

Attitude, Behavior, and Practices of Infection Control (Hand Washing, Social Distancing and Wearing Mask) among Communities During COVID-19 Outbreak in Areas, (Orangi, Baldia, Movach, Site, Garden, Nazimabad, Qayyumabad) of Karachi, Pakistan

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Abstract:-

➤ Background

Novel corona virus infectious disease covid-19 was first time reported in Wuhan city of China at the end of December 2019.[1] Which proliferated rapidly in China and then around the globe in 209 countries of USA, Europe, Australia, and Asia as well as Pakistan. The death toll around the world has been reached to more than 42 million and 2 billion have been affected so far,[3] in Pakistan the death toll reached to 23 thousand and affected population reached to 10 million and still numbers increasing rapidly.[5] Government taken Various measures in Pakistan for the control of covid-19. Despite of having insufficient funds Pakistan also taken accurate quantify like planned special hospitals, laboratories for testing, isolation facilities, mindfulness drive and lock down to minimize spread virus. Despite the government strict policy towards COVID-19 there are many people who are unable to follow the measures which add into the rapid spread of virus. the aim of the study is to assess the attitude, behavior, and practice among the resident of Karachi specifically those who are residing in SITE area, Orangi Town, Baldia Town, Movach Goth, Nazimabad, Garden, Qayyumabad and Gulshan-e-Iqbal to know the public response towards following SOPs.

➤ Method

A self-administered questionnaire was designed, based on determined attitude, behavior, and practices among the resident of Karachi during COVID-19 outbreak. Questionnaire were prepared at google form and accessible online for the participants. The questionnaire was processed to the residents of Karachi,

between the duration from 12, June to 10, July 2021. The collected data was analyzed with help of SPSS version 26.0 (IBM) to identify the attitude behavior and practices of people during COVID-19 outbreak. The responses were analyzed based on age, gender, level of education, and income, to identify statistical correlation by utilizing chi square test.

➤ Results

The study included 318 participants, out of which 193(61%) males and 125(39%) were female. The majority (291;92%) of the participant was familiar with the covid 19, (94%; 299) of the participant were concerned about the health of their families, (95%;303) agreed that self-care and protection can reduce the possibility to get infected by COVID-19 infection, a vast majority (98%; 313) participants were following cough etiquettes.

➤ Conclusion

All of the study participants were from Karachi and they have reasonably good attitude, behavior and practices towards COVID-19 precautions, but still there must be given further awareness to cope with the social and psychological impact of the COVID-19 on public health, and also awareness session should be taken into account to reduce the spread of the infection COVID-19.

Keywords:- COVID-19, Attitude, Behavior and Practices, Hand Hygiene, Social Distancing, Infection Control and Prevention, Safety Measures and Standard Operating Procedures.

I. INTRODUCTION

Novel coronavirus disease 2019 outbreak originated from the Wuhan, China which has spread rapidly around the globe associated with the high disease and death rate [2] As of date 06 August 2021 the World Health Organization statistics show 200,840,180 reported cases and 4,265,903 deaths in 222 countries, including (38,961,269) 19% of reported cases in south and east Asia which are increasing day by day as delta variant surged the 4th wave in the region.[3] The World Health Organization professed COVID-19 as an emergency worldwide in January and pandemic in march 2020.[4] Pakistan has reported its first case in Karachi on 26, February 2020 with the estimated population 204.65 million highest populated city in the country. [5,6] The virus become epidemic within few weeks in the country, as of August 8, 2021, Pakistan's death tally crossed 23 thousand, confirmed cases are 1,067,580 and 961,639 has been recovered from the COVID-19. [5] The virus transmit human to human through respiratory droplets (e.g., coughing or sneezing) and by direct contact with the infected person.[2] The modes of transmission can be direct or indirect.[7] The direct modes can be in form of droplet nuclei and aerosols formation during dental and surgical procedures and other secretion or body fluids for example saliva, urine, semen, tears, and feces. [7,8] The transmission process is same as of cold flu or influenza virus, which are commonly include community transmission, preemptive measures must be taken immediately to reduce the risk of transmission. Community transmission is one of the leading causes of the highest number of the reported cases in many countries. [3]

Many research has been done in context of knowledge, attitude and practices regarding COVID 19, different studies had diverse study group we have selected some of the literature which are more relevant to our research.

A cross-sectional study was done in Saudi Arabia to determined attitude, behavior, and practices of the people. The selected population was mostly adult and middle-aged people. 94% participants were Saudi residents. The methodology they used was snowball to collect data. Total sample size was 4305, the study results showed 89% participants have good knowledge about covid-19. The significance of the study was most respondents have good knowledge and awareness of COVID-19 [12]. Cross-sectional study by Fatmi et.al (2020) in Pakistan based on Knowledge attitude and practices among medical students has resulted with positive attitude of the participants regarding COVID-19 [13].

One more cross-sectional study was done on medical students. Data were collected from different medical universities from 13 June to 29 June 2020. The study significance was 1/3 students didn't know about SARS-COLD 2. Surprisingly wont believed risk of getting infected while travelling. About 39% student's thoughts virus is human-made and deliberately used. The result of the study concluded that 2/3 participants have good knowledge, attitude, and practices about covid-19. The study may create

biasness because data was only collected from the undergraduate students [14].

Another cross-sectional study was aimed to determine the knowledge, attitude and practices and their determinants regarding COVID -19 among the resident of Pakistan, 905 participants aged more than 18 years were enrolled in study, 403 survey responses obtained were web based, 365 responses was face to face collected form the urban area and 137 responses were obtained from rural area. They survey was based on the present global guidelines. The study result concluded that there is the gap in sufficient knowledge attitude and practices among the rural population, their survey has shown low scores due to their uncertain access to the information, and their level of education, they have suggested that there is need of raising awareness among rural resident by forming strategic plan to provoke COVID-19 among population. The study was not purely based on the rural resident and higher number to respondent was well educated [15].

Furthermore, Qalati, et.al (2021) had conducted a study in three Asian countries. Total of 1160 participants responded to the survey form 61.3% were under 30 year and 38.7% were aged more than 30 years including male and females, 53.8% of the participant was holding master's degree and 42.2% was employed. The survey result shown that student had a lower level of knowledge compared to the employed ones, and each group was poor in practices among the countries. Respondent form China has higher level of knowledge attitude and good practices in comparison to India and Pakistan, a multivariate analysis concluded that females from India and Pakistan had lower level of knowledge about COVID-19 among the people aged less and equal to 30 years. The respondent attitude was non serious among female, poorer, singles and majority of them were residing in India and Pakistan. While in context of practices employed, unemployed were founded poorer and these respondents had bachelor's degree and were residing in India. The study was limited to three Asian countries and the responder was those who has internet access, there wasn't any respondent form the slums area and those who didn't had internet access [16].

Many studies have been done based on the knowledge. Attitude and practices (KAP) but none of them were focused on the population from the backwards areas and population with low level of education or illiterate population. The educated population somehow gain the information through any source and they can enhance their knowledge attitude and practices if they have access to the internet and good level of education also contributes in their competency in KAP regarding COVID-19, there is more need to work for those who don't have access to the education nor to the internet they may not get information about COVID-19 that how this disease spread and how to prevent oneself form this pandemic, so it is necessary to assess their knowledge attitude and practices related to infection control, what they think about infection and how obediently they follow SOPs including wearing mask, washing hands and keeping appropriate social distance.

Hence, timely assessment of public attitude and behavior to establish the measurement to control the spread of COVID-19 is still needed to be acknowledged, especially contemplating that with the comparison to the other country, Pakistan has no prior capability of dealing with a pandemic. Individual's Hygiene procedures, including hand washing, putting a face mask, and ensuring the etiquette while sneezing or coughing can reduce the transmission of infection. [09,10] The proper implementation of SOPs can decrease the community transmission of the COVID-19. The Ministry of Health Services and National Command and Operation Centre of Pakistan has been providing updates and health policies or protocols to overcome the spread of COVID-19 through their official website since the outbreak surged nationwide.[11] It is important to change the attitude and behavior of the public for effective control and reduction in the spread of COVID-19, assessing public attitude, behavior and practices can help us to identify the level of seriousness of the public towards the pandemic. Therefore, this study examines the relationship between attitude, behavior and practices of the different communities of Karachi.

II. METHOD AND MATERIAL

A cross sectional analytical study was done from the month of June till August 2021 in Karachi, Pakistan. The sample size was 318 participants from the Karachi. We selected and surveyed 318 candidates for statistical convenience, using convenience sampling technique and sampling was done by sending an online questionnaire due to lockdown and COVID-19 SOP'S all over the Karachi. Our study participants including all those who were resident of Karachi during covid-19 and no discrimination was made during sampling. Only those were excluded from study who were not resident of Karachi from this study. Before conducting actual sampling, a pilot study comprising 10 participants was carried out to ensure clarity of questionnaire. A consent form was attached with every questionnaire giving us permission to use to collected data. Confidentially and anonymity were maintained throughout the procedure no names and personal information were shared. The data was collected from 12 June 2021 to 10 July 2021. The questionnaire consisted of 25 questions first 10 questions were from demographic profile, including age, gender, level

of education. The rest of questions were divided in three segments. Regarding disease, its severity, personal efforts, and governmental efforts to fight the disease were evaluated. Each question had yes, no response. The first part focus on assessing the attitude of the population towards covid-19. What the thinking whether is there any covid-19? The second part was of questions were based on behavior like either the virus preventable or not what they think of social distancing, avoided public gathering, and had limited their physical contact during this pandemic era. The third part was based on practices to control the spread of infection like following sop's e.g. hand washing, use of sanitizer and use of mask coughing sneezing. the data was analyzed by using SPSS 26.0, Chi- squared test was applied to compare response based on age, gender, level of education, and the area of residency to find possible statistical correlations. A p-value of <0.05 was considered statistically significant. The questionnaire was adopted from WHO guidelines.

III. RESULTS

➤ Demographical Characteristics

The study included 318 residents from the different district and areas of Karachi city, out of 318 participants 69% (n=220) were younger than 30 years, and the remaining 31% (n=98) were more than 31 years of age, were dominantly male 61% (n=193) and female was 39% (n=125). In our study, 41% (n=129) of respondent was undergraduate, 38% (n=121) had intermediate level, 17% (54) had secondary level of education and 4% (n=14) had primary level of education. [Table-1] Most of them were employed 64% (n=202), and 36% (n=116) was occupationally student, 34% (n=109) was professionals Including paramedics, teachers, bank employee and Government servant, 29% (n=93) was daily wedger. Most of the participants were living in SITE Town 25% (n=78), and equally 24 % (n=153) of the participant were residing in Orangi Town and Baldia Town, one sixth of the participants were from Movach Goth 18% (n=58) and the rest of the participant were residing in Qayyomabad, Graden, nazimabad and Gulshan-E-Iqbal 9% (n=29). Table-2.

The table below shows the demographical characteristics of participants.

Table 1 Demographical Characteristics

Characteristics	Gender	Frequency	Percent
Age	18 to 30 Yrs.	220	69%
	31 to above	98	31%
Gender	Male	193	61%
	Female	125	39%
Level of Education	Primary	14	4%
	Secondary	54	17%
	Intermediate	121	38%
	Undergraduate	129	41%

Table 2 Participants' Distribution as per their Residence

Current Residence	Frequency	Percent
SITE Town	78	25%
Orangi Town	76	24%
Baldia Town	77	24%
Movach Goth	58	18%
Nazimabad	11	3%
Garden	12	4%
Qayyumabad	4	1%
Gulshan-e-Iqbal	2	1%

➤ *Public Attitude towards COVID-19.*

Most of the participants had a positive attitude towards COVID-19. Majority 92% (n=291) responded that COVID-19 is existing, and 66% (n=210) of the respondent had fear of visiting crowded places, 92% (n=291) understand that the

spread of infection (COVID-19) can be preventable if SOPs being followed properly, 79% (n=252) were anxious while contracting persons with the signs and symptoms of COVID-19, furthermore 94%(n=299) concerned about their and family's health (Figure -1).

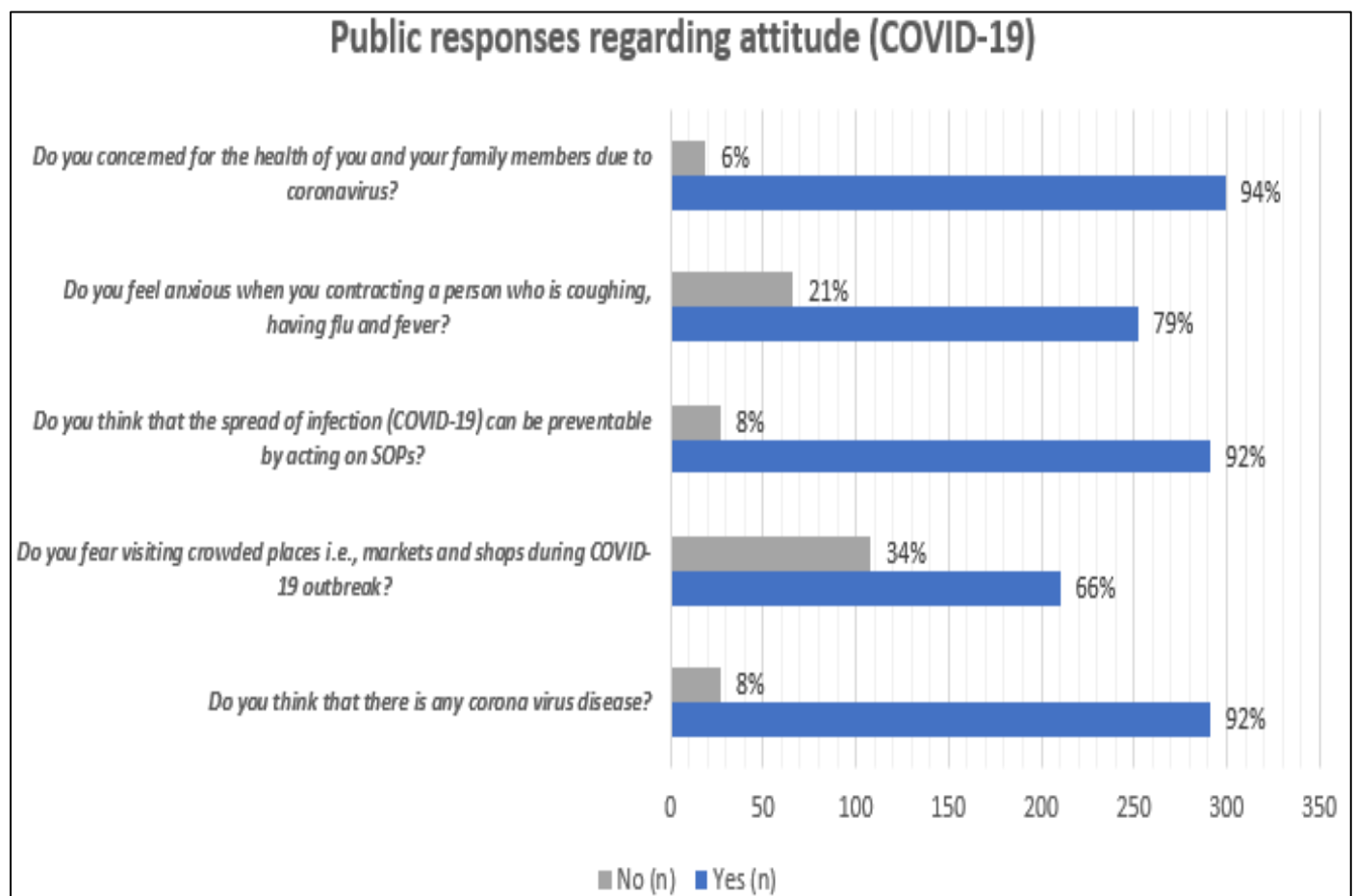


Fig 1 Public attitude regarding COVID-19

➤ *Public Behavior towards COVID-19.*

The collected responses shows that 85% of the participant were encouraging others people to follow standard operating procedures(SOPs), majority 95% of the participant were taking responsibility to follow precaution to control the spread of the infection (COVID-19), 90% of the participants

considered that COVID-19 is highly contagious disease, 95% of the participants were agree that self-protection and care can reduce the chances of being infected, and 90 % were accepting that wearing a facemask can control the speared of infection (Figure 2).

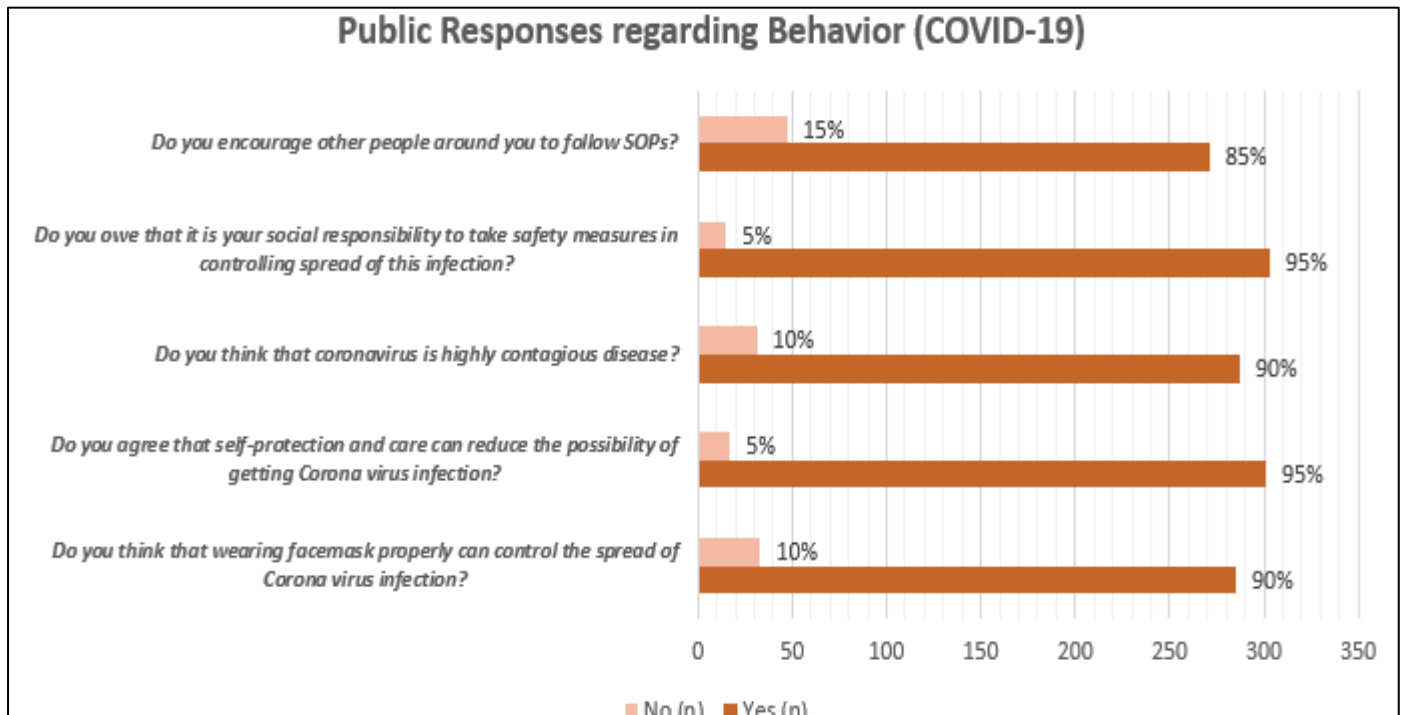


Fig 2 Public Behavior regarding COVID-19

➤ *Public Practices towards COVID-19.*

The 81% (n=258) of the participants were avoiding direct contact with eyes, nose and mouth, maintaining social distance in marketplace were common among 77% (n=246) of the participants, hand hygiene (hand washing and

sanitization) after contacting a person were fairly common among 86% (n=274), 83% (n=265) participants were wearing facemask while leaving home, among 98% (n=313) were practicing proper cough etiquette.

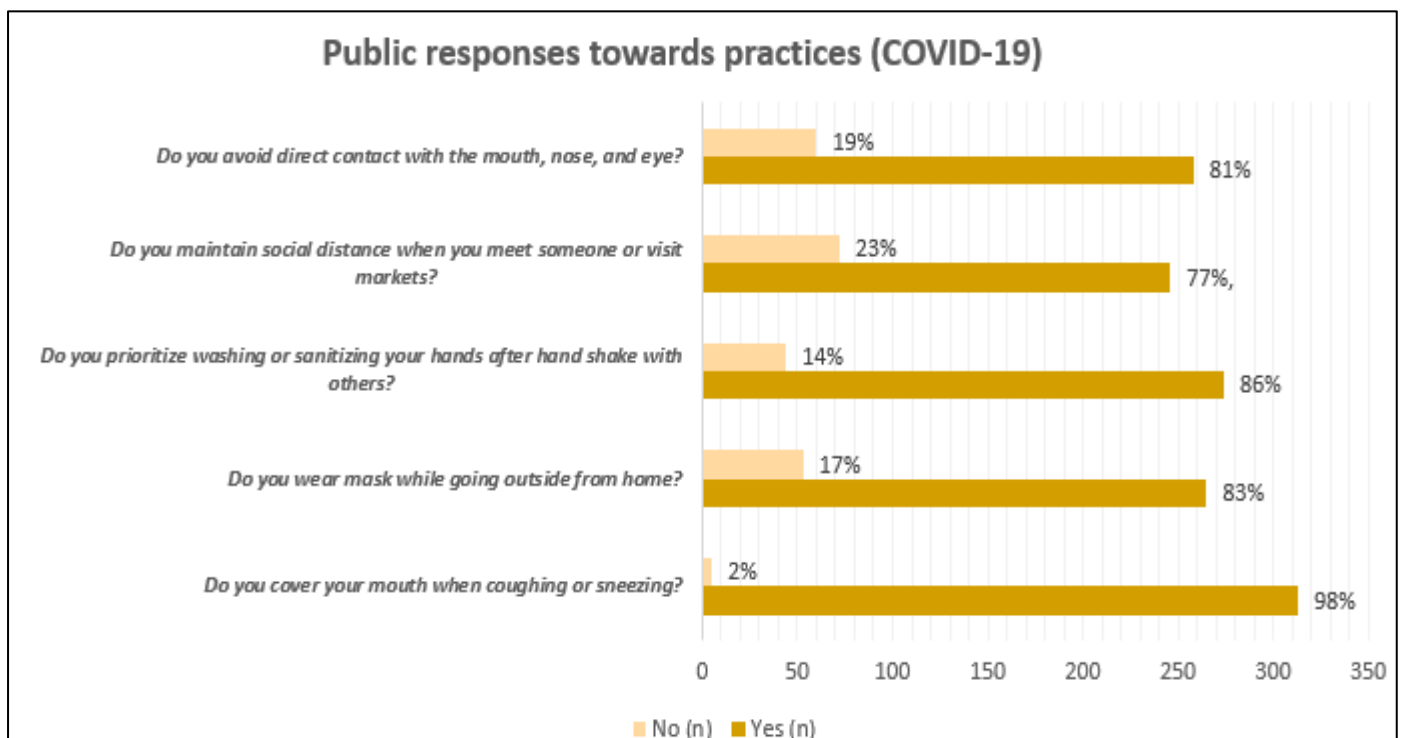


Fig 3 Public responses towards Practices (COVID-19)

➤ *Comparison among Different Groups*

These Chi square method was used for comparison among gender, age and level of education groups to

determine the public attitude, behavior and practices regarding COVID-19, as shown below in Table 3.

Table 3 Assessment of Public Attitude, Behavior and Practices based on Various Variables.

SN#	Statements		Male (n) & (%)	Female (n) & (%)	P Value	18-30 yrs. (n) & (%)	>31 yrs. (n) & (%)	P Value	PRIM (n) & (%)	SEC (n) & (%)	INTMD (n) & (%)	UG (n) & (%)	P Value
A1	Do you think that there is any corona virus disease?	Yes	170 53%	121 38%	0.006	198 62%	93 29%	0.14	10 3%	49 15%	108 34%	124 39%	0.09
		No	23 7%	4 1%		22 7%	5 2%		4 1%	5 2%	13 4%	5 2%	
A2	Do you fear visiting crowded places i.e., markets and shops during COVID-19 outbreak?	Yes	124 39%	86 27%	0.4	140 44%	70 22%	0.17	7 2%	29 9%	76 24%	134 42%	0.009
		No	69 22%	39 12%		80 25%	28 9%		7 2%	25 8%	45 14%	31 10%	
A3	Do you think that the spread of infection (COVID-19) can be preventable by acting on SOPs?	Yes	170 53%	121 38%	0.006	198 62%	93 29%	0.14	11 3%	49 15%	111 35%	120 38%	0.32
		No	23 7%	4 1%		22 7%	5 2%		3 1%	5 2%	10 3%	9 3%	
A4	Do you feel anxious when you contracting a person who is coughing, having flu and fever?	Yes	144 45%	108 34%	0.011	166 52%	86 27%	0.13	9 3%	44 14%	97 31%	102 32%	0.54
		No	49 15%	17 5%		54 17%	12 4%		5 2%	10 3%	24 8%	27 8%	
A5	Do you concerned for the health of you and your family members due to coronavirus?	Yes	178 56%	121 38%	0.09	204 64%	95 30%	0.14	13 4%	50 16%	112 35%	124 39%	0.63
		No	15 5%	4 1%		16 5%	3 1%		1 0%	4 1%	9 3%	5 2%	
B1	Do you think that wearing facemask properly can control the spread of Corona virus infection?	Yes	168 53%	117 37%	0.06	194 61%	91 29%	0.2	13 4%	43 14%	110 35%	119 37%	0.06
		No	25 8%	8 3%		26 8%	7 2%		1 0%	11 3%	11 3%	10 3%	
B2	Do you agree that self-protection and care can reduce the possibility of getting Corona virus infection?	Yes	179 56%	122 38%	0.06	207 65%	96 30%	0.08	13 4%	49 15%	116 36%	123 39%	0.53
		No	14 4%	3 1%		15 5%	2 1%		1 0%	5 2%	5 2%	6 2%	
B3	Do you think that coronavirus is highly contagious disease?	Yes	168 53%	119 37%	0.01	195 61%	92 29%	0.14	12 4%	49 15%	111 35%	115 36%	0.84
		No	25 8%	6 2%		25 8%	6 2%		2 1%	5 2%	10 3%	14 4%	
B4	Do you owe that it is your social responsibility to take safety measures in controlling spread of this infection?	Yes	179 56%	124 39%	0.008	206 65%	97 31%	0.03	13 4%	51 16%	113 36%	126 40%	0.41
		No	14 4%	1 0%		14 4%	1 0%		1 0%	3 1%	8 3%	3 1%	
B5	Do you encourage other people around you to follow SOPs?	Yes	157 49%	114 36%	0.016	184 58%	83 26%	0.23	11 3%	41 13%	101 32%	118 37%	0.03
		No	36 11%	11 3%		36 11%	11 3%		3 1%	13 4%	20 6%	11 3%	
P1	Do you cover your mouth when coughing or sneezing?	Yes	188 59%	123 39%	0.07	215 68%	98 31%	0.13	14 4%	53 17%	118 37%	128 40%	0.7
		No	5 2%	0 0%		5 2%	0 0%		0 0%	1 0%	3 1%	1 0%	
P2	Do you wear mask while going outside from home?	Yes	155 49%	110 35%	0.07	181 57%	84 26%	0.4	11 3%	37 12%	98 31%	119 37%	0.001
		No	38 12%	15 5%		39 12%	14 4%		3 1%	17 5%	23 7%	10 3%	
P3	Do you prioritize washing or sanitizing your hands after hand shake with others?	Yes	155 49%	119 37%	0	188 59%	86 27%	0.58	11 3%	44 14%	106 33%	113 36%	0.55
		No	38 12%	6 2%		32 10%	12 4%		3 1%	10 3%	15 5%	116 36%	
P4	Do you maintain social distance when you meet someone or visit markets?	Yes	138 43%	108 34%	0.002	167 53%	79 25%	0.35	9 3%	40 13%	95 30%	102 32%	0.57
		No	55 17%	17 5%		53 17%	19 6%		5 2%	14 4%	26 8%	27 8%	
P5	Do you avoid direct contact with the mouth, nose, and eye?	Yes	146 46%	112 35%	0.002	173 54%	85 27%	0.08	12 4%	44 14%	104 33%	100 31%	0.28
		No	47 15%	13 4%		47 15%	13 4%		4 1%	10 3%	17 5%	29 9%	

The Comparison among gender has shown significant values in many domains. Female were aware about existence of COVID-19($P < 0.01$), and mostly female were agree that following SOP's can reduce the spread of infection ($P < 0.01$), they were feeling anxious while contracting to those who have signs and symptoms e.g., flu, cough, and fever ($P < 0.01$). Female were considering COVID-19 as highly contagious disease ($P < 0.01$), there were high tendency among females to owe the responsibility of following safety measure (SOPs) to minimize the blowout of infection ($P < 0.01$), they were reassuring to others to follow SOPs ($P < 0.01$). the tendency of hand washing, maintaining social distance, and avoid unnecessary touching their face were higher among females ($P < 0.01$).

Comparison among the age group was not that significant the only significance have been among the younger age group (18-31 years) as they were taking responsibility to follow the safety measure to reduce the spread of COVID-19 infection ($p < 0.03$).

Meanwhile concluding the comparison between the Primary, secondary, intermediate and undergraduates emphasized the higher inclination of undergraduate's fear to visiting the crowded places ($P < 0.01$), they were also encouraging other people to follow SOP's ($P < 0.03$), And wearing face mask were very common among undergraduates as compared to others groups.

Table 4 Relationship between Attitude, Behavior and Practices of the Public based on Residency

Q Keys	Statements		SITE Town	Orangi Town	Baldia Town	Movach Goth	Nazimabad	Garden	Qayyumabad	Gulshan-e-Iqbal	P Values
A1	Do you think that there is any corona virus disease?	Yes	N 70	66	73	57	9	11	3	2	0.19
			% 22.01%	20.75%	22.96%	17.92%	2.83%	3.46%	0.94%	0.63%	
		No	N 8	10	4	1	2	1	1	0	
A2	Do you fear visiting crowded places i.e., markets and shops during COVID-19 outbreak?	Yes	N 51	39	54	48	7	8	2	1	0.26
			% 16.04%	12.26%	16.98%	15.09%	2.20%	2.52%	0.63%	0.31%	
		No	N 27	37	23	10	4	4	2	1	
A3	Do you think that the spread of infection (COVID-19) can be preventable by acting on SOPs?	Yes	N 67	68	74	56	10	11	3	2	0.24
			% 21.07%	21.38%	23.27%	17.61%	3.14%	3.46%	0.94%	0.63%	
		No	N 11	8	3	2	1	1	1	0	
A4	Do you feel anxious when you contracting a person who is coughing, having flu and fever?	Yes	N 61	50	70	53	7	7	4	0	0
			% 19.18%	15.72%	22.01%	16.67%	2.20%	2.20%	1.26%	0.00%	
		No	N 17	26	7	5	4	5	0	2	
A5	Do you concerned for the health of you and your family members due to coronavirus?	Yes	N 72	70	76	56	10	9	4	2	0.75
			% 22.64%	22.01%	23.90%	17.61%	3.14%	2.83%	1.26%	0.63%	
		No	N 6	6	1	2	1	3	0	0	
B1	Do you think that wearing facemask properly can control the spread of Corona virus infection?	Yes	N 67	64	74	56	9	10	3	2	0.08
			% 21.07%	20.13%	23.27%	17.61%	2.83%	3.14%	0.94%	0.63%	
		No	N 11	12	3	2	2	2	1	0	
B2	Do you agree that self-protection and care can reduce the possibility of getting Corona virus infection?	Yes	N 73	71	76	56	10	11	3	1	0.039
			% 22.96%	22.33%	23.90%	17.61%	3.14%	3.46%	0.94%	0.31%	
		No	N 5	5	1	2	1	1	1	1	
B3	Do you think that coronavirus is highly contagious disease?	Yes	N 70	66	74	55	8	10	3	1	0.41
			% 22.01%	20.75%	23.27%	17.30%	2.52%	3.14%	0.94%	0.31%	
		No	N 8	10	3	3	3	2	1	1	
B4	Do you owe that it is your social responsibility to take safety measures in controlling spread of this infection?	Yes	N 74	71	76	57	9	12	3	1	0.003
			% 23.27%	22.33%	23.90%	17.92%	2.83%	3.77%	0.94%	0.31%	
		No	N 4	5	1	1	2	0	1	1	
B5	Do you encourage other people around you to follow SOPs?	Yes	N 67	60	65	56	8	11	3	1	0.08
			% 21.07%	18.87%	20.44%	17.61%	2.52%	3.46%	0.94%	0.31%	
		No	N 11	16	12	2	3	1	1	1	
P1	Do you cover your mouth when coughing or sneezing?	Yes	N 78	74	76	58	9	12	4	2	0.002
			% 24.53%	23.27%	23.90%	18.24%	2.83%	3.77%	1.26%	0.63%	
		No	N 0	2	1	0	2	0	0	0	
P2	Do you wear mask while going outside from home?	Yes	N 67	56	64	54	7	12	4	1	0.01
			% 21.07%	17.61%	20.13%	16.98%	2.20%	3.77%	1.26%	0.31%	
		No	N 11	20	13	4	4	0	0	1	
P3	Do you prioritize washing or sanitizing your hands after hand shake with others?	Yes	N 66	57	72	56	8	10	3	2	0.007
			% 20.75%	17.92%	22.64%	17.61%	2.52%	3.14%	0.94%	0.63%	
		No	N 12	19	5	2	3	2	1	0	
P4	Do you maintain social distance when you meet someone or visit markets?	Yes	N 60	52	70	51	4	5	3	1	0
			% 18.87%	16.35%	22.01%	16.04%	1.26%	1.57%	0.94%	0.31%	
		No	N 18	24	7	7	7	7	1	1	
P5	Do you avoid direct contact with the mouth, nose, and eye?	Yes	N 63	55	72	50	6	8	3	1	0.004
			% 19.81%	17.30%	22.64%	15.72%	1.89%	2.52%	0.94%	0.31%	
		No	N 15	21	5	8	5	4	1	1	
			% 4.72%	6.60%	1.57%	2.52%	1.57%	1.26%	0.31%	0.31%	

The people of Orangi town, site town, Baldia town, Movach goth, Nazimabad, Garden, Qayyumabad, Gulshan e Iqbal area have same responses regarding contracting people who have cough, flu, and flu ($P < 0.05$). The people of Orangi town, SITE town, Baldia town, Movach goth, nazimabad, Garden, qayyumabad, Gulshan e Iqbal area have same thought that wearing mask can prevent COVID-19, ($P 0.08$), Overall resident owe that it is their social responsibility to take safety measure to reduce the spread of infection (P

<0.01), And mostly were encouraging others to follow SOPs around them ($P 0.008$). The resident of Site town, Orangi, Baldia, Movach goth, Nazimabad, Garden, qayyumabad, Gulshan e Iqbal, have same attitude, behavior, and practices regarding break chain of infection (COVID-19), which include wearing mask, following cough etiquettes, hand washing, hand sanitizing, maintaining social distancing, avoiding direct contact with face and eyes ($P < 0.01$).

IV. DISCUSSION

COVID-19 spread round the globe rapidly, still number of cases are high in some countries especially Pakistan, and India. The number of researchers and previous studies was conducted to know psychological impact, and knowledge, attitude, and behavior [17,18]. After the reviewing extensive literature search still, no significant study has been conducted to determine the attitude, behavior, and practices regarding COVID-19 infection in Pakistan. Our research aimed to fill the gap by assessing the attitude, behavior, and practical impact of this pandemic. While this study possibly can help out from future distress.

Overall, the study resulted number of participants responded (66%) have fear while visiting crowded places during COVID-19, the 90% of the respondent considered COVID-19 as a highly contagious disease and 94 % was Anxious about the health of their family members, and 79% of study population have been anxious about contracting with someone who has COVID-19 like symptoms. This result was similar to the study which is published by Balkhi et.al. (2020) to assess the psychological and behavioral response of the population towards COVID-19 has been showing 88.8% of the study population was afraid of visiting crowd places, 62.5% of the study population was afraid of COVID-19, 83.8% of the respondent were worried about their family members health and 80% of the participant was avoiding to contract any person.[17]

Our study results further revealed that 90% of the study population was using facemask while leaving home, and 77% of study population were maintaining social distance in public places, 86% of the respondent were prioritizing hand hygiene as the contract anything (person, object, equipment and pets). The results were somehow similar to a study conducted in Pakistan by Ahmed, et.al (2020) which resulted 92.4% we wearing face mask when visiting outside and 98.8% were following social distancing protocol and 83.3% were washing hand regularly.[18]

In our study majority 98% of the study participants responded that they cover their face while coughing or sneezing. In contrary a study has been published by Afzal et.al (2021) regarding community-based assessment of KAP and risk factor regarding COVID-19 among 1060 Pakistanis from all province of Pakistan has concluded that 50.5% of the participant have been covering their face while coughing or sneezing. [19]

It was concerning that 81% of our study population was avoiding direct contact with their eyes, nose and mouth. A cross-sectional study was conducted by Hussain et.al in 2021 based on KAP towards primary health care provider from three territory care hospitals of Peshawar, Pakistan has resulted in satisfactory compliance of the 97.3% participants who were avoiding unnecessarily touching their eyes, nose and mouth. [20]

Finally, as we have discussed some previous studies of this pandemic, the level of the fear and anxiety was very

significant among these study population during COVID-19, therefore, measure to reduce fear and anxiety among the population is much concerning and few measure may be taken to overcome the public fear and anxiety. [17] avoiding unnecessary exposure to news and social networking application which can lead to fear and anxiety can be supportive. Many studies including our study had concluded that the participants were also afraid regarding the health of their family members and they were avoiding frequently visits to markets, in our study 85% were involved in encouraging other people to follow infection control practices including hand hygiene, wearing face mask, maintaining social distance, avoiding unnecessary contact with others, and 95% owe that it's their social responsibility to take safety measure to control the spread of COVID-19 infection.

V. LIMITATIONS AND STRENGTHS

Our study has few limitations, as the data collection was based on an online survey with convenient sampling method so the majority of the participants was younger than 30 years and most of them was student and had education level of under graduation. Susceptible communities including illiterate population and those who do not have access to internet or mobile phone were not represented in this study. There is also possibility that some of the participants may have picked answers randomly in the short-limited time to complete the survey or they might have been finding out the answers from other online sources to fill the survey. Our analysis did not justify these but that may have affected the study outcome. The strength of our study includes the real time assessment of attitude, behavior and practices of the study population during the period when it was desirable, and the questionnaire was converted into Urdu so the participant would not face any difficulty, most of the residential areas was covered where the population was not familiar to follow the SOPs.

➤ Ethical Consideration

The data collection procedure complies with institutional and National ethical guidelines and following the Helsinki declaration. Anonymity and confidentiality of data were maintained. The study was carried out after obtaining ethical approval from the Institution, any individual or group 's has not been disclosed. Informed consent was obtained from all subjects involved in the study.

VI. CONCLUSION

In conclusion, the young student from Karachi (including residential area of the study population) has positive attitude and behavior towards the COVID-19 and majority of them was practicing adequate safety measure or SOPs to reduce the spread of infection COVID-19. If the public keep their positive collaboration with the government and law enforcement organization, so that can help to easily won the war against the COVID-19. The study findings may be helpful for those who are interested to know the attitude behavior and practice of the participant around the certain residential areas of Karachi.

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➤ Interest of Conflicts

The authors declare no conflict of interest.

REFERENCES

- [1]. Wu, Y. C., Chen, C. S., & Chan, Y. J. (2020). The outbreak of COVID-19: An overview. *Journal of the Chinese Medical Association*. 83(3), 217–220. <https://doi.org/10.1097/JCMA.0000000000000270>
- [2]. Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J., Gu, X., Cheng, Z., Yu, T., Xia, J., Wei, Y., Wu, W., Xie, X., Yin, W., Li, H., Liu, M., Xiao, Y., Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet (London, England)*, 395(10223), 497–506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
- [3]. World Health Organization. Coronavirus Disease (COVID-19) Weekly Epidemiological Update. Available online: <https://covid19.who.int/> (accessed on 8 August 2021).
- [4]. WHO Director-General's opening remarks at the media briefing on COVID19 11-March 2020. Available online: <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19--11-march-2020> (accessed on 8 August 2021).
- [5]. Government of Pakistan. Coronavirus in Pakistan. <http://covid.gov.pk/>. (Accessed on 08 August, 2021)
- [6]. Government of Pakistan; Ministry of Planning, Development & Special Initiatives; Pakistan Bureau of Statistics. Pakistan Statistical Year Book 2018 (Provisional). <http://www.pbs.gov.pk/sites/default/files//PAKISTAN%20STATISTICAL%20YEAR%20BOOK%202018.pdf>. (Accessed on 08 August, 2021)
- [7]. World Health Organization. Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations. 2020. <https://www.who.int/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations>.
- [8]. Iorio-Morin, C., Hodaie, M., Sarica, C., Dea, N., Westwick, H. J., Christie, S. D., McDonald, P. J., Labidi, M., Farmer, J. P., Brisebois, S., D'Aragnon, F., Carignan, A., & Fortin, D. (2020). Letter: The Risk of COVID-19 Infection During Neurosurgical Procedures: A Review of Severe Acute Respiratory Distress Syndrome Coronavirus 2 (SARS-CoV-2) Modes of Transmission and Proposed Neurosurgery-Specific Measures for Mitigation. *Neurosurgery*, 87(2), E178–E185. <https://doi.org/10.1093/neuros/nyaa157>.
- [9]. Feng, S., Shen, C., Xia, N., Song, W., Fan, M., & Cowling, B. J. (2020). Rational use of face masks in the COVID-19 pandemic. *The Lancet. Respiratory medicine*, 8(5), 434–436. [https://doi.org/10.1016/S2213-2600\(20\)30134-X](https://doi.org/10.1016/S2213-2600(20)30134-X)
- [10]. World Health Organization. Rational Use of Personal Protective Equipment (PPE) for Coronavirus Disease (COVID-19): Interim Guidance, 19 March 2020; World Health Organization: Geneva, Switzerland, 2020.
- [11]. Ministry of National Health Services Regulations & Coordination's, COVID-19 guideline. (Accessed on 08 August 2021)
- [12]. Alnasser, A., Al-Tawfiq, J. A., Al-Kalif, M., Shahadah, R., Almuqati, K., Al-Sulaiman, B., Alharbi, K., Alabbad, F., Alabbad, J., Alquwaiz, I., & Almashama, I. (2021). Public Knowledge, Attitudes, and Practice towards COVID-19 Pandemic in Saudi Arabia: A Web-Based Cross-Sectional Survey. *Medical sciences (Basel, Switzerland)*, 9(1), 11. <https://doi.org/10.3390/medsci9010011>
- [13]. Ahmed, N., Hassan, W., Rasool, R., Fahim, U., Shakil, A., & Khan, S. K. (2020) Knowledge, Attitude and Practices Regarding Covid-19 among a Cross-Sectional Sample from Karachi, Pakistan: Descriptive Data. *J Infect Dis Epidemiol*, 6:164. doi.org/10.23937/247
- [14]. Noreen, K., Rubab, Ze., Umar, M., Rehman, R., Baig, M., & Baig, F. (2020) Knowledge, attitudes, and practices against the growing threat of COVID-19 among medical students of Pakistan. *PLOS ONE*, 15(12), e0243696. <https://doi.org/10.1371/journal.pone.0243696>
- [15]. Fatmi, Z., Mahmood, S., Hameed, W., Qazi, I., Siddiqui, M., Dhanwani, A., & Siddiqi, S. (2020). Knowledge, attitudes, and practices towards COVID-19 among Pakistani residents: information access and low literacy vulnerabilities. *East Mediterr Health J*, 26(12), 1446–1455. <https://doi.org/10.26719/emhj.20.133>
- [16]. Qalati, S.A., Ostic, D., Fan, M., Dakhan, S. A., Vela, G. E., Zufar, Z., Sohu, J. M., Mei, J., & Thuy, T. T. H. (2021) The General Public Knowledge, Attitude, and Practices Regarding COVID-19 During the Lockdown in Asian Developing Countries. *International Quarterly of Community Health Education*, doi:10.1177/0272684X211004945.
- [17]. Balkhi F, Nasir A, Zehra A, et al. (May 02, 2020) Psychological and Behavioral Response to the Coronavirus (COVID-19) Pandemic. *Cureus* 12(5): e7923. doi:10.7759/cureus.7923
- [18]. Ahmed N, Hassan W, Rasool R, Fahim U, Shakil A, et al. (2020) Knowledge, Attitude and Practices Regarding Covid-19 among a Cross-Sectional Sample from Karachi, Pakistan: Descriptive Data. *J Infect Dis Epidemiol* 6:164. doi.org/10.23937/2474-3658/1510164

- [19]. Afzal, M. S., Khan, A., Qureshi, U., Saleem, S., Saqib, M., Shabbir, R., Naveed, M., Jabbar, M., Zahoor, S., & Ahmed, H. (2021). Community-Based Assessment of Knowledge, Attitude, Practices and Risk Factors Regarding COVID-19 Among Pakistanis Residents During a Recent Outbreak: A Cross-Sectional Survey. *Journal of community health*, 46(3), 476–486. <https://doi.org/10.1007/s10900-020-00875-z>
- [20]. Hussain, I., Majeed, A., Imran, I., Ullah, M., Hashmi, F. K., Saeed, H., Chaudhry, M. O., & Rasool, M. F. (2021). Knowledge, Attitude, and Practices Toward COVID-19 in Primary Healthcare Providers: A Cross-Sectional Study from Three Tertiary Care Hospitals of Peshawar, Pakistan. *Journal of community health*, 46(3), 441–449. <https://doi.org/10.1007/s10900-020-00879-9>
- [21]. Health NI of. National Institute of Health, Islamabad, Pakistan. NIOH Pakistan. (2020) Available online at: www.nih.org.pk (accessed August 22, 2021).