

ORIGINAL ARTICLE

Effect of COVID-19 Related Infodemic on Health of General Public of PakistanAzeema Noor¹, Tahira Sadiq²**ABSTRACT**

Objective: To know the public opinion about the role of infodemic in spreading fear & panic among the public of Pakistan and to assess the effect of fear created by infodemic on their health.

Study Design: This was a cross sectional survey.

Place and Duration of Study: The study was conducted from 14th July 2020 to 25th August 2020 in Rawalpindi, Pakistan.

Materials and Methods: An online cross-sectional survey was conducted using a pre-validated questionnaire from 14th July 2020 till 25th August 2020. People of age >12 years were invited to participate in an online survey through Google forms. A written consent was obtained from all the participants before filling the questionnaire. Data was analyzed using statistical package for social sciences SPSS version 24.

Results: Total 541 participants took part in this survey. 320 (59%) of which females and 221 (41%) were males. Majority 224(41%) reported that category of misinformation and fake news about COVID-19 had the most impact in creating fear and panic among people. 80% (432) reported that infodemic played a role in creating fear and panic among people, 310(57.4%) participants reported that infodemic created fear on them, 304(56.2%) reported their health was affected, 182(33.6%) had effects on psychological health, 17(3%) had effect on physical health while 105(19.4%) had effects on both psychological and physical health.

Conclusion: Infodemic caused by media played a major role in creating fear and panic among people. Fear created by infodemic during the Covid-19 outbreak is associated with negative psychological outcome in our population.

Key Words: COVID-19, Fear, Pandemic, Public Health.

Introduction

Corona virus (COVID-19) is an infectious disease caused by a newly found Corona virus in China in December 2019.¹ COVID-19 outbreak was declared as a "PANDEMIC" by W.H.O on 11 March 2020.² This caused a wave of fear, anxiety and panic among people throughout the world. In addition to the fear of disease, it's contagious and deadly nature; there was an information overload which created even more fear and panic among people.

"We're not just fighting an epidemic; we're fighting an infodemic"³

These were the words of WHO director general while addressing a conference on 15th February 2020. Infodemic is the term coined from the words

"information" and "epidemic" which means the overwhelming amount of information regarding a problem which makes it difficult to find the accurate information and its solution.⁴ This was a real challenge during the times of global health crisis. Due to media, the phenomenon of spread of information, misinformation and rumours has been dramatically increased⁵ which posed a serious problem for public health both psychologically and physically.⁶ "We're in the midst of the social media misinformation age and these rumours and conspiracy theories have real consequences."⁷

Electronic media is the most used source of information in Pakistan. But the role of media concerning COVID-19 is kind of disappointing. On one hand, media played its role in creating awareness regarding the disease, but on the other hand provision of unfiltered information affected health of public both psychologically and physically. Media covered the news about COVID-19 however, often the media coverage was without opinion of medical experts, doctors and even without scientifically proven evidence.⁸ Media disseminated more information about rising death toll, rate of

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infectivity, some fake news about⁹ herbal cures of disease, COVID-19 being a “conspiracy” and not actually a natural disease and other such news. In other words, there was an avalanche of such information which created fear and panic among people.

Fear is an emotional response of human beings which can have positive as well as negative effects. In context of health crisis, fear effected people psychologically causing negative symptoms like anxiety, depression, poor brain function as well as physically by weakening the immune system.¹⁰ When fear is out of proportion, it becomes the source of various psychiatric disorders having long term effects.¹¹

Humanitarian crisis is a public health issue and the goal of public health is physical, psychological and social wellbeing of¹² entire population which was greatly threatened in the above mentioned circumstances. There was no study to assess the effects of infodemic during the time of health crisis on the health of public of Pakistan. The purpose of this study was:

- To know public opinion about the role of infodemic in spreading fear and panic among the public of Pakistan during COVID-19.
- To assess the effect of fear created by infodemic on their health.

Materials and Methods

This was a cross-sectional survey conducted from 14th July 2020 till 25th August 2020 in Rawalpindi/ Islamabad. Sample size was calculated using “Raosoft”, with total population of Pakistan 220.8 million, confidence interval of 95% and the margin of error of 5%, the recommended sample size was 385. And the additional sample of 156 was collected. Total 541 participants took part in study. Sampling technique used was non-probability convenience sampling. Instrument used for data collection was pre-validated questionnaire¹³ used with permission from author. The inventory was modified with respect to local context. Only adolescent and adult citizens were included in the study. Children and people with clinical mental illness were excluded. Responses were collected after written informed consent at the start of questionnaire from respondents and their anonymity was assured. Data was collected from participants from different cities

of Pakistan. Questionnaire was self-administered online via Google forms due to COVID-19 restrictions. Forms with incomplete information were rejected. Questionnaire consisted of 4 sections; first section addressed the demographic variables of gender, age and qualification. Second section addressed the category of information that had the most impact in creating fear and panic among people. Third section addressed the opinion about the role of infodemic in spreading fear and panic among public of Pakistan and the impact of fear caused by infodemic on their health. Final section addressed the opinion regarding need of information filtering by media. The data was analysed using SPSS version 20. Tables and figures were drawn using Microsoft Excel. Chi square test was employed to establish the association between qualitative variables. Confidence interval of 95% was used. P values of less than 0.05 were considered statistically significant. Tables and figures were drawn in terms of frequencies and proportions.

Results

The research revealed some interesting figures about the effects of infodemic on public health. Data is presented in the form of tables, figures, and bar charts. The participants comprised of 41% males and 59% females. Majority of participants aged 18-60 years (92%). Approximately 70% had received the university degree (table I)

Section 2: Figure 1 shows the response of participants about the category of information that

Table I: Demographic Information of Respondents

Variables	N (%)
Gender	
Female	320(59%)
Male	221(41%)
Age Group	
12-17 years(adolescents)	45(8.36%)
18-24 years	357(65.99%)
25-34 years	79(14.68%)
35-60 years	58(10.6%)
more than 60 years (older adults)	2(0.37%)
Qualification	
Just read and write	8(1.48%)
Matriculation	20(3.7%)
Intermediate	134(24.77%)
Bachelors	272(50.28%)
Masters	100(18.48%)
PhD	7(1.29%)

mostly caused fear. It shows that majority responded that the category of “misinformation and fake news” had the most impact in creating fear and panic among people.

Age Group Based Response About Category of Information That Mostly Caused Fear Is Shown In

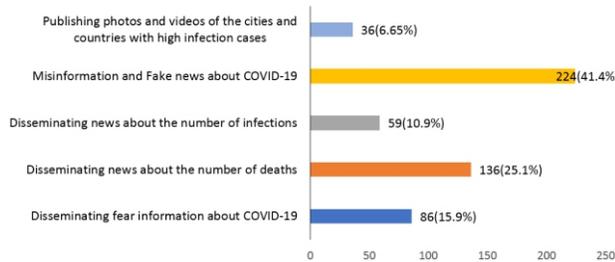


Fig 1: Category of Information That Mostly Caused Fear

Figure 2 Which Shows That In All The Age Groups The Category Of “Misinformation & Fake News About Covid-19” Was The Response Of Majority Of Participants.

Section 3 comprised of the opinion about spread of fear and panic among people by infodemic to which

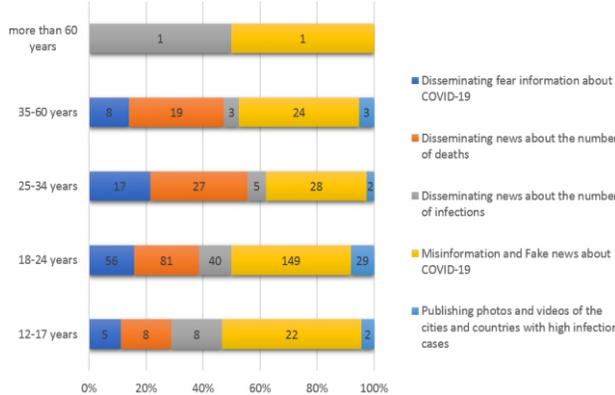


Fig 2: Age Group-Based Response About Category of Information That Mostly Caused Fear

majority 432(80%) had a positive response shown in figure 3.

Majority of participants 310(57.4%) reported that publishing more news related to covid-19 i.e., Covid-19 related infodemic created fear on them.

Figure 4 shows 304(56.2%) participants reported that their health was affected either in terms of physical, psychological or both i.e., physical and psychological health by the fear created by infodemic while 237(43.8%) reported they were not afraid.

Gender based response is shown in figure 5. In females, 61% reported that their health was

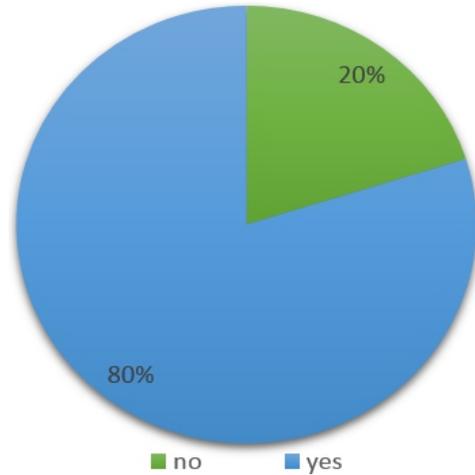


Fig 3: Opinion About Fear and Panic Among People by Infodemic

health aspect effected by fear

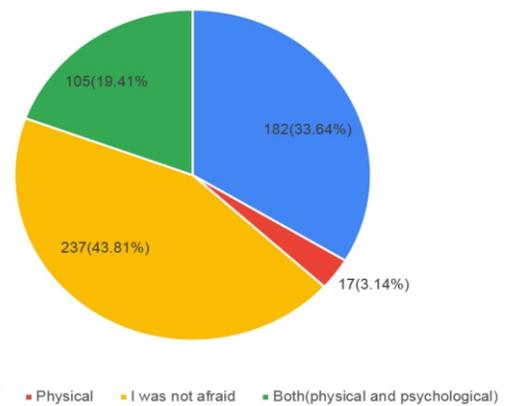


Fig 4: Health Aspect Affected by Fear

affected. While 50% males reported the effects on their health.

Section 4 comprised of opinion regarding need of information filtering by media. Majority of

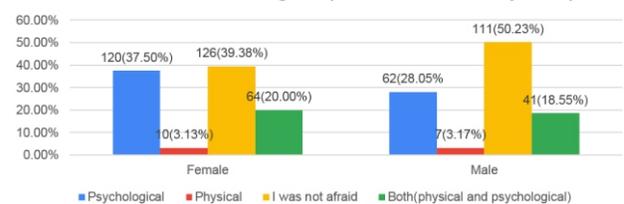


Fig 5: Health Aspect Effected by Fear (Gender-Based Response)

participants 496(91.7%) reported that there is need of information filtering by media.

Opinion of participants that Covid-19 related infodemic has caused fear and panic among people has significant association with age group $P=0.017$, category of information that had most impact in creating fear and panic $p=0.04$, health aspect

effected by fear $p < 0.001$ and the need of information filtering $p = 0.02$.

The category of information that had most impact in creating fear & panic has significant association with the opinion of participants that Covid-19 related infodemic created fear on them $p = < 0.001$, health aspect effected by fear $p = < 0.001$ and the need of filtering of information $p = 0.03$

The opinion of participants that Covid-19 related infodemic created fear on them has significant association with the health aspect effected by fear i.e $p < 0.001$. However there was no significant association of any variable with gender and qualification of participants.

Discussion

This study was conducted to explore the effects of infodemic on the health of public of Pakistan. We found that majority had the opinion that there is more spread of fear and panic among people due the infodemic which had negative health outcomes. Our finding that majority (41%) reported "misinformation and fake news" played the main role in creating fear and panic among people is consistent with the study conducted in Italy that there were almost 46000 new posts¹⁴ on twitter daily during March 2020 which was related to misinformation about covid19. A survey conducted in UK indicated that 46% of adults in UK were exposed to misinformation about covid19 and 40% of UK adults are 'finding it hard to know what is true or false about the virus'¹⁵. Another study conducted in US reported that due to misinformation/fake news 64% of the adults had confusion about basic information related to current events¹⁶. It was stated by WHO director General that the most contagious thing about COVID-19 might be the misinformation and stated that "social media panic travelled faster than the COVID-19 spread"¹⁷

There is negative health outcome associated with infodemic with health of 35% respondents affected psychologically. Psychological health of people is affected more as there is more spread of fear by the infodemic ($p < 0.001$). Similar results are reported by a study conducted in China during March 2020 concluded that there is high prevalence of mental health problems associated with social media exposure during covid-19.¹⁸ The study conducted in Iraq¹³ also reported that the majority of participants

had effects on psychological health due to fear which might have played a role in decreasing the immunity of people. A Chinese survey found that 53.8% of respondents rated the psychological impact of the outbreak as moderate or severe; 16.5% reported moderate to severe depressive symptoms; 28.8% reported moderate to severe anxiety symptoms, and 8.1% reported moderate to severe stress levels¹⁹. Another survey conducted in China in which 52370 people participated concluded that 35% people had psychological distress.²⁰ A study conducted in China with 17865 participants concluded that negative emotions increased after the declaration of Covid-19 pandemic.²¹ A study conducted in USA reported that COVID-19 pandemic has profound psychological and social effects which will persist for a long time in future.²²

The problem is the filter failure due to which there is a need to have filters for information provided by media as expressed by 91% of participants but there is very little evidence to support this result.

This study has various limitations. This was a cross sectional study which cannot fully establish the cause and effect relationship of unfiltered media exposure and psychological health. The methodological choices were constrained due to lockdown and quarantine situation. We were not able to compare the mental health of participants before, during and after Covid-19. The research sample consisted of Pakistani public of mainly Rawalpindi and Islamabad so it's difficult to establish the generalization of results.²³

Further studies should investigate the long-term health effect and psychological outcome of COVID-19 outbreak on health of public of Pakistan once the pandemic is over.

Conclusion

This study concludes that infodemic caused by media played a significant role in creating fear and panic among people. Fear created by infodemic is associated with negative health outcome during the Covid-19 outbreak in Pakistan.

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