COMPREHENDING THE CHARACTERISTICS AND EFFECTS OF THE HEALTH MISINFORMATION - A STUDY AMONG SOCIAL MEDIA USERS
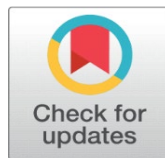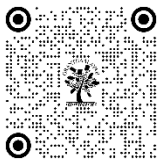
Dr. E. Indira [1] ✉ iD, Dr. G. Radha [2] ✉ iD

[1] Assistant Professor, Department of Visual Communication, School of Arts and Social Sciences, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, India
[2] Associate Professor & Head, Department of Visual Communication & Electronic Media PSG College of Arts and Science, Coimbatore, India

ABSTRACT

Social media has become the most accessible and considered to be trustworthy media for accessing health related information with immediacy. This has led to the creation, development and spread of misinformation too. Prevalence of misinformation can be detrimental to the quality of life and sometimes may lead to even death and hence it becomes more essential to understand the complexities of dealing with such misinformation. Being aware of the menace of the situation, we also recognize the need to fight against misinformation. For this purpose, we need to focus on categorization of the main topics of health misinformation and an all-inclusive depiction of their pervasiveness on various social media, the influence it has on the minds and health behavior of people. Such a detailed analysis will enable us to develop future digital policy action plans towards misinformation. Against this background the objectives of the study are to identify the characteristics of health misinformation on social media; and the factors that influence the people's belief and behavior towards health misinformation circulated online. A descriptive survey with convenience sampling technique among social media users will be applied for understanding how various people perceive and are susceptible to the problems of misinformation. Proper understanding of the features of health misinformation in the social media will facilitate us to focus on the measured ways to eradicate the fatal impact of misinformation. Our perceptions on the misinformation that prevails in the fields of health and emergency management will improve through the data gathered and presented in this study.

Keywords: Misinformation, Social Media, Health, Communication

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1. INTRODUCTION

"Health misinformation is a serious threat to public health. It can cause confusion, sow mistrust, harm people's health, and undermine public health efforts"

"Dr. Vivek H. Murthy

Surgeon General of the United States"

Health is an important concern in everyone's life and people are anxious when they seek information on health aspects. Digitalisation and high penetration of low-cost internet services, proliferation of numerous web portals and websites has opened a new world of information for all. It is estimated that more than 4 billion have joined these services and this population is growing every day Barua et al. (2020). In the world of internet, there are innumerable channels of accessing information, more specifically health related information. But it is hard to identify the authenticity and trust worthiness of the information and the sources of information in such channels. When the health information circulated consists of misleading information, done intentionally or not and verified or not, it can be termed as "misinformation". Such misinformation becomes rampant during times of emergency and pandemics, and this directly hinders the efforts of the public authorities and thereby the overall healthcare system of the country, region, or state.

In the most recent times, COVID 19 was one such situation when there was a big wave of misinformation spread among the people of the world and it was addressed as "infodemic" by World Health Organisation (WHO). According to WHO, "an infodemic is too much information including false or misleading information in digital and physical environments during a disease outbreak. It causes confusion and risk-taking behaviours that can harm health. It also leads to mistrust in health authorities and undermines the public health response. An infodemic can intensify or lengthen outbreaks when people are unsure about what they need to do to protect their health and as well as the health of people around them. With growing digitization – an expansion of social media and internet use – information can spread more rapidly. This can help to rapidly fill information voids but can as well amplify harmful messages".

High penetration of mobile phones and the increasing network connectivity, people have more avenues for search of information with great speed and scale. This trend is more prevalent in the spread of misinformation on social networking sites. The widespread use of social media and internet during the pandemic leads to information overload with low scope of confirmation and more importantly high level of anxiety about the epidemic. People look out for various ways to alleviate their anxiety and resort to diverse information channels about the potential risks of the epidemic. This becomes more conducive for the rapid dispersion of misinformation, specifically through social media.

The "infodemic" during the pandemic made people oppose vaccination and public health measures and also resort to unproven remedies. Not just that, they also act violently against the health workers and other frontline workers who are involved in disseminating public health measures.

Some of the identified reasons for the instant and fast spread of misinformation through social media platforms are

1) The inbuilt algorithm of the social networking sites will suggest posts and information to the people based on their previous history of engagement as well as popularity of the content. It creates an "echo chamber" for the people, where they tend to see the information which they would like to see or hear. This makes them exposed to any misinformation and again reinforced to the same kind of misinformation.

2) The engagement rewards including likes, shares, comments which are embedded as a product feature in the social media platforms makes people share and expose to more and more misinformation which comes as a vicious cycle. These platforms focus more on connecting and informing people rather than on verifying the accuracy and authenticity of the shared information.

3) The information shared in the social media platforms tend to be more appealing to the common public as they are charged with sensational and emotional content. Moreover, they are framed to intensify the psychological responses more than make people resort to their logical, cognitive thinking. And this leads them to either urgently act based on the received content or share the misinformation with others resulting in a "viral" spread.

4) The proliferation of number of online spaces people look for information especially health related information has made it more challenging to identify and correct misinformation. Sometimes the media channels too tend to promote or amplify the misinformation carried in the online platforms.

5) In some cases, there is a general mistrust on the existing health care system and the information shared by them. This results in scarcity of credible and reliable information. And when people are exposed to lot of contradictory information on the online platforms they may be misled and misinformed.

6) When intense societal and political differences exist, there is a general distrust and hostility among the public and this leads to lots of contradictions and also "viral" of misinformation.

2. NEED FOR THE STUDY

The need for research studies on health misinformation arises from the fact that during the first phase of COVID 19 pandemic nearly 30 percentages of the information shared in the social media platforms on the pandemic and the virus could be categorised as misinformation. And moreover, many research studies mentioned that the social media posts also carried several myths related to COVID 19, and these studies did not provide any clear proof on the outcomes of the misinformation. Some studies mentioned that such misinformation shared among the common public led to fear and panic and heightened the anxiety of the people. Such negative emotions evoked through misinformation were also one of the causes for the "viral" diffusion of misinformation.

It was seen that social media was the main reason for mushrooming of misinformation through the period of Covid 19 pandemic which also shed doubts about the legitimacy of the vaccines and the spread of virus as such. Some of the misinformation that circulated online promoted medicines that were considered not safe for the treatment of Covid 19. Responding to such information has caused detrimental effects on the lives of people. Based on the WHO newsroom article, it is seen that misinformation has caused nearly 6,000 people across the globe to be

hospitalised and around 800 people may have died during the initial stages of the Covid 19 pandemic. World Health Organization (2021).

Even after the world has witnessed the gruesomeness of the health misinformation, scientific research towards analysing the scope of misinformation, the modalities of its spread, their impact and identifying measures to combat misinformation are not sufficient to be conclusive. Also, there is little focus is given to the reasons on why and how people circulate misinformation. There is a need for additional research which can identify the characteristics of the misinformation and its spread based on the socio- cultural diversities existing in the spaces of misinformation.

3. OBJECTIVES OF THE STUDY

For the purpose of determining the characteristics of health misinformation practices among the social media users and also understanding how they respond to the health misinformation they come across, the objectives of the study were formulated as

1) To identify the features of health (mis)information practices among the social media users
2) To understand the attitude of social media users towards health (mis)information they come across

4. REVIEW OF LITERATURE

To understand the prevalence and the impact of health misinformation and the variables associated with it, a comprehensive review of literature was done. This analysis gave new inputs on the conduct of the present study. In a quali – quantitative case study of Brazil on Misinformation on social networks by Biancovilli et al, they mention that the main features of misinformation that comes in social media should be understood to develop smart, latest, and proof supported content that helps to increase health literacy and combat the diffusion of false information.

Several studies conclude that exposure to health misinformation has resulted in detrimental effects like unwanted fear and apprehension about the diseases or health conditions Chua & Banerjee (2017), led to misunderstandings about the diseases Chen et al. (2021) and also brings barriers in the rapport between the doctors and the patients Lavorgna et al. (2018). To identify solutions to the ill effects of health misinformation on social media, Bode and Vraga explored various methods like inclusion of relevant corrective algorithms in the social media, corrective content given by relevant experts and also societal involvement in the corrective messages Bode & Vraga (2015). Few studies also insisted on promoting health literacy among the people like knowledge about health issues, and awareness about the ways of handling the issues that arise due to exposure to health misinformation on social media Syed-Abdul et al. (2013), Trembath et al. (2016).

Few studies focussed on the management approaches the ill effects of misinformation like providing visible accurate information, improving the social media presence, and also reaching out to the doubts of individuals Brady et al. (2017), Gesser-Edelsburg et al. (2018). A thematic analysis of Misinformation in India during the COVID-19 Pandemic was carried on by Md. Sayeed Al-Zaman (2021). This study found that misinformation on health issues will influence the nation's healthcare system and facilities directly, generating false remedies,

therapies, data, and forecasts and also identified few information gaps which calls for further research efforts to understand the contents, bases, influences, and other essential features of COVID-19 misinformation in India.

In a study by Ghenai (2017), it was found that nearly 44% of the people were searching for a cure for an illness on the internet before consulting any physician. Not only that they also sometimes changed their decision about the treatment for their illness.

Another study which attempts to study the scale of false health information in social media identified the ways and levels at which the misinformation was spread and made few suggestions to the policy making authorities. The study also found that social media platforms are very prompt in stepping up to condemn the acts of spreading false information and identifying measures to counter such mis information.

Exposure to online COVID 19 related health misinformation was found to reduce the intentions of people towards vaccination Loomba et al. (2021). People showed high inclination to share their first-hand experience of treatment among their social groups than on online platforms, which they expected to raise their social standing Fichman et al. (2011). From the users' perspective, they found the information on health issues from their friends and relatives more trustworthy than the information they find in through internet search Zhao & Zhang (2017). On the flip side, when such misinformation was shared among the closed networks, the risks involved were found to be on a higher scale Brady et al. (2017), Chou et al. (2018)

5. METHODOLOGY

The present study **"Comprehending the characteristics and effects of the health misinformation – A study among the social media users"** is a descriptive study to assess the situation of health misinformation online. The study used a quantitative survey method involving convenience sampling technique. A questionnaire tool was developed based on the variables used in the studies reviewed. The questions outlined the socio demographic profile, the social media usage pattern for health communication purposes, knowledge level about health misinformation and the ways to deal with it and finally the attitude towards the health (mis)information they access. The attitude towards health (mis)information was collected through a 5-point Likert scale attitude statements based on the themes derived from various studies. The survey questionnaire was circulated among social media users alone through Google forms. Around 114 responses were received during a period of one month from February 2023 to March 2023. Descriptive Statistics, Non Parametric Kruskal Walis Test and Regression analysis were used to analyse the responses using SPSS statistical tool.

6. RESULTS AND DISCUSSIONS

The socio demographic profile of the respondents gives an interesting depiction of the health information scenario of the respondents who were social media users. The age of the respondents was in the range between 17 to 45 years and nearly 55% of them were between 19 years to 21 years. Among the various sources of information for accessing health information, the majority of the respondents resorted to family members (61%) and health professionals (67%). On the other hand, websites (45.3%) and social media (45.3%) also were too widely accessed for health information. Among the various social media platforms used every day by the

respondents What's app was the highest (102-), followed by Instagram (67) and You Tube (60). Surprisingly Facebook was rarely or never used by most of the respondents.

Nearly 95% of the respondents said that they accessed social media for health information regularly when they needed to know more information about certain health condition more than during any disease outbreak (30%) or when they were affected by any disease (35%). This shows that searching for health information happens on a regular basis and thereby creates a fertile area for the possibilities of accessing and misled by any misinformation. It was also seen that most of the respondents (53.8%) accessed health information in the form of image, video, audio, and graphics. It may be inferred that they were more interested in accessing the information in more dynamic and more participatory content.

Majority of the respondents (78%) partially relied on the health information they accessed through social media, which says that there are all possibilities for them to be misled by the misinformation they may come across. This says that more focus needs to be made on the ways of how to protect them from such misinformation or create an awareness on the ways to identify the information and misinformation and health literacy on reporting such misinformation they come across.

Nearly 55% of the respondents are in the habit of endorsing the health information they come across in the social media which multiplies the possibilities of false information being circulated. However, the respondents also knew how to check the facts of the health information they considered as not trustworthy. Contrarily, only 28% of the respondents mentioned that they will report the misinformation, and 41% of them ignored it and only 30% of them share it mentioning that it was false. Ignoring the misinformation without reporting or mentioning it was false makes the situation graver.

Table 1

Table 1 Results of Regression Analysis Showing the Relationship Between the Situations for Accessing Health (mis)Information and the Usage of You Tube

Model	Unstandardized Coefficients		Standardized Coefficients						
	B	Std. Error	Beta	t	Sig.	R	R Square	F (4,109)	Sig.
1. (Constant)	1.703	.171		9.985	.000	.233[a]	.054	1.562	.190[b]
Disease outbreak	.023	.169	.015	.134	.893				
Affected by any disease	.044	.090	.061	.485	.628				
Family members are affected	-.133	.062	-.265	-2.143	**.034***				
Information on health issues	-.011	.043	-.024	-.244	.808				

*Significance @0.05

The respondents were asked about the situations when they will access social media for your health information needs. The options given were during any disease outbreak, when you are affected by any disease, when your family members are affected and you want to know certain information on any health issues. Regression analysis of these two variables revealed no significant correlation between the use of social media and the type of situations during when they access social media for their health information.

However, a statistical significance was found between usage of You tube and when family members are affected by any disease. This significance however shows a negative coefficient which proves that when the family members are affected by any disease, they tend to retreat or do not use You tube. This may be due to the notion that their fear or anxiety may be intensified due to the extra information they access through the use of you tube.

Table 2

Table 2 Results of Regression Analysis Showing the Relationship Between the Reasons for Sharing Health (mis)Information and the Usage of WhatsApp

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R	R Square	F (4,109)	Sig.
	B	Std. Error	Beta						
1. (Constant)	1.052	.108		9.743	.000	.206[a]	.042	1.205	.313[b]
New information	.005	.111	.005	.043	.965				
Protect people	.036	.052	.075	.694	.489				
Seeking explanations	.070	.034	.214	2.058	**.042***				
Feel connected	-.018	.036	-.047	-.495	.622				

*Significance @0.05

The respondents were asked to give their views on the reasons for sharing health (mis)information which includes, we like to feel that we have new information that others don't know, we want to protect the people we care about, we may be seeking explanations or wanting to share information that helps us make sense of events and we want to feel connected to others.

From the above Table 3 it can be inferred that that there is a significant correlation between use of what's app for seeking explanations or wanting to share information that helps them make sense of events, may be during pandemic or any health calamity. During any health emergencies, whether it is a personal one or happening to the society as a whole, every individual is concerned of what may happen next. This anxiety of the unknown facts of the health emergency, doubts on the health practices to be followed, and so on makes people to reach out to the people or experts for clarification. However, the analysis also showed that there was no significant relation between any other reasons for accessing social media for their health information and usage of other social media.

Table 3

Table 3 Results Showing the Opinions of Social Media Users Regarding Using Social Media for Health-Related Information

Social Media Used	Opinion Statement	Chi-Square	df	Asymp. Sig.
Whats app	Most of the health information in social media is told by someone whom I am able to relate to, for example a housewife or someone who claim themselves to be an expert	9.891	2	.007*
You Tube	It is easy for me to access social media for health-related information	8.062	3	.045*
	I find the health information shared by people in social media which talks about their personal experience	8.83	3	.032*

*Significance @0.05

The attitude of the respondents towards using social media for health information was analysed using the attitude statements responses in which they expressed their views on how they will respond to the health (mis)information they access or come across. Based on the highly used social media platforms by the respondents, the analysis was carried out on the three social platform users which includes Whats app, You Tube and Instagram. It was found that there was no significant association between the Instagram users and any of the attitude statements towards health (mis)information. However, the users of What's app showed significant association towards the statement affirming that they accessed the health information in social media as it is told by someone whom they can relate to or who they think as an expert. It can be inferred that the respondents accessed social media for their health information needs as they can look out for people whom they can trust or relate to. This shows that credibility of the source plays a major role in the credibility of the information as such.

In addition it could be seen that there is a strong association between the users of You tube ant the statements which said that it was easy to access health information instantly and also that the respondents could find real people whom they know and also who talk about their own personal experiences. The results of the study by Zhao & Zhang (2017) reaffirm the idea that people tend to make health decisions based on the experiences of their friends. The reason for sharing such personal experiences is explained in a study by Fichman et al. (2011) which states that people tend to share their firsthand treatment experience on social media thinking that they contribute for a social conscience and feel that enhances their social standing among their friends. According to the respondents, ease of use is one of the drivers which made them choose social media for accessing health information. Ease of use here can be identified with other aspects including technical efficacy to use social media, and availability of devices for access. With the experiences during COVID 19, everyone developed the habit of accessing social media for their health information needs and that habit still seems to persist.

On the other hand, the users of You Tube also felt that they accessed social media to know details about various health conditions as it comes from the people who have experienced it and that shared experience makes the people more personalized with the information too. True to its name, the social media establishes social ties among people whom they know and among people they have not met also. This makes it more convenient for them to relate to the posts made by the people world around. However, it should be noted that the health condition of one individual cannot be generalized for everyone and also the environmental conditions where they reside also differ. When people take other people's experience for their own health condition it would be detrimental to their health and life too.

The attitude statements assessing the credibility of the information shared or the credibility of the source does not show significant relationship or association which is an unsettling aspect. Mushrooming of misinformation will be difficult to curb if the users do not show importance to the credibility aspects of the information shared or accessed.

The results of the study show that there is a growing trend to access social media for information on health issues and they tend to rely on it partially. However, if they find it less trustworthy, they are clear to verify it with the health professionals. This seems to be a promising trend. However, the analysis of the attitude statements gives a little a worrisome picture as most of the respondents are found to be guided more by emotions than the logic of the information on health

topics found in the social media. And this may lead them to be misguided or access misinformation without realising the repercussions of such access.

7. CONCLUSION

According to Rosnow et al. (1988), there are four factors that will lead to the big spread of misinformation. They are uncertainty, outcome relevant involvement, personal anxiety, and trust worthiness. All these factors are interconnected, and one factor leads or affects the other and results in the thriving of misinformation. People search and share misinformation when the situation is uncertain, and no one knows where and how to approach for credible information. As such if the information they search for will affect their life or important to the general public, the tendency to believe the misinformation will be high. During times of crisis, the anxiety of the people is heightened and hence when they come across any misinformation, they are prone to believe it easily and also share it amongst their circles. This increases the speed of spread of misinformation and difficult to control it. Trust worthiness in case of public health domain is dependent on the level of health literacy among the people and also the socio-cultural factors prevailing in that society. Health literacy of the individuals will decide on how the individual will access, process, understand and act upon the health information. Li et al. (2019)

Every individual should actively involve in reducing the spread and impact of health-related misinformation. The social media users can take up the responsibility to avoid spreading information which they consider as not credible. When they come across any information which they consider not credible, they can directly report it to the social media platforms itself or the misinformation reporting tabs found in the portal of World Health Organisation. On their side the social media platforms can identify the misinformation and they can either tag it as misinformation or remove it. The health department of the state or health providers can increase their presence in social media, thereby circulating more credible information. Harvey (2021)

Understanding the need to combat health related misinformation; the World Health Organization (WHO) has initiated awareness campaigns that enable people to check information with trusted sources. In addition, WHO has installed myth busters' pages which aim at informing people about the various myths that exists on the diseases and various health issues. Murthy (2021)

As discussed earlier, WHO has proclaimed the information overload or misinformation during the pandemics as "infodemic" and management of infodemic becomes the need of the hour. It involves "the systematic use of risk- and evidence-based analysis and approaches to manage the infodemic and reduce its impact on health behaviours during health emergencies". Effective infodemic management involves listening to the genuine concerns of the community, making people understand the risks and provide essential health advice, building resilience to misinformation and enabling communities to take up positive actions.

There is a need for more research outlay which can create an evidence base spelling out the consequences of the mis and disinformation and how it can affect the health outcomes of individuals and society at large. In addition, the research efforts can also focus on the effectiveness of the interventions that are designed for countering the effects of misinformation. This will enable us to reciprocate more efficiently to the challenges caused by the infodemics and also increase the practice of accessing accurate health information. Gabarron et al. (2021)

Discussing lockdown to who is right and who is wrong with COVID 19 information was seen with an over hyped reactions from the social media users. But it can be noted that many social media users have gained followers for their handle, whether is it fortunate or unfortunate is a question to be cleared by social scientists and psychologist. Thus, scope for further research is multifold in the area of mis- and dis-information for the researchers, as no one can disagree that many lives have been taken away by the COVID 19 pandemic whether it is silly, illogical or planned conspiracy, but life become standstill throughout the world. It is time to share some sense and fact by not threatening the laymen by our messages through social media. We need to join hands in establishing the right sense of health information through our studies and analysis by intensifying methods and data to substantiate the broad area of health communication.

CONFLICT OF INTERESTS

None.

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