

## Role of Mass Media in promoting Health Literacy

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### Abstract

Centre for Disease Control, Healthy people 2030, defines Health literacy as ‘the degree to which individuals have the ability to find understand and use basic health information and services needed to make appropriate health decisions for themselves and others. The American Medical Association (AMA) defines it as ‘a constellation of skills including basic reading and numerical tasks required to function in the healthcare environment.’ Businesses, educators, community leaders, government agencies, health insurers, healthcare providers, the media, and many other organizations and individuals all have a part to play in improving health literacy in our society.

Development Communication is a complex evolutionary branch that looks at development through communication an empowerment tool to facilitate the participation of people in activities that lead to economic and social transformation. There have been many approached to development communication starting with the “dominant paradigm” as proposed by Rogers in 1960. The modernisation theory looked at traditional culture as an impediment to development. Further scholars like Daniel Lerner and Wilbur Schramm who were involved in third world development posited that as the traditional society was non-participant as people were more isolated as communities with minimal interactions. He emphasised the role of mass media and identified that it had the potential to transform people attitudes and usher in modernisation. Mass media was looked up as ideal vehicles for transferring new ideas and models from developed nations to the third world. They were looked up as “magic multipliers” and key factors in the speed of development by Schramm. The diffusion of innovations theory identified by Rogers looks at the innovation, communication, channels of communication and the social system within which and for which the process occurs, through five stages – awareness, interest, evaluation, trial and adoption. Over time the theory has been replaced with social marketing theory which provides a model for strategic, scientific, determination of messages and media strategies to disseminate ideas to promote a social cause. Family planning, gender rights, adult literacy, HIV/AIDS prevention, responsible sexual relationships have all been some of the responsible campaigns carried out with the support of media.

Media is crucial to the advancement of communication because it disseminates information, offers a forum for debate of problems, and imparts concepts and abilities. achieve a better life and establish a foundation of agreement for the stability of the nation.

India concentrated on development communication in the 1940s with radio broadcast in different languages through various programmes, like-Programs for Rural Audience, Educational Programs and Family Welfare Programs. Television entered the foray shortly through different programs like Educational Television (ETV), Countrywide Classroom (CWC), Teleconferencing. Successful missions like SITE, Kheda Communication project have brought out social change and development.

With the development of newer technologies that support interactivity Government programs optimise on this strength.

Health literacy concerns the knowledge and role of media in health literacy is increasingly recognised, there is no consensus about the definition of health literacy and possible limits for measurement and comparison. Hence the authors' aim of the study is to review definitions, models on health literacy and role of media in health literacy to develop an integrated definition and conceptual model capturing the significance of media's role in promoting health literacy.

**Method Proposed:** A secondary research based on literature review is intended to be performed to identify definitions and conceptual frameworks of media's role in health literacy. A compilation of various research-based information on media's role in health communication including the definitions and conceptual frameworks is planned to be carried out to identify the central dimensions of health literacy and develop an integrated model.

**Objectives & Implications:** The secondary research review method intended by the researchers may serve to study the dimensions referring to the knowledge, motivation and competencies of accessing information on health via various media, study the people's understanding about health concerns, media coverage dealing with the appraisal and application of health-related information within the healthcare, disease prevention and health promotion setting, respectively. Through this paper the researchers aim to study the competencies related to accessing, understanding, appraising and applying health information in the domains of healthcare, disease prevention and health promotion, respectively, especially role of media (greater emphasis on social media) in contributing to health literacy and Covid19 Pandemic being the significant evidential situation.

**Possible Outcome:** Based on an analysis of review of existing definitions and conceptualizations of health literacy and role of mass media, it serves to outline the basis for developing mass media-based health literacy enhancing interventions. This further provides a conceptual validation for capturing the different dimensions of health literacy, disease prevention and health promotion settings.

**Keywords:** Development Communication, Mass media, Health literacy

## Introduction

### Health Literacy

The **Center for Disease Control and Prevention (CDC)** officially defines health literacy as the ability to “obtain, communicate, process and understand basic health information and services.” Reading skills gives one the ability to understand and use the written information while health literacy gives the skills to understand and make good decisions on health.

According to the American Medical Association (AMA), health literacy is defined as ‘a constellation of skills including basic reading and numerical tasks required to function in the healthcare environment.’ Health literacy as a term became popular in 1970s and is of immense relevance in public health and health care. Health literate means placing one's own health and that of one's family

and community into context, understanding which factors are influencing it, and knowing how to address them. Kickbusch & Maag (2008) look at health literacy as a term concerned with the capacities of people to meet the complex demands of health in a modern society. MacQueen D et al. (2007) posit that an individual with an adequate level of health literacy can take responsibility for one's own health as well as one's family health and community health. Businesses, educators, community leaders, government agencies, health insurers, healthcare providers, the media, and many other organizations and individuals all have a part to play in improving health literacy in our society.

From looking at health literacy as the ability to handle words and numbers in a medical context, the recent years has adopted approach to understand health literacy as involving the simultaneous use of a more complex and interconnected set of abilities, such as reading and acting upon written health information, communicating needs to health professionals, and understanding health instructions. (Peerson and Sanders, 2009). Through a systematic review Liu et al. (2020) point out that Health literacy was commonly conceptualised as a set of knowledge, a set of skills or a hierarchy of functions (functional-interactive-critical). After a detailed analysis of 34 studies, they classify the construct of health literacy covers three broad elements: (1) knowledge of health, healthcare, and health systems; (2) processing and using information in various formats in relation to health and healthcare; and (3) ability to maintain health through self-management and working in partnerships with health providers.

Nutbeam (2008) suggests a model for health literacy with the following three domains: (i) functional (i.e. transmission of factual information on health risks and services), (ii) critical (i.e. provision of information on social determinants of health and opportunities for communal action to direct change) and (iii) interactive (i.e. opportunities to direct change on a personal level). These domains focus on ways in which information is used to promote and maintain good health.

Past studies have shown that health literacy helps individuals engage more in treatment decision-making and cooperate better with healthcare centers. (Khosravi & Ahmadzadeh, 2016; Mahmoudi, 2016). Further, people with poor health literacy may not understand the nature of the treatment and medical advice given to them. Various factors can affect the level of health literacy one of which seems to be media literacy. Tehrani (2016) in his study points out that different organizations recommend media literacy as one of the effective strategies for promoting health.

Afshar et al. (2022) prove that the media literacy is an important determinant factor for health literacy and hence, the development and increase of media literacy can increase health literacy. Health literacy is already seen as a crucial tool for the prevention of noncommunicable diseases. Therefore, community health policies can be used to increase health literacy and media literacy of citizens because people with adequate health literacy may behave better in health crises and epidemics. This was the need of the hour to wade through during the recent COVID pandemic times. Health literacy is important in determining true information, especially in the context of infodemics (Abel, 2020 and Chong, 2020).

## Mass Media and Development Communication

Media is a vehicle or means of communication that disseminates information from the source to the target public. Any media intended for a larger audience is called Mass Media. From pictorial representations at an early age, massive production of newspapers, and fancy videos on television to high-tech media combining the Internet and computers, there are variations in the type of mass media. Being the prime source of information, entertainment, marketing, advertising media, they play a very important role in today's context. Mass Media can be defined as a technology which is intended to communicate or reach a mass audience. Mass media is the primary means of communication for the general public to communicate with each other as well on a grander level. The most popular types of mass media include Newspapers, Radio, Television, Internet, Magazines.

The technique of employing messages to generate meaning in a mediated system is known as mass communication. It is between a source and many unseen receivers—there is always some sort of transmission system (mediator) between the sender and the receiver. In today's environment, it can be broadly classified as traditional or mainstream mass media, which includes newspapers, radio, and television, and new media, which includes social media (Facebook, Twitter, Instagram, and so on) and various news media that reach out to people through e-apps observe Anand.S. and A. Kumar (2016). "Mass communication is the process of sending a message, thought, or attitude to a large number of diverse audiences through some media at the same time." (Homes, 2005).

Development Communication is a complex evolutionary branch that looks at development through communication an empowerment tool to facilitate the participation of people in activities that lead to economic and social transformation. There have been many approached to development communication starting with the “dominant paradigm” as proposed by Rogers in 1960. The modernisation theory looked at traditional culture as an impediment to development. Further scholars like Daniel Lerner and Wilbur Schramm who were involved in third world development posited that as the traditional society was non-participant as people were more isolated as communities with minimal interactions. He emphasised the role of mass media and identified that it had the potential to transform people attitudes and usher in modernisation. Mass media was looked up as ideal vehicles for transferring new ideas and models from developed nations to the third world. They were looked up as “magic multipliers” and key factors in the speed of development by Schramm. The diffusion of innovations theory identified by Rogers looks at the innovation, communication, channels of communication and the social system within which and for which the process occurs, through five stages – awareness, interest, evaluation, trial, and adoption. Over time the theory has been replaced with social marketing theory which provides a model for strategic, scientific, determination of messages and media strategies to disseminate ideas to promote a social cause. Family planning, gender rights, adult literacy, HIV/AIDS prevention, responsible sexual relationships have all been some of the responsible campaigns carried out with the support of media.

Media is crucial to the advancement of communication because it disseminates information, offers a forum for debate of problems, and imparts concepts and abilities. achieve a better life and establish a foundation of agreement for the stability of the nation. According to UNESCO (1978) a multi-

dimensional communication flow strategy is effective in reaching out the development initiatives to the targeted public, using interpersonal channels with the support of mass media. (Khalid, 2012).

### **Media literacy & Health literacy**

Mass media are expected to perform the following functions:

- **Informing the Public:** Mass media such as television, radio, and newspapers can be used to disseminate important health information to the public, including disease prevention strategies, new medical treatments, and emerging health threats.
- **Educating the Public:** Mass media can be used to raise awareness among the public regarding health hazards and the importance of healthy behaviors such as exercise, healthy eating, and vaccination.
- **Advocating for Public Health Policies:** Mass media can be used to advocate for public health policies such as smoking bans, seatbelt laws, and restrictions on junk food advertising to children.
- **Providing a Platform for Public Discourse:** Mass media can provide a forum for public discussion about health issues, allowing individuals and communities to share their experiences and opinions.
- **Mobilizing Communities:** Mass media can be used to mobilize communities to act to improve public health, such as participating in health screenings or organizing community clean-up events.
- **Providing Support for Individuals:** Mass media can offer support to individuals with health conditions by providing information about treatment options, support groups, and resources.
- **Addressing Health Disparities:** Mass media can help to address health disparities by providing information and resources to underserved populations, including those with limited access to healthcare.
- **Generating Public Interest:** Mass media can generate public interest in health issues, which can lead to increased funding for research, improved healthcare services, and better health outcomes for individuals and communities.

### **Does Mass Media Influence Public Policy?**

Mass media can also influence public policy by increasing public awareness regarding public health concerns, including the harmful effects of tobacco use, and by advocating for policies that can improve public health. Media campaigns that emphasize the importance of vaccinations, for example, can lead to changes in public policy that increase vaccination rates. Through mass media, public health professionals can also reach out to underserved populations and communities with limited access to health information. For example, television and radio campaigns can reach rural communities with information about healthcare services and disease prevention measures. In addition, mass media can be used to address health disparities and promote health equity. Media campaigns can provide information about diseases that disproportionately affect marginalized communities and promote access to healthcare services for these populations.

## Limitations of Mass Media in Public Health

Despite the many benefits of mass media in public health, there are also some challenges, such as:

- **Sensationalism:** Sometimes, mass media focuses on sensational or eye-catching news, rather than providing accurate and relevant information on public health issues.
- **Misinformation:** Mass media can inadvertently spread misinformation or false information related to public health issues, which can be dangerous for the public.
- **Language and Cultural Barriers:** In some communities, the use of mass media may not be as effective due to language and cultural barriers. This can result in limited comprehension of public health messages and interventions.
- **Limited Reach:** Not everyone has access to mass media, and there are still areas with limited internet connectivity and access to traditional media such as newspapers and television.
- **Political Influence:** Mass media can be influenced by political agendas and bias, which can impact the accuracy and effectiveness of public health messages.
- **Limited Attention Span:** In today's fast-paced world, people have limited attention spans and may not pay attention to public health messages that require time and effort to understand.
- **Lack of Trust:** Mass media may not always be trusted by the public, which can lead to skepticism and disbelief in public health messages.

Previous research has shown a positive correlation between media literacy and health literacy; the higher the health literacy, the higher the media literacy. The views of research done by of (Akbarinejad et al.,2017) (Mahmoudi et al.2016) and (Yvonne Chen, 2014) conducted in Iran, and the US showed a direct positive correlation between health literacy and media literacy. This has been reiterated by Afshar et al. (2020).

Levin-Zamir et al. (2011) propose the concept of Media Health Literacy (MHL) that is based on the premise that the individual has the capability to control the determinants influencing his or her health through thought and action. The concept assumes that, unlike health content and information intentionally generated by the health system, mass media content is often implicit and can have a profound impact. Their study was among adolescents in Israel and their use of media. MHL is an effective mental health determinant or can progress both the health of individuals and communities. Adopting an interventional experimental design approach, Dharti et al. (2021) prove that Mass media intervention was effective for improved mental health literacy among rural women, and show a significant association of effectiveness of mass media intervention on mental health literacy in age, education, family income. The investigators stress on the importance of health literacy as the public will understand and use health information and services. They show significant association of effectiveness of mass media intervention on mental health literacy in age, education, family income.

An online cross-sectional study (Inour et al., 2022) infer that in the context of COVID-19 in Japan, mass media was the most frequently used source of information, followed by digital media, face-to-face communication, and social media. Social media use was significantly higher among individuals aged 20-29 years than among other age groups.



According to Mohammad Hossein Saei, Sardar Valadi, Kianoosh Karimi, and Mohammad Khammarnia et al., (2021) who studied the role of mass media communication in public health: The impact of Islamic Republic of Iran broadcasting health channel on health literacy and health behaviors, infer that by informing and educating, the Media play a main role in increasing the health literacy of the community. Broadcasting health channels (BHCs) are established to improve health literacy and public health worldwide. A cross-sectional, comparative study was performed on 500 participants throughout 6 urban areas in Tehran, the capital of Iran in 2019. About 250 of the samples were included in viewing the health channel group. A standard questionnaire was used to measure the levels of public health in the 2 groups. Data were analyzed and compared using SPSS software version 25. According to the results, health literacy was higher in the group that used the health channel rather than the other group. Also, with regard to physical and psychological health levels, a significant difference was observed between audiences and non-audiences ( $p=0.013$ ,  $p=0.001$ , respectively). The study concluded by declaring that the IRIB HC has positive effects on increasing the level of health literacy, Physical and psychological health, and consequently improving public health. Therefore, these channels have a great role in the implementation of health policies to improve health status.

### **Significance of Social Media in promoting health literacy**

Anwar A, Malik M, Raees V, et al. (2020) in his article on the Role of Mass Media and Public Health Communications in the COVID-19 Pandemic, in the Cureus 12(9): e10453 has quoted that Mass media became the major source of information about the novel coronavirus, led to the emergence of the biggest global health crises seen to date. In his review, he analyzed the role of mass media and public health communications from December 31, 2019 to July 15, 2020, and make scientific inferences. The COVID-19 pandemic highlighted multiple social, cultural, and economic issues arising from the media's arguable role. The racial prejudices linked to the origin of the virus prevented collaborations among scientists to find a solution. Media coverage of coronavirus news during geographical lockdowns, extended quarantines, and financial and social hardships induced fear and caused psychological stress. Domestic and elderly abuse upsurged. The unscientific cures and unverified medicines endorsed by the politicians and fake doctors proved harmful. The media played a worldwide role in coronavirus disease tracking and updates through live updates dashboard. The media allowed for timely interventions by the Center For Disease Control And Prevention (CDC) and the World Health Organization (WHO), enabling a rapid and widespread reach of public health communications. An upward trend for the promotion of health and hygiene practices worldwide by adaption of safe health practices such as increased hand washing, use of face coverings, and social distancing was propagated by media. Media reinforced illness-preventing guidelines daily, and people were encouraged to use telehealth to meet their healthcare needs. Mass media has an imperative role in today's world and it can provide a unified platform for all public health communications, comprehensive healthcare education guidelines, and robust social distancing strategies while still maintaining social connections. It can enable equal access to healthcare, end discrimination, and social stigmatization. The role of media and public health communications must be understood and explored further as they will be an essential tool for combating COVID-19 and future outbreaks.

The study offers to cover the emotional and psychosocial aspects of social media including Facebook, Twitter, YouTube, Instagram, Snapchat, WhatsApp, and Reddit, along with their Chinese equivalents WeChat, Weibo, Tencent, Tik Tok, and Toutiao. The study reveals that People have become accustomed to posting every aspect of their lives on social media. This includes their achievements, worries, and travels on a daily and hourly basis. Since the lockdown, there has been an 87% increase in social media usage by the people. People started gathering information posted on the groups and unknown pages and believing them. Religious pages also started attracting people amid crises by spreading unscientific information regarding the prevention and treatment of the virus. The implausible claim of the virus affecting the geriatric population made the young vulnerable. This ultimately resulted in a large number of young affected by the virus. This unscientific and unproven fact spread like wildfire in the media and made the elderly go through many psychological and physical terrors. Moreover, disruption in professional lives and sticking to social media in all this free time, highlighted the problems like racism and wealth inequality. Many cases of domestic violence were also reported.

In contrast to this, the positive impact of social media was also covered in the study. The continuous mention of ads like ‘Stay home, stay safe,’ ‘Face covers mandatory in public,’ ‘COVID-19: less is more, avoid gatherings,’ ‘give extra space with each other and on the road,’ and ‘wash your hands, stay healthy, avoid COVID-19’ was essential to consolidate the role of them in preventing the disease spread. Further Online mental health services including telemedicine, working to combat mental diseases, and psychiatrists and psychologists on the internet provide free consultations go to prove that Social media is contributing to mental health education for the public. Many SARS-COV-2 tracking tools, including Worldometer, provided live statistics and updated news regarding coronavirus. WHO has unveiled its Arc Geographic Information System (ArcGIS) Operations dashboard for COVID-19 which helped to map the worldwide spread of misinformation and confusion. Media helped researchers and scientists to predict and take necessary measures at appropriate times.

In a study on the Role of the Media in Health-Related Awareness Campaigns on Perception of COVID-19: A Pre-post Study in the General Population of Pakistan, published in the Frontiers by Atta Ur Rehman, Rubeena Zakar, Muhammad Zakria Zakar, Ume Hani, Kamil J. Wrona, Florian Fischer et al., (2021) aimed to study if the Medical preparedness and community education are the most valuable preventive tools for combatting the COVID-19 pandemic. The study was based on the Knowledge Gap Hypothesis. The hypothesis proposed that knowledge is disseminated in the society on the basis of socio-economic indicators. The philosophical stance of the knowledge gap hypothesis described that people with better financial status may assimilate media information more rapidly than lower financial status. The socio-demographics association with awareness was analyzed in this study. The objectives of the study were to assess the role of media health-awareness campaigns on the general population's perception and knowledge of COVID-19 in Rawalpindi, Pakistan. A quantitative study using a pre-post design among 384 respondents was conducted. A structured questionnaire was administered to the participants twice: The first response (t1) from participants was filled in during the 1st week in February 2020 before any confirmed cases were reported in the country, and the second response (t2) was completed 1 month after the first case detection in Pakistan (March 2020). Media health awareness campaigns were launched just after the detection of the first case in Pakistan.



Exposure to the media and knowledge relating to COVID-19 increased over time. People use different types of media—either exclusively or in combination—to acquire information. Different types of media correlated at a low or moderate level for each instance of data collection. However, there was a very high correlation for each type of media when comparing t1 and t2. The daily users of social media increased from 46.1 to 54.7% from t1 to t2. The proportion of weekly users of social/digital media stayed almost the same. Electronic media (news portals) were the most widely used among participants (62.5% at t1 and 71.7% at t2). The use of newspapers and magazines decreased significantly, as 64.3% of respondents were not using them in March compared to 45.1% in February. Socio-demographic characteristics were not significantly associated with knowledge (gains). Knowledge related to COVID-19 awareness (general, symptoms, and preventive measures), as well as total awareness, increased significantly over time. Awareness regarding the symptoms of COVID-19 indicated a noteworthy increase in knowledge among participants. However, more frequent use of electronic media is associated with greater knowledge gains from t1 to t2.

**TABLE 2 |** Frequency of media use before (t<sub>1</sub>) and after (t<sub>2</sub>) the first reported case of COVID-19 (n = 384).

Type of media	Media use at t <sub>1</sub> n (%)			Media use at t <sub>2</sub> n (%)		
	Daily	Weekly	Not follow	Daily	Weekly	Not follow
Social media (e.g., Facebook, WhatsApp)	177 (46.1)	90 (25.8)	108 (28.1)	210 (54.7)	95 (24.7)	79 (20.6)
Electronic media (e.g., television)	240 (62.5)	72 (18.8)	72 (18.8)	270 (71.7)	59 (15.4)	52 (13.5)
Print media (e.g., newspaper, magazine)	150 (39.1)	61 (15.8)	173 (45.1)	97 (25.3)	40 (10.4)	247 (64.3)

The findings of this study provide evidence that awareness and knowledge related to COVID-19 symptoms and preventive measures increased significantly over time. The increased frequency of following the media indicates that health awareness campaigns are important for enhancing the knowledge of the general public regarding COVID-19. Differences in knowledge related to educational level, gender, residence, income, and age of the respondents were investigated. The statistical outcomes revealed that all variables were non-significant in respect to age and income of the sampled population. Furthermore, the diffusion of innovation theory also proposes that acceptance takes time and that individual's pass through various phases in the adoption procedure and may acclimatize to the concept during the later phases. Therefore, future investigations may discover improved health awareness among participants related to further items, whereas only limited progress was seen in the study, such as that related to the complications of COVID-19.

Qinling Yan, Sanyi Tang, Sandra Gabriele, Jianhong Wu et al., (2016) developed a quantitative approach to evaluate the potential of News reporting to modify a community's knowledge of emerging infectious diseases and affect peoples' attitudes and behavior. Statistically significant correlations between the number of new hospital notifications, during the 2009 A/H1N1 influenza epidemic in the Shaanxi province of China, and the number of daily news items added to eight major websites were found from Pearson correlation and cross-correlation analyses. They also proposed a novel model to examine the implication for transmission dynamics of these correlations. The model incorporated the media impact function into the intensity of infection, and enhanced the traditional epidemic SEIR model with the addition of media dynamics. They used a nonlinear least squares estimation to identify

the best-fit parameter values in the model from the observed data. They also carried out the uncertainty and sensitivity analyses to determine key parameters during early phase of the disease outbreak for the final outcome of the outbreak with media impact. The findings confirm the importance of responses by individuals to the media reports, with behavior changes having important consequence for the emerging infectious disease control. Therefore, for mitigating emerging infectious diseases, media reports should be focused on how to guide people's behavioral changes, which are critical for limiting the spread of disease.

Kristine S, Broucke SV, Fullam J, Doyle G, Pelikan J, Slonska Z. et al. (2012) undertook to publish an article in BMC Public Health, a part of Springer Nature with a systematic review and integration of definitions and models on Health literacy and public health. The review resulted in 17 definitions of health literacy and 12 conceptual models. Based on the content analysis, an integrative conceptual model was developed containing 12 dimensions referring to the knowledge, motivation and competencies of accessing, understanding, appraising and applying health-related information within the healthcare, disease prevention and health promotion setting, respectively. Based upon this review, a model was proposed integrating medical and public health views of health literacy. The model can serve as a basis for developing health literacy enhancing interventions and provide a conceptual basis for the development and validation of measurement tools, capturing the different dimensions of health literacy within the healthcare, disease prevention and health promotion settings. Health literacy was linked to literacy and entails people's knowledge, motivation and competences to access, understand, appraise, and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life during the life course. The core of the model shows the competencies related to the process of accessing, understanding, appraising and applying health-related information. According to the 'all inclusive' definition this process requires four types of competencies: (1) Access refers to the ability to seek, find and obtain health information; (2) Understand refers to the ability to comprehend the health information that is accessed; (3) Appraise describes the ability to interpret, filter, judge and evaluate the health information that has been accessed; and (4) Apply refers to the ability to communicate and use the information to make a decision to maintain and improve health. Each of these competences represents a crucial dimension of health literacy, requires specific cognitive qualities and depends on the quality of the information provided: obtaining and accessing health information depends on understanding, timing and trustworthiness; understanding the information depends on expectations, perceived utility, individualization of outcomes, and interpretation of causalities; processing and appraisal of the information depends on the complexity, jargon and partial understandings of the information; and effective communication depends on comprehension. The competences also incorporate the qualities of functional, interactive and critical health literacy as proposed by Nutbeam.

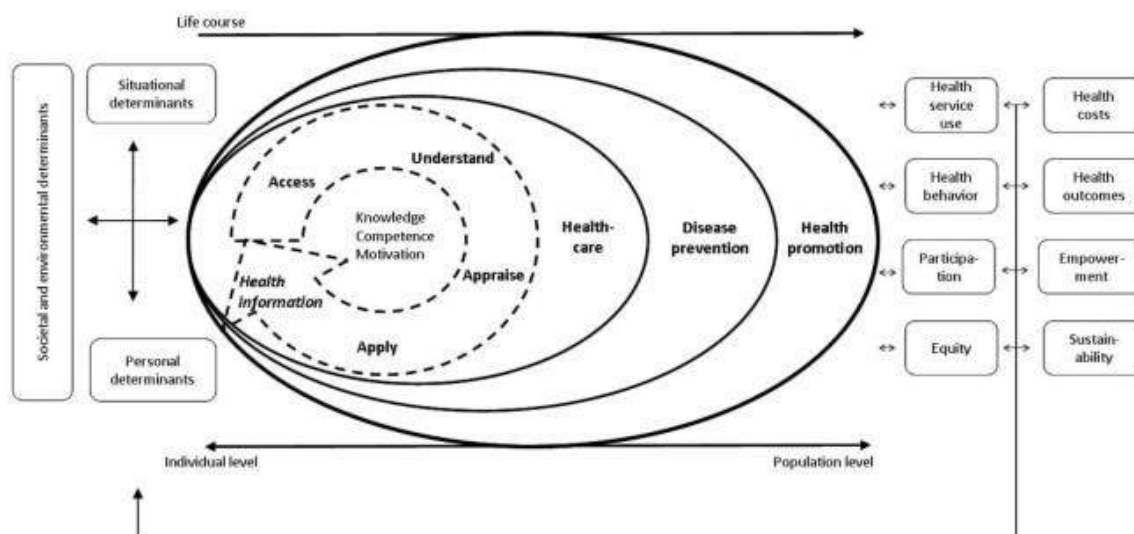


Fig 1: An integrated conceptual model of health literacy by Kristine S, Broucke SV, Fullam J, Doyle G, Pelikan J, Slonska Z. et al. (2012)

Some of the key realisations from the literature was that the media acts as a modification agent can affect the behavior of individuals to enable improved well-being by acclimatizing them to the precautionary measures that halt the spread of the virus. Prevention is the essence of public health. The numbers of social and electronic media users increased significantly during the coronavirus pandemic. The government, in collaboration with the media, has to address the challenge of information inequalities. There is a need for guidance to recognize the importance of the media for disseminating information related to the coronavirus. Health journalism requires sound knowledge related to infectious diseases. Lack of knowledge makes it challenging for journalists to describe this public health pandemic.

	Access/obtain information relevant to health	Understand information relevant to health	Process/appraise information relevant to health	Apply/use information relevant to health
<b>Health care</b>	Ability to access information on medical or clinical issues	Ability to understand medical information and derive meaning	Ability to interpret and evaluate medical information	Ability to make informed decisions on medical issues
<b>Disease prevention</b>	Ability to access information on risk factors for health	Ability to understand information on risk factors and derive meaning	Ability to interpret and evaluate information on risk factors for health	Ability to make informed decisions on risk factors for health
<b>Health promotion</b>	Ability to update oneself on determinants of health in the social and physical environment	Ability to understand information on determinants of health in the social and physical environment and derive meaning	Ability to interpret and evaluate information on health determinants in the social and physical environment	Ability to make informed decisions on health determinants in the social and physical environment

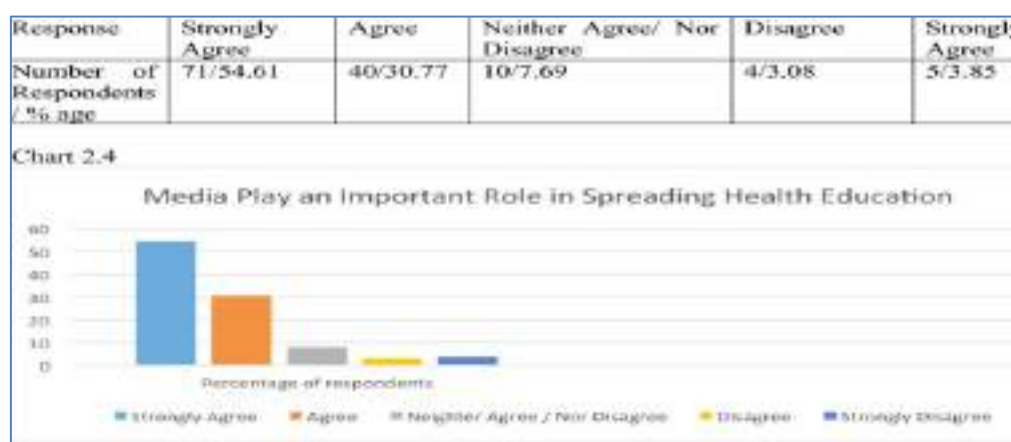
Fig 2: The matrix with four dimensions of health literacy applied to three health domains

Business today on March 30, 2020 on a survey reported that 75 per cent of Indians were spending more time on Facebook, Twitter and WhatsApp compared to the week before. Before the lockdown, social media usage was on average 150 minutes per day. However, in the first week of lockdown, the figures jumped to 280 minutes per day, showed a survey. The survey added that 75 per cent people were spending more time on Facebook, Twitter and WhatsApp compared to the week before. In social media, people were largely consuming news and communicating with their friends and families as

coronavirus grappled the country. Besides, television, internet browsing and streaming platform have also seen a rise in viewership, according to the survey. Internet browsing saw a 72 per cent spike during the first week of lockdown.

Abdul Rahim Munshi, Darshana Dave, Sneha Anna Sabu (2020), in their paper Social Media Consumption habits during Covid-19 lockdown in the International Journal of Business and Management Invention (IJBMI) aim to study the social media consumption habits of respondents; the study also aims to compare social media consumption before and during COVID-19 lockdown. Descriptive research design was used with a sample size of 226 respondents selected on the basis of non-probability convenience sampling. Wilcoxon test was used to compare social media consumption before and during the COVID-19 lockdown. The results indicated that consumption of all social media platforms had increased during the lockdown.

Sushil M, Sharma K, Yogesh D, Gupta K, Kumar Y. (2017), in an article titled ‘Mass media for health education: a study in the State of Rajasthan’, says that Mass media play crucial role in disseminating health information and increasing awareness about health education. Media not only spread awareness, but also inform and educate people over a period of time. This ultimately helps in the change of attitude & behavior of audience for achieving better health. In other words, media is instrumental in bringing behavioural changes in knowledge, beliefs, and attitudes about health and healthy behaviours. Being an important social organization mass media has wide reach and access that can influence the public by improving their health education level.



Analysis of data reflects that 43.85% respondents (biggest group) strongly agreed that TV is the most effective media for health communication; while only 03.08% respondents (smallest group) strongly disagreed about it. On the other hand 32.31% and 4.61% respondents agreed and disagreed respectively. Interestingly 16.15 % respondents were undecided as they neither agreed nor disagreed.

Source:

[https://www.researchgate.net/publication/324910020\\_Mass\\_Media\\_for\\_Health\\_Education\\_A\\_Study\\_in\\_the\\_State\\_of\\_Rajasthan](https://www.researchgate.net/publication/324910020_Mass_Media_for_Health_Education_A_Study_in_the_State_of_Rajasthan)

In another study titled TV as an effective medium of mass communication for public health (A study in the state of Rajasthan) (2018), author Yogesh Kumar says that Studies show that mass media, especially TV, is an effective medium for spreading awareness about different public health issues,

among general public. Due to its potential role in the influencing and shaping human health behaviour, & public health; mass communication has attracted a lot of attentions from health care professionals, policy makers, academics, social scientists, and other stakeholders.

People Are Spending 20% More Time in Apps During the COVID-19 Lockdowns reports Andrew Hutchinson, Content and Social Media Manager. According to the latest report from App Annie, daily time spent in apps on Android devices increased 20% year-over-year in Q1 2020, while consumer spending in both iOS and Android apps was also up 15% and 5% respectively, setting a new record for in-app spending for a single quarter at \$23.4 billion worldwide. Time spent in apps in Italy grew 30% in March from Q4 2019, while France, Germany, and the US have all had 15%, 10% and 10% growth respectively. All social apps have reported increased usage and engagement - and again, given that we're all locked in our homes, and looking for a means to stay connected with the outside world, that comes as little surprise. In terms of app-specific performance, TikTok continues to hold its spot at the top of the downloads chart. The increased focus on video connection tools has already lead to launch of various upgraded video features from Facebook and Instagram.

According to a report released by Broadcast Audience Research Council (BARC) India and Nielsen as sourced from ET Brand Equity as on 30 March 2020 and quoted by Simms J.(2021) on the impact of COVID-19 on television and digital media behaviour across India, the average time spent per viewer also saw a growth of 2%, from 3 hours and 46 minutes to 3 hours and 51 minutes a day, News apps saw 8% more users per week with an increase of 17% in time spent. The report also revealed that users are spending 1.4 hours a day more on their smartphone devices with the biggest jump coming from users in the 35-44-year age group. Due to the level of uncertainty around what is happening, people have also increased their time spent on chatting (+23%) and social networking (+25%) apps. Almost all social networking apps - Facebook, Instagram and TikTok - have seen significant increases while conversely, shopping apps, travel apps and food apps have seen a significant drop in both users and time spent.

Consolidating the outcomes of the review of literature about the role played by the Media during Covid-19,

### **Positive Role played by Mass Media**

It ensured that awareness messages on Covid-19, important government guidelines and free consultations with doctors reached everyone in the country.

It strongly fought against the menace of fake news and misinformation on a real time basis.

The media has significantly delivered on their mandate of public service by setting the trend through prompt coverage, ground reports and organising programmes on public health.

Mass media or traditional media is considered to be more credible than social media due to availability of original source of information, processing of information through journalistic standards and responsibility for accuracy of news (Wada, 2018), as in the study by Tandoc (2019), it was found that



the participants rated news from mass media to be more credible than those shared by their friends on the social media platform (Facebook). During the current COVID-19 pandemic a lot of studies were done addressing the spread of misinformation, infodemics and fake news and its impact on individual's mental health and well-being by social media (e.g., Brennen et al., 2020; Gao et al., 2020; Pennycook et al., 2020), but the area assessing the impact of mass media on the same during the current pandemic remains unexplored by large.

Mass media has played an important role in disseminating news about the current pandemic and curbing curiosity since the outbreak. There has been a substantial increase in news consumption in India (Banka, 2020; Jha, 2020) and the world during the present COVID-19 pandemic (O'Grady, 2020). In the past, during the Ebola outbreak instead of focusing attention on medical facts and actual viral outbreak, sensationalized coverage using less relevant content by news media outlets whipped up hysteria and fear in the USA (Kilgo et al., 2019; Towers et al., 2015). Similarly, during COVID-19, news has focused more on death and grave consequences leading to public panic and negative emotions while giving less attention to information as to how to control the spread and promote healthy practices (Basch et al., 2020). As with increased viewership and readership of COVID-19 related news content and psychological experiences (including effective coping with adversity) from previous epidemics and other natural and manmade disasters (Pfefferbaum et al., 2014), it becomes essential to empirically assess the risk factor of mass media exposure on various psychological outcomes during the current pandemic as well.

An analysis of 141,208 headlines of global English news sources regarding the coverage of coronavirus disease revealed that a major portion (51.66%) of total news headlines were related to negative sentiments, while a small portion (30.46%) of the news headlines were of positive sentiments and the remaining 17.87% fell into the category of neutral news (Aslam et al., 2020). Other studies too have shown the rise of negative emotions by COVID-19 related mass media contents and the effect of these negative news may generate anxiety, fear, anger, homesickness, sadness etc. in a maximum number of individuals (e.g., Aslam et al., 2020; Hamidein et al., 2020). The article 'A neglected reality of mass media during COVID-19: Effect of pandemic news on individual's positive and negative emotion and psychological resilience' by Shakshi Priya Giri & Abhishek Kumar Maurya says that media continuously must make people aware of the current developments and also warn them of possible consequences for their negligence, but not in a privative way to inculcate the feeling of pessimism, fear, danger, or chaos. Rather they must thoughtfully and carefully carry out preparation and presentation of news as subtle changes can affect the audience's psyche in substantial ways. Otherwise, it may generate various negative emotions which may have a detrimental effect on people's mental health and may also put an adverse effect on an individual's ability to be resilient in these conditions. As being the responsible and susceptible media, they can focus more on positive developments and help in instilling people with the belief that everything will be fine soon. In this way, the reach and effect of mass media can be best harnessed.

## **Negative Role played by Mass Media**

Social media has played a crucial role in spreading awareness and knowledge about public health, however, it has also been misused for spreading fake news, hatred and creating racism during epidemics.

Even before the detection of the first case of Covid-19 in India, the epidemic of social media panic hit India, which led to stock out of masks and sanitizers from the market.

The fake claims about transmission of virus through air and its survival on different surfaces created a panic.

An unwarranted use of N95 masks by common people during travelling and daily activities resulted in the shortage for frontline healthcare workers who actually needed those.

Due to existing multiple media houses in India, messages containing fake claims about use of herbal and immunity-booster medicines, religious and spiritual ways for prevention and treatment were widely circulated which added to the confusion.

The panic was escalated by fake news such as the possibility of extending the lockdown , which resulted in individuals fleeing from quarantine or isolation facilities and unnecessary travel prior to lockdown or even during lockdown for returning to their hometown.

## **Many such studies on media coverage of Covid19 Pandemic recommended the following**

WHO emphasized the role of media to curb the false information and provide accurate information to people so they are well informed to act appropriately

Effective utilisation of third-party fact-checkers to limit the dissemination of the concocted knowledge

Only information that pertains to WHO or CDC guidelines should be allowed to be posted on social groups or aired on televisions

Each media source should have a way of connecting people to credible sources by having special tabs or pop-ups

Media should act as a bridge for people in need to reach health officials and the local government for their problems

Banning advertisements for medical equipment and drugs which have not been proven to have a definite role

The pivotal roles that the media can play in the current pandemic is promoting physical and psychological health measures and ensuring resilience in people belonging to different age groups and socioeconomic conditions.

Social isolation could be propagated and exacerbated by the conflicting role of the media, by videos for relaxation exercises to keep bodies and minds healthy and fit, Education services provided to children of each age group, Social media groups to keep positive energy running among people and ensure adherence to public health measures.

Media has the potential to unite people and end discrimination by spreading awareness, breaking the barriers of racial and socioeconomic discrimination that prevailed and providing an excellent resource for verifiable information.

"Infodemic" stems from two words, "information" and "epidemic", and refers to a rapid and far-reaching spread of both accurate and inaccurate information about a disease, using mass media, including print media (brochures, pamphlets, newspapers), television, internet, and social media.

There is a need to develop user-friendly and indigenous communication strategies to improve the knowledge of COVID-19 among masses. Active collaboration between the government and media stakeholders is vital to safeguard the population during the COVID-19 pandemic.

## Conclusion

Based on an analysis of review of existing definitions and conceptualizations of health literacy and role of mass media, it serves to outline the most comprehensive dimensions of health literacy and shows the proximal and distal factors of mass media & its responsibilities in promoting health literacy. Through this paper the researchers aim to study the competencies related to accessing, understanding, appraising and applying health information in the domains of healthcare, disease prevention and health promotion, respectively, especially role of media (greater emphasis on social media) in contributing to health literacy and Covid19 Pandemic being the significant evidential situation.

By integrating existing media scenario with its functions & responsibilities to support the practice of healthcare, disease prevention and health promotion, the researchers have arrived at the possible positive role and negative roles that media has played during Covid 19 Pandemic.

The researchers through this elaborate study of secondary resources suggest a need for pilot studies about utilizing the media during pandemics and epidemics by healthcare stakeholders for the development of rapid and timely information communication strategies. Infodemics related to infectious diseases should be addressed through effective policymaking and implementation, as an outcome of research. There is a need for inclusion of accurate information on infectious disease reporting based on rational health communication so that infodemics can be avoided in future outbreaks. Governments, NGOs, health officers etc should address challenges to overcome health communication barriers among different social classes by conducting good localised research studies from time to time.

Media must serve as the fourth pillar of democracy, providing impartial information that is critical for a democracy and its development. To educate people on topics of paramount importance to society, the media is vital. The media is vested with an important responsibility and a vital role in ensuring justice and the benefits of the government policies reaching the weaker sections of the society,

breaking the barriers of economic imbalances, caste or financial discrepancies. In order to propagate and disseminate different government policies and initiatives, the media is relevant. In spreading awareness of Swachh Bharat and Cowin, Arogyasethu, promoting vaccine and medicines to treat Covid19 etc the media has proved to play an important role.

## References

1. Rehman AU, Zakar R, Zakar MZ, Hani U, Wrona KJ and Fischer F (2021) Role of the Media in Health-Related Awareness Campaigns on Perception of COVID-19: A Pre-post Study in the General Population of Pakistan. *Front. Public Health* 9:779090. doi: 10.3389/fpubh.2021.779090
2. Anwar A, Malik M, Raees V, et al. (September 14, 2020) Role of Mass Media and Public Health Communications in the COVID-19 Pandemic. *Cureus* 12(9): e10453. doi:10.7759/cureus.10453
3. Mazumder BH. Role of mass media and the indian democracy. *Int J Media Cult Politics*. 2019:258. [Google Scholar]
4. Yan Q, Tang S, Gabriele S, Wu J: Media coverage and hospital notifications: Correlation analysis and optimal media impact duration to manage a pandemic. *J Theor Biol*. 2016, 390:1-13. 10.1016/j.jtbi.2015.11.002
5. Kristine S, Broucke SV, Fullam J, Doyle G, Pelikan J, Slonska Z. et al. Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health*. 2012:12. [PMC free article] [PubMed] [Google Scholar]
6. Reisi M, Javadzade SH, Mostafavi F, Sharifirad G, Radjati F, Hasanzade A. Relationship between health literacy, health status, and healthy behaviors among older adults in Isfahan, Iran. *J Educ Health Promot*. 2012;1:31. [PMC free article] [PubMed] [Google Scholar]
7. Dadipoor S, Ramezankhani A, Aghamolaei T, Rakhshani F, Safari-Moradabadi A. Evaluation of Health Literacy in the Iranian Population. *Health Scope*. 2018;7(3):e62212. [Google Scholar]
8. Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV) . (2020). Accessed: January 30, 2020: <https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulation...>
9. COVID-19 Coronavirus pandemic. (2020). Accessed: September 08, 2020: <https://www.worldometers.info/coronavirus/>.
10. Novel Coronavirus(2019-nCoV) situation report-1. (2020). Accessed: January 20, 2020: [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf?sfvrsn=20a99c10\\_4](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf?sfvrsn=20a99c10_4).
11. Coronavirus: 87% increase in social media usage amid lockdown; Indians spend 4 hours on Facebook, WhatsApp. (2020). Accessed: March 30, 2020: <https://www.businesstoday.in/technology/news/coronavirus-87-percent-increase-in-social-media-usage-amid-lockdown-indi...>
12. Hanan MA, Saleem N, Khawar N, Arshad A. Media and behavior change: effectiveness of public health campaigns in Pakistan. *Isr Med J*. (2019) 11:323–6.
13. Nabi RL, Oliver MB. Media Processes and effects. SAGE Publications, 2009.
14. Suresh K. Evidence based communication for health promotion: Indian lessons of last decade. *Indian J Public Health*. (2011) 55:276–85. doi: 10.4103/0019-557X.92405
15. Sushil M, Sharma K, Yogesh D, Gupta K, Kumar Y. Mass media for health education: a study in the State of Rajasthan. *Multidiscip Int J*. (2017). 1:26–39. PubMed Abstract | Google Scholar
16. Catalán-Matamoros D. The Role of Mass Media Communication in Public Health. *Health Manag Diff ApprSolut*. 2011:399–414. [Google Scholar]

17. Sharma MSK, Gupta YK. Mass Media for Health Education (A Study in the State of Rajasthan) *GRAM i J.* 2017;1(1):26–39. [Google Scholar]
18. Wakefield MA, Loken B, Hornik RC. Use of mass media campaigns to change health behavior. *Lancet.* 2010 Oct 9;376(9748):1261–1271. [PMC free article] [PubMed] [Google Scholar]
19. Fung AYH, Lau AHY. The Role of the Mass Media in Health Care. *Prim Care Revisit.* 2020:67–79. [Google Scholar]
20. 82% of consumers do not use telehealth, survey says. (2017). Accessed: December 25, 2017: <https://medcitynews.com/2017/12/consumers-telehealth/>.
21. Rogers EM. *Diffusion of Innovations.* New York, NY: Simon and Schuster. (2010).
22. Hutchinson A. (2020). People are spending 20% more time in apps during the COVID-19 lockdowns. *Social Media Today.* <https://www.socialmediatoday.com/news/people-are-spending-20-more-time-in-apps-during-the-covid-19-lockdowns-re/575403/> (accessed September 17, 2021).
23. Simms J. (2020). India's TV and mobile consumption spikes as COVID-19 lockdown progresses. *WARC.* [https://fintechzoom.com/fintech\\_news\\_mobile-banking/indias-tv-and-mobile-consumption-spikes-as-covid-19-lockdown-progresses/](https://fintechzoom.com/fintech_news_mobile-banking/indias-tv-and-mobile-consumption-spikes-as-covid-19-lockdown-progresses/) (accessed September 17, 2021).
24. Diane Levin-Zamir, Dafna Lemish, Rosa Gofin (April 2011), Media Health Literacy (MHL): development and measurement of the concept among adolescents, *Health Education Research*, Volume 26, Issue 2, Pages 323–335, <https://doi.org/10.1093/her/cyr007>
25. Mohammad Hossein Saei, Sardar Valadi, Kianoosh Karimi and Mohammad Khammarnia, et. al., (2021) The role of mass media communication in public health: The impact of Islamic Republic of Iran broadcasting health channel on health literacy and health behaviors, *Med J Islam Repub Iran.* 2021; 35: 54, Published online 2021 Apr 26. doi: 10.47176/mjiri.35.54
26. Yanni XiaoSanyi TangSanyi TangJianhong WuJianhong Wu et. al., (2015) Media impact switching surface during an infectious disease outbreak, *Scientific Reports* 5(1):7838Follow journal, DOI: 10.1038/srep07838, PubMed
27. Abdul Rahim Munshi, Darshana Dave, Sneha Anna Sabu (2020), Social Media Consumption habits during Covid-19 lockdown in the *International Journal of Business and Management Invention (IJBMI)*