CHAPTER-2
MATERIALS AND METHODS

Research Design:

The present study is partly exploratory and partly descriptive in nature to gain in-depth knowledge into the reproductive health-seeking behaviour of young females of the slums of Chandigarh. It incorporates both quantitative and qualitative research methods.

Research Setting:

Chandigarh is a model of architectural grandeur in modern India, which is named after the local presiding deity ‘Chandi’ – the goddess of power. It owes its birth in 1950 to the vision of Pt. Jawahar Lal Nehru – the first Prime Minister of India who envisaged ‘Chandigarh – the City Beautiful’ as an ‘expression of the nation’s faith in the future’. It is located at the foothills of the Shivalik range with two rivulets – Patiali-ki-Rao on the North-West and the Sukhna choe on the South-Eastern edge.

Le-Carbusier – the French architect planned Chandigarh for a finite population of half a million; 1,50,000 in Phase – I in sectors 1 to 30 and 3,50,000 in Phase – II in sectors 31 to 47. However in 1996, there was a division of joint Punjab into Punjab, Haryana and Himachal Pradesh. Both Punjab and Haryana had their capital in Chandigarh, thus it was retained as a Union Territory, thereby leaving a limited space for expansion.

Scholars have indicated that the negation of some of the basic objectives of Chandigarh’s master plan began from the very start of its construction. Obviously, the majority of those who were the first to arrive at the site were construction workers, with no provision for housing at all. Failure was evident, by not making any provision for such workers (approximately 30,000) in the Chandigarh project estimates. Consequently, large clusters of thatched huts adjoining major construction work started sprouting and thus began the genesis of the slums (Dubey,
Most of these slums are encroachments on government land or on private land in connivance with the landowners, who have converted the agricultural land on the outskirts of city to build temporary accommodation (mostly jhuggis). Many of these migrant labourers erected these hutments with the hope that they would be provided permanent accommodations under some rehabilitation scheme.

The Union Territory of Chandigarh comprises of 47 sectors, 27 villages and 43 colonies. These colonies are slum dwellings with a population of approximately three lacs. As already stated, the dwellers of these slums are migrants, majority of whom have migrated in the search of better job prospects. About 64 percent of these people are from states with very high morbidity and mortality indices (BIMARU states viz. Bihar, Madhya Pradesh, Andhra Pradesh, Rajasthan, Uttar Pradesh and Orissa) in comparison to general indices of India. Out of these 43 colonies, 20 are authorized and rest, 23 are unauthorized. There are 26084 households in the authorized colonies with approximate population of 1.25 lacs, whereas in the unauthorized colonies, there are 29586 households with a population of about 1.75 lacs (Dubey, et al. 1999).

**Target Population:**

The target population consisted of all the females aged 10 to 24 years residing in these 43 colonies.

**Sample Selection:**

It would have been interesting to study all the females of the target population. But owing to the time and personnel constraint, the sampling was essential. For this study, multi-stage sampling technique was used.

1st stage: A list of all the colonies was procured from the Community Health Center, Sector 22 and CRRID, Sector 19, Chandigarh. These colonies were then divided into the authorized and unauthorized categories. Two colonies were selected from each category by the lottery method.
One of them was with relatively good accessibility to health care facilities and the other one with low or no care facilities. Thus, four colonies were selected as shown in Figure – 2.1. These were:

- **Authorized colonies:**
  i. Daddu-Majra rehabilitation colony.
  ii. Janta rehabilitation colony.

- **Unauthorized colonies:**
  i. Gur-Sagar Sahib colony.
  ii. Kajheri colony.

**2nd stage:** At this stage, the medical officers of the selected colonies were contacted and a list of all the house holds was procured. These colonies were then divided into segments and a random selection of these segments was undertaken. The segments were proportionate to the number of households of that colony as follows:

i) In Dadu-Majra colony, 2584 households were divided into 10 segments comprising 258 houses in each segment.

ii) In Janta colony, there were 2726 households, which were divided into 12 segments, comprising 227 houses in each segment.

iii) In Gur-Sagar Sahib colony there were 456 households, which were divided into 2 segments comprising 228 houses in each segment.

iv) In Kajheri colony, there were 3727 households, which were divided into 16 segments, comprising 232 houses in each segment.

**3rd stage:** During the third stage, a list of all segments in each category was prepared, out of which exactly half of the segments were selected randomly by lottery method. For each of these segments all the houses were listed and by systematic random sampling, the desired number of households were obtained e.g. in Dadu-Majra colony to obtain a sample of 20 from 1st segment of 257 houses, a number was chosen by lottery method from the first 12 numbers. This came out 4. Thus if 4 is assumed X, then every 12th number was included in the sample, going through the entire list of the households in the particular
segment. Therefore, \(X, X + 12, X + 24, X + 36, \ldots\), constituted the study sample. This procedure was adopted for each segment of the colony, to ensure a fair probability to all the houses in the target area. Hence, a systematic random sampling method was adopted to select the final study sample of approximately 410, which was based on the proportionate population sample of each selected colony. Table-2.1 shows the sample size of the selected slums and the multi-stage sampling technique adopted, which shows a final study sample of 410 households.

**Table – 2.1**

<table>
<thead>
<tr>
<th>Slum</th>
<th>Number of Households</th>
<th>Total Segments</th>
<th>Segments Selected</th>
<th>Households / Segment</th>
<th>Sample Size (Intended)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daddu Majra Colony</td>
<td>2584</td>
<td>10</td>
<td>5</td>
<td>257</td>
<td>102</td>
</tr>
<tr>
<td>Janta Colony</td>
<td>2726</td>
<td>12</td>
<td>6</td>
<td>227</td>
<td>118</td>
</tr>
<tr>
<td>Gur Sagar Sahib Colony</td>
<td>456</td>
<td>2</td>
<td>1</td>
<td>228</td>
<td>50</td>
</tr>
<tr>
<td>Kajheri Colony</td>
<td>3727</td>
<td>16</td>
<td>8</td>
<td>232</td>
<td>140</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9493</strong></td>
<td><strong>40</strong></td>
<td><strong>20</strong></td>
<td><strong>944</strong></td>
<td><strong>410</strong></td>
</tr>
</tbody>
</table>

4th stage: The households thus enlisted were then visited by the investigator. If the particular visited house, had at least one female in the age group of 10 – 24 years, it was selected as a sampling unit dwelling, otherwise the investigator moved to the adjacent household, and thus till the female of 10 – 24 years was not available, the next sample and household was not taken.

In case there were two or more females in the age group of 10 – 24 years in the same household, the female, who opened the door or first met the investigator was taken as the subject. Further if two or more females of 10 – 24 years were sitting together, when the investigator entered the house then the female who was older in age,
was taken up as the study subject. If someone else opened the door, then the availability and age of the subject was considered for enrolling her as subject. Only one female per household has been interviewed.

**Final Sample:**

Though it was intended to take up 410 study subjects, only 386 females participated. Twenty-four subjects could not participate in the study, due to various reasons as shown in the Table – 2.2 on the next page.

Table – 2.2

**PARTICIPATION OF THE STUDY SUBJECTS**

<table>
<thead>
<tr>
<th>Participation Status</th>
<th>Daddu Majra Colony</th>
<th>Janta Colony</th>
<th>Gur Sagar Sahib Colony</th>
<th>Kajheri Colony</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Selected</td>
<td>102</td>
<td>118</td>
<td>50</td>
<td>140</td>
<td>410</td>
</tr>
<tr>
<td>Sample Participated</td>
<td>101</td>
<td>103</td>
<td>50</td>
<td>132</td>
<td>386</td>
</tr>
<tr>
<td>Sample Not Participated</td>
<td>1</td>
<td>15</td>
<td>0</td>
<td>8</td>
<td>24</td>
</tr>
</tbody>
</table>

**Reason for non-participation**

<table>
<thead>
<tr>
<th>Reason for non-participation</th>
<th>Daddu Majra Colony</th>
<th>Janta Colony</th>
<th>Gur Sagar Sahib Colony</th>
<th>Kajheri Colony</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>House found locked thrice</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Subject refused</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Mother refused</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Father-in-law refused</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mother-in-law refused</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Husband refused</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
**Data Sources:**

The data was collected both from primary and secondary sources. The information from published and unpublished sources like survey reports, household registers with sub-center, census, newspapers, magazines, monographs, etc. was used as secondary sources. For the primary data, the information was collected directly from the study subjects with a help of a pre-tested semi-structural interview schedule.

**Development of Tools:**

The interview schedule was developed by review of relevant literature, work experience of the investigator in the community, consulting experts in the field of sociology, community medicine, obstetrics and gynaecology and nursing. Their suggestions and comments were incorporated for the validity of the instrument. There were a total of seven experts to assess the context validity, and necessary modifications were made.

The reliability of tools was ensured by test – retest method, which was obtained by administering the tool twice to 10 subjects. Reliability co-efficient was calculated by using the Spearman’s rank co-relation co-efficient by using the formula:

\[ \rho = 1 - \frac{6 \sum D^2}{N(N-1)} \]  
(Mahajan, 1991)

where:
- \( \rho \) = co-efficient of rank co-relation.
- \( D \) = rank difference.
- \( N \) = number of pairs.

The co-efficient of relation was 0.561, which is significant.

The interview schedule was suitably modified again after the pilot on ten women was conducted in Janta Colony, Naya Gaon, adjacent to Chandigarh, where the social, economical and demographic patterns are akin to the slums of Chandigarh.
The interview schedule comprised of four parts to collect information pertinent to various aspects of the study (Annexure – III).

A) Household characteristic schedule to gain insight into the background of the study population. It collected information of respondents’
   Housing – Type, amenities, assets, etc.
   Family – Size, composition, education, occupation, income, etc.

B) Prevalence of reproductive morbidities among the respondents. In all nine reproductive morbidities were listed for which the information was collected. These have already been discussed in the operational definitions in the previous chapter.

C) Reproductive health treatment seeking behaviour and their consistency / inconsistency to stick to a particular health agency. This schedule was filled only for those respondents who had some reproductive health morbidity.

D) Perception of the respondents regarding their general health needs, reproductive health needs and gain insight into their attitude, knowledge and practices relating to their needs.

**Data Collection:**

Data collection was done from December 2001 to October 2002, by the investigator, herself. After self-introduction and explaining the purpose of the study, information was collected on the household and family characteristics and respondents for the study were identified (Annexure II). The procedure was then explained to the respondents and then they were asked to give their verbal consent for the participation. The interview was conducted in privacy only with the respondents. Visits had to be conducted sometimes on holidays or evenings to interview, in case the house was found locked or the identified respondent was not available. Such houses were visited thrice, and if contact with the respondent was not established, then they were dropped from the study. Mothers insisted on sitting along with three respondents who were unmarried. They were allowed to be with their daughters, after they were made to understand that they would not be allowed to give an answer to any of the questions being asked.
Anecdotes:

i) In Janta colony one of the respondents, who was 11½ years old, refused to talk in between when questions related to menstruation were asked. She ran outside, where her father and brother were sitting saying, “Aunty gandi-gandi batein poochi hai” (Aunt asks objectionable and dirty questions). Her mother and the investigator tried to persuade her but in vain.

ii) In Kajheri, when the interview was being conducted, the father-in law of one of the respondents came in an inebriated condition and said, “mein is gliar ka malik hoon, jo poochna hai mujhse pooclto. Is kutti ko kuch nahin pata. Ise to is gliar se nikaal ke hi dum loonga.” (I am the owner of this house and whatever you want to enquire, ask me. She is a bitch who does not know anything. I will not rest, till I throw her out of the house). The investigator had to leave the interview on that day, due to unavoidable circumstances. On the second visit to the house it was found locked. The neighbor’s informed the investigator that the respondent’s mother in law had expired in her native village in Uttar Pradesh, so the entire family had gone there, and would return after a month or so. Thus, the subject had to be dropped from the study sample.

iii) In yet another incident, the husband of the respondent, again in an inebriated status, refused to leave the subject alone, on the pretext saying, “yeh to bholi hai, ise jo kuch poochte hai, bata deti hai, Ise akal nahin hai, kuch batein chupane ki bhi hoti hain.” (She is very innocent, and she will tell you anything you will ask her. She has no sense, that certain matters are discreet and not to be revealed). On subsequent two visits, the husband did not allow the investigator to meet the respondent, though she was at home. So this subject also had to be dropped from the sample.
A total number of houses surveyed were 463 to get a sample of 410 in the age group of 10-24 years females. Average time spent for conducting an interview was 50-60 minutes for a married respondent who had conceived and 25-30 minutes for unmarried respondents and those who had never conceived. Taking into account the time taken to reach a house and building rapport for the interview an average of one hour and fifteen minutes was spent on each subject. Therefore six hundred hours were approximately needed to collect the data.

The liaison was established with the Government dispensary medical officers, wherever applicable. The subjects who were found to have some morbidity were referred. Many of the subjects were very co-operative, and had many queries, once the interview was finished. Since, the investigator herself is a community health personnel, she gave health education and referred the respondents with reproductive health problems as and when needed. However, compliance to referral was not scheduled in the study. Therefore, referral data has not been analyzed.

**Ethical Consideration:**

Respondents above 18 years were first explained the purpose of the study and then, their verbal consent was obtained. The younger respondents’ parent’s or husband’s approval was taken prior to the interview. Whenever the respondent’s parents / husband refused, the investigator tried to convince them, but no undue pressure was exerted. Twelve subjects were dropped from the sample due to this reason. Another 12 subjects had to be dropped because they could not be contacted, inspite of repeated visits to their houses. Full confidentiality was maintained, while the interview was conducted and the subjects were also given an assurance about this.

**Data Analysis:**

The data collected has been processed both manually and electronically. The descriptive data i.e. the qualitative aspect has been handled manually, whereas quantitative processing was done on the computer using SPSS package (Argyrous, 2000). Univariate, Bivariate and Multivariate analysis has been undertaken to identify the patterns of reproductive health seeking behaviour in relation to various social, economical and demographic factors.
For the present study, the socio-economic scale has been developed taking into consideration five characteristics of the respondent. The scale has been developed in order to justify that any social class or strata have two aspects – the subjective aspect and the objective aspect. The subjective aspect pertains to individual’s class as a part of one’s ego, a feeling of belongingness to and identification with something larger than himself. In it’s objective aspect, “social class is the totality of individual’s, the people of which have similar position in regard to occupational, economic and political status (Sorokin, 1959). The socio-economic scale developed and used is given as Annexure I.

Figure – 2.1

MAP OF CHANDIGARH SHOWING THE SLUMS TAKEN UP FOR STUDY