National Journal of Biological Sciences
Received: 3rd February, 2022
Revised: 10th April, 2022
Accepted: 30th May, 2022
Published: 20th June, 2021
DOI: https://doi.org/10.37605/v3i1/5

RESEARCH PAPER

TITLE

POPULATION BASED PREVALENCE SURVEYS OF COVID-19 IN DISTRICT DIR LOWER, KP PAKISTAN

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POPULATION BASED PREVALENCE SURVEYS OF COVID-19 IN DISTRICT DIR LOWER, KP PAKISTAN

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Abstract

There have been 62784 fatalities and 1,133,788 confirmed cases of the 2019 coronavirus illness (COVID19), which has spread to 181 nations and territories. COVID-19 is a pandemic that began in China in December 2019. World health organization(WHO) Coronavirus disease 2019 (COVID19) has expressed fears that Pakistan might emerge as the next epicenter of this pandemics. The aim of this study finds out the population based prevalence survey among the different age groups and gander of COVID-19 in Dir Lower, KP.The area of our research is KPK Dir Lower. Sample collection and questionnaire-based data then statistically analyzed through python and excel software. Total 988 suspected subjects in which 76% male and 24% are female all from different age. The groups from 18-90 from different areas of Dir Lower. From which 50% are Negative cases and 48% are positive cases. We concluded from current survey that most of suspected cases are negative cases and through questionnaire they used face mask and follow proper precautions. But in positive cases male are more than female. Male are used to travel and going for jobs on daily basis without using precautions.

Keywords: COVID-19, Prevalence, population, Survey, Dir Lower, KP, Pakistan.

Introduction:

A new corona virus designated as 2019-nCoV, emerged in Wuhan, China, at the end of 2019. As of January 24,2020, at least 830 cases had been diagnosed in nine countries: China, Thailand, Japan, South Korea, Singapore, Vietnam, Taiwan, Nepal, and the United States. Twenty-six victims occurred, mainly in patients who had severe fundamental illness. Although many particulars of the appearance of this virus An increasing number of cases appear to have been caused by human-to-human transmission, yet details about its origin and ability to spread among people remain unknown. With the significant SARS Covid (severe acute respiratory syndrome) outbreak that occurred in 2002. The third corona virus to be discovered in the human population in the previous 20 years, the Middle East respiratory syndrome corona virus (MERS-CoV) epidemic in 2012 and the 2019 ssinfluenza pandemic have elevated global public health institutions to a high CoV) outbreak in 2002 and the Middle East respiratory syndrome corona virus (MERS-CoV) outbreak in2012, 2019-nCoV is the third corona virus to become known inthe human population in the past two decades anemergence that has situate worldwide public health institutions on high vigilant [1]. Since the first human corona virus was discovered in the 1960s, other varieties have been discovered. In line with CDC. According to CDC (Center for Disease Control and Prevention. Four of them are recognized as the most prevalent, including (Alpha Covid 229E and NL63 and Beta Covid OC43 and HKU1). The other two corona virus strains, epidemic SARS and epidemic MERS, which were originally discovered in China in 2003 and Saudi Arabia in 2012, respectively, were known [2]. COVID-19 was deemed a global public health emergency by WHO on January 30, 2020 [3].

Origin and Transmission

Source of commencement and spread are related variables that affect the development of preventative measures and treatment regimens. Only bats were infamously used as input reservoirs in the case of COVID-19**.** [4]. The Hubei province's cities were placed under lockdown, and then the entire nation was put under additional organization to manage the quickly rising infection rates. This method effectively prevented the exponential increase in infectivity on a national scale [5, 6].

Morphology

Latin's term "corona" (which refers to the virus's external surface's spikes that resemble crowns) means "crown." Corona viruses have a positive sense single-stranded RNA genome and are of the encapsulated type [7]. They have the most important genome of any RNA virus and typically range in size from 27 to 32 kb, measuring 65 to 125 nm [7,8]. The nucleocapsid protein (N) forms a helical capsid that houses the genome and is further encircled by covering [9]. With the viral envelope are at least three structural proteins. While the spike protein (S) facilitates virus entry into many cells, the envelope protein (E) and membrane protein (M) are involved in virus assembly. These structural proteins include, the spike-like construction from the virus surface renders the crown-like outer shell.

Clinical demonstration

The patient individuality in the continuing COVID-19 epidemic expose a number of hints concerning the defenselessness and the syndrome's severity. Every person in the same vicinity of a positive case, with or without symptoms, can become infected, according to a relevant analysis analyzing clinical and demographic features. This can occur when the virus is spread through respiratory droplets or when contacting infected surfaces and then touching the mouth, nose, or eyes [10]. Anyone in close touch with an infected transporter can catch the virus without any limitations. Most typically, a severe course of the disease caused by pneumonia kills older patients and immune impaired people [11]. Advanced age, metabolic syndrome, smoking, and other chronic conditions like cardiovascular disease are all closely linked to CoV pneumonia progression [12, 13]. Environmental factors, biological processes, and socio economical factors.by spending times mostly in indoor are directly related to poor endangers of vitamin D synthesis.

Symptoms

Depending on pre-existing co-morbidities, COVID-19 encompass a wide range of situations. reported no symptoms for 81% of cases, 14% developed serious health issues, and 5% became dangerously ill in China during the course of COVID-19 disease [16]. In contrast to individual data, pediatric patients showed greater rates of revival and only moderate symptoms, such as fever and cough. In a study, 80% of individuals experienced their first mild fever. .. 80% cases produced significant fevers; 20% of the time, however, there was no fever at all. Other symptoms included coughing and exhaustion. The majority of patients had issues with their neurological, digestive, and cardiovascular systems, which overshadowed the discovery of COVID-19 [17]. The majority of symptoms, including fever, cough (with and without sputum), muscle pains, weariness, dyspnea, headache, sore throat, and gastrointestinal distress, are reported in a review of 61 studies from eleven counties with highest percentage of symptoms followed by cough, fatique, headache, and gastrointestinal dilemma. The clinical signs of COVID-19 are broadly similar to those of other viral respiratory illnesses, which delays diagnosis. The delayed diagnosis, in combination with elements like being a man, being older than 60, and having severe pneumonia, led to heightened fatality

rates, with a total mortality of 3%. Epidemiology research supports preferential mortality in senior, male patients, however COVID-19 clinical signs and diagnoses are still vague. The only way to effectively handle COVID-19 is to put in place effective systems for identification, isolation, and management. Every suspected patient requests to go through a thorough diagnosis process that includes virological testing and early imaging [18]. The signs and symptoms of COVID-19 range from having no symptoms (asymptomatic) to having severe pneumonia and dying [17].

Table: 1 Symptoms and complications of Covid 19

No.	Symptoms	Complications	References
1	Dry cough	Pneumonia	18,19,20
2	Fever	Kidney Failure	18,19,20
3	Sore Throat	Sepsis	18,19,20
4	Headache	Acute RespiratoryDistress Syndrome (ARDS)	18,19,20
5	Tiredness	Acute Heart Injury	18,19,20
6	Body ache and Pain	Weakness	18,19,20
7	Diarrhea	Dehydration	18,19,20
8	Runny or Stifling Nose	ARDS	18,19,20
9	Shortness of Breath	ARDS	18,19,20
10	Depression	ARDS	18,19,20

Preventive Measurements

Fixed dimensions can control the COVID-19 pandemic. They include carefully planned, meticulously followed organizational systems that are endorsed and carried out by the executive and judicial branches of government. The political, social, and economic systems of the nations, as well as their infrastructure and level of health care system intensity, all influence the hit rate. The ability to access socioeconomic dominance with enough money to handle the strain on the healthcare system amplifies the impact of the run dimensions that have been put into place. Hence, industrialized nations with more incomes may have better opportunities to respond to the situation [21]. Lockdown Several control methods were implemented by many nations across the globe in response to the experiences that had been prepared in China, Iran, and South Korea. A Singaporean modelling study looked into the effects of the control measures used to slow the growth of COVID-19. According to these and previous research, a combination of isolating infected cases, stringent quarantine, and closing of schools and workplaces was the most effective strategy, with a median average of 99.3% [23].ns, hygienic safety precautions, and social seclusion may aid in preventing infection [22]. The closure of educational facilities and offices paved the door for web-based solutions that aided in extending education and enabling employment from home. Vietnam, South Korea, China, Taiwan, and other nations have been able to contain the COVID-19 outbreak by reducing infection rates [24]. The Korean government launched a round-the-clock emergency response system to track all visitors entering the nation from Wuhan, China, as a result of the epidemic [25]. By February 26, they had approved unlicensed COVID-19 testing equipment and had diagnosed 46,127 instances, compared to 1,846 in Japan and 426 in the US [24]. On arrival from Hubei province, practical and extensive health checks were rapidly implemented in Taiwan. production of hand sanitizers, masks, and other important medical supplies South Korea and Vietnam are two nations that have been successful in containing the COVID-19

outbreak by reducing infection rates. When arriving travellers from Hubei province, swift and extensive health inspections were established. The government soon took control of the production of masks, hand sanitizers, and other important medical supplies by giving citizens a daily ration [24]. In-depth discussion of the morphology, clinical manifestations, diagnosis, treatments, precautions, and potential future directions for this novel coronavirus is provided in this study (n-CoV).

Methods:

Study Area:

The current study was conducted in Dir, Lower from 10 May 2020 onward in which different areas of dir lower are included. Samples were randomly collected from suspected people along with information.

Sample Size:

A total of 988 suspected participants were included in the study both male and female. All participantsbelong from different areas having different age groups like from 18-90years most probably.

Data Collection:

Data was collected from different area of Dir, Lower. We included all suspected male and female participant in our study.The thorough histories of each patient were obtained using a comprehensive information and design questionnaire.y

Statistical Analysis:

The data from the aforementioned tests were all entered into a computer, and python and a Microsoft Office Excel worksheet were used to perform statistical analysis.

Results:

A total 988 suspected subject's samples were selected from different areas of Dir, Lower. Out of which 747 (76%) were males and 241(24%) were females. In this study different age groups are included 135(14%) are from 1-18years, 691(70%) are from 19-50years, 147(15%) are from 51-70years and 15(1%) are above 70-90 years. These are suspected with covid-19 symptoms but after Covid-19 test Male positive cases are 300 and female positive cases are 187 out of 988.

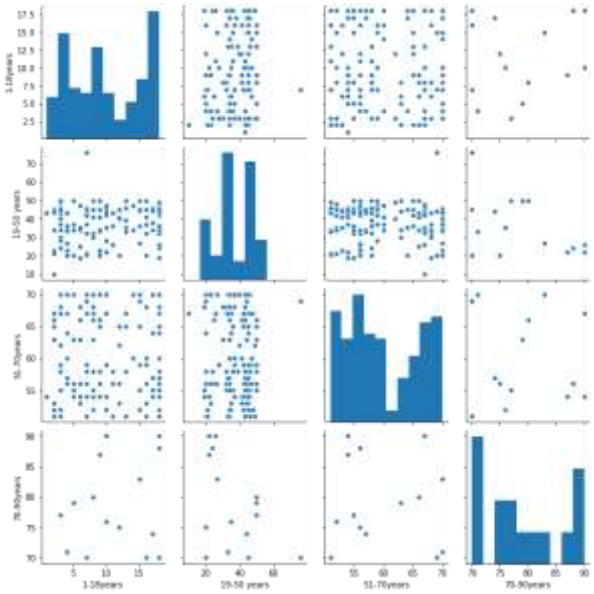

Figure1: Age wise pair plot

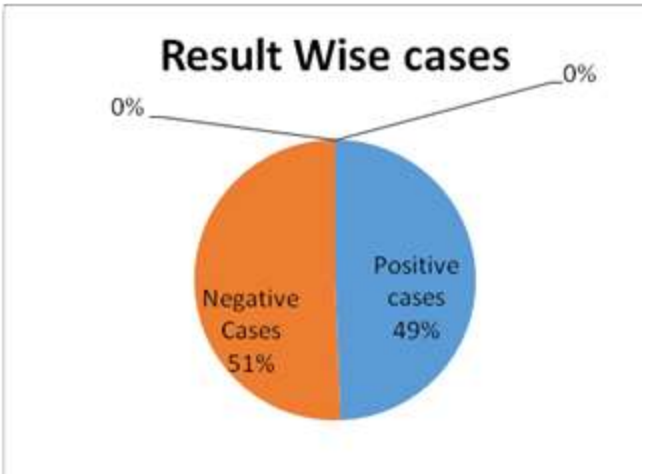

Fig 2: Result wise cases of patients

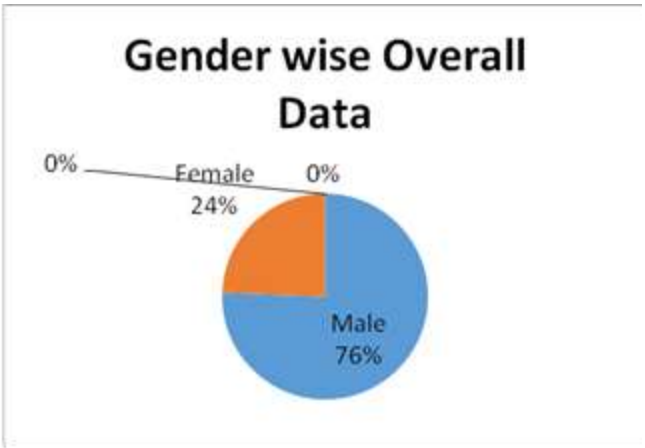

Fig 3: Gender wise distribution of suspected patients

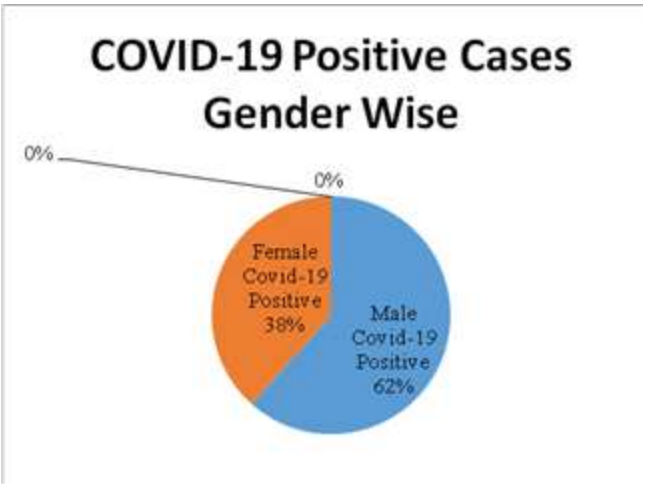

Fig 4: Gender –wise distribution of Covid-19 Positive cases

Discussion:

According to our knowledge, this is the first i nvestigation of the COVID-
19 infection in Dir Lower KP. We discovered an overall correct response rate of during the sample period, indicating that the participants in this study had strong general understanding of COVID-19. The majority of responders expressed optimism regarding COVID-19. On February 26, 2020, the first two COVID-19 instances in Pakistan occurred. Within 48 hours, three further cases from various cities across the nation surfaced, with no connections between the patients. The recoveries with the most affected cases were 1,378 with 96 fatalities. [26]but in current study the first case in Dir Lower reported March 24, 2020 resident of Talash but with effected cases 285 recoveries were recorded and 22 deaths. In a prior study, a comprehensive census of Pakistan's urban general population revealed that the actual number of COVID-19 positive patients was 17.7 times greater than the numbers reported by symptom-based PCR. While the study found a sero-prevalence of 17.5% at workplaces, newly emerging cases had an incidence rate of 7% after 6 weeks, which reveals ground-breaking findings in the light of the changing COVID-19 scenario in Pakistan[27]. However, the current survey is a population-based study carried out in Khyber Pakhtunkhwa Dir Lower. The mortality rate is higher in the under-60-year-old and elderly age groups [28]. **Figure 1** showing in the recent study age group 19-50 years suspected is more than other groups. Previous study reported that males were more affected (76%) to COVID-19 in comparison to females (24%) [29]. In **Figure 4** the Current study shows in Dir Lower Male (62%) which are more affected to COVID 19 than female(38%) because due to cultural, religious barriers, which indirectly restrict the females going to populated areas this factor alone has minimized the chances of female exposure to COVID19.

Conclusion:

We concluded from current survey that most of suspected cases are negative cases and through questionnaire they used face mask and follow proper precautions use sanitizers and frequently washed their hands. But some are confirmed cases of COVID-19 positive in which male are more than female. Male are used to travel and going for jobs on daily basis and more are school, college and university going students without using precautions. According to our survey The Female of Dir lower mostly preferred to stay home so that's why they are safer then male from corona virus.

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