Journal of Research in Applied and Basic Medical Sciences 2022; 8(2): 97-103

Original Article

Urmia University of Medical Sciences

RABMS Journal of Research in Applied and Basic Medical Sciences

Perception of COVID-19 vaccine due to media influence and its impact

Somya Thakan[1*], Aditya Mehta[2], Shakila Mulla[3]

[1] *Jhalawar Medical College, Jhalawar, Rajasthan, India*

[2] *Jhalawar Medical College, Jhalawar, Rajasthan, India*

[3] *Jhalawar Medical College, Jhalawar, Rajasthan, India*

***Corresponding authors:** Somya Thakan, Room No-515, New PG Hostel, OPP Library, Jhalawar Medical College, NH-12 Kota Road, Jhalawar, **Email**: somyathakan@gmail.com, **Tel**: +917432233388

Abstract

***Background & Aims*:** Social media/mobile mass communications, while providing an unprecedented capacity for the masses to communicate, has also been a major drivers in the rise of fringe opinions very damaging to public health. Reconciling principles of freedom of speech with the usage of social media for damaging falsehoods remains a conundrum for nations. Hence it was desired to conduct a study with objective of determining the influence of social media on the perception of COVID-19 vaccine.

Materials & Methods: An analytical cross-sectional study was conducted from May - July 2021 (duration three months) on those who gave consent and were eligible for vaccination according to the guidelines by ICMR (Indian council of medical research) and GOI (Government of India)

Result: The majority of study participants 76.7% were aware of covid appropriate behaviour and preventive measures and around 61.8% of participants were aware of covid vaccination.

The vast majority of the participants stated that they had obtained information about vaccinations (61.8%). The preferred method for acquiring information was social media (56.6%), followed by community health workers (15.6%), media-internet/news/television (15.3%) and very little importance to national guidelines through miking, pamphlets (5.6%).

Conclusion: The impact of social media on the influence of covid vaccination was very disturbingly negative as a vast majority of study participants 60.7% tried to convince people to avoid vaccines after hearing about adverse events following vaccination through the social media platform.

***Keywords*:** COVID-19 vaccine, social media, perception, hesitancy, impact

Received 03 May 2022; accepted for publication 08 July 2022

Introduction

The world's population is ageing rapidly, partly due to the decline in birth rates and improving life expectancy (1). Vaccination is a major driver of this process, as it can help prevent deaths caused by chronic conditions and infectious diseases (2,3).

WHO listed vaccine hesitancy as one of the top 10 threats to world health (4). Historically, nations have

improved health outcomes due to institutions being held accountable to the public, increased levels of public awareness (5). Social media/mobile mass communications, while providing an unprecedented capacity for the masses to communicate, has also been a major drivers in the rise of fringe opinions very damaging to public health (6). Reconciling principles of freedom of speech with the usage of social media for damaging falsehoods remains a conundrum for nations (7).

The country's infection rate started to increase in February after it had already been declining for a couple of months (8). Sero-surveys conducted indicated that the majority of the population has immunity against the illness. For some sections of the health establishment, the emphasis on containment methods was more than on testing, contact tracing and monitoring (9,10).

However, the effect of social media/mobile mass communication is compounded by an additional factor: the intentional spread of misinformation (11). There has been a lot of work on the socio-economic factors that affect vaccine hesitancy, but there has been no global analysis of how social media influences this effect (12).

Currently, 32.3 crore people in India have been vaccinated. It's a daunting task to vaccinate the remaining 1.3 billion people in the country (14).

Current study fills that gap by addressing a pair of research questions tackling both the dimensions of the proposed effect of social media - positive and negative. Since a study for the same was long due in this region to ascertain usage and impact of social media for Covid vaccines.

Materials & Methods

To determine the influence of social media on the perception of the COVID -19 vaccine. An analytical cross-sectional study was conducted from May - July 2021 (three months) on those who gave consent and were eligible for vaccination according to the guidelines by ICMR (Indian council of medical research) and GOI (Government of India). The study population were attendants of recently hospitalized patients (admitted in general wards) as community-based sampling was not possible due to mobility restriction and risk of infection due to the ongoing second wave of the pandemic. Candidates were excluded based on eligibility criteria for covid vaccination set out by GOI, which included any known drug/food allergy or ongoing COVID-19 infection. Prior permission was taken by the institutional ethical review board to conduct the study. Written informed consent was obtained from the study participants.

The study instrument was a self-administered and structured questionnaire which was constructed after a thorough literature review and using findings of earlier studies and empirical literature (15). Expert opinions on the importance and feasibility of the questions were considered before the final version was distributed through paper in local language.

The questionnaire contains 3 parts:

1) Baseline questions - name, age, marital status, address, qualification

2) Vaccine knowledge through social media questions: questions based on procuring information through various modes and levels of trust based on these sources.

3) Perception of side effects of covid vaccine and its influence on the masses. Along with their role in spreading misinformation and disinformation regarding it.

Collected data were coded, tabulated, and statistically analysed using the Statistical Package for the Social Sciences Software, (SPSS) version 26 (TRIAL version). Descriptive statistics were used to summarise demographics and key variables. Inferential statistics were applied (Pearson Chi-square test). The level of statistical significance for all tests was set at $P < 0.05$, otherwise, the tests were considered insignificant.

Results

Among the 512 questionnaires distributed, 463 agreed to participate and returned the survey for an overall response rate of 90.4%.

Table 1. shows socio-demographic characteristics of the participants

		Address					
		Rural (n=143)		Urban (n=320)		Total (n=463)	
		Count	Column N%	Count	Column N%	Count	Column N%
AGE (in years)	18-44	83	58.0%	203	63.4%	286	61.8%
	45-59	25	17.5%	55	17.2%	80	17.3%
	>60	35	24.5%	62	19.4%	97	21.0%
Gender	Female	61	42.7%	135	42.2%	196	42.3%
	Male	82	57.3%	185	57.8%	267	57.7%
Marital Status	Single	22	15.4%	63	19.7%	85	18.4%
	Married	106	74.1%	247	77.2%	353	76.2%
	Divorced	4	2.8%	2	0.6%	6	1.3%
	Widow/Widower	11	7.7%	8	2.5%	19	4.1%
Level of education	Illiterate	49	34.3%	67	20.9%	116	25.1%
	Primary	27	18.9%	47	14.7%	74	16.0%
	Secondary	20	14.0%	37	11.6%	57	12.3%
	High School/Vocational	30	21.0%	112	35.0%	142	30.7%
	College	17	11.9%	57	17.8%	74	16.0%
Occupational status	Unemployed	16	11.2%	44	13.8%	60	13.0%
	Daily wage worker	34	23.8%	71	22.2%	105	22.7%
	White Collar Worker	7	4.9%	44	13.8%	54	11.6%
	Farmer	14	9.8%	11	3.4%	25	5.4%
	Student	33	23.1%	64	20.0%	97	21.0%
	Self-employed	39	27.3%	83	25.9%	122	26.3%

The main socio-demographic characteristics of the study participants are: Majority from age group 18-44 years with 57.7% were males, 42.3% were female and 76% were married (Table 1).

The majority of study participants (76.7%) were aware of covid appropriate behaviour.

Table 2. Regarding the source of information and perception

		Rural (n=143)		Urban (n=320)		Total	
		Count	Column N%	Count	Column N%	Count	Column N%
Knowledge about preventive measures of covid	Yes	101	70.6%	254	79.4%	355	76.7%
	No	42	29.4%	66	20.6%	108	23.3%
Idea about covid vaccine	Yes	24	16.8%	262	81.9%	286	61.8%
	No	119	83.2%	58	18.1%	177	38.2%
Source of information	Community health workers (ASHA/ ANM)	48	33.6%	24	7.5%	72	15.6%
	Staff in hospitals	15	10.5%	17	5.3%	32	6.9%
	Broadcast Media (Radio/Internet/ News / Tv)	31	21.7%	40	12.5%	71	15.3%
	National guidelines through miking/Pamphelets	5	3.5%	21	6.6%	26	5.6%
	Social media/Mobile mass communication (WhatsApp/ Facebook/ Twitter/Telegram)	44	30.8%	218	68.1%	262	56.6%
Trust on source of information	High trust	105	73.4%	235	73.4%	340	73.4%
	Neutral	17	11.9%	58	17.8%	75	16.2%
	Low trust	20	14.0%	28	8.8%	48	10.4%
Do these sources motivate you to go for vaccination?	Yes	110	76.9%	272	85.0%	382	82.5%
	No	33	23.1%	48	15.0%	81	17.5%

The vast majority of the participants stated that they had obtained information about vaccinations (61.8%). The preferred method for acquiring knowledge was social media (56.6%), followed by community health workers (15.6%), media-internet/news/television (15.3%) and very little importance to national guidelines through miking and pamphlets (5.6%). Moreover, the majority of study participants reported the need for additional information about vaccinations (Table 2).

Table 3. Information seeking behaviour of people regarding adverse events of immunisation and their attributable behaviour

		Rural (n= 143)		Urban (n= 320)		Total	
		Count	Column N%	Count	Column N%	Count	Column N%
Would you motivate others to take vaccine?	Yes	23	16.1%	262	81.9%	285	61.6%
	No	120	83.9%	58	18.1%	178	38.4%
Is there any side effects of COVID vaccine that you have heard of?	Yes	93	65.0%	278	86.9%	371	80.1%
	No	50	35.0%	42	13.1%	92	19.9%
Any news about adverse events of immunisations previously in media (such as newspaper, magazine, television, radio, Internet or social network, etc)	Yes	81	56.6%	217	67.8%	298	64.3%
	No	62	43.4%	103	32.2%	165	35.6%
Source of finding more information regarding side effects	Mass media	40	28.0%	83	25.9%	123	26.6%
	Family/ relatives	60	42.0%	214	66.9%	274	59.2%
	Doctor	10	7.0%	7	2.2%	17	3.7%
	Friends/ colleagues	33	23.1%	16	5.0%	49	10.6%
Degree of worry after hearing about side effects on the media?	Worried	89	62.2%	263	82.2%	352	76.0%
	Not worried	54	37.8%	57	17.8%	111	24.0%
Decision maker regarding vaccination in the family	Self	51	35.7%	160	50.0%	211	45.6%
	Head of the family	92	64.3%	160	50.0%	252	54.4%
Have you ever tried to convince people to avoid vaccine?	Yes	97	67.8%	184	57.5%	281	60.7%
	No	46	32.2%	136	42.5%	182	39.3%
Are you vaccinated? (Taken both doses)	Yes	68	47.6%	111	34.7%	179	38.7%
	No	75	52.4%	209	65.3%	284	61.3%

The majority of people relied on family (59.2) and friends (10.6%) to seek more information if they heard about any adverse event following immunisation, that influenced their decision to go ahead with vaccination, especially for the second dose of vaccine as vaccination status is 38.7% among full vaccinated. Many people tried convincing other people to avoid vaccination due to false information circulated by social media, it is very high 60.7% (Table 3).

Discussion

This study provides insights into covid vaccination perception and its impact on bounteous study participants.

A disturbing result was that only 73.4% agreed or strongly agreed that the information received about vaccinations was reliable. It can be dealt with through targeted awareness campaigns to clear misconceptions and myths regarding vaccine safety and efficacy and to increase confidence in vaccines.

The strength of this study is that it signals an urgent need for filtered and reliable information being spread through social media regarding infection prevention and control education to guard the safety of the masses.The results showed that traditional sources of information for this group, such as national guidelines, community health workers - ANM/ASHA although significantly associated with a higher level of knowledge, were secondary to social media-based sources of the information.

As with all similar research, it is crucial to reflect on some potential limitations of this survey was conducted only from one geographic area; therefore, the collected responses might not be generalisable to other parts of the country.However, good sample frames may not be easy to identify; hence, the selection of hospitals purposively and respondents conveniently are accepted and dependent on the health problem to be studied in its specific context. Further studies with larger sample sizes in multiple sites across the country should be conducted in order to confirm our argument in this study in a large scale. Thus, further studies should be elucidated to fill these gaps of knowledge.

However, the fact study maintained complete confidentiality and anonymity suggest that the respondents were likely to be authentic, with minimal social desirability bias.

Conclusion

The impact of social media on the influence of covid vaccination was very disturbingly negative as a vast majority of study participants 60.7% tried to convince people through mobile mass communication to avoid vaccines after hearing about adverse events following vaccination. These findings are valuable for the circulation of authentic/censored information to ensure that people improve their level of knowledge as well as perception about vaccinations and develop responsibility to spread authentic information rather than spreading misinformation so that vaccination coverage in a geographic area with low vaccination coverage, especially for the second dose can be improved.

Acknowledgments

Unparalleled gratitude to every individual who contributed to the success of the research.

Conflict of interest

There are no conflicts of interest.

Financial support and sponsorship: Nil

Ethical Statement

This study was conducted from May - July 2021 (three months) on those who gave consent and were eligible for vaccination according to the guidelines by ICMR (Indian council of medical research) and GOI (Government of India). Written informed consent was obtained from the study participants.

.

References

1 Dubé E, Laberge C, Guay M, et al. Vaccine hesitancy: an overview. Hum Vaccin Immunother 2013;9:176373.

2 Dubé E, Gagnon D, Nickels E, et al. Mapping vaccine hesitancy-- country-specific characteristics of a global phenomenon. Vaccine 2014;32:6649–54.

3 MacDonald NE, Eskola J, Liang X, SAGE Working Group on Vaccine Hesitancy. Vaccine hesitancy: definition, scope and determinants. Vaccine 2015;33:4161–4.

4 Mesch GS, Schwirian KP. Social and political determinants of vaccine hesitancy: lessons learned from the H1N1 pandemic of 2009-2010. Am J Infect Control 2015;43:1161–5.

5 Larson HJ, de Figueiredo A, Xiahong Z, et al. The state of vaccine confidence 2016: global insights through a 67-country survey. EBioMedicine 2016;12:295–301.

6 Marti M, de Cola M, MacDonald NE, et al. Assessments of global drivers of vaccine hesitancy in 2014 –looking beyond safety concerns. PLoS One 2017;12:e0172310–2.

7 Lane S, MacDonald NE, Marti M, et al. Vaccine hesitancy around the globe: analysis of three years of WHO/UNICEF Joint Reporting Form data-2015-2017. Vaccine 2018;36:3861–7.

8 Dubé E, Gagnon D, MacDonald N, et al. Underlying factors impacting vaccine hesitancy in high income countries: a review of qualitative studies. Expert Rev Vaccines 2018;17:989–1004.

9 Davies P, Chapman S, Leask J. Antivaccination activists on the world wide web. Arch Dis Child 2002;87:22.

10 Keelan J, Pavri-Garcia V, Tomlinson G, et al. YouTube as a source of information on immunization: a content analysis. JAMA 2007;298:2481–4.

11 Ache KA, Wallace LS. Human papillomavirus vaccination coverage on YouTube. Am J Prev Med 2008;35:389–92.

12 Keelan J, Pavri V, Balakrishnan R, et al. An analysis of the human papilloma virus vaccine debate on MySpace blogs. Vaccine 2010;28:1535–40.

13 Tafuri S, Gallone MS, Cappelli MG, et al. Addressing the anti-vaccination movement and the role of HCWs. Vaccine 2014;32:4860–5.

14 Mitra T, Counts S, Pennebaker JW. Understanding anti-vaccination attitudes in social media. Tenth International AAAI Conference on Web and Social Media, 2016.

15 Evrony A, Caplan A. The overlooked dangers of anti-vaccination groups 'social media presence. Hum Vaccin Immunother 2017;13:1475–6.