

# Trends in Authorship in an Indian Pediatric Dentistry Journal: Relevance of Matthew Effect

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## Review

### ABSTRACT

**Introduction:** The maxim “rich get richer and the poor get poorer” forms the basis for Matthew effect in Science. Our goal of conducting this study was to test the hypothesis that the gap in number of publications between renowned, older authors and newer authors amongst Indian pediatric dentists widens over time as stated by the Matthew effect and possible trends in publication in Journal of Indian Society of Pedodontics & Preventive

Dentistry (JISPPD). **Materials and methods:** It was hypothesized that the Matthew effect is applicable to the work published by Indian Pedodontists in the official publication of Indian Society of Pedodontics & Preventive Dentistry (ISPPD). The names of the authors in JISPPD from 1996 to 2011 were recorded year wise and the data was entered in Microsoft excel 2007 and analyzed using SPSS software. **Results:** The study revealed that there were a total of 823 papers published in JISPPD during the study period

(1996 to 2011) by 1142 authors. 71.6% authors had contributed only one paper and 14.4% authors had contributed two papers during the study period. Only 0.6% authors had contributed to 20 or more papers. The results revealed evidence of Matthew effect for publications in JISPPD and the effect is relatively large. **Conclusions:** The results of the study showed that the Matthew effect is prevalent in the publication trends in JISPPD. **Key words:** Indian, Pediatric dentist, Matthew effect, publication trends.

## 1. INTRODUCTION

According to St. Matthew's Gospel; XXV: 29 “Qui enim habet, dabitur ei, et abundabit; Qui autem non habet, et quod habet, auferetur ab eo” translated as “For unto every one that heath shall be given, and he shall have abundance: but from him that heath not shall be taken away even that which he heath”. In simple terms; this can be summarized as, “The rich get richer, and the poor get poorer.” This forms the basis of Matthew effect stated for the first time by Robert K. Merton in 1968 in sociology of science (1).

The concept denotes that better known scientists get more credit than their lesser known counterparts for comparable achievements. Another term used for this effect is “cumulative advantage”. This states that a relatively favorable position itself acts as a resource and produces further gains and this creates inequality in any process over time (2).

Small differences in initial status tend to get amplified over time to generate cumulative advantages. The work of an author with accredited experience is accepted for pub-

lication more easily than those of a young author. This concept has since been applied to several fields such as learning (3, 4), sports (5), publication trends (6, 7), health development (8) etc.

Our goal of conducting this study was to test the hypothesis that the gap between renowned, older authors and newer authors amongst Indian pediatric dentists widens over time as stated by the Matthew effect and possible trends in publication in Journal of Indian Society of Pedodontics & Preventive Dentistry (JISPPD).

## 2. METHODOLOGY

In order to test the hypothesis that Matthew effect is applicable to the contribution of Indian Pediatric dentists to scientific literature, a cross sectional study was carried out from the month of June, 2012 to January, 2013. It has been hypothesized that Matthew effect is applicable to the contribution of Indian Pediatric dentists to scientific literature. It was then decided to examine the official journal of Indian Society of Pedodontics & Preventive Dentistry

(JISPPD). The journal is indexed and published quarterly. It is also available in full text from www.medind.nic.in.

Before conducting the study, a literature search was carried out on PubMed, Google scholar and institutional library to identify any literature reporting the applicability of Matthew effect in contributions of Indian Pediatric Dentists to scientific literature. The keywords ‘Matthew Effect’, ‘Pedodontics/ pedodontists’, ‘Pediatric Dentistry/ Dentist’, ‘Indian’ were used for online search and no such study could be found out. After confirming that there is no published data article available on the applicability of Matthew effect on the authorship of Indian Pedodontists, it was then decided to conduct a study with an aim to identify the prominent contributors of JISPPD and observe a trend in their authorship. It would also help to create awareness among Indian dental professionals and editors on this important topic.

After this, a search was conducted from 1996, the year from which the articles are available online till 2011,

the year all four issues are available online. Issues of year 2012 were not included in the study as all the issues had not been available online at the time of study. A total of 823 papers were retrieved from the journal since 1996. The names of all the authors in the Journal of Indian Society of Pedodontics & Preventive Dentistry were recorded year wise. Names of 1144 authors were retrieved who had a minimum of one publication in the journal. The data was entered in Microsoft excel 2007 and analyzed using SPSS software. This whole process was done by two authors and randomly rechecked by the other two authors. Ethical approval was not required for this study as it does not constitute biomedical research or involve human or animal subjects. All the information used in this study was available in the public domain.

### 3. RESULTS

Overall, 823 papers published during the study period were analyzed. These comprised of original research, case reports, review articles, letter to editor, guest editorials and editorial commentary. The total number of editorials was 44 and there were two letters to the editor. These were excluded from the study. The total number of authors was 1142. Amongst these the maximum number of new authors was added after 2007. During the time period of 1996-2006, the total number of authors was 590 for 463 papers (table 1) whereas 548 new authors were added with a total of 360 papers from 2007 onwards. The mean number of authors per paper was 2.87 (range 1-8). 71.6% authors had contributed only one paper and 14.4% authors had contributed two papers during the study period. Only 0.2% authors had contributed to more than 50 papers. Only 2.4% of the authors had contributed to ten or more papers.

No. of Articles	1996-2006		2007-2011		1996-2011	
	No. of Authors	Percentage (%)	No. of Authors	Percentage (%)	No. of Authors	Percentage (%)
1	407	35.6	515	45.1	818	71.6
2	83	7.3	88	7.7	165	14.4
3	40	3.5	27	2.4	58	5.1
4	18	1.6	14	1.2	33	2.9
5	12	1.1	8	.7	18	1.6
6	4	.4	7	.6	8	.7
7	5	.4	2	.2	8	.7
8	2	.2	0	0	8	.7
9	3	.3	0	0	2	.2
10	2	.2	1	.1	3	.3
11-15	7	.6	1	.1	8	.7
16-20	3	.2	1	.1	6	.5
21 and above	4	.3	1	.1	7	.6
Total	590	51.7	665	58.1	1142	100

Table 1. showing distribution of number of authors according to their contribution

One more interesting finding from the data is that after year 2007 till 2011, about 92 new authors on an average contributed into the articles of the journal whereas, it was about 30 only for the period of 2001-2006.

### 4. DISCUSSION

The implication of Matthew effect in authorship for scientific articles has been considered as an unavoidable bias in the literature and a rapidly progressive field with novel inventions will not abide by Matthew effect. In order to study whether Matthew effect is prevalent in the authorship trends of Indian pediatric dentists, the present study was planned. With this goal in mind, the official publication of ISPPD, i.e., JISPPD was analyzed. This is one of the oldest Indian dental journals indexed in PubMed/MEDLINE as well as various other indexing sites such as Caspur, DOAJ, EBSCO Publishing's Electronic Databases, Expanded Academic ASAP, Google Scholar, Hinari, Index Copernicus, MedInd, Index Medicus, National Science Library, Scimago Journal Ranking, SCOPUS etc (9). (Figure 1)

The results obtained in this study shows skewed distribution towards

some prominent authors in publications in the journal. The majority of papers were contributed by a handful of authors only. On the surface it might appear as the Matthew effect is prevalent in the field. However it should be kept in mind that these are older and more experienced researchers. The high number of their publications may also be due to the longer time spent by these in the field as compared to newer entrants.

An interesting finding of this study was that various new authors were added from year 2007. When analyzed in detail, the average number of addition of new authors per year in the Journal of ISPPD from year 2007 was about 90 whereas it is about 30

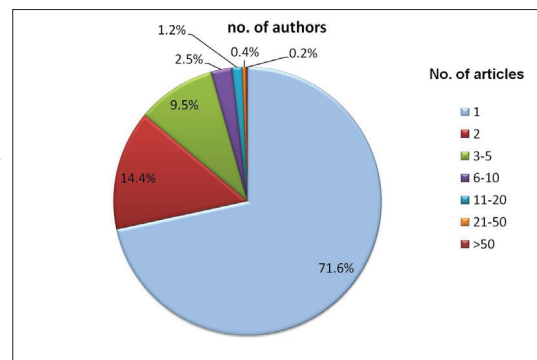


Figure 1. Showing distribution of publications contributed by authors

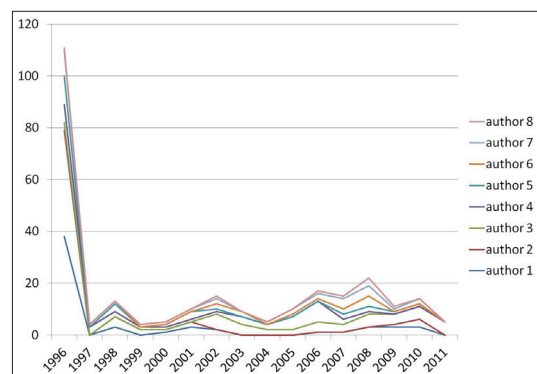


Figure 2. Showing year wise distribution of number of articles published by top eight authors with more than 20 publications. (N.B. There was an increase in articles contributed by foreign researchers in 2004 leading to a decrease in contributions by Indi.

from year 2001 to 2006. The reason for such a finding might be that the regulatory body for dental education in India, i.e., Dental Council of India (DCI) issued a notification regarding revision of minimum requirements for becoming teaching faculty in dental schools in India (10). According to this notification, each faculty member should have a certain number of publications to their credit. This might be the impetus for several

researchers to publish their work and a sudden splurge of new authors. The reasons for excluding editorials from the study are obvious as inclusion of the same could have led to a skewed data in favor of the journal editors. A large number of foreign authors also formed a part of the contributors thus reducing the number of publications of Indian authors in year 2004. (Figure 2)

One of the limitations of this study is that although the journal chosen for the study is being published since 1983, however, only the issues available online from year 1996 could be included. Thus the true picture of the trends of the previous years could not be elicited. Moreover, a total of four issues were not available online and few authors had similar names or initials leading to confusion in their identity. Another limitation is that due to the social norm of change in the surname of females in India after marriage, it is possible that same author being counted twice. This however formed


a very small percentage and the difference would not have affected the results grossly.

## 5. CONCLUSION


Our findings suggest that about 2.1% of total number authors are contributing in almost 50% of the publications in JISPPD. Such bias depreciates the value of the work done by lesser known authors and negatively impacts scientific output.

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### Welcome to EASE

**12th EASE General Assembly and Conference, Split, 13th – 15th June 2014**

Planning is now well under way for our next Conference. We are delighted that Nobel Laureate **Tim Hunt** has agreed to be our Keynote speaker. Tim is an inspirational speaker whose enthusiasm for science shines through. He just wants to know "how things work!" We have invited him to reflect on the current state of science and how he thinks it may develop, including science publishing.

The other plenary speakers will be **Milena Zic-Fuchs** (Croatia), **Doug Altman** (UK) and **Jacob Rosenberg** (Denmark).

The provisional programme is available [here](#): more information will be added in due course. Information on [transportation and the main sights](#) is also now available (in pdf format).

Registration will open in January.

**EASE/ISMTE conference September 2013**

Participants had an excellent time in Blankenberge - informative, entertaining talks, interactive break-out sessions, good (and plenty of) food with sunshine for tea breaks on the roof terrace.

The poster prize was won by Shazia Khanam and Clarinda Cerejo for their poster, 'Can authors' editors help expedite peer review of the manuscripts they edit?'

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**2nd International Congress for Medical Writing**  
Wednesday, 19 February, 2014  
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**Izet Masic**  
Bosnia and Herzegovina

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