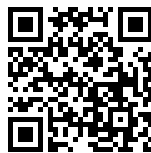


Media and Communication Review (MCR)

Volume 3 Issue 1, Spring 2023


ISSN (P): 2790-8356, ISSN (E): 2790-8364

Homepage: <https://journals.umt.edu.pk/index.php/mcr>



Article QR



- Title:** **Role of social media and Mass Media during COVID-19: A Comparative Study Conducted in Sialkot, Pakistan**
- Author (s):** Muhammad Husnain Khokhar¹
Huma Yasin², Hannan Khan Tareen³
- Affiliation (s):** ¹ University of Management and Technology, Sialkot, Pakistan
² COMSATS University, Lahore Campus, Pakistan
³ Islamia University Bahawalpur, Pakistan
- DOI:** <https://doi.org/10.32350/mcr.31.05>
- History:** Received: February 10, 2023, Revised: April 28, 2023, Accepted: May 2, 2023,
Published: June 20, 2023
- Citation:** Khokhar, M. H., Yasin, H., & Tareen, H. K. (2023). Role of social media and mass media during COVID-19: A comparative study conducted in Sialkot, Pakistan. *Media and Communication Review*, 3(1), 78–96.
<https://doi.org/10.32350/mcr.31.05>
- Copyright:** © The Authors
- Licensing:**  This article is open access and is distributed under the terms of [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)
- Conflict of Interest:** Author(s) declared no conflict of interest



A publication of
The School of Media and Communication Studies
University of Management and Technology, Lahore, Pakistan

Role of Social Media and Mass Media during COVID-19: A Comparative Study Conducted in Sialkot, Pakistan

Muhammad Husnain^{1,2*}, Huma Yasin^{3,4}, and Hannan Khan Tareen¹

¹Department of Media &. Communication Studies, Islamia University Bahawalpur, Pakistan

²Department of Media &. Communication, University of Management and Technology, Sialkot, Pakistan

³Department of Psychology, University of Central Punjab, Lahore, Pakistan

⁴Department of Humanities, COMSATS University, Lahore Campus, Pakistan

Abstract

The research explores the outcomes of media coverage during the pandemic in the city of Sialkot, Pakistan to analyze media's role in timely disseminating information and updates on COVID-19 and its effects on people's lives. The theoretical framework used in this research study is magic bullet theory. A quantitative approach was adopted to conclude the hypothesis. A sample of $N=150$ ($n=75$ Male, $n=75$ Female) respondents in the city of Sialkot was chosen to fill the survey questionnaire related to COVID-19 pandemic. Questionnaire stratification was used as sampling method to gather data from survey and z-test was used to present the results. The results showed that social media compared to other media, such as TV, radio, and newspaper, was an effective source of spreading awareness, latest updates, guidelines, and motivation for vaccine, as well as different myths during the pandemic era.

Keywords: awareness campaign, COVID-19, Magic Bullet Theory, media strategies

Introduction

Corona Virus is a family of viruses affecting people mostly with brain, lung and kidney diseases. The name Corona is derived from the word "Crown" as its outer structure is covered with spikes and the disease caused by this virus is called COVID-19 (Nassar et al., [2021](#)). The outburst of the virus occurred in the city of Wuhan, China and turned into a global pandemic. Its symptoms include: cough, high fever, chills, muscles aches, sore throat, flu, loss of taste or smell, diarrhea, severe headache, nausea, vomiting, congestion of nose, runny nose and breathing problems (Alimohamadi et

*Corresponding Author: muhammad.husnain@skt.umt.edu.pk

al., [2020](#)). COVID-19 attacks respiratory lines and causes death among older people or people already effecting with some chronic diseases. This is an air-borne disease (Haleem et al., [2020](#)) and in its aftermaths, the dead bodies were to be dealt with extensive care, and the survived patients faced severe health issues even after recovering from the COVID-19 (Chorba, [2020](#)). Another important source of spread were the suspended droplets in the air after someone suffering from COVID sneezes and a healthy person inhales them directly or indirectly through touch (Galbadage et al., [2021](#)). With some great efforts, COVID-19 vaccination was produced and proved to be effective in increasing immunity to fight against this disease (Bernal et al., [2021](#)). In the precautionary guidelines, the most important to be followed is the use of face masks and hand sanitizers in preventing the spread of virus from one surface to another one. The duration of virus's stay in human body is 14 days with or without some or all the symptoms (Ullah et al., [2021](#)).

COVID-19 Impact on the World

First case of COVID-19 was emerged in the city of Wuhan, China on Dec 01, 2019. This was CoV-Sars-2, which was found in animal's body (American mink) and mutated to spread illness among human beings. Since then, COVID has impacted the whole world quite strongly, specifically the developed countries like USA and UK in terms of economic disaster because of travelling restrictions, trading halts, shutting down of production units and public places. So far, there are 570,005,017 global COVID cases right now, out of which 6,384,128 deaths have been, confirmed (Meo et al., [2022](#)).

Impact of COVID-19 in Pakistan

In Pakistan, from 3rd January 2020 to 29th March 2023, there have been 1,579,245 confirmed cases of COVID-19 with 30,649 deaths, reported by the World Health Organization. As of 27th March 2023, a total of 349,852,542 vaccines have been administered. In Pakistan, first 2 cases were confirmed in the year 2020, soon after that, the government imposed full lockdown, resulting in complete shutting down of educational institutes, public places, and transportation in the country. Despite the lockdown, new cases were confirmed after pilgrims returned from Iran. The Government of Pakistan imposed restrictions yet this didn't stop the spread of COVID in the country (Noreen et al., [2020](#)). The initial blow to the economy happened,

when there was a decline of 1500 points from stock exchange on daily basis (Ullah et al., [2021](#)) and Pakistan's economic growth went down to -0.47% from the previous year which was 1.9% per year (Asghar et al., [2020](#)). Pakistan's health care system is not as good as the developed countries in the world and only 1 bed was available out of every 1680 people in the entire population.

COVID and Media Campaigns

After the occurrence of the first case of COVID-19 in Pakistan the government issued instructions and policies to media organizations to start a campaign and spread awareness about COVID. Electronic media, news channels including radio conducted talk shows, health shows about the prevention of COVID, newspapers published health columns and expert opinions related to COVID in order to educate the people. Multinational companies like Zong 4G, Lifebuoy and UNICEF attached hands to help the general public in Pakistan to deal with the pandemic. Different hash tags like #Wash Hands Beat Corona, #Stay Home Stay Safe, #Together At Home, #Big Online Par, etc. were circulated on different mediums of media to spread awareness.

Media Strategies for COVID Vaccination

According to Gallup's COVID-19 survey, 50.6% of Pakistanis are hesitant to vaccination because they have fear of different side effects like infertility, autoimmune disorders and death. Pakistani media (TV, Facebook, Instagram) played an important role in lowering the suspicions regarding the vaccine in people by arranging doctor's talk shows, showing celebrities getting vaccinated, and different religious scholars emphasizing that this vaccine is not haram (Tahir et al., [2021](#)).

Problem Statement

To study the role of media in spreading the awareness about COVID-19, precautionary measures, SOPs, and vaccination among the people of Sialkot.

Objectives

1. To analyze the effective role of media in spreading information about COVID
2. To analyze the media effectiveness about COVID-19 SOPs update.

3. To study how media creates awareness about personal and home cleanliness.
4. To understand how media motivated people about COVID vaccination
5. To analyze how media caused fear among people by highlighting myths, and incomplete information.

Hypotheses

H1: It is likely that social media compared to other mediums of media effectively disseminate information among people about COVID-19.

H2: It is likely that social media compared to other mediums of media created awareness about personal cleanliness and homes too.

H3: It is likely that social media compared to other mediums of media spread useful information about SOPs for public interactions.

H4: It is likely that social media compared to other mediums of media motivated people about the benefits of vaccination for immunity.

H5: It is likely that social media compared to other mediums of media was a source to create a sensation of fear while providing global updates about COVID-19.

The rest of the paper is categorized as follows: section-II covers literature review on COVID-19, in general and researches on the said topic, section-III includes our proposed methodology to prove the claimed hypothesis and section-IV consists of the results, and section-V presents the conclusion.

Literature Review

In December 2019, a novel corona virus emerged, presently named as SARS-CoV-2, caused a progression of intense abnormal respiratory illnesses in Wuhan, Hubei Province, China. The sickness brought about by this infection was named COVID-19, which is associated with the trade of living animals like bats, and snakes. The infection is communicable among people and has caused pandemic around the world. The quantity of losses of life proceeds to rise and countless nations have been compelled to do social removing, quarantine and lockdown to forestall the spread of the virus. Media played a major role in providing information and tracking through live updates dashboard. Media was 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 was observed for the promotion of health and hygiene practices worldwide by adaption of safe health practices such as frequent hand washing, use of face coverings, and social distancing. Media reinforced illness-preventing guidelines daily, and people were encouraged to use telehealth to meet their healthcare needs (Gordon et al., [2020](#)).

Epidemiological investigations showed that the elderly patients were vulnerable to serious illnesses, while the kids would be mildly effected. Absence of designated treatment caused panic and havoc and this gave rise to need of carrying out researches and studies. Sathish et al. ([2020](#)) has recognized COVID as a danger to human existence and provided a report about countries which are exceptionally impacted by this pandemic. There was an environment of great fear as some countries like Italy suffered huge number of deaths and dead bodies could be seen on the roads (Rizzo et al., [2020](#)).

A study was conducted to scrutinize the influence of social media campaigns (the kind of social media platform, the kind of message, and the sender of the message) in changing public perception of health and behavior during the COVID-19 pandemic in a few national selected nations (Poland and Jordan). The results demonstrated a positive correlation between public health awareness, and behavioral change. However, because of different nationalities, the respondents' favored social media platform types, message kinds, and source sender types range considerably (Abuhashesh et al., [2021](#)).

Methodology

The research has been carried out by applying quantitative approach in order to study the comparison of different mediums of media coverage on COVID-19 in Sialkot, Pakistan. Magic bullet theory is used in this study which helped to predict that media updates reach to human brains as fast as a bullet. For this purpose, the questionnaire is divided into 5 sections, consisting of 25 questions, where each section is correspondingly used to collect data for the hypothesis stated above.

Survey Method

Online survey was conducted to firstly collect demographics like age, gender, marital status, and educational degree of the respondents. The collected data from survey is then used to infer the results.

Sample Size

We selected ($N=150$) individuals from Sialkot as respondents to study the effect of different mediums of media coverage on COVID-19 in Sialkot, Pakistan.

Sampling Technique

Sampling method used in this research study is random sampling.

Instruments

The instrument is mainly questionnaire prepared through Google Forms and sent to students, teachers, and family members.

Data Collection

Total 150 respondents from Sialkot city completed the survey, and those surveys were chosen as the useful data to draw conclusions.

Data Analysis and Representation

SPSS (Statistical Package for Social Sciences) is used to apply Z-test among two populations, i.e. social media vs. any other medium of media to analyze the data. Data from survey is first extracted into the form of tables, to be drawn in SPSS sheets to apply the test. The data has been represented in the form of tables showing frequency and %age of each response.

Results

z-test is applied to either accept or reject null the hypotheses as shown below.

Table 1

Demographics of Respondents

	Gender		Education				
	Male	Female	Under Matric	Matric	Bachelors	Masters	PhD
Frequency	56	94	15	32	78	22	3
%	37.3	62.6	10.0	21.3	52.0	14.6	2.0

Table 1 shows a split of demographic data of our 150 respondents according to their age, gender and educational degrees.

Table 2

Comparison of Different Mediums of Media about COVID-19 Information Spread

	Radio		News paper		TV		Social Media	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Strongly Disagree	35	23.3	30	20.0	8	5.3	5	3.3
Disagree	47	31.3	38	25.3	11	7.3	6	4.0
Neutral	22	14.6	21	14.0	24	16.0	19	12.6
Agree	21	14.0	34	22.6	43	28.6	48	32.0
Strongly Agree	25	16.6	27	18.0	64	42.6	72	48.0
Total	150	100.0	150	100.0	150	100.0	150	100.0

Nearly 48.0% people strongly agreed and 32.0% agreed that social media was a great source of information about COVID-19, and 42.6% people strongly agreed while 28.6% agreed that TV was an effective source of knowledge about COVID-19 as shown in Table 2.

Table 3

Comparison of Different Mediums of Media about COVID-19 SOPs Updates

	Radio		News paper		TV		Social Media	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Strongly Disagree	43	28.6	18	12.0	7	4.6	3	2.0
Disagree	24	16.0	13	8.6	18	12.0	12	8.0
Neutral	27	18.0	17	11.3	14	9.3	11	7.3
Agree	33	22.0	46	30.6	44	29.3	37	24.6
Strongly Agree	23	15.3	56	37.3	67	44.6	87	58.0
Total	150	100.0	150	100.0	150	100.0	150	100.0

Our collected response showed that 58.0% people strongly agreed and 24.6% agreed that social media timely provided updates related to SOPs to be followed at workplaces, public places, health places, and in gatherings

as suggested by the World Health Organization (WHO) as shown in Table 3. These updates have helped many people to survive the war, and avoid the battle in future.

Table 4

A Comparison of Different Mediums of Media using Campaigns to Promote Precautionary Measures at Homes for COVID-19

	Radio		News paper		TV		Social Media	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Strongly Disagree	25	16.6	14	9.3	67	44.6	6	4.0
Disagree	24	16.0	22	14.6	9	6.0	2	1.3
Neutral	17	11.3	19	12.6	13	8.6	9	6.0
Agree	36	24.0	51	34.0	46	30.6	57	38.0
Strongly Agree	48	32.0	44	29.3	15	10.0	76	50.6
Total	150	100.0	150	100.0	150	100.0	150	100.0

The collected data exhibits that 50.6% people strongly agreed and 38.0% agreed that social media provided a good amount of information related to washing hands, quarantine, precautionary measures, and cleanliness of objects or things other than humans, through campaigns, and celebrity talks as shown in Table 4.

Table 5

Comparison of Different Mediums of Media in Spreading Myths and Creating Fear Related to COVID-19

	Radio		News paper		TV		Social Media	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Strongly Disagree	51	34.0	42	28.0	61	40.6	3	2.0
Disagree	44	29.3	33	22.0	46	30.6	6	4.0
Neutral	7	4.6	13	8.6	5	3.3	5	3.3
Agree	30	20.0	34	22.6	22	14.6	60	40.0
Strongly Agree	18	12.0	29	19.3	16	10.6	76	50.6
Total	150	100.0	150	100.0	150	100.0	150	100.0

The collected data shows 50.6% respondents strongly agreed and 40.0% agreed that social media was also a rich source of spreading myths

related corona virus, COVID diseases' correlation with other diseases, and side effects of COVID vaccination as shown in Table 5.

Table 6

Comparison of Different Mediums of Media to Motivate for COVID-19 Vaccination

	Radio		News paper		TV		Social Media	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Strongly Disagree	43	28.6	39	26.0	12	8.0	9	6.0
Disagree	39	26.0	27	18.0	18	12.0	2	1.3
Neutral	19	12.6	15	10.0	10	6.6	3	2.0
Agree	23	15.3	32	21.3	41	27.3	51	24.0
Strongly Agree	26	17.3	36	24.0	69	46.0	85	56.6
Total	150	100.0	150	100.0	150	100.0	150	100.0

The above survey presents that 56.6% people strongly agreed and 24.0% agreed that social media motivated people to get vaccinated through celebrities' ads, global updates, and doctors' approvals as shown in Table 4.6.

z-test

z-test gives difference between two populations that is based upon their variances. z-test works under the assumption that data is normally distributed, and data points are independent and have equal opportunity to get selected. This test provides the probability of occurrence of an event with some confidence level α when compared with a null hypothesis. In this research work, z-test is used to statistically observe the role of Pakistani and Indian media towards warfare regarding Balakot airstrikes 2019. The formula to calculate z-score is given by:

$$\frac{(p_1 - p_2)}{\sqrt{\frac{p(1-p)}{n_1 + n_2}}}, \quad \text{where } p = (p_1 n_1 + p_2 n_2) / (n_1 + n_2)$$

The probabilities from 'Agree' and 'Strongly agree' category of each table designed for each hypothesis has been taken to process the calculations.

Hypothesis 1

For the hypothesis that social media spread more information about COVID-19 than TV following would be the equation: $p_1 = 0.48 + 0.32 = 0.80$, $p_2 = 0.426 + 0.286 = 0.712$.

$$p = \frac{p_1 n_1 + p_2 n_2}{n_1 + n_2} = \frac{0.80 * 150 + 0.712 * 150}{150 + 150} = \frac{120 + 106.8}{300} = 0.756$$

$$z = \frac{(0.80 - 0.712)}{\sqrt{\frac{0.756(1 - 0.756)}{300}}} = \frac{0.088}{0.0247} = 3.562$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 3.562, and the two-tailed associated p -value < 0.000184, hence the hypothesis is supported.

For the hypothesis that social media spread more information about COVID-19 than newspaper, the equation would be: $p_1 = 0.48 + 0.32 = 0.80$, $p_2 = 0.180 + 0.226 = 0.406$.

$$p = \frac{p_1 n_1 + p_2 n_2}{n_1 + n_2} = \frac{0.80 * 150 + 0.406 * 150}{150 + 150} = \frac{120 + 60.9}{300} = 0.603$$

$$z = \frac{(0.80 - 0.406)}{\sqrt{\frac{0.603(1 - 0.603)}{300}}} = \frac{0.394}{0.0282} = 13.97$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 13.97, and the two-tailed associated p -value < 0.00001, proves that the hypothesis is accepted.

For the hypothesis that social media spread more information about COVID-19 than radio, the equation would be: $p_1 = 0.48 + 0.32 = 0.80$, $p_2 = 0.166 + 0.14 = 0.306$.

$$p = \frac{p_1 n_1 + p_2 n_2}{n_1 + n_2} = \frac{0.80 * 150 + 0.306 * 150}{150 + 150} = \frac{120 + 45.9}{300} = 0.553$$

$$z = \frac{(0.80 - 0.306)}{\sqrt{\frac{0.553(1 - 0.553)}{300}}} = \frac{0.494}{0.0286} = 17.27$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 17.27, and the two-tailed associated p -value < 0.00001, thus hypothesis is accepted.

Hypothesis 2

For the hypothesis that social media provided timely updates about COVID-19 SOPs than TV. $p_1 = 0.58 + 0.246 = 0.826$, $p_2 = 0.446 + 0.293 = 0.739$.

$$p = \frac{p_1 n_1 + p_2 n_2}{n_1 + n_2} = \frac{0.826 * 150 + 0.739 * 150}{150 + 150} = \frac{123.9 + 110.85}{300} = 0.7825$$

$$z = \frac{(0.826 - 0.739)}{\sqrt{\frac{0.7825(1 - 0.7825)}{300}}} = \frac{0.087}{0.0238} = 3.655$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 3.655, and the two-tailed associated p -value < 0.000129, hence the hypothesis is accepted.

For the hypothesis that social media provided timely updates about COVID-19 SOPs than newspaper, the equation would be: $p_1 = 0.58 + 0.246 = 0.826$, $p_2 = 0.373 + 0.306 = 0.679$.

$$p = \frac{p_1 n_1 + p_2 n_2}{n_1 + n_2} = \frac{0.826 * 150 + 0.679 * 150}{150 + 150} = \frac{123.9 + 101.85}{300} = 0.7525$$

$$z = \frac{(0.826 - 0.679)}{\sqrt{\frac{0.7525(1 - 0.7525)}{300}}} = \frac{0.147}{0.0248} = 5.92$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 5.92, and the two-tailed associated p -value < 0.00001, hence hypothesis is accepted.

For the hypothesis that social media provided timely updates about COVID-19 SOPs than radio, the values in equation would be: $p_1 = 0.58 + 0.246 = 0.826$, $p_2 = 0.153 + 0.22 = 0.373$.

$$p = \frac{p_1 n_1 + p_2 n_2}{n_1 + n_2} = \frac{0.826 * 150 + 0.373 * 150}{150 + 150} = \frac{123.9 + 55.95}{300} = 0.5995$$

$$z = \frac{(0.826-0.373)}{\sqrt{\frac{0.5995(1-0.5995)}{300}}} = \frac{0.453}{0.0282} = 16.06$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 16.06, and the two-tailed associated p -value < 0.00001 , so the proposed hypothesis is accepted.

Hypothesis 3

For the hypothesis that social media showed more ads and campaigns to create awareness for personal cleanliness and at homes compared to TV, the equation would be $p_1 = 0.506 + 0.38 = 0.886$, $p_2 = 0.10 + 0.306 = 0.406$.

$$p = \frac{p_1n_1 + p_2n_2}{n_1+n_2} = \frac{0.886 * 150 + 0.406 * 150}{150 + 150} = \frac{132.9 + 60.9}{300} = 0.646$$

$$z = \frac{(0.886-0.406)}{\sqrt{\frac{0.646(1-0.646)}{300}}} = \frac{0.48}{0.027} = 17.77$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 17.77, and the two-tailed associated p -value < 0.00001 , so the hypothesis is accepted.

For the hypothesis that social media showed more ads and campaigns to create awareness for personal cleanliness and at homes compared to newspaper, the values in equation are as follows: $p_1 = 0.506 + 0.38 = 0.886$, $p_2 = 0.294 + 0.34 = 0.634$.

$$p = \frac{p_1n_1 + p_2n_2}{n_1+n_2} = \frac{0.886 * 150 + 0.634 * 150}{150 + 150} = \frac{132.9 + 95.1}{300} = 0.76$$

$$z = \frac{(0.886-0.634)}{\sqrt{\frac{0.76(1-0.76)}{300}}} = \frac{0.252}{0.0246} = 10.24$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 10.24, and the two-tailed associated p -value < 0.00001 , hence proved.

For the hypothesis that social media showed more ads and campaigns to create awareness for personal cleanliness and hygiene at homes compared

to radio, the equation would be $p_1 = 0.506 + 0.38 = 0.886$, $p_2 = 0.32 + 0.24 = 0.56$.

$$p = \frac{p_1 n_1 + p_2 n_2}{n_1 + n_2} = \frac{0.886 * 150 + 0.56 * 150}{150 + 150} = \frac{132.9 + 84}{300} = 0.723$$

$$z = \frac{(0.886 - 0.56)}{\sqrt{\frac{0.723(1 - 0.723)}{300}}} = \frac{0.326}{0.0258} = 12.63$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 12.63, and the two-tailed associated p -value < 0.00001 , so the hypothesis is accepted.

Hypothesis 4

For the hypothesis that social media spread different myths related to Covid-19, its vaccination and instilled fear among people compared to TV, the equation is as follows: $p_1 = 0.506 + 0.40 = 0.906$, $p_2 = 0.106 + 0.146 = 0.252$.

$$p = \frac{p_1 n_1 + p_2 n_2}{n_1 + n_2} = \frac{0.906 * 150 + 0.252 * 150}{150 + 150} = \frac{135.9 + 37.8}{300} = 0.579$$

$$z = \frac{(0.906 - 0.252)}{\sqrt{\frac{0.579(1 - 0.579)}{300}}} = \frac{0.654}{0.0284} = 23.19$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 23.19, and the two-tailed associated p -value < 0.00001 , hence proved.

For the hypothesis that social media spread different myths related to COVID-19, its vaccination and created fear among people compared to newspaper, the equation would be: $p_1 = 0.506 + 0.40 = 0.906$, $p_2 = 0.193 + 0.226 = 0.419$.

$$p = \frac{p_1 n_1 + p_2 n_2}{n_1 + n_2} = \frac{0.906 * 150 + 0.419 * 150}{150 + 150} = \frac{135.9 + 62.85}{300} = 0.6625$$

$$z = \frac{(0.906 - 0.419)}{\sqrt{\frac{0.6625(1 - 0.6625)}{300}}} = \frac{0.487}{0.0272} = 17.90$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 17.90, and the two-tailed associated p -value < 0.00001 , the proposed hypothesis is accepted.

For the hypothesis that social media spread different myths related to COVID-19, its vaccination and created fear among people compared to radio, values will be calculated as: $p_1 = 0.506 + 0.40 = 0.906$, $p_2 = 0.12 + 0.20 = 0.32$.

$$p = \frac{p_1n_1 + p_2n_2}{n_1+n_2} = \frac{0.906 * 150 + 0.32 * 150}{150 + 150} = \frac{135.9 + 48}{300} = 0.613$$

$$z = \frac{(0.906-0.32)}{\sqrt{\frac{0.613(1-0.613)}{300}}} = \frac{0.586}{0.0281} = 20.92$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 20.92, and the two-tailed associated p -value < 0.00001 , so the hypothesis is accepted.

Hypothesis 5

For the hypothesis that social media motivated more for vaccine than TV, the equation is as follows: $p_1 = 0.566 + 0.34 = 0.906$, $p_2 = 0.466 + 0.273 = 0.739$.

$$p = \frac{p_1n_1 + p_2n_2}{n_1+n_2} = \frac{0.906 * 150 + 0.739 * 150}{150 + 150} = \frac{135.9 + 110.85}{300} = 0.8225$$

$$z = \frac{(0.906-0.739)}{\sqrt{\frac{0.8225(1-0.8225)}{300}}} = \frac{0.167}{0.02204} = 7.577$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 7.577, and the two-tailed associated p -value < 0.00001 , proves the hypothesis.

For the hypothesis that social media motivated more for vaccine than newspaper, the equation would be: $p_1 = 0.566 + 0.34 = 0.906$, $p_2 = 0.240 + 0.213 = 0.453$.

$$p = \frac{p_1n_1 + p_2n_2}{n_1+n_2} = \frac{0.906 * 150 + 0.453 * 150}{150 + 150} = \frac{135.9 + 67.95}{300} = 0.6795$$

$$z = \frac{(0.906-0.453)}{\sqrt{\frac{0.6795(1-0.6795)}{300}}} = \frac{0.453}{0.0269} = 16.840$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 16.840, and the two-tailed associated p -value < 0.00001 , so the hypothesis is accepted.

For the hypothesis that social media motivated more for vaccine than radio, the equation is as follows: $p_1 = 0.566 + 0.34 = 0.906$, $p_2 = 0.173 + 0.153 = 0.326$.

$$p = \frac{p_1n_1 + p_2n_2}{n_1+n_2} = \frac{0.906 * 150 + 0.326 * 150}{150 + 150} = \frac{135.9 + 48.9}{300} = 0.616$$

$$z = \frac{(0.906-0.329)}{\sqrt{\frac{0.616(1-0.616)}{300}}} = \frac{0.577}{0.0280} = 20.60$$

Level of significance: $\alpha = 0.05$

Sample evidence z-value= 20.60, and the two-tailed associated p -value < 0.00001 , hence proved.

Discussion

This research work is conducted to study the effective role of social media handles (Facebook, Twitter, Youtube, and Instagram) compared to print media, (newspapers) mainstream media, (TV), and audio media, (radio) on COVID-19 awareness. This study was conducted online amid a period of social isolation and widespread usage of social media. The results reveal that individuals' social media usage during COVID-19 differs from their typical usage.

The main goal was to examine the relationships between social media exposure and spreading information about COVID19 during the pandemic. The research is divided into five sub-categories and to collect data an online survey form is held in Sialkot city, Pakistan. The responses were gathered from 200 individuals ranging between 14-55 years, out of which 150

respondents are selected which filled out all the form, and they have an educational degree less than Matric to PhD. The z-test was performed for data analysis and the role of social media is one by one tested with all other mediums of media and hypotheses are attested. The findings supported the proposed hypotheses that social media inculcate more fear in public because of misinformation and misconception shared by the users. It also highlighted the beneficial and detrimental effects of social media usage as compared to other mediums of media specifically with regard to COVID-19.

Limitations

1. The study targets only one city and a limited sample of respondents thus, lacks the generalizability of results.
2. Different comparison groups can be made on the basis of demographics, like education and socioeconomic status to evaluate the difference in responses towards media briefings. This is also a limitation of this study.
3. A specified group of electronic media (TV, Radio) and social media (Facebook, Instagram, Twitter, WhatsApp) can be used to see which form of media impacts the most rather than a general comparison.

Conclusion

Media is the key factor in spreading information related to COVID-19 among general public. This study fills the literature gap regarding a comprehensive understanding of a social media campaign (the type of social media platforms Instagram, Facebook, Whatsapp Imo,) during COVID-19 as a global pandemic across all the countries. The present study provides theoretical contributions to the literature on social media's role in public health care. It's concluded that social media is the most effective source to create awareness about SOPs for public interactions, and cleanliness for homes and personal care. Social media was also proved to be the most effective source to spread myths related to COVID vaccination. It provided a good motivation to get people vaccinated compared to TV, newspaper, and radio media. This study is important to understand the role of social media, or in general, media in a crisis situation like pandemic and its effects on the minds and lives of the people.

References

- Abuhashesh, M. Y., Al-Dmour, H., Masa'deh, R. E., Salman, A., Al-Dmour, R., Boguszewicz-Kreft, M., & AlAmaireh, Q. N. (2021). The role of social media in raising public health awareness during the pandemic COVID-19: An international comparative study. *Informatics*, 8(4), Article e80. <https://doi.org/10.3390/informatics8040080>
- Alimohamadi, Y., Sepandi, M., Taghdir, M., & Hosamirudsari, H. (2020). Determine the most common clinical symptoms in COVID-19 patients: A systematic review and meta-analysis. *Journal of Preventive Medicine and Hygiene*, 61(3), E304–E312. <https://doi.org/10.15167/2421-4248/jpmh2020.61.3.1530>
- Asghar, N., Batool, M., Farooq, F., & Rehman, H. (2020). COVID-19 pandemic and Pakistan economy: A preliminary survey. *Review of Economics and Development Studies*, 6(2), 447–459. <https://doi.org/10.47067/reads.v6i2.222>
- Bernal, J. L., Andrews, N., Gower, C., Gallagher, E., Simmons, R., Thelwall, S., & Ramsay, M. (2021). Effectiveness of Covid-19 vaccines against the B. 1.617. 2 (Delta) variant. *The New England Journal of Medicine*, 385(7), 585–594. <https://doi.org/10.1056/nejmoa2108891>
- Chorba, T. (2020). The concept of the crown and its potential role in the downfall of coronavirus. *Emerging Infectious Diseases*, 26(9), 2302–2305. <https://doi.org/10.3201/eid2609.AC2609>
- Galbadage, T., Peterson, B. M., & Gunasekera, R. S. (2020). Does COVID-19 spread through droplets alone? *Frontiers in Public Health*, 8(163), Article e163. <https://doi.org/10.3389/fpubh.2020.00163>
- Gordon, D. E., Jang, G. M., Bouhaddou, M., Xu, J., Obernier, K., White, K. M., & Krogan, N. J. (2020). A SARS-CoV-2 protein interaction map reveals targets for drug repurposing. *Nature*, 583(7816), 459–468. <https://doi.org/10.1038/s41586-020-2286-9>
- Haleem, A., Javaid, M., & Vaishya, R. (2020). Effects of COVID-19 pandemic in daily life. *Current Medicine Research and Practice*, 10(2), 78–79. <https://doi.org/10.1016/j.cmrp.2020.03.011>
- Meo, S. A., Alsomali, A. H., Almushawah, A. A., & Halepoto, D. M. (2022). Seasonal variations impact on SARS-CoV-2 incidence and

- mortality in southern and northern hemispheres: Two years pandemic period based study. *Journal of King Saud University-Science*, 34(8), Article e102335. <https://doi.org/10.1016/j.jksus.2022.102335>
- Nassar, A., Ibrahim, I. M., Amin, F. G., Magdy, M., Elgharib, A. M., Azzam, E. B., & Elfiky, A. A. (2021). A review of human coronaviruses' receptors: The host-cell targets for the crown bearing viruses. *Molecules*, 26(21), Article e6455. <https://doi.org/10.3390/molecules26216455>
- Noreen, N., Dil, S., Niazi, S. U. K., Naveed, I., Khan, N. U., Khan, F. K., & Kumar, D. (2020). Coronavirus disease (COVID-19) pandemic and Pakistan; limitations and gaps. *Global Biosecurity*, 1(3), 1–11. <https://doi.org/10.31646/gbio.63>
- Rizzo, M., Liguori, G., Verze, P., Palumbo, F., Cai, T., & Palmieri, A. (2020). How the andrological sector suffered from the dramatic Covid 19 outbreak in Italy: Supportive initiatives of the Italian association of andrology (SIA). *International Journal of Impotence Research*, 32(5), 547–548. <https://doi.org/10.1038/s41443-020-0288-7>
- Sathish, R., Manikandan, R., Priscila, S. S., Sara, B. V., & Mahaveerakannan, R. (2020, December 3–5). A report on the impact of information technology and social media on Covid–19 (Paper presentation). 3rd international conference on intelligent sustainable systems (ICISS). Thoothukudi, India. <https://doi.org/10.1109/ICISS49785.2020.9316046>
- Tahir, M. J., Saqlain, M., Tariq, W., Waheed, S., Tan, S. H., Nasir, S. I., & Ahmed, A. (2021). Population preferences and attitudes towards COVID-19 vaccination: A cross-sectional study from Pakistan. *BMC Public Health*, 21(1), 1–12.
- Ullah, A., Pingu, C., Ullah, S., & Elahi, M. A. (2021). A pre post-covid–19 pandemic review of regional connectivity and socio-economic development reforms: What can be learned by central and eastern European countries from the China-Pakistan economic corridor. *Comparative Economic Research*, 24(2), 23–43. <http://dx.doi.org/10.18778/1508-2008.24.10>