**A STUDY OF COMPARATIVE WEATHER CHANGES AND INFLUENZA PREVALENCE WITHIN RUARAKA DISTRICT IN NAIROBI, KENYA**

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**ABSTRACT.**

This report is meant to find out the relationship among temperature, precipitation, humidity and influenza prevalence. The amount or level of temperature, precipitation and humidity has direct effect on the weather and climatic changes in the area. These changes have a great influence on influenza infections. This influenza majorly attacks the upper respiratory tract parts of the body.

This research uses data collected in our TAHMO weather station in our school and the upper respiratory tract infections as recorded in UZIMA dispensary, a constituent health facility of St. Scholastica Catholic School which is opposite the TAHMO weather station.

The data collected ranges from July to December 2016. During this time, there are low temperatures in the first two months followed by high temperature in September and October then low in November and high again in December.

Objectively, by the end of this research we should be able to identify the relationship between the factors on study and the possible approaches to curb the problem.

The flu virus is more infectious in cold winter temperatures than during the warmer months. At winter temperatures, the virus's outer covering, or envelope, hardens to a rubbery gel that could shield the virus as it passes from person to person, the researchers have found. At warmer temperatures, however, the protective gel melts to a liquid phase. But this liquid phase apparently isn't tough enough to protect the virus against the elements, and so the virus loses its ability to spread from person to person.

**PROBLEM.**

Our problem is to draw an informed conclusion on atmospheric weather changes and upper respiratory tract infections prevalence. As well, we would like to know how temperature levels affect the amount of precipitation, humidity and the amount of dust in the atmosphere.

The question is: ‘Can atmospheric temperature, precipitation, and humidity be used to predict influenza infections in an area?’

**PURPOSE.**

The purpose of this study is to find out the direct relationship among precipitation, humidity, temperature and influenza infections prevalence in the upper respiratory tract within Ruaraka and its environs.

**HYPOTHESIS.**

Humidity, precipitation and air temperature has a direct relationship with influenza infections within Ruaraka district.

**PROCEDURES.**

1. Collect data on weather changes from TAHMO weather station
2. Calculate mean daily averages for a specific amount of time.
3. Collect data from the dispensary or a health centre within the locality.
4. Tabulate the data.
5. Plot the graph.
6. Using the graph, compare the relationship between temperature, precipitation, humidity and influenza prevalence.

**RESULTS.**

All data was taken in Uzima dispensary and the TAHMO weather station.

DATE: 1ST JULY TO 31ST DECEMBER 2016.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MONTH** | **humidity** | **Precipitation** | **temperature** | **flu prevalence <5yrs** | **flu prevalence >5yrs** |  |  |  |  |
| JULY | 73.5 | 0.0007 | 17.8 | 17.1 | 19.5 |  |  |  |  |
| AUGUST | 71.9 | 0.0212 | 17.8 | 9.5 | 14.2 |  |  |  |  |
| SEPTEMBER | 69.3 | 0.0078 | 19.0 | 9.6 | 11.9 |  |  |  |  |
| OCTOBER | 63.9 | 0.0079 | 21.0 | 8.5 | 9.2 |  |  |  |  |
| NOVEMBER | 79.5 | 0.0092 | 19.7 | 6.1 | 6.2 |  |  |  |  |
| DECEMBER | 72.7 | 0.0081 | 20.2 | 3.9 | 3.5 |  |  |  |  |
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| DISCUSSION |  |  |  |  |  |  |  |  |

It is true that the amount of temperature has a direct effect on precipitation and humidity in the area. When the average temperature is at its highest like 210c, the cases reported reduce and the same applies as it is evident in November and December as in the data tabulated above.

There may be some errors in the data collected since these are reported cases. It is possible that a number of cases were not taken for a professional medical observation ending up receiving home treatment.

**CONCLUSION**

All these weather changes have a direct effect on the influenza cases in the area.

This information can be useful to the doctors in the health centre to plan on the drugs to be purchased. If the data is taken at regular times and the right interpretation accorded, this information can be useful to determine times of prevalence of this infection and the preventive measures to be taken before the disease occurs.

Our question was thereby answered duly.

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