

A STUDY ON PREVALENCE OF COVID-19 IN DIFFERENT GENDER AND AGE GROUPS

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ABSTRACT

Background: CORONA is derived from Latin, mean crown. Corona virus is non segmented, RNA enveloped virus with positive polarity. Corona affects the mankind physically, psychologically, emotionally, and economically in the form of pandemic. Over last 7 months, corona virus appears as major public health issue. It shows its huge impact on respiratory, cardiovascular and reproductive system. Previously, outbreaks of corona virus types SARS and MERS are also seen. It can be prevented by good hygiene and respiratory hygiene.

Objective: The aim of study is to access the prevalence of corona virus (COVID-19) among different genders and age groups in general population by collecting their data.

Methodology: A cross sectional study was conducted in general population from 12 September to 21 September, 2020. A total of 150 patients, who were both male and female, were studied with self-administered questionnaire, who were diagnosed with PCR. No harm to patient and no privacy breachment occur during this research.

Study Setting: The study was carried out at Punjab, Pakistan.

Study Design: Descriptive cross-sectional study.

Results: Among 150 patients, frequency of COVID-19 in males is 51.4% and females 48.6%. According to age difference, highest chances of interaction occur in 13-25 years of age. Major symptoms in both genders are dry cough, fever and tiredness. Majorly, patients were diagnosed by clinical evaluation. No significant history and chronic diseases. Recovery rate is more in males (89.6%) than females (83.6%). Mortality rate is more in females (16.4%) than males (10.4%).

Conclusions: The higher prevalence of COVID-19 is seen in males and 13-25 years of age. Recovery rate is more in males and mortality rate is more in females.

INTRODUCTION

Coronaviruses are a massive own family of viruses that can be visible to purpose illness ranging from rare colds to more severe ailments along with the center East Breath Syndrome (MERS) and intense Acute breathing Syndrome (SARS). In early December 2019, the deadly coronavirus (COVID-19) invaded the city of Wuhan after which spread throughout China, retaining the industry alert. the high-dose sequence detected

β -coronavirus which is presently known as acute breathing syndrome 2 (SARS-CoV-2) just like acute acute respiration syndrome (SARS-CoV) and maximum patients with COVID-19. slight / younger patients who're more likely to develop dyspnea after 1 week. intense sufferers development rapidly to important conditions, which cover symptoms and symptoms such as acute breathing misery syndrome (ARDS), severe breathing failure, coagulopathy, septic surprise, and metabolic acidosis. Early identity of risky materials in important conditions is urgently wished, now not best to stumble on medical capabilities and epidemics with exquisite accuracy, however additionally to facilitate appropriate assist care and to transport them to an intensive care unit (ICU) if needed. . Pakistani authorities have introduced that the entire quantity of showed cases in Pakistan so far (29-nine-2020) has reached 311,516 and that six humans, 474, have died from the virus. some of the 6,474 sufferers who died, the highest number have been old, unprotected and two-thirds have been men, even though unique records have been no longer disclosed the use of authentic sources. This raises the query: Are men at better risk of contracting the virus and losing their lives due to COVID-19? right here, we consist of the records collected inside the present day collection of instances of 150 sufferers who have been supposed to evaluate the morbidity and mortality of male and female sufferers with COVID-19. consistent with the effects received, the percentage of COVID-19 for guys is fifty-one.four% and for ladies it's miles forty eight.6%. the exact motive of this difference has not but been installed, yet the alternative proposed ideas are as follows: One organic aim is to differentiate among genetic variations among ladies and men, particularly with reference to the immune gadget. The X chromosome is thought to include a huge quantity of genes related to the immune device at some point of the genome. With their XX chromosome, females have a double replica in their crucial immune defenses in comparison to 1 copy in XY guys. This development extends to each everyday reaction to infection (congenital response) and in addition to extra direct response to viruses which include antibody formation (adaptive immunity) due to which women' immune structures are greater at risk of infections. this could suggest that women are able to deal with the uncommon coronavirus efficaciously but this has no longer yet been confirmed. Sexual orientation is connected to smoking. approximately 36% of guys in Pakistan smoke, but due to the fact they're not considered suitable for girls to smoke, only nine% of them do. latest research indicates that smoking is related to the dangerous consequences of COVID-19. diverse reasons why boys are related to extra intense results as compared to girls in reaction to COVID-19 contamination may additionally involve a diffusion of immunologic reactions and a loss of protecting effect of estrogen signaling in girls; an opinion based on a look at by means of MERS and SARS. lots of those thoughts recommend, however they're now not decisive. it truly is the want for an hour to do some research and studies on this.

Objectives

1-To rule out prevalence of covid 19 among different genders and different age groups among general population.

Covid 19 association with the other chronic disease like asthma, cardiovascular disease ,hypertension and diabetes.

To rule hospitalization time of different genders.

MATERIAL & METHODOLOGY

Sample size: 150**Study design:** Cross-sectional study.**Study population:** Study was conducted in people from various cities of Punjab(Pakistan). 77 of them were male, 73 were female.**Study duration:** 12-09-20.- --- 21-09-20**Sampling technique:** Non probability convenient sampling.**Data Collecting Tool:** Online Questionnaire.**Inclusion criterion:** People who have covid.

OPERATIONAL DEFINITIONS

COVID : CO STANDS FOR CORONA. VI FOR VIRUS AND D FOR DISEASE. CORONAVIRUSES ARE A FAMILY OF VIRUSES TRANSMITTING BETWEEN ANIMALS AND PEOPLE THAT CAUSE ILLNESS RANGING FROM COMMON COLD TO MORE SEVERE DISEASES SUCH AS SEVERE ACUTE RESPIRATORY SYNDROME. **PREVALENCE** : IT IS THE PROPORTION OF A POPULATION WHO HAVE A SPECIFIC CHARACTERISTIC IN A GIVEN TIME PERIOD. **GENDER** : IT REFERS TO THE CHARACTERISTICS OF WOMEN ,MEN ,GIRLS AND BOYS THAT ARE SOCIALLY CONSTRUCTED. **RESULTS**:

Age of covid patient

Age	Male	Female
0-12	$1/77 \times 100 = 1.3\%$	$0/73 \times 100 = 0\%$
13-25	$41/77 \times 100 = 53.2\%$	$31/73 \times 100 = 42.5\%$
26-45	$23/77 \times 100 = 29.8\%$	$23/73 \times 100 = 31.5\%$
46-65	$10/77 \times 100 = 12.9\%$	$17/73 \times 100 = 23.3\%$
65 above	$2/77 \times 100 = 2.7\%$	$2/73 \times 100 = 2.7\%$
Total	100%	100%

Prevalence in gender

Gender	Nc. Of patents	Prevalence
Male	77	$77/150 \times 100 = 51.4\%$
Female	73	$73/150 \times 100 = 48.6\%$
Total	150	100%

Symptoms in covid patient

Symptoms	Male	Female
Dry cough	5 6.4%	8 10.9%
Fever	15 19.5%	16 21.9%
Tiredness	12 15.6%	7 9.5%
All of these	31 40.3%	37 50.6%
Others	14 18.2%	5 6.8%
Total	77 100 %	73. 100%

Any family member got infected before you	Male	Female
Male	16 20.7%	17 23.3%
Female	8 10.4%	8 10.9%
No one got infected	53 68.8%	48 65.7%

Any family member got infected before you	Male	Female
Total	77 100%	73 100%

Has any of family member had covid before you

How is patient diagnosed

How patient was diagnosed	Male	Female
Clinical evaluation	43 55.8%	42 57.5%
Routine surveillance	17 22.1%	19 26%
Contact tracing	14 18.2%	7 9.5%
Others	3 3.8%	5 6.8%
Total	77 100%	73 100%

Any significant history

History of	Male	Female
Contact with covid patient	12 15.5%	26 35.6%
Mass gathering	23 29.8%	18 24.6%
Travelling	11 14.2%	9 12.3%
None	31 40.1%	20 27.4%
Total	77 100%	73 100%

Chronic diseases in covid patient

Chronic diseases	Male	Female
Asthma	5 6.5%	2 2.7%
Cardiac disease	5 6.5%	2 2.7%
Diabetes	13 16.9%	4 5.5%
Hypertension	5 6.5%	8 10.9%
None	49 63.6%	57 78%
Total	77 100%	73 100%

Hospitalization time

Hospitalized	Male	Female
0–14 days	16 20.7%	24 32.8%
15–30	7 9.2%	4 5.5%
30 +	1 1.3%	2 2.7%
Not hospitalized	53 68.8%	43 58.9%
Total	77 100%	73 100%

ICU admission

ICU admission	Male	Female
Yes	12 15.5%[?]	14 19.2%
No	65 84.5%	59 80.8%
Total	77 100%	73 100%

Outcome of covid in patients

Outcome of covid	Male	Female
Death	8 10.4%	12 16.4%
Recovery	69 89.6%	61 83.6%
Total	77 100%	73 100%

DISCUSSION

The research was carried out by Nishtar Hospital Multan, to evaluate the prevalence of covid-19 among different genders and age groups. It also differentiates patients on basis of Signs and Symptoms, family history, the way patient was diagnosed, history of any chronic disease, hospitalization, admission, morbidity and mortality in covid patient . As regards gender, In week of April 2020, the UK intensive care and National Audit research center (ICNAR) published a report on 2249 patients admitted to intensive care . Data showed men with covid 19 were more than women (53.2% vs 37.5 %) , mechanical ventilation (73%vs 27%) , Respiratory support (71% vs 29 %) which is in accordance with our results which showed covid-19 came out to be more prevalent among males (51.4%) as compared to females (48.6%). The reason for this is not yet completely understood, however it is generally seen that, women are less vulnerable to various viral infection e.g. Cocksackie viruses virus B, SARS etc. This may be due to various factors including the presence of several immune related genes of X chromosomes and there is evidence of greater reactivation of these genes in immune cells from women than men, influence of steroid hormones on immunity etc. As regards the age, a study examining 133 COVID-19 patients in Wuhan China, reported a similar male predominance of covid 19 in persons aged above 65 years (58% male vs. 42% female). In our study Covid-19 prevalence above 65 years was 2.7% in both males and females. The various symptoms associated with covid-19 are fever, cough, shortness of breath, flue like symptoms, body aches and anosmia etc. ISARIC multinational study shows Male Female Fever 71% 66% Cough 70% 66% Shortness of breath 67% vs 64% while nausea and vomiting more common in female than male (23 %vs 16 %). Our study shows : -

Fever. (Male 19.5% Female 21.9%) -Tiredness (Male 15.6% Female 9.5%) -Dry cough (Male 6.4% Female 10.9%) Fever a common symptom of COVID is defined by The American College of Critical Care Medicine and Infectious Disease Society as “Core body temperature greater or equal to 38.3 °C . NICE considers an infant or child has fever if their temperature is 38 °C or higher .Reports suggest that fever is most common after five days of exposure on average. The next consideration was to see that how a COVID-19 affected person was diagnosed. A study showed that 72% of COVID-19 admissions were males versus 28% of those were females based on clinical evaluation. According to the data collected by our colleagues, the maximum number of patients were diagnosed on the basis of clinical evaluation(males 55.8% - females 57.5%) , followed by routine surveillance (22.1% males_26% females) , contact tracing(18.2% males_9.5% females) , and others(males 3.8%_females 6.8%). The history of these patients was also evaluated to see that how did they contract this virus Clinical and demographic features of COVID-19 patients in Shiraz, South of Iran showed history of contact with infected cases(16.8%) and history of travelling (26.5%)in males and females. According to our research among males, mass gathering was the major factor (29.8%)while in case of females it was contact with covid patients (35.6%).14.2%males and 12.3%females also had a traveling history. There were 40%males and 27.4%females that did not have any such history which would give a clue as to how did they contract the virus. Chronicity and comorbidity influences the risk of COVID-19 infection and the course of the disease. It is a well-known fact that the patients suffering from any chronic disease become immuno-compromised and this adversely affects the ability of their immune system to cope up with any type of infections. According to a study conducted on COVID-19; the most frequent association was with hypertension (19.5%), diabetes (14.2%), cardiovascular diseases (14.2%) and asthma(6.2%). Our collected data suggests that COVID-19 patients suffering from chronic diseases like diabetes(16.9% males and 5.5% females) , hypertension(6.5%males and 10.9%females) , cardiac diseases(6.5% males and 2.7% females) and asthma(6.5% males and 2.5% females) are having very severe and fatal symptoms of COVID-19 infection. We also assessed the hospitalization time and ICU admissions in COVID-19 positive patients. A research conducted by Shiraz University showed hospitalization (25.7%) and ICU admissions (9.7%) in male and female covid 19 patients. Male to female ratios of our Results showed that more females were admitted to the ICU i.e. 19.2% as compared to males 15.5% and hospitalization rate of patients was 31.16% in males and 27.3% in females The last but not the least is the outcome of the research. In the first week of April 2020, the UK Intensive Care and National Audit Research Centre (ICNARC) published a report on the first 2,249 patients admitted to intensive care in the UK with COVID19. It showed that men with COVID-19 were more likely to die than women (53.2% v. 37.5%) whereas in our study it showed that although COVID-19 had higher prevalence rate among men but mortality rate was pretty more in females i.e. 16.4% as compared to males 10.4% On the whole, it is novel virus and there is a need to carry out more studies on it in order to develop a good treatment plan or a vaccine and to prevent the people from getting infected with this fatal virus.

CONCLUSION

Among 150 patients, frequency of COVID-19 in males is 51.4% and females 48.6%. According to age difference, highest chances of interaction occur in 13-25 years of age. Major symptoms in both genders are dry cough, fever and tiredness. Majorly, patients were diagnosed by clinical evaluation. No significant history and chronic diseases. Recovery rate is more in males (89.6%) than females (83.6%). Mortality rate is more in females (16.4%) than males (10.4%).

LIMITATIONS

1. The research was conducted on a narrow scale due to limited resources.
2. No measuring equipment could be used during research because it was based on Questionnaire only.
3. Time for the research was limited.

4. Researchers couldn't reach people because of movement restrictions during pandemic. The research was based on Questionnaire only.

RECOMMENDATIONS

1-Each individual has to take steps toward minimizing the risk by staying in the house and social distancing themselves 2-Three-pronged approach of trace, test and treat needs to be aggressively implemented to halt the community transmission leading to exponential increase in cases.

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Sample Online Questionnaire:

1)Name of patient 2)Age of covid patient (in years) a)0–12. b)13–25. c)26–45. d) 46–65. e)65above 3)Gender of covid patient a)male. b) female 4)Has patient experienced any of these symptoms a)fever. Dry cough. Tiredness. All of these. Others 5)Is any one in your family was covid positive before you a)male. b)Female.

c) no one 6) How is patient diagnosed of covid a) clinical evaluation. b) routine surveillance. c) contact tracing. d) others 7) Has patient have history of a) travelling b) mass gathering. . c) contact with covid patient. d) no such history 8) Has patient have any of these chronic diseases a) asthma. b) cardiac diseases. c) diabetes d) hypertension e) others 9) Is patient hospitalized a) 0–14 days b) 15–30. c) 30 above d) not hospitalized 10) Has patient admitted to ICU a) yes. b) no 11) What is the outcome of covid for patient a) death. b) recovery