Public awareness and perception on Health and Disinformation: A comprehensive survey

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ABSTRACT:

Health disinformation is purposefully created to mislead and cause harm, and those who spread it are well aware of this. It is spread gradually via a variety of outlets, including social media, internet blogs, and others. People find it difficult to discern fact from fiction due to the constant onslaught of potentially inaccurate health information, which leads to challenges in society. This study investigates public perceptions of health disinformation, focusing on the Tirupati area employing a KAP (Knowledge, Attitudes, and Practices) model. Findings suggest respondents primarily rely on healthcare professionals and fact-check online sources before accepting health information. While most search for health information through general search engines (like Google) rather than dedicated health websites, social media is a frequent source. Respondents believe social media can combat misinformation through awareness campaigns. A majority also supported regulations to curb the spread of health disinformation. Despite frequent use of social media, few reported encountering specific disinformation. The study concludes that mitigating disinformation requires a multi-faceted approach, including improved health literacy, responsible digital tool use, rigorous monitoring, and community engagement to foster critical thinking and reliable information access. The ultimate goal is a healthier society, free from harmful and misleading information.

Keywords: Health, Disinformation, Misinformation, Social media, Awareness, Community, Social media, Education.

INTRODUCTION:

Misinformation and disinformation differ mostly in the sender's knowledge and intent rather than the falsehood's content. Public health disinformation is a unique kind of information risk that, in contrast to misinformation, is produced maliciously to sow division, discord, and mistrust among targets, including government organizations, scientific experts, public health organizations, the commercial sector, and law enforcement, among others.

In the field of health, accurate and evidence-based information is especially crucial. Misinformation, disinformation, and malinformation are among the information disorders that have become more prevalent in society in recent years. Since the goal of this essay is to clarify health disinformation, it is important to highlight the distinctions between these three ideas. (a) Misinformation: it may be utterly untrue, dubious, or somewhat accurate, yet it is shared in good faith and without intending to cause harm to others. (b) Malinformation may include reasonably accurate information about a specific circumstance or even information based on convincing medical knowledge that is shared with the intent to cause harm to others. (c) Disinformation: completely false information that is purposefully spread to hurt people for social, psychological, political, or economical reasons.

Therefore, any claim made for financial gain or fraud that could cause issues with disease management is considered health disinformation. It is now essential for public health to recognize and stop this misinformation since it can have a negative impact on people's and communities' health. (Hotez, P. J. 2024)

Disinformation propagators have a variety of complicated motivations. The goal of the disinformation efforts in the earlier historical examples was to harm oppressed populations and find ways to hold them accountable for the spread of disease. As various groups looked for ways to blame one another for the emergence of a disease and to undermine the effectiveness of their public health interventions (such as vaccination uptake and social isolation policies during COVID-19), more contemporary disinformation campaigns developed to be a part of geopolitical tensions. Frequently, it is a component of a bigger plan to weaken public confidence in government, intensify polarizing political divisions, erode trust in scientific and civil organizations, and create misunderstandings about facts and their sources.

Frequently, it is a component of a bigger plan to weaken public confidence in government, intensify polarizing political divisions, erode trust in scientific and civil organizations, and create misunderstandings about facts and their sources. Additionally, it can be utilized to establish a social media following, make a group seem better than another depending on how they are handling a public health emergency, or generate money. Security services have observed how deception has been used by extremist organizations to increase their appeal in order to recruit new members and gain legitimacy.
Developing countermeasures requires an understanding of the disinformation's background and history. (Disinformation and public health, WHO, 2024)

Disinformation continues to inflict ravages on people, institutions, and communities. In public health, the transmission of inaccurate and misleading information about the corona virus illness of 2019 has had a substantial impact on vaccination deployment. Fake news is frequently accompanied by hateful posts and online threats that encourage extreme behavior, including deadly violence. The signs of the times urge governments and institutions to investigate the impact of disinformation consumption on people's health and take actual steps beyond educational campaigns and fact-checking. (Laxa, J. 2023).

False or misleading nutritional information is spreading rapidly via social media and other digital channels, often outperforming evidence-based messages from reliable sources. This expansion is fuelled by emotionally appealing narratives, financial motivations, and popular distrust of scientific institutions. Misinformation disproportionately affects people with poor health literacy, limited access to professional help, or digital media abilities, increasing existing health disparities. (Diekman 2023)

AIM AND OBJECTIVES:

The rapid spread of knowledge via digital and social media has changed our society, and the spread of misinformation about health poses serious threats to public health. Negative health behaviors, poor decision-making, and a decline in faith in medical institutions can all result from misinformation regarding health issues. The goal of this study is to investigate important facets of this problem.

- To estimate public knowledge of misinformation about health.
- To comprehend how people perceive the influence of misinformation on health decisions.
- To determine the origins of health misinformation that the general public comes across.
- To investigate opinions regarding media literacy and health information sources.

METHODOLOGY:

In order to evaluate how people view, understand, and react to health information—both true and misleading—that is disseminated by traditional and digital media, this study uses a thorough survey-based methodology. Because of its ability to effectively capture a wide range of opinions, beliefs, and behaviors from a diverse demographic sample, the survey approach was selected with a questionnaire comprising 30 questions pertaining to the identification of disinformation utilizing Knowledge, Attitude, and Practice based questions. It enables both qualitative insights into individual perceptions and experiences as well as quantitative study of awareness levels. In order to guarantee representativeness across important demographic factors that could affect exposure to and interpretation of health-related information, such as age, gender, education, and digital literacy, the technique was created.

DATA COLLECTION

Online tool- specifically Google Forms, were used to collect the data. 300 members made up the sample size.

Criteria for inclusion:

Age: Respondents must be between the ages of 18 and 65. This enables a sample that is representative of various adult age groups.

Location: Only residents of Andhra Pradesh and Telangana were the focus of the survey.

Criteria for exclusion:

Age: People over 65 and those under 18 are not included.

FINDINGS:

1. Health Information on Social Media:

Social media is a prominent medium for people looking for health-related content, as evidenced by the noteworthy 79.1% of respondents who said they found health information there. This demonstrates how social media sites like Facebook, Instagram, and Twitter are increasingly influencing public health attitudes. 20% of respondents, however, said they do not discover health information on social media, which may be a reflection of their concern about the accuracy of social media platforms for health-related content or their preference for alternative sources.

2. Spread of Health Disinformation:

The vast majority of respondents (84.8%) agreed that health disinformation spreads through multiple channels, including social media and online search engines. Few respondents chose simply internet search engines, and a smaller percentage (10.6%) named social media alone as a source of misinformation. This suggests that the majority of people are aware that health misinformation spreads across several channels, underscoring the necessity of all-encompassing approaches that deal with false information on multiple digital platforms.

3. Confidence in Identifying Misleading Health Information:

The findings show that 59.7% of respondents are confident in their capacity to identify inaccurate or misleading health information, indicating a high degree of public knowledge. Nonetheless, a significant 40.3% of respondents said they were unsure or unconfident about spotting false health content, indicating that further training on digital health literacy and how to recognize faulty health information is still required.

4. Concerns About Health-Related Disinformation:

According to the survey, 59.1% of participants are extremely worried about how misinformation about health would affect their general wellbeing. The increased understanding of the possible harm that inaccurate health information might bring is reflected in this worry. However, 40.9% of respondents expressed less anxiety, which could be due to a lack of knowledge or the conviction that they can ignore the false information.

5. Role of Social Media Platforms in Combating Disinformation:

As a result of public expectations that social media platforms assume accountability for guaranteeing the authenticity of health-related content, a significant majority of respondents—86.4%—think that these platforms ought to do more to counteract health disinformation. The fact that only 13.6% disagreed shows that although the majority of users want platforms to act, some may not think these platforms need to do anything more.

6. Sources of Health Information:

The results show a significant discrepancy between the sources that respondents typically utilize for health information and the sources they trust the most. When it comes to health information, more than half of the respondents (52.2%) said they trust health care providers the most, followed by government websites (19.4%) and online forms (14.9%). When asked where they typically get health information, however, most respondents (43.3%) said they relied on online search engines like Google, followed by social media (19.4%) and health websites (11.9%). This suggests that although medical professionals are the most reliable source, individuals regularly turn to search engines and social media for health information due to its practical convenience and accessibility. This disparity emphasizes how trustworthy, expert-supported information has to be better included into the platforms that consumers use most regularly.

7. Most frequently searched topics and vulnerability:

The findings show that, with 58.2% of respondents saying they frequently search for information on this topic, diet and nutrition are the most searched health topics online. This is followed by fitness and exercise (22.4%) and disease prevention (7.5%). When asked about vulnerability to disinformation, nearly half of the respondents (47.8%) believed that nutrition and diet topics are the most susceptible to misleading or false information. Other areas viewed as vulnerable include mental health (25.4%), chronic disorders such as diabetes and heart disease (29.9%), vaccinations and immunization (22.4%), and alternative medicines (20.9%). These findings indicate a serious risk to public health literacy as, despite the huge demand for nutrition and diet information, it is also thought to be the area most susceptible to false information.

8. Health Decisions Based on False Information:

The practical effects of inaccurate health material are demonstrated by the 22.4% of respondents who acknowledged making decisions about their health based on inaccurate information. However, a higher percentage of respondents—40.3%—said they did not base their decisions on inaccurate information, while 37.3% were unclear. These responses show a mix of awareness, caution, and maybe misunderstanding about the reliability of online health information.

9. Regulation of Health Information to Prevent Disinformation:

Regarding regulation, 65.2% of respondents think that in order to avoid misinformation, health information shouldn't be regulated. This suggests that people generally prefer to share health information freely. However, 12.1% of respondents think it should be regulated, and 22.7% were undecided, indicating some concern about unregulated misinformation and the role that legislation plays in controlling it.

10. Encountering False or Misleading Health Information:

The prevalence of misinformation about health is demonstrated by the 64.6% of respondents who said they have come across inaccurate or misleading health information online. This emphasizes the necessity of stronger structures to detect and rectify false information on digital networks.
On the other hand, 35.4% of respondents said they had never come across this kind of false material, which would suggest that people interact differently with online health content.

11. Reporting Misleading Health Information:

Regarding responsibility, it appears that some people are actively working to prevent misinformation, as 24.2% of respondents reported or flagged inaccurate health information they found online. 54.5% of respondents, however, had never reported such information, which may suggest that they were unaware of the reporting procedures or felt helpless to correct false information. Furthermore, 21.2% were unclear on how to report this kind of content.

12. How can individual protect themselves from health disinformation?

The majority of respondents (57.6%) indicated that verifying information with healthcare professionals is the most preferred way to protect themselves from health disinformation. Furthermore, 37.9% advised consulting several sources, whilst only 4.5% thought it was beneficial to stay away from internet health information. Interestingly, not a single respondent advocated for obtaining health information exclusively from social media. This implies that the majority of people understand how crucial it is to seek advice from trained experts and double-check data in order to stop the spread of false information about health.

13. Promoting a culture of accurate health information:

The majority of respondents (76.6%) say that it takes a multifaceted strategy that involves fostering critical thinking, aiding health literacy initiatives, and offering rewards for accurate information in order to foster a culture of accurate health information. Few people preferred merely promoting critical thinking or offering incentives, and a smaller percentage chose only supporting health literacy initiatives (12.5%). This suggests that the best approach to counteract health misinformation and promote an accurate culture is generally thought to be a complex one.

RESULTS:

ATTITUDE:

Table 1 Attitude of the respondents towards the health disinformation.

S.NO.	Attitude of the Respondents	Frequency	Percentage(%)
1.	Average	273	91.0
2.	Good	27	9.0
Total		300	100.0%

The above table shows that 91% of respondents had an average attitude on health and disinformation. This suggests that the majority of people hold a moderate or neutral opinion of the accuracy and trustworthiness of health information available online. They are certainly aware of the value of health-related content, but they may not actively engage with or critically evaluate the information they come across.

27% of respondents had a positive attitude towards health and misinformation. This reflects a smaller set of people who are more inclined to be proactive with health information, such as fact-checking, trusting credible sources, and critically analysing online health content. This

category may consist of health-conscious persons who actively seek verifiable information and are likely to cross-reference material before making health-related decisions.

KNOWLEDGE:

Table 2 Knowledge of the respondents towards the health disinformation

S.NO.	Knowledge of the Respondents	Frequency	Percentage (%)
1.	Average	94	31.3
2.	Good	206	68.7
Total		300	100.0%

Table 2 shows that a considerable majority of respondents (68.7%) have good knowledge of health misinformation, demonstrating a thorough understanding of the topic. However, 31.3% of respondents have just average knowledge, indicating the need for additional education and awareness activities to improve their comprehension and capacity to detect health disinformation effectively. These findings emphasise the need of focused interventions in addressing knowledge gaps and promoting critical thinking abilities among the community.

PRACTICE:

Table 3 Practice of the respondents towards the health disinformation

S.NO.	Practice of the Respondents	Frequency	Percentage (%)
1.	Poor	27	9.0
2.	Average	245	81.7
3.	Good	28	9.3
Total		300	100.0%

The statistics in Table 3 show an alarming trend, with a considerable majority of respondents (81.7%) engaging in average practices regarding health disinformation. And, 9.0% of respondents have poor practices, indicating a significant knowledge-practice gap that must be addressed immediately. This population is especially vulnerable to the propagation of health disinformation, so focused interventions are critical to improving their awareness and capacity to identify erroneous information effectively. Furthermore, just 9.3% of respondents display good behavior, emphasising the need for widespread education and awareness campaigns to encourage critical thinking abilities and responsible behavior among the general public.

Table 4: Association between Attitude on Details of Health and Disinformation and Demographic variable. N=300

S.no.	Demographic variables		Attitude on Details of Health and Disinformation				Chi square
			Average		Good		P val (<0.05)
			F	%	F	%	
1.	Age	18-24	217	72.3%	18	6%	0.36 (NS)
		25-34	43	14.3%	7	2.3%	
		35-44	10	3.3%	2	0.6%	
		45-54	0	0%	0	0%	
		55-64	3	1%	0	0%	
		65+	0	0%	0	0%	
2.	Gender	Male	95	31.6%	8	2.6%	0.58 (NS)
		Female	178	59.3%	19	6.3%	
3.	Educational Qualification	High school or less	3	1%	1	0.3%	**0.05 (S)**
		College	39	13%	1	0.3%	
		Bachelor's degree	125	41.6%	11	3.6%	
		Master's degree	98	32.6%	11	3.6%	
		Doctoral degree	8	2.6%	3	1%	
4.	Occupation	Student	204	68%	17	5.6%	0.73 (NS)
		Health care professional	13	4.3%	2	0.6%	
		Working professional	47	15.6%	7	2.3%	
		Retired	1	0.3%	0	0%	
		Other	8	2.6%	1	0.3%	

The table reveals that there was **significant** between an attitude on details of health and disinformation and **Educational Qualification** of the respondents because of p value is **0.05** ($p<0.05$).This indicates that the demographic variable of Educational Qualification is significantly associated with the attitude towards the health and disinformation.

Table 5: Association Between Knowledge on Details of Health and Disinformation and Demographic variable. N=300

S.no.	Demographic variables		Knowledge on Details of Health and Disinformation				Chi square
			Average		Good		P val (<0.05)
			F	%	F	%	
1.	Age	18-24	77	25.6%	158	52.6%	0.26 (NS)
		25-34	11	3.6%	39	13%	
		35-44	4	1.3%	8	2.6%	
		45-54	0	0%	0	0%	
		55-64	2	0.6%	1	0.3%	
		65+	0	0%	0	0%	
2.	Gender	Male	24	8%	79	26.3%	**0.03 (S)**
		Female	70	23.3%	127	42.3%	
3.	Educational Qualification	High school or less	0	0%	4	1.3%	0.23 (NS)
		College	17	5.6%	23	7.6%	
		Bachelor's degree	40	13.3%	96	32%	
		Master's degree	32	10.6%	77	25.6%	
		Doctoral degree	5	1.6%	6	2%	
4.	Occupation	Student	76	25.3%	145	48.3%	**0.05 (S)**
		Health care professional	5	1.6%	10	3.3%	
		Working professional	9	3%	45	15%	
		Retired	1	0.3%	0	0%	
		Other	3	1%	6	2%	

The table reveals that there was **significant** between their knowledge on details of health and disinformation and **Gender and Occupation** of the respondents because of p value is **0.03** and **0.05** ($p<0.05$).This indicates that the demographic variables of gender and occupation is significantly associated with the knowledge towards the health and disinformation.

Table 6: Association between Practice on Details of Health and Disinformation and Demographic variable. N=300

S.no.	Demographic variables		Practice on Details of Health and Disinformation						Chi square
			Poor		Average		Good		P val (<0.05)
			F	%	F	%	F	%	
1.	Age	18-24	23	7.6%	189	63%	23	7.6%	0.70 (NS)
		25-34	3	1%	44	14.6%	3	1%	
		35-44	1	0.3%	10	3.3%	1	0.3%	
		45-54	0	0%	0	0%	0	0%	
		55-64	0	0%	2	0.6%	1	0.3%	
		65+	0	0%	0	0%	0	0%	
2.	Gender	Male	13	4.3%	82	27.3%	8	2.6%	0.24 (NS)
		Female	14	4.6%	163	54.3%	20	6.6%	
3.	Educational Qualification	High school or less	0	0%	3	1%	1	0.3%	0.07 (NS)
		College	9	3%	26	8.6%	5	1.6%	
		Bachelor's degree	9	3%	115	38.3%	12	4%	
		Master's degree	8	2.6%	93	31%	8	2.6%	
		Doctoral degree	1	0.3%	8	2.6%	2	0.6%	
4.	Occupation	Student	23	7.6%	179	59.6%	19	6.3%	0.13 (NS)
		Health care professional	1	0.3%	11	3.6%	3	1%	
		Working professional	2	0.6%	49	16.3%	3	1%	
		Retired	0	0%	1	0.3%	0	0%	
		Other	1	0.3%	5	1.6%	3	1%	

The table reveals that there was **no significant** between their practice on details of health and disinformation. This indicates that the demographic variables are not significantly associated with the practice towards the health and disinformation.

DISCUSSION AND CONCLUSION:

The association between attitudes and health disinformation when subjected to chi square tests have given non-significant association between the two variables. However on closer examination, the data in the table shows that the younger generation between 18-24 years did

show the influence of social media on the attitudes (72%). Similarly, the female population's (59%), attitude did have get influenced by the social media disinformation. Further, the higher education degree students at the Bachelors level and Masters level did have a tendency to have a significant association between disinformation and attitudes, so education does influence attitudes of the sample population included in the study. On examining data on influence of knowledge on health disinformation. It is observed that the female population and education impact was significant. The females did get impacted by the health disinformation. Also the educated population at the Bachelors and post graduate level were observed to get affected by the health disinformation. The association between practices and health and disinformation was insignificant, irrespective of age, gender, education and occupation in the sample surveyed. While knowledge and attitudes did have some influence on health and disinformation, the same wasn't true for practices in the present study.

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