

# Citation analysis of Oral Pathology and Microbiology Postgraduate dissertations submitted to Rajiv Gandhi University of Health Sciences, Bengaluru

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## Abstract

**Background:** Researchers often need to refer a variety and quality resources during the study and finally publish their research findings. Upon informal observation, scenario appears to have changed with increased use of digital technology, rise in the number of open access journals, increased quantity of Grey literature and reduced use of printed library documents. Citation analysis can bring out useful information of a complex relationship in and out of the used documents.

**Aims:** To find out the current trends of the citations with the objective to identify the distribution, frequency of citations by format and their ranking by descriptive analysis.

**Method:** The present study analysed 2,174 citations from PG dissertations in the subject of Oral Pathology & Microbiology submitted to Rajiv Gandhi University of Health Sciences, Bangalore with the descriptive analysis to find the distribution of resources by format and rank.

**Results:** It is found that journals are most dominant form of resources cited (84.9%), followed by books and electronic resources. Reports and Newsletters are less consulted form of citation, dissertations and conference proceedings are the least used sources.

**Conclusion:** The study examined the awareness of the Post graduates of oral pathology and microbiology about different types of resources available, journals are the most widely used references and conference proceedings are the least commonly used..

**Keyword:** Citation, postgraduate dissertation and Health University

## Introduction :

Present Dental education scenario and the knowledge environment : As per the Dental Council of India announcement of 2011, there are 290 Dental Colleges in the country, with the total enrolment of around 23,590 undergraduate students and more than 2800 postgraduates every year in various specialties of dentistry.<sup>1</sup> There is a much decline in the availability of employment in dental specialties. At the same time the research work followed by their publications has increased in quantity raising doubts in the quality of many works.

Writing a long term paper is different from that of dissertation which accomplishes extensive reading and learning, as compared by Brause RS.<sup>2</sup> Citations normally provide the bibliometric data about the used documents in a paper or a dissertation work. Citation analysis can bring out useful information of a complex relationship in the used documents. The main purpose of this study is to

find out the current trends of the citations of the Post Graduate dissertations in t Oral Pathology and Microbiology submitted to RGUHS. So the objective of this study is to identify the distribution, frequency of citations by format and their ranking by descriptive analysis.

It is worthwhile to revisit some terminologies. The Oxford dictionary meaning of a bibliography is a list of the books referred to in a scholarly work, typically printed as an appendix. A citation can be described as an acknowledgement by written reference to a specific work or portion of a work.<sup>3</sup> Smith LC quoted Francis Narin (Evaluative Bibliometrics 1976, pp. 334, 337) in his article<sup>4</sup> as 'A reference is the acknowledgment that one document gives to another; a citation is the acknowledgment that one document receives from another'. Scientometrics is the study of measuring and analyzing science research, often done using 'bibliometrics' which is a set of methods to quantitatively analyze academic

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literature.<sup>5,6</sup> Citation analysis is a common bibliometric method which is the examination of the frequency, patterns, and graphs of citations that is appended with the research communication in articles, books, etc.<sup>7,8,9</sup>

### Methodology

This is a descriptive study of references which were collected from 36 Post Graduate dissertations of Oral Pathology and Microbiology submitted to Rajiv Gandhi University of Health Sciences, Karnataka, Bengaluru, accessed from <http://www.rguhs.ac.in>. The study included the dissertations submitted between the years 2009 - 2013. From each bibliography references linking to books, journals, reports, e-resources, reports, newsletters, dissertations and conference proceedings were taken for analysis. A total of 2,244 citations were collected, tabulated and analyzed.

### Analysis and interpretation

2,244 citations were included for the descriptive analysis to ascertain the format of literature cited, frequency and ranking of citations.

**Table: 1** Distribution of resources cited by format

Sl. No.	Types of Resources	Frequency	Frequency percentage
1	Books	250	11.14%
2	Journal	1905	84.89%
3	E resources	54	2.41%
4	Reports	13	0.58%
5	Newsletters	16	0.71%
6	Dissertations	1	0.04%
7	Conference proceedings	4	0.18%
8	Others/Unidentified	1	0.04%
	Total	2,244	

Table 1 shows variety of resources such as Books, Journals, E-resources, Reports, Newsletters, Dissertations and Conference proceedings. It is revealed that Journals (84.89 %) are most dominated form of information cited followed by Books (11.14%), E-resources (2.41%), Newsletters (0.71%), Reports (0.58%), Conference proceedings (0.18%), Dissertations (0.04%) and an unidentified resource(0.04%).

**Table 2: Distribution of resources Cited by Rank**

Sl. No.	Type of resources	Rank
1	Journal	I
2	Books	II
3	E resources	III
4	Newsletters	IV
5	Reports	V

6	Conference proceedings	VI
7	Dissertations	VII
8	Others/Unidentified	VIII

**Table 2** Depicts that Journals are the main source of information followed by the others in the order of their ranking.

### Results

1. The study found that Journals (84.89%) are most dominated form of information cited by PG research Scholar.

2. Journals are followed by Books (11.14%) and e-resources (2.41%). Newsletters (0.71%), Reports (0.58%), Conference proceedings (0.18%) and dissertations (0.04%) are least consulted form of citations.

### Discussion

Publishing the research work in high quality journals is an integral part of academic life. Researchers often need to refer a variety and quality resources derived from the best literature on the topic during the study and finally publish their research findings. But failure to acknowledge the ideas through citation or reference could result in an accusation of plagiarism.<sup>10</sup>Citation and reference data can benefit our knowledge of the information systems by providing information on the authors' subject coverage as well as size and growth of literature on particular subject. Citations which normally provide the bibliometric data about the used documents which can be better utilized for bibliometric studies in many respects and plays a significant role in research of Library and information science.

The purpose of study is to investigate the use pattern of literature as revealed through the citation analysis of the Post Graduate dissertations submitted from the year 2009 till 2013 in the Rajiv Gandhi University of Health Sciences, Karnataka.

The figure of Journal article references (ranked I) is substantially much higher than the books (ranked II) which is not surprising. It definitely indicates authors' right choice to cite. The information contained in a journal article is often more valuable than the information found in books, because turnaround time for journals is usually quite short, and presenting fresh and valid research information, while it takes months or years for a book to be published.<sup>11</sup>Newsletters includes magazines, usually have a more general readership, with second hand information, which is distinct from a journal which is generally for the audience of very specific field with original information.<sup>11</sup>

Electronic Resources includes e-databases (Usually through group or consortia of libraries like HELINET), e-journals, e-books, newspaper articles, book reviews, conference proceedings etc, found on intranet of an institution or internet.<sup>12,13,14</sup> The e-resource may not appear on the World Wide Web through search engines like Google and even if appears it will not be authenticated to publish. Incredible amount of knowledge can be obtained sitting at a single place through a computer but certainly have unstable e-texts in the webpage or the cited entire electronic document might be there today and gone tomorrow.<sup>15</sup> E-resources are ranked III and is much comparatively less to journal articles although growth of online electronic resources had tremendously increased in the recent years.<sup>16</sup> Because of the perception that many articles are pay articles the library search engines and catalogs are used only to locate journal articles by the PG scholars of RGUHS. Mr. Shivapathasundaram in his editorial work quoted 'most of the Indian journals are available online, providing increased visibility to the international readers, have cost effective subscription rates and provide free access to the full text of the manuscript online'.<sup>17</sup>

Reports, Conference proceedings, Dissertations and even newsletters are considered to be the part of Grey literature which is informally published written material.<sup>18</sup> Though its validity is sometimes but not always questionable, it shows extensive use of literature and the author's inquisitiveness as sometimes logical explanation in the discussion part of the study is possible with the grey literature which can give most recent information.<sup>18</sup> Only 0.71% from newsletters (ranked IV), 0.58% from reports (ranked V), 0.18% from conference proceedings (ranked VI) and 0.04% from previous dissertations (ranked VII) have been cited in this study. The awareness of the PG scholars to exploit Grey literature (which can be used with appropriate content) and used as a resource for citing in the theses appears to be much lower.

Studies done in a region or nation will be more beneficial and better appreciated by the readers belonging to the same region.<sup>17</sup> Gutka related premalignancy or cancer are unique to Indian subcontinent and the studies of which provide indigenous information. Studies in the same research field belonging to the same University or the same nation should be connected or linked collectively to build the indigenous knowledge which appears to be lacking here as shown by the figure of only 0.04% references from previous dissertations in this study.<sup>19</sup>

It is hard to make complete conclusion based on our

results alone because the resources cited obviously vary according to different research fields. For example, the studies related to histotechnology in India show less references from journals but more that of books and grey literature as there are relatively less number of journals existing or less subscribed in India and above that only few have open access. However, the result of our descriptive study provides a rationale for new studies using the large sample size.

**Conclusion :** Citations play an important role in carrying out research. The preferences of literature cited in their theses are journals followed by books, conference proceedings, other documents, and reports. It is evident from the citations that PG research scholars consulted enormous literature while preparing their dissertations. These sources provided factual information to the researchers. However, awareness and access to electronic resources and use or exploitation of grey literature (with appropriate content) and the connected or linked new research studies to build the indigenous knowledge are some factors that needs to be considered for research excellence in Higher Education.

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