

## Information Seeking Behaviour of Dentists in Indian Metros: A Study

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### Abstract

The need for perfection and improvement in the quality of medical treatment in field of oral health has become quite apparent in present Indian scenario. Incredible volume of medical information, its ever-increasing nature, invention of new diagnostic methods and rejection of previous techniques and medicines necessitate access to the most recent information in the field. This paper provides a picture of the information seeking behaviour of the dentists in Indian metros. The aim of this study is to investigate how the Dentists obtain the information they require. It also attempts to investigate the type of library resources that these groups use as well as the problems they face while seeking information.

**Keywords:** Barriers to information seeking; Continuing dental education (CDE); Dentist; Information seeking behaviour; Information seeking behavior model of Leckie; Sources of oral health information.

### Introduction

Dentistry as a discipline began in Egypt in about 3700 BC. Modern dentistry emerged in the 19<sup>th</sup> century and today it includes the study, treatment and prevention of the diseases of the mouth, teeth, gums and jawbones. Dentistry includes so many techniques that most dentists specialize. In the recent past, the dental science has emerged as an integral fast advancing high-tech branch of modern dental sciences. The old concept and modalities of dental treatment have changed radically across the globe. In India too, oral and dental health care teaching and training modalities are advancing in a rapid pace and the qualified dental surgeons, specialists and super-specialist are now competent to take care of patients suffering from dental caries to oral cancer. Keeping in view providing quality dental health care services, Dentists require

various types of information to begin their professional career or to update them, however, little is known about the information seeking behaviour of dentist in India. A very few number of Library and Information Science (LIS) studies have been devoted to this population of India. With the explosion of health related information since technology has evolved, it is conceivable that information preferences of today's dentists may differ from those of an earlier period. The phenomenal growths of the internet combined with user-friendly WWW have made health information widely available. The internet offers unparalleled access to information in conjunction with a more efficient mode of dissemination and acquisition. Health care providers now have universal access to health-related information. Instantaneous transmission of e-mail messages, files, images, communication with colleagues, and access to electronic journal cause this resource to be regarded as a practical and beneficial information resource. Because of the insular environment often encountered in dentistry, the importance of internet based methods for seeking information can be significant.[1-2]

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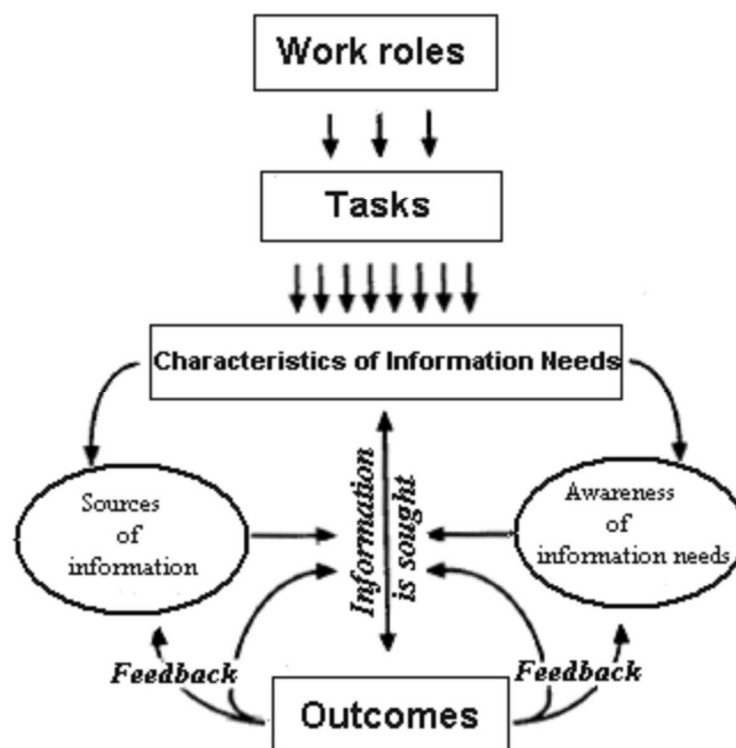
*Literature review*

Incredible volume of medical information,

its ever-increasing nature, invention of new diagnostic methods and rejection of previous techniques and medicines necessitate access to the most recent information in the field. The research findings conducted on information seeking behavior of physicians show that the most important or the foremost channel of obtaining information is consultation with colleagues.[3-7] Furthermore, it is claimed that while medical specialists often use journal articles, residents and medical students mostly use books and monographs to meet their information needs.[8] The results of an experimental study conducted in the United States revealed that “patient care and education were enhanced by the rapid access to recent information.”[9] In a study conducted at the University of Albany, New York, it was found that about 50 percent of physicians participated in courses that taught how to use the *Index Medicus*, and that they were interested in accessing current information and being up-to-date.[10] It is also claimed that medical students’ problem in accessing information is due to their inability or lack of personal skills in information

retrieval. The author reported a significant relationship between students’ inability in learning information retrieval skills and their successful and effective use of the library.[11] Research studies carried out in Iran show that medical researchers and authors, in general, use journal articles and books as their most referred information sources. It is also reported that non-faculty physicians in Iran often use books rather than journals;[12] furthermore, medical students at different levels use textbooks more than any other information source and are not adequately up-to-date. Proficiency in English was reported as an important factor in retrieving relevant information.[13] Moreover, as has been reported “It is imperative that surgeons acquire and maintain modern information retrieval skills as a means of remaining up-to-date in their profession.”[14] Rapid access to patient data reduces the time consumed for medical decision making and for improving the quality of the decisions.[15] Finally, it was found that organizational information was extremely important to the team members in their

Figure 1: The Information Seeking of Professionals Model (Leckie, *et al* 1996)



surgical intensive care unit. Thus, ready access to required information is of great importance to medical staff for diagnosis and patient management.[16]

### *Information seeking*

“Information seeking is a natural and necessary mechanism of human existence”. To survive in this age of information and perform several works or specialized work with perfection, every person is in search of information to satisfy some goal. There are several information seeking behaviour models but here the information seeking behaviour of dentists finds some common elements in the model of Leckie and coworkers (1996). Leckie and colleagues (1996) based their model (Figure 1) on the assumption that information seeking is related to the enactment of a particular role and its associated tasks. As part of the communication and information seeking process, professional groups, such as engineers, health care professionals and lawyers, adopt, enact and accept various roles. Particular roles and their related tasks result in information needs, which are, in turn, affected by factors, such as sources available, intended use of sources, individual characteristics of the user, and environment surrounding the user. The source of information which a professional may choose can be affected by such variables as their formal or informal nature and whether they are internal or external; oral, written or electronic; personal knowledge or experience. Similarly, a professional’s awareness of information sources depends on his/her self intention to know the different sources of information or taking the help and guidance from library and information science professionals. Leckie and his colleagues noted that awareness of information sources, including accessibility, quality, timeliness, trustworthiness, familiarity and previous success has a direct impact on approaches taken in information seeking.

Finally, the outcomes may offer two results: success as a result of information seeking process or failure to satisfy the information need. When an information need is not

satisfied, the user may begin the information seeking process again or redefine the information need. Leckie *et al* suggest a feedback loop, which highlights the benefit of the outcome of the information seeking process to the original information need or task, as well as other roles unexpectedly. In this model, Leckie *et al.* imply that the feedback loop only loops back as far as the characteristics of the information need. However, it is conceivable that the looping could also go back to the task and work roles, at which point the information need, as well as the task or role, may be redefined and further rounds of information seeking may be undertaken, employing different combinations of sources and awareness factors.[17-18]

### **Objective of the study**

The study is based on the following objectives:

- i) To study about information seeking behaviour of dentists.
- ii) To know about the use of various sources for patient treatment, current awareness, research and lecture preparation.
- iii) To know about the awareness level of library tools and techniques by dentists.
- iv) To identify the barriers to information provision and how to overcome them.

### **Methodologies**

The population of this survey is the dentists of six metropolitan cities in India. An open-ended survey questionnaire was designed which covered questions regarding the information for patient treatment, current awareness, lecture preparation and research. The survey questionnaires were mailed to 30 dentists of Bangalore, Chandigarh, Chennai, Delhi and Mumbai. In Kolkata the survey questionnaires were personally handed over to 80 dentists of Gurunanak Institute of Dental Science and Research, 17 dentists of R. Ahmed

**Table 1: Distribution of participants according to Methods of Updating**

S. No.	Sources of Information	No. of Respondents	%
1	Review Journals	19	16.2
2	Discussion with Colleagues	48	41.0
3	Attending Conferences	33	28.2
4	Internet Surfing	68	58.1
5	Scanning Indexing and Abstracting Journals	24	20.5

**Table 2: Distribution of participants according to Place of Finding Information regarding oral health**

S. No.	Place	No. of Respondents	%
1	Public Libraries	0	0
2	Professional Institutes	72	61.5
3	Local University Libraries	31	26.4
4	Research Organization	09	7.6
5	Colleagues	58	49.5

Dental College and 13 private practicing dentists. The selection of participants has been done by random sampling. The responses were received from 17 dentists out of 30 to whom questionnaires were mailed. 14 filled up questionnaires were collected back from R. Ahmed dental College and 78 filled up questionnaires were collected back from Gurunanak Institute of Dental Science and Research. Survey questionnaires were also distributed to 13 private practicing dentists of Kolkata, out of which 8 questionnaires were collected back. The collected data were analyzed using tabular and statistical techniques to get dentists' opinion on various issues questioned. After the analysis of data, the results inferred have been discussed.

#### *Analysis of the study*

The presentation, analysis and interpretation that follow are based upon the results of the findings, which were obtained from the questionnaires. During this stage coding of all open-ended and closed questions was undertaken. It is to state here that questionnaires were completed by 117 respondents.

Table 1 shows that 16.2% of total respondents read review journals to upgrade themselves. 41% of dentists prefer to have discussion with colleagues while 28.2% attend conference regularly. Maximum number of respondents (58.1%) prefers to surf internet to

make them updated. Only 20.5% of participants go through Indexing and Abstracting journals.

Table 2 shows that the majority of dentists, 61.5% (72) reported that professional institute i.e. their college library is their place or location to seek information whilst 49.5% (58) said colleagues are their sources of information, while 26.4% (31) of the dentists said that they use local university library to find or locate information. 7.6% (9) said they use research organization.

According to Table 3 the majority of dentists, 63.2% (74) acquire needed information by surfing the Internet whereas 58.1% (68) of the dentists said they prefer to consult a librarian. Those dentists who said that they consult colleagues if they need information on a specific topic constitute 53.8% (63) while 49.5% (58) said if they need information on a certain topic they browse the library. 10.2% (12) dentists visit other health centre libraries in search of information.

Table 4 shows that the majority of dentists, 70.0% (82) cited books as their preferred sources of information. Of these 66.6% (78) dentists said that they prefer internet while 60.6% (71) indicated that they prefer professional journals as their source of information. There were 52.9% (62) of the dentists who said conference proceedings are their preferred source of information. 35.0%

**Table 3: Distribution of participants according to Method of Acquiring Information on a Certain Topic**

S. No.	Methods	No. of Respondents	%
1	Browse Library	58	49.5
2	Consultation with Librarian	68	58.1
3	Internet surfing	74	63.2
4	Consultation with colleagues	63	53.8
5	Visiting other library	12	10.2

**Table 4: Distribution of participants according to Preferred Sources of Oral Health Information**

S. No.	Sources of Information	No. of Respondents	%
1	Professional journals	71	60.6
2	Professional text	82	70.0
3	Professional meetings	23	19.6
4	Conferences Proceedings	62	52.9
5	Study clubs	12	10.2
6	Continuing Dental Education (CDE)	41	35.0
7	Librarian	22	18.8
8	Internet	78	66.6
9	Online Databases	33	28.2

**Table 4.1 : Distribution of participants according to Methods about Information Resources (Mentioned in Table 4)**

S. No.	Methods of Learning about Information Sources	No. of Respondents	%
1	Read about it	42	35.8
2	Colleague told about it	78	66.6
3	Found it on the internet	33	28.2

(41) said that they prefer continuing dental education while 28.2% (33) opted for online database. Professional meetings and the assistance of librarian were chosen by 19.6% (23) and 18.8% (22) dentists respectively. Amongst these 10.2% (12) dentists also indicated the study clubs as their preferred source of information.

Table 4.1 shows that 66.6% of total respondents acquire knowledge about the information resources through their colleagues. 35.8% of dentists read about them while 28.2% found them on the Internet.

Table 5 shows that 58.1% of dentists come to library to consult reference materials, 53.8% to consult journals and 55.5% to consult books. 52.13% of dentists use library to borrow library items. 39.3% of dentists use the reprographic service and 44.4% of dentists use the Internet service of the library. Other reasons include

reading recent books and newspapers.

Figure 2 shows that 31.6% of dentists use library once in a fortnight. 29.9% of them use it once in a month. Only 14.5% of dentists regularly use the library.

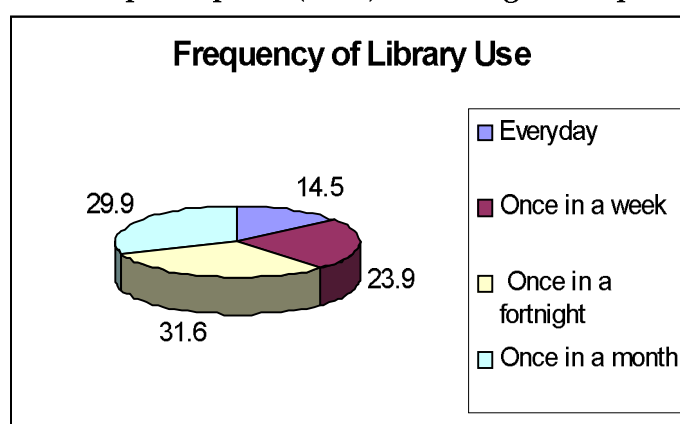
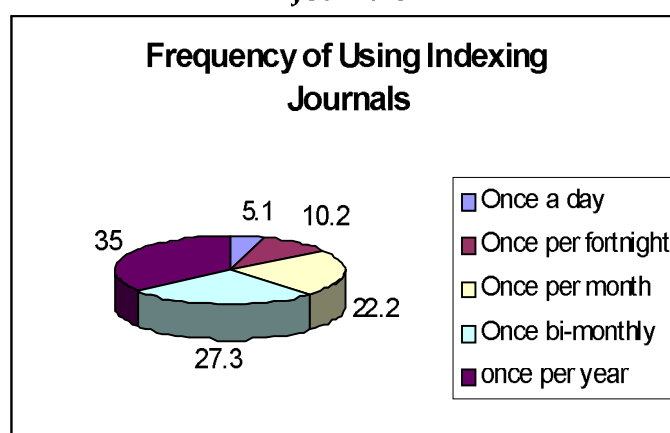
Figure 3 shows that 35% of the participants use indexing journals once in a year while 29.3% of them once in two months. Only 22.2% of dentists use it per month.

## Discussions

From the analysis of the above tables and pie-charts, some of the important aspects of information seeking behaviour of dentists have been explored. It has been noticed that journals publishing peer-review papers, supplemented by tutorial and review articles from knowledge

**Table 5: Distribution of participants according to Reasons for Using the Library**

S. No.	Reasons	No. of Respondents	%
1	To consult books	65	55.5
2	To return borrowed library items	31	26.4
3	To read recent books	12	10.2
4	To consult reference materials	68	58.1
5	For work with own documents	06	05.1
6	To consult journals	63	53.8
7	To borrow library items	61	52.13
8	To photocopy materials	46	39.3
9	To surf internet	52	44.4
10	To read newspapers	03	02.5

**Figure 2: Distribution of participants (in %) according to Frequency of Library Use****Figure 3: Distribution of participants (in %) according to Frequency of Using Indexing Journals**

experts remain the most trusted sources of new dental knowledge. They are contemporary, readily available and well indexed. Yearbooks, collected papers, abstracts and monographs are also found useful. Dentists (practitioners) also follow what is called the 'sufficient' approach, i.e, they do not want everything

that is written on a given topic, but only enough information to answer a clinical problem. The database available to and use by dentists include MEDLINE (Medical Literature, Analysis and Retrieval System Online), PubMed (This includes most of the articles in Medline but is freely available) MEDLARS

(Medical Literature Analysis and Retrieval System), Embase, EBSCO (Online Dentistry Database for full text journal articles and monographs) etc. For research purpose Dentists also go through some academic databases of systematic reviews which includes The Cochrane Library (<http://www3.interscience.wiley.com/cgi-bin/>), The Centre for Evidence-Based Dentistry (<http://www.cebd.org/>), Cochrane Collaboration (<http://www.cochrane-oral.man.ac.uk/>), The Centre for Reviews and Dissemination (CRD) in York (<http://www.york.ac.uk/inst/crd/>). Another resourceful website "<http://www.healthmantra.com/>" which is frequently browsed by internet savvy Indian Dentists for free full text journal articles along with information on clinical guideline for dental treatment, list of conferences worldwide, continuing dental education, training in India, dental dealers directory and dental softwares.[19]

Dentists also depend on patient information, i.e., the patients' dental records consisting present complaints and previous illness. In fact, acquiring information from the patient is central to the diagnostic process. Patient generated data are also vital for research and teaching purposes.[20]

#### *Use of library*

- i. Dentists depend on the departmental libraries. They may occasionally visit libraries in other hospitals where they are seeing patients.
- ii. Within the library, the Dentists regard journals and books of primary importance.
- iii. They also value and use the facility for photocopying journal articles to take and read away from the library.
- iv. Bibliographic and indexing services are also found valuable.
- v. They interpret the ease of use as meaning that a document or service can be obtained with little effort in a short visit to the library.

- vi. A substantial amount of their visits to the library are brief.
- vii. Since their clinical duties restrict them to a certain area of the hospital, they prefer the library which is close to their work place.
- viii. They have relatively low interest in interlibrary loan.

#### *Problems faced by dentists in information handling*

In finding the various information from various sources of information Dentists encounters some problems which have been discussed below:

- i. Dentists find it difficult to catch up with all the information that keeps pouring in. Adding to the knowledge base of basic dental science, diagnostic methods and treatment is a formidable task and many dentists have abandoned 'keeping up with literature'. They are paralysed by the sheer enormity of the task.
- ii. More than 500 journals in Dentistry are published each year and a consultant in a single dental subspecialty may need to read five to eight publications a month, to keep up-to-date.
- iii. Dentists' ability to acquire, evaluate, store and recall new knowledge is limited especially due to lack of time.
- iv. Lack of knowledge about the various online sources of information on Dentistry and proper search techniques.

#### **Conclusion**

Dentists function in a constantly changing information environment and need to keep up to date in the practice of their profession. Not only does information facilitate their ability to make valid decisions and statements about dental hygiene, but information also enables them to provide quality care to their patients. There has been little research on dental

hygienists' information-seeking practices. It is important to know how dentists acquire professional information. Knowledge of information seeking practices helps in delineating effective means of disseminating dental hygiene information. Such knowledge also serves as a foundation for providing dentists with guidelines for information management and defining the skills they will need to cope with an increasingly computerized health care environment.

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