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Information Literacy among Faculty members in the Public Sector Medical Colleges of Khyber Pakhtunkhwa-Pakistan

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ABSTRACT

Purpose of the study: This study aims to evaluate faculty members' information literacy skills in public sector medical colleges in Khyber Pakhtunkhwa.

Design/Methodology/approach: The descriptive research design was used to conduct and accomplish the study's objectives. The research population consisted of faculty members at public sector medical colleges in Khyber Pakhtunkhwa southern region. Professors, Associate Professors, Assistant Professors, Lecturers, and demonstrators comprise the faculty. The adapted questionnaires of (Jan & Bahtti, 2018; Ullah, 2015; Sharma & Lata, 2019; and Rafique, 2014) were modified and used as data collection instrument.

Key findings: Majority of the public sector medical college faculty recognizes the various sources of information, and they use both printed and online materials to identify needed information. The majority of faculty at these medical colleges consults monographs/textbooks regularly, preceded by online journals/medical databases. A good number of medical faculty members opted to use the HEC digital library to locate and access their contents.

Delimitations of the study: This study is delimited to three public sector medical colleges operate in southern districts: of Khyber Medical University Institute of Medical Sciences (KIMS) in Kohat, the Gomal Medical College (GMC) in Dera Ismail Khan, and the Bannu Medical College (BMC) in Bannu.

Practical implication(s): The findings of the study will motivate the policy makers and authorities of these three medical colleges in southern region of Khyber Pakhtunkhwa to enhance the information literacy skills of medical faculty. This practice will result into an effective medical education in the province.

Contribution to the knowledge: No significant work has been done on the Faculty's Information literacy skills at public sector medical colleges in Khyber Pakhtunkhwa.. This study will add valuable literature to literary world.

***Keywords:** Information literacy skills-Khyber Pakhtunkhwa, Information literacy skills-medical faculty-Khyber Pakhtunkhwa, Medical sciences- Information Literacy, Information- Literacy- Pakistan*

INTRODUCTION

In today's electronic society, information professionals are increasingly concerned that, in the absence of well-considered information literacy skills, significant barriers to information access will exist, particularly in the field of medical science. The importance of Information Literacy grows as people gain the ability to verify or refute expert opinions and become independent seekers of truth, giving them the ability to construct their arguments in the process of furthering their knowledge. (Sharma & Lata, 2019). The then President of the United States, Barack Obama, proclaimed October 2009 to be National Information Literacy Awareness Month. He stressed that rather than simply having data, we should also learn how to gather, compare, and assess information in any situation. He also encourages Americans to realize the importance of information in our everyday lives and recognize the need to understand its effects better (Obama, 2009). Dr. Forest Woody Horton, a consultant, has his viewpoint regarding the importance of Information Literacy by stating that, "This is why information literacy is so crucial in our evolving information culture because, without it, information society will never reach its maximum capacity and instead will remain an unrealized dream" (Shrestha, 2008). The Society of College, National, and University Libraries (SCONUL) adopted the Seven Pillars of Information Skills model in 1999. This model's seven pillars are represented as Identity, Scope, Plan, Gather, Evaluate, and Present (Bent and Stubbings, 2011).

Our current medical education system does not adequately prepare our graduates to face the challenges of an increasingly complex healthcare system. It also fails to sufficiently nurture

the skills required for lifelong learning or development in learners, the ability to critically analyze practice performance and make the necessary changes to improve patient outcomes. (Plsek & Greenhalgh, 2001; Fraser & Greenhalgh, 2001). Like many other sciences, medicine is a field where information is rapidly expanding and where up-to-date information is critical (Ajayi, 2004). Medical science is one of the most dynamic fields, with new medicines and research being developed daily. As an active medical professional, one must keep pace with the changing landscape of the medical profession (Singh, 2012). In medical education, information literacy is regarded as a critical skill. According to the Report on Medical Education Learning Objectives published by the Association of American Medical Colleges: Physicians must be able to retrieve (from digital databases and other resources), maintain, and use biomedical information to solve problems and make appropriate decisions about the treatment of patients and populations. Similarly, the CanMEDS competencies framework of the Royal College of Physicians and Surgeons of Canada stated that Physicians need to "critically analyze information and its origins and contribute this information effectively to clinical decision-making." (Storie & Campbell 2012).

Medical professionals are in dire need of IL skills as they are directly involved with treating human health. So they cannot keep themselves uninformed about new developments, new treatments, new views, new explanations, and new approaches in the various fields of medical sciences. No study has been conducted on the Information Literacy skills of Medical Faculty members in Khyber Pakhtunkhwa (KP). This study aims to examine the Information Literacy skills of medical teaching staff of the public sector medical colleges in KP.

PREVIOUS WORKS

Ahmed et al. (2021) conducted a study to determine undergraduate students' information literacy skills and usage of electronic resources using Kuhlthau's Model of Information Search Process (ISP). The researchers suggested making information literacy programs a stand-alone course in the curriculum, improving the students' information literacy skills. Jeyshankar and Nachiappan (2021) investigated the gender disparities in information literacy skills among Alagappa University's research scholars. The study recommends that University library staff and faculty develop a comprehensive information literacy program supported by research scholars. Matonkar and Kumar (2021) conducted a study to determine the level of information literacy among pharmacy students. The study's findings indicated that most students (97.3 %) were aware of books as a source of information, followed by Wikipedia (89.4 %) and newspapers & magazines (69.6 %). Similarly, all 263 respondents (100%) were familiar with and using Google as a search engine. Asiedu et al. (2020) conducted an assessment of the IL competencies of education students enrolled in a multi campus institution. This thesis employed a survey methodology. The researchers suggested introducing information literacy courses to the academic curriculum of universities or colleges and should be taught as a course with credit hours assigned to it. Mulat and Natarajan (2020) administered a descriptive study to ascertain library professionals' digital literacy (DLi) skills. The results pinpointed the fact that significant constraints faced by the library professionals in using Digital literacy skills include electricity supply, internet availability, educational background, and job satisfaction. Shannon et al. (2019) evaluated teachers' Information Literacy (IL) capabilities. The results showed that just 10.5 % respondents attributed their IL experience to their Initial Teacher Education (ITE), 34.2 % to further qualifications, and 28.9 % to workplace training..Hemavathi and Chandrashekara (2019) Surveyed to determine the level of information

literacy among faculty members at the College of Horticulture in Bagalkote, Karnataka. The authors suggested that the library should arrange orientation programs and workshops on Information Literacy skills.

Pathan and Anandhalli (2019) examined the awareness of information literacy among the faculty members of vijayapura engineering colleges. Gowri and Padma (2018) used the "SCONUL Seven Pillars Model" to assess engineering students' information literacy skills. They reported that students are more skilled at distinguishing the concepts and terminology associated with the information they need and recognizing any information gaps. Petermanec and Šebjan (2018) investigated the effect of information literacy on student success in higher education. Tandi Lwoga and Sukums (2018) performed a survey to determine how health science faculty at the Muhimbili University of Health and Allied Sciences (MUHAS) use electronic resources (e-resources) and their degree of information literacy. Govindarajan and Dhanavandan (2018) Assessed Information Literacy skills among university students. Two hundred seven students from two universities were selected for the study, including 68 female and 134 male students. Alagarsamy and Ramalingam (2017) reported the IL needs, searching & evaluation skills of female faculty members. Two hundred ninety questionnaires were distributed among users having a response rate of 87.59 %. Atta-Obeng et al. (2017) conducted a cross-sectional survey method to assess the information literacy skills of science students. Malanga (2017) administered a study assessing information Literacy skills of undergraduate education students at the University of Livingstonia, Malawi. It was recommended that students must be equipped with IL skills and that practical sessions must be conducted to help them improve their IL skills. Santharooban (2016) assessed the information literacy of undergraduate medical students at a Sri Lankan medical university. Munshi and Nagar (2016) have conducted an information literacy analysis among post-graduate students at Aligarh

Muslim University, India. Researchers found that the majority 82.67 % of the students consult their subject-related books while 26 % use various types of Encyclopedias. Ramamurthy and Siridevi (2015) conducted descriptive survey research to find the ICT literacy skills of digital library users and staff of Salem University in Nigeria. Sanjay and Shashank (2014) analyzed the information literacy skills of college teachers. Ilogho and Nkiko (2014) evaluated IL student search skills at five private universities in Nigeria. The study findings indicate that most (88%) students don't know the right source of journal articles. Nagaraju and Roja (2014) conducted research to determine the students' information literacy skills at an Ayurveda Medical College. Hazrati et al. (2013) assessed the faculty members' and post-graduate medical and paramedical students' information literacy skills. Baikady and Mudhol (2013) assessed medical faculty and students' computer literacy when it comes to using digital resources. Kishore and Padmaja (2013) conducted a study on the Information literacy Skills of Post-graduate students of medical sciences regarding the use of Electronic Information Resources. Nanda and Ramesh (2012) conducted a study to determine the level of ICT literacy among teachers and practitioners in the field of disability. The results indicated that 87% of respondents were computer literate. Storie and Campbell (2012) undertook a survey to ascertain the information literacy needs of the University of Alberta's Medical and Dental faculty. Baro et al. (2011) conducted research to evaluate medical students' information literacy capabilities at Niger Delta University's college of health science.

Sasikala and Dhanraju (2011) conducted a study to assess information literacy among Andhra University's science students. The findings indicated that (94%) students' preferred source is a textbook, accompanied by reference books. Kingsley et al. (2011) assessed first-year dental students' information literacy skills. Dinkelman et al. (2011) revealed in their research the role of veterinary librarians in imparting IL skills and found that librarians are good at teaching IL skills

Ali et al. (2010) performed a survey on engineering students for analyzing their Information Literacy Skills and discovered that only 16.30 percent of students correctly used the Boolean operator "OR" to obtain additional search results. Islam and Tsuji (2010) performed an analysis on assessing Information competency in graduate students of information science library management and discovered that only 30% of students correctly defined the Boolean operator 'AND.' Just 10% of students formulated their queries using truncation and Boolean operators. Siddike (2010) explored the digital literacy competencies among library and information professionals. Obama (2009) President of the United States, Barack Obama, proclaimed October 2009 to be National Information Literacy Awareness Month. He stressed that rather than simply having data, we should also learn how to gather, compare, and assess information in any situation. Jan, Saeed Ullah & Waheed Ullah Khan (2022) *reported that he majority of faculty at these medical colleges consults monographs/textbooks regularly, preceded by online journals/medical databases.* Faculty members possess the skills to locate and access the sources of needed information.

Issa et al. (2009) examined the impact of information literacy skills on electronic resource usage among students at the University of Ilorin in Kwara State, Nigeria. Ur Rehman and Alfaresi (2009) published a report on female students' information literacy skills in Kuwaiti high schools. Gedam and Agashe (2009) the authors agreed that in this modern changing world, information Literacy is a significant factor. Information literacy makes users identify, assess, and use the right information for their needs, and they can search independently, effectively for meeting their needs. Cobus (2008) believes that for the continuing successful education of Health professionals, a solid multidisciplinary partnership between medical faculty and librarians is necessary through curriculum-based Information Literacy (IL) to help implement IL into the curriculum to educate

the health professionals to communicate the future health-related problems. Terra (2009) investigated the Information literacy skills among European Union (EU) information users and found that the users of European Documentation Centers (EDCs) who are familiar with European issues need to develop their information literacy skills.

Mishra and Maharana (2007) conducted a survey of faculty members at Sambalpur University about their digital information literacy. The findings indicated that most of the faculty members (82.86 %) needed electronic information from electronic journals, whereas more than half of the faculty required e-articles, e-thesis & dissertations, and e-databases. McGuinness (2006) found that till now, faculties do not give priority to Information literacy. The study expresses the faculty's belief that available instructional programs cannot develop students Information literacy skills, but it entirely depends upon the individual's interest, motivation, and inherent skills. Singh (2005) concluded in his survey that very few undergraduate students of different accredited programs could not be considered information literate; however, most of their graduate students met the information literacy criteria proposed by ACRL. Ibrahim et al. (2020) conducted a quantitative study that aimed to investigate the Information literacy program in medical libraries situated in the Khyber Pakhtunkhwa (KP) province of Pakistan. Furthermore, results showed that the most common type of information literacy is library orientation practiced (68.75%) in libraries. Rafique and Khan (2017) conducted a study on the information literacy skills of management science students at two Lahore-based universities. About half of the students, (50.9 %), desired to obtain necessary information online. Jan and Bahtti (2018) conducted a study to determine librarians' information literacy skills in public sector universities. The study's findings indicated that most respondents were unable to understand and recognize the information they need. Ullah and Ameen (2015) explored medical librarians' perceptions toward the significance of information literacy.

Batool and Mahmood (2012) conducted a survey to evaluate primary school teachers' perceptions of their students' IL abilities. Ullah and Ameen (2016) investigated the obstacles to imparting information literacy training in Pakistani medical institutions. Hamid and Ahmad (2016) surveyed to evaluate the User Education programs (UEP's) conducted by different university libraries of Islamabad. The study revealed that UEPs are being offered with a 1-hour time duration for a class in most universities. Lecture, workshop/seminar, and library tours were the methods being commonly used to instruct library users. Hamid et al. (2015) analyzed the Riphah International University, Islamabad's Information literacy program (ILP). Kousar and Mahmood (2015) published a report titled faculty perceptions of post-graduate engineering students' IL expertise. These perceptions were evaluated using ACRL standards. Naveed and Sharif (2015) assessed the needs and effects of information literacy sessions at Agha Khan University's Institute for Educational Development. Ahmad (2014) carried a research survey entitled Information literacy skills of researchers. Rafique (2014) measured faculty members' information literacy skills at the University of Lahore. Ullah and Ameen (2014) explored the existing state of information literacy instruction in Pakistan's medical libraries and found that the majority of respondents (73.9 %) provided IL instruction to their users. Mahmood (2013) conducted a study at the University of the Punjab, Lahore, to ascertain students' perceived IL skills.

Kousar and Mahmood (2013) evaluated the information literacy competence of AIR University post-graduate engineering students. The research findings revealed that first-year students enrolled in undergraduate engineering programs might not have a strong grasp of information resources. Arif and Kanwal (2009) used a survey testing approach to ascertain female student's adoption of the digital library. Ameen and Gorman (2009) examined Information and

Digital Literacy in Pakistan and learned that respondents rated online services, university libraries, and the HEC digital library as extremely significant.

RESEARCH OBJECTIVES

The main objectives of the research study are:

1. To know the faculty ability to determine the nature and extent of desirable information
2. To find out respondents' level of awareness about different sources of needed information.
3. To examine how the faculty 'locate and access different sources of information.
4. To know the skills of the respondents to evaluate the collected information.
5. To know how the collected information is presented effectively by the respondents.

Research Questions

- Q.1 What is the faculty ability to determine the nature and extent of desirable information?
- Q.2 What is the level of respondent's awareness about different sources of needed information?
- Q.3 What tools are used by the faculty to locate and access different sources of information?
- Q.4 Which skills are used by respondents to evaluate the collected information?
- Q.5 What is the level of respondents in presenting the collected information?

RESEARCH DESIGN AND METHODOLOGY

The descriptive research design was used to conduct and accomplish the study's objectives since it is more reliable, analytical and allows the use of statistics to generalize the findings. This study was conducted using a quantitative approach and the survey process.

The research population consisted of faculty members at public sector medical colleges in Khyber Pakhtunkhwa southern region. Professors, Associate Professors, Assistant Professors, Lecturers, and demonstrators comprise the faculty. This research examined three medical colleges in the southern region of Khyber Pakhtunkhwa. As the data was census-based, the researcher approached all faculty members at these selected medical colleges. Regardless of ethnicity, designation, qualification, or experience, each faculty member had an equal opportunity to contribute to this research. To collect data, a total of 183 faculty members from these three public sector medical colleges were contacted.

Following a review of the literature on the topic, a formal questionnaire was created. For this research report, the questionnaires of (Jan & Bahtti, 2018; Ullah, 2015; Sharma & Lata, 2019; and Rafique, 2014) were modified. In comparison to other data collection techniques, a questionnaire is simple and inexpensive to administer. Additionally, it accommodates a large sample dispersed over a broad area. Likewise, respondents have enough time to consider the questions and respond to them when they have free time. It gathers quantitative data that can easily be analyzed and generate. The reliability and validity of the instrument were determined. To ensure the validity of the questionnaire, it was reviewed by two eminent LIS professionals (List attached in appendix A). The suggestions made by these experts were correctly adopted. Additionally, a pilot analysis was conducted to determine the reliability of the instrument. The alpha cronbach test was used to determine the same. The instrument was seen to be reliable, with an alpha value of 0.8.(Gay et al., 2011). As a result, it was proposed to collect data using the same technique.

The questionnaires were distributed among the faculty of three public sector medical colleges of the southern region of Khyber Pakhtunkhwa through personal visits. The questionnaire was structured and a close-ended type. Altogether 183 questionnaires for medical faculty members

were distributed. A total of 154 respondents returned the questionnaires dully filled in, having a response rate of 84%. The questionnaires returned by respondents were critically scrutinized and analyzed. The respondents' responses about awareness with different information resources, information access, and retrieval skills, and their capability to interpret, evaluate and present the information gathered from the faculty were collected, categorized, codified in excel, and recorded in SPSS for data review. All of the data gathered was aggregated into a form that displayed a summary of respondents' responses. Estimation scales such as nominal, ordinal, and ratio were employed. Descriptive statistics were applied to obtain the frequency, mean, and standard deviation values. Tabulation is used to interpret processed results. The findings of the analysis are identified in tables and figures.

DATA ANALYSIS, INTERPRETATION AND FINDINGS OF THE STUDY

It is evident from the analysis of data that male faculty members dominate over females in public sector medical colleges in Khyber Pakhtunkhwa. Majority of the faculty comprised of Demonstrators 63 (40.91 %), followed by Assistant professors 40 (25.97 %), Professors 20 (12.99 %), Associate professors 18 (11.69 %), and Lecturers 13 (8.44 %).

Table # 1: *Frequency distribution by gender*

Gender	Frequency	%
Male	110	71.43
Female	44	28.57
Total	154	100

It is clearly evident from the Table 2 that majority of the public sector medical college faculty used printed materials for the recognition of needed information (Mean=4.53 & S.D=0.617) followed

by online materials (Mean=4.44 & S.D=0.758). Furthermore, the tabulated value of the table shows that most of the faculty also agreed that they were able to recognize the various sources of information (Mean=4.41 & S.D=0.643). Respondents demonstrated a complete understanding of the required information (Mean=4.12 & S.D=0.646) and the ability to define the information necessary to satisfy the requirement and solve the problem (Mean=4 & S.D=0.605). Additionally, a good number of faculty members agreed that they go for assistance from others if they need to understand the information they needed. They were also able in determining the existence or nonexistent of needed information. Overall, it is obvious from the results that the faculty members have good literacy about determining the nature and extent of needed information.

Table # 2: *Determine the Nature and Extent of Needed Information*

Statements	N	Mean	Std. Deviation
I am able to Use Printed materials for Recognition of the needed information	154	4.53	0.617
I am able to Use online resources for recognition of needed information.	154	4.44	0.758
I am able to recognize the various sources of information.	154	4.41	0.643
I am able to fully understand the needed information.	154	4.12	0.646
I am able to Define the information needed to meet the requirement and solve the problem.	154	4.00	0.605
Go for help if required to understand the needed information.	154	3.96	0.410
I am able to determine whether the needed information exists or not.	154	3.92	0.479

Scale used: Strongly Disagree=1, Disagree = 2, Neutral = 3, Agree = 4 and strongly Agree = 5

In a similar study conducted by Jan and Bhatti (2018) and Rafique (2014), the results were almost similar to current study as in those studies it was noted that most of the respondents were able to use printed materials for the recognition of needed information and also the faculty members of the university have higher literacy skills about the information recognition.

It is noticed that most faculty members at these medical colleges frequently consult monographs/textbooks, online journals/medical databases, audio-visual sources, research reports/articles, government publications while print/online journals, dictionaries and encyclopedias, newspapers, abstracts and indexes, Conference/ Seminar Papers, Institutional Resources /Repositories and Bibliography of bibliographies were used occasionally by the faculty members. Furthermore, faculty members seldom used Library Catalogs and Theses and Dissertations as sources of the required information.

Table # 3: *Level of Awareness about Different Sources of Needed Information*

Information Sources	N	Mean	Std. Deviation
Monograph/ Textbooks	154	4.55	0.733
Online Databases/Medical databases	154	4.05	0.975
Audio – Visual Sources	154	3.78	1.080
Research Reports/Articles	154	3.59	0.860
Government publications	154	3.56	0.647
Print/ Electronic Journals	154	3.40	0.829
Dictionaries and Encyclopedias	154	3.38	0.734
Newspapers	154	3.36	0.798
Abstracts and Indexes	154	3.34	0.649
Health Care Groups/Organizations	154	3.21	0.738

Conference/ Seminar Papers	154	3.19	0.569
Institutional Resources /Repositories	154	3.08	0.974
Bibliography of bibliographies	154	3.01	1.057
Library Catalogues	154	2.70	1.294
Theses and Dissertations	154	2.58	0.644

Scale: Never Used=1, Rarely Used =2, Occasionally Used=3, Frequently Used= 4 and Most Frequently Used=5.

Dahiru (2021) conducted a similar study and the results were similar to the current study. The results of the study indicated that majority of the respondents were of the view that library information resources such as Books, Journals, Newspapers, Magazines, encyclopedia, internet, dictionaries, were used always in the libraries while Thesis/dissertations, Electronic databases, Microform and library catalogue were used rarely.

The tabulated data designates that many of the faculty members have good skills in locating and accessing the different information sources as it is clearly obvious from the results that respondents can use search engines to locate required information. While respondents were more familiar with the use of internet as they can Copy/download files from Internet. They can also locate different websites and download scholarly articles from the Internet to fulfill their information needs. A considerable amount of faculty members has the skills in online database searching as they can use and search in different online medical databases to access needed information /articles (Science Direct, PubMed, Medline, ProQuest, etc.).

Additionally, the tabulated values indicate that most medical faculty members opted to use the HEC digital library to locate and access their content. Besides that, the faculty members are somehow familiar with the online public access catalog (OPAC) while they have very little knowledge about abstracting and indexing services and various online searching techniques, including how to utilize Boolean operators and truncations for searching. The table also depicts

that the faculty members of these medical colleges do not know about using library catalogs in any format to locate and access the needed information.

Table # 4: *Locate and Access the Sources of Needed Information*

Statements	N	Mean	Std. Deviation
I can use search engines (e.g. Google, Yahoo, ask.com) to locate required information.	154	4.55	0.584
I can Copy/download files from Internet	154	4.47	0.639
I can locate different websites to fulfill my information needs.	154	4.41	0.755
I can Download scholarly article from Internet	154	4.40	0.753
I can Search in the Online medical databases	154	4.23	0.805
I can use different databases to access needed information /articles.(science Direct, PubMed, Medline, proQuest etc)	154	4.21	0.848
I can apply advanced search option to limit my search. (Limited to specific author, format, resource etc.)	154	4.17	0.884
I can use HEC digital library	154	4.14	0.874
I can find what I am looking for.	154	3.96	0.704
I can make search through key words in any OPAC.	154	3.66	0.794
I can utilize Boolean Operators and Truncations for searching.	154	3.49	0.895
I can use OPAC to locate the needed information.	154	3.45	1.279
I can do search through author, subject and title in Online Public Access Catalogues. (OPAC)	154	3.45	0.732
I have understanding about various online searching techniques	154	3.42	0.721
I can understand the abstracting and indexing services.	154	3.38	0.659
I can use library catalogues in all formats.	154	2.63	0.749

In a similar study Rafique (2014) concluded that most of the faculty members perceived that they could use search engines and different websites to locate their required information, but few results were in contrast to the current study such as the faculty members, who used databases and advance search options to retrieve their necessary information and those who used key words and author entry/call number were very few in numbers.

While evaluating the collected information; most faculty members also check when and why the information is being published. The tabulated values in the table also specify that majority of the medical faculty members (Mean=4.28 & S.D=0.763) can determine whether the information received is valuable or not? The table illustrates that features such as (quality of the page layout and graphic images and does it look professional) are widely used as an evaluation criterion for collected information by faculty members (Mean=4.19 & S.D=0.798).

Similarly, faculty members give emphasis to the international standard book number (ISBN) and international standard serial number (ISSN) associated with the source of information. The table also designates that medical faculty (Mean=4.01 & S.D=0.911) also pay consideration to sources of retrieved information as to whether it is from an educational (.edu) or government (.gov) or any other website. The tabulated values also show that a number of the faculty members (Mean=2.83 & S.D=0.854) are not interested in whether the author of any information source can be contacted or not. Instead, they give special attention to the author's credentials, whether the author is an expert in the related field or not? (Mean=3.59 & S.D=0.897).

Table # 5: *Evaluation of the Retrieved Information and its Sources*

Statements	N	Mean	Std.Deviation
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Is the information from a reliable source?	154	4.38	0.825
How old is the information? Is it still reliable?	154	4.33	0.809
Why do you need this information? Does it apply to your research needs?	154	4.29	0.870
I can determine whether the information received is valuable or not?	154	4.28	0.763
When was the information published?	154	4.27	0.936
What is the quality of the page layout and graphical images? Does it look professional?	154	4.19	0.798
Why is this information being published?	154	4.13	0.883
Is there any standards number on the information (ISBN,ISSN)	154	4.04	1.015
Where did the information come from? (.edu , .gov, .com, .mil, .org)	154	4.01	0.911
I can determine whether the information need is accomplished or initial query needs to be revised.	154	3.95	0.948
I can examine and compare information gathered from various sources in order to evaluate reliability, validity, accuracy, authority etc.	154	3.89	0.967
Can the contents of the information be verified in a traditional edited print/electronic sources?	154	3.81	1.008
Check the author's credentials. Is the author an expert in the field?	154	3.59	0.897
Can the author be contacted?	154	2.83	0.854

Scale: Never Used=1, Rarely Used= 2, Occasionally Used= 3, Frequently Used= 4 and Most Frequently Used= 5.

The results are in agreement with the study of Jeysankar and Nachiappan (2021) which found that the maximum numbers of respondents were able to evaluate: a) the publishers of information,

b) computerized electronic resources, c) authenticity of the information and d) the creditworthiness of contents and can report misleading, outdated & obsolete information.

The table's tabulated values explicitly show that the majority of faculty members (Mean=4.41 & S.D=0.813) were proficient at presenting information using Microsoft PowerPoint presentation software. Similarly, most of these faculty members can write a research paper using Microsoft word (Mean=4.29 & S.D=0.948). The table indicates that medical faculty members are capable of sharing information through social media and email. Additionally, the table specifies that a substantial percentage of these faculty members could present information both in print and electronic formats. Further, the hierarchy reflects that a considerable number of these faculty members (Mean=3.95 & S.D=0.972) at these medical colleges are familiar with online discussion groups and professional platforms to exchange information on these media.

Table # 6: *Presentation of Information*

Statements.	N	Mean	St. Deviation
I can make a Power Point Presentation (PPT)	154	4.41	0.813
I can write a research paper using MS word	154	4.29	0.948
I Can share the information on social media.	154	4.22	0.802
I can send information through email.	154	4.18	0.671
I can share the information on online discussion groups and professional plate forms.	154	3.95	0.972
I can present the information in digital and in printed format.	154	3.88	1.037
I have the knowledge of different Referencing styles to organize the Reference list.	154	3.82	1.075
I have knowledge about various formats like pdf, word, jpg, jpeg, Raw, Tiff, bitmap, html, and mov, mp3, and mp4.	154	3.81	1.059

I can make a spread sheet	154	3.78	1.162
I can present the information in all formats.	154	3.12	0.699
I have the knowledge about Drop Box services.	154	3.11	0.974
I can digitize information.	154	2.71	0.773
Use of Citation Management Software (Endnote, Ref work, etc.)	154	2.71	1.375

Scale used: No Skills=1, Basic=2, Good=3, Proficient=4, Expert=5

Similarly, the table shows that a sizable proportion of faculty members at these medical colleges are familiar with the different formats in which information is accessible, including "pdf, word, jpg, jpeg, Raw, Tiff, bitmap, HTML, and mov, mp3, and mp4". Additionally, a good number of faculty members (Mean=3.11 & SD=0.974) can utilize the drop Box facilities for exchanging information. Though a good number (Mean=3.82 & S.D=1.075) of these faculty members were familiar with various referencing styles for organizing the Reference list, yet they have poor literacy skills when utilizing Citation Management Software (Endnote, Ref work, Mendeley, etc.) (Mean=2.71 & S.D=1.375). Additionally, faculty members have limited literacy skills regarding digitizing information (Mean=2.71 & S.D=0.773).

Most faculty members (83.12 %) needed training on the ethical use of information /awareness about plagiarism. The majority of the respondents (76.62%) needed instruction or training on citation management software such as Endnote, Mendeley, etc. Following this, (73.38 %) of the medical faculty members required instructions on the introduction of the library catalog/OPAC. Similarly, hierarchy shows that (64.29 %) of the respondents need instruction/training on the different Referencing styles used for citing information. Furthermore, (59.74 %) of the faculty members required training on the online searching techniques followed by library website introduction (40.26%), scholarly publishing (33.77 %), and use of medical databases (28.57 %).

The exact number of respondents (25.32 %) needed training or instructions in both 'Introduction to Library resources, services and policies' and 'copyright.' Almost the same percentage (21.43%) and (20.78%) of respondents needed instruction/training in the use of Higher education commission (HEC) digital library and Evaluation of information, respectively.

Table # 7: *Areas in which Training/instructions are required*

Statements	Frequency	%
Plagiarism awareness/ethical use of information	128	83.12
Use of Citation Management Software (Endnote, Refwork, Mendeley etc.)	118	76.62
OPAC/library catalogue introduction	113	73.38
Citation of information (Referencing styles)	99	64.29
Online searching techniques	92	59.74
Library website introduction	62	40.26
Scholarly publishing	52	33.77
Use of medical databases	44	28.57
Introduction to Library resources, services and policies	39	25.32
Copyright	39	25.32
Use of Higher Education Commission (HEC) Digit Library	33	21.43
Evaluation of information	32	20.78
Use of e-resources	25	16.23
Identification of own information needs	22	14.29
Use of search engines	12	7.79
Theory and Practice of Evidence Based Medicine	12	7.79

Use of printed resources	8	5.19
Use of Computers	8	5.19
Other topics	1	0.65

CONCLUSION

The following conclusions are formed as a result of the survey findings.

1. Faculty members of public sector medical colleges in Khyber Pakhtunkhwa can define and fully understand the information needed to meet the requirement and solve the problem. They are also able to recognize the various sources of information. The faculty members have low literacy in determining if the required information exists or not.
2. Medical faculty members have an awareness of potential sources of information to meet their information need. Monographs/textbooks are frequently consulted, while Library Catalogs and Theses and Dissertations are significantly less consulted as sources for required information by medical faculty.
3. Faculty members possess the skills to locate and access the sources of needed information. They can use search engines, and they can search in online medical databases. At the same time, there is a lack of awareness among the respondents regarding using library catalogs in any format to locate and obtain the information they need.
4. Faculty members have the skills to evaluate the retrieved information and its sources. They check the reliability of information sources on priority, while most faculty members were not interested in whether the author of any information source can be contacted.

5. Most faculty members are proficient in using MS PowerPoint and MS Word applications in respect of presentation skills. In contrast, most faculty members have limited literacy skills when digitizing information and utilizing the drop Box facilities for exchanging information.
6. Most faculty members require instruction or training on the ethical use of information, introduction to library catalog/OPAC, online searching techniques, citation management tools, and various referencing styles.

SUGGESTIONS AND RECOMMENDATIONS

The following suggestions and recommendations are made in light of the concluding points listed previously.

1. Faculty members in public sector medical colleges of Khyber Pakhtunkhwa have recognized the significance of information literacy (IL) skills, implying that all medical faculty members must be adequately equipped with information competencies.
2. Awareness about how to obtain information from printed and electronic resources, different research techniques to collect information, use and advantage of keywords, and Boolean operators when searching for information in online medical databases, use of library catalog/OPAC, assessment of collected information, and awareness about the ethical use of information should be developed primarily amongst medical faculty members. These should all be included in the Medical Library's Information Literacy Program (ILP).
3. Each medical institution should develop and implement a well-defined Information Literacy policy. Accrediting bodies such as the HEC and the Pakistan Medical Commission (PMC) can significantly contribute to this area.
4. It is being recommended that need-oriented Information Literacy Programs for faculties should be organized on a regular basis.

5. Medical institutions should integrate an information literacy course of at least two credit hours into the core curriculum to enhance adequate information literacy knowledge and skills, therefore developing the medical professionals' information literate and independent lifelong learners. Both the librarian and the faculty should develop the IL curriculum. Instructions in IL may be conducted alone by a librarian or in collaboration with faculty. This approach may be used in all types of medical institutes, public and private.
6. Informational Communication Technology (ICT) training workshops and seminars should be organized for faculty, medical professionals, and researchers.
7. Lack of opportunities for faculty to receive IL instruction and a lack of IL policies in medical institutions are two major obstacles that must be overcome. Lack of cooperation between faculty and librarians; and a lack of interest and understanding among management, teachers, and students about the value of Information Literacy programs hinder the delivery of IL instruction in medical institutions. The results of this study suggest that leadership in medical information systems should take responsibility for more successfully training library users to address these barriers.
8. Professionals of the Medical Library should make efforts to establish an extensive training or information literacy course for faculty members of medical colleges. However, as electronic and web-based information services have grown in popularity, these training and instruction programs now need further sophistication. These instruction and training programs must be updated and enhanced regularly in the electronic age.
9. Regular assessments of users' information literacy skills by library professionals can aid in the development of an effective information literacy program.
10. The Higher Education Commission of Pakistan (HEC) should develop a practical framework

for IL skills in all fields of study so that educational institutions can provide more information literate human resources to help shape an information literate community.

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