Findings, Suggestions and Conclusion

6.1 Introduction

The researcher set out to study the information seeking behaviour of the pharmaceutical science library users of South Kanara and Udupi districts. The objective of the research is to make an empirical study of the information need and seeking pattern of the pharmaceutical science library users in general, and to evaluate the nature, purpose, use pattern, and information seeking habits of the pharmaceutical science institutions of South Kanara and Udupi districts in particular.

In the light of the facts gathered and analysed, the researcher made an attempt to elucidate the major findings, suggestions to improve the services and facilities in the pharmaceutical science colleges of South Kanara and Udupi district and also made recommendations towards the further studies concerned to the present topic.

The total population of the study was 924 which includes 708 under graduates, 71 postgraduates, and 145 faculty members. Samples of 251 UG students, 60 PG students, and 106 faculty members have been selected for the survey. A common questionnaire was distributed among the respondents and the data obtained from the questionnaire has been broadly categorized under
following heads according to the objectives of the study to analyse the findings, suggestions and conclusion

6.2 Profile of respondents

The respondents profile-background information is very important to know and understand their information seeking behaviour. For the respondents profile data the researcher collected the background information of the respondents which will help to understand the seeking pattern of the users with respect to their age, gender, and designation.

The profile of the respondents belonging to the five pharmaceutical science colleges under study shows that:

- The sample consists of 266 (63.79%) males and 151 (36.21%) of females. It shows that the majority of the library users under study belong to the male gender.

- The age-wise distribution shows that 307 (73.62%) respondents of the survey of the 417 belong to the age group of 18 to 25. The next bigger group belongs to the age group of 26-35, i.e., 77 (18.47%) respondents of the total sample.

- Designation-wise distribution of the sample shows that there are 251 (60.19%) respondents belonging to the undergraduate students group. Postgraduate students comprise 60 (14.39%) of the total sample and 106 (25.42%) respondents belong to the faculty members' category.

- Further, of the 251 undergraduate students, 155 (61.75%) are male and 96 (38.25%) are female students. Among the postgraduate students, 38 (63.33%) are male and the rest 22 (36.67%) are females. In the category of faculty members, 73 (68.87%) are from the male gender and 33 (31.13%) from the female gender.
6.3 Purpose of seeking information

It is noticed that

❖ The majority, i.e., 281 (67.39%) of the respondents seek information to keep up-to-date in his/her area of knowledge. The next larger group of respondents, i.e., 74 (17.75%) seek information for the preparation of course work and notes.

❖ The gender-wise analysis shows that almost 185 (69.55%) of the male respondents and 96 (63.58%) of the female respondents seek information to keep themselves up-to-date. A considerable group of female respondents, i.e., 37 (24.50%) and 37 (13.91%) male respondents seek information for preparing course work notes.

❖ It found that 61 (79.22%) of the respondents belonging to the age group 26-35 and 198 (64.50%) of them belong to the age group of 18-25 seek information to keep themselves up-to-date. As much as 17 (15.38%) of the age group of 36-45 and 2 (28.57%) of the age group of 46-55 seek information to write conference papers.

❖ There are 162 (64.54%) undergraduates, 35 (58.33%) post graduates and 84 (79.25%) faculty members who seek information to keep themselves up-to-date. Some of the undergraduates 59 (23.51%) opine that they seek information for the preparation of course work. As many as 13 (21.67%) of the postgraduates were also of the same opinion. However, the faculty members do not hold this opinion. Among them, the second larger group of 12 (11.32%) seek information for writing papers for conferences.

Inference: It is remarkable to note that, the majority of the respondents, irrespective of their gender, designation, and age group seek information to keep themselves up-to-date in their subject area and to prepare course work or class notes.
6.4 Channels of seeking information

It has been found that

❖ The internet is the highly preferred channel of information seeking. 198(47.5%) of the respondents mentioned the internet as a complete preference for their information seeking.

❖ The traditional method of seeking information through the library is not lagging behind, since 189(45.3%) of the respondents prefer their mode of information seeking through the library.

❖ The other important channels are – discussion with experts within the institute, i.e., 153(36.7%) and equal percentages – 36(70%) of the respondents also seek information by attending seminars/conferences.

Inference: It has been found that a majority of the respondents prefer the internet and institute libraries as their main channel of information seeking, respectively.

6.5 Mode of acquiring current information

It is observed that

❖ The majority 171(41.01%) of the respondents use the current issues of print journals to acquire current information in their subject area. In this, 105(39.47%) of the respondents are male and 66(43.71%) are females.

❖ The next larger group of 96(23.02%) respondents prefer the internet/E-mail alerts as the mode of acquiring current information.

❖ Further, as many as 91(21.82%) of the respondents depend on online journals for current information, i.e., 55(20.68%) of the male and 36(23.84%) female respondents belong to this category.
The designation-wise distribution of opinion reveals that, 85 (33.86%) undergraduates, 22 (36.67%) post-graduates, and 64 (60.38%) faculty members seek current information through print journals.

**Inference:** Most of the respondents depend on the print journals for current information followed by the internet and online journals but, library services like CAS, SDI are not used much as a mode for acquiring current information.

### 6.6 Purpose of visiting library

It is prominently noted:

- **Majority** 309 (74.10%) of the respondents visit the library to read books.
  - As many as 187 (70.30%) of the male respondents and 122 (80.79%) of the female respondents opine that their main objective of visiting the library is to read books.

- 195 (77.69%) undergraduates, 36 (60%) post-graduate students, and 78 (73.58%) faculty members make use of the library to read books.

- The next large group 32 (7.67%) of respondents visit the library for the purpose of reference, followed by to read journals/magazines, i.e., 29 (6.95%). It can be seen that most of the respondents are utilizing the traditional services of the library.

- Finally, 11 (67%) postgraduate students and 9 (43%) of the faculty members use the library to read research articles and only 4 (78%) of the undergraduates make use of the library for this purpose.

**Inference:** It can be seen that the most of the respondents were utilizing the traditional resources of the library, irrespective of gender and designation they visited the library for the purpose of reading books and periodicals.
6.7 Frequency of library visit

It revealed that

❖ Most of the 166 (39.81%) respondents visit the library for 2-3 times in a week of which 99 are males and 67 are female respondents. The next larger group of 138 (33.09%) users visit the library daily.

❖ Only 62 (58.49%) faculty members visit the library every day or two to three times a week. The rest of the faculty are not frequent visitors of the library. Further, 78% of the undergraduates and 76.67% of the postgraduate students are regular visitors of the library.

❖ 36.48% of the respondents belonging to the age group of 18-25 visit the library daily. Similarly, 40.72% of the same group visit the library two to three times a week. In the same way, 71.43% of the respondents of the age group of 46-55 visit the library on a daily basis. Almost 29% of the same group of respondents visit the library 2 to 3 times every week.

Inference: It is found that the majority of the users visit the library either every day or two to three times a week. It can be inferred that gender has not influenced on the frequency of visits to the library but there is a significant difference between the students and faculty members in their frequency of visits to the library.

6.8 Purpose of visit against frequency

It is noticed that.

❖ Among the users who visit the library every day only 99 (71.74%) so to keep up-to-date on their subject area. The next large group of every day visitors do so for preparing course work/notes, i.e., 21 (15.22%) and for other purposes are very limited.

❖ Visitors to the library 2 to 3 times a week are also varied in their purpose of visit to the library. 63.86% of the 166 do so to keep
themselves up-to-date. As many as 15 (9.04%) users visit the library two to three times a week for writing papers for conferences.

**Inference:** The users visit the library regularly to keep up-to-date, the percentage of users who visit the library for the purpose of research/project work and to prepare teaching notes is not significant.

6.9 **Time spent in library**

It found that

- Majority 180 (43.15%) of the users spend 30 minutes to 1 hour in the library, i.e., 110 (41.35%) male and 70 (46.36%) female respondents remain in the library for 30 minutes to one hour. 54 (12.94%) remain in the library for less than 30 minutes, of which 35 (13.16%) are male and 19 (12.58%) are female users. However, 47 users remain in the library for two to three hours, whereas only 18 remain for more than three hours.

- About 51.79% of the undergraduates spend 30 minutes to one hour in the library and 27.89% undergraduates remain in the library for one to two hours. As many as 30% of the post graduates remain from 30 minutes to one hour and another group of exactly 30% remain in the library for one to two hours. Among the faculty members, the majority, i.e., 58.49% remain in the library from thirty minutes to two hours.

- The age groups below 35 vary in their duration spent in the library. The majority spend from 30 minutes to 2 hours in the library. Among those belonging to the age group above 45 the majority spend time in the library up to one hour.

**Inference:** As a whole, it can be reviewed that the maximum number of users, i.e., 298 (71.47%) of the entire sample remain in the library from 30 minutes to two hours per visit to the library.
6.10 Adequacy of computer facility for information seeking

The study has revealed that

❖ Only 82 (19.66%) of the 417 respondents agree to the fact that there is an adequate number of computers in the library. 172 (41.25%) respondents have not responded about the adequacy of the computers.

❖ It can be seen that almost equal percentages of both genders agree positively on this aspect. As much as 19.17% male and 20.53% female respondents agree to this factor.

❖ There are 236 of the 307 respondents belonging to the age group of 18-25 who are dissatisfied with the adequacy of the computers in the library. Respondents of the age group of 26-35 also making the majority, i.e., 68 out of 77 are dissatisfied with the present scenario regarding the inadequacy of the computers.

Inference: It can be inferred, irrespective of their gender, age, and designation that a higher percentage of the respondents opined that the computer facility in the library is not adequate.

6.11 Adequacy of LAN facility

It is prominently noted

❖ 152 (36.45%) of the sample agrees to the fact that the LAN facility of the campus is adequate enough. As much as 34.21% of male and 40.39% female respondents are of the opinion that the LAN facility in their campus is adequate.

❖ The faculty members are the most dejected group of users who do not agree with the adequacy of the LAN facility. 46.23% disagree in the adequacy of the LAN facility, whereas 31.33% did not respond.

❖ Among the postgraduate students also 45% do not agree with the adequacy of the LAN facility in the campus. However, the under-
graduate students have a different opinion, i.e., 42.62% of them strongly agree that the LAN facility was adequate.

- The respondents belonging to the lower age group of 18 to 25 have a different opinion on the adequacy of the LAN facility. 41.69% of the respondents agree to the fact that the LAN facility is adequate. Almost an equal percentage of the same age group respondents, i.e., 41.04% disagree on this aspect.

**Inference:** There is significant difference with regard to the adequacy of LAN facility among different user groups. It can be advocated by the result that 46.23% of the faculty members disagree with the adequacy of the LAN facility but almost an equal percentage of student groups agree with the adequacy of the LAN facility.

### 6.12 Adequacy of OPAC facility

It is noteworthy that:

- 222 (53.24%) respondents agree to the fact that the OPAC facility is adequate. Among these respondents, 176, i.e., 42.21% strongly agree to this fact.

- Among the 266 male respondents, 129 agree that the OPACs are adequate. Among 151 female respondents, 93 are of the opinion that the OPACs of their libraries are adequate.

- As many as 94 undergraduates (37.45%), 21 (35%) postgraduates, and 40 (37.74%) faculty members have disagreed that they do not have adequate OPAC facility.

- 56.35% of the users belonging to the age group 18-25, and 38.96% of the users belonging to the age group 26-35, agree that the OPAC is adequate.
Inference: The OPAC facility is adequate in the opinion of the lower age group and undergraduates, but not so in the higher age group and faculty members. That means almost 50% of the respondents agree about the adequacy of the OPAC facility and an equal percentage of them do not accept the same.

6.13 Adequacy of internet facility

The study has revealed that

- The vast majority of the respondents agree that the internet facility provided by their respective institutions is adequate. As many as 260 (62.35%) respondents are of this opinion of which 171 (64.28%) are male and 89 (58.94%) are female respondents.

- 101 (24.22%) respondents do not agree that the internet facility provided to them is adequate. As much as 60 (22.56%) male respondents and 41 (27.16%) female respondents completely disagree about the adequacy of the internet facility.

- The designation-wise distribution of opinion shows that the faculty members are happy with the internet facility provided to them, i.e., as many as 47 (44.34%) of the respondents are ‘Strongly agree’ with the internet facility provided to them and 27 (25.47%) are ‘Agree’ with regard to the adequacy of the internet facility. Further, there are 151 (60.16%) undergraduate respondents and 35 (58.33%) postgraduates who have positively agreed on the adequacy of the internet facility.

- It is also observed that the percentage towards the dissatisfaction on the internet facility is substantial, i.e., 55 (21.91%) undergraduates, 20 (33.33%) of postgraduate respondents, and 26 (24.53%) faculty members belong to this dejected group with regard to the internet facility in the library.

Inference: It can be inferred that the internet facility provided to the respondents in their respective institutes is adequate.
6.14 Purpose of using internet facility

It is worth mentioning that

❖ Majority of the respondents use the internet facility for general browsing only, amounting to 333 (79.86%) of the total sample. The next large group totals 36 (8.63%) but a nominal percentage of respondents are using the internet facility to access online journals.

❖ Gender-wise division shows that 84.11% females and 77.44% males dominate in using the facility for general browsing.

❖ Of the 251 undergraduates, 202 use the internet facility for general browsing. The people who are using the facility for browsing e-journals is very minimal, i.e., only 16%.

❖ However, it is seen that 25% of the postgraduates are browsing E-journals using this facility. Of the 106 faculty members, 94 are using the facility for general browsing.

Inference: It can be concluded that irrespective of the respondents’ gender, age, and designation, the internet facility is predominantly used for general browsing followed by e-journal access and e-mail purpose.

6.15 Journal archive facility

It is observed that

❖ The analysis of the data shows us a very grim picture about the journal archival facility. Of 477 respondents, only 102 agree that they are having adequate journal archives in their library. This amounts to 24.46% of the total sample. There is no huge difference when the two genders are considered. Only 62 (23.31%) males and 40 (26.49%) females feel that they have an adequate journals archive in their library.

❖ Among the undergraduates, 173 out of 251 do not agree that they had adequate journals archive support. This is about 68.92% of the total.
undergraduate sample. Similarly, 86.67% of the postgraduates and 84.90% of the faculty members also state that they are not happy with journals archive facility.

- In age group-wise analysis among the higher age groups, only a minority, i.e., 14.29% opine that their libraries have an adequate journals archive facility. Among the 307 respondents belonging to the 18 to 25 age group only 87 (28.34%) replied that they have an adequate journals archive in their library.

**Inference:** It can be inferred that the libraries do not have adequate journals archive facility, as agreed to by a majority of the respondents regardless of gender, age, and designation.

### 6.16 Reading room facility

The study has shown that

- 214 (51.32%) of the respondents have not answered this query, of which 129 are male respondents and 85 are female respondents.

- Among the respondents a majority, 203 (48.68%) have answered the query in the negative. Of the 203, only 31 male respondents agree that the reading room facility is adequate. In the same pattern, of the 66 female respondents, 17 share the same opinion.

- In the case of undergraduates only 33 (13.15%) of the total 251 had agreed that there is adequate reading room facility. The percentages are still low in the case of postgraduates and faculty members. Only 6 of the 60 postgraduates and 9 of the 106 faculty members provide a positive answer regarding the reading room facility.

- Among the 307 respondents of the age group 18-25, only 41 (13.36%) agree that there is adequate reading room facility. It can be seen that only 4 (5.20%) out of the 77 respondents of the 26-35 age group, and
2(70%) of the 26 respondents of the 36-45 age group opine that they have adequate reading room facility. In the 46-55 age groups only one respondent of 7 provided a positive answer.

**Inference:** It can be inferred from the findings of the study that the reading room facilities provided in the institutions were not up to standard. This is a very poor state of affair with regard to the reading room facility in the libraries under study.

### 6.17 Reprographic facility

It is found that

- Only 141 (33.81%) of the respondents agree that they are provided with adequate photocopying facility. 89(33.46%) males and 52(34.44%) of females agree to it. Also, 63(23.68%) males and 32(21.19%) females did not provide any response in this regard.

- 43.03% of the undergraduates agree that adequate photocopying facility is provided. Whereas only 20% among the postgraduates, and 19.81% among the faculty members.

- Age group-wise analysis reveals that 121(39.41%) of the respondents belonging to the age group of 18-25 agree that they have adequate photocopying facility in the libraries. Only 15.58% of the age group of 26-35 have agreed to this. None of the respondents of the age group of 46-55 agreed to this.

**Inference:** The overall opinion about the photocopying facility leads us to conclude that the poor photocopying services provided by the libraries and gender has no influence on this opinion. But, the lower age group mostly comprising of students had a good opinion regarding the photocopying facility.
6.18 Current Awareness Services

The study has revealed that

❖ 155(37.17%) of the sample agree with the statement that there are adequate current awareness services provided to them, of which 90(33.83%) are males and 65(43.05%) females

❖ Undergraduates are the largest group agreeing to the fact that there is adequate current awareness facility. It is 40.24% of the total 251 undergraduates

❖ 115(37.46%) of the age group of 18-25 agree that adequate Current Awareness Services are provided. But this is only 25.98% of the 26-35 age group

Inference: There is mixed response with regard to the adequacy of Current Awareness Services but majority of the respondents were not happy with CAS provided by the library

6.19 SDI Services

The study has shown that

❖ 183(43.88%) users under survey agree that they have adequate SDI services provided to them. In that 105 are males and 78 are female respondents. But, the higher number of 197(47.25%) respondents do not agree that adequate SDI services are being provided

❖ 49.80% of the undergraduates feel that they are provided with adequate SDI services. As many as 125 out of 251 undergraduates share this opinion. But it is only 25% in the case of postgraduates and 40.57% in the case of faculty members

❖ The age group 46-55 are mostly of the opinion that they are getting adequate SDI services from their library. As many as 6 of the 7 respondents are of this opinion. In a similar way, 53.85% respondents of
the 36-45 age groups also provide a positive response in this aspect. But it is comparatively low among the other age groups.

**Inference:** It can be inferred that gender has not influenced the opinion of the respondents regarding the adequacy of SDI services in their libraries. But, there is significant difference in the opinion among the UG, PG, and faculty members. The undergraduate students are happier than the postgraduates and faculty member with regard to SDI services provided in the library.

### 6.20 Digital library service and facilities

It is revealed that

- Majority, 167 (40.05%) of the users are not satisfied with the digital library services. Further, a large group of respondents from each group did not have an opinion. As much as 22.71% of the undergraduates, 28.33% postgraduates, and 34.91% faculty members have not provided any opinion on this.

- Only 38.25% undergraduates, 20% of the postgraduates, and 29.24% of faculty members feel that they are served with adequate digital library facility.

- Only 35.51% respondents belonging to the age group of 18-25 agree with the adequacy, whereas it is less than 25% in the other two cases.

**Inference:** It can be inferred that the digital library services provided by the libraries are inadequate and variables like age and gender has no influence on the opinion on the digital library facilities.

### 6.21 Adequacy of e-resources

It found that
A minority agree with the statement that they are provided with adequate electronic resources and services. This amounts to 139 (33.33%) of the total sample. The gender-wise analysis shows that 84 (31.58%) of the males and 55 (36.42%) of the female respondents agree that adequate e-resources are available.

The majority, i.e., 186 (44.60%) of both genders believe that they are not provided with adequate e-resources facility and services. 92 (22.06%) respondents did not give any opinion.

The undergraduates feel that they had adequate e-resources in their libraries, i.e., 41.83%. Almost an equal percentage of undergraduate respondents disagree to this. It can be noted that only 15% of the postgraduate and 23.59% of the faculty members agree that adequate e-resources facility are being provided.

The age group of 18-25 provides the highest percentage (37.46%) who agrees with the adequacy of e-resources available in the libraries. Only one person belonging to the age group of 46-55 says that he/she is provided with adequate e-resources and facility.

Inference: Irrespective of their age, gender, and designation, most of the respondents have opined negatively with regard to the adequacy of the e-resources facility and services.

6.22 Awareness of online databases

The study has revealed that

Among the various databases available online, 342 (82.01%) of the users are aware of only Science Direct journals from their Elsevier publishers. The reason might be that Science Direct carries large quality content for the science subject. Compared to Science Direct, other e-journal databases are consulted by a meagre proportion of the sample.
A designation-wise analysis of the awareness of e-journals also shows that majority are aware of the Science Direct journal. As much as 92.45% of the faculty members and 91.67% of the postgraduates were aware of the Science Direct database. However, the percentage is comparably low among the undergraduates.

The second largest group of 20 (480%) people come under a group who are aware of the presence of annual reviews. 18 students and only 2 faculty members are aware of this. Further, it is noted that 35 (8.39%) members of the sample were not aware of any e-journal databases being available in the library.

**Inference:** The use of online journals is remarkably low among the undergraduate students. Further, Science Direct is the only database which is used by a majority of the respondents irrespective of their age, gender, and designation. This scenario warrants the necessity of awareness programs on online databases subscribed to by the institutions.

### 6.23 Frequency of using online databases

It has been established that

- The largest group of people use Science Direct only when they need it, i.e., 102 of the 417 members of the sample. As much as 69 (25.94%) males and 33 (21.85%) females belong to this group. As many as 52 (12.47%) respondents say that they use the Science Direct database every day.

- It can be seen that the postgraduates and faculty members who are more inclined towards research make use of the Science Direct database only when they need it and almost 21% of the undergraduates, 6.67% of the postgraduates, and 7.55% of the faculty members are not using the Science Direct database.
However, 18 24% of the respondents belonging to the 18-25 age groups use Science Direct only when needed. It is 53 25% in the case of people belonging to the 26-35 age group.

**Inference:** It can be inferred that the Science Direct online journal database is a highly preferred database irrespective of gender, age, and designation but it is used only when needed.

6.24 Problems encountered while using online databases

It is noteworthy that:

- Among the problems listed a majority in the sample say that it is difficult for them to find the appropriate database from where they can get the required research information. This group comprises of 405 (97 12%) of the 417 respondents.

- Another majority of 318 (76 26%) respondents state that e-resources do not answer their specific questions.

- The third group of 246 (58 99%) people opined that lack of instructions by the library staff is a problem for them.

- Another important problem indicated by the respondents is regarding the non-availability of the materials they seek.

**Inference:** It can be concluded that difficulties in deciding on appropriate databases and lack of instruction by library staff are the major barriers to access e-journals among all categories of users. A higher percentage of undergraduates have indicated that E-resources do not answer their specific questions.

6.25 Information seeking habits

It is worth mentioning that
Reading articles/books is highly preferred 312(74.82%) among all other information seeking habits. As much as 207 male and 105 females opted for this as a preferred information seeking habit.

The second largest group, i.e., 225 among 417 respondents indicated that conversing with colleagues/friends or other experts in the institute and searching free e-resources through different search engines as their preference to gather or seek information.

The discussion forum/listservs is found to be the lowest ranked option by both the gender, i.e., 75 of the 417 respondents.

Majority of the undergraduates prefer to seek or gather information by reading books and journal article, i.e., 180 among 312 respondents. The next large group of undergraduates, i.e., 136 keep searching free e-resources or search engines for their required information.

A large number of postgraduate students and faculty members also seek information by reading books and journal article (i.e., 48) followed by conversing with colleagues/friends or other experts in the institute and searching free e-resources/search engines and online journals.

**Inference** It is to be inferred that beyond the line of gender, age, and designation the highest percentage of the respondents indicated that reading books and articles as major information seeking habits. Searching free e-resources and conversing with friends/colleagues in their respective institutions is also a popular habit of information seeking.

**6.26 Preference of format**

It is noted that

Most, i.e., 198(47.48%) of the respondents prefer document formats (i.e., either print or electronic format) The second large group of 137(32.85%) respondents prefer only the print document format.
respondents preferring only electronic documents is very minimum i.e.,
82(19.66%)

❖ However, the status wise analysis shows that 29(27.36%) faculty
members are in favour of digital formats As much as 88(35.06%) under
graduates prefer only print documents

❖ It was found that almost an equal percentage of male and female
respondents preferred only print documents, it amounts to 32.33% of
male and 33.77% of female respondents

**Inference**: It can be inferred that users give equal importance to both print and
electronic documents Further, the evolution of the digital format as a
convenient medium for information seeking and transfer is happening very
slowly The low percentage (19.66%) of acceptance of digital document could
be attributed to this fact

**6.27 Availability of time for information gathering**

It is prominently noted

❖ 250(59.95%) respondents feel that they have to struggle to adjust time
for information gathering, which includes 152(57.14%) male and 98
(64.90%) female respondents

❖ The remaining 167(40.05%) respondents indicate that they have enough
time for information gathering In that 114(42.86%) are male and
53(35.10%) are female respondents

❖ 155(61.75%) of the undergraduates were of the opinion that they were
not getting enough time for information gathering and an almost equal
percentage (i.e., 57–58%) of postgraduate and faculty member
respondents also pointed out the same

**Inference**: This infers that irrespective of gender and designation the
respondents’ find it difficult to adjust the time for information gathering
6.28 Influence of IT on information seeking habits

It has been revealed that

❖ 260 (62.35%) of the 417 respondents indicated that information technology made it easy to locate the right information at the right time. 170 (63.90%) males and 90 (59.60%) females respondents endorsed the fact.

❖ Further, it is interesting to note that the next larger group of 112 (26.85%) of the 417 respondents have mentioned that the information technology has made no influence on their information seeking habit.

❖ The age group-wise analysis reveals that 76 (62.62%) of the 26-35 age group responded that IT has made it easy to locate information followed by 61 (53.09%) of the age group 36-45 and 59 (60.00%) of the 18-25 age group.

❖ The next larger group indicated that IT hadn’t made any difference in locating information. Almost 96 respondents of the age group 18-25 and 8 from the 26-35 age groups have mentioned the same.

Inference: It is apparent that information technology has influenced positively on the respondents information seeking behaviour.

6.29 Attending courses/training on e-resources

It is observed that

❖ Majority 297 (71.22%) of the respondents opined that they did not get training to access e-resources of which 173 (65.04%) are male and 124 (82.12%) are female respondents.

❖ Only 120 (28.78%) of the respondents have said that training courses on e-resources had been conducted. This includes 93 (34.96%) of the male respondents and 27 (17.88%) of the female respondents.
But, it can be seen that more of the faculty members have attended such courses than the other two groups. As much as 43 (40.57%) of the faculty members had a course on e-resource, whereas only 23 (38.33%) of the postgraduates had attended the course. In the case of undergraduates, the number is very meagre.

Inference: A high percentage of the respondents opined negatively on training programme/courses to access e-resources.

6.30 Problems encountered while seeking information

It is prominently noted:

- The major problems encountered by the respondents are lack of infrastructure, i.e., 128 (30.69%), followed by comprehensive book collection - 64 (15.34%), and lack of printed journals - 48 (11.02%).

- 75 (58.59%) male respondents and 53 (41.41%) female respondents categorically mention that lack of infrastructure is a major hurdle in accessing library resources and services. Further, 44 (68.75%) male and 20 (31.25%) of the female respondents indicated that lack of a comprehensive book collection is the second major problem encountered while seeking information.

- The designation-wise analysis states that 97 (75.78%) undergraduate, 26 (20.31%) faculty members, and 5 (3.91%) post-graduate respondents are of the opinion that the lack of infrastructure is a major problem while accessing resources in the library.

- Among the undergraduates, 35 (54.69%) and 19 (39.58%) of the respondents have problems due to the lack of a comprehensive book collection and lack of printed journals, respectively.

- The other problems encountered are lack of instructions by library staff - 37 (8.87%), lack of computers - 35 (8.39%), lack of adequate e-resources.
Inference: It can be inferred that the lack of infrastructure facility and comprehensive book collection are the major hurdles for information seeking among the respondents under study

6.31 User education program

It revealed that

❖ 371(88.97%) respondents from both the genders gave a negative result; i.e., 233(87.6%) male respondents and 138(91.4%) of female respondents have mentioned that they have not received proper orientation or any user education program at the time of admission or at a later stage

❖ Further, 371(88.97%) of the respondents opined that user education program is necessary to use the library resources and facilities effectively. As much as 58(96.70%) postgraduates, 98(92.50%) of the faculty members, and 215(85.70%) under graduates have categorically opined the same

Inference: It can be summarized that a higher percentage of library users have not received proper orientation or any user education program. Also, the respondents opined categorically that user education program is a fundamental requirement to effectively use the library resources and facilities effectively

6.32 Rating for the traditional resources of the library

It has been found that

❖ Majority of the respondents, i.e., 202 of the 417 mentioned that the collection of books is good. The second large group of 168 respondents
opened the same for journals, followed by magazines, i.e., 147 of the 417 respondents

- Further, 52 respondents of the 417 have mentioned that they do not know about the availability of reports and thesis/dissertation

**Inference:** The collection of traditional resources like books, journals, and magazines are rated good but not excellent

### 6.33 Rating for the e-resources of the library

It is noticed that

- The majority of the users are happy with the availability of e-journals. This is evident from the data that 90 (21.58%) respondents mentioning e-journal collection as good and 52 (12.47%) as excellent.

- The higher percentages of the users are unhappy with availability of e-books. It is evident from the data that 137 (32.85%) respondents mention as the e-books collection is poor, 121 (29.02%) as average, and more over 69 (16.55%) of respondents don’t know about the availability of e-books in library. In the case CD-ROMs collection also the positive response is very low.

**Inference:** The collection of e-journals is ranked higher than the collection of e-books and CD-ROMs. It points out towards the need for more e-resources and making people aware of it.

### 6.34 Overall opinion on library resources

It has been found that

- 255 (61.10%) of the respondents opined positively about the library resources. As much as 76 (18.20%) opine that the resources are excellent and 179 (42.90%) opine as good. Further, the percentage of respondents who opine the resources as poor are only 35 (8.40%) and there is not
much contradiction between the two genders on their opinion about the library resources

- 78(73.6%) faculty members, 40(66.70%) postgraduates and 137(54.60%) undergraduates say that the resources are good and excellent

6.35 Overall level of satisfaction

It points out that

- Majority, i.e., 171(41.00%) of the respondents are satisfied at an overall level of 61-80%, followed by 136(32.94%) respondents with 41-60% of satisfaction level

- The gender-wise division of the satisfaction level indicates that 69(45.69%) female and 102(38.34%) males were satisfied by the overall level of 61-80%

- 38(63.33%) postgraduates are highly satisfied by an overall level of 61-80%, and 32(30.18%) faculty members at 80-100% satisfaction level with regard to the library services and facilities

Inference: It can be inferred that regardless of age, gender, and designation the greater percentage of users are satisfied with the library resources and services

6.36 Summary of findings

- The study sample consists of 251 UG students, 60 PG students, and 106 faculty members totalling 417 respondents of the five pharmaceutical science college libraries of South Kanara and Udupi districts

- It is remarkable to note that students seek information for updating their knowledge in addition to preparing course work or class notes
• It has been found that a majority of the respondents prefer the internet followed by their institute libraries as their main channel of information.

• Most of the respondents depend on print journals for current information, followed by e-mail alerts and online journals but the library services like CAS, SDI are not much used as a mode for current information.

• It is significant that the main reason to use the library is to read books and followed by journals.

• It is revealed that respondents visit the library either every day or 2-3 times a week and they spend 30 minutes to 2 hours per visit to the library.

• Among the users who visit the library every day to keep themselves up-to-date and the percentage of users who visit the library for the purpose of research/project work and to prepare teaching notes, is not significant.

• It is found that most of the respondents irrespective of their gender, age, and designation find the computer facility inadequate.

• There is significant difference in opinion with regard to the adequacy of the LAN facility among the different user group. The undergraduates agree that the LAN facility is adequate but not the postgraduates and faculty members.

• It is acclaimed that the OPAC facility is adequate according to the lower age groups and undergraduates but not very much among the higher age groups and faculty members.

• It has been identified that the internet facility provided to the respondents in their respective institution, is adequate.

• The internet facility was predominantly used for general browsing, followed by e-journal access and e-mail purpose.
- It has been identified that the journals archive facility is not adequate
- It is found that the reading room facilities provided by the respective institutions are not up to standard
- The overall opinion about the photocopying facility provided by the libraries is stated poor
- It is significant to note that the respondents under study are not happy with CAS provided by the library
- There is significant difference in opinion on the SDI service among different user groups. The undergraduates feel that they are provided with adequate SDI services but such is not in the case of postgraduates and faculty members
- It is inferred that the digital library services provided by the libraries are inadequate and the variable age and gender have no influence on their opinion on the digital library facilities
- A majority of the respondents opined that the e-resource services and facilities provided by the institute libraries are not adequate
- The use online journals are significant among postgraduates and faculty members but it is remarkably low among the undergraduate students. Further, Science Direct is the only database which is known and used by a majority of the respondents
- It is said that maximum number of respondents faces difficulties in selecting appropriate databases. Further, lack of instruction by the library staff is the second major barrier to access e-journals, among all categories of users
The higher percentage of respondents indicated that reading books and articles as the major information seeking habits. Further, searching free e-resources and conversing with friends/coworkers is also a popular way of information seeking.

It has been identified that users give equal importance to both, print and online documents, but most of the respondents find difficulty in adjusting time for information gathering.

It is apparent that information technology has influenced positively on the respondents' information seeking behaviour.

Two main problems faced by the respondents while seeking information resources are 'lack of infrastructure facility' and a 'comprehensive book collection'.

A high percentage of library users have not received proper orientation or attended any user education program. Further, the respondents opined categorically that proper user education program is necessary to use the library resources and facilities effectively.

The collection of traditional resources like books, journals, and magazines are rated good, but not excellent. Also, the collection of e-journals is ranked higher than the collection of CD-ROMs and e-books.

It has been identified that regardless of age, gender, and designation a large percentage of users are satisfied with the resources available in their respective library. Further, the overall level of satisfaction among the entire group of users is remarkably good.

6.37 Findings in relation to hypothesis

The entire hypotheses formulated in the present study are tested and results are shown as below.
Hypothesis 1: There exists no significant relation between genders in the mode and use of IT in seeking their informational needs.

Respondents of the survey opined that they seek various modes to acquire information. The data was analysed to find if there exists any relation between the gender of the respondent and the mode of acquiring information. The test of correlation was conducted and found the Pearson correlation = -0.0401 for significance value 0.4135.

Further, it was tested again to know if there is any significant difference between genders and use of IT in acquiring their required information. It was tested by Chi-Square test and found the critical value for $\chi^2 = 0.05$ level of significance and 2 degrees of freedom is 5.99. As the computed value was greater than the critical value, the goodness to fit test was upheld. Hence, both the tests proved that the hypothesis is positive and valid.

Hypothesis 2: The infrastructure and services provided by the institution are not significant in accessing information, particularly digital information in a networked environment.

Data analysis reveals that the infrastructure facilities like the computer facility, the LAN facility, and reading room facilities provided by the respective institutions are not satisfactory. This was tested using the Chi-Square Test and found that for 8 degrees of freedom, the $\chi^2$ value computed was 17.62296. The critical value for $\chi^2$ for 0.05 level of significance and 8 degrees of freedom is 15.51. The higher number of computed value than the critical value proves that the opinion of the users on the availability of computers in the library vary significantly between different designation status of the respondents. Further, the statistical analysis on the adequacy of LAN facilities and reading room facilities reveals that only 36.45% and 11.51% of the respondents agreed that the LAN and reading room facilities are adequate.
This lower percentage of response towards adequate infrastructure facilities of the respective institutes under study proves that the study hypothesis is sustained.

**Hypothesis 3: The provision of the library and information services like CAS and SDI are not in accordance with the need of the users.**

Respondents of the survey were asked to note whether the library services like CAS and SDI are adequate or not. The empirical data on their opinion was further analyzed to find if there exists any relation between the designation of the respondent and their opinion on the adequacy of CAS and SDI services. ANOVA test was used to test the adequacy of CAS and SDI among the respondents. The test of ANOVA for CAS services (ANOVA=8.873 (5), F=2.450, Sig=0.033) shows that there exists a significant difference among the respondents about the opinion on adequacy of current awareness services provided by the respective libraries. The test of ANOVA for SDI services (ANOVA = 12.672 (5), F=3.544, Sig=0.004) shows that there exists a significant difference among the respondents about the opinion on adequacy of SDI services provided by the respective libraries. Hence, the research hypothesis is sustained.

**Hypothesis 4: Designation of users is not an influencing factor on the opinion about the adequacy of the digital libraries.**

The empirical data on this query was analysed to find if there exists any relation between the designation of the respondent and their opinion on the adequacy of the digital libraries. The test of correlation was conducted to test this hypothesis. It found Pearson correlation = 0.1373 for significance value 0.0050, which shows that there exists a significant relation between the variables ‘Designation’ and ‘Opinion on the digital library facility’. Hence, the original hypothesis is rejected.
Hypothesis 5: There exists significant relationship between the effective use of library resources in an IT era and user education programme.

Respondents were asked to state whether there is a need for user education programmes in the effective use of library resources in an IT era and have attended any training programme on searching e-resources. The empirical data revealed surprisingly that, the large number 297 (71.22%) of respondents have not attended such training programme. But, there are 120 (28.78%) of the respondents who have attended such training programme. Further, the study has revealed that a large majority 371 (88.97%) of the respondents opined that user education program is necessary for the effective use of library resources. As many as 58 (96.70%) postgraduates, 98 (92.50%) faculty members, and 215 (85.70%) undergraduates have categorically opined the same. However, only 46 (11.03%) of the respondents from the entire sample mentioned that there is no need for the user education programs to use the library resources effectively. The analytical result of empirical data is presented in Table 5 63 and 5 68. The higher percentage of response towards the need of framing or user education programme for the effective use of library resources proves that the study hypothesis is valid and sustained.

7. Suggestions

In the field of library and information science, information seeking behaviour has emerged as an important area of research. Several studies have been carried out for the purpose of information system designing, organization of library and information services, and redesigning of existing library facilities to suit the changing needs of the users. A detailed user study always plays an important role by providing information on how the libraries or information systems acquire and access professional information. This study serves as a foundation for providing quality information with guidelines for information.
management and defining the skills needed to cope with an increasingly computerized information dissemination system. Further, the study makes an attempt to know systematically and assess the different types of uncertainties associated with the information seeking process. The explosion of new and different search tools, sources and channels of information, continues to be a significant factor in the search process and in accessing quality information. Hence, with the result of the empirical study on information need and seeking behaviour of pharmaceutical science library users the following suggestions are presented to improve the library services and facilities.

7.1 Information literacy classes in academic curriculum

The first suggestion for the pharmaceutical science institutions is to embed information literacy classes within the academic curriculum to enable and encourage successful information seeking methods so that relevancy to teaching and learning needs becomes the focus. If this is done in a seamless manner, that would be excellent for providing support in overcoming the technology barrier. Continued maintenance of the contents of the library's website so that it is easier to navigate can also in a way enable and encourage library users to search for information independently.

7.2 Libraries to work with faculty members

Furthermore, the study suggests for pharmaceutical science institute libraries to work with faculty members so that the latter encourage students to contact the library for any type of queries related to their academic courses. That will give a chance to demonstrate that the library and the faculty have the same end goal in the academic course for students and researchers. However, the librarian and faculty collaboration needs to be encouraged as college policy. Ivey (2003), in his study on information literacy sees conditions for this collaboration to be shared as understood goals, mutual respect, tolerance and
trust, competence for the task at hand by each of the partners and on-going communication.

7.3 To consider libraries and information centres in main stream

It is noticed that most of the pharmaceutical science institutions do not consider the library as an important part of the institute. It is treated as a necessary component to maintain the decorum of the institute rather than consider it as a brain for the academic growth of the institute and the students. In this regard, the study recommends the pharmaceutical science institutions to consider bringing the library and its staff members into the main stream which will help the libraries in providing better and innovative information services to its users.

7.4 To consider the relevance and importance of the online databases to the academic curriculum for UG and PG students.

There is a need to reconsider the relevance of online databases to the curriculum. As an outcome of the study, to fulfil the information needs of the students, it was observed that the ICT has influenced the students information seeking habits, but the use of online databases with undergraduate respondents was not up to the mark. They opined that the present databases does not give answers for syllabus related problems or doubts. As we know the present online databases contain only research oriented articles which are not very useful for academic institutions, especially for the undergraduate students. Therefore, the study recommends having separate curriculum based databases to suit the requirements of undergraduate and postgraduate courses.

7.5 To develop a full-fledged library website by the respective institution.

The pharmaceutical science institute libraries require their own websites to attract the faculty and students the way flowers attract insects. A library website serves as an integrated interface to a wide variety of digital resources.
and web-based library services. It is also an important tool for the users to access and utilise library and information services over a network. An informative home page provides the users helpful information about the library, its collection, and services. In addition, it is suggested that the library website can provide links to information about the library-staff directory, floor plan, library rules, electronic versions of the traditional library services, alert services, electronic SDI, virtual reference service, online document delivery service, request for purchases. Further, it can also provide access to online catalogues, full-text e-journals, e-books, and other e-documents, institutional repositories, and free accessible internet resources.

### 7.6 Conduct effective promotional programs

It is noticed from the study that the users are not completely aware about the library services, its collection, and mode of accessing the resources due to lack of knowledge and poor promotional or marketing programs. Traditionally, libraries, especially academic ones, have not considered marketing to be an important part of library services. However, in today's changing world, marketing library services has become a necessity. Hence, it is suggested to develop a comprehensive marketing strategy to advertise library services and facilities. We have listed some of the marketing/promotional strategies which may be useful for pharmaceutical science libraries, as follows:

a) Host attractive video pictures in different curriculum events of the institute about different sections of the library, its functionality and services, and about the current developments in the library.

b) By distributing pamphlets about the library facilities and services.

c) The library can also conduct different activities like quiz competition on library sources, best library user award to increase the foot falls towards the library.
d) The library staff can publish articles, news releases, and short communications in the college magazine or any other publication of the institute to increase the sensitization mechanisms.

e) Students should also be properly initiated and guided into being good information resource users, so that they do not depend solely on the lecturer notes to accomplish their knowledge goals.

f) Finally, the faculty members should take part in initiating library use to their students, along with the librarians to ensure that the students are appropriately informed and guided.

7.7 Libraries to come up with advance web 2.0 based services to deliver current information.

The pharmaceutical science libraries are lacking behind with ICT and web 2.0 based services. Hence, the study recommends following innovative web 2.0 based services for the pharmaceutical science institutions of South Kanara and Udupi districts.

7.7.1 Blogs: It is a powerful two way based tool. A blog is a website where library users can enter their thoughts, ideas, suggestions, and comments. Blogs entries known as blog posts are presented in journal style and are usually displayed in reverse chronological order, entries listed in specific categories that can be searched, links to other sites of interest and places for comments, and a monthly archive of previous entries. A blog entry might contain text, images or links to other blogs and web pages. Any library user can publish a blog post easily and cheaply through a web interface, and any reader can place a comment on a blog post.

Possible implementation of blogs in pharmaceutical science libraries:

❖ Blogs serve as a platform where the users can file their concerns, queries and suggestions regarding the services and activities of the library.
Postgraduates, research scholars, and faculty members can create their personal blogs on specific research topics and communicate their queries and get solutions for the same.

Blogs can also be used for the collection development where the users request the resources.

Blogs can be used as a tool for marketing of information as well as the library.

Blogs can serve as discussion forum, can discuss experimental problems, new pharmaceutical products, etc, among interested group of people.

7.7.2 Wikis: A wiki is a web page or set of Web Pages that can be easily edited by anyone who is allowed access. Wikipedia's popular success has meant that the concept of the wiki, as a collaborative tool that facilitates the production of a group work, is widely understood. Wiki pages have an edit button displayed on the screen and the user can click on this to access an easy-to-use online editing tool to change or even delete the contents of the page in question. Simple, hypertext style linking between pages is used to create a navigable set of pages. Unlike blogs, wikis generally have a history function, which allows previous versions to be examined, and a rollback function, which restores previous versions.

Possible implementation of wikis in pharmaceutical science libraries:

- Wikis can be used for social interaction and discussions among the librarians and users as well.
- Wikis can also be used by the users to share information and enhance the content, and a record of these transactions is archived for future reference.
- Pharmaceutical reference wiki can be built.
- Wikis can be used for creating subject guides, subject gateways.
 Wikis provide the very mechanism that supports participatory librarianship as it enables users to make original and genuine contributions to subject contents as both the libraries aiming to cover it in the near future

7.7.3 Really Simple Syndications (RSS): RSS is a family of web feed format used for syndicating content from blogs or web pages, RSS uses an XML that to blogs or websites. Many web browsers have built-in-feed readers or aggregators, which can easily add feeds to webpage and summarize information items and links to the information sources.

Possible implementation of RSS in pharmaceutical science libraries:
- Announcement of new arrival books and other resources in a given subject area
- Librarians can subscribe to RSS from the sources for compiling their customized alerts
- Promote events organized in the library for library users
- Enhance Library Instruction for different Web 2.0, Library 2.0, Blogs, Wikis, RSS, Tagging, Podcasting, IM programs/courses by integrating appropriate resources
- Integrating library services through RSS feeds. Announce availability of new pharmaceutical science research and learning opportunities in various institutions of the country

7.7.4 Instant Messaging (IM): IM is a form of real-time communication between two or more people based on typed text, images, etc. IM has become increasingly popular due to its quick response time, its ease of use, and possibility of multitasking. It is estimated that there are several millions of IM users, using it for various purposes, viz, simple requests and responses, scheduling face to face meetings, or just to check the availability of colleagues and friends.
Possible implementation of IM in pharmaceutical science libraries:

❖ Librarians question in real time regardless of where they are. Users may also attempt to answer questions other people posed if they are able to gain access to services.
❖ It can easily be implemented in reference services to replace traditional methods like e-mail or telephone.
❖ IM can be used as a synchronous communication where as e-mail does not.

7.7.5 Social Networking (SN): Social networks are built upon a hypothesis that there exists a determinable networking structure of how people know each other. A social network thus can be formalized into a net structure comprising nodes and edges. Nodes represent individuals or organizations. Edges connecting nodes are called ties, which represent the relationships between the individuals and organizations. MySpace and FaceBook are two popular social networking sites launched during 2003 and 2004, respectively. MySpace allows organizations to create their own profiles, pages, and can be used by libraries. But Facebook allows individual librarians to create profiles.

Possible implementation of SN in pharmaceutical science libraries:

❖ Libraries can create a page to reach the new users.
❖ Social networking could enable librarians and patrons not only to interact, but to share and change resources dynamically in an electronic medium.
❖ For building a network among the interested group for discussing common interest topics.

7.7.6 Podcasting: A podcast is a series of audio or video digital media files which is distributed over the Internet by syndicated download, through Web feeds, to portable media players and personal computers. Though the
same content may also be made available by direct download or streaming, a podcast is distinguished from other digital-media formats by its ability to be syndicated, subscribed to, and downloaded automatically when new content is added.

**Possible implementation of Podcasting in pharmaceutical science libraries:**
- Podcasts promotional recordings about the library’s services and programs
- Podcast highlights about new arrival resources
- Podcasts enable librarians to share information with anyone at anytime
- Podcasting can be a publishing tool for users and librarians oral presentations

**7.7.7 Tagging:** A tag is a keyword that is added to a digital object (website, picture or video clip) to describe it, but not as part of a formal classification system. The concept of tagging has been widened far beyond website bookmarking, and services like Flickr (Photos), YouTube (video), and Audio (podcasts) allowing a variety of digital artefacts to be socially tagged.

**Possible implementation of Tagging in pharmaceutical science libraries:**
- Tagging can be applied to the Library Management System editing the subject headings from the user point of view and thereby enhancing the indexing and relevancy of the searches, making the collection more dynamic
- Tagging would greatly facilitate lateral searching

**7.8 To maintain adequate state-of-art in library infrastructure**

In view of users’ opinion and suggestion, it is recommended that adequate state-of-art library, physical space, and infrastructure should be maintained. The physical makeup of libraries is changing dramatically in
reaction to new forms of media in collections and new patrons demands. Coffee shops, comfortable seating, computer laboratories, internet connections, and group discussion rooms are among the new types of services students are expecting to see in their college libraries. Students also expect access to computer software, audio and e-books, and electronic databases. Basic facilities such as ventilation, drinking water, bathroom/toilet facility, and coffee vending machine should also be provided to enable the readers for an extensive, convenient and comfortable reading inside the library.

7.9 To conduct regular user education programmes

It is noticed from the study that the problems which obstruct the use of a library is lack of awareness in using the library resources. The pharmaceutical science library users need to access for current innovations in their interested area of knowledge. The increase in the rate and volume of information published in the field of pharmacy and allied subjects makes it difficult for them to keep up with new ideas and experimental techniques. Libraries face real challenges in coping with the evolution in the digital age. User education, in general, is the ability to identify, locate, use and interpret information effectively.

Hence, it is suggested that advanced training for users at different levels should be started. The contents of the training programs should be: (a) Basic introduction to library services and facilities, (b) Using OPAC, (c) Methods and tools for searching information resources, (d) Using the Internet, (e) Using online and CD-ROM databases, (f) Using electronic journals, (g) Introducing reference books, (h) Introducing audio/video materials, and (i) Introducing appropriate indexes and abstracts. Users should be discouraged from merely browsing the shelves. They should be encouraged to use OPAC before going to the shelves. Therefore libraries should come forward to educate its users by training them to use the searching and accessing the library resources, especially the electronic resources, effectively. Library professionals can also
take the initiative to improve and expand the internet searching and use. Librarians can prepare a list of subject websites, data useful to researchers, link to free online databases, and so on, and place them on the library website.

7.10 To acquire more books and other library resources relevant to the curriculum

It has been revealed that most of the respondents would prefer to use both print as well as electronic format of resources available in the library. This may be because in most of the libraries, print resources are available in larger numbers, when compared to E-resources whereby they are forced to prefer print resources. Therefore, it is suggested that libraries should give equal importance to both print and electronic resources in the library. Further, the study suggests selecting and acquiring books and other informational resources more relevant to the curriculum, studies, and research as opined by most of the respondents under study.

7.11 To improve the reprographic facilities and services in the libraries

It is interesting to note that the study revealed negative results on the adequacy of reprographic facilities provided by the respective libraries. Users are unhappy with the high charges levied by the institute and working hours of the photocopy centre. Hence, it is suggested to improve the quality of Xerox facility and to provide the service with nominal charges for the institute members.

7.12 To provide more number of computers in the library with internet facility

It has been found that many of the respondents prefer the internet as their main channel of information seeking, since by this method users can get advanced, updated information related to their field of interest very speedily. It is observed that respondents who visit the library to use the computer are less
This may be because in most of the libraries under study have less number of computers with internet connectivity.

Hence, it is clear that the internet has firmly established a place in the lives of pharmaceutical science library users. The internet has become the single most important platform enabling connectivity to service providers, customers, suppliers, and employees. The successful implementation of a digital library requires budgetary and management support, acquisition of digital content, infrastructure support, expanded remote access, hardware upgrades, software support, and support of staff members. Since the advance technology plays a major role in information seeking, all the libraries should provide a separate section for internet with a number of well configured computers with high speed permanent internet connections.

7.13 To involve users in decision making about library services

There has been a great deal of talk about needing to reorient the library’s service models, based on user-centred change. One of the basic principles is to allow the students to modify the library services to fit their needs. One way to help achieve this goal is through library staff-student interaction in which the students give their opinion about the library services and make recommendations to the library staff about their information needs and habits.

7.14 To make the working hours of the library flexible

It has been found from the study that the major reason for not visiting the library is the inconvenient library hours. The pharmaceutical science courses are tight scheduled and more of an experiment-based study, it is not possible for the respondents to sit and use the library for a long time during the day or during class hours. Therefore, it is suggested that the library should provide services beyond the class hours, until late night for its users to maximize the use of the library resources. Libraries should be open on all days,
including Sundays and holidays and the timings of services like circulation of books, reprographic service, and internet browsing, etc should be extended to at least 9 00 PM. This way the students can get access to their resources at any time.

7.15 To evaluate the library services and facilities regularly to meet the changing need of users.

After provisioning the entire basic infrastructure, facilities, services, and resources, the library should judge its performance in accordance with the user needs and demands through some evaluation processes. The staff members of the respective library and information centre should be aware of the current needs of their users, which may vary from one library to another and from time to time. Therefore, carrying out regular surveys on user needs at regular intervals on various aspects of library usage will be an invaluable guide in determining the future direction of library developments.

7.16 Respondent's suggestion

As a final part of the questionnaire the respondents were asked to suggest ways for the improvement of the library from the viewpoint of their academic needs and strengthening the security measures. The respondents co-operated in this respect on the understanding that their opinions would be kept confidential. Several respondents were very frank and free in expressing their opinions on different aspects concerning this study. Some of the important respondent's suggestions are presented here.

❖ To organize and display library resources for easy access and frequent checking, re-shelving of books is essential
❖ Effort should be made to reduce the time needed in acquisition and processing of new documents
❖ Latest books should be acquired for the library soon after its publication
❖ Information regarding new arrivals should be communicated promptly
❖ Adequate copies of text books for lending are required
❖ Extension of time for issue / returns of books should be provided throughout library working hours
❖ More attention should be paid to acquire conference/seminar proceedings concerned with research work
❖ Missing issues and volumes in bound volumes of periodicals should be filled up
❖ Title of the journal should be written on the spine of the bound volume of the periodical
❖ Print journals discontinued due to various reasons should be re-subscribed
❖ More number of foreign periodicals should be subscribed
❖ Separate section should be provided for research scholars and faculty members
❖ Convenient furniture should be provided in the library
❖ Library should be fully air conditioned
❖ Prompt and proper photo copy service should be provided at reasonable cost when compared with market rates
❖ Library staff should be more service minded and come forward to help readers
❖ Advance technology (RFID) may be used at exit counter instead of manual checking to avoid wasting time

7.17 Recommendations for future research

The present study is confined to pursuing and achieving the objectives and testing the hypothesis stated earlier. In this pursuit, many related issues/problems were noticed. Though they were delimited as outside the scope of study, many of them are worth considering as areas for further research. Here are presented some of those problems for future research on information seeking behaviour.
There is a strong need for a meta-analysis (i.e., the analysis of several analyses) of many past studies over the last six decades in various disciplines so that a thorough sifting as well as consolidation of the findings of user research takes place. Also, a comparison and meta-analysis of information seeking behavior models can also be done.

More research also needs to be done about the information processing behavior of pharmaceutical science library users, i.e., the way they use documents and information as well as relating the use of information for the purpose of seeking information, and the requirements of information. How the use of information varied among the different category of users at various stages need to be explored.

It can be evaluated that the informal or inter-personal sources of information, i.e., informal communication, discussions, internal seminars and project meetings of students, research scholars, and faculty members in the institute have to be explored.

There is a vast scope for future research in terms of different types of users, different aspects of user-behavior, comparison of user behavior and attitudes of different types of users.

A comparison study of information seeking behavior of different paramedical courses can be done, i.e., Nursing, Physiotherapy, Pharmacy etc., to assess whether the information seeking behavior among paramedical library users are similar or different from each other.

Further research can be done on whether both faculty and students are information literate and to assess and evaluate their use of the computer systems and information technology for information retrieval purposes.
❖ There is a need for a detailed study to examine the impact of online journals on information-seeking behaviour and use patterns. Further study can be extended to assess the characteristics of online journal users and user references for online or print journals which influence future collection development decisions.

❖ There is a need for a detailed study to assess the information seeking behaviour of the users of the pharmaceutical industrial research and development. A comparison study can also be done on the use pattern and information seeking behaviour of industrial research scholars or scientists with the research scholars and faculty members of the academic institutes.

8.0 Conclusion

The study ‘Information seeking behaviour of users in the pharmaceutical science college libraries of South Kanara and Udupi districts A study’ has been conceived to determine the information needs and information gathering habits of users in the colleges of pharmaceutical sciences. The result of this survey discloses that the pharmaceutical science users seek diverse information from various sources, both print and non-print. A well-equipped library with up-to-date collection, organized on modern lines is a sine-quo-non for study and research in any discipline, particularly in the field of applied sciences like drugs and pharmaceutical sciences. Hence, the study has revealed that there is an indispensible role for a library to play as an information centre with efficient library services with a professional librarian to fulfil the users curricular research and informational requirements. E-resources, internet, and online information databases are becoming a valuable asset in any library and information centre. However, in addition to this it is important to note that in this IT and networked era a significant percentage of respondents also need and depend on the print resources in their libraries.
The users have also opined that they are more concerned about accuracy, easy accessibility, relevancy and usefulness of the information they get while searching for information. Due to their frustration because of non-availability and incompleteness of information, they judged the collection of book and journals, both print and online, and services such as current awareness service, ILL service, reference service, as average. Since awareness of the library resources, their usage and easy accessibility are the main problem, they recommended user orientation programs to educate them in using the library resources.

The findings of this study also indicate that the successful operation of a library depends to a large extent on the choice of library collections. The collection should meet the needs and requirements of the users. Consequently, librarians must be aware of how and what type of information the users need. Knowledge of user information needs and information-seeking behaviour is imperative for developing a valuable collection, and improving the facilities and services which needs periodic user surveys and studies. It is recommended that the library staff focus on assisting users to develop abilities to search their relevant information retrieval practices. The results of the study support previous studies, which have also found that the place of libraries is now being replaced by IT and internet and E-resources. The modern digital libraries, interfaces, and web database sources are also important factors that contribute in a big way to developing a students’ behaviour. This study can be helpful for the students, researchers, faculty members as well as for the library and information professionals.

It is found that the library must fundamentally change the way it sees itself in relation to the faculty and perhaps other user groups as well. Libraries must acknowledge that they are not the only source of information for their users. Patrons find the information they need through a variety of methods and in many places, besides the library. If libraries wish to make library resources and services more valuable to the users, they would do well to revise their...
library-centric view and instead, integrate resources and services into their users' work lives

It is apparent that the study has revealed that libraries need to reorient and provide both online and offline library services by conducting periodic surveys and studies to fulfil the gap between the perception and the satisfaction level among the users in this era of networking and knowledge society. To conclude, information is an important asset in any educational process and today's society. Hence, the LIC'S in the colleges under study need to reorient their libraries and information services. Such a move will help to provide optimum and satisfactory services to the user community and also in their information seeking behaviour. It will certainly enhance and improve the quality of library and information services.