

## Challenges in Tackling COVID-19: Use of the Mass Media versus Interpersonal Channels in Pakistan

This study aimed to investigate the influence of mass media and interpersonal communication channels in the adoption of preventive measures against the Covid-19 pandemic (coronavirus). The study hypothesises that higher exposure to media content increases interpersonal communication and increased interpersonal communication is positively associated with the adoption of preventive behaviour. To test this hypothesis, this study used a quantitative research technique employing a survey method. The results, when assessed through Pearson correlation, elaborated that there was a stronger association between media exposure and increased interpersonal communication and the adoption level of Covid prevention measures. The result of the thematic analysis revealed that interpersonal communication was an important contributor towards changing behaviour. Hence, the two-step flow of communication showed strong support for accepting the role of interpersonal communication alongside the mass media. This study findings provide insights to communicators and planners for devising different communication strategies for combating the pandemic.

*Keywords: Covid-19, Interpersonal Communication, Media Effect, Health Communication, Prevention, Pakistan.*

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## 1. Introduction

We are now living in the age of Corona, where the COVID-19 pandemic has changed the world completely, and perhaps permanently in some regards. Each area of life as we know it has been heavily affected by the changes that have occurred around us. There is no nation on earth that has not been affected by the coronavirus and almost every field of life has been adversely impacted by the pandemic all over the world. The coronavirus has been the most common cause of viral disease during the last two years (2020 and 2021) and its direct target has been (and still is) human health. The very existence of human life depends on healthy and active people. A healthy life means life without diseases. In the past, diseases and epidemics have resulted in a great loss of human beings. Humanity has struggled throughout history to find solutions to the various health issues that inflict mankind and tried its best to prevent the spread of epidemics that are hugely hazardous to life. For the sake of saving humanity, the world nations, regardless of their differences, have extended their cooperation in an attempt to control the disease. Sharing timely communication about the risk to life and wisdom to control the massive destruction that the pandemic has caused has proven to be an effective method in humanity's fight against the virus during the disastrous years of the pandemic (2020 and 2021).

Effective communication has played a pivotal role so far in helping us through the hardest times of our lives during this pandemic, and it remains a blessing to helping us cope as we continue to battle Covid-19. This includes both interpersonal communication and communication through mass media. Effective communication is helpful for promoting adopting preventive measures and for overcoming fallacies about the pandemic and its repercussions. This paper is an attempt to explore and investigate the role of mass media and interpersonal channels in facing the challenges that have arisen during this time of pandemic.

Only a few years ago, life seemed to be sailing its journey very smoothly, when suddenly shocking news arrived that a deadly viral outbreak had occurred in Wuhan China. Initially, it was assumed that this virus, which was later identified as Covid-19 or the coronavirus, would only be confined to a certain geographical region near the outbreak. But in fact the virus rapidly spread across the globe and the World Health Organisation (WHO) was forced to declare it a pandemic. Due to this virus, 2,378,863 deaths across the globe had been reported up to 12 February 2021, and that number has continued to rise since (Worldmeter 2020).

The main symptoms of this virus include cough fever, sore throat, and difficulty in breathing. The WHO quickly recommended preventive measures, like covering the mouth during coughing, repeated hand wash, maintaining distance from other people (with the new term "social distancing" rapidly gaining popularity), and proper isolation for people with suspected infection (WHO 2021). Information about the prevention measures against Covid-19 was mostly disseminated through the mass media and it was understood that people would adopt these precautionary measures to keep themselves and others safe from this deadly virus.

Many countries around the world imposed strict lockdowns and people were advised to stay at home and to apply all the precautionary measures for their safety and

for the safety of others. To implement these methods effectively, a change in public opinion was required and communication channels were supposed to disseminate information persuasively. Consequently, during this time of high crisis, the media were required to play their part in educating the public about their health and handling of the pandemic. Consequently, one aim of the present study was to unfold the importance of the communication channels in combating the Covid-19 pandemic.

### *1.2. Role of the media during the pandemic outbreak*

There is much evidence that the mass media can have a great impact on changing the behaviour of the public, and so it was hoped that this impact would ultimately reduce the number of newly infected cases (Yan et al. 2016). Studies into the outbreak of severe acute respiratory syndrome (SARS) indicated the importance of providing accurate and fast communication to the public about health risks so that the public can benefit from the advice from experts. It was also proved that the extensive press coverage of the SARS epidemic contributed to public-health bodies taking proper action against this respiratory syndrome (Rezza et al. 2014). Another study into the specific role of the media during crisis periods also elaborated that the impact of the media reduces the number of cases (Zhou 2019).

It has been found that all types and forms of mainstream traditional media, including television, newspapers, radio, booklets, and billboards, have been used for the dissemination of preventive messages related to health during the pandemic, with the presumption that the media has the potential to influence public opinion (Brinn et al. 2010). Furthermore, the media can discourage people from risky behaviours and persuade people to adopt precautionary measures to mitigate the severity of the disease (Young 2008).

The use of mass media for the promotion of clinical practices is one of the best tools to discourage them from adopting unapproved methods (Grilli et al. 2002). In modern societies, media organisations are primarily considered as responsible for the dissemination of health information (Schwitzer et al. 2005). It is also evident that the media is the most inexpensive source to sensitise people regarding health issues, especially those who are not easy to access through traditional approaches (Bauman et al. 2006). From the above narrative, the role of the media has been considered as very important during the current pandemic. In the past, diseases remained in specific geographical boundaries, but with the advent of globalisation, mankind has become more vulnerable to diseases such as Covid-19, which has spread globally and under such circumstances that the role of media has gained tremendous significance during the pandemic crisis.

### *1.3. Role of interpersonal communication*

Interpersonal communication involves communication between small groups of people in close physical proximity of the communication taking place. The litera-

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ture indicates that interpersonal conversations often begin when a population is exposed to mass media. According to Schulz (2010) interpersonal communication is initiated when individuals are exposed to media and media communication is discussed among the individuals. Interpersonal communication gains more importance when it involves issues about human lives, more specifically when the situation involves humans on the brink of risk from different contagions. Under such circumstances, mass media trickles information down to the masses, who then discuss it through their interpersonal communication platforms (Kam and Lee 2012).

However, it is not always the case that routine discussions in the media about health-related issues lead to further interpersonal communication (Brosius and Weimann 1996). However, studies have been designed to create awareness and encourage communication to create interpersonal conversations through exposure to mass media and they found that this exposure leads to further interpersonal conversation (Kam and Lee 2012). Public communication campaigns opine the importance of the media, yet supported by interpersonal communication. The success of any communication depends upon the extent to which the target audience has received the message and understood it.

The connection between interpersonal communication and mass media campaigns was probed in Southwell and Yzer's study, 'The Roles of Interpersonal Communication in Mass Media Campaigns'. This study found that the roles of interpersonal communication could be split into three general categories: media campaign outcomes, mediator of the media campaign effects, and moderator of the campaign effects (Southwell and Yzer 2007).

The literature on mass media and interpersonal communication further disclosed that there is a possible interplay between mass and interpersonal communication, especially in the context of health beliefs (Morton and Duck 2001). Mass media campaigns adds persuasion to interpersonal communication and that indirectly leads to behavioural change (Southwell and Yzer 2007). Consequently, the interaction starts with friends, family, and colleagues, and it may also regulate one's own perceived level of concern and decisions regarding the adoption of preventive measures. This advocates the important role of interpersonal communication following media exposure and its effects in influencing behaviour, and this process is known as the two-step flow of information (Jeong et al. 2015).

The process of interpersonal communication only starts when the message during the period of crisis is effectively designed, and it requires careful and good preparedness. In such shocking periods of crisis, the communicator needs to understand the information requirements of the audience. When the communicator knows the needs of the intended target audience, he/she can deliver the message more effectively and there is more chance that the target audience would act upon the message as desired by the communicator (Lundgren and McMakin 2018).

The above narration explains that exposure to the media could initiate interpersonal communication, but it is also found that this would only work when the message has been carefully designed and with knowing the targeted audience's needs. Therefore, the current study examined how exposure to the media and interpersonal-

al conversation has influenced the targeted population in taking measures for the prevention of Covid-19.

#### *1.4. Adoption of preventive measures*

The role of mass media and interpersonal communication channels has been inevitable in the creation of adaptive measures against different diseases. The primary goal of all health preventive messages is to keep the public away from all sorts of hazards that may damage their health. Both media and interpersonal channels are further expected to effect changes in the behaviour of the public to accept and adopt the recommended measures to keep themselves healthy and active to defend against diseases. Campaigns by mass media specially designed for behavioural and social change have shown great results because they are supported both by the media and by interpersonal communication (Ramalingaswami 2013). The success of interventions for stopping smoking in adults is evidence of the effectiveness of the mass media for supporting health campaigns (Bala, Strzeszynski and Cahill 2008).

It has been observed that when the risk from a disease is high, people may opt to act upon advice more promptly (Onofrio 2007). So, the mass media and interpersonal communication are central to slowing down the course of an epidemic (Mukan-davire and Garira 2007). The media have the potential to change the knowledge, attitude, and behaviour of large groups of the population in diverse communities (Redman et al. 1990).

The above indicates that the media and interpersonal communication can be effective during the period of an epidemic. This study aimed to investigate the linkage between exposure to mass media and interpersonal communication, and their outcome as adoptive measures against the Covid-19 pandemic.

Furthermore, there is a plethora of communication theories that explain the importance of health risk communication. Among the most known are the diffusion of innovation, Awareness-Interest-Evaluation-Trial-Adoption (AIETA), and hierarchy effects models. However, this research study primarily focuses on the two-step-flow of communication model as it is intended as a tool to explore the association between exposure to mass media and interpersonal communication. The diffusion of innovation theory can also add value, but due to the time constraints in this study, we only focused on the two-step flow of communication.

## **2. Statement of the Problem**

The role of media, both in times of war and peace, carries worthwhile importance. Likewise, interpersonal channels of communication also have their own worth. Considering the importance of the media and the interpersonal mode of communication, the present study aimed to gain insights into how both media exposure and

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interpersonal communication align for the adoption of preventive measures against the Covid-19 pandemic.

### *2.1. Objectives of the study*

- To find out the association between media exposure and the adoption of preventive measures against COVID-19.
- To investigate the linkage between media exposure and interpersonal communication.
- To explore the relationship between interpersonal communication and the adoption of COVID-19 preventive measures.

### *2.2. Hypotheses*

The literature indicates that there is a great linkage between media exposure and the adoption of preventive measures against diseases (Zhou 2019). One previous study found that there is an association between the thinning standard of beauty portrayed in the media and the increase in eating disturbances seen in women (Levine, NivaPiran and Irving 2017). Another study titled ‘Health effects of mass-media interventions’ concluded that media campaigns can effect positive changes and can be more effective in preventing negative changes occurring in health-related behaviours (Deane 2018). Therefore, in the light of evidence presented in the above literature on the role of the media in the outbreak of the pandemic, we hypothesise that:

**H1. The higher the exposure to media content about Covid-19, the greater the adoption of preventive measures.**

Discussions on the role of interpersonal communication, as seen in the earlier section, and further literature on the subject indicate that there is an interplay between media usage and interpersonal communication. Specifically, a study about healthy lifestyle behaviours was conducted and concluded that there was a great association between getting health-related information and interpersonal health communication (Narissra, Carter and Arias 2016). Consequently, we hypothesise that:

**H2. The higher the exposure to Covid-19 information, the greater the intensity of interpersonal health communication.**

Interpersonal communication is considered effective in the adoption of preventive measures process and there is a linkage between interpersonal communication and behavioural change. A study titled ‘Interpersonal communication in healthcare’ concluded that the more interpersonal communication about a health issue, the higher the willingness of patients to adopt measures and the increased interest of

the patients (Gheorghe et al. 2018). Given the discussion on the adoption of preventive measure and the above study findings, we hypothesise that:

**H3. It is likely that increased interpersonal communication about Covid-19 will promote a greater adaptability of preventive measures against Covid-19.**

### *2.3. Theoretical framework*

In the two-step flow theory of the media, the information is disseminated in steps, including through channels such as opinion leaders, who are well placed to influence the public. In one study, Katz (1957) highlights the importance and role of opinion leaders in disseminating information from the mass media to the masses. It was further emphasised in that study that opinion leaders can influence the opinion of the masses through interpersonal communication more than mass media communication can.

The two-step flow theory represents an important baseline for this study, as it is used in the current study to analyse how people have been exposed to the media and thus the role of interpersonal communication is ascertained in light of this theory. Hopefully, it would also tell us whether people who have been exposed to both media have been given the same message or have added in their own suggestions.

## **3. Methodology**

The research methodology is a procedure that is adopted for completion of the research. To understand the role of mass media and interpersonal communication channels in the adoption of Covid-19 preventive measures, the researcher chose the survey method. The participants in this research study were the public of Pakistan. An online questionnaire was uploaded for users to fill out, with 300 people invited to participate in the stipulated period, but only 202 questionnaires were received back.

### *3.1. Consideration of the time frame*

This study was conducted at the peak time of the outbreak of Covid-19. It was decided that asking about the role of mass media after some time would be useless, hence 20 days was selected for the collection of responses.

### *3.2. Sampling method*

A convenient sampling method was used in the collection of the data. The study was conducted during the time of the epidemic, during which time the Government as well health organisations requested all the residents to remain isolated as much as possible and hence the convenient sampling method was adopted. Face-to-face in-



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interviews or data collection through a by-hand distribution of the questionnaire was almost impossible given the permanent lockdown when it was almost impossible to access respondents in person, so social media was chosen as the platform to access them more easily. To ensure the questionnaire responses were representativeness of the whole country, the questionnaire was forwarded to different respondents in all provinces of Pakistan.

### *3.3. Instrument development*

The instrument was developed to determine the validity of our hypotheses, which were generated in light of the findings from the literature review. The instrument was a researcher-made-literature-consulted questionnaire. The questions about the role of mass communication and interpersonal communication channels were prepared by the researcher, with the questions about the preventive measures framed in light of the WHO recommendations for the protection from Covid-19. The reliability of the questionnaire was confirmed with a Cronbach's alpha index of 0.790.

### *3.4. Method of collection of the data*

Face-to-face interviews or data collection through by-hand distribution of the questionnaire was almost impossible as there was a permanent lockdown going on. Furthermore, there was another risk in spreading the virus through distribution of the paper-based questionnaire, so we created it through Google forms and sent a link to all the participants through social networking sites (Facebook, WhatsApp, and Twitter). The online questionnaire was available to fill in for 300 participants in the stipulated period, and 202 questionnaires were completed and received back.

### *3.5. Data analysis*

The responses received back through Google forms were transferred to a computer for analysis. The frequency and percentage of the answers in the gathered data were calculated with the help of the Statistical Package of Social Sciences (SPSS) software. The answers to the open-ended question were manually analysed after receiving the responses. Codes were then generated to extract the data, which were then converted into themes. The dominant themes were about diet, religious practices, and the avoidance of 5G technology.

### *3.6. Measures*

In Part-1 of the questionnaire, the respondents were asked about their media exposure to Covid-19. This segment contained questions about the media messages



about the virus, source of information, and frequency of receiving information about Covid-19.

Part-2 comprised questions seeking information about the role of interpersonal communication in discussing Covid-19. This portion also contained questions asking respondents about the extent to which they talked about Covid-19 with their family, friends, and with their social circle.

In Part-3 of the questionnaire, the respondents were asked to inform whether increased interpersonal communication about Covid-19 had made them adopt preventive measures. This was also the part of the questionnaire that asked about how much prevention they had adopted and what type of prevention they had applied so far. This segment was based on the WHO-recommended preventive measures and the main objective was to explore the respondents actions to get a true picture on how they are considering this important information and whether they have acted upon it.

Furthermore, the respondents were asked, through an open-ended question, about which additional preventive measures they have suggested to their families, friends, and social circle for protection against the coronavirus.

#### 4. Results and Discussion

Results for H.1: The higher the exposure to media content about Covid-19, the greater the adoption of preventive measures.

Description	Item	No of responses	Percentage
<b>Exposure to media messages about the coronavirus</b>	Not at all	9	4.45 %
	To some extent	32	15.85 %
	To moderate extent	52	25.74 %
	To a great extent	83	41.08 %
	To a greater extent	26	12.87 %
	Total	202	100 %

Table 1. Extent of exposure to media messages

Table 1 indicates the exposure to the media messages about the coronavirus. The people were asked to respond on a 1–5 scale ranging from “Not at all” to “To a greater extent”. The majority indicated that they were indeed exposed to media messages about the coronavirus; 41.1% responded that they were exposed to a great extent, 25.7% to a moderate extent, 15.8% to some extent, and 12.9% to a greater extent, while 4.5% responded that they were not at all exposed to information through the media about the coronavirus.

From which source you came to know about the Corona Virus? (You may tick multiple options)  
202 responses

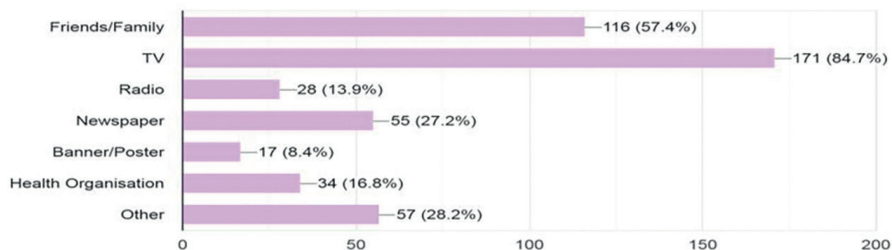


Figure 1. Sources of information for learning about the coronavirus

Figure 1 highlights the responses when asked about the source of information through which they came to know about the coronavirus. The highest response of 84.7% said they were informed about the virus through television, while the figure for the friends/family circle was 57.4%, radio 13.9%, newspapers 27.2%, banner/posters 8.4%, health organisation 16.8%, and 28.2% other.

Description	Items	No	Percentage
Exposure to messages about Covid-19	One time/day	10	4.95
	Two time/day	15	7.42
	More than three times/day	153	75.76
	Seldom	21	10.39
	None	3	1.48
	Total	202	100

Table 2. Daily exposure to messages about Covid-19

Table 2 shows how much people are exposed to the messages about Covid-19 on a daily basis. The highest percentage of 75.76 was for respondents exposed to messages about Covid-19 more than three times a day, while 4.95% were exposed one time/day, and 7.42% two times/day respectively. In addition to these figures, 10.39% said they were seldom exposed to such information and 1.48% were not exposed to such messages at all.

Figure 2 indicates that when the respondents were asked to what extent the media helped them in the adoption of preventive measures against the coronavirus, 48.5% informed that the media had helped them to a great extent, 20.8% to a moderate extent, and 13.9% to a greater extent, while only 1.9% said that the media had not helped them in the adoption of preventive measures against the coronavirus.

To what extent media do help you in adoption of prevention from Corona Virus?  
202 responses

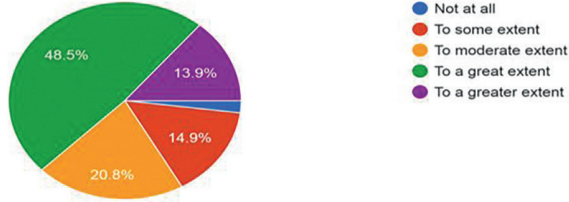


Figure 2. Media help in promoting the adoption of preventive measures against the coronavirus

		Exposure	Prevention
<b>Exposure</b>	Pearson Correlation	1	.492**
	Sig. (2-tailed)		.000
	N	202	202
<b>Prevention</b>	Pearson Correlation	.492**	1
	Sig. (2-tailed)	.000	
	N	202	202

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 3. Test of the correlation in Hypothesis 1 about the exposure to media content about Covid-19 and the adoption of preventive measures

The results in Table 3 for Pearson’s correlation coefficient indicate that a correlation existed in the above relationship and is significant, hence our hypothesis that the higher the exposure to media content about Covid-19, the greater the adoption of preventive measures holds true and is supported by the obtained results.

**Results for H2: The higher the exposure to Covid-19 information, the greater the intensity of interpersonal health communication**

To what extent you consider that information about the Corona Virus is important to be discussed?  
202 responses

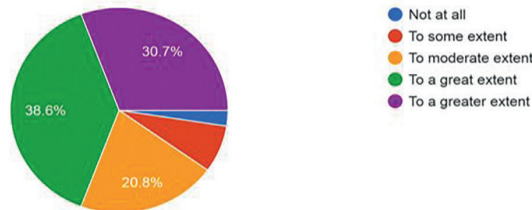


Figure 3. Perception about the importance of interpersonal communication to discuss information about the coronavirus

Figure 3 shows that the majority of respondents considered that it was important to discuss information about the coronavirus in interpersonal communication: 38.6% to a great extent, 30.7% to a greater extent, 20.8% to a moderate extent, and 7.42 to some extent, while 2.47 thought that there was no need to discuss information about the coronavirus.

To what extent do you talk about the Corona Virus with friends, family members, colleagues and other people?  
202 responses

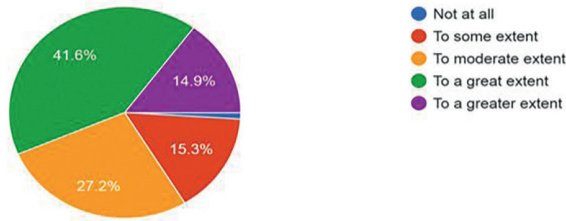


Figure 4. Interpersonal communication about the coronavirus

Figure 4 shows how much people talked about the coronavirus with friends, family members, colleagues, and other people: 41.6 % to a great extent, 27.2 % to a moderate extent, 14.9 % to a greater extent, and 15.3% to some extent, while 0.99% responded they did not talk about it at all.

		Exposure	Interpersonal communication
<b>Exposure</b>	Pearson Correlation	1	.478**
	Sig. (2-tailed)		.000
	N	202	202
<b>Interpersonal communication</b>	Pearson Correlation	.478**	1
	Sig. (2-tailed)	.000	
	N	202	202

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 4. Test of the correlation in Hypothesis 2 about the exposure to Covid-19 information and the intensity of interpersonal health communication

The results in Table 4 show that a correlation existed in the above relationship as is significant, hence our hypothesis that higher exposure to Covid-19 information leads to a higher intensity of interpersonal health communication holds and is supported by the results.

**Results for H3: It is likely that increased interpersonal communication about Covid-19 will promote a greater adaptability of preventive measures against Covid-19**

To what extent discussion with family/friends helps you in adoption of prevention from Corona Virus?  
202 responses

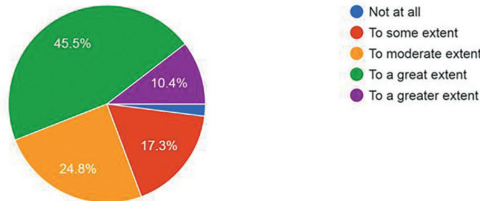


Figure 5. Interpersonal communication helps people in the adoption of preventive measures against the coronavirus

Figure 5 presents the figures for the role of interpersonal communication in the adoption of preventive measures against the coronavirus: 45.5 % stated this helped to a great extent, 24.8 % to a moderate extent, 10.4 % to a greater extent, and 17.3% to some extent, while 1.98% responded it did not help at all.

Which precautionary measure you have taken for your protection? (You may tick multiple options)  
202 responses

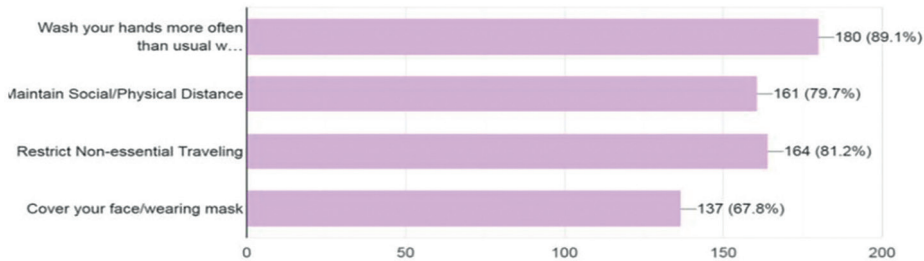


Figure 6. Precautionary measures taken as protection against the coronavirus

Figure 6 shows how people have protected themselves from the coronavirus. This was a multiple choice question, and the responses showed that: 89.1% wash their hands more often than usual, 79.7% maintained the social/physical distance, 81.2% restricted non-essential travelling, and 67.8% covered their face/wore a mask as a precautionary measure.

Table 5 shows that a correlation existed in the above relationship and is significant, hence our hypothesis that increased interpersonal communication is positively associated with the adoption of preventive measures holds and is supported by the results.

		<b>Interpersonal Communication</b>	<b>Prevention</b>
<b>Interpersonal communication</b>	Pearson Correlation	1	.431**
	Sig. (2-tailed)		.000
	N	202	202
<b>Prevention</b>	Pearson Correlation	.431**	1
	Sig. (2-tailed)	.000	
	N	202	202

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 5. Test of the correlation in Hypothesis 3 between interpersonal communication and the adoption of preventive measures against the coronavirus

#### 4.1. Additional preventive measures suggested by respondents

In addition to the above, a question was asked about which additional measures they suggested to family, friends, relatives, and others which, as per their knowledge, they considered was the best remedy against the coronavirus so that their social circle could save themselves. The respondents were able to give the choice in an open-ended question. The responses to this question were manually analysed after the first 10 responses. Codes were generated to extract the data, and these codes were then cast into themes. A summary of these themes is given below.

##### 4.1.1. Use of special drinks as a remedy

While the vast majority of people suggested that washing the hands, using a mask, maintaining physical distance, and avoiding unnecessary travel were the best preventive measure, they also recommended some other measures to their social circle, like using lukewarm water for drinking, as they considered this would relieve congestion, and gargling with salt. Some respondents also expressed that warm water is also the best remedy for controlling the spread of flu.

In conjunction with the above suggestion of drinking hot water, some others stressed the use of lemon in hot water for drinking. As per the old traditional remedies, many responded that Kalonji (Black seed, Black Cumin) and natural honey with black tea are good natural remedies and should be used regularly. Another suggestion was making green tea with ginger and using turmeric with milk, as both are effective methods that have long been used to control the flu and other viruses.

##### 4.1.2. Diet improvement

Most of the respondents urged boosting the immunity system, such as by eating a lot of fresh fruits and vegetables for strong immunity, or using vitamins and food sup-

plements, especially for elderly people. Some respondents also recommended using a clove of garlic, as this would energise the body against the viruses and it should be used regularly. It was also recommended that junk food should be avoided as much as possible.

#### *4.1.3. Religious practices*

Another theme that was highly suggested by these people to their social circles was that they should regularly make Wudu (ablution) with a short interval, pray to God, and ask forgiveness. Many people also recommended learning religious practices, with some further suggesting that serving mankind is the only way to come out from this calamity.

#### *4.1.4. Avoidance of technology*

Some curative and critical opinions were also received stating that 5G Technology is the biggest cause in spreading the coronavirus, and therefore urging that 5G Technologies should be stopped to halt its spreading of the virus. “Feed your mind and body from authentic information as there is a bombardment of misinformation”, one respondent recommended to his social circle. Another respondent thought that enough information had reached everyone, so he advocated stopping further discussion of the issue, as more discussion would only further harm the mental health of the masses.

## **5. Conclusion**

This study investigated the role of the mass media and interpersonal communication on the adoption of preventive measures against the coronavirus. Initially, the study participants were asked whether they had been exposed to messages about the coronavirus or not. Most of the respondents informed that they had been exposed to messages about the coronavirus. They were further asked about which sources they had received information about the virus. The highest response cited television as the main source where they got the maximum information. Respondents were further asked how much information they received daily, and here the majority replied that they received information about the coronavirus more than three times a day.

This was followed up by a question asking to what extent the media helped them in the adoption of preventive measures against the coronavirus. The role of interpersonal communication was also assessed among the respondents through multiple questions, like how much they think that information about the coronavirus should be discussed and to what extent they have talked about such information with their families, friends, relatives, and others. In response to these questions, a higher number of respondents thought that information about the coronavirus should be discussed and that they had shared such information.



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All the data received from the respondents were statistically analysed with SPSS using Pearson's correlation coefficient, and the results showed that relations existed between media exposure and increased interpersonal communication about the virus and between interpersonal communication and the adoption of preventive measures against the coronavirus.

Interpersonal communication was further investigated through an open-ended question asking what additional measures they have suggested as a precautionary step for protection against the coronavirus. From the initial stage responses, codes were generated to extract the data, and these codes were then organised into themes. One highly recommended suggestion was about imbibing special drinks, such as lukewarm water, lemon water, turmeric with milk, making green tea with ginger, and the regular use of Kalonji (Black seed, Black Cumin) or natural honey with black tea, which were all considered good remedial steps to control the virus.

Another major theme was about diet improvement, as most of the respondents urged measures to boost the immunity system, such as eating a lot of fresh fruits and vegetables, and using vitamins and food supplements, especially for elderly people. Some respondents recommended using a clove of garlic, stating this would energise the body against the viruses and that it should be used regularly. Another suggestion was that junk food should be avoided as much as possible.

Through the open-ended question, another theme that appeared in the recommendations of the respondents was suggestions about religious practices, including that adopting religious practices is the only way and solution by which people can save themselves from the coronavirus.

Some people criticised 5G Technologies, stating that 5G was causing great harm and was contributing to the spreading of the coronavirus. A few respondents also suggested that the excessive coverage of the issue was harming the mental health of the masses and should be stopped.

Through the results of the study, we can conclude that during a period of crisis, like the current Covid-19 pandemic, the media and interpersonal communication both are effective tools for spreading information. People receive information through the media, and this is discussed in interpersonal communication among their circle. The present study's findings revealed that the more interpersonal conversations take place about the virus, the greater the adoption of preventive measures against the virus. Like in the two-step flow of information theory, it was also found in this study that the role of interpersonal communication was important in times of calamities, as those who are recipients of information, e.g. from the media, then tend to pass this information along to their circle of friends, family members, relatives, and others along with conveying their own opinion on the subject.

The true opinions of these opinion leaders was analysed through coding, and it was found that all the suggestions have some deep-roots in the traditional thoughts and practices of the people of Pakistan. Whether these unconventional methods of treatment will work as prevention against coronavirus is not certain. but it is recommended that the health communicators should consider these historical treatments when designing the communication strategy for effective messaging to the Pakistan population.

### 5.1. Limitations

This study has several limitations to note.

1. This study was confined to respondents from Pakistan only.
2. Another limitation is that the respondents were those who have internet facility, whereas it would be better if the researcher could approach other people too who do not have internet/cell connection with the net. It has already been explained that during the pandemic face-to-face interaction was almost impossible, so the questionnaire was forwarded to respondents through social media.

### 5.2. Policy recommendations

- It is desired that all the media should work holistically in this COVID-19 emergency for the betterment of humanity.
- A joint mechanism should be devised by all stakeholders so as to maximise the valid information that can be shared.
- Health communicators should create the messages to the public carefully by keeping in mind the effects of interpersonal communication when designing messages.
- A debate in the media is necessary about the old traditional methods of healing, so that public misconceptions can be minimised.
- Opinion leaders should avoid making suggestions to adopt practices that are not scientifically proven, as these can be harmful.

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