CHAPTER 3

METHODOLOGY

3.1. DEFINITION

From the literature review, it is clear that, a many studies have been conducted so far to examine the various issues regarding information needs and information seeking behaviour of medical practitioners abroad and also Indian settings. But so far, not a single study has been conducted in information needs, information channel, information sources and information barriers. In order to satisfy information needs, medical practitioners have to use various channels to reach to the sources of information. The 2 main channels of information are formal (e.g. library) and informal (e.g. discussion with colleagues).

The nature of information needs by the medical practitioners in relation between variables is illustrated in Fig. 3.1.

![Diagram](image)

Fig. 3.1. A model to study information seeking strategies of Medical Practitioners.
3.2. OBJECTIVES OF THE STUDY

The objectives of the present study is mainly as follows:

1. To investigate the nature of information needs by the medical practitioners.

2. To examine local institutions in relation to transmission of medical information.

3. To identify the relationships between information needs, information channels, information barriers and information sources.

4. To study any relationships between background variables of medical practitioners and their information needs.

5. To suggest a model for effective transmission of medical information in North East India.

3.3. HYPOTHESIS

For the purpose of this study, the medical practitioners have been classified into 2 group each, Clinicians Versus Non-Clinicians in one group and Institutional Versus Private Medical Practitioners in other group. The underlying assumptions are that information needs and information seeking behaviour of clinicians, non-clinicians and private medical practitioners working in various parts of North East India will not differ. Keeping in view the above assumption main hypothesis to be tested are as follows :-
1. There is no significant difference in information seeking strategy between clinicians and non-clinicians.

2. There is no significant difference in information seeking strategy of medical practitioners based on their background variables.

3. There is no significant difference in information seeking strategy between private medical practitioners and medical practitioners working in institutions.

3.4. THE RESEARCH SITE

The aim of the present study is to study the information needs and seeking strategy of the medical practitioners in North East India. Medical practitioners for the purpose of study have been divided into clinicians, non-clinicians and private medical practitioners. Clinicians and non-clinicians are medical practitioners attached to the institution. Clinicians are medical practitioners who specializes in General Medicine, Paediatrics, General Surgery, Orthopaedics, Otorhinolaryngology, Ophthalmology, Obstetrics and Gynaecology, Radiodiagnosis, Anaesthesiology, Psychiatry, Dermatology, Venerology & Laproscopy, Dentistry. Non-clinicians are medical practitioners who specialize in Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology, Forensic Medicine and Community Medicine. The private medical practitioners are those medical practitioners who are not affiliated to an institution, but have their own clinics for their practice.
This study attempts to identify the relationship among information needs, sources, channels and barriers with background of medical practitioners working in North-East India. The following method has been adopted to conduct the present study.

For the purpose of this study, all Medical Colleges with attached Hospital were identified. In North-East India, there are only four Medical Colleges, which have Hospital attached to them. These are as follows:

1. Gauhati Medical College, Guwahati.

2. Assam Medical College, Dibrugarh.

3. Silchar Medical College, Silchar.

4. Regional Institute of Medical Sciences, Imphal.

The medical practitioners working in the above Institutions are Professor, Associate Professor, Assistant Professor and Registrar / Demonstrator.

3.5. THE SAMPLE

The sample comprised of all medical practitioners working in four Medical College & Hospitals. There are total 605 medical practitioners working in four Medical College and Hospitals. Out of that, 92 medical practitioners were not available for following reasons:
(i) Some of them were on long leave for study out of the institution.

(ii) Some of them were on leave due to transfer.

(iii) Some of them were abroad.

Therefore, questionnaires were distributed to remaining 513 medical practitioners. The questionnaires were distributed and collected personally. The data collection was done through September 1998 to May 1999. Each medical practitioner was requested 3 times to return the questionnaires. Out of 513 medical practitioners, only 374 medical practitioners responded making in 72.90% response. Further, in order to study the difference between medical practitioners working in Institution and private medical practitioners data was also collected from 23 private medical practitioners based in Guwahati alone. Table 3.1 and Table 3.2 shows details of the sample.

Table : 3.1. Data summary regarding Sample.

<table>
<thead>
<tr>
<th>SL. NO.</th>
<th>INSTITUTIONS</th>
<th>Total Medical Practitioners</th>
<th>Participated Medical Practitioners</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GAUHATI MEDICAL COLLEGE &amp; HOSPITAL, GUWAHATI</td>
<td>207</td>
<td>175</td>
<td>84.54%</td>
</tr>
<tr>
<td>2</td>
<td>ASSAM MEDICAL COLLEGE &amp; HOSPITAL, DIBRUGARH</td>
<td>109</td>
<td>73</td>
<td>66.97%</td>
</tr>
<tr>
<td>3</td>
<td>SILCHAR MEDICAL COLLEGE &amp; HOSPITAL, SILCHAR</td>
<td>92</td>
<td>61</td>
<td>66.30%</td>
</tr>
<tr>
<td>4</td>
<td>REGIONAL INSTITUTE OF MEDICAL SCIENCE, IMPHAL</td>
<td>105</td>
<td>65</td>
<td>61.90%</td>
</tr>
<tr>
<td></td>
<td><strong>Total ::</strong></td>
<td><strong>513</strong></td>
<td><strong>374</strong></td>
<td><strong>72.90%</strong></td>
</tr>
<tr>
<td>5</td>
<td>PRIVATE PRACTITIONERS AT GUWAHATI</td>
<td>23*</td>
<td>23</td>
<td>100%</td>
</tr>
<tr>
<td><strong>GRAND TOTAL ::</strong></td>
<td></td>
<td><strong>536</strong></td>
<td><strong>397</strong></td>
<td><strong>74.06%</strong></td>
</tr>
</tbody>
</table>

*: Random sample
Table: 3.2. Details of the Sample.

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Name of the Institution</th>
<th>Levels</th>
<th>Total</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>P</td>
<td>AS</td>
<td>AP</td>
</tr>
<tr>
<td>1</td>
<td>G.M.C.H.</td>
<td>40</td>
<td>33</td>
<td>57</td>
</tr>
<tr>
<td>2</td>
<td>A.M.C.H.</td>
<td>10</td>
<td>09</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>S.M.C.H.</td>
<td>14</td>
<td>09</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>R.I.M.S.</td>
<td>16</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>P.P.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>80</td>
<td>63</td>
<td>109</td>
</tr>
<tr>
<td>%</td>
<td></td>
<td>20.15</td>
<td>15.86</td>
<td>27.45</td>
</tr>
</tbody>
</table>

Note: GMCH = Gauhati Medical College & Hospital, AMCH = Assam Medical College & Hospital, SMCH = Silchar Medical College & Hospital, RIMS = Regional Institute of Medical Sciences, PP = Private Practitioners, P = Professor, AS = Associate Professor, AP = Assistant Professor, D/R = Demonstrator/Registrar.

As seen from Table 3.2, out of 397 participants, 36.01% represent the top level medical practitioners, viz., Professor and Associate Professor, 27.45% Assistant Professor, whereas 30.73% represent lowest level viz., Demonstrator/Registrar. Majority of the participants were males (73.80%).

3.6. THE SURVEY QUESTIONNAIRE

A questionnaire booklet (Appendix I) based on various studies and scales available in current literature was prepared. There were total of 123 items, which were divided into five sections. A summary of the measures employed, is given in Table 3.3.
Table: 3.3. Survey Questionnaires employed in the Study.

<table>
<thead>
<tr>
<th>Section</th>
<th>Measures</th>
<th>No. of Items</th>
<th>Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Information needs</td>
<td>15</td>
<td>5 point likert type</td>
</tr>
<tr>
<td>II</td>
<td>Information sources</td>
<td>54</td>
<td>5 point likert type</td>
</tr>
<tr>
<td>III</td>
<td>Information channels</td>
<td>25</td>
<td>5 point likert type</td>
</tr>
<tr>
<td>IV</td>
<td>Information barriers</td>
<td>17</td>
<td>5 point likert type</td>
</tr>
<tr>
<td>V</td>
<td>Background variables</td>
<td>12</td>
<td>**</td>
</tr>
<tr>
<td>TOTAL ::</td>
<td></td>
<td>123</td>
<td></td>
</tr>
</tbody>
</table>

** : Note : Scale varies from single item measures to 8 items.

3.6.1. INFORMATION NEEDS

In this section, there are 15 items, distributed on various information needs. The scale items were averaged on 5 point likert type rating scale ranging from 5 = to a very great extent; 4 = to great extent; 3 = to some extent; 2 = to a small extent; 1 = almost no extent. In the information needs of a medical practitioner, items are in first person, i.e. the "I" format, e.g.:

"I need information to know about the background of the patient".

"I needs information to prepare conference / seminar papers".

"I collect information for understanding research project".

3.6.2. INFORMATION SOURCES

Altogether there are 54 items in this section. The attempt has been made to have comprehensive list of information sources, both printed and non-printed information sources included. The scale items were averaged on 5 point likert type rating scale ranging from 5 = very often;
4 = often; 3 = sometimes; 2 = seldom; 1 = never. Here also items are in first person, i.e. the "I" format, e.g.

**Printed information sources:**
- "I use news-letters."
- "I use current awareness bulletins".
- "I use directories".

**Non-printed information sources:**
- "I use radio".
- "I use cinema".
- "I use internet".

3.6.3. INFORMATION CHANNELS

In this section, 25 items are included and based on the use of various information channels both formal and informal, are included. The scale items arrange on 5 point likert type rating scale ranging from 5 = very often; 4 = often; 3 = sometimes; 2 = seldom; 1 = never. The items are in first person, i.e. "I" format, e.g.

- "I get / acquire information by consulting the Institutional library".
- "I get / acquire information by personal connection".
- "I get / acquire information by conducting computer based search on my Institute".

3.6.4. INFORMATION BARRIERS

The medical practitioners face various barriers while seeking information. In order to study the information barriers and their impact on information needs there are 17 items on explaining various information barriers were included. These 17 items included personal
as well as environmental barriers. The scale items were averaged on 5 point likert type rating scale ranging from quite 5 = true; 4 = true; 3 = doubtful; 2 = false; 1 = quite false. The items are like:

"There is always shortage of books in my Library".

"Library staff does not assist in using library resources".

"I have communication barriers with my library staffs".

3.6.5. **BACKGROUND VARIABLES**

Last section of the questionnaire, consist of 12 items of background variables. The background variables taken into consideration are present age, age at the time of joining in the medical profession, sex, marital status, designation, joining qualification, academic qualification, specialization, number of years working in the profession, number of years working in the present position, number of years working in present organization, number of years working in other organization. Single item measure was named for background variables having scales ranging from 1 – 8.

3.7. **THE STATISTICAL ANALYSIS**

The following statistical techniques were employed:

a) Factor analysis with varimax rotation,

b) Inter co-relation among the inferred variables,

c) Analysis of variance (ANOVA).
Factor analysis is a data reduction process, but it differs from principle component analysis (PCA). In PCA, variance is the element leading to inclusion of an entity within a component, whereas in factor analysis, co-variance is the critical element. The consequence is that an entity needs not to be included within one factor and partially within one or more others. Factor analysis is frequently used in where there is need to see a relatively large number of measures reduced to fewer, one basic underlying variables. It is used as a means of detecting underlying structure or order among variables. These new composite variables or factor derived there identified from the context of the variables with which they are strongly co-related. These co-relations are called factor loadings.

To reveal the multiple dimensions produced by factor analysis factor loadings are rotated according to various criteria, the most common of which is a varimax rotation. The rotation procedure groups variables that tend to co-relate highly with some factors and considers them together. This allows factors to be defined in terms of the variables with which they are highly co-related.

Factor analysis was initially developed in the context of psychology, but this technique has been used by few studies in library science field also. McGrath et al. (1969) applied factor analysis to a formula for determining library collection, allocations of academic departments. Data on 22 variables used for developing an allocation formula was analysed using multiple co-relation and factor analysis. The data were reduced to three groups or factors. Phillips & Lyons (1990) choose
factor analysis as a relevant technique to identify relationship among 19 of the questions they asked faculty regarding library policy. The criteria used by SPSS PC package employed selected six factors (Eigen value = 1) out of which only four retained for final analysis. Saraf (1995) applied factor analysis for determining leadership styles and their effectiveness in the management of University libraries in India. Rahman (1999) applied factor analysis in role of documentation centers in communication and dissemination of scientific and technological ideas in Bangladesh.

Fifteen items of information needs in section I, 54 items of information sources in section II, 25 items of information channels in section III, 17 items of information barriers in section IV were subjected to factor analysis with varimax rotation separately and inferred factors were named appropriately. Analysis of variance (ANOVA) was applied to identify the relationship among the information needs, information sources, information channels, information barriers and background variables.

All statistical techniques were performed using SPSS-PC (ver. 6.0), 1993.