and socio-economic factors on utilization of maternal health care services.

### 3.3 Research Design

There are basically three types of research design broadly classified as follows:

- Exploratory Research Design
- Descriptive Research Design
- Causal Research Design

Descriptive research design has been used in this study which includes survey and fact finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. A descriptive research design has been used to examine the level of satisfaction, maternal health care utilization and many other phenomenon in term of What, When, Where and How things are happening. The descriptive part has presented the socio-demographic characteristics and Socio-economic profile of the respondents.
3.4 Variables of the Study

The following study variables have been used by the researcher in this study.

**Socio-Demographic:** Age, Residential Area/Location, Religion, Caste, Type of Family, Marriage Age and Occupation.

Socio-demographic characteristics include age, sex, education, migration background and ethnicity, religious affiliation, marital status, household, employment. Different index variables are formed on the basis of socio-demographic variables. They include, for example, socio-economic status, which combines information on education and income. Socio-demographic details are often used to describe realized samples and to determine sampling error.

The contributions devoted to socio-demographic characteristics provide an overview of available survey instruments or address the measurement of individual socio-demographic characteristics.

The study used Age, Residential Area/Location, Religion, Caste, Type of Family, Marriage Age and Occupation as socio-demographic characteristics in this research from extensive literature.

**Socio-Economic:** Education, Health, Local Environment, Income (Wealth Index)

Socioeconomic status is an economic and sociological combined total measure of an individual’s work experience and of an individual's or family's economic and social position in relation to others, based on income, education, and occupation. When analyzing a family's socio-economic status, the household income, earners' education, and occupation are examined, as well as combined income, whereas for an individual's status only their own attributes are assessed. However, it is more commonly used to depict an economic difference in society as a whole.

Socioeconomic status is typically broken into three levels (high, middle, and low) to describe the three places a family or an individual may fall into. When placing a family or individual into one of these categories, any or all of the three variables (income, education, and occupation) can be assessed.
The study used Education, Health, Local Environment, Income (Wealth Index) as socio-economic characteristics in this research from past studies.

**Research Variables:** Maternal Health Care, TT, Early ANC, ANC, PNC.

A variable is any entity that can take on different values. So anything that can vary can be considered a variable. For instance, age can be considered a variable because age can take different values for different people or for the same person at different times. Similarly, country can be considered a variable because a person's country can be assigned a value.

An attribute in addition to that is a specific value on a variable. For instance, the variable sex or gender has two attributes: male and female. Or, the variable agreement might be defined as having five attributes: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

Further this study has specific variables under study as Maternal Health Care, Tetanus Vaccine (TT), Early Antenatal Care (ANC), Antenatal Care (ANC), and Postnatal Care (PNC).

**3.5 The Hypothesis**

A scientific study is based on hypothesis. This approach clearly establishes the nature of the problem and the logic underlying the investigation. The hypothesis indicates the expected outcomes of the investigation. The formulation of the hypothesis in advance of the data gathering process is necessary for an unbiased investigation. In this research, researchers have formulated hypothesis on the basis of socio-demographic and economic profile.

The following hypotheses were formulated based on the variables and objectives of the study.

**Common Hypothesis:**

1. \( H_0: \) Data Follows Normal Distribution.

**Socio-demographic and Socio-economic Hypothesis:**

2. \( H_0: \) There is no significant association between Maternal Health Care Utilization and Socio-Demographic Variables in each city under study.
3. **H₀**: There is no significant association between Maternal Health Care Utilization and Socio-Economic Variables in each city under study.

**Testing Hypothesis:**

4. **H₀**: There is no significant difference in satisfaction level towards Maternal Health Care Utilization in each Cities of Gujarat under study.

5. **H₀**: There is no significant difference in satisfaction level towards doctors/nurses/trained medical staff for Maternal Health Care Utilization in each cities of Gujarat under study.

6. **H₀**: There is no significant difference in mean rank of Maternal Health Care Utilization among selected four cities of Gujarat.

**3.6 Unit of Study**

The unit of analysis is the major entity that is being analyzed in a study. It is the 'what' or 'who' that is being studied. In social science research, typical units of analysis include individuals (most common), groups, social organizations and social artifacts.

After finalizing the variables and hypothesis of the present study, consideration was given to whether the entire population is to be made the subject for data collection or a particular group is to be selected as representative of the whole population. The Target population (Unit of Study) of this study included mothers of all the selected hospitals of Selected Cities of Gujarat.

**3.7 Sample Selection**

In statistics, quality assurance, and survey methodology, sampling is the selection of a subset (a statistical sample) of individuals from within a statistical population to estimate characteristics of the whole population. This is extensively used by researcher as to reduce the cost and drawing better and quicker conclusion for the whole population.

Sampling is defined as the process of selecting a sufficient number of elements from the population so that a study of the sample and understanding of its properties would make it possible to generalize such characteristics to the population elements.
Sampling Method: Since population (units of Study) includes all the mothers, so a census survey was very difficult time wise. So, a sample survey has been used to conduct the study.

3.8 Sampling Techniques and Size

There are two types of Sampling Designs; Probability and the Non-Probability Sampling. Probability Sampling is the type of sampling whereby the elements in the population have some known chance or probability of being selected as sample subjects. Meanwhile, the non probability sampling is where the elements do not have a known or predetermined chance of being selected as subjects. Initially Probability sampling like Cluster Sampling has been used to collect the Data from the Mothers. Researcher has divided cities with different zone and attempt has been made to collect the data.

Table 3.1 Zones in Surat, Vadodara, Ahmedabad & Rajkot Cities

<table>
<thead>
<tr>
<th>City</th>
<th>Zone</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surat</td>
<td>Central Zone, West Zone, North Zone, East Zone, South Zone, South East Zone, South West Zone</td>
<td>100</td>
</tr>
<tr>
<td>Vadodara</td>
<td>West Zone, North Zone, East Zone, South Zone</td>
<td>100</td>
</tr>
<tr>
<td>Ahmadabad</td>
<td>Central Zone, West Zone, North Zone, East Zone, South Zone, New West Zone</td>
<td>100</td>
</tr>
<tr>
<td>Rajkot</td>
<td>Central Zone, East Zone and West Zone</td>
<td>100</td>
</tr>
</tbody>
</table>

Survey Period: from June 2017 to November 2017.

Non Probability Convenience sampling has been used to collect the data. Sample size formula (Sample Size Calculator – when a population characteristic is unknown) has been applied and we received 384 sample size at 5% significance level. However, for better result, the researcher has collected data from 400 sample size. Thus, taking into consideration of all Zones of each city, the probability of having a true picture about the Maternal Health Care utilization may increases.

3.9 Sources of Data

Data collection remains an integral part of research design and an important aspect of research design. Ability to achieve the research aims and answer the research questions depends on the effectiveness of data collection. There exists many ways in
collecting data such as primary and secondary data. Primary data refers to data collected by the researcher. Collection of primary data is expensive, time consuming and difficult. But, it is reliable data source since the researcher collects only that much information which is relevant. Related data were collected from mothers. Initially secondary data has been used by the researcher to get the information about the maternal health care utilization in each city. Then, primary data has been used to collect the response from mothers.

3.10 Data Collection Method

The data required for the purpose of the study have collected from mothers through Survey method i.e. personnel survey. For the purpose of this study, Questionnaires have been used as the research instrument. Questionnaires are a set of questions developed to gain necessary data to answer the problem of the study. The advantage of using questionnaire is the fact that the researcher can collect all the completed responses within a short period of time. In addition to that, administering the questionnaires to a large number of respondents is time efficient as well as less expensive.

3.11 Tools and Techniques of Data Analysis

The next steps in the process of research, after the collection of data, are the organization, analysis and interpretation of data and formulation of conclusions and generalizations to get the meaningful picture out of the raw information collected. The analysis and interpretation of data involve the objective material in the possession of the researcher and his subjective reactions and desires to be derived from the data.

The mass data collected through the use of tool need to be systematized and organized, i.e., edited, classified and tabulated before it can serve the purpose. Here, editing implies the checking of gathered data for accuracy, utility and completeness; classifying refers to the dividing of the information into different categories, classes or heads for use; and tabulating denotes the recording of the classified material in accurate mathematical terms, i.e. marking and counting frequency tallies for different items on which information is gathered.
Data has been gathered and analyzed using descriptive statistics which helps to understand and summarize the data. The summary statistics has been represented by tabular form. Thus based on the responses of the mothers, score has calculated using various statistical techniques as follows:

1. Chi square Test (Goodness of Fit)
2. Mann Whitney U Test,
3. Kruskal Wallis Test,
4. Cross Tabulation, Multi response and Frequency Analysis
5. MS- Excel
6. MS Word
7. SPSS 21

3.12 Data Collection Instrument

The most common approach to measuring Satisfaction involves the use of questionnaires in which highly specialized rating scales are completed. Using this method, people answers questions allowing them to report their reactions to their services received. Several different scales have been developed for this purpose. There are many methods for measuring satisfaction. By far, the most common method for collecting data is the Likert scale. Other less used common methods of for gauging satisfaction include: Yes/No questions, True/False questions, point systems, checklist, forced choice answers and many more.

A Research tool plays a major role in any worthwhile research as it is the sole factor in determining the sound data and in arriving at perfect conclusions about the problem or study on hand, which ultimately, helps in providing suitable remedial measures to the problem concerned.

Structured questionnaire has been used to collect the data from the mothers. There are many questions in questionnaire which is divided in parts. In that first part of the questionnaire is to collect the data about the personal details which includes personal information then after socio-demographic factors and socio-economic factors which we have already discussed in above methodology variables under study. The part of questionnaire includes questions related to study or research variables of maternal health care satisfaction which includes following variable like TT received, Early
ANC, ANC and PNC received. This includes 5 point likert scale questions. From Highly Satisfied to Highly Dissatisfy. Other question includes multiple options checklist questions, and open ended questions.

3.13 Significance of the Study

1. In developing countries like India, a large number of women are dying due to factors related to pregnancy. Implementing and assuring utilization of maternal health care services is potentially one of the most effective health interventions for preventing maternal morbidity and mortality.

2. Considering global and national interests in the Millennium Development Goal and India’s level of maternal mortality, the understandings of various factors like socio-demographic and socio-economic that determines maternal health care utilization is crucial.

3. Further the comparison of four major cities will help to generalize whole Gujarat state in terms of Maternal Health Care utilization.

3.14 Limitations of the Study

1. There could be recall bias since the women were asked for events within the last three years prior to the survey despite the fact that, the most recent births were considered.

2. Non Probability Convenience sampling may be the limitation for this study because we are unable to consider all areas (slum) of all mothers or women.

3. There is need for interventions that explore the most effective ways to raise women’s status in terms of education and socio-economic status in disadvantaged communities.

3.15 Scope of the study

1. Distribution of women should be according to their registration status for antenatal care.
2. Comparison of utilization of antenatal and postnatal care services is missing this present study with National Family Health Survey.

3. Distribution of pregnancy related complications can be done according to the socio-demographic characteristics of women.