



## **Contributing Factors of COVID-19's Spread in Pakistan**

**Muhammad Tayyeb<sup>1</sup>, Ayesha Jehad<sup>1</sup>, Naqash Ahmad<sup>1</sup>, Muhammad Abbas<sup>2</sup>, Noreen Akhtar<sup>3</sup>, Anees Muhammad<sup>4\*</sup>**

<sup>1</sup>Lecturer, Department of Anesthesia, College of Medical Technology, Medical Teaching Institution, Bacha Khan Medical College, Mardan, Pakistan.

<sup>2</sup>BS student, Department of Microbiology, Abdul Wali Khan University, Mardan, KPK, Pakistan

<sup>3</sup>M.Phil, Department of Microbiology, University of Haripur, Haripur, Pakistan

<sup>4</sup>Lecturer, Department of Medical Laboratory Technology, College of Medical Technology, Medical Teaching Institution, Bacha Khan Medical College, Mardan, Pakistan

\*Corresponding Author's Email: [aneesafridi15295@yahoo.com](mailto:aneesafridi15295@yahoo.com)

### **ABSTRACT**

World health organization (WHO), declared Coronavirus disease 2019 (COVID-19) a serious threat to public health. From past two decades, mankind comes across many viral epidemics like including a severe acute respiratory syndrome (SARS), influenza and Middle East Respiratory Syndrome (MERS) in 2003, 2009 and 2012, respectively. During current pandemic of COVID-19, majority developing countries including Pakistan lacks the diagnostic facilities in early stages. In low-income countries, it is very hard to implement social distance policies. Therefore, the spreading of COVID-19 in underdeveloped countries are due to several reasons including poverty, economical factor, illiteracy, religious mass gathering, and unethical behavior of people. Pakistan government tried to overcome the major deficiency in short period. Mass gathering implies great public challenges to the government and Health authorities of Pakistan. Religious (Ramzan, Eid festival), sports (Pakistan Super League), and music concerts. Low literacy rate and general lack of awareness leading to the non-seriousness of people towards the adoption of social distancing and hand hygiene. Despite the low-income country, modern quarantine centers were arranged in certain regions. The important mass gathering has been postponed including Pakistan Super League (PSL) and religious gathering. COVID-19 related awareness programs were arranged on social media.

**Key Words:** SARS-CoV-2; COVID-19, Illiteracy, Poverty, Fearlessness.

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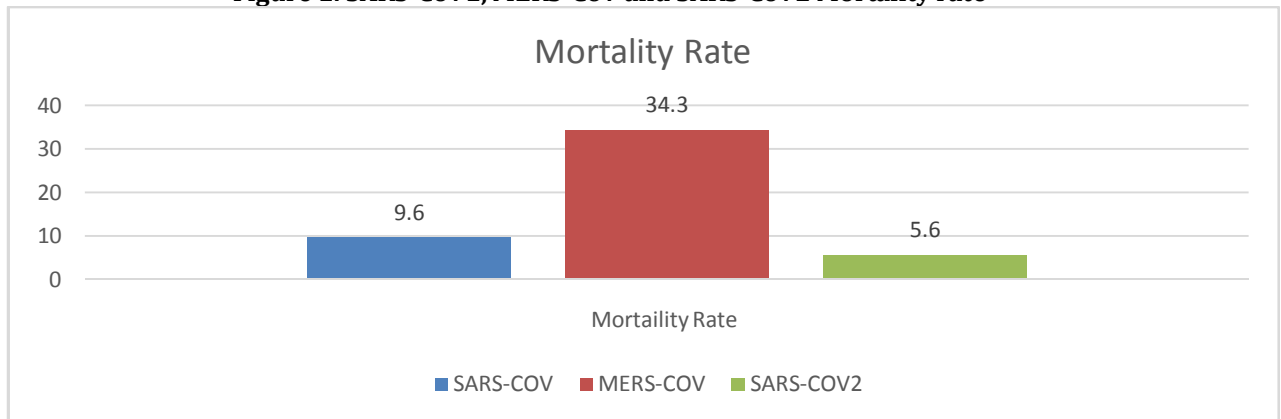
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### **INTRODUCTION**

Coronavirus disease 2019 (COVID-19) is viral infection, spreading continuously throughout the world. World health organization (WHO) already declared a public health emergency and a serious threat to public health [1]. In the last week of December 2019, a patient comes with pneumonia of unknown causes reported in the WHO country office city of Wuhan Hubei Province China [2]. On 7<sup>th</sup> January 2020, Chinese Center for Disease Control and Prevention (CCDC) took a throat swab sample from an infected person and confirm the causative agent. Later 11 February 2020, in press release World Health Organization named this virus as Severe Acute Respiratory Syndrome (SARS-CoV-2), which was called 2019 nCoV). The infection which is caused by SARS-CoV-2 called COVID-19 [3]. SARS-CoV-2 presents with a wide clinical spectrum from asymptomatic to mild sore throat, dry cough, fever, and myalgia. To date among infected patients' majority were recovered spontaneously, while some developed serious complications like pneumonia, pulmonary edema, organ failure, and severe acute respiratory syndrome (ARDS) [4]. According to the WHO, about 6,903 cumulative cases of SARS-CoV and 495 death. Since September 2012 WHO reported 27 countries confirmed (2494) infected cases of Middle East Respiratory Syndrome (MERS) with (858) deaths. And (7,039,918) cases of COVID-19 with (404,396) death. Among the three cited diseases MERS-CoV has the highest mortality rate than SARS and SARS-COV2 as shown in Figure 1 [5,6].

**Figure 1. SARS-CoV1, MERS-CoV and SARS-CoV2 Mortality rate**



Adapted from [6,7]

After the first case of (COVID-19) investigation CDCs published a report and mention the incubation period of COVID-19 (3 to 7 days) which is similar to SARS [8]. And up to 14 days as the time from infection to developing symptoms was 12.6 days [9]. This data represents that this epidemic doubled after one week. Simply, each infected patient infects 2.2 other health individuals [10].

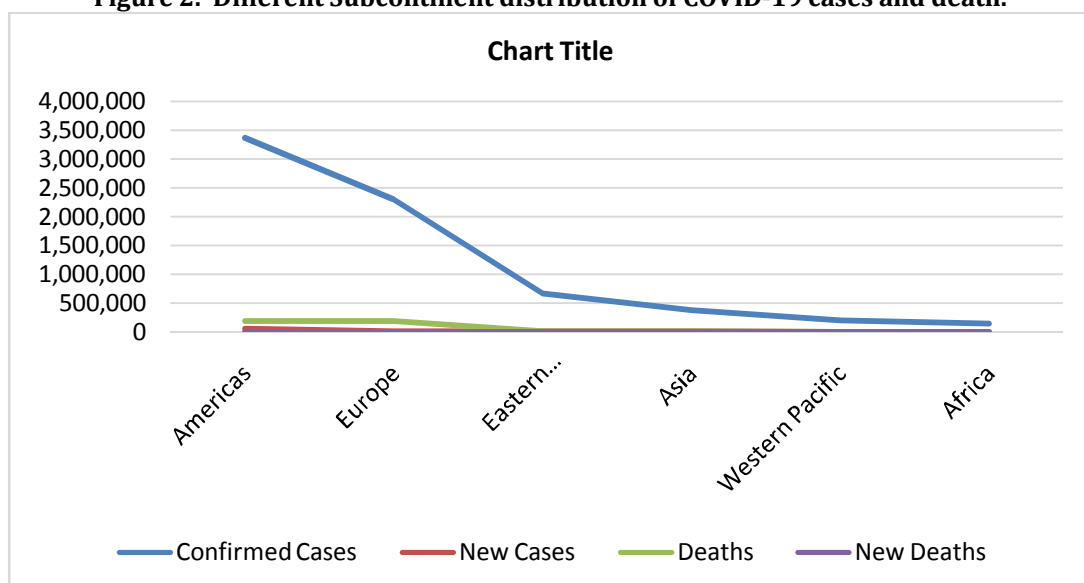
**CURRENT STATUS OF COVID-19**

On 9<sup>th</sup> June 2020, WHO published a situation report (7,039,918) confirmed infected cases and (404,396) deaths globally. To date, there are confirmed cases in 216 countries. After China, American and United Kingdom are considered the epicenter of COVID-19. Considering confirmed cases of (COVID-19) compared with America there are (3,366,251) cases; Europe (2,303,361) cases; Eastern Mediterranean (658,614) cases; Africa (140,498) cases; Asia (378,118). The highest death rate has been recorded in America (110,220) followed by United Kingdom (40597) Brazil (36,455) and Italy (33964) as shown in Figure 2 [6].

Among developed countries, America has a majority of confirmed cases with leading death rates. In under developing countries, India has reported (266,599) active cases; Iran (173,832); while Pakistan reported (113,702) active cases [6,11].

Among top ten countries infected with COVID-19 is United State of America (USA) with (2066401) confirmed cases and (808494) of recoveries, followed by Brazil (775184) (396692), Russia (493657), (252783) so and so as shown in Figure 3 [11].

**Figure 2. Different Subcontinent distribution of COVID-19 cases and death.**



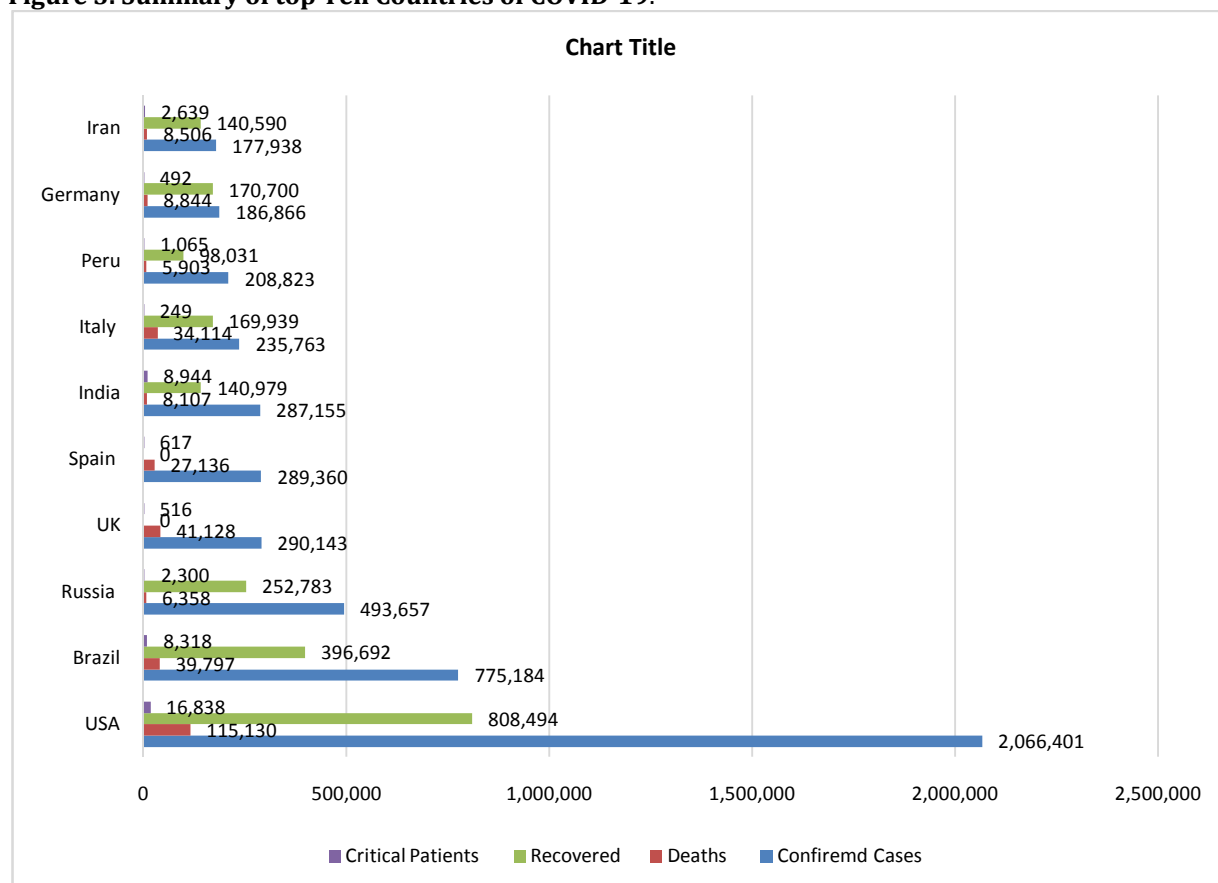
Continental Region	Confirmed Cases	New Cases	Deaths	New Deaths
Americas	3,366,251	54,864	183,950	2,146
Europe	2,303,361	16,801	184,671	551
Eastern Mediterranean	658,614	17,185	14,913	311
Asia	378,118	13,922	10,376	406
Western Pacific	192,335	1,060	7,121	9
Africa	140,498	5,086	3,352	116

Adapted from [6]

### CURRENT SCENARIO OF PAKISTAN

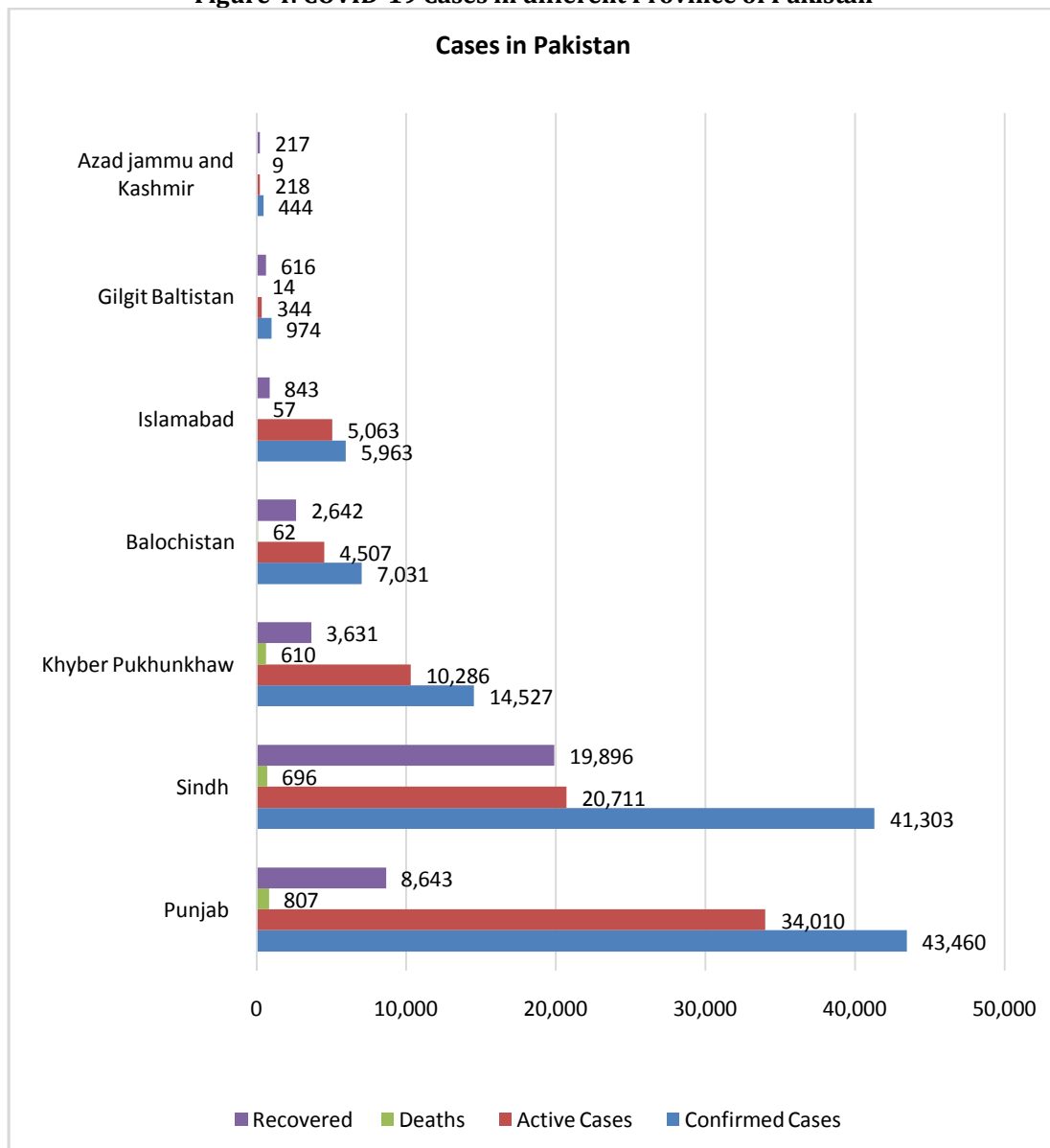
On June 10, 2020, National Institute of Health, Pakistan published a report there are (43460) confirmed cases in Punjab followed by Sindh with (41,303), KP (14,527), Balochistan (7,031), Islamabad (5,663), Gilgit Baltistan (974) and AJK (444) the majority of recoveries were reported in Sindh (21,007) then Punjab (9,005), KP (3,771) are shown in Figure 04 [11]. The Federal Government of Pakistan took several preventive measures to prevent COVID-19 disease transmission. Pakistani government established a screening laboratory to screen every individual who is traveling from infected countries (China, Iran, Turkey, America, Brazil) [12]. In the early epidemic, Pakistan lacks any diagnostic facilities. Later Pakistan purchase primer and diagnostic kit from Japan and China. Seven different hospitals were allocated for diagnosing of COVID-19 test (one center in Peshawar, Lahore, and Islamabad and two centers in Quetta and Karachi) [13,14]. There were different modern quarantine centers with different beds are established. Today Pakistan has enough resources to fight against COVID-19 [15]. It is important to monitor the current situation of hospital and quarantine centers in Pakistan [16].

Figure 3. Summary of top Ten Countries of COVID-19.



Adapted from [11].

Figure 4. COVID-19 Cases in different Province of Pakistan



Adapted from [11].

## FACTORS CONTRIBUTE TO SPREADING OF COVID-19 IN PAKISTAN

### Poverty

Every Pandemic effect every ethnic group of peoples in uniform and the same way. In the 14<sup>th</sup> century, Black death decrease 1/3<sup>rd</sup> of the world population, and the majority were among the poor population [17]. Every time history reminds us how poor the population suffered the most at the time of pandemic and crisis; as same in the COVID-19 pandemic. The scenario of Pakistan's labor is not different from the rest of other countries. One study conducted in Pakistan reveals that about 18.4% % of the working population have a luxury opportunity to work from home in major big cities of Pakistan. And about 70% of the working population is working without signing any contract which challenges them emotionally in this global economic crisis [18]. According to the UN Educational, Scientific and Cultural Organization reported that 138 countries closed their school to follow SOPs and slow down the transmission of COVID-19. About 80% of students were affected by school closing.

In the United State of America (USA) and Europe closing schools directly affected poor children. In the USA school is not only for academics but also for a healthy diet. Eurostat reported; 6.6% and 5.5% of households with children cannot afford a healthy diet in the European Union and United Kingdom (UK) respectively. After some time the Health crisis will become a social crisis and will affect low-income families if we didn't do any strategic action [19]. In low-income countries, it is very hard to implement

social distance policies. A study concludes that the spread of COVID-19 is more between different poverty levels. In a simple way, poverty increases the spread of COVID-19 [20]. On 05 May 2020 PM of Pakistan order to reopen many businesses and shop and the government will implement Standard Operating Procedure (SOPs). And threaten the public that the government will impose another lockdown in case of not following SOPs and if another spike of COVID-19 diseases. On 12<sup>th</sup> May 2020, press conference government of Khyber Pakhtunkhwa (KP) released a statement that the KP government facing a financial crisis. And expecting 150 billion shortfalls in the upcoming budget [21]. Developing countries experiencing more economical crises than developed countries. The consequences in the form of psychological depression and suicidal attempts in Asian countries [22]. Pandemic related restriction (self-quarantine, isolation, spatial distancing) effect economical and psychological mediators (frustration, sadness, anger, fear nervousness, hallucination) [23]. Economists declared that the large economic impact will lead to a global recession. This COVID-19 pandemic Indonesian economy growth will decrease in between (1 to 5%). And poverty will be an increase from (9.2 to 9.7%). And researcher predicted that (1.3 million) Indonesian population will compel to push toward poverty and poverty spike will rise to (12.4%) [24]. Under the special title "COVID-19 Advent and Impact Assessment" the government of Pakistan declared that poverty and unemployment will rise. And after 1952 first time Pakistan facing a great challenge due to the Corona crisis. According to a survey in (2017-18), there are (61.7) million employed force with (23.8) million working agricultural department and (37.9) million in the non-agricultural department. Under this sector, 72% are more at risk to lose their jobs due to partial or complete lockdown and restriction in economic activities as shown in Table 1 [25]. To reduce the spread of COVID-19 due to the poverty PM of Pakistan introduce *Ehsaas Program* and allocate 900 million US dollars. On June 11, 2020, the Poverty Alleviation And Social Safety Division Government of Pakistan reported that under the Ehsaas emergency program has served Ten million needy people to fight against poverty in the COVID-19 epidemic [26].

Table 1. **Economical Survey and Labour Force at Risk due to COVID-19.**

<b>Total Employes in Pakistan (2017-18) Survey</b>	
<b>61.7 million (Employed Labour)</b>	
<b>AGRICULTURAL SECTOR</b>	<b>NON-AGRICULTURAL SECTOR</b>
23.8 million	37.9 million
	<b>FORMAL SECTOR</b>
	27.3 (72%) <b>(more at risk )</b>
<b>Moderate low of economy</b>	12.5 to 15.5 million
<b>Full lockdown</b>	(18.7 to 19.1) million

Adapted from [25]

### **Mass Gathering**

Epidemic preparedness and minimize the risk of the spread of COVID-19 disease globally. Among different factors, mass gathering implies great public challenges to the government and Health authorities of Pakistan. Religious (Ramzan, Eid festival), sports (Pakistan Super League) and music concerts and other mass gatherings could the source of infection [27]. As WHO declared COVID-19 pandemic refocused on regional and international preparedness. In late February 2020, there are an increase in cancellation mass gathering includes (sports, religious and music concert, airports, sports) in both nationally and internationally [28]. In Pakistan, most important mass gathering (MG) have been postponed including Pakistan Super League (PSL). For novel coronavirus preventive measure are categorized at two-level (Individual level and the second one is protecting our people by obeying our state orders) [29]. The primary source of information is local and national health authorities about COVID-19. For a small gathering, everyone should follow guidelines issued by local and national health authorities. In case of a medium or large gathering including wedding ceremony, religious gathering the organizer should establish contact for duration and buildup of gathering according to WHO. If they are unable to follow these steps the organizer should cancel the gathering [30]. It's quite challenging to protect people's health and the safety of people. If look in history the most prominent MG are religious in nature then sports-related includes (world cup, leagues, Olympic). Postponed and cancellation of such gathering have a great impact on economic loss to the host nation. In this critical situation, it's up to local or intergovernmental organizations to deal with this pandemic [31]. COVID-19 warped the Middle Eastern Union and Arabian Peninsula (Iran, Bahrain, Egypt, Oman, Kuwait, Iraq, and Afghanistan) [6,32,33]. Through both Umrah and non-umrah visitors, COVID-19 was transmitted in and out of Saudi Arab. Among pilgrim (43%) are in the age of (55-56 years) and 50% of pilgrim presented with severe comorbidities [34]. (39 to 89.95%) of morbidities are related to respiratory diseases. MERS pandemic coincided (8.4%) with Hajj in 2012 [35].

For upcoming Hajj home countries should sensitize the pilgrim toward PPE. For geriatric and patients with chronic diseases are proposed to postpone until this pandemic cleared. Five peaceful massive gatherings around the globe are shown in Table 2.

**Table 2. Five Peaceful Massive Gathering**

MG	Year (attend)	Participant Number's	No of Countries	Location
Hajj	2018	38 million	180	Saudi Arab
Umrah	2019	7.5 million	180	Saudi Arab
Spring festival	Annual	11 million	01	China
World Fair	2010	73 million	All Nation	China
Kumbh Mela	2010	50 million	01	India

Adapted from [36,37]

### **Fearless**

The initial response from the public of Pakistan toward the emerging threat of COVID-19 was ennui. The main factor behind apathy was lack of awareness. Government warrenred public that mass gathering leads to the spread of COVID-19 but still massive gathering and mass prayer continued before and during Ramadhan [38]. A case of carelessness and fearlessness traveling from Spain dodge airport screening. After he tested positive and infected their whole family and community members. Moreover, the majority of people at Sukkur camp broke their quarantine and escape from their rooms and become the source of infection to others [39]. This irresponsible behavior leads to a more general population exposed to COVID-19 disease.

After easing lockdown in Pakistan, the number of cases increases. On May 9, 2020, after lifting restriction government issued a list of SOPs including instruction for shopkeepers and business and while leaving home in this pandemic. In some province public maintain the decorum while in remaining there an open violation of SOPs [40]. On June 4, 2020, Punjab administration sealed more than 100 shops in Lahore for violation of the SOPs. There is no FIR lodged against them the aim of this activity was to warn and conveying the message that the government means business [41]. On June 11, 2020, Prime Minister of Pakistan warns the public that strict action will be taken against those violating SOPs [42].

### **Illiteracy**

As the literacy percentage in Pakistan is 65%. In adult males (69%) and in females (40%). So, it will be quite difficult to educate the general public about COVID-19. Among different nations, Pakistan comes under the worst literacy rate. With the lowest literacy rate, Pakistan ranked 113 in a total of 120 countries [43]. As an Islamic state, religious discrimination is not new in Pakistan. As in this pandemic, Pakistan's discrimination based on religion continues. Some of them referring this virus as "Sunni virus" while some called them "Shia Virus". [44]. As a result of illiteracy, most of the general population violates SOPs which the government of Pakistan issued and become a threat to Public Health.

### **LACK OF HEALTH CARE SETTINGS AND FACILITIES**

Despite showing in a tremendous improvement in the public health care system Pakistan still falls far short in ensuring an effective Public Health Care system. Pakistan among developing countries, in early days of COVID-19 Pakistan deficit with the basic diagnostic kit. A sample of suspected individuals was sent to a foreign laboratory for diagnosing [15]. National Institute of Health (Federal) help in establishing surveillance unit in different Province [12]. A June 10, 2020 report from the National Institute of Health the testing capacity for COVID-19 in Pakistan is about (46,730) per day [45]. Increases in several COVID-19 related death is contributing to social stigma. A case reported Dr. Abdul Bari (CEO Indus Hospital) said Dr. Furqan ul Haq was died due to delay in treatment. His niece said he refused to admit in the hospital because his NEWS of diagnosis would be spread in the neighborhood [46]. PM special assistant Dr. Zafar Ali Mirza on Health discouraged negative social stigma. Those patients who tested positive. And condemns social stigma being attached to COVID-19 patients. Moreover, PM Imran Khan (IK) expressed disappointment over behavior toward COVID-19 positive patients. The society must accept these patients [47]. In the early stage of the epidemic in Pakistan, people chose death over COVID-19 stigma[48]. They think that COVID-19 positive patients would be admitted to Corona Ward where visitors are not allowed and if these patients died, they would not handover to a relative for the funeral ceremony. Most symptomatic patients are reluctant to visit a government hospital [49]. Necessary consideration should be adapted to Public Health to avoid spread of diseases in form of early diagnosing , treatment and in preventive measures [50].

**RECOMMENDATION**

For upcoming Hajj, the pilgrim should sensitize toward PPE. For geriatric and patients with chronic diseases are proposed to postpone until this pandemic cleared. We should avoid myths and misinformation related to the spread of coronavirus. It is advisable to keep up to date on guidance published by local and national authorities.

**CONCLUSION**

Low literacy rate and general lack of awareness leading to the non-seriousness of people towards the adoption of social distancing and hand hygiene. The high population density in major cities of Pakistan can facilitate the spread of the virus. The major role of Coronavirus diseases spread is a fearless and social gathering of the general population. And secondly, religious gathering in time of pandemic facilitate the number of cases in Pakistan.

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