



# UNVEILING THE SHADOWS: GLIMPSE INTO INDIAN RESEARCHER'S PERSPECTIVE ON PUBLISHING NEGATIVE RESULTS.



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## INTRODUCTION



The accessibility and impartiality of clinical research evidence are vital for healthcare decision-making. However, much research goes unpublished, contributing to bias through selective reporting of positive outcomes. Negative results are undervalued in the competitive academic environment, despite their potential to challenge paradigms and improve methodologies. This reluctance perpetuates flawed concepts, misallocates funding, and impedes scientific advancement. Despite their significance, negative results often face skepticism and neglect in the scientific community. This study aims to explore researchers' perceptions and the barriers hindering the publication of negative results.



## MATERIAL AND METHODS



A cross sectional questionnaire survey was conducted among dental and medical teaching faculty of an Institute in Shimoga, Karnataka, India in August and September 2023, with ethical approval from the IEC. Written informed consent was obtained from the participants.

The questionnaire validated for face and content by experts and showing good reliability (Cronbach's analysis ( $\alpha=0.81$ , i.e. good) included 31 close ended questions across three parts.

1. Questions designed to collect the information related to demographic parameter of the study group such as age, dental or medical institute faculty, gender, designation and number of years of experience.
2. Questionnaire comprised of 11 questions pertaining to perception of dental and medical faculty on publishing the negative results.
3. Questionnaire comprised of 20 questions related to assessing barriers related to publishing the negative results. The questionnaire will take 10 minutes to complete for each individual.

Data was fed in SPSS (IBM version 23) for analysis. Descriptive statistics included mean, standard deviation, frequency and percentage.



## RESULTS



Out of 176 participants, 105 were medical and 71 were dental faculties. 60% of the faculty were females in both dental and medical institute. Average age (in years) was  $37.84 \pm 10.79$  in dental and  $39. \pm 11.83$  in medical faculty. Majority of the faculties were assistant professor and associate professors. The average years of experience was  $8.32 \pm 8.71$  in dental and  $13. \pm 9.75$  in medical faculty.

Table 1: Perception of publishing negative results among the dental and medical full time teaching faculty

Sl. No.	Perception of Publishing Negative Results	Responses	Dental	Medical
1.	Publishing negative results can avoid waste of resourced in terms of time, money and intellectual effort of the researchers.	Yes	68(95.7)	99(94.3)
		No	3(4.3)	6(5.7)
2.	Negative results of a study is your failure.	Yes	41(57.7)	25(23.8)
		No	30(42.3)	80(76.2)
3.	Journals will publish negative results.	Yes	21(29.5)	43(40.9)
		No	50(70.5)	62(59.1)
4.	Finding a different result from what is already published is a negative thing.	Yes	31(43.6)	57(54.2)
		No	40(56.4)	48(45.7)
5.	Negative results are worth sharing with the scientific community.	Yes	33(46.5)	55(52.4)
		No	38(53.5)	50(47.6)
Why would you not publish negative results?	It is too time consuming.		0(0)	0(0)
	Negative results are less cited than positive results.		9(12.6)	15(14.3)
6.	I need good publications to keep my job.		11(15.5)	21(20)
	My co-authors do not agree.		12(16.9)	12(11.4)
negative results?	It is too expensive.		15(21.1)	26(24.8)
	I collaborate with industry and they do not allow me.		10(14.1)	11(10.5)
	I am embarrassed, I wanted this to work.		14(19.8)	20(19)

- 67.6% in dental and 72.3% in medical, publish 1-2 articles annually. 4.8% in dental and 2.8% in medical faculty publish 5-10 articles annually.
- 60.5% in dental and 49.5% in medical faculty believe only positive results to be published.
- 83.1% in dental and 64.8% in medical, never published a negative result.
- 21.1% in dental and 48.6% of medical faculty - interested to publish negative results in future.
- 83.1% in dental and 89.5% in medical, recognize potential contribution - to scientific progress.

Table 2: Perception regarding barriers in publishing negative results among the dental and medical full time teaching faculty

Sl.no.	Do you think the following are the barriers in publishing negative results?		Dental		Medical	
	Yes	No	Yes	No	Yes	No
1.	Contextual/ Scientific	Prejudice against confirmatory research	28(39.4)	43(60.6)	81(77.1)	24(22.9)
		Pressure to produce successful research	71(100)	0(0)	94(89.5)	11(10.5)
2.	Individual, behavioral and cognitive	Exposure to failure	51(71.8)	20(28.2)	60(57.1)	45(42.9)
		Perception that it is a waste of time and resources to report	64(90.1)	7(9.9)	42(40)	63(60)
		Little personal interest in publicizing	61(85.9)	10(14.1)	50(47.6)	55(52.4)
3.	Professional	Uncertainty about results	28(39.4)	43(60.6)	45(42.8)	60(57.2)
		Negative impact on career on promotions	37(52.1)	34(47.9)	61(58.1)	44(41.9)
4.	Organizational	Little incentive to publish negative results by research institution, funders and private partners	5(7)	66(93)	32(30.5)	73(69.5)
		Little scientific rigor	57(80.3)	14(19.7)	74(70.4)	31(29.6)
5.	Academic	Questioning from colleagues	45(63.4)	26(36.6)	22(20.9)	83(79.1)
		Academic competition for prestige, position and funding	51(71.8)	20(28.2)	63(60)	42(40)
6.	Editorial	Few journals accept negative results	48(67.6)	23(32.4)	25(23.8)	80(76.2)
		Low impact of journals that accept	22(30.9)	49(69.1)	21(20)	84(80)
		Low level of citation of negative results	41(57.7)	30(42.3)	47(44.7)	58(55.3)



## DISCUSSION



- Barriers identified - Fanelli (2012); Matosin et al (2014); Hendrix (2016); Guimaraes et al (2018); Herbert M E (2022).
- Ali J (2010) ; Teixeira da Silva JA (2015); Echevarria L et al (2021)- Problem – traditional mindset (file drawer problem), rigid publishing framework including pressure and limited time(Publication Bias). Editors not accepting research without statistical analysis and do not report significant differences. Negative results increases reproducibility; it is building block for science and tells us what doesn't work. It should not be equated to bad science or poor study design.



## CONCLUSION



Both dental and medical faculties demonstrate a robust publication culture but show reluctance in publishing negative results. Utilization of alternative platforms for publishing like public repositories and academic networking sites is limited. This underscores the need for a shift in attitudes to recognize significance of negative data and support systems to actively promote its public dissemination.

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