

Preference of Information Characteristics among Ophthalmologists in India: A Study

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Abstract - Ophthalmologists - Eye doctors choose information by checking several characteristics of the information to satisfy their information need. The purpose of this study is to determine the key characteristics of information preferred by the ophthalmologists. The study design is cross-sectional and convenience sampling method is adopted. A structured questionnaire was used to collect data. SPSS 18 PASW Statistical package was used for statistical analysis. Frequencies, percentages, Mann Whitney U test, Kruskal-Wallis test were used in the study. Around 633 ophthalmologists working in 47 academic eye hospitals from 16 states of India were included in the study. The study results revealed that the majority of the ophthalmologists prefer well known reliable information. The statistical test results showed up that the information characteristics preferences of ophthalmologists differ by designation and experience. The ophthalmic librarians should develop quality norms for building the resource collection and adhere to it. The information service providers like online databases, websites, discussion forums, etc. should ensure to deliver reliable information services.

Keywords: Information Characteristics, Ophthalmologists, Good Information, Information Preferences, Information Seeking Behavior

I. INTRODUCTION

In this information age, Information is the real power. Good information always yields better results. In the medical field, it leads to better patient care, capacity building of the human resources, efficient administration and research advancements. Ophthalmologists - Eye doctors choose information by checking several characteristics of the information to satisfy their information need. The characteristics of good information are: innovative, fit-for-purpose, reliability, accuracy, well-structured and neatly presented.

The present study attempted to determine the key characteristics of information preferred by the ophthalmologists and examine if the preferences differ based on their individual characteristics and institution characteristics. The individual and institution characteristics chosen for examination were gender, age, designation, working experience and institution type. This study will help to identify the exact ophthalmologists' preferences of information characteristics which will help to understand, how the ophthalmologists choose information. This will help the libraries, institutions, information service providers,

ophthalmic community to provide adequate resources in line with their preferences.

II. REVIEW OF LITERATURE

Nazim, M. (2008), studied the information searching behavior of faculties at Aligarh Muslim University. A total of 405 faculties responded to the study. About 60% of respondents believed that the good quality of information on the Internet made it a useful tool for education and research.

Tenopir, C., King, (2009) investigated the electronic journals and changes in scholarly article seeking and reading patterns. The study revealed that the average number of article readings per faculty is increasing but the average time spent per reading is declining. It does not mean they are reading each article with less care. The attention paid to each reading remains relatively high even when the time available per reading is less. The depth of reading has clearly remained about the same over the years. The faculties either read "with great care" (43%) or "with attention to the main points" (51%).

O'Carroll, A. M., (2015) conducted a study to investigate the Information-seeking behaviors of medical students. The survey included 213 medical students. Accessibility, understandability, and overall usefulness were common features of highly used resources.

Tabassum, M., (2015) investigated the usage of a digital library system at a private university library in Bangladesh. The study enrolled 129 users of the library. Users' intention to use the digital library is significantly related to their perceived ease of use and usefulness of the system.

III. OBJECTIVES OF THE STUDY

1. To identify the information characteristics preferred by the ophthalmologist.
2. To examine the information characteristics preference between male and female ophthalmologists.
3. To find out the information characteristics preference among ophthalmologists of different age group.
4. To measure the information characteristics preference among ophthalmologists of different designations.
5. To examine the information characteristics preference among ophthalmologists with different work experience.

- To find out the information characteristics preference among ophthalmologists working in different institution types.

IV. HYPOTHESES OF THE STUDY

- The information characteristics preference of ophthalmologists differs by gender.
- The information characteristics preference of ophthalmologists differs by age group.
- The information characteristics preference of ophthalmologists differs by designation.
- The information characteristics preference of ophthalmologists differs by experience.
- The information characteristics preference of ophthalmologists differs by institution type.

V. METHODOLOGY

The main purpose of the study was to find out the information characteristics preference among ophthalmologists. The research design adopted for this study was cross-sectional. Convenience sampling method was found appropriate to enroll the wide-spread ophthalmologist population and the same was followed in the study. A structured questionnaire was used as a data collection tool to record the ophthalmologists' preferences. A total of 633 ophthalmologists from 47 academic eye hospitals in 16 states of India were included in the study.

The collected data were entered into data-entry software, purposefully developed for the study. The software was developed in Microsoft Visual Basic 6.0 with backend SQL Server 2000. For further analysis, the data stored in SQL Server 2000 was extracted into Ms-Excel 2007 spreadsheets. MS-Excel 2017 was used to organize and tabulate the data. SPSS 18 PASW Statistical package was used for statistical analysis. Frequency counts and Ranks were used to find out the most common preference of ophthalmologists. The Mann Whitney U test was used to examine ophthalmologists' preferences with gender. The Kruskal-Wallis test was used to examine the ophthalmologists' preferences with age, designation, experience, and institution type.

VI. ANALYSIS

Information characteristics preference among Ophthalmologists had been ascertained based on five variables with a five point scale such as "1-Never", "2-Rarely", "3-Seldom", "4-Often" and "5-Most Often". The internal consistency of the variables was measured by Cronbach's alpha (Alpha >0.70 is considered as acceptable). The alpha coefficient for the variables is 0.8645 which indicates that the variables have relatively high internal consistency. Number of responses, percentage, mean, standard deviation, median, and rank were shown in Table I. Ranks were assigned based on the mean and standard deviation.

TABLE I INFORMATION CHARACTERISTICS PREFERENCES – SUMMARY

S. No.	Description	Never	Rarely	Seldom	Often	Most Often	Mean (SD)	Median	Rank
1	I am interested on information from well-known reliable sources	1 (0.2%)	2 (0.3%)	61 (9.6%)	338 (53.4%)	231 (36.5%)	4.26 (0.65)	Often	1
2	I am interested especially in new innovative ideas.	3 (0.5%)	27 (4.3%)	120 (19%)	357 (56.4%)	126 (19.9%)	3.91 (0.77)	Often	5
3	I am interested on well-arranged and attractive presentation / form of information	2 (0.3%)	27 (4.3%)	128 (20.2%)	330 (52.1%)	146 (23.1%)	3.93 (0.79)	Often	3
4	I am interested on competent information which don't have any bias	4 (0.6%)	20 (3.2%)	107 (16.9%)	343 (54.2%)	159 (25.1%)	4 (0.78)	Often	2
5	I choose to look at just that information which I can use immediately.	3 (0.5%)	26 (4.1%)	121 (19.1%)	349 (55.1%)	134 (21.2%)	3.92 (0.78)	Often	4

It can be seen from the table 1 that "I am interested on information from well-known reliable sources" was the first preference of ophthalmologists. It is followed by "I am interested on competent information which doesn't have any bias" and "I am interested on well-arranged and attractive presentation / form of information" which were their second and third preferences. The least preference was "I am interested especially in new innovative ideas". The mean value of the responses ranges between 3.91 and 4.26. The standard deviation of the responses ranges between 0.65 and 0.79.

The information characteristics preferences of both female and male ophthalmologists were analyzed further and ranks were assigned based on the mean and standard deviation. The mean, standard deviation, rank, and Mann Whitney U test results were shown in Table II. Rank is derived for each gender group based on the mean and standard deviation of ophthalmologists' preferences. The ranks show up that most of the female and male ophthalmologists prefer "I am interested on information from well-known reliable sources". It was followed by "I am interested on competent information which doesn't have any bias".

TABLE II INFORMATION CHARACTERISTICS PREFERENCES VS GENDER

S. No.	Description	Female		Male	
		Mean (SD)	Rank	Mean (SD)	Rank
1	I am interested on information from well-known reliable sources	4.25 (0.67)	1	4.27 (0.63)	1
2	I am interested especially in new innovative ideas.	3.86 (0.8)	5	3.96 (0.75)	3
3	I am interested on well-arranged and attractive presentation / form of information	3.94 (0.78)	3	3.93 (0.81)	5
4	I am interested on competent information which doesn't have any bias	3.98 (0.8)	2	4.02 (0.76)	2
5	I choose to look at just that information which I can use immediately.	3.88 (0.79)	4	3.96 (0.77)	4

A Mann Whitney U test was conducted to determine whether there is any difference between ophthalmologists' preferences on information characteristics and gender. The mean rank for male ophthalmologists was 318.72. The mean rank for female ophthalmologists was 315.02. The test showed that there doesn't exist a significant difference

between ophthalmologists preference and gender (P-value=0.796). The information characteristics preferences of ophthalmologists in different age groups were analyzed further and ranks were assigned based on the mean and standard deviation. The mean, standard deviation, rank, and Kruskal-Wallis test results were shown in Table III.

TABLE III INFORMATION CHARACTERISTICS PREFERENCES VS AGE GROUP

S. No.	Description	Less than or equal to 30		31 to 40		41 to 50		51 to 60		61 and above	
		Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank
1	I am interested on information from well-known reliable sources	4.23 (0.64)	1	4.28 (0.65)	1	4.21 (0.67)	1	4.62 (0.5)	1	3.75 (0.71)	3
2	I am interested especially in new innovative ideas.	3.83 (0.75)	5	3.94 (0.78)	4	4 (0.75)	4	3.95 (0.97)	4	3.88 (0.64)	2
3	I am interested on well-arranged and attractive presentation / form of information	3.86 (0.81)	4	3.95 (0.79)	3	4.06 (0.77)	3	4.05 (0.74)	3	3.75 (0.71)	3
4	I am interested on competent information which doesn't have any bias	3.91 (0.73)	2	4.02 (0.8)	2	4.07 (0.79)	2	4.48 (0.68)	2	3.75 (0.71)	3
5	I choose to look at just that information which I can use immediately.	3.89 (0.78)	3	3.92 (0.77)	5	4 (0.75)	5	3.95 (0.97)	4	3.88 (0.83)	1

Rank is derived for each age group based on the mean and standard deviation of ophthalmologists' preferences. The ranks show up that most of the ophthalmologists in age group groups "Less than or equal to 30", "31 to 40", "41 to 50", "51 to 60" prefer "I am interested on information from well-known reliable sources". The ophthalmologists in the Age group "61 and above" prefer "I choose to look at just that information which I can use immediately." A Kruskal-Wallis H test was conducted to determine if ophthalmologists' preferences differ with age groups.

The mean ranks for the age groups were Less than or equal to 30 (296.82), 31 to 40 (320.23), 41 to 50 (344.58), 51 to 60 (387.02), 61 and above (253.19) respectively. The test showed that there doesn't exist a significant difference between ophthalmologists preference and age groups ($\chi^2(2) = 9.112$, P-value=0.058).

The information characteristics preferences of ophthalmologists in different designation groups were analyzed further and ranks were assigned based on the mean and standard deviation. The mean, standard deviation, rank, and Kruskal-Wallis test results were shown in Table IV.

Rank is derived for each designation group based on the mean and standard deviation of ophthalmologists' preferences. The ranks show up that most of the ophthalmologists in all designations prefer "I am interested on information from well-known reliable sources". A Kruskal-Wallis H test was conducted to determine if ophthalmologists' preferences differ with designation groups. The mean ranks for the designation groups were Medical Officer (336.30), Fellows (292.07), and Senior Residents (266.04) respectively. The test showed that there exist a significant difference between ophthalmologists

preference on information characteristics and designation groups ($\chi^2 (2) = 10.208$, P-value=0.006).The information characteristics preferences of ophthalmologists in different experience groups were analyzed further and ranks were

assigned based on the mean and standard deviation. The mean, standard deviation, rank, and Kruskal-Wallis test results were shown in Table V.

TABLE IV INFORMATION CHARACTERISTICS PREFERENCES VS DESIGNATION

S. No.	Description	Medical Officer		Fellows		Senior Resident	
		Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank
1	I am interested on information from well-known reliable sources	4.28 (0.67)	1	4.23 (0.63)	1	4.07 (0.62)	1
2	I am interested especially in new innovative ideas.	3.98 (0.78)	5	3.81 (0.76)	5	3.79 (0.7)	4
3	I am interested on well-arranged and attractive presentation / form of information	4.01 (0.76)	3	3.85 (0.81)	3	3.64 (1.08)	5
4	I am interested on competent information which doesn't have any bias	4.05 (0.78)	2	3.93 (0.76)	2	3.86 (1.03)	3
5	I choose to look at just that information which I can use immediately.	3.98 (0.78)	4	3.84 (0.77)	4	4 (0.88)	2

TABLE V INFORMATION CHARACTERISTICS PREFERENCES VS EXPERIENCE

S. No.	Description	Less than or equal to 5		6 to 10		11 to 15		16 to 20		21 and above	
		Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank
1	I am interested on information from well-known reliable sources	4.21 (0.67)	1	4.38 (0.59)	1	4.3 (0.7)	1	4.26 (0.73)	1	4.38 (0.57)	1
2	I am interested especially in new innovative ideas.	3.83 (0.79)	5	3.88 (0.76)	5	4.1 (0.71)	2	3.97 (0.66)	3	4.12 (0.71)	4
3	I am interested on well-arranged and attractive presentation / form of information	3.85 (0.83)	4	4.1 (0.67)	3	4.07 (0.74)	3	3.77 (0.8)	5	4.17 (0.66)	3
4	I am interested on competent information which doesn't have any bias	3.91 (0.8)	2	4.25 (0.54)	2	4.03 (0.76)	4	4.13 (0.72)	2	4.2 (0.71)	2
5	I choose to look at just that information which I can use immediately.	3.86 (0.81)	3	4 (0.68)	4	4 (0.74)	5	3.84 (0.82)	4	4.12 (0.68)	5

Rank is derived for each experience group based on the mean and standard deviation of ophthalmologists' preferences. The ranks show up that most of the ophthalmologists in all experience prefer "I am interested on information from well-known reliable sources".

A Kruskal-Wallis H test was conducted to determine if ophthalmologists' preferences differ with experience groups. The mean ranks for the experience groups were Less than or equal to 5 years (296.16), 6 to 10 years (345.04), 11 to 15 years (352.93), 16 to 20 years (322.35),

21 and above years (368.25) respectively. The test showed that there exist a significant difference between ophthalmologists preference on information characteristics and experience groups ($\chi^2(2) = 17.543$, P-value=0.002).

The information characteristics preferences of ophthalmologists working in different institution types were analyzed further and ranks were assigned based on the mean and standard deviation. The mean, standard deviation, rank, and Kruskal-Wallis test results were shown in Table VI.

TABLE VI INFORMATION CHARACTERISTICS PREFERENCES VS INSTITUTION TYPES

S. No.	Description	Government		NGO		Corporate	
		Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank
1	I am interested on information from well-known reliable sources	4.15 (0.61)	3	4.27 (0.66)	1	4.26 (0.64)	1
2	I am interested especially in new innovative ideas.	4.15 (0.76)	3	3.89 (0.78)	5	3.91 (0.73)	3
3	I am interested on well-arranged and attractive presentation / form of information	4.29 (0.68)	1	3.91 (0.8)	3	3.87 (0.77)	4
4	I am interested on competent information which doesn't have any bias	4.1 (0.86)	5	3.99 (0.77)	2	4.01 (0.79)	2
5	I choose to look at just that information which I can use immediately.	4.27 (0.71)	2	3.91 (0.78)	4	3.83 (0.73)	5

Rank is derived for each institution type group based on the mean and standard deviation of ophthalmologists' preferences. The ranks show up that most of the ophthalmologists working in Government prefer "I am interested on well-arranged and attractive presentation / form of information". Most of the ophthalmologists working in the institution types "NGO" and "Corporate" prefer "I am interested on information from well-known reliable sources".

A Kruskal-Wallis H test was conducted to determine if ophthalmologists' preferences differ with institution types. The mean ranks for the institution types were Government (372.93), NGO (313.55), and Corporate (310.27). The test showed that there doesn't exist any significant difference between ophthalmologists preference on information characteristics and institution types ($\chi^2(2) = 4.262$, P-value=0.119).

VII. CONCLUSION

Around 633 ophthalmologists working in 47 academic eye hospitals from 16 states of India were included in the study. The study aims to determine the key characteristics of information preferred by the ophthalmologists. The study results revealed that the majority of the ophthalmologists prefer well known reliable information. The statistical test results showed up that the information characteristics preferences of ophthalmologists differ by designation and experience. The study results will be helpful to the

ophthalmic librarians and service providers to understand the nature of the ophthalmologists' information preference. They should serve the ophthalmologists with reliable information. The ophthalmic librarians should develop quality norms for building the resource collection on their own or with the collaboration of subject experts. They should strictly follow those norms to build the resource collection. The information service providers like online databases, websites, discussion forums, etc. should ensure to deliver reliable information services.

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