COOKING UP INSIGHTS: UNEARTHING THE DATA FABRICATION ATTITUDES IN DENTAL AND MEDICAL FACULTIES OF INDIA.

Dr. Raksha Radhakrishnan (MDS in Oral Pathology and Microbiology) – General Dentist.
Mobile No.: 0091-9743289317. Email ID: raksharadhakrishnarai@gmail.com

INTRODUCTION

Scientific research faces ethical challenges, from mishandling intellectual property to distorting evidence. High-profile cases like Hwang Woo-Suk's fake stem-cell lines highlight the infiltration of fabricated data into prestigious journals, risking resources. While viewed as isolated, evidence suggests such cases are just a fraction of the problem. Fabrication, falsification, and plagiarism are universally recognized as serious misconduct. Data fabrication invents non-existent data, undermining research integrity. Addressing these issues is crucial, despite lacking a universal reporting procedure. This study aims to explore researchers' perceptions and attitude towards data cooking among dental and medical faculty.

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 (α=0.84,i.e. good) included 25 close ended questions across five parts.

- 1st part - Questions designed to collect demographic parameter - age, dental or medical institute faculty, gender, designation and number of years of experience.
- 2nd part – 4 questions – perception- research ethics education.
- 3rd part – 9 questions - perception of gifted authorship.
- 4th part – 9 questions on attitudes towards data cooking/falsification and fabrication of data.
- 5th part – 3 questions of perception of plagiarized author. 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±10.79 in dental and 39.± 11.83 in medical faculty. Majority of the faculties were assistant professor and associate professors. The average years of experience was 8.32±8.71 in dental and 13.± 9.75 in medical faculty.

Table 1: Perception of research ethics education

Sl.no	Question		Dental	Medical
1.	Do you think you have the information about research ethics	Yes	52(73.3)	90(85.7)
		No	19(26.7)	15(14.3)
2.	From where do you receive education on research ethics	Teachers/ mentor/ guides	35(49.3)	52(49.5)
		Conferences/ courses	23(32.4)	31(29.5)
		Self help	13(18.3)	22(21)
3.	Opinion on the need for research ethics education	Useful	41(57.7)	51(48.6)
		Not useful	9(12.7)	13(12.3)
		Necessary	21(29.6)	41(39.1)

Table 2: Perception of gifted authorship

Sl. no.	Questions		Dental	Medical
1.	Frequency of observed situation of gifted authorship	Never	17(23.9)	12(11.4)
		Rare	11(15.5)	21(20)
		Common	43(60.6)	72(68.6)
2.	Thinking about gifted authorship	Right	22(30.9)	31(29.5)
		Wrong	49(69.1)	74(70.5)
3.	Ever done this gifted authorship	Had done	59(83.1)	76(72.4)
		Had never done	12(16.9)	29(27.6)
4.	In future chance of gifted authorship is given	Accept	51(71.8)	35(33.3)
		Reject	20(28.2)	70(66.7)

Table 3: Attitude towards data cooking/falsification and fabrication of data

Sl.no.	Questions		Dental	Medical
1.	Frequency of observed situation of data cooking	Never	13(18.3)	22(20.9)
		Rare	12(16.9)	32(30.5)
		Common	46(64.8)	51(48.6)
2.	Action should be taken against data cooking	Take no action	0(0)	0(0)
		Warning	3(4.2)	11(10.5)
		Punishment	68(95.8)	94(89.5)
3.	Punishment should be	Moderate	52(76.5)	74(78.7)
		Severe	16(23.5)	20(21.3)
4.	Ever done this data cooking	Had done	5(7.1)	11(10.5)
		Had never done	66(92.9)	94(89.5)
5.	In future chance of data cooking is given	Accept	0(0)	0(0)
		reject	71(100)	105(100)

Table 4: Perception of the plagiarized author.

Sl.no.	Questions		Dental	Medical
1.	Attitude as a plagiator	No measures against plagiator	10(14.1)	11(10.5)
		Warning	49(69)	47(44.8)
		Punishment	12(16.9)	58(55.7)
2.	Punishment should be	Moderate	10(83.3)	47(81.1)
		Severe	2(16.7)	11(18.9)
3.	Reaction on being plagiarized	Would react publicly	59(83.1)	83(79.1)
		Take legal action	2(2.8)	5(4.7)
		Would not react	10(14.1)	17(16.2)

In terms of consequences, a high percentage of both medical (89.5%) and dental (95.8%) faculty believed that punishment should be imposed for data cooking suggesting a strong commitment to research integrity. The results were statistically significant ($p<0.05$) highlighting the need for tailored interventions to address these variations in ethical practices and perceptions within the two fields.

DISCUSSION

- Research misconduct reporting - truth has its price in terms of academic rivalries; oppression and victimization. Dutch study (6813 researchers), 10% confessed to falsifying data. 3000NIH funded scientists, 2% admitted to misconduct.
- Ambition to become famous and financial/promotional/contract retention - Data fraud – Roger Poisson, Jon Sudbo, Yoshitaka Fujii, Harry W Synder Jr and Renne Peugot.
- Kingori P et al (2016); Fanelli D (2009) - Prevention – Articles retracted or corrected; researcher removed from committees; no funding. Audit and methodological, ethical and presentational aspects of the study should be evaluated through the peer review system of journals. Training – research ethics, research integrity (national body) and research misconduct.
- Awasthi S et al (2019); Kingori P et al (2016) – observed plagiarism in many disciplines.

CONCLUSION

This study reveals common occurrences of data cooking and gifted authorship among researchers. Global criminalization of data fabrication is unlikely. Continuous research ethics and prevention are vital. Institutions should provide thorough training and foster an integrity-driven culture to establish researchers' ethical foundation for responsible practices. Cultivating accountability and ethical conduct helps mitigate data fabrication risks, preserving scientific integrity in crucial fields.

REFERENCES

1. Awasthi S and Sumit R. Perception and attitude towards data cooking: A perspective of LIS Research Scholars. Library Philosophy and Practice (e-journal) 2019: 2872.
2. Freitas J, Esteves D and Neiva H. A narrative on the fabrication of results in science. Current Science 2021; 121(2):205-209.
3. Vuckovic-Dekic L, Gavrilovic D, Kezic I and Bogdanovic G and Brkric S. Science Ethics Education Part I. Perception and attitude toward scientific fraud among medical researchers. Journal of BUON 2011; 16:771-777.
4. Resnik D B. Data Fabrication and Falsification and Empiricist Philosophy of Science. Sci Eng Ethics 2014; 20(20):423-431.
5. Ankier SI. Dishonesty, Misconduct and Fraud in Clinical Research: an International Problem. The Journal of International Medical Research 2002; 30:357-365.
6. Fanelli D. How many scientists fabricate and falsify research? A systematic review and meta analysis of survey data. PLoS ONE 2009; 4(5):e5738.
7. Elsayed D E M. Fraud and misconduct in publishing medical research. Sudan Journal of Medical Sciences 2020 ; 15(2): 131-141.
8. Wiwanikit V. Research misconduct and data fraud in clinical trials. Int J Clin Oncol 2016;21:1196.
9. Poutoglidou F, Stavrakas M, Tsetsos N, Poutoglidis A, Tsentemeidou A, Fyrmpas G et al. Fraud and deceit in medical research:Insights and current perspectives. Voices in Bioethics 2022; 8:1-6.
10. George S L ad Buyse M. Data fraud in clinical trials. Clin. Invest. (Lond.) 2015;5(2):161-173.