



PREVALENCE, SYMPTOMS AND EFFECTIVE MEASURES AGAINST NOVEL COVID-19 VIRUS

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ABSTRACT

More than 0.4 million people have died as a result of novel coronavirus disease (COVID-19), which has so far impacted close to 7 million people. There have been numerous instances of gender disparities in COVID-19 infections and fatalities. According to reports, COVID-19 is a highly contagious illness with symptoms include fatigue, fever, dry cough, and sore throat. The published literature on occurrence and gender-wise prevalence of COVID-19 is rare in Pakistan. Therefore, the present study was planned to compare the gender, age-wise and year-wise distribution of COVID-19 in population of district Mardan. The data were collected between January 2022 and April 2022 from the population of district Mardan, Pakistan. A total of 13994 cases were collected from Mardan Medical Complex and District Head Quarter Mardan. Amongst these 2358 (18%) were found positive and 10942 (82%) were found negative. Between the positive cases, the rate of COVID-19 was (58.9%) among males and (41%) among females.

INTRODUCTION:

Coronavirus is a major disease that primarily affects people respiratory systems. Both the Middle East respiratory syndrome (MERS)-CoV and the severe acute respiratory syndrome (SARS)-CoV. Coronaviruses (CoVs) are members of the Coronavirinae subfamily of the Coronaviridae family of the order Nidovirales, which includes four types and coronavirus. COVID-19, a -coronavirus with positive-sense single-stranded RNA, is an enveloped virion with a diameter of 60–140 nm and is frequently polymorphic. COVID-19 is widely distributed in humans and other species, and its genome differs from that of SARS-CoV and MERS-CoV [1].

RNA is the virus's basic genetic material, and it is responsible for the virus's mutation. It has glycoproteins on the surface, as evidenced by the spike shape. Corona virus is classified into four subcategories: alpha, beta, delta, and gamma. The alpha subfamily is responsible for respiratory problems such as colds and breathing problems, enteric problems such as indigestion, and hepatic problems such as decreased liver function [2]. A common sign of infection is fatigue, muscle pain, sneezing, sore throat, dry cough, high fever, respiratory problems, and other symptoms. Severe infections can result in pneumonia, serious respiratory syndrome, kidney failure, and even death.

Patients with various health conditions such lung disease, heart disease, diabetes, and cancer as well as older people, kids, and patients are more likely to contract COVID-19 [3].

Even though they are less frequent than respiratory symptoms, GI issues have recently become more significant. The Centers for Disease Control and Prevention (CDC) have included a number of GI symptoms for COVID-19, which can coexist with respiratory symptoms or be the only sign of the illness. Anorexia, nausea, vomiting, diarrhoea, and abdominal discomfort are some of the most typical gastrointestinal (GI) symptoms in COVID-19 patients. GI bleeding, acute pancreatitis, and colitis have also been reported [4].

There are now three different coronavirus diagnostic assays: reverse transcription polymerase chain reaction (RT-PCR), real-time RT-PCR, and reverse transcription loop-mediated isothermal amplification (RTLAMP). RT-LAMP, which has a sensitivity comparable to rRT-PCR, is used to detect MERS-CoV. It is also quite particular. According to the most recent diagnostic standards issued by the China National Health Commission, laboratory investigations, including nasopharyngeal and oropharyngeal swab tests, have become a standard evaluation for the diagnosis of COVID-19 infection [5].

By inactivating the proteases necessary for replication, a number of protease inhibitors, such as darunavir and atazanavir, which are already used to treat HIV, could prevent SARS-CoV-2 from replicating. The Italian Medicines Agency (Agenzia Italian del Farmaco - AIFA) has given the go-ahead for the ARCO-Home study, which aims to test the effectiveness of darunavir-cobicistat, lopinavir-ritonavir, favipiravir, and hydroxychloroquine as home treatments in an early COVID-19 population to stop the infection from progressing to serious or critical clinical forms, necessitating and there are currently many vaccinations accessible in the case of COVID-19 [6].

Materials and Methods:

Study area

The current study was conducted to find the prevalence of COVID-19 in district Mardan. Mardan is the second largest city of KPK. Mardan is located in the valley of Peshawar. Mardan is the the district of KPK with total area of 1632 kilometres.

Study time period

The data was collected from different hospitals during the period of January to March 2022.

Data collection sites

The data was collected from different hospitals of district Mardan including District Head Quarter Mardan (DHQ) and Mardan Medical Complex (MMC).

Data Analysis

The data collected were analyzed using Microsoft Office Excel 2010. Prevalence rates of COVID-19 were found for both the males and females.

RESULT:

A total of 13994 patients data were collected from the different hospitals including Mardan Medical Complex, District Head Quarter and private laboratory including Chughtai lab, Agha khan lab of 1 to 110 years of age from district Mardan, Pakistan. Out of the total 13994 patients, 8178 were males and 5122 were female. The data collected were analyzed using Microsoft office excel 2010. Prevalence rates of covid-19 were found out for both gender and age groups and then compare to gender-wise and age –wise. The results show that out of total 13994 patients' data, 2358 were positive and 10942 were negative.

4.1. Prevalence of COVID-19

Figure 4.1 shows the prevalence of COVID-19 among patients and out of the total 13300 patients. Among these 2358 (18%) were found positive and 10942(82%) were negative.

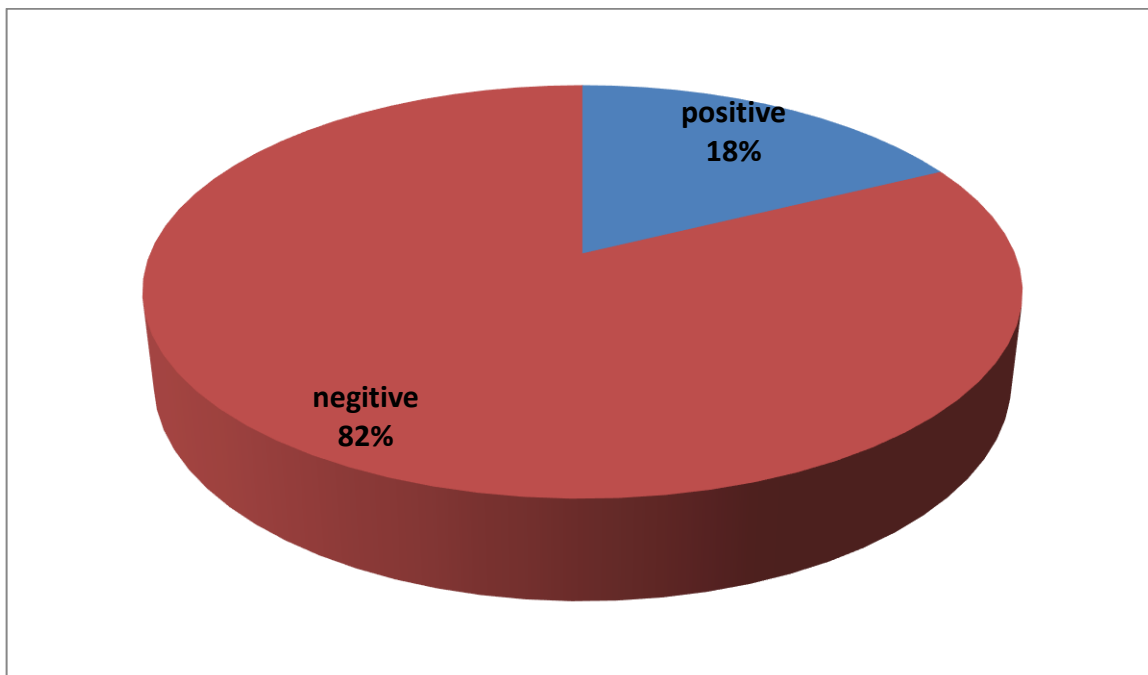


Figure 4.1: Prevalence of COVID-19 among hospital-based population

4.2. Prevalence of COVID-19 with respect to Gender

Out of total 13300 patients, 2358 patients were reported to have COVID-19 virus. Out of the total 2358 positive cases, the majority i.e 1390 (58.94%) of the positive were males. The record of data is available in Table 4.1.

Table 4.1: Gender wise distribution of covid-19 positive cases patients

Gender	All cases	Positive cases	Percentage
Male	8178	1390(58.94%)	16.99
Female	5122	968(41%)	18.89
Total	13300	2358(100%)	17.72

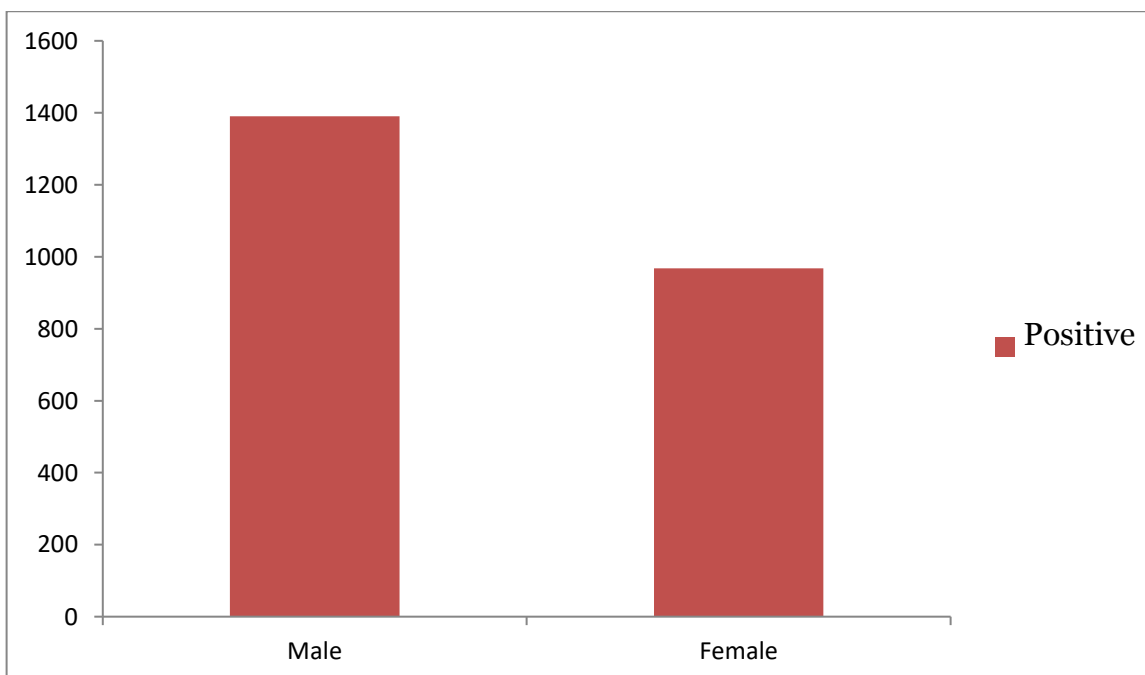


Figure 4.2: Prevalence of COVID-19 with respect to gender.

4.3. Distribution of COVID-19 patients with respect to Age

Table 4.2, 4.3 and figure 4.3, 4.4, 4.5 and 4.6 show the age wise distribution of covid-19 patients. Out of 1390 positive cases, the majority in males i.e 310 in age 21-30 years, followed by 10 cases in age 1-10, 116 cases in age 11-20, 306 cases in age 31-40, 230 cases in age 41-50, 240 cases in 51-60, 126 cases in age 61-70, 44 cases in age 71-80, 8 cases in age 81-90 and there is no case reported in age 91-110 and in females the majority is 182 in age 41-50 years, followed by 8 cases in age 1-10, 74 cases in age 11-20, 222 cases in age 31-40, 194 cases in age 41-50, 180 cases in 51-60, 84 cases in age 61-70, 16 cases in age 71-80, 8 cases in age 81-90, 2 cases in age 91-100 and there is no case reported in age 100-110.

Table 4.2: Distribution of COVID-19 patients in both males and females with respect to age (1-40 years)

Age in years	All cases in both males and females	Positive cases in males	Negative cases in males	Positive cases in females	Negative cases in females
1-10	282	10	158	8	106
11-20	1958	116	1088	74	680
21-30	3418	310	1824	222	1062
31-40	2852	306	1464	194	888

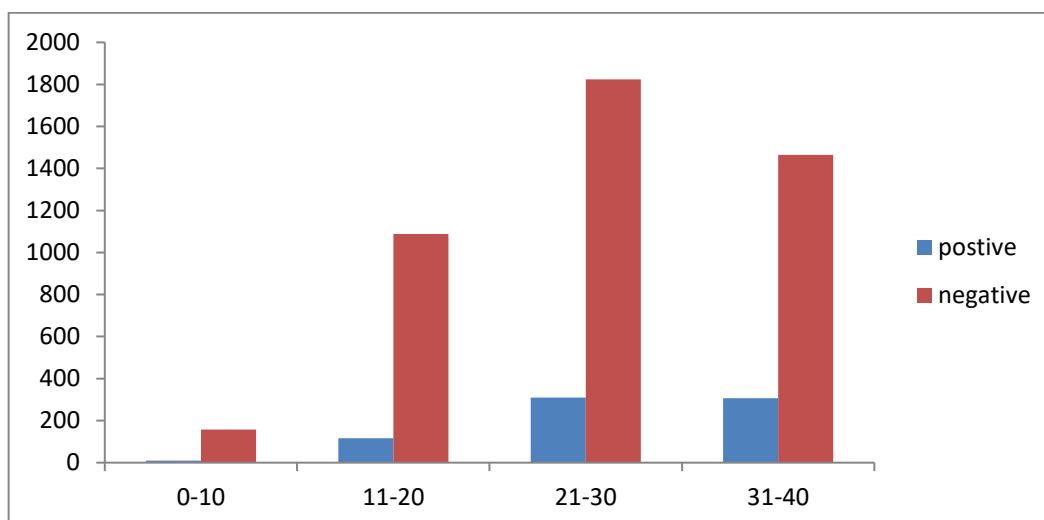


Figure 4.3: Prevalence of Covid-19 in males with respect to age (1-40 years)

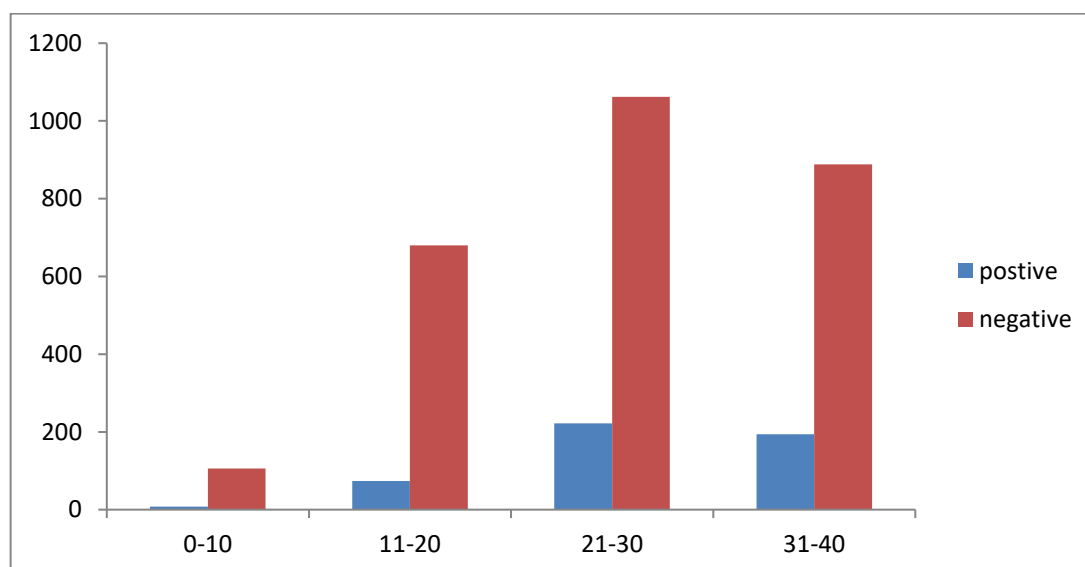


Figure 4.4: Prevalence of Covid-19 in females with respect to age (1-40 years)

Table 4.3: Distribution of COVID-19 patients in both males and females with respect to age (41-110 years)

Age in years	All cases in both males and females	Positive cases in males	Negative cases in males	Positive cases in females	Negative cases in females
41-50	1954	230	926	182	618
51-60	1558	240	710	180	428
61-70	868	126	404	84	254
71-80	290	44	156	16	74
81-90	106	8	50	8	40
91-100	10	0	8	2	0
101-110	4	0	0	0	4

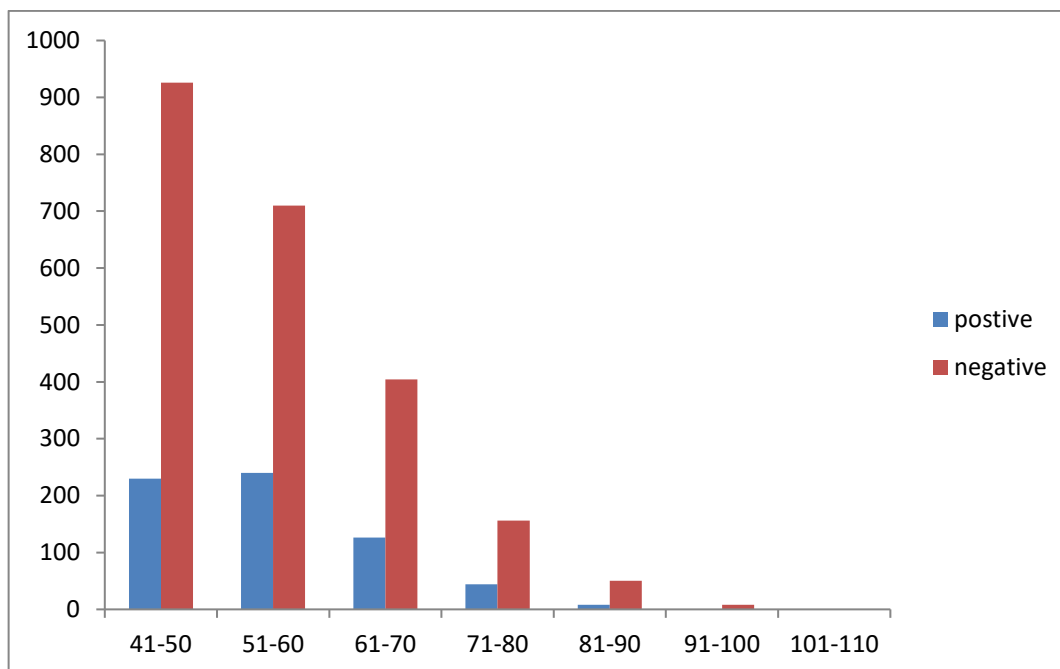


Figure 4.5: Prevalence of Covid-19 in males with respect to age (41-110 years)

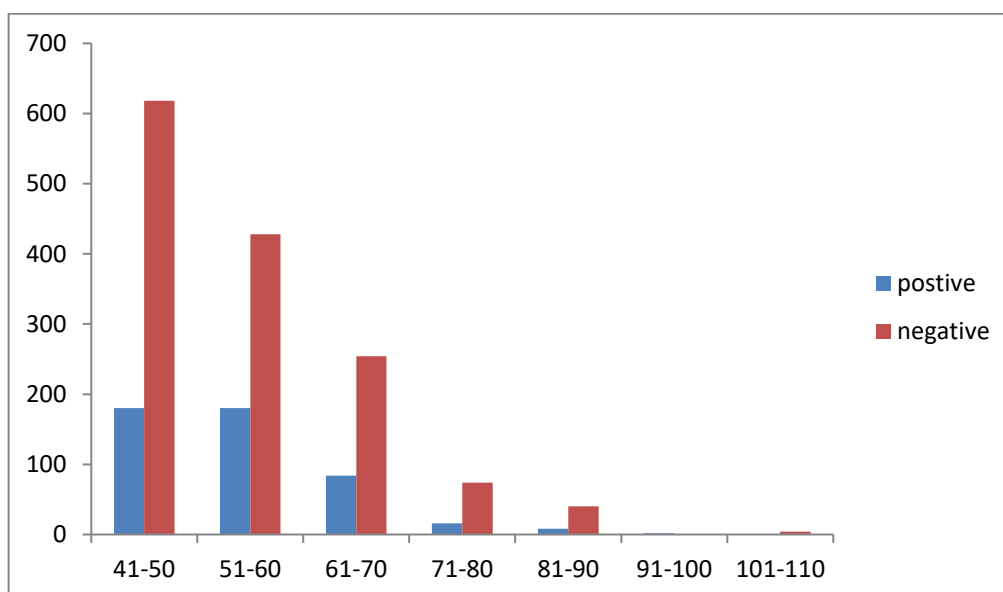


Figure 4.6: Prevalence of Covid-19 in females with respect to age (41-110 years)

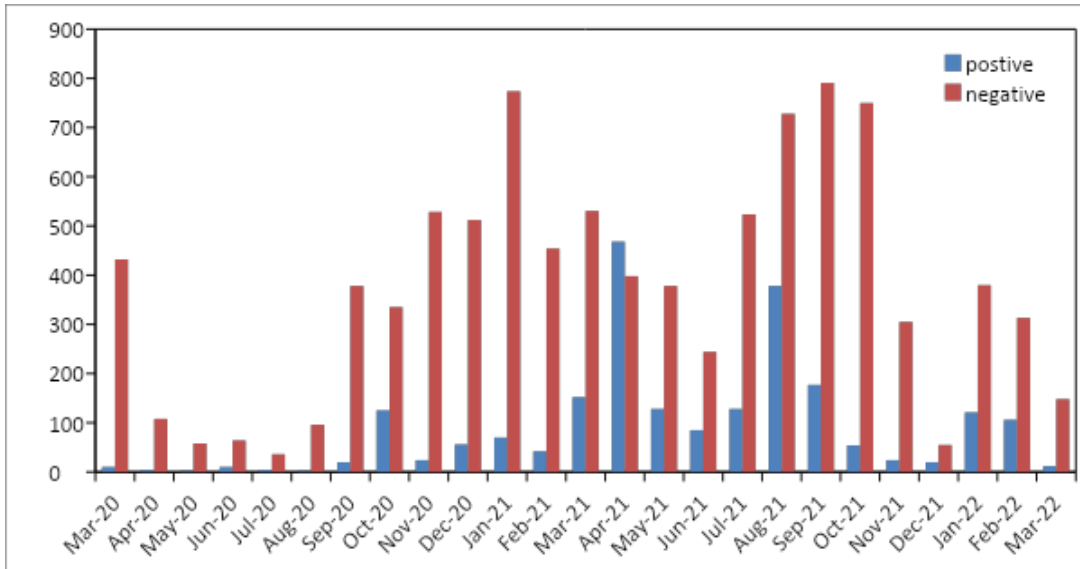


Figure 4.7: Month wise prevalence of COVID-19 in district Mardan

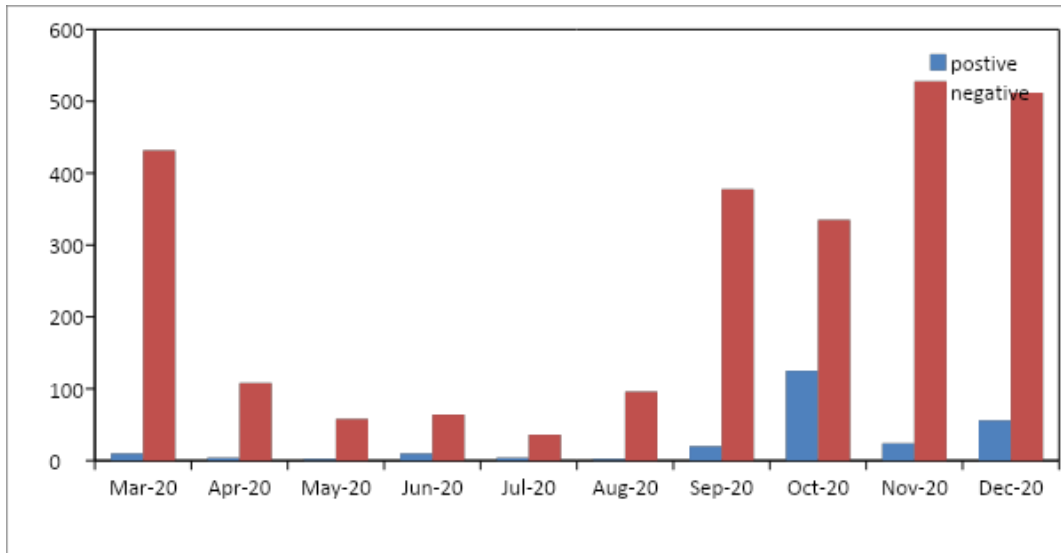


Figure 4.8: Prevalence of COVID-19 in year 2020

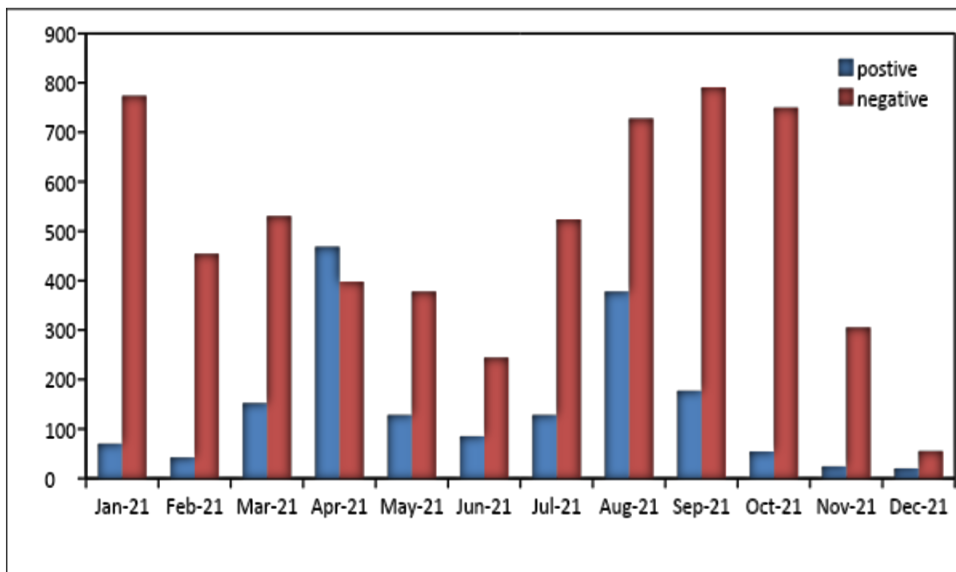


Figure 4.9: Prevalence of COVID-19 in year 2021

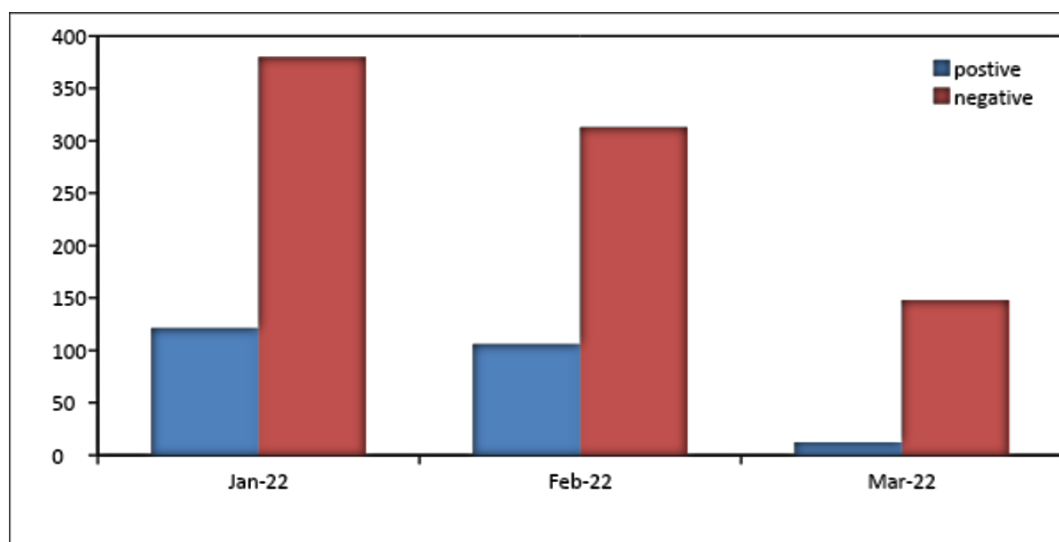


Figure 4.10: Prevalence of COVID-19 in year 2022

Discussion

novel corona virus has emerged as a disastrous situation globally. Along with a huge number of mortalities, corona virus pandemic has brought with it, the socioeconomical downfall. Therefore, a survey-based study was designed to evaluate the level of awareness about COVID-19 among the general population of Pakistan and their beliefs and attitude towards the preventive measure of total 4.6 million cases reported worldwide, 1.49 million cases and 310,000 deaths were reported in US whereas, number of cases and deaths in Europe were 1.29 million and 154,590, respectively. In addition to this, 751,862 cases are from Asia, 78,432 from Africa, and 8444 are in Oceania. [7] reported that out of 376 respondents, 46.28% of Pakistanis exhibited excellent and good levels of knowledge, followed by 6.91% fair, only 0.53% of individuals were found to have poor knowledge about COVID-19.

The present hospital-based study analyzed data of 13994 cases collected from different hospital that is Mardan Medical Complex and District Head Quarter Mardan, Pakistan. The study is a relative comparison of COVID-19 infection with gender and age-wise in district Mardan population. Out of total of 13300 patients, 2358 patients were reported to have COVID-19 virus cases, among these 2358 (18%) were found positive and 10942(82%) were negative cases, the majority prevalence were noted in males i.e 310 in age 21-30 years, and in females the majority is 182 in age 41-50 years. It was observed that in district Mardan population the male is more affected with COVID-19 in comparison to female population.

Alamri et al. [8] conducted a study in the Saudi Arabian Ministry of Health's COVID-19 database recoded 1024 patients data in which 613 were positive cases. Gender wise prevalence was determined in this study where the high prevalence was recorded in male 53% (324/613) in age 65 years, then female 51.1% in age 60-69 years. While the lowest 32.3% were observed in age 10-20 years.

Khan and Akhtar [9] conducted that total of 193 patients from COVID-19 isolation units, Hayatabad medical complex Peshawar, were enrolled in the study that total of 193 patients cases of COVID-19 in which 152 were males (78.8%) and 41 were females (21.2%) among 193 patients. 94 patients (48.7%) were between the ages of 35 and 55, whereas 76 patients (39.4%) were over 55 years.

Raza et al. [10] study represents epidemiological trends of SARS-CoV-2 in Faisalabad, Pakistan reported on April 4th, 2020, the finding showed that overall prevalence of COVID-19 in Faisalabad on April 4th was 17.18% (22 of 128). Prevalence was higher in males ($n = 17$; 77.2%) as compared to females ($n = 5$; 22.8%) but this gender-wise difference was not statistically significant. Patients belonging to age group 37–47 years were found to be most (45.5%) infected with COVID-19.

Out of 383 COVID-19 patients, 141 (36.81%) were found to be severely infected, 138 (36.03%) were moderately infected and 104 (27.15%) had mild infection. Amongst the study, the percentage

of COVID-19 infected males was 65.53% compared to females with 34.64%. The infection rate was found to be higher in males in all three sub groups viz. severe patients had 64.53%, moderate group with 71.73% and mild group with 58.65% as compared to 35.46%, 28.26% and 41.34% of female patients respectively [11].

The prevalence rate of COVID-19 in the present study was expressively higher in males (58.94%) in agreement with many other studies done in the past [8-11]. Higher infection rates in men could be recognized to their frequent exposure to risk factors such as their different activities, as they may be more likely to leave the house and enter crowded areas. Men are more likely to smoke and although smoking has a clear risk factor for severe disease.

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