Collection and Collaboration of Library in Updating Knowledge: A Study among Doctors of Medical Institutions in Chennai (Tamil Nadu, India)

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Abstract

In this study the knowledge updating by doctors were analysed based collection and collaboration of library. The collection and collaboration has been analysed based on the awareness on use of Information in knowledge updation; awareness on Database; Opinion on Collection in the library; the satisfaction over present library services, the library staff assistance in knowledge updation and the use of databases in updating knowledge. A structured questionnaire was distributed among 605 faculty members of five private medical colleges in Chennai, Nearly 60.8% respondents indicated that the aware of usage of information were moderately aware. aware on databases in updating knowledge has been ascertained in a three point scale such as Not at all aware; Moderate level and Significant level on six medical related databases such as Hubmed; Go Pub Med; Pub Med; Medicine plus; MD Consult and Free Medical Journals. Go pub Med was highly preferred by the respondents. It is followed by Pub Med; Hubmed and Mediline plus. .

Keywords

Library Collection; Collaboration; Updating knowledge; Medical professionals,.

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1 INTRODUCTION

Service Channel Surfing, common to users and library staff, experience quickly tells us which doors delivers and those service channels (processes, tools, etc.) become integrated into the organizational transformation process in collaborative strategies. Library services, such as; Acquisition, Collection Development and Resource Sharing are traditional units, has a dimensional changes with the development of technologies. The technologies and the management tools introduced in the library and information science have made a significant change in the role and functions of the library. The information is disunited among the users by using different enhanced, extended and new services which users likes most in the global information availability era. ICT based services, digital library services, internet based services, social networked based services, mobile services, consortium based services are now initiated in digital era which are representing as user centric based services. With the new technologies, these changes have derived substantial benefits to both the users and library staff.

McGarry (2003) highlights access as a key dimension of libraries, distinguishing between 'passive access', 'mediated access' and 'transitive access', representing different points on the service continuum, from making stock available to borrowers, through matching individual needs with materials, to reaching out directly to particular groups with special collections and services. The author also discusses how libraries have evolved from historical times to the modern world and deals with the issue of whether advances in information and communication technology (ICT) and particularly the development of the World Wide Web have made the term 'library' redundant as a result of printed research material (such as books and journals) being replaced by electronic equivalents. All this essentially forces the professionals in different domain in updating their knowledge

The four knowledge updating factors that has dominance in any domain in updating the knowledge were.

- JOURNAL -Information about Journals,
- ACTIVITIES – Extended Activities
- COLLECTION AND COLLABORATION -, library Collection & Collaboration
- KNOWLEDGE TOOLS

The same can form an acronym - JACK.

2 REVIEW OF LITERATURE

Information literacy Programmes (Bhatti, Rubina, 2013) and guidance in use of library resources and services (Pareek, 2013) with the help of professional staff are expected among the engineering faculty members. Lack of awareness of resources especially digital information resources (Adio and Arinola. 2012), use of ICT in information seeking and gathering process (Khan, Shakeel Ahmed, Bhatti, Rubina and Khan, Ghalib.,2011) are the limitations in information seeking among the faculty members. Majid et al., 2012) found that the basic purposes of seeking information are primarily for academic purpose rather than that of enriching the knowledge. Even Siddiaui, 2011) stated that the successful operation of any library and information centres depends to a large extent on the choice of their collections. The choice of the collection should meet the need and requirements of the end users. Importance of journals and extended activities in knowledge updation among the medical professionals has studies by Godwin and Ambuja (2020a, b)

3 OBJECTIVES

The primary objective of the study was to identify the collection and collaboration of the library in updating the knowledge among the professionals irrespective of the domain.

The ***secondary objectives*** were

- To know the awareness on use of Information in knowledge updation
- To identify the awareness on Database
- To know the Opinion on Collection in the library
- To identify the satisfaction over present library services in updating knowledge
- To know about the library staff assistance in knowledge updation
- To identify the use of databases in updating knowledge

4 HYPOTHESES

Based on the objectives the following hypotheses have been formulated

1. collection and collaboration of the library has a significant impact in updating the knowledge among the professionals
2. There exists significant awareness on use of Information in knowledge updation
3. The medical professionals about the awareness on Database
4. There exists significant difference on the opinion regard to Collection in the library
5. There exist satisfactions over present library services in updating knowledge
6. There exist significant differences in library staff assistance in updating the knowledge
7. The medical professionals well aware about the use of databases in updating knowledge

5 DATA CAPTURE

A structured questionnaire was distributed among 605 faculty members of five private medical colleges in Chennai, taking into account 40% of the total respondents in each institution. The data were collected during August to December 2019. Out of 605 questionnaires distributed 497 were received. The response rate works out to 82.15%. Received sample questionnaire were analyzed statistically.

Table 1: Personal Information of Respondents

S.No.	Description	Frequency	Percent	Cumulative Percent
AGE				
1	Below 30 yrs	114	22.9	22.9
2	31 to 40 yrs	179	36.0	59.0
3	41 to 50 yrs	49	9.9	68.8
4	51 to above yrs	155	31.2	100.0
Present Assignment				
1	Both Teaching and Practicing	359	72.2	72.2
2	Only Teaching	138	27.8	100.0
Gender				
1	Male	264	53.1	53.1
2	Female	233	46.9	100.0
Qualification				

1	MD	376	75.7	75.7
2	MS	121	24.3	100.0
Designation				
1	Professor & Head	25	5.0	5.0
2	Professor	101	20.3	25.4
3	Associate Professor	106	21.3	46.7
4	Assistant Professor	265	53.3	100.0
Overall				
	Total	497	100.0	

It can be seen from the table1 that 53.1% (264) were male and 46.9% (233) were female. Among 497 respondents, 114 (22.9%) were below 30 years. It is followed by 179 (36.0%) were 31-40 years; 49 (9.9%) were between 41 and 50years and 155(31.2%) were above 51 years. Out of 497 respondents, 359 (72.2%) were have both teaching and practicing and 138 (27.8%) were only teaching. Nearly 376 (75.7%) were having MD qualification and the remaining 121 (24.3%) were with MS qualification. Out of 497 respondents, 5% (25) were Professor and Head; 20.3% (101) were Professors; 21.3% (106) were Associate Professors. The remaining 265 (53.3%) were Assistant Professors.

6 DATA ANALYSIS

The analysis were carried out based on the concepts such as

- Awareness on use of Information in knowledge updation
- Awareness on Database
- Opinion on Collection in the library
- Satisfaction over present library services
- Library staff assistance in knowledge updation
- Use of databases in updating knowledge

Aware of use of Information

The aware of usage of information in updating knowledge has been ascertained in a five point scale such as Not at all aware; Slightly Aware; Somewhat Aware; Moderately Aware and Aware. The mean and standard deviation were calculated based on the opinion. The respondents' opinion, mean, and standard deviation are shown in Table 2

Table 2: Aware of usage of information

S. No.	Awareness	Frequency	Percent	Cumulative Percent
1	Not at all aware	2	.4	.4
2	Slightly Aware	21	4.2	4.6
3	Somewhat Aware	25	5.0	9.7
4	Moderately Aware	302	60.8	70.4
5	Aware	147	29.6	100.0
	Total	497	100.0	
	Mean	4.15	Std.	0.728

Out of 497 respondents, 302 (60.8%) respondents indicated that the aware of usage of information were moderately aware. It is followed by 147 (29.6%) respondent indicated they aware as well as 25 (5.0%) indicated they were somewhat aware. Only 4.6% indicated that they were not at all aware and slightly aware. The mean value works out to 4.15 which indicate that the respondents were lean towards aware of usage of information.

The analyses were further extended to demographic details such as gender, age, qualification and professional assignment. The same has been shown in Table 3.

The male medical professionals indicated that the awareness on use of information were aware (A) and somewhat aware (SA) whereas the female indicated they were moderately aware (M).On the contrary male indicated slightly aware (Sl) and not at all aware (N);. The mean value works out 4.15 indicated that both male and female lean towards aware where as the standard deviation indicate that female has edge over male in indicating the awareness of use of information.

Table 3: Aware of usage of information Vs gender, age, qualification and professional assignment

S.No.	Description	n	Not at all aware (N)	Slightly Aware (S)	Somewhat Aware(SW)	Moderately Aware (M)	Aware (A)	Preference	Mean	Std
Gender										
1	Male	264	2	12	16	149	85	M>A>SW>S>N	4.15	.783
2	Female	233	0	9	9	153	62	M>A>SW=S>N	4.15	.662
	Preference		M>F	M>F	M>F	F>M	M>F			
Age										
1	Below 30 yrs	114	2	5	7	68	32	M>A>SW>S>N	4.08	.822
2	31 to 40 yrs	179	0	10	5	114	50	M>A>S>SW>N	4.14	.717
3	41 to 50 yrs	49	0	0	2	30	17	M>A>SW>S=N	4.31	.548
4	51 & above yrs	155	0	6	11	90	48	M>A>SW>S>N	4.16	.716
	Preference		B30>31-40= 51 &A= 41-50	31-40>51 &A= B30> 41-50	51 &A> B30>31-40> 41-50	31-40> 51&A> B30>41-50	31-40> 51&A> B30>41-50			
Qualification										
1	MD	376	2	13	23	220	118	M>A>SW>S>N	4.17	.731
2	MS	121	0	8	2	82	29	M>A>S>SW>N	4.09	.719
	Preference		MD>MS	MD>MS	MD>MS	MD>MS	MD>MS			
Assignment										
1	Only Teaching and Training(TT)	359	2	12	21	211	113	M>A>SW>S>N	4.17	.727
2	Both Practicing and Teaching(PT)	138	0	9	4	91	34	M>A>S>SW>N	4.09	.730
	Preference		TT>PT	TT>PT	TT>PT	TT>PT	TT>PT			
Overall										
	Total	497	2	21	25	302	147	M>A>SW>S>N	4.15	.728

The mean value of different age group of medical professionals ranges between 4.08 and 4.31 which indicate they were well aware of use of information. Out of 114 in the age group of below 30 years, 100 respondents indicated that they were moderately aware and aware. Only 7 indicated they were somewhat aware. The remaining 7 indicated that they were either not at all or slightly aware. In the age group of 31-40, out of 179, 164 indicated they were either moderately aware or aware. The remaining 15 indicated that they were either slightly aware or somewhat aware. Out of 49 respondents of 41-50 age group 47 indicated they were either moderately aware or aware. Only 2 respondents indicated that they were somewhat aware. In the case of51 and above age group, out of 155 respondents 138 indicated either moderately aware or aware. Only 17 indicated that they were either slightly aware or somewhat aware.

The mean value of MD qualified medical professionals works out 4.17 indicated that the aware of use of information lean towards aware. Out of 376, 338 indicate that they were either aware or moderately aware. Only 15 indicated that they were not at all aware or slightly aware. 23 indicated they were somewhat aware. Similarly the mean value of MS qualified respondents works out 4.09 indicated that the aware of use of information lean towards aware. Out of 121, 111 indicate that they were either aware or moderately aware. Only 10 indicated that they were slightly aware or somewhat aware.

The mean value of Only Teaching and Training (TT) works out 4.17 indicated that the aware of use of information lean towards aware. Out of 359, 224 indicate that they were either aware or moderately aware. Only 14 indicated that they were not at all aware or slightly aware. 21 indicated they were somewhat aware. Similarly the mean value of Both Practicing and Teaching (PT) works out 4.09 indicated that the aware of use of information lean towards aware. Out of 138, 125 indicate that they were either aware or moderately aware. Only 13 indicated that they were slightly aware or somewhat aware.

Awareness on Database

The aware on databases in updating knowledge has been ascertained in a three point scale such as Not at all aware; Moderate level and Significant level on six medical related databases such as Hubmed; Go Pub Med; Pub Med; Medicine plus; MD Consult and Free Medical Journals. The mean and standard deviation were calculated based on the opinion. The respondents' opinion, mean, and standard deviation are shown in Table 4

Table 4: Awareness on Database

S.No.	Database	Moderate level		Significant level		Mean	Std	Rank
1	Hubmed	28	5.6%	469	94.4%	2.94	.231	3
2	Go Pub Med	20	4.0%	477	96.0%	2.96	.197	1
3	Pub Med	23	4.6%	474	95.4%	2.95	.210	2
4	Medline plus	29	5.8%	468	94.2%	2.94	.235	4
5	MD Consult	67	13.5%	430	86.5%	2.87	.342	5
6	Free Medical Journals	135	27.2%	362	72.8%	2.73	.445	6

The mean value ranges between 2.73 and 2.96 which indicates that the respondents have significant level of awareness on medical databases. The standard deviation ranges between 0.197 and 0.445 indicates there were no significant difference among respondents opinion. Go pub Med were highly preferred by the respondents. It is followed by Pub Med; Hubmed and Mediline plus. The least preference were indicated towards free medical journals followed by MD consult.

The analyses were further extended to demographic details such as gender, age, qualification and professional assignment. The same has been shown in Table 5.

Table 5: Awareness on Database Vs. Gender, Age, Qualification and Professional Assignment

S.No.	Description	Hubmed (H)		Go Pub Med(G)		Pub Med (P)		Medline plus(M)		MD Consult (MD)		Free Medical Journals (J)		Preference
		Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	
GENDER														
1	Male	2.92	.271	2.95	.217	2.95	.209	2.93	.259	2.92	.265	2.73	.444	P>G>M>MD>H>J
2	Female	2.97	.171	2.97	.171	2.95	.213	2.96	.203	2.80	.402	2.73	.447	G=H>M>>P>MD>J
	Preference	F>M		F>M		M>F		F>M		M>F		M>F		
AGE														
1	Below 30 yrs	2.93	.257	2.95	.224	2.94	.241	2.90	.297	2.96	.206	2.67	.473	MD>G>P> M>H>J
2	31 to 40 yrs	2.93	.251	2.96	.194	2.93	.260	2.92	.278	2.94	.230	2.73	.444	G>MD>H>P>M >J
3	41 to 50 yrs	3.00	.000	3.00	.000	3.00	.000	3.00	.000	2.59	.497	2.78	.422	H=G=P=M>J> MD
4	51 & above yrs	2.95	.222	2.95	.208	2.98	.138	2.98	.138	2.79	.406	2.75	.432	P=M>G>H>MD>J
	Preference	41-50>51 &A>31-40> B30		41-50>51 &A >B30>31-40>		41-50>51 &A >B30> 31-40		41-50>51 &A >31-40>B30		B30> 31-40> 51&A> 41-50		41-50>51 &A > 31-40> B30		
QUALIFICATION														
1	MD	2.95	.225	2.95	.208	2.97	.176	2.95	.214	2.85	.362	2.73	.445	P>G>M>H>MD>J
2	MS	2.93	.250	2.98	.156	2.91	.289	2.91	.289	2.93	.263	2.73	.447	G>H>MDP=M>J
	Preference	MD>MS		MS>MD		MD>MS		MD>MS		MS>MD		MS>MD		
ASSIGNMENT														

1	Only Teaching and Training(TT)	2.94	.230	2.95	.213	2.97	.180	2.95	.219	2.85	.355	2.74	.440	P>G>M>H>MD>J
2	Both Practicing and Teaching (PT)	2.94	.235	2.98	.146	2.92	.272	2.92	.272	2.90	.303	2.70	.459	G>H>P=M>MD>J
	Preference	PT>TT		PT>TT		TT>PT		TT>PT		PT>TT		TT>PT		
OVERALL														
	Total	2.94	.231	2.96	.197	2.95	.210	2.94	.235	2.87	.342	2.73	.445	G>P>M>H>MD>J

The mean value of male on awareness on medical databasein a three point scale ranges between 2.73 and 2.95 which indicates, the respondents awareness on various data base were lean towards significant level. Similarly the mean values of female ranges between 2.73 and 2.97. The Standard deviation for both male and female ranges between 0.171 and 0.447 which indicates that there has been no deviation on respondents opinion. However the male edge over female on Pub Med (P); MD Consult (MD) and Free Medical Journals (J) whereas in the case of Medline plus(M); Hubmed(H) and Go Pub Med(G) it is wise versa.

The overall mean value of different age group ranges between 2.67 and 3.00 which indicates the respondents aware on data base has significant level. 41-50 age group prefer Hubmed; Go Pub Med; Pub Med (P); Medline Plus and Free Medical Journal whereas Below 30 age group prefers MD Consult (MD).

The mean value of MD qualified professionals on aware of database ranges between 2.73 and 2.95 which indicates, the respondents aware of database has significant level. Similarly the mean values of MS qualified professionals ranges between 2.70 and 2.98. The Standard deviation for both MD and MS ranges between 0.146 and 0.459 which indicates that there has been no deviation on respondents opinion. However the MS respondents edge over MD on Go Pub Med(G); Pub Med (P) and MD Consult (MD) whereas in the case of Hubmed(H) Medline plus(M); and Free Medical Journals (J) it is wise versa.

The mean value of Only Teaching and Training (TT) on use of database ranges between 2.74 and 2.97in a three point scale which indicates, the respondents aware of data base in significant level. Similarly the mean values of Both Practicing and Teaching (PT) ranges between 2.70 and 2.94. The Standard deviation for both Only Teaching and Training (TT) andBoth Practicing and Teaching (PT) ranges between 0.146 and 0.459 which indicates that there has been no deviation on respondents opinion. However the Only Teaching and Training (TT) edge over Both Practicing and Teaching (PT) on Hubmed(H); MD Consult (MD)and Free Medical Journals (J) whereas in the case of Pub Med (P); Medline plus(M); and Go Pub Med(G)it is wise versa.

Collection in the library

The opinion on collection of library in updating knowledge has been ascertained in a five point scale such as poor; average; good; verygood and excellent on three different types of collection such as General collection, reference collection, journals and e-resources. The mean and standard deviation were calculated based on the opinion. The respondents' opinion, mean, and standard deviation are shown in Table 6

Table 6: Opinion on Collection in the library

S.No.	Collection	Poor		Average		Good		Very good		Excellent		Mean	Std	Rank
1	General Collection	18	3.6%	26	5.2%	62	12.5%	248	49.9%	143	28.8%	3.95	.973	3
2	References Collection	24	4.8%	16	3.2%	61	12.3%	179	36.0%	217	43.7%	4.10	1.055	2
3	Journals	7	1.4%	40	8.0%	64	12.9%	165	33.2%	221	44.5%	4.11	1.006	1
4	E Resources	32	6.4%	51	10.3%	112	22.5%	173	34.8%	129	26.0%	3.64	1.160	4

The mean value ranges between 3.64 and 4.11 which indicates that the respondents opinion lean towards very good on the collection in the library. The standard deviation ranges between 0.973 and 1.160 indicates there were no significant difference among respondents opinion. Among the collection, Journal collection has been indicated very good. It is followed by reference collection and general collection. The least preference were given for e-resources. It can be inferred that the medical institutions has to concentrate e-resources collection.

The analyses were further extended to demographic details such as gender, age, qualification and professional assignment. The same has been shown in Table 7.

Table 7: Opinion on Collection in the library vs. Gender, Age, Qualification and Professional Assignment

S.No.	Description	General Collection (G)		References Collection (R)		Journals (J)		E Resources(E)		Preference
		Mean	Std	Mean	Std	Mean	Std	Mean	Std	
GENDER										
1	Male	4.03	.918	4.15	1.064	4.10	1.020	3.57	1.135	R>J >G>E
2	Female	3.86	1.026	4.05	1.045	4.13	.992	3.71	1.186	J>R >G>E
	Preference	M>F		M>F		F>M		F>M		
AGE										
1	Below 30 yrs	4.04	.906	4.18	1.018	4.04	1.072	3.57	1.030	R>G >J>E
2	31 to 40 yrs	3.95	.926	4.09	1.148	4.14	.947	3.64	1.130	J>R >G>E
3	41 to 50 yrs	3.90	1.046	3.98	.924	4.04	1.079	3.51	1.325	J>R >G>E
4	51 & above yrs	3.90	1.052	4.10	1.014	4.16	1.003	3.72	1.231	J>R >G>E
	Preference	31-40>51 &A> B30> 41-50		31-40> B30>51 &A> 41-50		31-40>51 &A> B30> 41-50		31-40>51 &A> B30> 41-50		
QUALIFICATION										
1	MS	3.95	1.013	4.12	1.017	4.12	1.021	3.65	1.173	R>J >G>E
2	MD	3.96	.841	4.06	1.171	4.07	.959	3.60	1.122	J>R >G>E
	Preference	MD>MS		MS>MD		MS>MD		MS>MD		
ASSIGNMENT										
1	Only Teaching and Training(TT)	3.97	.968	4.13	1.024	4.11	1.030	3.65	1.172	R>J >G>E
2	Both Practicing and Teaching (PT)	3.89	.987	4.05	1.136	4.13	.942	3.60	1.130	J>R >G>E
	Preference	TT>PT		TT>PT		PT>TT		TT>PT		
OVERALL										
	Total	3.95	.973	4.10	1.055	4.11	1.006	3.64	1.160	M>A>D

The mean value of male respondents on library collection ranges between 3.57 and 4.15 in a five point scale which indicates the respondents opinion on library collection lean towards excellent. Similarly the mean values of female ranges between 3.71 and 4.13. The standard deviation for both male and female ranges between 0.918 and 1.026that indicates that there has been no deviation on respondents' opinion. However the male edge over female on general collection and Reference collection whereas female has edge over in the case of Journals(J)and e-resources (E) .

The overall mean value of different age group ranges between 3.51 and 4.18 which indicates the respondents opinion on library collection lean towards excellent. 31-40 age group has highest order on general collection; reference collection; journal and e-resources. It is followed by above 51 age group, below 30 and 41-50. The order of preferences were journal, reference collection, general collection and e-resources of age group 31-40; 41-50 and 51 and above where as the order of preference of below 30 age group were reference collection, general collection, journal and e-resources.

The mean value of MD qualified professionals on use of database ranges between 3.60 and 4.07 which indicates, the respondents opinion on library collection lean towards excellent Similarly the mean values of MS qualified professionals ranges between 3.65 and 4.12. The Standard deviation for both MD

and MS ranges between 0.942 and 1.136 which indicates that there has been no deviation on respondents opinion. However the MS respondents edge over MD on Reference collection; Journal and e-resources whereas in the case of general collection it is wise versa.

The mean value of Only Teaching and Training (TT) on library collection ranges between 3.65 and 4.13 which indicate the respondents' opinion on library collection lean towards excellent. Similarly the mean values of Both Practicing and Teaching (PT) ranges between 3.60 and 4.13. The Standard deviation for both Only Teaching and Training (TT) and Both Practicing and Teaching (PT) ranges between 0.968 and 1.172 which indicates that there has been no deviation on respondents opinion. However the Only Teaching and Training (TT) edge over Both Practicing and Teaching (PT) on general collection, e-resources and Reference collection whereas in the case of Journal it is wise versa.

PRESENT LIBRARY SERVICES

The opinion on satisfaction over present library services in updating knowledge has been ascertained in a five point scale such as highly dissatisfied; dissatisfied; unsure; satisfied and highly satisfied. The mean and standard deviation were calculated based on the opinion. The respondents' opinion, mean, and standard deviation are shown in Table 8

Table 8 Satisfied with the present library services

S. No.	Opinion	Frequency	Percent	Cumulative Percent
1	Highly Dissatisfied	16	3.2	3.2
2	Dissatisfied	6	1.2	4.4
3	Unsure	39	7.8	12.3
4	Satisfied	265	53.3	65.6
5	Highly Satisfied	171	34.4	100.0
	Total	497	100.0	
	Mean	4.14	Std.	0.861

.Out of 497 respondents, 265 (53.3%) respondents indicated that the present library services were satisfactory and 171 (34.4%) indicated highly satisfied. In all nearly 87.8% were either satisfied or highly satisfied. Only 4.4% of the respondents indicated that the present library services were either dissatisfied or highly dissatisfied. Only 12.3% indicated that they were unsure in their opinion. The mean value works out to 4.14 which indicate that the respondents' opinion leans towards highly satisfied towards present library services. The standard deviation ranges works out to0.861 indicates there were no significant differences among respondents opinion

The analyses were further extended to demographic details such as gender, age, qualification and professional assignment. The same has been shown in Table 9.

Table 9: Satisfied with the present library services Vs. gender, Age, Qualification And Professional Assignment

S.No.	Description	n	Highly Dissatisfied (H)	Dissatisfied (D)	Unsure (U)	Satisfied (S)	Highly Satisfied (HS)	Preference	Mean	Std
	Gender									
1	Male	264	8	2	29	127	98	S>HS>U>H>D	4.16	.873
2	Female	233	8	4	10	138	73	S>HS>U>H>D	4.13	.848
	Preference		M=F	F>M	M>F	F>M	M>F			
	Age									
1	Below 30 yrs	114	3	0	12	56	43	S>HS>U>H>D	4.19	.830
2	31 to 40 yrs	179	6	0	17	99	57	S>HS>U>H>D	4.12	.839
3	41 to 50 yrs	49	1	3	1	24	20	S>HS>U>H>D	4.20	.912
4	51 & above yrs	155	6	3	9	86	51	S>HS>U>H>D	4.12	.897
	Preference		31-40=	51 &A= 41-	31-40>	31-40>	31-40>			

			51 &A> B30>41-50	50> 31-40= B30>	B30>51 &A>41-50	51&A> B30>41-50	51&A> B30>41-50			
	Qualification									
1	MD	376	12	5	31	196	132	S>HS>U>H>D	4.15	.869
2	MS	121	4	1	8	69	39	S>HS>U>H>D	4.14	.840
	Preference		MD>MS	MD>MS	MD>MS	MD>MS	MD>MS			
	Assignment									
1	Only Teaching and Training(TT)	359	12	6	31	189	121	S>HS>U>H>D	4.12	.883
2	Both Practicing and Teaching(PT)	138	4	0	8	76	50	S>HS>U>H>D	4.22	.799
	Preference		TT>PT	TT>PT	TT>PT	TT>PT	TT>PT			
	Overall									
	Total	497	16	6	39	265	171	S>HS>U>H>D	4.14	.861

The mean value of male on satisfaction over present library services works out to 4.16 in a five point scale which indicates, the respondents opinion on high satisfaction over present library services lean towards highly satisfied. Similarly the mean values of female works out to 4.13. The Standard deviation for both male and female ranges between 0.848 and 0.873s which indicates that there has been no deviation on respondents opinion. Out of 264 male respondents, 98 indicated there were highly satisfied with present library services. It is followed by 127 indicates they were satisfied with present library services. In all 225 respondents indicated they were either satisfied or highly satisfied with present library services. Only 10 indicated they were either dissatisfied or highly dissatisfied with present library services and 29 indicated they were unsure about the library services. Similarly 211 female respondents out of 233 have indicated either satisfied or highly satisfied with present library services. Only 12 indicate either dissatisfied or highly dissatisfied with present library services and 10 indicated they were unsure about present library services.

The overall mean value of different age group ranges between 4.12 and 4.20in a five point scale which indicates, the respondents opinion over present library services lean towards highly satisfied. Out of 155 respondents of 51 and above age group, 137 indicated that they were either satisfied or highly satisfied with present library services. Only 9 indicated they were either highly dissatisfied or dissatisfied. Similarly 9 indicated they were unsure about the services. In the case of 41-50 age group, 44 out of 49 indicated that they were highly satisfied or satisfied. Only 4 indicated that they were either highly dissatisfied or dissatisfied with present library services and only one indicated they were unsure about the services. Out of 179 respondents of 31-40 age group, 156 indicated that they were either satisfied or highly satisfied with present library services. Only 6 indicated they were either highly dissatisfied or dissatisfied. Similarly 17 indicated they were unsure about the services In the case of below 30 age group, 99 out of 114 indicated that they were highly satisfied or satisfied. Only 3 indicated that they were either highly dissatisfied or dissatisfied with present library services and only 12 indicated they were unsure about the services.

The mean value of MD qualified professionals on satisfaction over present library services works out to 4.15 in a five point scale which indicates, the respondents opinion over present library services lean towards highly satisfied. Similarly the mean values of MS qualified professionals works out to 4.22. The Standard deviation for both MD andMS ranges between 0.840 and 0.869 which indicates that there has been no deviation on respondents opinion. Out of 376 MD qualified respondents, 132 indicated there were highly satisfied with present library services. It is followed by 195 indicates they were satisfied with present library services. In all 328 respondents indicated they were either satisfied or highly satisfied with present library services. Only 15 indicated they were either dissatisfied or highly dissatisfied with present library services and 31 indicated they were unsure about the library services. Similarly 121 MS respondents out of 108 have indicated either satisfied or highly satisfied with present library services. Only 4 indicates either highly dissatisfied with present library services and 8 indicated they were unsure about present library services.

The mean value of Only Teaching and Training (TT) on satisfaction over present library services works out to 4.12 in a five point scale which indicates, the respondent's opinion over present library services lean towards highly satisfied. Similarly the mean value of Both Practicing and Teaching (PT) works out to 4.223. The Standard deviation for both Only Teaching and Training (TT) and Practicing and Teaching (PT) ranges between 0.799 and 0.883 which indicates that there has been no deviation on respondent's opinion. Out of 359 Only Teaching and Training (TT) respondents, 121 indicated there were highly satisfied with present library services. It is followed by 189 indicates they were satisfied with present library services. In all 310 respondents indicated they were either satisfied or highly satisfied with present library services. Only 18 indicated they were either dissatisfied or highly dissatisfied with present library services and 31 indicated they were unsure about the library services. Similarly 138 female respondents out of 126 have indicated either satisfied or highly satisfied with present library services. Only 4 indicates either highly dissatisfied with present library services and 8 indicated they were unsure about present library services.

LIBRARY STAFF ASSISTANCE IN KNOWLEDGE UPDATATION

The opinion on library staff assistance in updating knowledge has been ascertained in a three point scale such as not at all; moderate level and significant level on four different types of assistance such as Literature search and Bibliographies; Technical Enquiry Services; Document delivery services and Current Awareness services. The mean and standard deviation were calculated based on the opinion. The respondents' opinion, mean, and standard deviation are shown in Table 10.

Table 10: Library Staff Assistance in Knowledge Updatation

S. No.	Services	Moderate level		Significant level		Mean	Std	Rank
1	Literature search and Bibliographies	19	3.8%	478	96.2%	2.96	0.192	1
2	Technical Enquiry Services	300	60.4%	197	39.6%	2.40	0.490	4
3	Document delivery services	78	15.7%	419	84.3%	2.84	0.364	2
4	Current Awareness services	177	35.6%	320	64.4%	2.64	0.479	3

The mean value ranges between 2.96 and 2.40 which indicates that the respondents opinion lean towards significant level on library staff assistance. The standard deviation ranges between 0.192 and 0.490 indicates there were no significant difference among respondents opinion. The assistance towards literature search and bibliographies has been indicated highest order. It is followed by document delivery services and current awareness services. A technical enquiry service has been indicated least.

The analyses were further extended to demographic details such as gender, age, qualification and professional assignment. The same has been shown in Table 11.

Table 11: Library Staff Assistance In Knowledge Updatation vs. Gender, Age, Qualification And Professional Assignment

S. No.	Description	Literature search and Bibliographies (L)		Technical Enquiry Services(T)		Document delivery services(D)		Current Awareness services (C)		Preference
		Mean	Std	Mean	Std	Mean	Std	Mean	Std	
GENDER										
1	Male	2.97	.172	2.38	.486	2.81	.390	2.65	.479	L>D>C>T
2	Female	2.95	.213	2.42	.494	2.88	.331	2.64	.481	L>D>C>T
	Preference	M>F		F>M		F>M		M>F		
AGE										
1	Below 30 yrs	2.96	.206	2.39	.491	2.82	.389	2.61	.491	L>D>C>T
2	31 to 40 yrs	2.95	.219	2.40	.491	2.82	.389	2.66	.475	L>D>C>T

3	41 to 50 yrs	2.96	.200	2.35	.481	2.90	.306	2.73	.446	L>D>C>T
4	51 & above yrs	2.98	.138	2.41	.494	2.88	.329	2.63	.485	L>D>C>T
	Preference	51 &A>41-50 > B30>31-40		51 &A> 41-50>31-40> B30		41-50>51 &A> 31-40= B30		41-50>31-40>51 &A > B30		
QUALIFICATION										
1	MS	2.97	.183	2.39	.489	2.85	.359	2.65	.479	L>D>C>T
2	MD	2.95	.218	2.41	.494	2.83	.380	2.64	.483	L>D>C>T
	Preference	MS>MD		MD>MS		MS>MD		MS>MD		
ASSIGNMENT										
1	Only Teaching and Training (TT)	2.96	.187	2.39	.489	2.84	.363	2.65	.479	L>D>C>T
2	Both Practicing and Teaching(PT)	2.96	.205	2.41	.493	2.84	.367	2.64	.482	L>D>C>T
	Preference	TT>PT		PT>TT		TT>PT		TT>PT		
OVERALL										
	Total	2.96	.192	2.40	.490	2.84	.364	2.64	.479	L>D>C>T

The mean value of male on library staff assistance ranges between 2.38 and 2.97 in a three point scale which indicates, the respondents opinion on library staff assistance lean towards significant level. Similarly the mean values of female ranges between 2.42 and 2.95. The Standard deviation for both male and female ranges between 0.172 and 0.494 which indicates that there has been no deviation on respondents opinion. However the male edge over female on Literature search and Bibliographies (L) and Current Awareness services (C); whereas in the case of Technical Enquiry Services (T) and Document delivery services (D)it is wise versa. The overall mean value of different age group ranges between 2.39 and 2.98 which indicates the respondents opinion on library staff assistance lean towards significant level..51 and above age group prefer Literature search and Bibliographies (L) and Technical Enquiry Services(T) whereas 41-50 age group prefers Document delivery services(D) and Current Awareness services (C).

The mean value of MD qualified professionals on use of database ranges between 2.41 and 2.95 which indicates, the respondents opinion on library staff assistance lean towards significant level Similarly the mean values of MS qualified professionals ranges between 2.39 and 2.97. The Standard deviation for both MD and MS ranges between 0.183 and 0.494 which indicates that there has been no deviation on respondents opinion. However the MD respondents edge over MS on Technical Enquiry Services (T); whereas in the case of Literature search and Bibliographies (L);Document delivery services(D) and Current Awareness services (C) it is wise versa.

The mean value of Only Teaching and Training (TT) on library staff assistance ranges between 2.39 and 2.96 which indicates, the respondents opinion on library staff assistance lean towards significant level. Similarly the mean values of Both Practicing and Teaching (PT) ranges between 2.41 and 2.96. The Standard deviation for both Only Teaching and Training (TT) andBoth Practicing and Teaching (PT) ranges between 0.187 and 0.493 which indicates that there has been no deviation on respondents opinion. However the Only Teaching and Training (TT) edge over Both Practicing and Teaching (PT) on Literature searchand Bibliographies (L); Document delivery services(D) and Current Awareness services (C); whereas in the case of Technical Enquiry Services(T) and it is wise versa.

USE OF DATABASE

The use of databases in updating knowledge has been ascertained in a three point scale such as Very frequently; till task completes and whenever necessity arises on six medical related databases such as Hubmed; Go Pub Med; Pub Med; Medicine plus; MD Consult and Free Medical Journals. The mean and standard deviation were calculated based on the opinion. The respondents' opinion, mean, and standard deviation are shown in Table 12

Table 12: Use of Database

S. No.	Database	Very frequently		Till task completes		Whenever necessity arises		Mean	Std	Preference	Rank
1	Hubmed	62	12.5%	93	18.7%	342	68.8%	2.56	.705	Whenever necessity arises	6
2	Go Pub Med	64	12.9%	268	53.9%	165	33.2%	2.20	.648	Till task completes	4
3	Pub Med	70	14.1%	364	73.2%	63	12.7%	1.99	.518	Till task completes	2
4	Medline plus	314	63.2%	135	27.2%	48	9.7%	1.46	.665	Very frequently	1
5	MD Consult	41	8.2%	158	31.8%	298	60.0%	2.52	.645	Whenever necessity arises	5
6	Free Medical Journals	23	4.6%	377	75.9%	97	19.5%	2.15	.469	Till task completes	3

The mean value ranges between 1.46 and 2.56 which indicates that the respondents have were using the on medical databases till there task completes and whenever necessity arises. The standard deviation ranges between 0.469 and 0.705 indicates there were no significant difference among respondents opinion. Go pub Med were highly preferred by the respondents. It is followed by Pub Med; Hub med and Medline plus. The least preference was indicated towards free medical journals followed by MD consult.

Frequently used database has further been identified using proximity matrix and the same has been shown in Table 13.

Table 13: Use of Database - Proximity Matrix

Databases	Hubmed	Go Pub Med	Pub Med	Medline plus	MD Consult	Free Medical Journals
Hubmed	.000					
Go Pub Med	515.000	.000				
Pub Med	541.000	336.000	.000			
Medline plus	1190.000	689.000	503.000	.000		
MD Consult	419.000	434.000	456.000	1009.000	.000	
Free Medical Journals	478.000	327.000	**263.000**	500.000	469.000	.000

Closely associated database were

- Medline plus and Hubmed
- MD Consult and Medline plus
- Medline plus and Go Pub Med

Distinctly associated database were

- Free Medical Journal and Pub Med
- Free Medical Journal and Go Pub Med
- Pub Med and Go Pub Med

Agglomeration Schedule enabled to identify the formation of frequently used database cluster and the same has been shown in Table 14.

Table 14: Use of Database - Agglomeration Schedule

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	3	6	263.000	0	0	2
2	2	3	331.500	0	1	4
3	1	5	419.000	0	0	4
4	1	2	482.167	3	2	5

5	1	4	778.200	4	0	0

The agglomeration schedule identifies two cluster based on cluster coefficients. In order to identify the cluster element dendrogram has been drawn using hierarchical cluster analysis and the same has been shown in Fig. 1

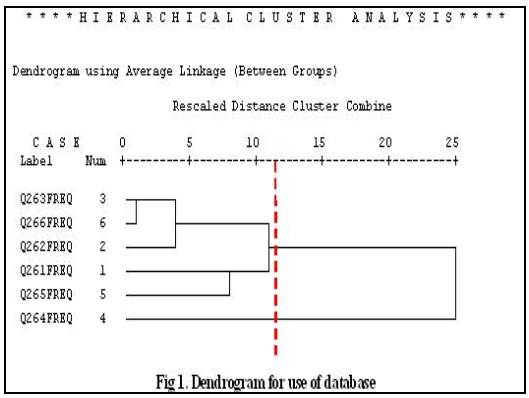

Fig 1. Dendrogram for use of database

At 42% level there exist two clusters. Cluster one comprises of five data bases such as Pub Med; Free Medical Journals; Go Pub Med; Hubmed and MD Consult which has been named as Primary data bases. Cluster 2 comprises of only one data base known as Medline plus which has been named as least preferred database.

The analyses were further extended to demographic details such as gender, age, qualification and professional assignment. The same has been shown in Table 15.

Table 15: Use of Database Vs. Gender, Age, Qualification And Professional Assignment

S. No.	Description	Hubmed (H)		Go Pub Med(G)		Pub Med (P)		Medline plus(M)		MD Consult (MD)		Free Medical Journals (J)		Preference
		Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	
GENDER														
1	Male	2.56	.706	2.20	.652	2.01	.516	1.47	.675	2.51	.647	2.16	.472	H>MD>G>J>P>M
2	Female	2.56	.705	2.21	.646	1.96	.520	1.46	.656	2.53	.643	2.14	.466	H>MD>G>J>P>M
	Preference	F>M		F>M		M>F		M>F		M>F		M>F		
AGE														
1	Below 30 yrs	2.48	.778	2.13	.645	1.98	.441	1.44	.692	2.55	.625	2.19	.496	MD>H>J> G>P>M
2	31 to 40 yrs	2.60	.666	2.11	.635	1.96	.512	1.50	.665	2.50	.674	2.13	.467	H>MD>J>G>P>M
3	41 to 50 yrs	2.49	.767	2.16	.657	1.96	.455	1.47	.680	2.55	.580	2.12	.439	MD>H>G> J>P>M
4	51 & above yrs	2.60	.670	2.37	.636	2.03	.592	1.44	.646	2.50	.648	2.14	.462	H>MD>G>J>P>M
	Preference	31-40>51 &A>41-50>B30		51 &A >41-50> B30>31-40		51 &A> B30>41-50> 31-40		31-40>41-50>51 &A> B30		41-50> B30>51 &A > 31-40		B30>51 &A> 31-40>41-50		
QUALIFICATION														
1	MD	2.55	.718	2.23	.655	2.01	.516	1.45	.655	2.52	.649	2.14	.462	H>MD>G>J>P>M
2	MS	2.62	.662	2.12	.622	1.93	.519	1.51	.697	2.51	.634	2.19	.488	H>MD>G>J>P>M
	Preference	MS>MD		MD>MS		MD>MS		MS>MD		MD>MS		MS>MD		
ASSIGNMENT														
1	Only Teaching and Training	2.55	.718	2.23	.657	2.02	.509	1.47	.667	2.52	.642	2.14	.462	H>MD>G>J>P>M

	(TT)													
2	Both Practicing and Teaching (PT)	2.59	.669	2.12	.621	1.90	.531	1.46	.664	2.50	.653	2.16	.487	H>MD>G>J>P>M
	Preference	PT>TT		TT>PT		TT>PT		TT>PT		TT>PT		PT>TT		
OVERALL														
	Total	2.56	.705	2.20	.648	1.99	.518	1.46	.665	2.52	.645	2.15	.469	H>MD>G>J>P>M

The mean value of male on use of database ranges between 1.47 and 2.56 which indicates, the respondents use data base either till task completes or when necessary arises. Similarly the mean values of female ranges between 1.46 and 2.56. The Standard deviation for both male and female ranges between 0.466 and 0.706 which indicates that there has been no deviation on respondents opinion. However the male edge over female on Pub Med (P); Medline plus (M); MD Consult (MD) and Free Medical Journals (J) whereas in the case of Hubmed(H) and Go Pub Med(G) it is wise versa.

The overall mean value of different age group ranges between 1.44 and 2.60 which indicates the respondents use data base either till task completes or when necessary arises. 51 and above age group prefer Pub Med and Go Pub Med whereas 31-40 age group prefers Hubmed (H) and Medline plus. 41-50 age group prefers MD Consult (MD) and below 30 prefers free online journals.

The mean value of MD qualified professionals on use of database ranges between 1.45 and 2.55 which indicates, the respondents use data base either till task completes or when necessary arises. Similarly the mean values of MS qualified professionals ranges between 1.51 and 2.62. The Standard deviation for both MD and MS ranges between 0.462 and 0.718 which indicates that there has been no deviation on respondents opinion. However the MD respondents edge over MS on Go Pub Med (G); Pub Med (P) and MD Consult (MD) whereas in the case of Hubmed(H) Medline plus(M); and Free Medical Journals (J) it is wise versa.

The mean value of Only Teaching and Training (TT) on use of database ranges between 1.47 and 2.55 which indicates, the respondents use data base either till task completes or when necessary arises. Similarly the mean values of Both Practicing and Teaching (PT) ranges between 1.47 and 2.59. The Standard deviation for both male and female ranges between 0.487 and 0.669 which indicates that there has been no deviation on respondents opinion. However the Only Teaching and Training (TT) edge over female on Pub Med (P); Medline plus (M); MD Consult (MD) and Go Pub Med (G) whereas in the case of Hubmed(H) and Free Medical Journals (J) it is wise versa.

CONCLUSION

The four knowledge updating factors that has dominance in any domain in updating the knowledge were **J**ournal; **A**ctivities; **C**ollection and Collaboration and **K**nowledge Tools. The same can form an acronym – JACK. In this study the knowledge updating by doctors were analysed based collection and collaboration of library. The study has been carried out with ***primary objective*** of the study was to identify the collection and collaboration of the library in updating the knowledge among the professionals irrespective of the domain. The ***secondary objectives*** were to know the awareness on use of Information in knowledge updation; to identify the awareness on Database; to know the Opinion on Collection in the library; to identify the satisfaction over present library services in updating knowledge; to know about the library staff assistance in knowledge updatation; to identify the use of databases in updating knowledge.

The analysis were carried out based on the concepts such as

- Awareness on use of Information in knowledge updation
- Awareness on Database
- Opinion on Collection in the library
- Satisfaction over present library services
- Library staff assistance in knowledge updation
- Use of databases in updating knowledge

Nearly 60.8% respondents indicated that the aware of usage of information were moderately aware. aware on databases in updating knowledge has been ascertained in a three point scale such as Not at all aware; Moderate level and Significant level on six

medical related databases such as Hubmed; Go Pub Med; Pub Med; Medicine plus; MD Consult and Free Medical Journals. Go pub Med were highly preferred by the respondents. It is followed by Pub Med; Hub med and Med line plus. The respondents indicated that the library collection of the academic institutions taken up for the study were good. , Journal collection has been indicated very good. It is followed by reference collection and general collection. This study indicates that the respondents were highly satisfied towards present library services. Further this study indicates that library staff provides significant level assistance towards knowledge updation among medical professionals. The professionals were using the on medical databases till there task completes and whenever necessity arises.

The study fulfils the primary objectives as well as the hypotheses, thus formulated, such as collection and collaboration of the library has a significant impact in updating the knowledge among the professionals. Further the study shows there exists significant awareness on use of Information in knowledge updation and awareness on Database. There exists significant difference on the opinion regard to Collection in the library, present library services, library staff assistance in updating the knowledge.

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