

Information Needs of Physicians and Surgeons of Jammu & Kashmir

S.M. Shafi*

Dr. Mudassir Ashraf Wani**

Abstract

Purpose: The paper attempts to explore the information needs of physicians and surgeons of Jammu & Kashmir

Design/Methodology/Approach: The survey is conducted among physicians and surgeons working at primary, secondary and tertiary health care institutions by administering a questionnaire employing stratified random sampling.

Findings: The information needs of the physicians and surgeons vary with practice location, affiliation and specialization. Most of the physicians and surgeons need patient data/patient care information, latest medical knowledge, information about new drugs and medical products/equipments.

Originality/Value: The identification of information needs of physicians and surgeons is a maiden attempt for the state of J & K. This study may encourage and foster further research for effectiveness and better performance of medical libraries and information managers in the State.

Keywords: Medical Practitioners, Physicians, Surgeons, Information Needs, Jammu & Kashmir.

Paper Type: Research

Introduction

Information need is an area which involves exact and accurate study of information requirements among different stakeholders of a profession. The advances in user and behavioural studies, living patterns, standards and styles add varied dimensions to information needs and its seeking behaviour. However, literature shows its beginning in the 20th century as an area of study. A number of papers pertaining to information seeking behaviour of scientists and technologists have been presented at the Royal Society Scientific Information Conference since 1948 (Wilson, 1999). Later, during 1960s and 1970s, the works of Line, Brittain, Paisley, Lin, Garvey, Herner and others focusing on information requirement of Social Scientists, popularly known as INFROSS appeared in *Annual Review of Information Technology* (Goodall, 2005). These works motivated scholars to work on similar lines. Similarly, the studies of Dervin, Ellis, Kuhlthau, Wilson, Ingwersen and others have outlined the theoretical perspectives on the area and devised several useful models for the improvement of the existing state of the information user studies (Wilson, 1999).

The research on the information needs of medical practitioners is a relatively new endeavour. Forsythe states, "identifying the information

* Head, Department of Library and Information Science. University of Kashmir. Jammu and Kashmir. India. 190 006. shafi_sm@rediffmail.com

** Librarian. Entrepreneur Development Institute (EDI), Pampore. Jammu and Kashmir.

needs of Physicians was recognized as a significant problem as early as 1972" (**Forsythe, Buchanan, Osheroff & Miller, 1992**). Earlier study by **Strasser (1978)**, a Library and Information Science student at the State University of New York, on practicing physicians opened the area for extensive research. Since its publication in 1978, numerous studies have been carried out about information needs of physicians and nurses. However, no such work has been carried out in J&K, a small and geographically isolated state of India.

Literature Review

A sizeable number of studies have been carried out from time to time to study the information needs of medical practitioners since 1972. **Covell, Uman and Manning (1985)** report that the physicians require information about patient management, medical specialists and information highly specific to the individual patient's problem. Sub-specialists most frequently require information related to other specialties. **Woolf and Benson (1989)** carried a survey at Johns Hopkins Hospital which reveals that the faculty more often requires information for research and preparation of conferences and rounds. The most frequently required information by house staff is about differential diagnosis and treatment recommendations. Internists involved with ambulatory patient care need instant information about the treatment of specific conditions, the diagnosis of physical findings or symptoms and drug information. **Osheroff, Forsythe, Buchanan, Bankowitz, Blumenfeld and Miller (1991)** have identified the physician's information requests and reveal that on average, five clinical questions are raised for each patient discussed. Out of them 74% requests concern patient care.

Dee & Blazek (1993) report that 75% of rural physician's requests regarding patient-care (clinical) information needs relate to treatment, 14.7% relate to diagnosis, 8.3% relate to etiology and 2.1% to the psychological aspects of disease. Later, Lundeen narrowed the information needs of physicians into two categories: research or patient care (**Lundeen, Tenopir & Wermager, 1994**). But **Ocheibi and Buba (2003)** reveal that the doctors in Maiduguri, Nigeria need specific medical information to enhance their knowledge on a day-to-day basis. **Gonzalez, Dawes, Sanchez-Mateos, Riesgo-Fruetes, Escortell-Mayer, et al. (2007)** show that the most frequent questions asked by primary care physicians in Spain relate to diagnosis (53%) and treatment (26%). **Shabi, Kutetyi, Odewale and Shabi (2008)** found that the information needs of family physicians in Nigeria focus on new developments in area of specialization (87.3%); drug information (74.2%); government regulations on health care (70.2%); and routine patient care (65.9%).

Problem

As health is a phenomenon of global concern, the information needs of medical professionals need to be explored so that adequate infrastructure is provided to them and barriers that thwart their information seeking behaviours can be removed depending upon the results and suggestions in order to provide the best to the patient health and medical education especially for the state of Jammu and Kashmir that has remained under stress because of the prevailing political conflict.

Objectives

The main objectives set forth for the study are:

- To identify different information needs of the physicians and surgeons.
- To assess the context and diversity in information needs of physicians and surgeons.

Scope

The study attempts to identify the information needs of physicians and surgeons working in J&K at primary, secondary and tertiary health care institutions encompassing 3567 medical colleges/associations/ health institutions in public and 51 registered private nursing homes besides several solo practitioners. **(Appendix-I)**

Methodology

A stratified random sample of 226 physicians and surgeons of major medical fields and sub-fields was drawn using the sample size determination formula. The practitioners on the basis of their work roles were first divided into different strata. The strata were selected from the seven main working environments as given in the scope.

A questionnaire was drafted, tested and later distributed. The data was collected personally from practitioners (4th of January 2009 to 31st of August 2009). The survey was previously piloted among several groups of physicians and surgeons.

Findings and Discussion

Different professional activities give rise to various information needs. Variations do exist in the information needs among the physicians and surgeons as their scope and operation of practice differs.

➤ **Information Needs (Institution wise)**

The information needs of physicians and surgeons vary at each location in view of nature of work, patient type and treatment level like primary, secondary or tertiary care. Every individual practitioner has unique information needs. These perceived and actual needs also change with time, place and clinical case load.

The physicians and surgeons of medical institutions and hospitals require data about patients and latest medical knowledge to improve their practice. Majority of them (83-100%) want updates on information pertaining to drugs and medical products/equipments. Information about hospital administration is needed more by physicians/surgeons (47-70%) of SKIMS, its associated Medical College and ASCOMS compared to those of working in other institutions (11-28%). Similarly, the information regarding latest research findings and subjects being taught in the institutions is required more by physicians/surgeons (60-100%) of SKIMS/ its associated Medical College, GMC (K/J)/ its associated hospitals/ GDC (K/J) and ASCOMS compared to those working in District, Sub-District Hospitals, Dispensaries, Health centres, Ayurvedic cum Unani Hospitals/ Dispensaries, Private nursing homes and solo settings (12-25%). **(Table 1)** Thus, it can be concluded that physicians and surgeons in different practice settings require patient data/patient care information, latest medical knowledge, information about new drugs and medical products/equipments. **Gorman (2001)** has made similar conclusion for rural and non-rural primary care physicians having equal information needs.

However, practitioners working in teaching hospitals [SKIMS and associated Medical College, GMC (K/J)/ its associated hospitals and GDC (K/J) and ASCOMS] in addition to above requirements need information about latest research, subjects taught and hospital administration.

➤ **Information Needs (Designation Wise)**

Physicians and surgeons play various roles like teaching, clinical practice and administration. Their information needs also vary with their roles in the profession.

The practitioners in teaching and clinical practice need lesser information about population statistics (5-13%), logistics and social influences (42-53%) compared to those in administration wherein all the practitioners need information about population statistics and many require information about logistics and social influences (53%). The practitioners in teaching and clinical practice require more information on drugs (100%), new medical products/equipments (73-76%) and lab/imaging procedures/techniques (36-43%) compared to those in administration wherein majority of these professionals (83.5%) demand information regarding drugs, new medical products/equipments (49%) and lab/imaging procedures/techniques (21%). Information pertaining to latest research findings and government regulations related to healthcare is required more by practitioners in teaching (53-60%) compared to those in clinical practice and administration (23.5-42%). Similarly, the practitioners (84%) in teaching state that more information is required about the subjects being taught in the institutions compared to those in

clinical practice and administration (5-17%). Practitioners in clinical practice (41%) need more information on disaster management as compared to those in teaching and administration (8-33%). The practitioners in teaching (5%) and clinical practice (11%) require less information regarding hospital/health administration compared to those in administration (65%). **(Table 2)**

It shows that physicians and surgeons of all categories need patient care information and current medical information in their respective specialized field. However, practitioners in teaching and clinical practice require more information about drugs, new medical products/equipments and lab/imaging procedures/techniques compared to those in administration, while as practitioners in administration require more information regarding hospital/health administration and practitioners in teaching require information more about subjects they teach, latest research findings and government regulations related to healthcare. **Woolf and Benson (1989)** has drawn similar conclusion reporting that both the faculty and house staff in Internal Medicine and Pediatrics at an academic medical center frequently requires treatment recommendations and differential diagnosis. However, the information needs of house staff differs significantly in several categories from those of faculty physicians. House staff frequently needs information for patient care. Faculty need information more frequently on activities unrelated to patient care.

➤ **Information Needs (Specialization Perspective)**

The specialization in medicine is evolving with the growth in knowledge and technology, and resources are diversifying at an alarming rate. Consequent upon such developments, new specialties are sprouting and physicians and surgeons need various types of information to carry forward their mission. Therefore, the professional information needs are specific to a particular discipline.

Practitioners in various specialized fields need information regarding patient data/ patient care information (100%), latest medical knowledge (100%), drug information (60-100%) and logistic information (43-70%).

Practitioners in General medicine (40%), General surgery (20%), Obstetrics & Gynaecology (13%), Pediatrics & Neonatology (20%), Psychiatry (21%), Community Medicine & Public Health or Social & Preventive Medicine (SPM) (100%) and Hospital Administration (20%) need information about population statistics while as the practitioners in other medical fields do not need such type of information. The practitioners in Otorhinolaryngology or ENT (ear, nose & throat), Toxicology & Forensic Medicine, Community Medicine & Public Health and Hospital Administration (36-53%) report less information requirements about medical products and equipments compared to

those in other specialized fields (100%) except in Psychiatry. Physicians/surgeons in Orthopedics, Physical Medicine & Rehabilitation, and Otorhinolaryngology/ENT report to need information pertaining to lab/imaging procedures/techniques. Information about latest research findings is reported more by practitioners in General medicine and General surgery (80%) compared to those in other specialized fields (21-44%). Information regarding subjects being taught in the institutions is needed more by practitioners in General medicine, General surgery, and Community Medicine & Public Health/SPM (60-67%) compared to those in other specialized fields (20-36%). Hospital administrators (100%) report requirement of information more about hospital/health administration compared to those in other specialized fields (14-36%) (**Table 3**).

The above studies show that the physicians/surgeons in the entire specialized fields need patient data/patient care information, latest medical knowledge and drug information. The results found are however, similar to those in other published studies. **Gorman (2001)** affirms that primary care physicians in Family Medicine, Internal Medicine, and Pediatrics have similar information needs.

The results are corroborated by the study of **Lakshmi, Rao, Gore and Bhaskaran (2003)** which shows that pediatricians, general physicians, dermatologists, gynecologists and other practitioners need information about drug product availability / identification, contraindications / safety, adverse drug reactions, choice of drugs, banned drug information and use of drug during pregnancy. Similarly, the neurologists at National Institute of Neurological Disorders and Stroke (Bethesda) also came to similar conclusion and report that they need the patient's medical history and information about various laboratory test results for diagnosis e.g., blood or urine tests, skin or tissue sampling, electroencephalogram or EEG, electrical studies of the eyes, brain scans, measurement of enzyme activity, and DNA analysis (**National Institute of Neurological....., 2009**). **Bauer (2009)** also came up with similar findings while reporting that urologists at Regional Medical Centers in Michigan require patient's health history, information about medications (if they are taking) and diagnostic test results e.g., blood or urine test, x-rays etc.

The above studies show that the physicians/surgeons in the entire specialized fields need patient data/patient care and drug information.

Conclusion

Physician and surgeon role and related tasks undertaken in the course of daily practice prompt specific Information needs. The environment is characterized by specialty, practice type and setting etc.

The information needs of Physicians and surgeons vary at each place of work in view of nature of work, patient type, and treatment like primary,

secondary or tertiary care. These information needs change with their roles in the profession like teaching, clinical practice and administration. The practitioners of all categories require updates on latest medical knowledge, information regarding new drugs and medical products/equipments. Besides, practitioners in teaching need information more about subjects being taught in the institutions, latest research papers and hospital/health administration while as practitioners in clinical practice need patient data/patient care information depending upon the type of ailment. However, practitioners performing administrative roles need information more about hospital/health administration and also to some extent information pertaining to latest research papers and patient data/patient care. Those in lab. technology require patient data, and information about lab/imaging procedures/techniques.

Table 1: Diversity in Information Needs (Institution Wise)

		Information needs												
		Patient data/ patient care information	Population statistics	Latest medical knowledge	Drug information	Logistic information	Social influences	New medical products and equipments	Lab. / imaging diagnosis/ procedures/ techniques	Research	Subject	Disaster management	Hospital /health administration	Govt. regulations on health care
SKIMS/ associated Medical College	17	17 (100.0)	4 (23.5)	17 (100.0)	17 (100.0)	14 (82.4)	5 (29.4)	15 (88.2)	10 (58.8)	16 (94.1)	17 (100.0)	3 (17.6)	8 (47.1)	12 (70.5)
GMC/ associated hospitals/GDC in Kashmir region	18	18 (100.0)	2 (11.1)	18 (100.0)	15 (83.3)	13 (72.2)	13 (72.2)	13 (72.2)	2 (11.1)	15 (83.3)	17 (94.4)	7 (38.9)	3 (16.7)	10 (55.5)
GMC/ associated hospitals/GDC in Jammu region	9	9 (100.0)	1 (11.1)	9 (100.0)	9 (100.0)	5 (55.6)	5 (55.6)	8 (88.9)	2 (22.2)	6 (66.7)	6 (66.7)	2 (22.2)	1 (11.1)	6 (66.7)
District/Sub-district hospitals/ dispensaries/health centres in the State	122	122 (100.0)	18 (14.8)	122 (100.0)	112 (91.8)	62 (50.8)	89 (73.0)	68 (55.7)	42 (34.4)	30 (24.6)	22 (18.0)	40 (32.8)	20 (16.4)	44 (36.0)

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		Information needs												
		Patient data/ patient care information	Population statistics	Latest medical knowledge	Drug information	Logistic information	Social influences	New medical products and equipments	Lab. / imaging diagnosis/ procedures/ techniques	Research	Subject	Disaster management	Hospital /health administration	Govt. regulations on health care
Ayurvedic cum Unani hospitals/ dispensaries in the State	25	25 (100.0)	3 (12.0)	25 (100.0)	25 (100.0)	7 (28.0)	5 (20.0)	12 (48.0)	4 (16.0)	3 (12.0)	3 (12.0)	2 (8.0)	7 (28.0)	5 (20.0)
ASCOMS	10	10 (100.0)	4 (40.0)	10 (100.0)	9 (90.0)	6 (60.0)	4 (40.0)	9 (90.0)	4 (40.0)	6 (60.0)	9 (90.0)	2 (20.0)	7 (70.0)	5 (50.0)
Private nursing homes/ solo practitioners in the state	25	25 (100.0)	1 (4.0)	25 (100.0)	25 (100.0)	9 (36.0)	13 (52.0)	22 (88.0)	10 (40.0)	6 (24.0)	4 (16.0)	5 (20.0)	3 (12.0)	12 (48.0)

Figures in parentheses indicate percentage

Table 2: Diversity in Information Needs (Designation Wise)

		Information needs												
		Patient Data/ Patient care information	Population Statistics	Latest Medical knowledge	Drug information	Logistic information	Social influences	New medical Products and Equipments	Lab. / imaging diagnosis/ procedures/ techniques	Research	Subject	Disaster Management	Hospital /health administration	Govt. regulations on health care
Teaching*	75	75 (100.0)	10 (13.3)	75 (100.0)	75 (100.0)	37 (49.3)	32 (42.6)	55 (73.3)	32 (42.6)	45 (60.0)	63 (84.0)	6 (8.0)	4 (5.4)	40 (53.3)
Clinical Practice**	66	66 (100.0)	3 (4.5)	66 (100.0)	66 (100.0)	35 (53.0)	28 (42.4)	50 (75.7)	24 (36.3)	19 (28.7)	11 (16.6)	27 (40.9)	7 (10.6)	18 (27.2)
Administration***	85	85 (100.0)	20 (23.5)	85 (100.0)	71 (83.0)	45 (52.9)	45 (52.9)	42 (49.4)	18 (21.1)	20 (23.5)	4 (4.7)	28 (32.9)	55 (64.7)	36 (42.3)

Figures in parentheses indicate percentage

*Principals, Professors, Associate Professors, Additional Professors, Assistant Professors, Demonstrators, Lecturers and Health Educators.

**Consultants, Residents, Physician Specialists, General Physicians, Surgeon specialists, Asstt. Surgeon and Dental surgeons.

***Registrars, Directors/Dy./Asst. Directors, CMOs, BMOs, Medical superintendent and Hospital administrators.

Table 3: Diversity of Information Needs (Specialization Wise Distribution)

		Information needs												
		Patient Data/ Patient care Information	Population Statistics	Latest Medical knowledge	Drug information	Logistic information	Social influences	New medical Products and Equipments	Laboratory/ imaging Procedures/ techniques	Research	Subject	Disaster Management	Hospital/health administration	Govt. regulations on health care
General Medicine	15	15 (100.0)	6 (40.0)	15 (100.0)	15 (100.0)	7 (46.7)	5 (33.3)	12 (80.0)	9 (60.0)	12 (80.0)	10 (66.7)	9 (60.0)	5 (33.3)	8 (53.3)
General Surgery	15	15 (100.0)	3 (20.0)	15 (100.0)	12 (80.0)	8 (53.3)	5 (33.3)	15 (100.0)	8 (53.3)	12 (80.0)	9 (60.0)	8 (53.3)	5 (33.3)	9 (60.0)
Obstetrics and Gynaecology	15	15 (100.0)	2 (13.3)	15 (100.0)	15 (100.0)	7 (46.7)	8 (53.3)	15 (100.0)	7 (46.7)	4 (26.7)	5 (33.3)	4 (26.7)	3 (20.0)	8 (53.3)
Pediatrics and Neonatology	15	15 (100.0)	3 (20.0)	15 (100.0)	15 (100.0)	9 (60.0)	6 (40.0)	10 (66.7)	4 (26.7)	5 (33.3)	3 (20.0)	3 (20.0)	4 (26.7)	7 (46.7)
Orthopedics	14	14 (100.0)	- -	14 (100.0)	14 (100.0)	6 (42.9)	5 (35.7)	12 (85.7)	- -	6 (42.9)	4 (28.6)	3 (21.4)	5 (35.7)	6 (42.9)
Physical Medicine and Rehabilitation	14	14 (100.0)	- -	14 (100.0)	11 (78.6)	8 (57.1)	4 (28.6)	11 (78.6)	- -	4 (28.6)	3 (21.4)	4 (28.6)	4 (28.6)	7 (50.0)
Otorhinolaryngology (ENT)	14	14 (100.0)	- -	14 (100.0)	14 (100.0)	6 (42.9)	5 (35.7)	6 (42.9)	- -	- -	4 (28.6)	- -	3 (21.4)	7 (50.0)
Ophthalmology	14	14 (100.0)	- -	14 (100.0)	14 (100.0)	7 (50.0)	7 (50.0)	12 (85.7)	4 (28.6)	5 (35.7)	5 (35.7)	3 (21.4)	3 (21.4)	6 (42.8)

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		Information needs												
		Patient Data/ Patient care information	Population Statistics	Latest Medical knowledge	Drug information	Logistic information	Social influences	New medical Products and Equipments	Laboratory/ imaging Procedures/ techniques	Research	Subject	Disaster Management	Hospital/health administration	Govt. regulations on health care
Burns and Plastic Surgery	14	14 (100.0)	- -	14 (100.0)	14 (100.0)	9 (64.3)	6 (42.9)	9 (64.3)	5 (35.7)	3 (21.4)	3 (21.4)	7 (50.0)	2 (14.3)	8 (57.1)
Dermatology and Venerology	15	15 (100.0)	- -	15 (100.0)	15 (100.0)	8 (53.3)	5 (33.3)	8 (53.3)	4 (26.7)	3 (20.0)	5 (33.3)	- -	3 (20.0)	8 (53.3)
Dental Surgery	14	14 (100.0)	- -	14 (100.0)	14 (100.0)	7 (50.0)	4 (28.6)	12 (85.7)	5 (35.7)	2 (14.3)	5 (35.7)	- -	5 (35.7)	3 (21.4)
Psychiatry	14	14 (100.0)	3 (21.4)	14 (100.0)	14 (100.0)	7 (50.0)	10 (71.4)	- -	4 (28.6)	6 (42.9)	4 (28.6)	3 (21.4)	3 (21.4)	3 (21.4)
Anaesthesiology	15	15 (100.0)	- -	15 (100.0)	12 (80.0)	8 (53.3)	6 (40.0)	10 (66.7)	4 (26.7)	4 (26.7)	4 (26.7)	- -	4 (26.7)	2 (13.3)
Toxicology and Forensic Medicine	14	14 (100.0)	- -	14 (100.0)	14 (100.0)	7 (50.0)	12 (85.7)	6 (42.9)	8 (57.1)	- -	3 (21.4)	7 (50.0)	2 (14.3)	3 (21.4)
Community Med. & Public Health (SPM)	14	14 (100.0)	14 (100.0)	14 (100.0)	13 (92.9)	6 (42.9)	11 (78.6)	5 (35.7)	9 (64.3)	5 (35.7)	9 (64.3)	6 (42.9)	5 (35.7)	5 (35.7)
Hospital Administration	10	10 (100.0)	2 (20.0)	10 (100.0)	6 (60.0)	7 (70.0)	6 (60.0)	4 (40.0)	3 (30.0)	3 (30.0)	2 (20.0)	4 (40.0)	10 (100.0)	4 (40.0)

Figures in parentheses indicate percentage

Appendix-I

1. Sher-i-Kashmir Institute of Medical Sciences (SKIMS) and associated Medical College and Hospital, Srinagar.
2. Government Medical College (GMC), Associated Hospitals/ Government Dental College (GDC) in Kashmir region.
3. Government Medical College (GMC), Associated Hospitals/ Government Dental College (GDC) in Jammu region.
4. District, Sub-district Hospitals, Dispensaries and Health Centres in the State.
5. Ayurvedic cum Unani Hospitals and Dispensaries in the State.
6. Acharya Shri Chandra College of Medical Sciences (ASCOMS), Jammu, and
7. Private Nursing Homes/ Solo practitioners in the State.

SKIMS and ASCOMS are tertiary health care institutions. GMCs/ Associated hospitals & GDCs are secondary health care institutions while District/ Sub-district hospitals/ dispensaries/ health centres, Ayurvedic cum Unani hospitals/ dispensaries and Private nursing homes are primary health care institutions.

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