Data manipulation in academic research activities

What is data manipulation?

To write a research paper one needs to have the required data for it. Data within a paper is like engine within a car, without engine the car cannot run, likewise, without data a paper is meaningless. To get this data there are several ways depending on the study field and idea of the researchers. Some data is collected through surveys by providing questionnaires and asking for individuals views, while some of them are extracted through experiments. The tricky part with the data is that sometimes it will take so much effort and time but still be inaccurate in some ways. Some parameters of the data couldn't be validated which means the data in some parts have problems which could be a qualitatively or quantitively wrong. So here comes the definition of data manipulation; to avoid further experiments to solve the data inaccuracies or make the data collection process easy sometimes authors will forge the data, change some parameters without any experiment or further validation and present it in an unprofessional way, which is called data manipulation.

Is data manipulation allowed?

Taking in mind that manipulated data can lead to false findings, misconceptions and wrong conclusions, it is strictly prohibited for research papers. According to Wikipedia the U.S. National Science Foundation defines three types of research misconduct: fabrication, falsification, and plagiarism. Fabrication is making up results and recording or reporting them (1). Plagiarism has already been discussed but the brief definition is that the writer copies the exact same idea and words and uses it as his/her own finding and sentence. While falsification is defined as "manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record (2). So, to conclude, data manipulation is prohibited and not allowed in a research paper.

How ethical is to manipulate research data?

According to a business professor in Longwood University, data manipulation is considered extremely unethical. He shares his opinion as follows: "For example, in journal articles, researchers often collect data and look at results—then they create a hypothesis. They report hypotheses that were supported and fail to disclose those that weren't supported, which is misleading. In some studies, researchers find a negative relationship when they had predicted a positive one, but in the journal article they say they predicted a negative relationship all along, which is unethical." (3)

To the question "**Why researchers manipulate their research data?**" he answered:

"The pressure to publish encourages people to do things they shouldn't do," he also added "Most researchers don't outright cheat, but many are comfortable engaging in practices that are questionable" (3).

What are disadvantages of data manipulation?

Taking a close look to the issue, the disadvantages of data manipulation can be divided into two parts

1: Disadvantages for the Author/Researcher

- Presenting questionable data/results can lead towards losing reputation and trust in the field of research.
- Putting him/herself into the risk of getting banned by scientific research organization.
- Providing results that later will be proved wrong or dangerous that can result to being arrested, jailed or punished in another way like getting banned etc.
- Defaming and humility among rivals, colleagues and community.

2: Disadvantages for the community

- Taking into consideration that in our communities (people, government, companies…) listen to the experts like researchers, so giving them wrong results, concepts, thoughts and advice can be extremely dangerous and misleading.
- Wrong concepts and results can either cause waste of time and resources or can even threat people's life.
- Data manipulation can prevent the growth of a community/country, results based on false data can lead towards failure in real life practices.

Some real-life examples of Data manipulation and false results:

We are currently living in a pandemic caused by new Coronavirus, people are afraid, and everyone wants to save themselves and their families, thus they strictly follow guidelines on how to stay safe. Meanwhile people are looking towards scientific studies which will either result in making the medicine to cure COVID19 or a vaccine to prevent the disease from further spreading. In this kind of terrible situation some companies and individuals are trying to make money and sell products as COVID19 medicine. Some examples are presented as bellow to show how data manipulation which leads towards false results affects people's lives.

1: Patanjali Ayurved Limited a company in India

"Police have registered a First Information Report against yoga guru Ramdev and four others for allegedly conspiring to sell a fake Ayurveda medicine with the misleading claim to cure COVID-19 following clinical trials on some patients. The FIR said the claim had been made without getting the Union AYUSH Ministry's approval. (4)

2: According to Aljazeera News channel in Iran

More than 700 people died in Iran after ingesting toxic methanol, erroneously thinking it can cure the new coronavirus. (5)

3: According to REUTERS in India

People have been drinking cow urine and taking bath in cow dung to be cured from coronavirus.

The "party," hosted by a group called the Akhil Bharat Hindu Mahasabha (All India Hindu Union) at its headquarters in the country's capital, was attended by 200 people, and the organizers hoped to host similar events elsewhere in India.

"We have been drinking cow urine for 21 years, we also take bath in cow dung. We have never felt the need to consume English medicine," said Om Prakash, a person who attended the party. (6)

4: According to NDTV Channel in India

Cow Urine Used In 5 Products' provided by Patanjili Ayurved Company and claims that it is considered good for health. (7)

Conclusion

Looking to the above examples one can notice that how research organizations and companies affect people's lives and people also tend to obey what they say, however, the results can be as harsh as mentioned above. Thus, data manipulation leads to false results and misconceptions and false results leads towards so many complications in societies.

Note

The above examples are provided only to show the impact of data manipulation and false results, there was no aim towards any kind of degrading the reputation of the mentioned regions or people living within those regions. Sole reason for providing those examples were because they were perfectly depicting the contemporary issues with false results and they were real life examples of this pandemic era.

References

1: https://en.wikipedia.org/wiki/Scientific_misconduct

2: https://www.ncbi.nlm.nih.gov/books/NBK214564/

3: http://www.longwood.edu/news/2013/researchers-sometimes-manipulate-data/

4:https://www.thehindu.com/news/national/fir-against-ramdev-others-on-covid-19-cure-claim/article31939972.ece

5:https://www.aljazeera.com/news/2020/04/iran-700-dead-drinking-alcohol-cure-coronavirus-200427163529629.html

6:https://www.reuters.com/article/us-health-coronavirus-india-cow-urine-pa/hindu-group-offers-cow-urine-in-a-bid-to-ward-off-coronavirus-idUSKBN2110D5

7:https://www.ndtv.com/india-news/day-after-fatwa-ramdevs-patanjali-says-cow-urine-used-in-5-products-1260812