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Study to Explore Psychological Aspects of COVID-19 Among Patients in Pakistan

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Abstract. COVID-19 outbreak is affecting the world population and has emerged as a global pandemic, started from the city Wuhan, China in December 2019. The physical and mental health that is being affected due to the trauma and suffering from COVID-19 leads to additional associated factors. It has been pointed by the physicians that mental health implications of COVID-19 are still unknown. In this study we analyzed the extent of response under the ambit of anxiety, depression and physical well-being of persons who have recovered from the novel COVID-19 in Pakistan. The rapid spread of COVID-19 has led to health emergencies in mental health institutes implemented by the Governments of different countries. Considering the social impact, the outbreak leaves large and growing financial losses as business and trade industries are severely affected due to lockdown. Such situations are likely to increase the stress among the population and patients. Patients with co-morbidities, and old age were mostly affected. Individuals from different districts of Pakistan were included in this study and total 104 designed questionnaires were distributed to the affected persons who have recovered from COVID-19.

Keywords. COVID-19, Anxiety, Depression, Social Media, Pakistan

Introduction:

The first case of COVID-19 was reported on December 08, 2019 in Wuhan, Mainland China having unknown etiological factors [1]. The outbreak of novel coronavirus is considered as an emerging source from animals who take seafood and get exposure in animal market located in Wuhan [2,3]. The major cause of the spread of this pandemic is the travelling by individuals from one country to another.

Psychological distress and emotional imbalance as compared to previous large-scale outbreaks as Ebola Virus Disease (EVD) recorded in the years of 2014 to 2016 is less than the COVID-19 outbreak [7]. The mental health problems include fear, behavioral extremities and stigmatizing the public procedures including medical professionals and negativity that affected the survivors commonly observed in this pandemic. In the context of EVD survivors it has been

observed that depression and impact of traumatic stress were the most common mental health problems [8].

COVID-19 reflects similar mental health problems as observed in EVD while the number of cases is more than the cases reported against EVD. COVID-19 establishes well known risk factors as ignoring social distancing exclusively by younger age group who continued to move in surrounding while restrictions were implemented by the law and enforcement agencies in Pakistan. This behavior provided significant space for COVID-19 to spread and disease left the impact of difficulty for isolation of confirmed cases. It has been established that extreme behavior on the other side of social contact is increasing mental health problems. This contrast behavioral concern shaped the trajectory of outbreak with long term effects [9]. The most applicable treatment by Psychologists on clinical evidences was use of Psychoeducation. Psychiatrists in Pakistan exclusively maintain the approach of awareness regarding Psychoeducation and endorsed the medication where it is required during pandemic.

The medium of awareness for Psychoeducation most commonly being practiced during COVID-19 outbreak is use of Internet. The internet was potentially considered for the information regarding capacities of medical supplies as shortage of personal protective equipment and ventilators highlighted in major sources. The impact of lacking medical supplies and information circulated through internet escalated the fear in public and confirmed cases reported by World Health Organization (WHO) caused mental health issues with utmost common factor of anxiety. The confirmed cases and lockdown both brought psychological trauma and increasing behavior of magnified myths also initiated on internet (i.e. fake news).

It has been reported till date that millions of people are confused about the question of social distancing and it leads to the drastic substantial activity in public. Use of social media and exposure towards digital media has increased due to lockdown [10-11]. The conventional behavior around use of social media applications as Facebook, Twitter, Whatsapp messenger and Instagram together cause misconception and in turn causes fear and anxiety in population. The psychopathological effects observed by the patients having COVID-19 positive included in this study and consequences related to stress are reported most common. The risky behaviors of young people who did not follow social distancing and most common example of this behavior observed is attendance in Mosques and churches due to contrast behavior.

Posttraumatic stress included the effects of nightmares, sexual thoughts, difficulty sleeping, random response in interactions, physical inactiveness. The study performed in early 2020 in China that revealed the prevalence of mental health problems and estimated 48.3% rate of depression and of anxiety about 22.6% in adults [12]. It was also observed that people who have high rate of social media use exhibit more effects of depression and anxiety as compared to the people who have less rate of exposure with social media applications.

It is concluded hypothetically that increasing behavior of depression and anxiety in population elevated due to the significant use of social media which lead to cause mental health problems.

Methods:

In this study total 104 individuals included who have recovered from the COVID-19 infection. The distribution of data applied on the basis of gender, age, province, and literacy rate. In province of Punjab total 82 individuals were included in which 54 were males and 28 were females, from Khyber Pakhtunkhwa (KPK) 10 males with no females, from Sindh 5 males with no females, Federal area Islamabad Capital Territory (ICT) 1 male and 2 females and Azad Jammu and Kashmir (AJK) 1 male was included for the questionnaire based responses.

Questionnaire:

Response of individuals structured in standardized format [13] of questionnaires covering the aspects and conditions of individuals from physical to mental health. COVID-19 symptoms and the extent of psychological factors such as emotions and feelings exclusively targeted with challenging environmental conditions during isolation. The quick mode of communications used for the distribution of questionnaires was WhatsApp and Emails. There was no ethical approval required for this study. Questionnaire were filled on the basis of memory, knowledge and the most convenient time of their choosing.

Questionnaire contained 28 different questions with basic knowledge of infection, behavioral changes, common practice of isolation, and history of previous infections, transmission modes, signs/symptoms, clinical significance, and healthy attitude of mind and body, diet and nutrition plans. Participants were asked to fill the questionnaires with their best way of expressions and free will.

Statistical Analysis:

The data was analyzed using Sofa stats software version 2.4 [14]. Self-administered questionnaire used to describe the knowledge and beliefs about the stress management in population after getting recovered by COVID-19. About 50% population was asymptomatic and the confidence to get recovery observed on the basis of will power and self-sustainability was about 70%. Total of 110 persons approached in this study and 104 filled the questionnaire and rest of the questionnaires were excluded. The formal agreement was received by each individual to fill the questionnaire and no Ethical approval required for this study. Most of the participants were from Province of Punjab, Pakistan. The geographical areas included with the distribution of five provinces as Punjab, Khyber Pakhtunkhwa, Balochistan and Gilgit Baltistan and seventh part of the area was of Azad Jammu and Kashmir. The individuals less than 15 years of age were excluded. The questionnaire designed by considering the expert opinions as Medical practitioners, Psychiatrists and Behaviorists. The assessment comprised the parameters as socio-economic factors, knowledge, beliefs and perception about the impact of COVID-19 on mental health. The characteristics included as variables were age, sex and demographical implications.

Results:

Table I. Results of Independent Samples t-test of average "Age" for Depression groups "0.0" vs "5.0"

Group	N	Mean	CI 95% ³	Standard Deviation ⁴	Min	Max	Kurtosis ⁵	Skew ⁶	p abnormal ⁷
0.0	21	24.476	19.207 - 29.745	12.319	1.0	51.0	0.588	0.457	0.2859
5.0	17	25.824	21.535 - 30.113	9.022	15.0	53.0	2.843	1.667	< 0.001 (4.227e-4)

Source	Sum of Squares	df	Mean Sum of Squares	F	p ¹
Between	514.693	5	102.939	1.084	0.3740
Within	9305.268	98	94.952		

1

p value: 0.7090 ¹

t statistic: -0.376

Degrees of Freedom (df): 36

O'Brien's test for homogeneity of variance: 0.3542 ²

Table II. Results of Independent Samples t-test of average "Age" for Afraid of COVID-19 groups "0.0" vs "5.0"

Group	N	Mean	CI 95% ³	Standard Deviation ⁴	Min	Max	Kurtosis ⁵	Skew ⁶	p abnormal ⁷
0.0	17	27.059	20.495 - 33.623	13.809	1.0	54.0	-0.077	0.616	0.3821
5.0	16	22.25	18.958 - 25.542	6.718	2.0	33.0	3.489	-1.623	< 0.001 (2.878e-4)

Source	Sum of Squares	df	Mean Sum of Squares	F	p ¹
Between	805.865	5	161.173	1.752	0.1299
Within	9014.096	98	91.981		

p value: 0.2174 ¹

¹ If p is small, e.g. less than 0.01, or 0.001, you can assume the result is statistically significant i.e. there is a difference between "0.0" and "5.0". Note: a statistically significant difference may not necessarily be of any practical significance.

This is a two-tailed result i.e. based on the likelihood of a difference where the direction ("0.0" higher than "5.0" or "5.0" higher than "0.0") doesn't matter.

² If the value is small, e.g. less than 0.01, or 0.001, you can assume there is a difference in variance.

³ There is a 95% chance the population mean is within the confidence interval calculated for this sample. Don't forget, of course, that the population mean could lie well outside the interval bounds. Note - many statisticians argue about the best wording for this conclusion.

⁴ Standard Deviation measures the spread of values.

⁵ Kurtosis measures the peakedness or flatness of values. Between -2 and 2 means kurtosis is unlikely to be a problem. Between -1 and 1 means kurtosis is quite unlikely to be a problem.

⁶ Skew measures the lopsidedness of values. Between -2 and 2 means skew is unlikely to be a problem. Between -1 and 1 means skew is quite unlikely to be a problem.

⁷ This provides a single measure of normality. If p is small, e.g. less than 0.01, or 0.001, you can assume the distribution is not strictly normal. Note - it may be normal enough though.

t statistic: 1.259

Degrees of Freedom (df): 31

O'Brien's test for homogeneity of variance: 0.06350 ²

Table. III Results of Independent Samples t-test of average "Depression" for Gender groups "Male" vs "Female"

Group	N	Mean	CI 95% ³	Standard Deviation ⁴	Min	Max	Kurtosis ⁵	Skew ⁶	p abnormal ⁷
Male	72	2.153	1.770 - 2.536	1.659	0.0	5.0	-1.089	0.352	< 0.001 (6.873e-4)
Female	32	2.344	1.670 - 3.018	1.945	0.0	5.0	-1.427	0.227	< 0.001 (8.823e-4)
Male	72	2.417	2.043 - 2.790	1.616	0.0	5.0	-1.042	0.151	4.244e-3
Female	32	2.406	1.823 - 2.989	1.682	0.0	5.0	-0.991	-0.042	0.2692
Group	N	Mean	CI 95% ³	Standard Deviation ⁴	Min	Max	Kurtosis ⁵	Skew ⁶	p abnormal ⁷
Female	32	2.344	1.670 - 3.018	1.945	0.0	5.0	-1.427	0.227	< 0.001 (8.823e-4)
Male	72	2.153	1.770 - 2.536	1.659	0.0	5.0	-1.089	0.352	< 0.001 (6.873e-4)

Source	Sum of Squares	df	Mean Sum of Squares	F	p ¹
Between	0.002	1	0.002	0.001	0.9762
Within	273.219	102	2.679		
Source	Sum of Squares	df	Mean Sum of Squares	F	p ¹
Between	0.808	1	0.808	0.264	0.6087
Within	312.538	102	3.064		

p value: 0.6087 ¹

t statistic: -0.514

Degrees of Freedom (df): 102

O'Brien's test for homogeneity of variance: 0.08144 ²

Table IV. Group Summary Details for Gender groups "Male" vs "Female"

Group	N	Mean	CI 95% ³	Standard Deviation ⁴	Min	Max	Kurtosis ⁵	Skew ⁶	p abnormal ⁷
0.0	21	24.476	19.207 - 29.745	12.319	1.0	51.0	0.588	0.457	0.2859
1.0	22	26.591	23.069 - 30.112	8.427	19.0	54.0	3.279	1.855	< 0.001 (6.254e-5)
2.0	21	28.762	24.702 - 32.822	9.492	18.0	50.0	0.232	1.113	0.04947
3.0	11	25.727	22.064 - 29.390	6.198	20.0	40.0	0.530	1.213	0.04570

Group	N	Mean	CI 95% ³	Standard Deviation ⁴	Min	Max	Kurtosis ⁵	Skew ⁶	p abnormal ⁷
4.0	12	31.75	25.622 - 37.878	10.830	19.0	57.0	0.526	1.043	0.07647
5.0	17	25.824	21.535 - 30.113	9.022	15.0	53.0	2.843	1.667	< 0.001 (4.227e-4)

Group	N	Mean	CI 95% ³	Standard Deviation ⁴	Min	Max	Kurtosis ⁵	Skew ⁶	p abnormal ⁷
0.0	17	27.059	20.495 - 33.623	13.809	1.0	54.0	-0.077	0.616	0.3821
1.0	15	26.133	24.119 - 28.147	3.980	19.0	34.0	-0.254	0.011	0.9272
2.0	22	28.273	24.380 - 32.165	9.316	19.0	50.0	0.332	1.105	0.04343
3.0	24	26.792	22.996 - 30.587	9.487	18.0	57.0	2.365	1.618	< 0.001 (3.672e-4)
4.0	10	33.3	26.227 - 40.373	11.412	20.0	53.0	-1.192	0.421	0.4952
5.0	16	22.25	18.958 - 25.542	6.718	2.0	33.0	3.489	-1.623	< 0.001 (2.878e-4)

Group	N	Mean	CI 95% ³	Standard Deviation ⁴	Min	Max	Kurtosis ⁵	Skew ⁶	p abnormal ⁷
Female	32	2.406	1.823 - 2.989	1.682	0.0	5.0	-0.991	-0.042	0.2692
Male	72	2.417	2.043 - 2.790	1.616	0.0	5.0	-1.042	0.151	4.244e-3

Table I shown the statistical analysis of group having depression related to age, table II illustrated the results as group having fear of COVID-19 impact. Table III exhibited group having extent of depression on gender basis and table IV illustrated overall summary regarding number of groups data on gender basis.

Discussion:

COVID-19 is currently the topic of discussion on electronic and print media from general to professional population in Pakistan. This study highlighted the behavioral and psychological distress among individuals who have faced the isolation and loneliness during quarantine. This is the first study in Pakistan that covered this area since pandemic started.

Population was purely local and this study might be useful for planning the mental health education programs and engaging the infectious diseases spreading around the globe with less rate as compared to COVID-19. Health care workers and the governments must address these psychological outcomes as part of pandemic response. The study showed knowledge level of respondents about COVID-19 was not enough to deal with the period of isolation and response on fatality. It presented that routes of transmission of infection was appreciable in the considered population.

Uncertain prognosis, imposition of unprecedented public health measures that infringe on public freedoms raised depression and emotional distress. The overall courage and will to deal the quarantine time observed in the females was significant as compared to males. The comparison was also performed with previous study of Kingdom of Saudi Arabia [13, 15]. In our study data reflected more irritating behavior in males as compared to females and the major factor in this insight was use of internet, playing online games in their routine before being infected by COVID-19. Anxiety was more reported in age group of 40 years and above while the age group of 15-39 reported less anxiety.

The common practice in recognizing the disease clinically and physically is identification of symptoms that convey the understanding of early medical and mental health treatment. It was alarming in this study that symptoms knowledge and expression were poor and individuals referred fever, cough and sour throat as seasonal changing pattern instead of focusing on COVID-19. Respiratory problems were not observed clinically that caused confusion in the minds of people. The aggressive respiratory problems existed in population of Wuhan, People Republic of China [15]. The other clinical symptom recommended by World Health Organization (WHO) is diarrhoea [16]. The origin of psychological distress in pandemic taken as isolation and fear. Initial negligence behavior regarding social distancing enhanced cases [17] in Pakistan and gravity of its effects defined with less common metrics to deal the pandemic on National level.

Media played significant role in awareness however false information also created unnecessary fear due to which mental health was affected on long-term basis. Psychological distress and behavioral changes observed and domestic issues were also raised during pandemic. Digital media, use of internet in excess leading drastic changes in the physical activities of population. It has been observed that extent of symptoms exhibited in selected individuals were not high and prevalence reported in connection to psychological distress reflect long term psychiatric disorders due to isolation, loneliness and marked identifications. Since April 2020 it has been reported in United States (US) that most of the adults felt loneliness in comparison to Pakistan where most of the social circles exist with less distances in relationship. These factors effecting mental health in Pakistan are less from US [18]. The social interventions reflected in the mean of human perceptions based on behaviors for particular pandemic. The large scale of exposure in outbreak with news of loss of lives, difficulty raising in financial aspects cover the mental health requirements for the communities. It is subjected that mental health problems were showed in population who have financial and physical converging metrics even before the outbreak.

The factors associated in causing depression and anxiety during quarantine are isolation and this isolation increased the behavior of patients in massive use of social media and other websites related to pandemic. The mental health care workers used online platforms to reduce the trauma and release the effective information to facilitate the social and moral support. In the emerging psychological disorders, it is concluded to personalize the contact-based interventions that found effective in practice of mental health care delivery system which further disseminated the issues effecting mental health.

Conclusion:

The Covid-19 pandemic has horrendous implication for individual and collective physical and mental health. In addition to providing medical care, psychological support must be provided to the patients by the health care workers. Since media reports on the number of patients and deaths can be emotionally disturbing, time spent on television and internet must be limited and monitored. The experiences of covid-19 patients must be normalized by providing information

about the reactions to this sort of emotional stress and by educating them that people can and do manage even in grim circumstances. The psychological effects such as anxiety, depression and fear of death of the covid-19 patient must be decreased by psychoeducation and mental health support so that their body fights this virus more effectively. Elder patients are more prone to emotional distress, they must be regularly screened for psychological problems.

List of Abbreviations:

1. Coronavirus Disease 2019 (COVID-19)
2. Ebola Virus Disease (EVD)
3. World Health organization (WHO)
4. Institutional Ethical Review Board (IERB)
5. Azad Jammu & Kashmir (AJ&K)
6. Khyber Pakhtunkhawa (KPK)
7. Islamabad Capital Territory (ICT)
8. Kingdom of Saudi Arabia (KSA)
9. United States (US)

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