DOI: 10.7860/JCDR/2023/60270.18052

Original Article

Dentistry Section

Assessment of Knowledge of the DCI Point System among Orthodontists associated with a Dental College to Develop a Colour-coded Guide of Orthodontics Journals

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ABSTRACT

Introduction: The credibility of the published scientific literature is dependent on various dynamic factors like the type of research, type of journal, journal indexing, impact factor which are subjected to constant changes. Calculating publication points, as a form of performance measure to award promotions for postgraduate faculty is used in many developing and in some developed countries.

Aim: To determine the knowledge of the Dental Council of India (DCI) point system among orthodontists associated with a Dental College and to develop a colour-coded guide of Orthodontics journals.

Materials and Methods: This cross-sectional study was conducted in the Department of Orthodontics, of an Educational Institution from July 2021 to December 2021, and a structured questionnaire was self-designed and made available in Google forms. This cross-sectional epidemiological study was conducted among the orthodontic faculty. A total of 428 complete responses were obtained and all the responses were evaluated using one way analysis of variance with Tukey's Post-hoc tests and Independent sample t-test. A survey of all the journals that related to the field of orthodontics was performed in various databases. Journals that are included in the DCI categories were listed and colour-coded.

Results: Majority of study participants in this study were professors (53.3%) followed by readers and senior lecturers (15.9% each). Significant differences (p-value=0.021) were noted in participants' knowledge on the DCI points system based on designation. Almost all the respondents reported indexing of the journal to be the basis for selecting a journal. Only 8.4% responded that, they were not aware of the DCI's points system for publications. Subjects with self-reported awareness on the DCI points system showed a significantly higher mean knowledge score compared to their counterparts.

Conclusion: Subjects with self-reported awareness on the DCI points system showed a significantly higher mean (2.412±0.793) knowledge score compared to their counterparts. A colour-coded guide was developed to eliminate the bias in point calculation completely and help academicians select a journal suitable for academic promotions.

Keywords: Abstracting, Faculty, Guidelines, Indexing, Journal article, Publications

INTRODUCTION

With notable increase in research, the importance of publications in researcher's life particularly academician goes beyond providing a means of communication and knowledge exchange. In this competitive era, promotions for academicians are decided largely based on the number of publications entitled their name as well as the journal where they appear. However, the credibility of the published scientific literature is dependent on various dynamic factors like the type of research, type of journal, journal indexing, impact factor which are subjected to constant changes [1]. Simon S and Philip B reported that most of professors (70.5%) in India had little awareness about the indexing with a mean score in the range of 0-5 [2]. They suggested that although majority of faculty members engage in research and publication but end up compromising on the quality of journals. However, the results may not be applied to general population as the sample size is quite low. Keeping in view of this, the governing body for Dental Education, DCI has devised a broad point system for postgraduate faculty promotions in 2017 September in Indian Gazette like Medical Council of India (2016). DCI mainly divided journals into three broad categories Category-I: 1) Journals Indexed to Pubmed/Medline; 2) Journals published by Indian/International Dental Speciality Associations approved by DCI. Category-II: 1) Medical/Dental Journals published by Government Health Universities awarding dental degree or Government Universities awarding dental degree; 2) Original research/study approved by Indian Council for medical research/similar Government Bodies; 3) Author of text/reference book concerned to respective specialty; 4) PhD or any other similar additional qualification after Master of Dental Surgery (MDS). Category-III: 1) Journals published by Deemed Universities/Dental Institutions/Indian Dental Association; 2) Contribution of Chapters in the textbook [3,4].

Since then, every academician had been striving to publish his/her ideas and work in a journal with good indexing and falls under Category-I, II or III. In the due purpose, they spend most of their treasured time searching for a journal that fits the criteria as there is no clear mention of specific journals that come under each category. This is particularly true for Category-III as one must know the various universities that provide dental degrees. Despite the available data, there seems to be lack of clarity, leading to confusion among academicians even today during calculation of publication points [5].

Another aspect that adds to this is the number of publications. Most senior academicians have many publications to their name. There is a possibility that some of the journal publications are overlooked leading to miscalculation of publication points. So, it becomes imperative to have a quick guide that provides the necessary information instantly. Thus, the aim was to determine the knowledge of the DCI point system among orthodontist associated with a dental college and to develop a colour-coded guide of orthodontics journals.

MATERIALS AND METHODS

This cross-sectional study was conducted in the Department of Orthodontics, of an Educational Institution from July 2021 to December

2021. Ethical clearance was obtained from the ethical committee with reference number IEC VDC/2021/UG02/ODFO/Q/69. An informed consent was obtained from the participants prior to the study.

Inclusion criteria:

- Faculty working in educational Institutions on a full-time basis.
- Faculty with minimum of 03 publications.
- Faculty with minimum experience of 02 years.
- Faculty of orthodontic speciality.

Exclusion criteria:

- Newly joined Faculty
- Faculty of other specialities
- Part time academicians.
- Orthodontists not associated with colleges.

Sample size calculation: The sample size was calculated using G power software. The calculation were based on 95% confidence level, 80% power and expected α value of about 5%. The anticipated sample size was 384. The distribution of the samples based on designation.

STUDY PROCEDURE

A self-designed structured Questionnaire was developed and made available in Google forms. The questionnaire was subjected to validation by sending the Google forms total group of orthodontists whose experience is more than 10 years in academics in the field of orthodontics and their responses along with feedback were taken into consideration and made the required changes in the final questionnaire.

An email was sent to all the Orthodontists working in various Institutes across India. A total of 428 complete responses were obtained. The questionnaire contained 11 knowledge questions on the DCI points system. Besides providing descriptive statistics for participants' responses to individual questions, the study also quantified the knowledge score by assigning a score of one to a correct answer. Thus, the knowledge score ranged between 0 and 11.

Search strategy for colour-coded guide: The search strategy was based on the journals that were included/indexed in Pubmed/Pubmed central, Medline, Institutional affiliated by DCI, Deemed universities, Indian Council for Medical Research (ICMR), Government bodies, Indian Dental Association etc. A first survey of all the journals that related to the field of orthodontics was performed by using the following databases: Pubmed, Google Scholar, Institutional journals, university journals. An electronic search conducted for Pubmed was according to Cochrane collaboration guidelines using the MESH terms "Orthodontia", "Orthodontics", "Dentofacial orthopaedics", "Craniofacial" and Orthodontic journals etc., and the journals that were not indexed Pubmed/Medline in Category-I were excluded. (https://www.cochranelibrary.com/advanced-search/mesh)

Similar search was conducted for the other databases using the same MESH terms and later exclusion criteria was added such that journals that were not affiliated to DCI or any Indian institutional universities, Journals whose preference for publishing manuscripts not in English were excluded from Category-II and III. Two authors screened the journals independently and assessed the eligibility of the journals to be included in the categories and were colour-coded into Blue, Red, Green for Category-I, II, III, respectively. As per the revised guidelines of DCI point system, the scores can be calculated based on the type of research study, position of the author and category of the journal. In case of any disagreement, third author judgment was considered.

STATISTICAL ANALYSIS

The differences in knowledge score based on designation and self-reported awareness on DCI points system were evaluated using one way analysis of variance with Tukey's Post-hoc tests and Independent sample t-test, respectively. IBM Statistical Package for the Social Sciences (SPSS), version 20.0 software (IBM SPSS, IBM Corp., Armonk, NY, USA) was used for data analysis.

RESULTS

Majority of study participants in the present study were professors (53.3%) followed by readers and senior lecturers (15.9% each) [Table/Fig-1]. Almost all the respondents reported indexing of the journal to be the basis for selecting a journal. Only 8.4% responded that they were not aware of the DCI's points system for publications [Table/Fig-2]. there was significant difference in knowledge on DCI points system based on self-reported awareness on DCI points system (p-value=0.001) [Table/Fig-3].

Variable	Category	Frequency (n)	Percentage (%)
Designation	Professor	228	53.3
	Associate Professor	64	15.0
	Reader	68	15.9
	Senior Lecturer	68	15.9

[Table/Fig-1]: Descriptive statistics.

Parameters	Awareness	Frequency (n)	Percentage (%)
Basis for choice of journals	Indexing	424	99.06
	Random	4	0.93
Self-reported awareness on DCI categorisation of publications	Aware	392	91.6
	Not aware	36	8.4

[Table/Fig-2]: Descriptive statistics for self-reported awareness and choice of indexing.

Self-reported awareness	n	Mean	SD	SE	F-value	p-value
Yes	392	7.08	2.287	0.231	4.025	<0.001*
No	36	4.00	0.96	0.32		

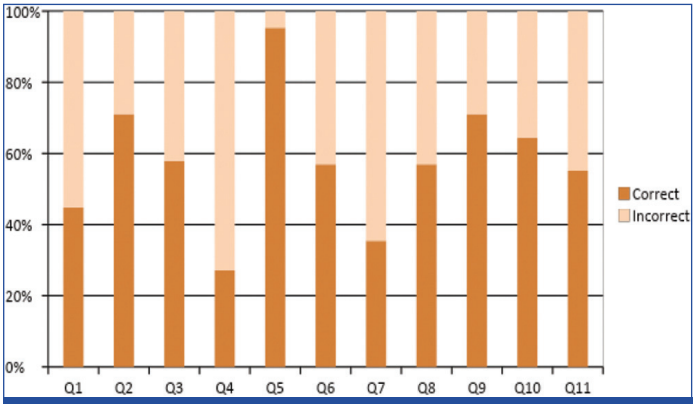
[Table/Fig-3]: Differences in knowledge on DCI points system based on self-reported awareness on DCI points system.
Independent samples t-test; p≤0.05 considered statistically significant; *denotes statistical significance

[Table/Fig-4] provides a detailed account of participants' responses to each of the 11 knowledge questions on the DCI points system. Highest percentage of participants had chosen the correct answer for all the knowledge questions, except for the two questions on 50% of points being awarded for second author in all categories and the category under which ICMR approved studies fall. [Table/Fig-5] presents an overview of the dichotomisation of participants' responses to each individual question as 'correct' and 'incorrect'. Significant differences were noted in participants' knowledge on the DCI points system based on designation [Table/Fig-6]. Associate professors demonstrated the highest mean knowledge scores (8±2.129) followed by professors (6.98±2.303). Senior lecturers had the least mean scores (5.59±2.093). [Table/Fig-7] presents the box plot showing differences in participants' knowledge on the DCI points system based on designation. In multiple pairwise comparisons using Tukey's post-hoc tests, significant differences were noted, exclusively between associate professors and senior lecturers [Table/Fig-8].

S. no.	Variables	Category	Frequency (n)	Percentage (%)
Q1	Minimum points for promotion as Professor	20	44	10.3
		30	192	44.9
		40	192	44.9
Q2	Number of categories in DCI points system	3	304	71
		4	124	29
Q3	Points awarded to first author for Category-II publications	5	48	11.2
		10	248	57.9
		15	124	29.0
		20	8	1.9
Q4	Second author is given 50% of maximum points for a publication in all categories	Yes	312	72.9
		No	116	27.1

Q5	For original research, all authors are given equal points up to a maximum of six authors	Yes	408	95.3
		No	20	4.7
Q6	Authorship in text/ reference book in corresponding specialty falls under	Category-I	88	20.6
		Category-II	244	57.0
		Category-III	96	22.4
Q7	ICMR approved studies fall under	Category-I	260	60.7
		Category-II	152	35.5
		Category-III	16	3.7
Q8	Publications in Journals of National/ International dental specialty associations recognised by DCI fall under	Category-I	244	57.0
		Category-II	32	7.5
		Category-III	152	35.5
Q9	Maximum number of Category-III publications considered in DCI points system	2	88	20.6
		3	304	71.0
		4	36	8.4
Q10	Journals indexed in the Web of Science may be considered under	Category-I	276	64.5
		Category-II	116	27.1
		Category-III	36	8.4
Q11	Patents may be considered under	Category-I	236	55.1
		Category-II	132	30.8
		Category-III	60	14.0

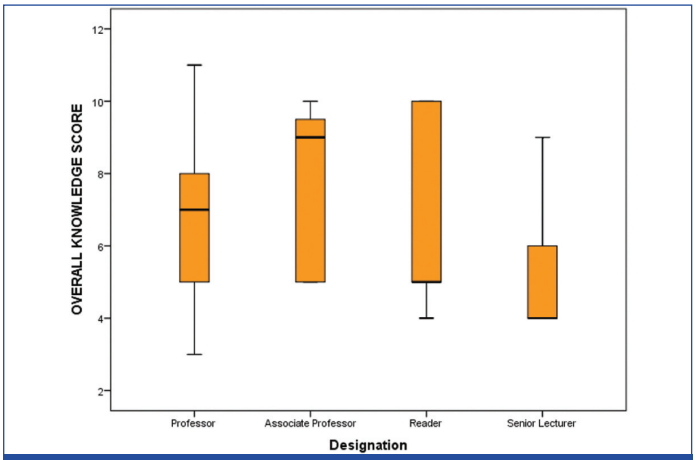
[Table/Fig-4]: Descriptive statistics for knowledge on DCI points system.



[Table/Fig-5]: Dichotomous graphical representation of subject's responses to knowledge questions on DCI points system.

Designation	n	Mean	SD	SE	F-value	p-value
Professor	228	6.98	2.303	.305	3.37	0.021*
Associate Professor	64	8.00	2.129	.532		
Reader	68	6.41	2.476	.601		
Senior Lecturer	68	5.59	2.093	.508		

[Table/Fig-6]: Differences in knowledge on DCI points system based on designation.



[Table/Fig-7]: Differences in knowledge on DCI points system based on designation.

Reference group	Comparison group	Mean difference	SE	p-value
Professor	Associate Professor	-1.018	0.644	0.394
	Reader	.571	0.629	0.801
	Senior Lecturer	1.394	0.629	0.125
Associate Professor	Reader	1.588	0.793	0.193
	Senior Lecturer	2.412	0.793	0.015*
Reader	Senior Lecturer	.824	0.780	0.717

[Table/Fig-8]: Multiple pairwise comparisons for differences in knowledge on DCI points system based on designation.
Tukey's post-hoc tests; p≤0.05 considered statistically significant; *statistical significance

Journal with colour coding	Acronym
American Journal of Orthodontics and Dentofacial Orthopaedics.	AJODO
Angle Orthodontist.	AO
Australian Orthodontics Journal	AOJ
Cleft palate and Craniofacial Journal (#)	CPCJ
Contemporary Clinical Dentistry (#)	CCD
Dental Press Journal of Orthodontics.	DPJO
DMIMS (Datta Meghe Institute of Medical Sciences) Journal of Dental Research (#)	JODR DMIMS
European Journal of Orthodontics.	EJO
Indian Journal of Contemporary Dentistry	IJCD
Indian Journal of Dental Sciences	IJDS
Indian Journal of Dentistry (#)	IJD
Indian Journal of Dental Research (#)	IJDR
Indian Journal of Oral Health and Research (#)	IJOHR
International Journal of Oral Health Sciences (#)	IJOHS
International Journal of Orthodontics Rehabilitation	IJOR
International Orthodontics	INT ORTHOD
IP Indian Journal of Orthodontics and Dentofacial research	IP IJODR
JDOR (Journal of Dental and Orofacial research) Journal	JDOR
Journal of Clinical Orthodontics	JCO
Journal of Contemporary orthodontics	JCO-IOS
Journal of Contemporary Dental Practice (#)	JCDP
Journal of Dental and Allied Sciences(#)	JDAS
Journal of Dental Research and Review (#)	JDRR
Journal of Dr.NTR UHS (Dr. NTR University of Health Sciences)	J NTR Univ Health Sci
Journal of Indian Dental Association (#)	JIDA
Journal of Indian Orthodontic Society.	JIOS
Journal of Orofacial Orthopaedics	JOFO
Journal of Orofacial Science (#)	JOFS
Journal of Orthodontic Sciences.	JOS
Journal of Orthodontics	JO
Journal of World Federation of Orthodontics	JWFO
Korean Journal of Orthodontics.	KJO
Nepal Journal of Orthodontics	NJO
Orthodontic Waves	ORTHOD WAVES
Orthodontics and Craniofacial Research	OCR
Progress in Orthodontics.	PROG. ORTHOD
Quintessence International (#)	QI
Revista Clinica de Orthodontia Dental Press	REV CLIN ORTHOD DENT
RGUHS (Rajiv Gandhi University of Health Sciences) Journal of Dental Sciences	JDS RGUHS
Seminars in Orthodontics.	SEMIN ORTHOD

The list of all journals in all categories has been illustrated in [Table/Fig-9] and a colour-coded guide of orthodontics journals has been given in [Table/Fig-10].

SRM Journal of Research and Dental Science (#)	SRM JRDS
TMU (Teerthanker Mahaveer University) Journal of Dentistry (#)	J D TMU
Turkish Journal of Orthodontics	TJO
University Journal of Dental Sciences (#)	UNIV J DENT SCI

[Table/Fig-9]: List of all journals in all categories.
(# denotes Multidisciplinary)

Category with colour coding	Indexed	Type of article	Authorship with scores					
			1	2	3	4	5	6
I (Blue)	Pubmed/Medline	Original	15	15	15	15	15	15
		Review	15	7.5	7.5	7.5	7.5	7.5
	Indian/International Dental Speciality Associations (DCI)	Original	15	15	15	15	15	15
		Review	15	7.5	7.5	7.5	7.5	7.5
II (Red)	Government Health Universities	Original	10	10	10	10	10	10
		Review	10	5	5	5	5	5
	Indian Council for Medical Research (ICMR)	Original	10	10	10	10	10	10
		Review	10	5	5	5	5	5
	Author of Text/ Reference book		10	5	5	5	5	5
	Phd /Additional qualification after MDS		10	-	-	-	-	-
III (Green)	Deemed Universities/IDA	Original	5	5	5	5	5	5
		Review	5	2.5	2.5	2.5	2.5	2.5
	Chapters in the textbook	Original	5	5	5	5	5	5
		Review	5	2.5	2.5	2.5	2.5	2.5

[Table/Fig-10]: Colour-coded guide.

DISCUSSION

The work nature in all Dental colleges in India predominantly involves research and teaching. Despite the dual nature of the job, career advancements and promotions chiefly depend on research performance. A widely accepted convention holds that the best research achievements are published in the most prestigious scientific journals and have a high impact, while lower quality achievements are published in less prestigious journals and have a low impact, according to a study done by Harvey EC et al., 2010 [6]. It is noteworthy that, with respect to research, the same performance measures (e.g publications, citations, and grants) can be meaningfully applied at the organisational and individual levels. Keeping in view of this, DCI has laid certain guidelines with a point system in 2016 for promotions [3]. In 2017, DCI made a few amendments to the existing points table [3]. However, there is an extension to the revised point system given by DCI in 2019 with elaborations [7].

In recent years, the work flow in Dental Institutes has become dynamic with growing opportunities for young orthodontists to join as academicians. These young people being enthusiastic and highly motivated seem to incline towards research. For, most of them rely on DCI points to choose the type of study they wish to undertake, journal and impact factor. On the contrary, they do not have enough experience to select appropriate journals for publication and often find it difficult to understand which category a journal fits in. So, the authors initially assessed the awareness regarding the DCI point system among all academicians pertaining to the speciality of Orthodontics. Based on the results, this is the first study of its kind in the literature on Orthodontics and dentistry, but the authors felt the need to create an index that aspires to make the work of all academicians easier while calculating the points awarded by assessing the faculty members' comprehension and raising awareness with the aid of this guide. The study's constraint is the absence of a uniform sample distribution and the absence of analysis of publications in national and international journals, books, and chapters.

Limitation(s)

The present study did not included journals which publish orthodontic article, but don't have the MeSH keywords in their title.

CONCLUSION(S)

The study's findings showed that Professors and Associate Professors had better knowledge compared to senior lecturers. The findings of the study indicate a need for faculty development programs that enable young orthodontists to gain a deeper grasp of selecting high-quality journals and authoring high-quality articles. The flip side is that the time spent on research might take teachers away from teaching or clinical duties, particularly in under-staffed speciality departments.

REFERENCES

[1] Rawat S, Meena S. Publish or perish: Where are we heading? J Res Med Sci. 2014;19(2):87-89.
[2] Simon S, Philip B. Academic journal indexing: a review of the awareness among faculty members in India. Kristu Jayanti J Human and Soc Sci (KJHSS). 2021;20:10-18.
[3] Shamim T. The point system of the DCI for publications by faculty. Natl Med J India. 2016;29:312.
[4] Dental Council of India MDS Course Regulations, 2017. Available from: http://www.dciindia.org.in/Rule_Regulation/MDS_Course_Regulations_2017.pdf.
[5] Aggarwal R, Gogtay N, Kumar R, Sahni P. The revised guidelines of the Medical Council of India for academic promotions: Need for a rethink. Natl Med J India. 2016;29:01-05.
[6] Harvey EC, Morris H, Kelly A, Rowlinson M. Academic Journal Quality Guide. (2010).
[7] Shamim T. Revised point system of the Dental Council of India for publications by faculty. J Family Med Prim Care. 2021;10:578.

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PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Sep 28, 2022
- Manual Googling: Jan 20, 2023
- iThenticate Software: Feb 27, 2023 (10%)

ETYMOLOGY: Author Origin

EMENDATIONS: 8

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Sep 17, 2022**
Date of Peer Review: **Dec 02, 2022**
Date of Acceptance: **Feb 28, 2023**
Date of Publishing: **Jun 01, 2023**