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ABSTRACT

Learning is a continuous process and effective learning relates to students' attitudes, feelings and approach towards the subject of learning. To excel in their academic curricula students must acquire, evaluate and use the available information effectively. One of the mandates of today's higher education is to develop a community of students with information literacy (IL) skills while pursuing their education and enable them to further extend it to their future workplace. This paper examines the information literacy competency of post-graduate students of pharmaceutical sciences course at Manipal University, Manipal. The present case study, conducted prior to and after an Information Literacy Instruction (ILI) program at the Health Sciences Library of Manipal University, Manipal, assesses different aspects of information competency for utilization of information resources. Data were collected through a survey prior to IL session and through feedback response at the end of the session (after the session). Structured questionnaires were distributed to all the participants (125) before and after the instruction program. Students' awareness about the library website, availability of types of resources of the library, familiarity with the name of online database in the health sciences field, knowledge about the use of library catalogue, bibliographic databases and open access resources; confidence level related to search skills before and after the ILI and the usefulness of ILI

program were assessed during the study. The results indicated that the information literacy instruction had a positive influence on effective learning of information literacy skills.
Keywords: Information literacy; IL instruction program; Pre and post IL evaluation; Health sciences library

INTRODUCTION

In the contemporary world of technological advancements, the way the information is produced and disseminated has resulted in an unprecedented growth and availability of different forms of information resources. Sharing of information through multiple media like textual, graphical and also audio affects the various aspects of life owing to the development of the web. Accessing relevant and comprehensive information is difficult because of the complexity in searching literature from various information resources especially from digital resources. New challenges surface for the library users in understanding, evaluating and retrieving information from various information resources. Information literacy leads to lifelong learning (Lau, 2006) and is a common requirement to all learning environments, to all disciplines and to all levels of education. It helps the learners to master content, become self-sufficient and take greater control over their self-learning. "Information literacy is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ACRL, 2000). In this era of information overload, information literacy is considered as a valuable tool for students to become lifelong learners.

Libraries in the higher educational institutions conduct Information Literacy Instruction (ILI) program to add value to learning and teaching. ILI helps in developing literature search skills among the students in retrieving literature related to their topic of interest from various information resources. The library science professionals in academic libraries play an important role in creating the awareness on the availability of various electronic information resources for conducting literature search and training the users in carrying out effective literature search. Libraries offer ILI to its users in the form of lectures, workshops, conferences, online courses, webinars etc. Information literacy skills help the students to become independent in finding solutions to the problems that they encounter during their learning (Sasikala and Dhanraju, 2011). This eventually assists the students to become creative, analytical and efficient as life-long learners. The increase in the number of electronic resources, the differences in features and functionality between them and complexity in searching the electronic information resources necessitate information literacy programs in academic libraries. The changing nature of position

of libraries and responsibilities makes it necessary to continuously recalibrate the library instructional programs. Towards this purpose, a study was conducted to assess the information literacy of post graduate pharmacy students, prior to and after an ILI session held at the KMC health Sciences Library.

LITERATURE REVIEW

Information Literacy Instruction (ILI) provides students with a framework on how to access and use information required for their academic and research activities. The literature survey revealed a variety of methodological techniques that were employed to assess information literacy instruction.

"Information literacy is the ability to identify, evaluate organize and use the information judiciously" (Syamalamba, 2011). The term information literacy encompasses a wide range of competencies acquired through a multiplicity of methods of library instruction focused on educating its users. They are variably known as "Information fluency, User education, Library instruction, Bibliographic instruction, Information competencies, Information skills, Development of information skills" (Lau, 2006).

A study by Okki and Asiru (2011) revealed that the factors that tempted usage of electronic information resources were the demand to accomplish research work, writing research articles, completing course assignments and excelling in courses of study. The study also revealed that postgraduate students frequently use electronic information resources and the main barrier for using EIR was slow internet connectivity. The study recommended increasing institutional bandwidth, continuous power supply and conducting information literacy programs to improve the search skills of users.

Natarajan et al, (2010) pointed out that the databases and other e-resources required computers and networked electronic information resources for serving the library users; leading to the users searching library's catalogue, browsing electronic journals and accessing subject guide or database without visiting the library premises. The reasons for low use of e-resources identified were slow downloading and lack of time or the lack of awareness of users. This study also stressed for publicity and training for accessing e-Resources for better utilization. Ranasinghe and others (2012) noted that the recent technological emergence in the fields of medicine and medical education have made computer literacy a necessity, which encompass the knowledge on common software packages, operating systems, database management, and the usage of internet, as vital competencies for the present day undergraduates.

The study conducted by Balasubramanian et.al (2014) observed that the students preferred internet for accessing information. The investigator noted that the PG students had less awareness of the electronic information resources available in the library. Chandrakumar (2009) found that the search strategies like Boolean operators or phrase searching were rarely used by the researchers. Kaur and Verma (2008) observed that the researchers who were aware about the electronic information resources made the best use of them and utilized for their seminars and project work.

According to Tiefel (1995), students needed to become independent learners and to achieve this, user education had to play a major role. The study recommended that "users should receive guidance on which resources are best for their needs, and basic instruction on search technique, and should feel assured that the system is not difficult and is evolving toward a more efficient, effective, and easy-to-use system".

Adeleke and Emeahara (2016) examined the role of information literacy and the use of electronic information resources by postgraduate students. They have found a significant relationship between IL and the use of e-information resources. The study recommended to include information and communication technology course with emphasis on e-information literacy in the curriculum of postgraduate students. Chinyere (2014) in his study assessed the perception of users about the effectiveness of user education for searching information resources. The study examined the role of information professionals in facilitating the easy access and retrieval of library resources, and various ways of educating users in the use of library resources. The study found that the user education instructed and equipped the library users with the skills that enabled them to be independent in searching literature and helped them to retrieve needed information.

Sasikala and Dhanraju (2011) conducted a study for assessing the information literacy skills among science students of the departments of botany, physics, chemistry, and environmental science of Andhra University through questionnaires. The study covered details of demographic data, awareness about the use of printed reference sources, knowledge about library catalogue, opinions on the usefulness of library tools and user education programs etc. The results of the study showed a lack of awareness of the usage of library catalogue, a lack of search skills and a gap in the knowledge of using web search tools. The study observed that user education programs offered by the library would enable the users in searching and finding the needed information with ease.

A study conducted (Perrin et al., 2008) to assess the first year nursing students' information literacy skills prior to and after ILI found that the students' confidence and awareness were positively affected by their increased exposure to information literacy in the nursing context. The study also pointed out that exposure to various sources of information increased the students' awareness of the scope of information.

A study of the assessment of credit based information literacy module for science undergraduates by Somaratna (2015) found that the majority of the undergraduate students who joined the University of Colombo, do not have skills of using different information resources of the library for their academic activities. Information literacy instruction programs helped to improve the quality of their learning and retrieval of authentic and relevant information. Similarly a survey conducted at the University of Ilorin (Issa et al., 2015), Nigeria to assess the IL competence of final year undergraduate students observed that for mastering the ability to recognize, locate, evaluate and acquire the needed information, the students need to be information literate. Developing IL competencies is of importance to the students who are involved in research which is a process of discovery that encompasses reading, learning, creating of intellectual conversations, evolving their own ideas and acknowledging the ideas of others. IL is needed in effective utilization of information resources. Navalur et al., (2012) in their paper also highlighted the importance of information literacy programs for the maximum utilization of resources.

Rimland (2013) assessing affective learning using a student response system focused on measuring confidence levels of undergraduate students' who received course-related library instruction for a research assignment before and after the library literacy session, through a survey. Affective learning was related to three domains of learning. The learning outcomes involve students' attitudes, emotions, and feelings. It is important to assess affective domain as it helps the instructors to make interventions. Students' response system was shown to be useful to study active learning and engagement as well as retaining materials.

Cobus (2008) in his study on integrating information literacy into education found that, IL provides the mechanism for integrating and educating public health professionals in core competencies for the 21st Century. IL is the best practice for achieving excellence and transforming the educational experience because it is considered as a key component of, and contributor to, sustained learning.

Eisenberg (2008) opines that a curriculum suited for the integrated instruction should be selected from the existing curriculum units and advocates integrative ILI with classroom

teachers, librarians and other educators together to design and deliver information skills and classroom content. He also suggested that repetition is important as these skills may appear simple but may be difficult to master.

A study was conducted by Smith and others (2013) on students of public health to assess the effectiveness of integrating information literacy into college courses by taking a close look at a partnership developed between a professor and two librarians. A college professor and two librarians joined together to figure out the difficulties faced in their previous IL session. Information literacy was conducted in various levels such as semester-long research project overview, library sessions; process and outcomes assessment and finally result assessment. The study found the effectiveness in imparting information literacy with this collaborative effort from the academic professor and librarians. A study by Bhattacharyya (2009) pointed out that IL program need to be embedded in the regular classroom activities in all types of academic institutions and that both the teaching faculty and librarians should become essential components of such programs.

Huston and others (2011) in their information literacy project, designed a study in three stages to address distinct sets of research questions, viz. stage 1: understanding information literacy; stage 2: developing problem-based 'Embedded Librarian' models and stage 3: implementing 'Embedded Librarian' models. The study brought to attention that the problem-based learning (PBL) helped the students to acquire information-literacy skills effectively. PBL approach provided student-centered learning with instructional experiences derived from collaboration and critical thinking while doing hands-on training with resources.

A study was designed (Emmett and Emde, 2007) to obtain the efficacy of a curriculum to promote the growth of information literacy skills in a graduate student of chemistry bibliography course for a period of three years. The assessment results from all three years revealed an improvement in the average students score from pre and post-test methodology. The study also pointed out "assessing instructor competencies and student learning outcomes are essential activities in evaluating library instructional programs".

Centra and Gaubatz (2005) in their study explored the relationship between students' ratings of instructional effectiveness and various measurements of student perceptions of learning. The study had pointed out that the instructor can facilitate learning and motivates the students in their learning process, but ultimately student-learning is highly influenced by the attempt the students put forward.

SIGNIFICANCE OF THE STUDY

Continuing education and importance of research necessitated the IL competency among students, especially those who are pursuing postgraduate courses. Information literacy aims to achieve the larger goal of educating the student community to identify the information need, access the needed information, evaluate and organize it for their application.

INFORMATION LITERACY PROGRAMS AT THE HEALTH SCIENCES LIBRARY

The Health Sciences Library was established in 1953 along with the Kasturba Medical College, Manipal University at Manipal. The library caters to the needs of Medical, Dental, Pharmacy, Nursing, Allied Health Sciences and Life Science institutions. The library has a rich collection of print as well as electronic information resources comprising print books, current print journals, back volumes of journals, CDs & DVDs, theses, online journals, e-books, online databases (full text/bibliographical) and EBM resources of various publishers and aggregators. Table 1 provides the list of e-resources currently subscribed by the library.

Table 1: Electronic information resources subscribed by health sciences library in the year 2015 from various publishers and aggregators*

Online Databases from different publishers/aggregators	• CINAHL Plus with Full Text • Science Direct (Health Sciences Collection) • ProQuest Health & Medical Complete • UpToDate – Clinical Information Resource • Scopus • Web of Science • Journal Citation Reports (JCR) • SciFinder • J-Gate Plus
Online journals from different publishers	• Elsevier Science • Wiley • Lippincott Williams & Wilkins • BMJ Publishing Group • Springer • Sage • Taylor & Francis • Oxford University Press • Nature Publishing Group • American Medical Association • Karger • Thieme Publications • Quintessence Publishing
e-Books from different publishers	• McGraw Hill/ Access Medicine • Lippincott/ OvidSp • Springer/ Springer Link

*Source: 'SEARCH- The Health Sciences library': http://libportal.mahe.manipal.net/KMC/index.asp

The Health Sciences Library remains an integral part, serving as a key instrument for information literacy program delivery in the health sciences campus of the University. Eighteen ILI programs have been conducted by the library in the year 2013 and 2014 and the total number of participants was 1,080. The purpose of conducting information literacy programs was to provide awareness and to facilitate access the e-Resources available in the Health sciences library. The programs were usually in the form of library orientation and user education with the help of PowerPoint presentations, live demonstrations of search techniques, lectures and video conferencing. A study was conducted by the library for the first time, to assess the effectiveness of information literacy instruction focused on an academic specialization, during an ILI session held for the postgraduate students of Pharmaceutical Sciences course from Manipal University, Manipal, through a pre and post evaluation survey.

OBJECTIVES OF THE STUDY

Following are the objectives of the study:

- To analyze the effectiveness of information literacy after the information literacy instruction program;
- To assess the confidence level of the participants related to search skills in finding information resources before and after the information literacy instruction program;
- To assess the participants' opinion about the effectiveness of ILI.

SCOPE OF THE STUDY

The study covered 125 postgraduate students of Pharmaceutical Sciences course, studying in different departments, viz. Dept. of Pharmacology, Dept. of Pharmaceutics and Dept. of Pharmaceutical Quality Assurance at Manipal University, Manipal.

METHODOLOGY

The study was conducted at Health Sciences Library at Manipal University, Manipal. Data were collected through survey prior to IL session and through feedback response at the end of the literacy program. Structured questionnaires were distributed to all the participants (125) before and after the instruction program conducted by the librarian. A total of 14 questions were given in the questionnaire to assess the students' awareness about the library website and types of library resources; familiarity with the name of online database in the health science field, identification of the characteristic features of selected library resources, testing the confidence

level for literature search before and after the ILI session and to assess the effectiveness of ILI program. The first ten questions were repeated in the post survey questionnaires and three questions were unique to the post survey questionnaire meant to assess the effectiveness of ILI program. An open ended question was asked at the end of the questionnaire for gathering suggestions to improve the ILI program conducted by the library. After collecting back the pre survey questionnaire from the participants, information literacy program was conducted on how to retrieve relevant information from online databases, e-journals and e-books by selecting the right keywords and phrases, narrowing down the search, accessing the right literature and on how to use the library and its website effectively. From the 125 questionnaires distributed prior to and after the ILI session, 117 questionnaires were found usable (93.6%). Eight questionnaires distributed before the ILI session were not usable as they were partially filled and hence the same were discarded from the post ILI session's feedback.

DATA ANALYSIS AND RESULTS

The data were collected with the help of pre ILI session survey questionnaire and post session feedback questionnaire. The data was analyzed using Excel and SPSS software and is presented in tables and graphs.

Measuring of effectiveness of information literacy program before and after ILI

The effectiveness of IL programs indicates improvement in participants' awareness related to library resources and the skills for maximal utilization of resources after the IL programs. The pre and post-test used to measure the effectiveness of ILI covered the different aspects related to students' awareness on the library website and availability of types of resources; familiarity with the names of online databases in the health science field; knowledge about the library catalogue, bibliographic databases and open access resources; confidence level related to search skills before and after ILI.

Awareness of the library website

Every library has a website that provides the comprehensive information about its resources and promotes its usage. Awareness of the library website helps to gather information about the library and its resources, which in turn, improve the resource utilization. Participants' awareness about the library website was analyzed before and after the IL program. Pre-test results showed that only 57.3 % of the students were aware about the Health Sciences library website. However, the post ILI feedback data indicated that all the participants have aware of the library website. The details are given in Table 2.

Table 2: Response of the participants about the awareness of library website

Response to question	Number of responders before ILI (%) (Overall n= 117)	Number of responders after ILI (%) (Overall n=117)
Yes	67 (57.3%)	117 (100)
No	50 (42.7%)	0
Total	117 (100)	117 (100)

Awareness on the types of library resources

Students' awareness of the availability of the types of library resources were analyzed using the questionnaires that were distributed before and at the end of the ILI program. The pre-test results revealed the participants' lower level awareness of the resources like CDs/DVDs (22.2%) and online databases (41.0%) available at the library. The post-test results showed that the participants' awareness of all types of library resources increased highly. Participants' awareness of e-Books increased from 63.2 % to 99.1 % after the ILI. The details of participants' response are given in the Table 3.

Table 3: Types of resources in the Health Sciences Library and the awareness of students about their availability

Sl. No.	**Types of resources**	**Response of participants before ILI (%)**	**Response of participants after ILI (%)**
1	Print books	87 (74.4%)	110 (94.0 %)
2	Print journals	85 (72.6%)	111 (94.9 %)
3	Newspapers and magazines	82 (70.1%)	108 (92.3 %)
4	E-books	74 (63.2%)	116 (99.1 %)
5	E-journals	69 (59.0 %)	114 (97.4 %)
6	Online databases	48 (41.0 %)	111 (94.9 %)
7	CDs/DVDs	26 (22.2 %)	87 (74.4%)

Familiarity with online databases

The participants were asked to name the online database/s related to the areas of health science that they were familiar with. Pre-test results showed that the participants had a lower level of familiarity with the names of database/s. Most of the students 83 (70.9%) were unable to provide the names of the databases in the field of health sciences, and 11.1 % provided wrong answers like Google, Internet, Facebook, the MU Portal etc. before the ILI program. The post ILI session feedback revealed an increase in the number of responders 71 (60.7%) who answered the database name/s correctly (for e.g. PubMed, ProQuest, Science Direct, Scopus, Web of Science etc.) as presented in the figure one.

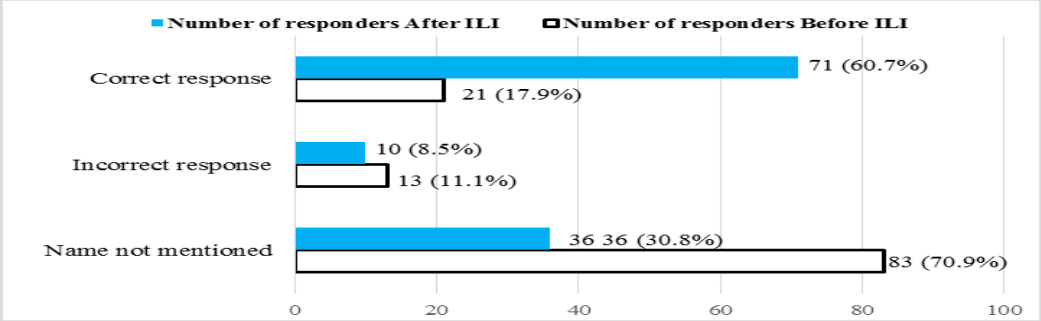

Fig. 1 — Response of the participants about the familiarity of the names of online databases in the field of health sciences

Knowledge of library catalogue

The library catalogue provides details of all the titles of books available in the library. Students were asked to identify the use of the library catalogue. The majority 89 (76.07%) of participants were not aware that library catalogue provides details of all the titles of books available in the library and gave wrong answers before the ILI program. However, the post- test results showed that 66 (56.4%) of the participants answered correctly. The response to the question administered in multiple choice format is summed up in the figure below.

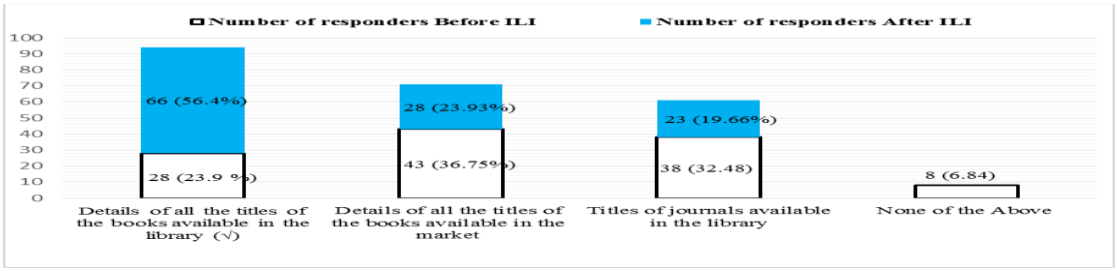

Fig. 2: Knowledge of the responders about library catalogue

Knowledge of bibliographic databases

Students were asked about the features of the bibliographic databases to know their knowledge of the same. The majority (58.12 %) of the participants were of the opinion that bibliographic databases give full text of the articles which indicated the lack of awareness about the features of bibliographic database before the ILI. However, the post ILI session feedback showed an increase in the participants' (79.49 %) awareness that the bibliographic databases provided the abstracts of the articles as shown in the Figure 3.

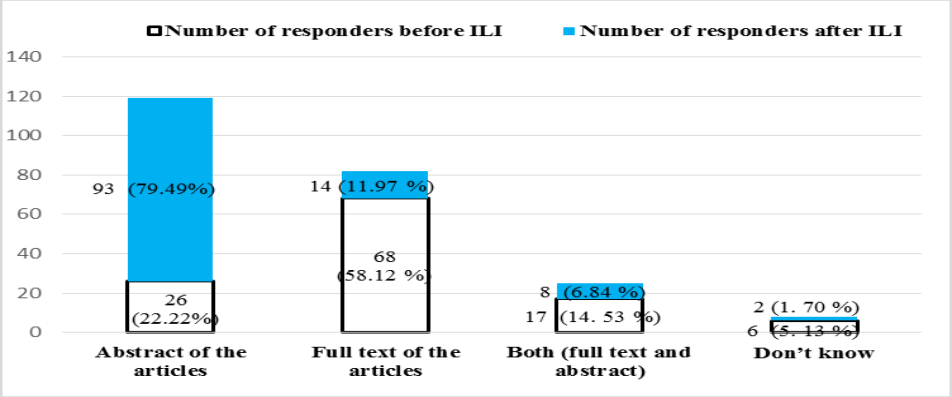

Fig. 3 — Response of the participants to the query about defining the characteristics feature of bibliographic databases

Meaning of open access resources

To test the participants' knowledge of the meaning of open access resources, they were asked to select the right answer from the multiple choice format (Figure 4). More than fifty percent of the responders knew that the open access resources are the resources which are freely accessible from the web. It is heartening to note that after the ILI session 112 (95.73 %) of the responders came to know that open access resources means resources which are accessible freely from the web.

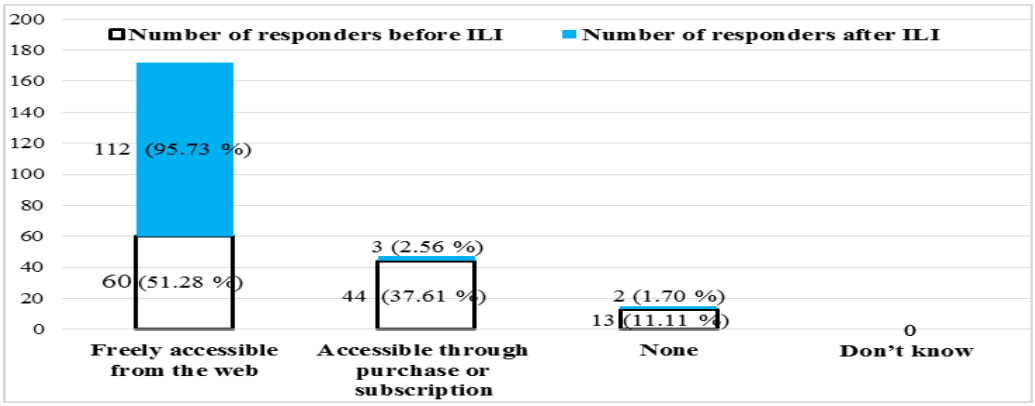

Fig. 4: Response of the participants to the query about defining the characteristics feature of Open Access resources

Proficiency in use of Boolean Operators

The students' skill in the use of Boolean operators for literature search was assessed in the pre and post-test. They were asked to select the appropriate Boolean operators (AND, OR, NOT) for searching synonymous terms to retrieve more results; in both questionnaires administered before and end of the ILI program. When the respondents were asked the question, which Boolean operator will be used for connecting similar words, only 6.84 % of the participants chose the right Boolean logic 'OR' before the ILI. The post ILI test result showed a significant increase in the percentage of the respondents (30.8 %) that chose the right Boolean operator 'OR'. The details are given in Table 4.

Table 4: Participants knowledge about the use of Boolean operators before and after the ILI

Response to question	Number of responders (%)	Number of responders (%)
Yes	8 (6.84 %)	36 (30.8 %)
No	109 (93.16%)	81 (69.23 %)
Total	117 (100)	117 (100)

Confidence level related to search skills

The confidence level of the participants for identifying the right kind of information resources with their search skill was also tested with the help of a five-point scale through the survey prior to IL session and also through their feedback at the end of the session. Increased confidence, was shown by more number of participants 44 (37.6 %) who indicated 'very good' as their response after the ILI session. The number of responses obtained for the various levels of the scale is presented in the line graph (figure 6) below.

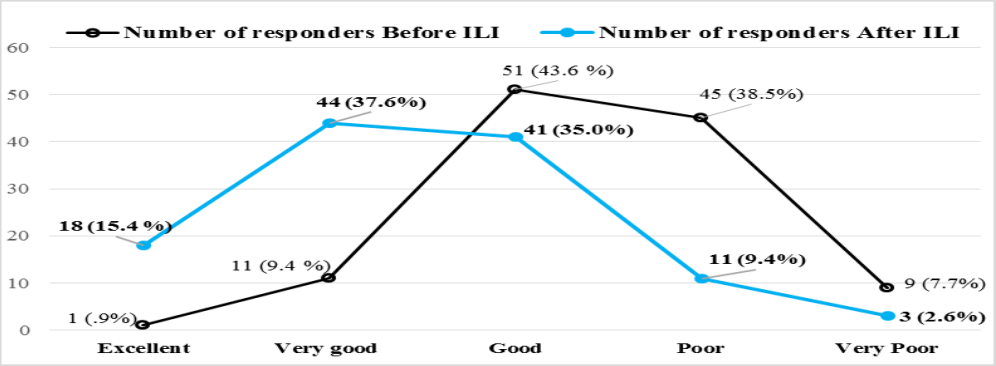

Fig. 6: Comparison of the confidence level of participants related to their ability to use search skills, pre and post ILI session

Users' opinion on effectiveness of ILI at the end of the session

Users' opinion on the effectiveness of IL program was also collected after the literacy program. For testing the effectiveness of ILI program, three more additional questions were added in the post-ILI session feedback questionnaires. They were meant to assess (i) the role of ILI for basic search knowledge and betterment of search skills; (ii) the support provided by ILI program for research activities and (iii) participants' opinion about the efficiency of the librarian to impart information seeking skills. The results are shown in the following tables.

Effectiveness of ILI program for assisting improvement of basic search knowledge and betterment of search skills

Opinion on the effectiveness of ILI program to acquire basic search knowledge and betterment of search skills was gathered from the participants with the help of a five-point Likert type scale question after the session, through their feedback. The majority of the students have either strongly agreed (61.5%) or agreed (37.6%) that the ILI program was effective in providing the

basic search knowledge and effective in improving search skills. The details of participants' opinion are given in the Table 5.

Table 5: Participants' opinion on the effectiveness of ILI on providing basic search knowledge and improvement of search skills after the session

Response of participants	Number of responders (Overall n=117)
Strongly Agree	72 (61.5%)
Agree	44 (37.6%)
Not Sure	1 (.9%)
Disagree	0
Strongly Disagree	0

Support of ILI program for research activities

The opinion of students was gathered on whether ILI program was helpful in preparing them to utilize the library resources for writing assignments/project work. Majority of the students agreed that the IL program conducted by the library was helpful [either very helpful (53.85%) or helpful (44.44%)] for making use of the library resources for their research activities (writing assignments/project work). The details of the data are given in the Table 6.

Table 6: Response of the participants on the helpfulness of ILI program for writing assignments/project work after ILI

Response of participants	Number of responders (Overall n=117)
Very helpful	63 (53.85 %)
Helpful	52 (44.44 %)
Not Sure	2 (1.7 %)
To some extent	0
Not helpful	0
Total (Overall n=117)	117 (100)

Feedback about the instruction

Assessing instructor competence along with student learning outcomes are essential activities in evaluating library instructional programs. The opinion on the efficiency of the librarian to impart literacy skills was also gathered from the participants through their feedback. Majority of the students were either highly satisfied (52.1 %) or satisfied (46.2 %) with the instruction methods in imparting information seeking skills. The details of participants' response are given in the Table 7.

Table 7: Response of the participants after ILI on the efficiency of the of the librarian to impart literacy skills

Response of participants	Number of responders (Overall n=117)
Highly satisfied	61 (52.1 %)
Satisfied	54 (46.2 %)
Not Sure	2 (1.7 %)
Unsatisfied	0
Highly unsatisfied	0
Total (Overall n=117)	117 (100)

In response to the open ended question inviting suggestions from the participants for the improvement of ILI programs, they suggested that hands-on training sessions may be conducted in the future ILI programs.

DISCUSSION

The results of the current study for assessing the effectiveness of ILI program, for the students of Pharmaceutical Sciences course, demonstrated the improvement in the information competency skills of the participants.

The outcome of the study revealed the following:

- Though the participants' awareness about the types of library resources increased substantially, the scope for further improvement existed.
- The post program feedback indicated that 60.7 % of the students were able to provide the names of online databases related to their field where as 56.4 % of the responders were able to properly indicate the use of the library catalogue after the ILI session.
- The post ILI program feedback revealed that the majority of the students (95.73 %) were able to know the features of open access resources and 79.49 % of the participants could identify the features of bibliographic databases.
- The participants' knowledge of the use of Boolean operators increased to a great extent (from 6.8% to 30.8%) after ILI.
- Increased number of participating students expressed confidence in their ability to search and identify the right kind of information, in the post ILI feedback. Therefore a further improvement of their search skills may be brought about by continuing training programs for the same target group.
- ILI program conducted by the library has been effective and created awareness about various resources of the library, search strategies as well as services and facilities of the library as evident from the students' responses and comments.

The postgraduate students in the discipline of Pharmaceutical Sciences would be expected to demonstrate the abilities to identify search terms, filter information from most relevant resources and identify authentic information suited for their academic and research purposes. Continuous review and evaluation are necessary to improve the IL skills of participants.

RECOMMENDATIONS AND CONCLUSION

Based on the assessment results above, the following recommendations have been made.

- Appropriate intervention studies may be conducted to examine the impact of ILI program on the participants regularly.
- Involvement of the concerned teaching faculty along with the librarian in the ILI programs conducted by the library is important due to the multi-disciplinary nature of the subjects to enable and focus the session as per the students' requirement.
- Course-curriculum oriented information literacy programs are recommended for better understanding of the methods for information resource utilization.
- Opportunities for hands-on training must be given to the participants for effectiveness of ILI programs.

The pre evaluation study conducted at the library has identified the actual level of awareness among the participants about library website and resources of library, familiarity with the names of online databases in the health sciences field, knowledge about the library catalogue, bibliographic databases, open access resources and proficiency in the use of Boolean logic. It was observed from the post evaluation study that the information literacy program conducted by the library was effective and helped in improving participants' information literacy skills. The findings of the present study identify the areas that are needed to be focused upon while designing the future IL programs to be conducted by the library for the user community. This method of pre and post ILI evaluation study is helpful in assessing the effectiveness of information literacy programs in the academic libraries.

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