

SUMMER TRAINING

APRIL 1 TO MAY 31 2020

'A REPORT'

"A STUDY ON THE MAGNITUDE OF COVID-19 IN
DEVBHOO MI DWARKA DISTRICT OF GUJARAT"

BY

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"DECLARATION"

I hereby declare that the project entitled " a study on the magnitude of covid-19 in Devbhoomi Dwarka district of Gujarat" has been prepared by me under guidance of Dr. Daya Krishan Mangal (IIHMR university) Jaipur.

date:-

place:-

Dr. Nikhil Khandal

ACKNOWLEDGEMENT

I have taken efforts in this project however it would not have been possible without the kind help and support of many individuals.

I remain indebted to those individuals without whose help this project would not have been completed. A special gratitude to my brother Dr. Shashank Khandal (DPC-PMJAY) and special thanks towards Dr. Naran Dangar (DPC) at Devbhoomi Dwarka district , Gujarat. to complete this project.

I would like to extend my gratitude to my parents for their kind co-operation and encouragement which helped me in completion of this project.

My thanks and appreciation also go to my colleague Dr. Preetha Prasad in developing the project.

BACKGROUND

The novel corona virus (covid-19) is spread almost all over the world. It is closely related to severe acute respiratory syndrome (SARS) which swept around the world in 2002. The virus not only brought misery and death but also economic depression which already has taken livelihood from many. The source of the Covid-19 believed to be a "wet market" in a set of pneumonia cases was reported by china in Wuhan, Hubei. province to the WHO country office on 31st December 2019 and a novel coronavirus eventually identified.

Seeing the hazardous face of covid-19, its levels of spreading and severity. World Health Organization (WHO) characterized it as a pandemic. The disease has already taken hold in United States, Europe, South West Asia and now beginning to start its destruction in Africa and South America.

In India the second largest population nation has initially seen a low infection has taken a jump of government of India seeing of the virus. Covid-19 cases in India were increasing at the rate of 6.5 percent but as the government applied the containment policy by declaring hotspots to the areas which are most affected.

INTRODUCTION

The magnitude of covid-19 in Gujrat till 29 April 2020 overtook Delhi in total number of covid-19 cases becoming the second major hotspot of infection in the county after Maharashtra.

on April 29 Gujrat had 3744 cases of covid-19 cases which was 11.94% of the total number of covid-19 cases in India. when the state has only 4.3 % of the national population. Also Gujarat has experienced much higher rate of the total cases (4.8) compared to 3.21 across India. And while 11.59% of the patients have recovered In Gujarat. this figure is 24.56 % at the national level. according to this the number of the covid-19 cases increasing continuously.

Whether the Devbhoomi Dwarka district had 12 covid-19 cases till 30th may which is much lower compared to other districts of Gujarat state. due to the the policy of government and the proper implementation of a good strategic management policy of Devbhoomi Dwarka district's public health officials and health worker's effort and government officials.

MATERIAL METHOD

For data collection i contacted and approached to the Chief District Health Officer Dr. R. B. Patel of the Devbhoomi Dwarka district. and DPC of Devbhoomi Dwarka district. they gave me data in an excel sheet. and then data analyzed by Microsoft excel.

METHODOLOGY:-

RESEARCH QUESTION:-

What is the magnitude of COVID-19 in Devbhoomi Dwarka district of Gujarat?

OBJECTIVE:-

To study the magnitude of COVID-19 in Devbhoomi Dwarka district of Gujarat.

BROAD OBJECTIVE:-

To anatomize the magnitude of covid-19 in Devbhoomi Dwarka district of Gujarat.

SPECIFIC OBJECTIVE:-

To analyze the covid-19 confirmed cases according to the age sex composition.

To figure out the total number of confirmed active, recovered and deceased cases in Devbhoomi Dwarka district of Gujarat.

RESULTS METHODOLOGY:-

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Rows: Gender Columns: Outcome Code

	Active Discharge		All
F	2	6	8
	25.00	75.00	100.00
	50.00	42.86	44.44
M	2	8	10
	20.00	80.00	100.00
	50.00	57.14	55.56
All	4	14	18
	22.22	77.78	100.00
	100.00	100.00	100.00

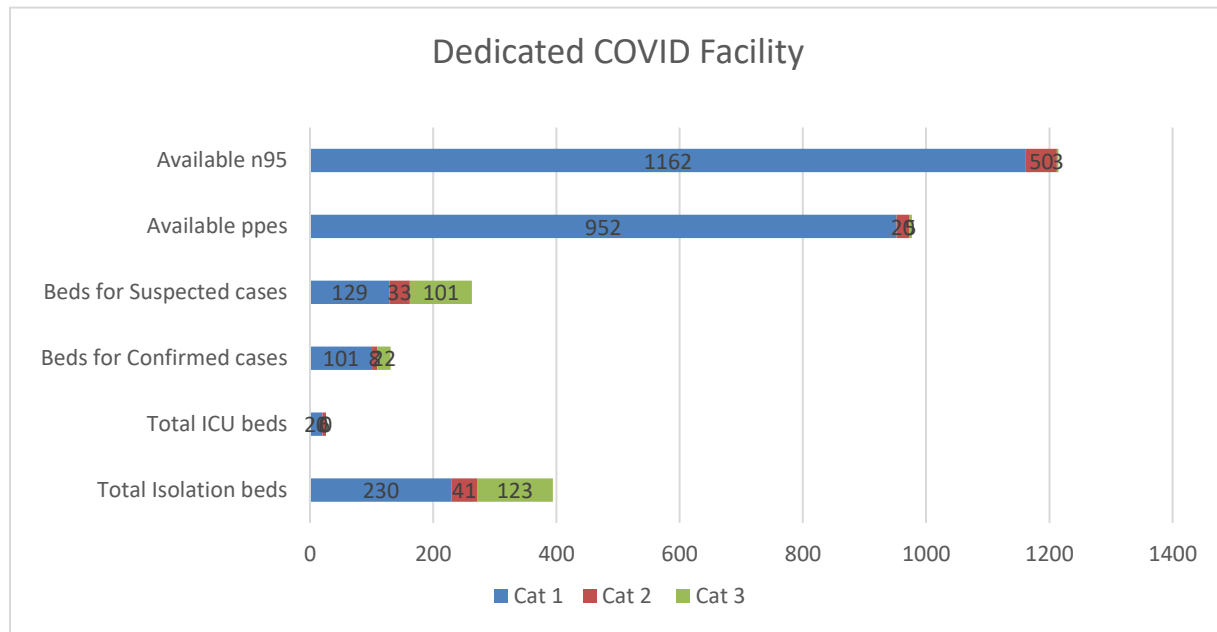
Cell Contents

Count

% of Row

% of Column

22% are active cases and 77 % have been discharged. 25% of females are active cases whereas 75% females have been 20 % males are active and 80% have been discharged. Discharge rate is more for males than females and active cases are seen more in females than male



Statistics

Variable	N	N*	Mean	SE	Mean	StDev	Minimum	Q1	Median	Q3	Maximum
age	28	1	39.18	4.27	22.60		1.00	23.50	38.50	53.75	90.00
total contact	28	0	62.71	6.32	33.46		7.00	40.00	67.50	75.00	161.00
contact trace	28	0	62.71	6.32	33.46		7.00	40.00	67.50	75.00	161.00
High risk	28	0	13.93	1.08	5.72		4.00	9.25	14.00	18.75	27.00
low risk	28	0	48.79	6.37	33.69		0.00	24.00	50.00	63.00	152.00
Community contact	28	0	44.29	5.48	29.02		0.00	16.50	53.00	61.00	104.00

	<i>Total Isolation beds</i>	<i>Total ICU beds</i>	<i>Beds for Confirmed cases</i>	<i>Beds for Suspected cases</i>	<i>Available ppes</i>	<i>Available n95</i>
<i>Cat 1</i>	230	20	101	129	952	1162
<i>Cat 2</i>	41	6	8	33	20	50
<i>Cat 3</i>	123	0	22	101	5	3

22% ACTIVE CASES

77% DISCHARGED CASES

25% CASES OF FEMALE

75% CASES OF MALES

75% FEMALES CASES DISCHARGED

80% MALES CASES DISCHARGED

DISCUSSION

Till 30th may the total no. of COVID-19 cases in Devbhoomi Dwarka district was 12 cases without any death. And total number of COVID-19 cases in Gujarat state was 16,356 out of 980 deaths were recorded.

And therefore Ahmedabad district taking the overall cases count to 12,539 and the number of the deceased cases were recorded 602.

Besides Ahmedabad, Surat now accounts for 1193 covid-19 cases and 56 deaths.

While in Vadodara now accounts for 726 cases and 32 deaths.

Ahmedabad:-

positive cases- 12,539

deaths-749

active-6571

discharged-5219

Surat:-

positive case-1193

deaths-56

Vadodara:-

positive case726

deaths-32

Devbhoomi Dwarka:-

positive case- 12

deaths-0

As in comparison of other districts of Gujrat Devbhoomi Dwarka district accounts for 12 without any death. which is much lower than other districts of Gujarat state.

CONCLUSION

The magnitude of the covid-19 cases are reported 12 in total number without any death in Devbhoomi Dwarka district of Gujarat. Due to the good strategic management of the government officials and hard-working and aware population. District has low population as compared to other districts of Gujarat.

"REFERENCE"

- <https://www.who.int/emergencies/disease/novel-coronavirus-2019/events-as-they-happen/>
- <https://www.who.int/india/emergencies/india-situation-report>
- <https://www.newindianexpress.com>
- <https://www.deccanherald.com>
- <https://www.timesofindia.com>
- <https://gujcovid19.gujrat.gov.in>

PART 2

ONLINE COURSE REPORT

"EPIDEMIOLOGY : THE BASIC SCIENCE OF PUBLIC HEALTH"

EPIDEMIOLOGY THE BASIC SCIENCE OF PUBLIC HEALTH

Epidemiology is the basic science of public health, because it is the science that describes the relationship of health or disease with other health-related factors in human populations, such as human pathogens. Furthermore, epidemiology has been used to generate much of the information required by public health professionals to develop, implement, and evaluate effective intervention programmes for prevention of disease and promotion of health.

What is epidemiology?

Defining epidemiology is difficult primarily because it does not represent a body of knowledge, as does, for example, anatomy, nor does it target a specific organ system, as does cardiology. Epidemiology represents a method of studying a health problem and can be applied to a wide range of problems, from transmission of an infectious disease agent to the design of a new strategy for health care delivery.

Furthermore, that methodology is continually changing as it is adapted to a greater range of health problems and more techniques are borrowed and adapted from other disciplines such as mathematics and statistics. Maxcy, one of the pioneer epidemiologists of the past century, offered the following definition: "Epidemiology is that field of medical science which is concerned with the relationship of various factors and conditions which determine the frequencies. . The epidemiologist relates these frequencies and distributions of specific health parameters to the frequencies of other factors to which populations are exposed in order to identify those that may be causes of ill health or promoters of good health. Inherent in the philosophy of epidemiology is the idea that ill health is not randomly distributed in populations, and that elucidating the reasons for this non-random distribution will provide clues regarding the risk factors for disease and the biological mechanisms that result in loss of health.

Epidemiology has been described as the "art of the possible". Because epidemiologists work with human populations, they are rarely able to manipulate events or the environment as can the laboratory scientist. They must, therefore, exploit situations as they exist naturally to advance knowledge. They must be both pragmatic and realistic. They must realize both the capabilities and limitations of the discipline. Morris has said that the "epidemiologic method is the only way to ask

some questions., one way of asking others and no way at all to ask many” (Morris). The art of epidemiology is to know both when epidemiology is the method of choice and when it is not, and how to use it to answer the question.

Uses of epidemiology in support of public health:-

Epidemiology is the basic science of public health because it is the health science that describes health and disease in populations rather than in individuals, information essential for the formulation of effective public health initiatives to prevent disease and promote health in the community.

1. Describe the spectrum of the disease:-

Disease represents the end-point of a process of alteration of the host's biological systems. Although many disease agents are limited in the range of alterations they can initiate, others, such as measles, can cause a variety of disease end-points. For example, the majority of infections with rubella (the measles virus) result in the classical febrile, blotchy rash-disease, but the rubeola virus can also cause generalized haemorrhagic rash and acute encephalitis. Years after initial infection, measles can also cause subacute sclerosing panencephalitis. a fatal disease of the central nervous system. Various types of epidemiological studies have been used to elucidate the spectrum of disease resulting from many agents and conditions. For example, cohort studies have been used to document the role of

high blood pressure as a major cause of stroke, myocardial infarct, and chronic kidney disease.

2. Describe the natural history of disease:-

Epidemiological studies can be used to describe the natural history of disease, to elucidate the specific alterations in the biological system in the host and to improve diagnostic accuracy.

3. Community diagnosis.

Epidemiological surveys are often used to establish the morbidity and mortality from specific diseases, allowing efficient use of limited public health funds for control of those diseases having the greatest negative impact on the health of the community.

4. Describe the clinical picture of a disease.

Epidemiological strategies can identify who is likely to get a disease such as capillariasis, the characteristic symptoms and signs, the extent of the epidemic, the risk factors, and the causative agent, and can help to determine the effectiveness of treatment and control efforts

5. Identify factors that increase or decrease the risk of acquiring disease. Having specific characteristics increases the probability that individuals will or will not develop disease. These 'risk factors' may be social (smoking, drinking), genetic (ethnicity), dietary (saturated fats, vitamin deficiencies), and so on. Knowing these risk factors can often provide public health professionals with the necessary tools to design effective programmes to intervene before disease occurs.

6. Identify precursors of disease and syndromes. High blood pressure, a treatable condition, has been identified through

case-control studies and cohort studies as a precursor to heart disease, stroke, and kidney disease

7. **Test the efficacy of intervention strategies.** A primary objective of public health is to prevent disease through intervention in the disease process. But a vaccine or other intervention programme must be proven to be effective before it is used in the community. Double-blind placebo-controlled trials are a necessary step in developing an intervention programme, whether that programme is administration of a new vaccine,
8. **Investigate epidemics of unknown aetiology.**
Epidemiological strategies were used to establish the extent, cause, modes of transmission, and risk factors for Ebola haemorrhagic fever, which first occurred in the Congo in 1976
9. **Evaluate public health programmes.** Departments of health are engaged in a variety of activities to promote the health of the community, ranging from vaccination programmes to clinics for the treatment of specific diseases. Ongoing evaluation of such programmes is necessary to assure that they continue to be cost-effective. Periodic review of routinely collected health statistics can provide information about the effectiveness of many programmes
10. **Elucidate mechanisms of disease transmission.**
Understanding the mechanisms of disease transmission can suggest ways in which public health professionals can protect the public by stopping transmission of the disease agent.
Epidemiological studies of the various arboviral encephalitides

have incriminated certain species of mosquitoes as the vectors of disease and specific animals as the reservoirs for the viruses

11. **Elucidate the molecular and genetic determinants of disease progression.** Epidemiological strategies helped to elucidate the changes in the human immune response by CD4 and CD8 cells that accompany infection by disease agents

Applications of epidemiology Specific epidemiological study designs are used to achieve specific public health goals. These goals range from identifying a suspected exposure-disease relationship to establishing that relationship, to designing an intervention to prevent it, and, finally, to assessing the effectiveness of that intervention. The usual sequence of study designs in the identification and resolution of a disease problem are:

- Ecologic studies
- Cross-sectional (prevalence) surveys
- Case-control studies
- Cohort studies
- Experimental studies

Ecologic studies:-

The use of existing statistics to correlate the prevalence or incidence of disease in groups or populations to the frequency or trends over time of suspected causal factors in specific localities

has often provided the first clues that a particular factor may cause a specific disease.

Cross-sectional:-

surveys Cross-sectional surveys establish the frequency of disease and other factors in a community.

Case-control studies:-

The case-control study compares the prevalence of suspected causal factors between individuals with disease and controls. If the prevalence of the factor is significantly different in cases than it is in controls, this factor may be associated with the disease. Although case-control studies can identify associations, they do not measure risk. An estimate of relative risk, however, can be derived by calculating the odds ratio. Case control studies are often the analytic study design used initially to investigate a suspected association. Compared to cohort and experimental studies.

Cohort studies:-

Cohort studies follow defined groups of people without disease to identify risk factors associated with disease occurrence. Cohort studies have the advantage of establishing the temporal relationship between an exposure and a health outcome. Because the population studied is often defined on the basis of its known likelihood of exposure to suspected factors, cohort studies are particularly suitable for investigating health hazards associated with environmental or occupational exposures. Further, cohort studies will measure more than one outcome of a given exposure and, therefore, are useful for defining the spectrum of disease resulting from exposure to a given factor. Occasionally a cohort

study is done to elucidate the natural history of a disease when a group can be identified that has a high incidence of disease but in which specific risk factors are not known. Although this cohort is not defined on the basis of a known exposure, questions are asked and biological specimens are collected from which exposure variables can be identified concurrently or in the future.

Experimental studies :-

Experimental studies differ from cohort studies because it is the investigator who makes the decision about who will be exposed to the factor based on the specific design factors to be employed. Therefore, confounding factors such as choice that may have led to the subjects being exposed in the cohort studies are usually not a problem in experimental studies. Because epidemiologists usually study human populations, there are few opportunities for an investigator to deliberately expose participants to a suspected factor. On the other hand, intervention studies of randomly assign individuals.

Summary:-

Epidemiology is the core science of public health because it defines health and disease in human populations, describes disease etiology, and evaluates public health control efforts. Epidemiology achieves these goals through a variety of strategies and methods. Epidemiology is a dynamic science, and is continually evolving new strategies and methods in support of public health goals.