

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR: Dental Publication Service Available Online at: www.ijdsir.com

Volume - 3, Issue - 5, September - 2020, Page No.: 474 - 485

The Power and Perils: Perspectives of Being a Reviewer- A Questionnaire Study

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Citation of this Article: Dr. Divyangi Goel, Dr. Basavaraj Patthi, Dr. Ashish Singla, Dr Ravneet Malhi, Dr. Ambar Khan, Dr. Pankaj Kumar Chaudhary, "The Power and Perils: Perspectives of Being A Reviewer- A Questionnaire Study", IJDSIR- September - 2020, Vol. – 3, Issue - 5, P. No. 474 – 485.

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Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background: Publication system has tried to control their faults, all the way through incredible intensification and advancement in their system and reviewing forms a significant segment of the scientific publication procedure based on which papers are published.

Aim: To find out the perspective of dentists regarding merits and demerits of being a reviewer and effect of reviewing process on the scientific literature.

Methodology: A cross-sectional study was conducted among 247 dentists working as academicians or clinicians

or both. A self-structured 19-item questionnaire was distributed, consisting of questions related to the general perspective of the study participants towards being a reviewer, along with the effects of reviewing on the scientific literature.

Statistical Analysis Used: Data was analyzed using Statistical Package for Social Sciences (SPSS) 25.0 (SPSS Inc., Chicago, IL, USA) and descriptive and analytical tests, including mean, standard deviation, and Chi square test were used. P < 0.05 was considered statistically significant.

Results: Majority of the dentists was having an optimistic opinion towards being a reviewer and believed that reviewing process enhances the quality work of the research papers. Reviewers considered the reviewing as a broad-spectrum notion in more optimistic way which was found to be statistically significant (p<0.05).

Conclusion: Reviewing help in improving the excellence of the manuscripts by endowing authors with the suggestions on how to, and also helps in identification of any kind of errors that need correction before publication.

Keywords: Attitude, Dentists, Manuscript, Review.

Introduction

Scientific misconduct, replication of results, falsification in various research processes, is continually increasing in literature world today which further assert the publication methods. Though, publication system has tried to control these faults, all the way through incredible intensification and advancement in their system. [1] Still excellence, consistency and veracity of scientific literature are heated debate topic for researchers. In order to minimize these deficits reviewing procedure with systematic feedback of results is one of the empirically effective method for assessment of scientific literature and its assured quality. [2, 3]

Reviewing forms a significant segment of the scientific publication procedure based on which papers are published .[4] Reviewing, also acknowledged as 'refereeing', is the critical judgment of manuscripts submitted to journals by experts who are not a part of the editorial staff.[5] and it represents a number of the valuable and interesting reflections on other peoples' work.[6]

Review is deliberately done to serve up two major purposes. Firstly, it acts as a sieve to make certain that only high quality research is published, by determining the validity, implication and uniqueness of the study. Secondly, review is intended to advance the superiority and excellence of manuscripts that are deemed appropriate for publication. These are done by experts entitled as reviewers; who have knowledge, experience and have interest in the topic of the manuscript. [5] They help in improving the excellence of the manuscripts by endowing authors with the suggestions on how to, and also helps in identification of any kind of errors that need correction before publication. [7]

Even few of surveys have also reported that reviewing process enhances the quality work of the research papers and in 2004 Williams HC observed that good quality remarks by a reviewer possibly will assert the author's worth and can lead to improvement in their work by provision of the precise guidance. Their feedback leads to a selfless response to criticism and instigates selfcorrections by the authors. [8] In 2017 Hellauer RT et al also found the reviewing as a broad-spectrum notion as well as mainstream scholarly academic practice. [9] Even Ware M (2015) praised the reviewers in his study and found their attitude towards reviewing was positive. [10] assessment of manuscripts Review is usually acknowledged to be an apt mode to help the editorial staff of scientific journals to arrive at informed decisions about which papers to accept for publication. It is also a means by which reviewers can contribute to the valuable translation of new thoughts into print. However, two assumptions are inherent in this statement, first, that editors can recruit experienced reviewers to guide the journals' decision-making efforts; and second, that reviewers will take the time to do a plausible job of this voluntary, usually unsung work. [11] Hence, an attempt has been made through the current study to find out the opinions of dentists regarding merits and demerits of being a reviewer.

Methodology

A questionnaire based cross-sectional study was carried out among the 247 dentists working as clinicians, academician or both as academicians and clinicians in and around Meerut. Ethical approval was obtained from the Institutional Review Board, D.J. College of Dental Sciences and Research, Modinagar, Ghaziabad district, Uttar Pradesh, India and informed consent was taken from all the study participants prior to the study. Participation in the study was voluntary and confidentiality of data was maintained. The questionnaire used in the study consisted of 19 questions, to evaluate the perspective of dentists regarding merits and demerits of being a reviewer and effect of reviewing process on the scientific literature.

- A. Questionnaire Validation: The questionnaire was pretested on 45 dentists who were not included in the main study and comprised 18.2% of the study sample for reliability and validity. Reliability of the questionnaire was assessed using test-retest and internal consistency of the questionnaire was ascertained by Chronbachs-Alpha (α). Construct validity of the questionnaire was assessed using Spearman's correlation coefficient between individual parameter/construct and overall score of the construct.
- **B. Data** Collection: The questionnaire was self administered after explaining the study design to all the dentists who consented to participate in the study. Dentists were requested to complete the questionnaire within a week and were reminded once before the deadline.

C. Statistical analysis: The collected data were analyzed using Statistical Package For Social Sciences (SPSS) 22.0 (SPSS Inc., Chicago, IL, USA) and descriptive and analytical tests, including mean, standard deviation, Chi square test and Independent T-test. P < 0.05 was considered statistically significant.

Results

The questionnaire based study was carried out among 247 dentists working as, academicians, clinicians or both academicians and clinicians in and around Meerut City out of which only 225 dentists responded to the questionnaire generating the response rate of 91.1%. According to the perspectives of study subjects regarding review process, most of the participants responded to the questions in a positive way. Table 1 shows the frequency distribution of the total study subjects to the questions enlisted in the present study regarding perspectives of being a reviewer and impact of review process on the scientific literature. The comparison of perspectives, regarding being a reviewer and the effect of reviewing on quality of scientific literature, between reviewers and non-reviewers revealed a statistically significant association for almost all the questions (p<0.05). (Table 2) Table 3 shows the comparison of mean between reviewers and non-reviewers regarding their perspectives using independent t-test. The mean was higher for non-reviewers regarding most of the questions and the difference found was statistically significant in most of the cases (p<0.05).

Table 1: Perspectives of all the study subjects regarding review process

Question	Strongly	Agree	Neither agree	Disagree	Strongly	Mean ± SD
	agree	N (%)	nor disagree	N (%)	disagree	
	N (%)		N (%)		N (%)	
Slight experience is enough to	0 (0%)	67(29.8%)	45(20.0%)	88(39.1%)	25(11.1%)	2.68±1.019
be a good reviewer						
Understanding of the entire	169(75.1%)	56(24.9%)	0 (0%)	0 (0%)	0 (0%)	4.75±0.433
study is necessary for						
reviewing it						
Reviewing helps in	95(42.2%)	130(57.8%)	0 (0%)	0 (0%)	0 (0%)	4.42±0.495
enhancement of knowledge of						
a reviewer						
Reviewing helps to gain	110(48.9%)	115(51.1%)	0 (0%)	0 (0%)	0 (0%)	4.49±0.501
expertise in the literature						
related to your field						
Reviewing helps in career	70(31.1%)	110(48.9%)	42(18.7%)	03(1.3%)	0 (0%)	4.10±0.738
advancement						
Reviewing helps in	85(37.8%)	115(51.1%)	0 (0%)	25(11.1%)	0 (0%)	4.16±0.895
development of critical						
thinking						
Being a reviewer is a better	25(11.1%)	85(37.8%)	112(49.8%)	3(1.3%)	0 (0%)	3.59±0.703
way to enlighten one's						
identity						
Reviewing leads to	100(44.4%)	100(44.4%)	25(11.1%)	0 (0%)	0 (0%)	4.33±0.668
improvement in the author's						
manuscript						
Reviewing helps in	60(26.7%)	149(66.2%)	0 (0%)	16(7.1%)	0 (0%)	4.12±0.733
enhancement of						
communication and learning						
skills						
Reviewing makes a positive	75(33.3%)	105(46.7%)	26(11.6%)	19(8.4%)	0 (0%)	4.05±0.888
contribution in an individual's						
promotion and tenure						
Reviewing provides chances	115(51.1%)	65(28.9%)	26(11.6%)	19(8.4%)	0 (0%)	4.23±0.958
to establish relationship with						

reputable colleagues and their						
journals						
Reviewing helps In	70(31.1%)	130(57.8%)	25(11.1%)	0 (0%)	0 (0%)	4.20±0.620
prevention of ethical breaches						
by identifying research						
frauds, plagiarism etc.						
There are chances of study	90(40.0%)	84(37.3%)	25(11.1%)	26(11.6%)	0 (0%)	4.06±0.987
replication by a Reviewer						
Reviewer's help in	78(34.7%)	112(49.8%)	0 (0%)	25(11.1%)	10(4.4%)	3.99±1.094
maintenance of their journal's						
standard of quality						
Being a reviewer is a burden	0 (0%)	83(36.9%)	117(52.0%)	0 (0%)	25(11.1%)	3.15±0.892
to an individual						
Reviewing helps in	75(33.3%)	140(62.2%)	10(4.4%)	0 (0%)	0 (0%)	4.29±0.544
improvement of writing and						
editing skills						
Being a reviewer widens the	120(53.3%)	80(35.6%)	25(11.1%)	0 (0%)	0 (0%)	4.42±0.684
range of vision						
Reviewing makes the	88(39.1%)	137(60.9%)	0 (0%)	0 (0%)	0 (0%)	4.39±0.489
research more valid and						
reliable for the readers						
A formal training program	63(28.0%)	137(60.9%)	25(11.1%)	0 (0%)	0 (0%)	4.17±0.603
should be there for a reviewer						

Table 2: Comparison of Perspective between reviewers and Non-reviewers

	Groups	Strongly	Agree	Neither	Disagree N	Strongly	P value
		Agree	N (%)	Agree Nor	(%)	Disagree	
		N (%)		Disagree N		N (%)	
				(%)			
Slight experience	Non-	0(0%)	15(26.3%)	42(73.7%)	0(0%)	0(0%)	
is enough to be a	reviewer						0.000*
good reviewer	Reviewer	0(0%)	52(30.9%)	3(1.8%)	88(52.4%)	25(14.9%)	
Understanding of	Non-	42(73.7%)	15(26.3%)	0(0%)	0(0%)	0(0%)	
the entire study is	reviewer						0.000*
necessary for	Reviewer	127(75.6%)	41(24.4%)	0(0%)	0(0%)	0(0%)	
reviewing it							

Reviewing helps	Non-	0(0%)	57(100.0%	0(0%)	0(0%)	0(0%)	
in enhancement	reviewer						0.020**
of knowledge of	Reviewer	95(56.5%)	73(43.5%)	0(0%)	0(0%)	0(0%)	
a reviewer		75(56.570)	73(13.370)	0(070)	0(0,0)	0(0,0)	
Reviewing helps	Non-	0(0%)	57(100.0%	0(0%)	0(0%)	0(0%)	
to gain expertise	reviewer	0(070))	0(070)	0(070)	0(070)	0.739**
in the literature	Reviewer	110(65.5%)	58(34.5%)	0(0%)	0(0%)	0(0%)	0.737
related to your	Reviewei	110(03.3%)	36(34.370)	0(0%)	0(0%)	0(0%)	
field							
	NT	0(00()	42(72.70/)	0(00()	15/26/20/	0(00()	
Reviewing helps	Non-	0(0%)	42(73.7%)	0(0%)	15(26.3%	0(0%)	0.000*
in career	reviewer	2(1.00)	20(1.5.50()	440/57.7)	0 (001)	0.000*
advancement	Reviewer	3(1.8%)	28(16.6%)	110(65.5	27(16.1%	0(0%)	
				%))		
Reviewing helps	Non-						
in development	reviewer	42(73.7%)	15(26.3%)	0(0%)	0(0%)	0(0%)	0.000*
of critical	Reviewer						
thinking		43(25.6%)	100(59.5%	0(0%)	25(14.9%	0(0%)	
))		
Being a reviewer	Non-						
is a better way to	reviewer	0(0%)	33(57.9%)	24(42.1%	0(0%)	0(0%)	0.000*
enlighten one's)			
identity	Reviewer						
		25(14.9%)	52(30.9%)	88(52.4%	3(1.8%)	0(0%)	
)			
Reviewing leads	Non-	42(73.7%)	15(26.3%)	0(0%)	0(0%)	0(0%)	
to improvement	reviewer						0.000*
in the author's	Reviewer	58(34.5%)	85(50.6%)	25(14.9%	0(0%)	0(0%)	<u> </u>
manuscript							
Reviewing helps	Non-	0(0%)	42(73.7%)	0(0%)	15(26.3%	0(0%)	
in enhancement	reviewer		(, 5.1, 70))		0.000*
of	Reviewer	60(35.7%)	107(63.7%	0(0%)	1(0.6%)	0(0%)	
communication	Reviewei	00(33.170)		0(0/0)	1(0.070)	0(0/0)	
and learning)				
skills	N	0.000	10/70 70/	0/00/	15/05/00	0(00)	
Reviewing	Non-	0(0%)	42(73.7%)	0(0%)	15(26.3%	0(0%)	

makes a positive	reviewer)		0.000*
contribution in an	Reviewer	75(44.6%)	63(37.5%)	26(15.5%	4(2.4%)	0(0%)	-
individual's)			
promotion and							
tenure							
Reviewing	Non-	42(73.7%)	0(0%)	0(0%)	15(26.3%	0(0%)	
provides chances	reviewer)		0.000*
to establish	Reviewer	73(43.5%)	65(38.6%)	26(15.5%	4(2.4%)	0(0%)	=
relationship with)			
reputable							
colleagues and							
their journals							
Reviewing helps	Non-	9(15.8%)	48(84.2%)	0(0%)	0(0%)	0(0%)	
In prevention of	reviewer						0.000*
ethical breaches	Reviewer	61(36.3%)	82(48.8%)	25(14.9%	0(0%)	0(0%)	_
by identifying)			
research frauds,							
plagiarism etc.							
There are	Non-	42(73.7%)	15(26.3%)	0(0%)	0(0%)	0(0%)	
chances of study	reviewer						0.000*
replication by a	Reviewer	48(28.6%)	69(41.1%)	25(14.9%	26(15.4%	0(0%)	=
Reviewer))		
Reviewer's help	Non-	0(0%)	57(100.0%	0(0%)	0(0%)	0(0%)	
in maintenance	reviewer)				0.000*
of their journal's	Reviewer	78(46.4%)	55(32.7%)	0(0%)	25(14.9%	10(6.0%)	_
standard of)		
quality							
Being a reviewer	Non-	0(0%)	42(73.7%)	15(26.3%	0(0%)	0(0%)	
is a burden to an	reviewer)			0.000*
individual	Reviewer	0(0%)	41(24.4%)	102(60.7	0(0%)	25(14.9	
				%)		%)	
Reviewing helps	Non-	0(0%)	57(100.0%	0(0%)	0(0%)	0(0%)	
in improvement	reviewer)				0.000*
of writing and	Reviewer	75(44.6%)	83(49.4%)	10(6.0%)	0(0%)	0(0%)	-
editing skills							

Being a reviewer	Non-	42(73.7%)	15(26.3%)	0(0%)	0(0%)	0(0%)	
widens the range	reviewer						0.000*
of vision	Reviewer	78(46.4%)	65(38.7%)	25(14.9%	0(0%)	0(0%)	-
)			
Reviewing makes	Non-	42(73.7%)	15(26.3%)	0(0%)	0(0%)	0(0%)	
the research more	reviewer						0.001*
valid and reliable	Reviewer	46(27.4%)	122(72.6%	0(0%)	0(0%)	0(0%)	-
for the readers)				
A formal training	Non-	0(0%)	57(100.0%	0(0%)	0(0%)	0(0%)	0.000*
program should	reviewer)				
be there for a	Reviewer	63(37.5%)	80(47.6%)	25(14.9%	0(0%)	0(0%)	-
reviewer)			

^{*}significant ** non-significant

Table 3: Comparison of Perspective between reviewers and Non-reviewers (Mean, SD)

	GP	Mean	Std.	Mean	
			Deviati	differen	P value
			on	ce	
Slight experience is enough to be a good	Non Reviewer	3.26	.444		
reviewer	Reviewer	2.49	1.083	0.775	0.000*
Understanding of the entire study is necessary	Non Reviewer	4.74	.444		
for reviewing it	Reviewer	4.76	.431	019	0.5**
Reviewing helps in enhancement of knowledge	Non Reviewer	4.00	.000		
of a reviewer	Reviewer	4.57	.497	565	0.000*
Reviewing helps to gain expertise in the	Non Reviewer	4.00	.000		
literature related to your field	Reviewer	4.65	.477	655	0.000*
Reviewing helps in career advancement	Non Reviewer	4.47	.889		
	Reviewer	3.97	.633	.503	0.000*
Reviewing helps in development of critical	Non Reviewer	4.74	.444		
thinking	Reviewer	3.96	.924	.779	0.04*
Being a reviewer is a better way to enlighten	Non Reviewer	3.58	.498		
one's identity	Reviewer	3.59	.761	010	0.000*
Reviewing leads to improvement in the author's	Non Reviewer	4.74	.444		
manuscript	Reviewer	4.20	.677	.540	0.002*
Reviewing helps in enhancement of	Non Reviewer	3.47	.889		
communication and learning skills	Reviewer	4.35	.513	872	0.000*

Reviewing makes a positive contribution in an	Non Reviewer	3.47	.889		
individual's promotion and tenure	Reviewer	4.24	.800	770	0.1*
Reviewing provides chances to establish	Non Reviewer	4.21	1.333		
relationship with reputable colleagues and their	Reviewer	4.23	.796	022	0.000*
journals					
Reviewing helps In prevention of ethical	Non Reviewer	4.16	.368		
breaches by identifying research frauds,	Reviewer	4.21	.685	056	0.000*
plagiarism etc.					
There are chances of study replication by a	Non Reviewer	4.74	.444		
Reviewer	Reviewer	3.83	1.015	.909	0.000*
Reviewer's help in maintenance of their	Non Reviewer	4.00	.000		
journal's standard of quality	Reviewer	3.99	1.267	.012	0.000*
Being a reviewer is a burden to an individual	Non Reviewer	3.74	.444		
	Reviewer	2.95	.917	.790	0.04*
Reviewing helps in improvement of writing and	Non Reviewer	4.00	.000		
editing skills	Reviewer	4.39	.599	387	0.000*
Being a reviewer widens the range of vision	Non Reviewer	4.74	.444		
	Reviewer	4.32	.719	.421	0.000*
Reviewing makes the research more valid and	Non Reviewer	4.74	.444		
reliable for the readers	Reviewer	4.27	.447	.463	0.8**
A formal training program should be there for a	Non Reviewer	4.00	.000		
reviewer	Reviewer	4.23	.690	226	0.000*

^{*}significant ** non-significant

Discussion

Acquiescence of low eminence manuscripts has turned out to be progressively more customary now-a-days and reviewing acts as a filter to avert this work from reaching the scientific community. Reviewing helps to decide the papers that adequately meet up the journal's standards of eminence and originality prior to their publication. Reviewing is currently a standard and customary practice in the majority of credible scientific journals, and is an indispensable element of determining the reliability and excellence of work submitted, thereby providing a trusted form of scientific information. [7] Hence, it's necessary to

be well aware of the importance and perspectives of being a reviewer in the world of scientific literature.

In the present study, majority of the respondents felt that understanding of the entire study along with an adequate amount of experience and familiarity is mandatory for reviewing any manuscript as they play a significant role with an intellectual contribution towards maintaining the veracity and eminence of the journal. This is in agreement with the study done by Kristin K et al, where respondents were agreed to the fact that reviewers should be knowledgeable and well- informed in the content area.

It was also observed that reviewing helps in enhancement and augmentation of knowledge of the reviewers too along with humanizing their communication and learning skills. Thus they gain the expertise and proficiency in the literature field which enlightens their identity in the scientific world. The American Physiological Society also agrees to this that researcher's involvement in peer review helps in their promotions as well as career development. [13] Even, Kelly J et al also reported through their study that process of reviewing acts as a prospect to advance their research as it instigates innovative ideas and allows them to read about new experimental techniques. [7] In the current study 74.7 % of the study participants were

In the current study 74.7 % of the study participants were reviewers where as 25.3% were non reviewers and it was seen through their responses that reviewing improves the editing and writing skills and also makes the research more valid and dependable for readers, which was found to be statistically significant. $(p \le 0.05)$ This may be due to the fact that after critical evaluation of the manuscript authors are encouraged to meet the elevated principles of the discipline towards their research and to control the propagation of research data. The results are in agreement with various studies conducted by Weller AC et al (2001), Ware M (2008), where it was concluded that reviewing 'ensures the shape of good science' and assures that scientific literature becomes reliable, trustworthy, significant and important after critical reviewing process. [14, 15]

But approximately 40% of study subjects felt that being a reviewer acts as a burden for an individual which might be due to reason that many of the reviewers are still unpaid and unrecognized in most of the journals. Even the studies done by Smith R et al in 2006 and Stroebe W et al (2012) also claimed that peer reviewing is sometimes conservative, biased, and acts as a burden for many of the

reviewers and also considered the reviewing process as a myth that leads to improvement in the literature. [16, 17] It was also seen in the current study that reviewing leads to enhancement in author's manuscript and helps in deterrence of ethical breaches by recognition of research frauds, plagiarism etc and most of them also agreed to a fact that reviewing helps to keep up journal's standard of quality. Even the studies done by Kristin K et al (2017) and Schmidt B (2018) also identified that reviewer and review characteristics help in perking up the manuscripts for publication by augmentation of the quality and also aid editorial decisions.[12,18] At the same time, more than 75% of the respondents agreed that there are chances for study replication and imitation by a reviewer while the rest of them denied the statement and majority of the study respondents also felt that a formal training program should be there for reviewers and this was in agreement with the study by Klosterhuis H (2010) and Andre Strahl (2018) which revealed that an interactive training approach appears to be the most appropriate way to produce the skills required for unvarying and reliable standards of reviewing.[19,20]

In the present study comparison was also done among the reviewers and non reviewers and it was observed that reviewers were having strapping acuity towards perspectives of the reviewing process than non-reviewers. Reviewers strongly believed that they gain more expertise in the respective field after reviewing the manuscripts or researches and also improves their tenure by acting as a boon in their professional carrier advancement and the mean difference was found to be statistically significant. ($p \le 0.05$)

Our study showed that majority of the participants were having positive attitudes toward reviewing process which helps to encourage authors to meet the higher standards of journal's discipline and makes the scientific literature more honorable, pertinent and valuable.

Limitation and recommendation

Till date very limited studies analyzing the perspectives of reviewing process, have been reported. Therefore, there was not much literature available for comparison of this study which proved to be a major limitation. Also, further studies analyzing the perspectives of reviewing process and its effect on scientific literature should be carried out to elucidate the knowledge and importance of the same. A formal training course should be implemented for reviewers to enhance their skills and many more professionals should be encouraged to become the part of this reviewing process.

Conclusion

Publication system has tried to control scientific frauds or ethical breaches by advancing their system and reviewing process is one of the methods which helps to meet the higher standards of discipline and makes the science principled. Reviewing help in improving the excellence of the manuscripts by endowing authors with the suggestions on how to, and also helps in identification of any kind of errors that need correction before publication.

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