



Original Research

Diversity in conception of COVID-19 in pastoral and metropolis areas of Pakistan

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Abstract

Background: SARS (severe acute respiratory syndrome) COV-2 has become a global problem since its emergence in 2019 from Wuhan, China as it is most deadly pandemic since Spanish flu in 1918. Primary Study Objective: This study analyzed the people's perception regarding COVID-19 and precautionary measures taken by them during COVID-19 peak time. Methods/Design: An observational concurrent study was performed in which data was collected from population in rural and urban areas of Punjab and Azad Kashmir using questionnaires. Setting: This survey was carried out in rural and urban areas of Punjab and Azad Jammu and Kashmir Participants: 305 participants were included in the study Intervention: Data was collected from the educated participants of different age groups belongs to different profession. Primary Outcome Measures: Purpose of the study is to know about that conception of COVID-19 in both rural and urban areas of Pakistan so that effective therapy can be given to the nation. Results: It was found that people from both populations had adequate knowledge about COVID-19 and followed restriction imposed by the government during lockdown period. Moreover, population in rural areas was more likely to believe in the myths and rumors about COVID-19 existence. Conclusion: It was concluded that there is need of generating awareness among general population through adequate means which provide authentic information to people and lockdown is not a solution. Everyone should take of his own life by wearing masks and following protocols.



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Introduction: Coronaviruses are enveloped RNA viruses that cause respiratory illness of varying severity from common cold to pneumonia which can be fatal [1]. Coronaviruses cause up to one third of community acquired upper respiratory tract infections in humans and contain pathogens with epidemic potential [2]. In 21st century, they are responsible for eruption of 3 epidemics SARS (2002-2004), MERS (2012-2014) and COVID-19 (2019-) [3]. But COVID-19 has been most deadly of all. It was declared a pandemic on March 11, 2020 [4]. COVID-19 is caused by SARS CoV-2 which is a bat borne virus [5]. It spreads through droplet method, vertical transmission, and indirect contact [6,7]. COVID-19 is mostly being diagnosed with Rapid diagnostic test and Real Time PCR (Rt PCR) [8]. Most of time COVID-19 is like a cold or flu but sometimes it causes serious complications due to damage to lungs [9,10]. It was mainly treated by supportive therapy which includes oxygenation, fluid management and some anti-viral drugs but now vaccine against COVID-19 is available [11]. Mostly used vaccines are developed by BioNTech and Pfizer (BNT162b2 mRNA vaccine), AstraZeneca (ChAdOx1 nCoV-19 Adenoviral vector vaccine), Moderna (mRNA-1273 mRNA vaccine), Johnson and Johnson (Ad26.COV2. S adenoviral vector vaccine) and Sinovac (Coronavac inactivated virus vaccine) [12-16]. By October 27, 2021, COVID-19 has infected 1.27 million with 28405 fatalities in Pakistan [17].

Literature review: A study performed in health care workers in Henan, China analyzed knowledge, practices and attitudes regarding COVID-19. 89% of health care workers had sufficient knowledge of COVID-19. 85% feared self-infection and 89.7% followed correct practices [18]. In another study, knowledge, perception and practices were observed in urban and rural areas of China. It was concluded that education, gender, age, and marital status were influencing factors of the COVID-19. More than 90% of the participants believed that COVID was serious and preventable. 99.4% were concerned about deterioration of pandemic, 43.7% participants did not want to go fever clinic to check for infection, 87.8% of respondents bought N95 surgical masks, 45.1% washed their hands using 7 step protocol and 70.4 percent covered their nose and mouth with either paper tissue or elbow while coughing and sneezing [19].

A study was performed on 940 people to assess perception of self-isolation in Cearra State of Brazil. 76% of people were in favor of isolation at the beginning of April. It became evident that the isolation measures adopted by the population vary by people's income, gender and education. It was also found that young people are more vulnerable to COVID-19 infection as they are less isolated than older adults [20].

According to research published in Journal of Medical Internet Research, patients who initially contacted virus were between ages of 20-40 years who were obese, smoked, drink alcohol with no underlying medical conditions. 85.6% of participants agreed with washing their hands and maintaining social distancing [21]. According to a survey conducted by University of Southern California to assess risk perception and effect of COVID-19 in different age groups, it was concluded that older adult age was associated with greater risk of dying if effected

with the virus and being quarantined decreased risk of contracting COVID but increased fear of running out of money, depression and anxiety due to uncertainty about their future [22].

A study investigated the knowledge attitude and practices during lockdown to examine factors associated with misperceptions and to determine behavioral patterns in Greece. 40% were not using face masks and 42% washed their hands properly. Regarding attitude toward future vaccination, 18.9% were against it and 81.1% declared that they may consider or will be vaccinated [23]. Situation is far more complicated in low-income countries like BANGLADESH where population have minimal health literacy. Women about 83.28% accepted that they fear COVID-19, 19.75.46% people thought it as a dangerous public health threat. Mostly perceived it to be common case of flu (72.5) [24] Perception about vaccination that everyone should get it was higher among females (56.9%) versus males (47.99%). 56% participants believed it to be treatable with vaccination [25]. A survey was carried out in Gilgit Baltistan. It was concluded that lives of 95% respondents were suffered because of pandemic, 87% reduced their travelling activities, 78% reported shortage of household food and uncertainty about their financial future, 64% confirmed that their earnings have decrease [26]. In another research published in Pakistan Armed Forces Medical Journal, knowledge and perception of COVID-19 was assessed in general public. From the results gathered it was deduced 97% were of the opinion that older people would develop complication due to virus. 91% agreed that face masks, washing hands (99.4%) and not touching face (98.7%) will decrease rate of transfer of COVID-19 [26].

Method and Materials: Study design: This study is observational concurrent study conducted involving voluntary participation of general population in different rural and urban areas. Study setting: Duration of study was from April to August 2021. This survey was carried out in rural and urban areas of Punjab (Gujranwala, Shakkargarh, Mandi Bahauddin, Okara) and Azad Jammu and Kashmir (Rawalakot, Bathick, Baloch and Pallandri). All participants were 18 years old. 50% participants belonged to city while other 50% were from countryside. Most of the questionnaire were printed because lack of availability and skills needed to fill an online form in pastoral areas. Only risk that was anticipated was trouble of time taken by the respondent to fill the questionnaire. Participants responded that questions were easily understandable and average time to answer a questionnaire was 10 minutes. People were assured of the confidentiality of the information they put in the survey. Sample size: In this survey, a total of 305 sample size was taken. Inclusion criteria: People involved belonged to both genders and any race, residents of rural and urban areas in above mentioned cities. All participants were included in this study were 18 or older. Both infected and non-infected people were involved in the study. Exclusion criteria: Individuals of age less than 18 and there was no upper limit for age. People suffering from any mental disorders were not included in the study. Study tool: Questionnaire comprised of 5 sections; demographic information, general information about coronavirus, knowledge about vaccine and treatment, perception of people about COVID-19. Questionnaire had closed ended

questions. First sections involved personal information about participants. Second section explored information about transmission of coronavirus and compliance with government restrictions. Third section indicated public's response and attitude toward vaccine against COVID. Fourth part was about perception of participants about COVID-19 existence, government restrictions and different rumors. Fifth section was related to possible treatment and remedies popular among masses. Ethical statement: Information regarding aims was provided to all participants who participated voluntarily. All ethical guidelines were strictly followed, and every participant consented to use of information given in survey for research purposes under the conditions that they remain anonymous

Results and Discussion: The study sample contain total of 305 participants from both rural and urban areas. Number of female subjects who participated in this study were higher in in urban area as compared to men while in rural areas men and women participated in equal numbers. When compared on the basis of age groups, we found that young people from urban areas were more interested in this study while higher percentage of middle aged and old people from rural areas filled the questionnaire as compared to urban areas. When evaluated on level of education, we determined that higher number of highly educated individuals were related to urban areas with resulting ratio 49:18.

The second part of our questionnaire which was general information and risk perception contained 6 items. Almost all people had heard about COVID-19 as already discussed in *awareness, perceived risk and protective behaviour of Myanmar adults on COVID-19*. More than 80% people in both rural and urban believed COVID to be a contagious disease as told by *Kanwal Ashiq and her colleagues in a study conducted in Lahore*. A higher percentage of participants from rural areas (73%) had correct knowledge of nature of the disease in comparison with urban areas (66%). A higher percentage of risk perception was observed in urban areas (88%) as discussed before by *S Mya Kyaw and her colleagues*. Participants agreed that travelling causes an increased risk of contracting COVID-19 in both urban and rural areas in ratio 88:76 as it is already reported in by *Shamsher ul haq et al*. People don't consider public transport a hazard because of the government restrictions as no entry without mask was allowed and transport was working at 50% capacity. When asked about activities during lockdown a higher number of participants from rural areas (48%) reported that they learned something new while watching television and online gaming were main activities reported in urban areas. Activities during lockdown were mainly influenced by availability of internet and participant's interest

The third chapter of our thesis was related to vaccine and mass's response to it. We observed elevated positive response toward vaccination in urban areas (69%) than in rural areas (55%) as already studied by *Patricia Soares and colleagues*. The hesitancy about being vaccinated was mainly due to religious beliefs, rumours about vaccine on social media and irrational fears. More than 55% respondents from both urban and rural areas thought that COVID vaccine had certain side effects. Many people claimed that COVID vaccine might cause impotency in

males and infertility in females as described in paper published by *Malik Sallam et al*. We noticed that people with low education attainment and lower income were less likely to be inclined to be vaccinated as already declared by *Kimberly H. Nguyen*. An average of 85 percent people knew the proper procedure of how to be vaccinated in Pakistan in both pastoral (80%) and urban (90%) areas. This is due to fact that government has initiated some awareness campaigns among general population by advertising on social media, TV and print media as well as informing people by sending messages to their contact numbers.

In the fourth section of questionnaire, we assessed different beliefs and myths that were circulating among general public. When we inquired the participants about origin of COVID-19, we received positive response from both rural (60%) and urban areas (63%) that it is a natural disaster. A higher percentage of people in urban areas (30%) believe that COVID-19 was manufactured in a laboratory in comparison with rural areas (23%). While a higher number in rural areas (16%) believed that it didn't exist as compared to response from urban areas (9%) as it is all already explained by *Lenisse M. Reyes, Lilibeth Ortiz et al*. More than 85% of participants from both rural and urban areas shared the belief that performing ablution five times a day and offering prayers significantly decreased chances of contacting coronavirus. Many people in developed countries were also victims of several myths. People believed it to be a conspiracy of pharmaceutical companies, took vaccine as a source to mask Bill gates microchip as explored by *K.S Khan et al*. A higher number of people from villages (76%) were affected economically during lockdown. An increased percentage of people in city (74%) were of the opinion that use of warm water decreases spread of coronavirus as virus cannot survive hot temperatures. At the start of pandemic, in Pakistan several gossips started to move among public some of most popular were that COVID didn't exist, it was created in a lab, it is an excuse used by government to get loan exemption, it was a punishment from God because of our sins etc. These myths were more believable for people because of the difficulty to accept that a flu like illness could be fatal for healthy people.

In fifth part of the questionnaire, we tested the knowledge about treatment in public. An average of 80% people from village and city thought that concomitant disease is responsible for increase rate of morbidity in COVID-19 patients. More people in urban areas (46%) believed that antibiotics could be used for treatment of COVID-19. Due to lack of medical facilities in rural areas and high hospital fees, many people turned to folk remedies to treat or prevent COVID as discussed in *Nur khaid ul Azam*. In Pakistan, most famous remedies were use of Joshanda, ginger tea and honey. In both urban and rural areas most popular remedy was use of ginger tea but it was more used in cities. Joshanda was more famous in rural areas. More than 20% percent of people used honey both rural and urban areas. These results corroborate with findings of previous study performed in Saudi Arabia by *Amna Alotiy*.

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Table 1. Questionnaire comprised of 5 sections; demographic information, general information about coronavirus, knowledge about vaccine and treatment, perception of people about COVID-19.

Location: Rural Total Participants: 152 male: 76 (50%) female: 76 (50%)								
AGE: 18-25: 81 (53%) 26-45: 40 (26%) 46 above: 31 (20%) Educated: all								
School (matric): 68 (40.7%) College (inter): 56(36.8%) University (bachelors):28 (18.4%)								
Location: Urban Total Participants: 153 male: 69 (54.4%) female: 84 (55%)								
AGE: 18-25: 105 (69%) 26-45: 27 (17%) 46 above: 21 (13%) Educated: all								
School (matric): 15 (11%) College (inter): 62 (40%) University (bachelors): 76 (49%)								
Q. NO	Questions	L	Option 1 Total	Option 1 %age	Option 2 Total	Option 2 %age	Option 3 total	Option 3 %age
1	What is COVID-19?	R	rsp. 112	73.6	Imm. 25	16.4	Blood 15	9.8
		U	101	66.4	50	32.8	2	1.3
2	Spread by physical contact	R	Yes : 127	83.5	No: 9	5.9	DN: 16	10.5
		U	125	82.2	16	10.4	12	7.8
3	Do u follow SOPs?	R	Yes: 128	84.2	No: 24	15.7	DN: 0	
		U	136	88.8	17	11.1	0	
4	Activities in lockdown??	R	New: 73	48.03	TV: 38	25	Game: 41	26.9
		U	61	39.8	45	29.4	47	30.7
5	Do u want to be vaccinated?	R	Yes: 85	55.9	No: 57	37.5	DN: 13	8.5
		U	106	69.2	36	23.5	10	6.5
6	What is helpline for vaccine reg.?	R	True: 124	81.5	No: 24	15.7	DN: 4	2.6
		U	139	90.8	10	6.5	4	2.6
7	Are there any side effects?	R	Yes: 86	56.5	No: 30	19.7	DN: 40	26.3
		U	91	59.4	40	26.1	22	14.3
8	What is source of COVID?	R	Nat: 96	63	Lab: 36	23.6	No: 25	16.4
		U	92	60.1	46	30	15	9.8
9	Prayer?	R	Yes: 131	86.1	No: 7	4.6	DN: 14	9.2
		U	132	86.2	9	5.8	12	7.8
10	Economically effected?	R	Yes: 116	76.3	No: 31	20.3	DN: 9	5.9
		U	107	69.9	40	26.1	6	3.9
11	Use warm water?	R	Yes: 105	69	No: 35	23	DN: 12	7.89
		U	114	74.5	38	24.8	1	0.65
12	Travelling increase COVID?	R	Yes: 113	74.3	No: 18	11.8	DN: 21	13.8
		U	133	86.9	16	10.4	4	2.6
13	Remedies for COVID?	R	Ging: 63	41.4	Josh: 50	32.8	Hony: 39	25.6
		U	71	46.4	45	29.4	37	24.1
14	Use Antibiotics for COVID	R	Yes: 57	37.5	No: 60	39.4	DN: 35	23
		U	71	46.4	62	40.5	20	13
15	Age group for COVID	R	Old: 120	78.9	Yng: 10	6.57	Chld: 22	14.4
		U	123	80.3	8	5.22	22	14.4
16	Concomitant disease?	R	Yes: 124	81.5	No: 10	6.57	DN: 18	11.8
		U	124	81	15	9.8	14	9.1

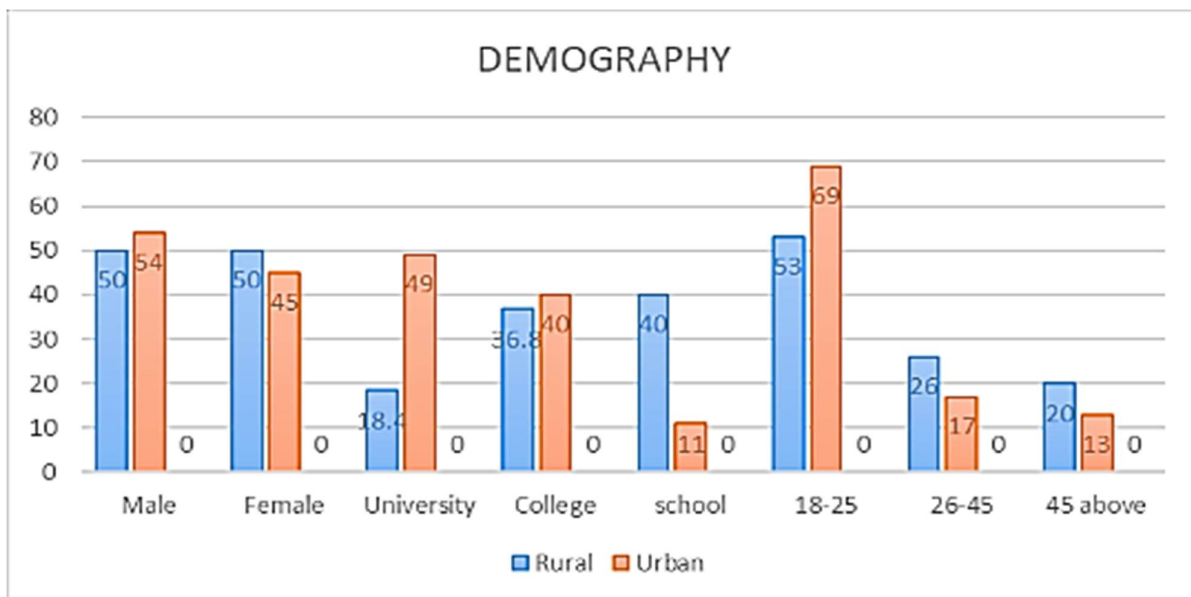


Fig.1. Demography

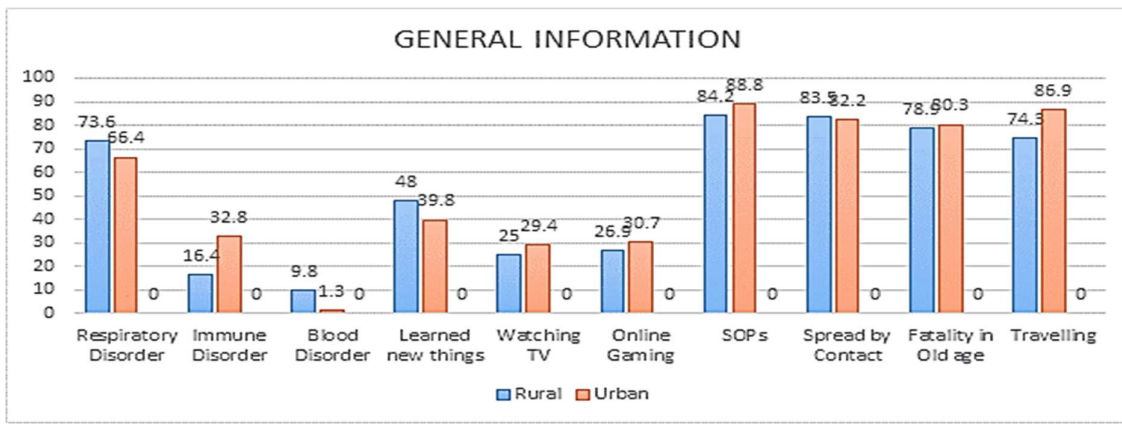


Fig.2. General information

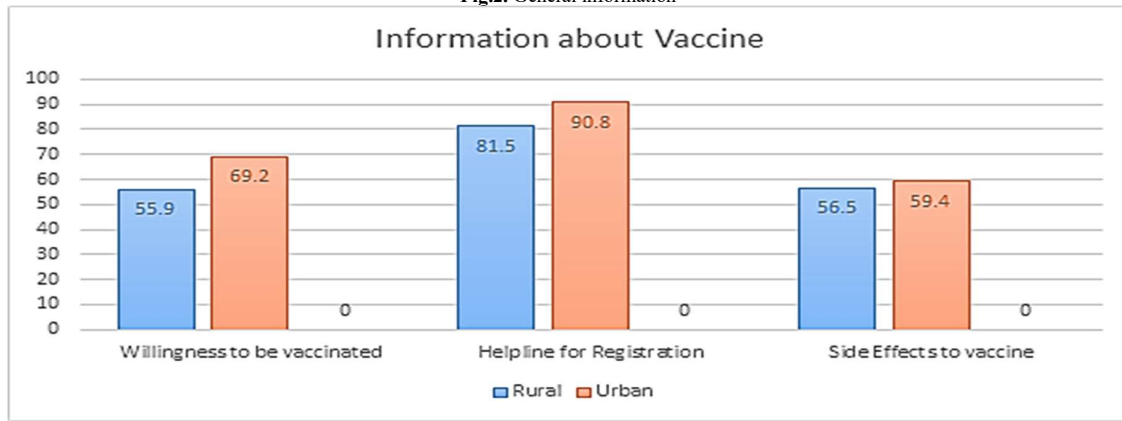


Fig.3. Information about vaccine

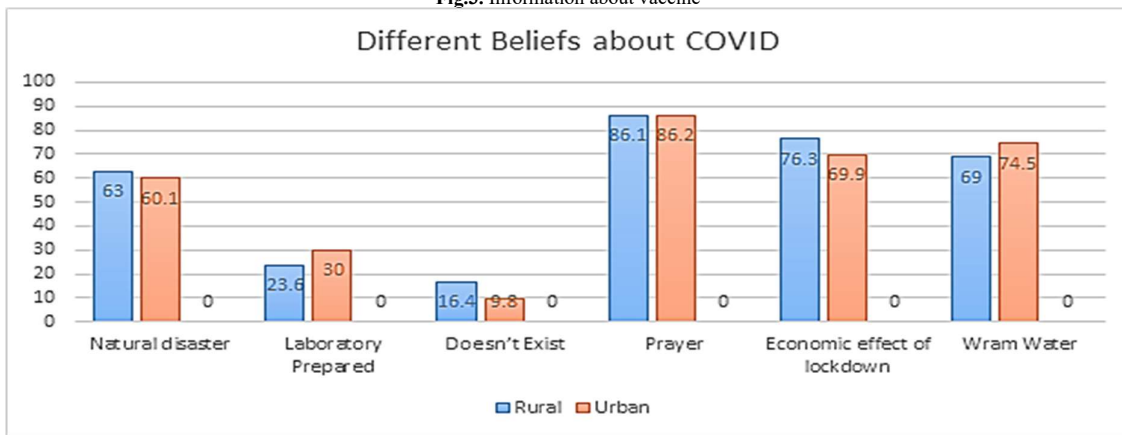


Fig.4. Different beliefs about COVID-19

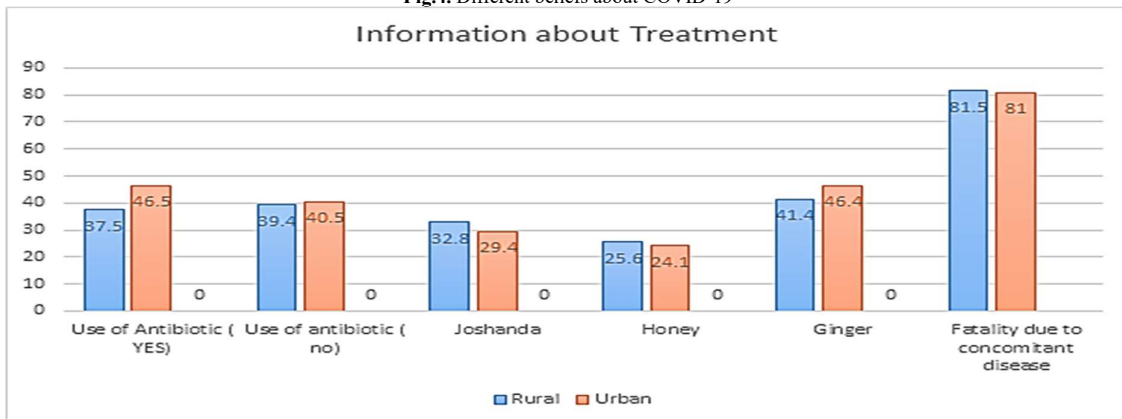


Fig.5. Information about Treatment