CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This concept gave genesis to the information searching and the method of determining the pattern of search is regarded as Information seeking behavior (ISB). Information Technology, Information age and Information revolution are familiar terms in day to day life. With growth of information, everyone needs it in an increasing variety and capacity with diversity of levels, frequency, volume and use. The use of information is so complex that there cannot be a single system to take up the task of effective retrieval without assessing their needs.

3.2 Methodology

This study has been limited to the faculty members working in Government Medical Colleges of Karnataka. There are 10 Government Medical colleges in Karnataka. Questionnaire was framed to the Librarians of Government Medical Colleges to obtain information regarding library facilities, staff particulars. Based on the data obtained from the Librarians questionnaire a structured questionnaire has been designed to obtain data from the faculty members of Government medical colleges. The questionnaire covers the information Elicits information regarding institution, designation, age, gender, visiting the library, services, information required, Delegation, Sharing of information, attending conferences, seminars and motives for seeking information. Table 3.1 shows the year of establishment of Government Medical colleges in Karnataka.
Table: 3.1 Year of Establishment of Government Medical Colleges

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Year of Establishment</th>
<th>Number of Government Medical Colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1924</td>
<td>01</td>
</tr>
<tr>
<td>02</td>
<td>1955</td>
<td>01</td>
</tr>
<tr>
<td>03</td>
<td>1957</td>
<td>01</td>
</tr>
<tr>
<td>04</td>
<td>1961</td>
<td>01</td>
</tr>
<tr>
<td>05</td>
<td>2005</td>
<td>01</td>
</tr>
<tr>
<td>06</td>
<td>2006</td>
<td>03</td>
</tr>
<tr>
<td>07</td>
<td>2007</td>
<td>02</td>
</tr>
<tr>
<td></td>
<td><strong>Total:</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

3.3. Questionnaire Design

The questionnaire is designed in such a way that faculty members can easily understand. It is a structured close-ended questionnaire developed in simple language. The faculty members and librarians have been used two type questionnaire to collect data related information need and information seeking behaviour. Questionnaire 2 for collect data regarding the users of the library and respondents details which includes gender, age, department, academic, e-resources which include types, frequently and purpose of using e-sources behaviour of browsing online journals, articles, Conference, Seminars, Interactive meeting while accessing online resources and level satisfaction with resources.

Data was distributed by means of structured questionnaire among 950 faculty members working 10 Government medical colleges namely. In this study 10% of the sample questionnaires have been considered for enumeration for each medical college. Accordingly the distribution of questionnaires among the faculty members and the quantum of response received.
3.4. Sampling

Karnataka Government medical college has 10 affiliated to Rajiv Gandhi University to Health Sciences at Bangalore. In this study purpose selected all Government Medical colleges present study, representing total Medical Colleges in the state of Karnataka. The researcher proposed to select 100 respondents for each medical college through interview questionnaire. However actual reply was reviewed from 855 respondents. Mysore medical college, Mysore 89 respondents are selected, 88 respondents are selected from Bangalore Medical College, Bangalore, 92 respondents are selected from Karnataka Medical College, Hubli, 89 respondents are selected from Vijayanagara Institute of Medical sciences, Bellary, 83 respondents are selected from Bidar Institute of Medical Sciences, Bidar, 81 respondents are selected from Mandaya Institute of Medical Sciences, Mandaya, 79 respondents are selected from Belagavi Institute of Medical Sciences, Belagavi, 79 respondents are selected from Hassan Institute of Medical Sciences, Hassan, 82 respondents are selected from Raichur Institute of Medical Sciences, Raichur, 93 respondents are selected from Shimoga Institute of Medical Sciences, Shimoga. Thus 855 respondents are considered as a sample of the study. The sampling of the study is based on purposive random sampling.

3.5. Data Collection

The investigator has adopted the following methods for data collection

A total of 950 structured questionnaires were distributed among faculty members of different Government Medical colleges, taking in to account 10% of the total respondents in each institution. Of the 950 questionnaires distributed 855 samples received. Received sample questionnaires were analyzed statistically.

Step 1. Review of literature

The literature on Information needs and Information seeking behavior has been studied which facilitated the construction of questionnaire.

Step 2. Questionnaire for Librarians of Government Medical Colleges.

Questionnaire was framed to the librarians of Government Medical Colleges to obtain information regarding library facilities, staff particulars etc.

Step 3. Questionnaire for faculty members
Based on the data obtained from the librarian’s questionnaire a structured questionnaire has been designed to obtain data from the faculty members of Government Medical Colleges. The questionnaire covers the information in the following sections.

**Section 1. General Information**

Elicits information regarding respondents, institution, designation, age, gender etc

**Section 2. Library use**

Covers information about respondents frequent visits, reasons for not visiting the library, time spent in the library visit of other libraries etc.

**Section 3. Information sources required.**

Identifies formal and informal sources of information.

**Section 4. Motives for seeking information**

Identifies the motivating factors seeking information in 5 point scale

**Section 5: dependence on the sources of information.**

Deals with the information regarding the dependence on formal and non formal sources of information and the extent of dependence.

**Section 6: Extent of use of library services**

Covers the information on up to what extent the respondents make use the library services.

**Section 7: Delegation.**

To identify whether the respondents delegate persons for the collection of information, the reasons for delegation, the nature work delegated, the reasons for non delegation etc.

**Section 8: Sharing of information.**

Identifies the extent of sharing of information of the respondents with their colleagues, peers etc.

**Section 9: Attending conferences, seminars.**

Deals with the extent of dependence on Seminars/Conferences/Interactive meetings etc.

**Section 10: Bibliographic reference sought.**
Covers the sources of bibliographic references library catalogue latest additions, internet etc.

**Section 11:** Data bases sought.

Identifies the data bases the respondents frequently search for information.

**Section 12:** Factors affecting information seeking environment.

Identifies the factors like Information overload, MCI norms etc., that affects the information seeking process.

**Section 13:** Method of collecting information.

Identifies the method of collecting Information from different sources according to the respondent’s importance.

**Section 14:** Dependence and Satisfaction/ Non-satisfaction.

Covers the dependence on the format and informal sources of information and satisfaction / non-satisfaction derived from these sources.

**Step 4.** Pilot study.

A pilot study was conducted with a sample of 30 respondents from different colleges and the results were tested. Based on the study the questionnaire was further modified and developed to suit the objectives. Accordingly revised version of the question was finally adopted.

**Step 5.** Administration of the questionnaire.

Structured questionnaires were distributed among the respondents working in 10 Government Medical colleges. Questionnaires were personally distributed and collected by the investigator because of the busy schedule of the faculty members.

**Step 6.** Data Analysis.

The data collected from the questionnaire has been statically analyzed to test the hypotheses framed and to fulfill the stated objectives.
3.6. Data Analysis

A total of 950 structured questionnaires were distributed among faculty members of different Government Medical Colleges, taking into account 10% of the total respondents in each institution. Of the 950 questionnaires distributed 855 samples were received. Received sample questionnaires were analyzed statistically.

For data analysis the following statistical techniques were used in the study.

i. **Percentage:** As absolute figures are unfit for relative study and in statistical analysis where most of the data is compared relatively percentage has been calculated in this study. These are simple derivatives (quantity) obtained by a combination of two or more figures. In calculation of percentage one figure is taken as base and is represented by 100. The other figure is expressed as ratio of the base.

ii. **Ratio:** A ratio is a quotient obtained by dividing one figure by another. A ratio reduces the size of the numbers and facilitates comparison.

iii. **Weighted Average (WA):** In the calculation of simple average each item of the series considered equally important. But there may be cases where all items may not have equal importance. Some of them may be comparatively more important than others. If an average have to maintain its representative character it should take into account the relative importance of the different items from which it is calculated.

In calculating the weighted Arithmetic average (WA) each value of the variable is multiplied by its weights and the products so obtained are aggregated. This total is divided by the total weights and the resulting figure is the weighted arithmetic average.

Symbolically:

\[
X \_w = \frac{X_1W_1 + X_2W_2 + X_3W_3 + \ldots \ldots + X_nW_n}{W_1 + W_2 + W_3 + \ldots \ldots + W_n}
\]
Where \( X_w \) stands for the weighted arithmetic average. \( X_1, X_2, X_3 \) etc., for the values of the variable and \( W_1, W_2, W_3 \) etc., for the respective weights.

**IV. Standard deviation (STD):** The technique in calculation of mean deviation is Mathematically illogical as in its calculation the algebraic signs are ignored. This drawback is removed in the calculation of Standard deviation (STDV). Standard deviation is the square root of the arithmetic average of the squares of the deviations measured from the mean. Standard deviation is technique used to denote the measure of dispersed tendency. It is a measure which shown how far the given items in a problem is distributed away from the centre.

These measures mainly as follows:

a. Range
b. Quartile deviation
c. Mean deviation
d. Standard deviation

Among these measures, Standard deviation is the reliable measure. Any measure can be calculated for ungrouped and grouped data. Here in this study data was analyzed for ungrouped data. Thus in the calculation of Standard deviation, the first step is to calculate the arithmetic average and then the deviation of various items from the arithmetic average are squared. The squared deviations are totaled and the sum is divided by the number of items. The square root of the resulting figure is the Standard deviation of the series.

Symbolically

\[
\text{Standard deviation } \sigma = \sqrt{\frac{\sum_{i=1}^{n} x_i^2 - (\sum_{i=1}^{n} x_i)^2}{n}}
\]

Where \( x_1 \) shows the items of the data in the row

\( X^- \) shows the Arithmetic mean of the data

**V. Chi-square test:** The Chi-square test is one of the simplest and widely used non-parametric tests in statistical work.

It is denoted as \( x^2 \)
\[ X^2 = \frac{(O-E)^2}{E} \]

Where \( O \) refers to observed frequency and \( E \) refers to expected frequency.

The following are the steps to be followed to arrive at \( X^2 \)

Calculate the expected frequency using the formula

\[ E = \frac{(\text{Row total} \times \text{Column total})}{\text{The total number of observations}} \]

Take the difference between observed frequencies and expected frequencies and square them to obtain the values of \((O-E)^2\)

Divide the value of \((O-E)^2\) by the corresponding expected frequencies and obtain the total of \((O-E)^2/E\). This gives the calculated value of Chi square.

The calculated value of Chi square is compared with table value at 5% level of significance. If the calculated value of Chi square is greater than the table value then the difference between the theory and observation is considered to be significant. It could not have arisen due to fluctuations of sampling

On the other hand if the calculated Chi square value is less than the table value the difference between theory and observation is not considered to be significant. It may be due to fluctuations of sampling and hence ignored.
3.7 Statistical technique Used

**Percentage:** As absolute figures are unfit for relative study and in statistical analysis where most of the data is compared relatively percentage has been calculated in this study. These are simple derivatives obtained by a combination of two or more figures. In calculation of percentage one figure is taken as base and is represented by 100.

**Ratio:** A ratio is a quotient obtained by dividing one figure by another. A ratio reduces the size of the numbers and facilitates comparison.

**Weighted Average:** In the calculation of simple average each item of the series considered equally important. But there may be cases where all items may not have equal importance. Some of them may be comparatively more important than others. If an average have to maintain its representative character it should take into account the relative importance of the different items from which it is calculated.

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**Step 4. Pilot study.**

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