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ICT Based Information Seeking Behaviour of Surgeon in Junagadh District

KEYWORDS: Surgeon, medical, information seeking behavior.

Mr.Mital P. Manavadaria
Librarian, Shri Pkm. College Of Tech. & B.ed, Junagadh

Dr. Niharika Udani
Librarian, Shri Vanivinayak, Arts &Commerce College Bhachau-Kutch

ABSTRACT *The purpose of this study was to examin surgeon medical information seeking behavior and their relevance to continuing education and provided services to their patient. Here, surgeons gives advance technology surgery to patients using ICT have been studied, also note that how current surgeons learning and change theories related to surgery internet information seeking and online learning behavior.*

Introductions:
Internet usage in India has been rising at a steady pace with metros and urban cities propelling of this growth since 2000. According to a study on an average there has been more then 30% year-on-year increase in the internet adoption among urban population. "In next 10-12 years, India is going to have one of the largest number of internet users in the world after china" says Bharat Bhardwaj CEO, Medisurge Technologist. (Top Doctors online. Com) According to a recent research conducted by IMRB is projected to have 10.6 million claimed internet users and 8.5 million active internet users by June 2010 and 15.2 million claimed internet users and 12% million active internet users by December 2010, which rise by 98% to tuch 24 millions by December 2011. This data clearly indicates that now more people are accessing the internet on regular base. Information seeking behaviors refers to the way people search for and utilizing information over the past 15years, surgeons use of the internet to provide good services to their patients in junagadh district, Gujarat, India. Medical professionals who reported using the internet regularly felt that discussion of the result of patient's Internet search was helpful in increasing patients knowledge to improve communication between the medical professional and patient. When information is sought that might indicate the need for complex changes is practice, other conditions of adoption must be met, including commitment to change, and time to including over making the change, and time to deliberate over making the change, information seeking might play various roles in this process. Today surgeons has adopted self learning, which beginning with awarders of the need to learn or adopt a change in practice. They learning actually needed to develop that new competency to practice differently. one more important thing they focuses on managing the new skill by changing the environment or by adapting the new skill to create a good fit with daily life.

By IMRB International with icube 2010, rural India.
Objectives:
The following main objectives are framed to conduct this study. The objectives are:

1. The use of electronic information resources by surgeons.
2. To find out the surgeons need for surgical information.
3. To find out the surgeons use of formal, informal, digital and other online resources.

Methodology:
A number of database were used in the search for relevant academic published articles including web of knowledge. Searches for grey literature on the topic area were conducted using Google. Allopathic medical practitioners in junagadh district, in Gujarat, India are the universe of the sample. There are 125 surgeons working in this district. Study sample details are collected randomly. Survey method is used for collection of the primary data. Pre tested questionnaire was used for data collection tool.

Data Analysis:
Data collection analyses are in tabulate form according questionnaire, given below:

Table:1 Specialization (educational and qualification) and Experience.

Specialization/ Surgeons.	Experience				Total surgeons.
	1 to 5 Year's	6 to 15 Year's	16 to 25 Year's	25 Year's above	
1. Orthopedic	4 (33.33)	5 (41.67)	2 (16.67)	1 (8.33)	12 (100)
2. Ophthal-mologist	2 (20)	6 (60)	2 (20)	---	10
3. Neurologist	5 (62.25)	2 (25)	1 (12.5)	---	08
4. Pediatric	7 (46.67)	5 (33.33)	3 (20)	---	15
5. Cardiologist	4 (80)	1 (60)	---	---	05
6. Gaynec	5 (41.67)	7 (43.75)	4 (25)	---	16
7. Gestro.	4 (66.67)	2 (33.33)	---	---	06
8. Skin Specialist	3 (100)	---	---	---	03
9. General	2 (22.46)	4 (30.77)	5 (38.46)	2(15.38)	03
Total	36 (40.91)	32 (36.36)	17 (19.32)	3 (3.41)	88 (100)

(Figures in parenthesis are percentage)
Table-1 shows the respondents specialization (educational qualification) and their experience. Among the total respondents 88, 12-Orthopedics; 10- Ophthalmologists; 8- neurologist; 15- Pediatricians; 5- Cardiologist; 16- Gaynec; 6- Gestro.; 3- Skin specialist and 13-General practicner surgeons. Among the total respondent 36 (40.91) having 1 to 5 years experience; 32 (36.36) having 6 to 15 years experience; 17 (19.32) having 16 to 25 years experience and only 3 (3.41) having more then 25 years experience.

Table-2 : Knowledge of computer technology and internet.

Specialization/ Surgeons.	Partially	Completely	Nothing
1. Orthopedic	4	8	--
2. Ophthalmologist	1	9	--
3. Neurologist	--	8	--
4. Pediatric	5	10	--
5. Cardiologist	--	05	--
6. Gaynec	3	13	--
7. Gestro.	1	05	--
8. Skin Specialist	--	03	--
9. General	2	11	--

Table-2: Shows that all surgeons having knowledge of computer technology and internet, if way be partially or completely.

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Table-3: Knowledge of ICT (Professional use)

Surgeons	Knowledge of ICT Professional use				
	Sometimes	Often	Regularly	Never	Total
1. Orthopedic	7(62.5)	3(25)	2(16.67)	---	12
2. Ophthalmologist	6(60)	3(30)	1(10)	---	10
3. Neurologist	5(62.5)	2(25)	1(12.5)	---	08
4. Pediatric	7(46.67)	7(46.67)	1(6.67)	---	15
5. Cardiologist	3(60)	2(40)	---	---	05
6. Gaynec	7(43.75)	7(43.75)	2(12.5)	---	16
7. Gestro.	4(66.67)	2(33.33)	---	---	06
8. Skin Specialist	3(100)	---	---	---	03
9. General	8(61.54)	5(38.46)	---	---	13
Total	50(56.82)	37(35.23)	7(7.95)	---	88(100)

(Figures in parenthesis are percentage)

Table-3:Professional use of computer technology and internet is classified into four categories. The above table shows the details of the respondent's surgeon's professional use of computer technology and internet. Among the total samples 50 (56.82) using computer technology and internet sometimes, 31 (35.23) using it often and 7 (7.95) using it regularly. Professional use of computer and internet means to get update information about surgical methods, Journals, case study, research articles, and robotic surgery from internet.

Table-4:
Practical use of ICT in surgery (during their practices)

Surgeons	Up to 10 times	11 to 20 times	20 to 30 times	More then 30 times	Not Responding
1. Orthopedic	3 (25)	2(16.67)	2(16.67)	---	5
2. Ophthalmologist	3(30)	3(30)	2(20)	---	---
3. Neurologist	4(50)	3(37.5)	1(12.5)	---	---
4. Pediatric	2(13.33)	---	---	---	---
5. Cardiologist	2(40)	1(20)	1(20)	1(20)	---
6. Gaynec	5(31.25)	5(31.25)	2(12.5)	---	3
7. Gestro.	1(16.67)	---	---	---	---
8. Skin Specialist	1(33.33)	---	---	---	---
9. General	1(7.69)	---	---	---	---
Total	22(21.59)	14(15.90)	8(9.09)	2(5.59)	

(Figures in parenthesis are percentage)

Details of table-4:Practical use of ICT in surgery during surgeons practices period. is classified into four categories. Among the total samples, neurologist surgeon has maximum 100 % (Up to 10 time-50% ; 11 to 20 time – 37 % and 20 to 30 times 12.5 %) practically use of ICT in surgery during their experience period. Where Gestro., skin specialist and general practitioners using practical use of ICT in surgery is minimum.

Table-5:Details of practitioners use of internet is beneficial to their patient.

Surgeons	Beneficial			
	Up to 25%	26% to 50%	51% to 75%	76% to 100%
1. Orthopedic	2(16.67)	1	---	---
2. Ophthalmologist	2(20)	1(10)	---	---
3. Neurologist	2(25)	1	---	---
4. Pediatric	1(6.66)	---	---	---
5. Cardiologist	3(60)	1(20)	1(20)	---
6. Gaynec	3(18.75)	1(6.25)	---	---
7. Gestro.	---	---	---	---
8. Skin Specialist	---	---	---	---
9. General	---	---	---	---

(Figures in parenthesis are percentage)

Table-5:Shows that the practical use of internet is beneficial to the patient. Out of 88 respondent only 19 has accepted that practical use of internet is beneficial to the patient. In other words 44 respondent who is using practical use of ICT only, 19 practitioners has accepted that practical use of internet is beneficial to the patient. Table shows that only one surgeon get more than 50 % benefits for their patient. Beneficial rate 26 % to 50 % is also minimum.

Table-6: Use of net working websites.

Use web site	Daily 1 to 2 hrs.	Daily 3 to 4 hrs.	Weekly 1 to 2 hrs.	Monthly 3 to 4 hrs.	Total
Face book	09(10.22)	10(11.36)	12(13.64)	06(6.82)	37
Orkut	02(2.72)	01(1.14)	01(1.14)	01(1.14)	05
Twitter	02(2.72)	03(3.41)	08(9.09)	02(2.72)	15
All of the above	05(5.68)	05(5.68)	09(10.23)	03(3.41)	23
None	---	---	03(3.41)	05(5.68)	08
Total	19	19	33	17	88

(Figures in parenthesis are percentage)

Table-6: Describes the use of networking website. Among the total respondents 37 (42.05%) using face book, 10.22 % of them are using daily 1 to 2 hours, 11.36 % of them are using 3 to 4 hours daily and 13.64 % of them are using 1 to 2 weekly and 6.82 % of them are using 3 to 4 hours monthly. Orkut social networking sites use is minimum. The study also reveals that many surgeon are connected with all of the websites.

Internet accessibility and usage pattern:

Table-7: Internet using pattern.

Surgeons	Usage pattern			
	Broadband Connection	Wi-Fi	GPRS mobile connection	Cyber cafe
1. Orthopedic	9(75)	1(8.33)	2(16.66)	---
2. Ophthalmologist	7(58.33)	1(10)	1(10)	---
3. Neurologist	7(81.5)	---	1(12.5)	---
4. Pediatric	9(60)	1(6.66)	3(20)	---
5. Cardiologist	5(100)	---	---	---
6. Gaynec	10(62.5)	2(12.5)	3(18.75)	---
7. Gestro.	2(33.33)	1(16.66)	2(33.33)	---
8. Skin Specialist	3(100)	---	---	---
9. General	2(66.67)	---	---	---

(Figures in parenthesis are percentage)

New digital technologies have become an increasingly important part of the daily lives of many people around the world. While statistics can very due to difference in research methodologies. as in 2010 there were an estimated more then 2 billions internet users worldwide the majority of cardiologist (100%) usage broadband pattern followed by urologist (87.5 %) and orthopedic (75%) however, Gastro, Skin specialist and general surgeons use only broadband pattern. Almost all respondent believe that internet has become a leading source of health care related information. Broadband connection is most popular in junagadh district surgeons circle. Around 15 % surgeons believe that mobile connection can be used as handy resources to access. Interest in the internet as a communication tool for health related information is also growing rapidly.

Table-8: Details of new surgical methods by online sources.

surgeon	Method			
	U-tube video	peer review/ Online Jour.	Face book/ Twitter	Search Engine
1. Orthopedic	1(8.33)	4(33.33)	3(3.41)	3(3.41)
2. Ophthalmologist	---	3(30)	2(20)	4(40)
3. Neurologist	1	3(37.5)	3(37.5)	5(62.5)
4. Pediatric	---	8(53.33)	5(33.33)	10(66.67)

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5. Cardiologist	1(20)	4(80)	4(80)	4(80)
6. Gaynec	3(18.75)	5(31.25)	5(31.25)	8(50)
7. Gestro.	---	2(33.33)	2(33.33)	---
8. Skin Specialist	---	1(33.33)	1(33.33)	---
9. General	---	5(38.46)	4(30.76)	6(46.15)
Total		35(39.77)	29(32.95)	34(38.64)

(Figures in parenthesis are percentage)
The above table-8 express the study of new surgical method by online sources, statistical analysis result show that 35 (39.77) peer review, e-journal, e-book are using maximum for their practices. Remaining search engine 34 (38.65) and face book & twitter 29 (32.45) are also useful methods for online sources.

Analysis and Finding:
- The most common reason doctors seek information on the internet is to solve a specific patient problem.
- To continue professional development on the internet, surgeons expect that, access to information will be immediate, easy to use, relevant and credible.
- All the respondent are not taking internet fees from their patient.
- All the respondent are sharing their developed or research information about surgical methods and operation technique with other experts or doctors using internet.
- Generally middle class and high society class people prefer/affords updated technological operation; who having knowledge of internet.
- Some patient demand latest information, surgery method, that time they need to know about current information.

Conclusion:
The internet provides an extensive and ever growing resource center available to doctors as a part of self-learning. ICT provides patients problems in a short time no doubt traditional methods and models is used by many smaller surgeons in rural area of junagadh district. The result of this study suggest that patients need more awareness about ICT so doctors can use/apply it in their practices.

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