

Correlational Inquiry between COVID-19 Patient's Age and Recovery Rate

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Abstract

The Covid-19 spreads in every country in the world. Philippines had increased the cases of COVID-19 since it started. The data gathered in the official website of the department of health COVID-19 tracker in the Philippines and the age of the patients and days of recoveries from January to April 2020 with 5454 cases and 243 recoveries. The treatment used in the data is Pearson r, a two-tailed t-test and it was measured in excel 2016. The result in COVID-19 patient's age and Recovery rate has no significant correlation because the average of the significance level is greater than on the alpha level of 0.5 but it has moderate positive strength in correlation

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1. Introduction

The virus appeared and generated since December 2019 in Wuhan City, Hubei Province, a central city in the People's Republic of China wherein there are theory and assumptions that this biological disease was unexpectedly and unconsciously appeared and formed because of selling and consuming exotic wildlife species [1] and animals especially the aliped or tittle bat and snakes that were the main reason and factor in attribution for the cause of existing this disease. In addition to the improper and inaccurate processing and uncleanness in preparing this exotic food [2], a theory was published in a Chinese paper by a group of Chinese scientists, claiming that the coronavirus was spread by both snake and bats.

As Covid-19 spread towards every country around the world it resulted for the worldwide interruptions, inconvenience and disruptions of all activities, businesses, small sectors and most governments around the world have temporarily closed such as public and educational institutions in an attempt to restrain the increment and prevalence of the said disease that is now considered as pandemic COVID-19 Educational Disruption and Response. In 2020, April 06, the virus spread in humans to human transmission, and it is spreading quickly. The transmission of the virus is by droplets through coughing and sneezing and also can live in hours in specific objects. The effects of this new virus can cause lung failure or what we could acute

respiratory disease type 2 [3]. This new virus according to study[4] can be lethal to a person who is a deficiency of immune system or in a person with a disease like cancer, diabetes and that every age tends to affect by this virus.

The virus is contagious, and it increasingly spread throughout the. One of the country speed up the cases of COVID-19 According to[5] predicted that Italy positively increases the cases up to 36 in only just. Italy and the Philippines may be nearly into this event in Italy, but the possibility is something not clearly define?. Furthermore, the rampant of positive cases of COVID-19 around the world creates impacts; first is the interruption of classes, which leads to students stuck their knowledge to gain and to learn more. Second is the cause for out of work of people truculent to be affected by the said disease. The third is the scarcity and shortage of food supply due to the limited and restricted activities and only relying on the support of government response.

Furthermore, the impact on the economic progression of the country dealing with this disease. This research study report utilized Pearson r treatment to predict the Patient's age and the rate of recovery. However, searching with this technique wants to encourage future empirical studies in the Field of investigating and reporting regarding this topic. Searching may be impractical for the reason of lack and deficiency of information sources due to the few studies had investigated and conducted the influence between the two variables. Nevertheless, the scarcity of empirical data and further research is essential to be complement concerning the issue in which it will magnify the positive relationship between the variables.

1.1. Conceptual Framework

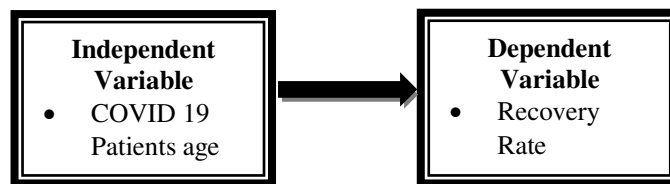


Fig. 1. Conceptual Framework

Figure 1 shows that the independent variable is COVID-19 Patients age; it has the following moderating variable, which is: Gender, Treatment applied/Medical care, Environment, Facility Equipment. And the dependent variable is the Cases of COVID-19 in the Philippines of this study.

1.2. Research Question and Null Hypothesis

The main research question of this paper: Do COVID-19 Patients age significantly influence the Recovery Rate?

The null hypothesis are:

Ho: $\rho_{xy}=0$ Population Correlation is zero; there is no relationship between the COVID-19 Patient's age and the recovery rate in the population. $\rho = \text{'rho'}$

H1: $\rho_{xy} \neq 0$ Population correlation is not zero; there is a relationship between COVID-19 Patient's age and recovery rate – could be positive or negative, i.e., two-tailed test.

II. Methodology

A correlational research design will be utilized to find out if there's a correlational relationship between and Covid-19 recovery rates. This kind of research method helps the researchers to seek out what type of relationship can be conceived and occurred among the two variables. For instance, correlational research design doesn't provide or prove causation, but it can actively support causal hypothesis [6]. Pearson's Correlation Coefficient is a technique for investigating the relationship between two quantitative, continuous variables, for example, age and blood pressure. Pearson's correlation coefficient (r) is a measure of the strength of the association between the two variables. Two-tailed tests also are utilized in this study; it is a method in which the critical area of a distribution is two-sided and tests whether a sample is greater than or less than a specific range of values [7].

A two-tailed test is designed to examine both sides of a specified date range as designated by the probability distribution involved [15] It is also used in null-hypothesis testing and testing for statistical significance. If the Sig (2-Tailed) value is greater than 05, that means, increases or decreases in one variable do not significantly relate to increases or decreases in your second variable. Conclude that there is a statistically significant correlation between your two variables. The data are collected on the website of the department of health of the COVID-19 in the Philippines. From Jan to April 2020 the number of observations is $n = 243$ in people who are already recovered. From January to April 2020, the number of recoveries in each age is collected randomly by the researcher. To have the number of recovery as the explanatory variable or independent variable and the dependent variable are the age of the improvements.

III. Findings

The collection of the data gathered on the website of the department of health within the Philippines in the COVID-19 tracker. A COVID-19 virus tends to affect older adults [8]. All patients excluding one had a history of contact with entities from Wuhan, which was precisely imperative for analysis. In our study, from January to April there are 243 recovered patients, and roughly patients that had coexisting medical conditions such as diabetes, hypertension, chronic liver disease, chronic obstructive pulmonary disease, and cardiac disease are the most near to the hazard virus [9]. In our findings, the researchers use Pearson r Correlation to designate the association between a set of independent variables and the dependent variable. This is somehow relevant to the findings in the research of Alipio [10] wherein he describe the characteristics of the epidemic in the Philippines. Also, he provided a report on the situation of healthcare professionals in the Philippines which is not desirable as compared to other countries [11].

Table 1. Correlation Coefficients

Coefficients r	Degrees of freedom (N)	t Stat	P-value
0.065	242	1.0094	0.32

With a coefficient r of 0.065 and a p -value of 0.32, it signifies and visualizes the level of significance is greater than means. It rejects the H1 for using a 0.05 level of significance. It has no significant correlation but moderately positive; the degree of strength is poor for only having of 0.32 p -value. However, the strength is weak; it reveals enough that there is a relationship between the two variables showing the 32% of having a recovery rate by chance base on our p -value result. This is relevant to the findings of Alipio's paper on the demographics of the patients of COVID-19 in the Philippines [12].

Table 1. Correlation Result

	Patient's Age	Days of recovery
(Patient's Age) Pearson Correlation	1	0.032
Sig. 2-tailed		1.0094
N	243	243
(Days of recovery) Pearson Correlation	0.032	1
Sig. 2-tailed	1.0094	
N	243	242

Table 2, shown above, is the measurement between the two variables using Pearson r Correlation. Results are the correlation between days of recoveries, and the age of the patients is .032; $r=.032$. And it has shown that there's a moderate strength positive correlation. The level of significance of this study is 0.5, and the average of the level of the significant value above is 1.0094. The level of importance of the study is higher than 0.5, and it is not statistically significant, and it means it occurred by chance that it has the p -value= .32 and with this, it has 32% of recovery rate by chance.

IV. Conclusion

Based on the findings of the study, it hypothesized that the COVID-19 Patients age moderately influence the Recovery rate. The results of the study are sufficient to explain and to reveal that there is a concomitant to the assumption and cognitive theory of the study research. It demonstrates that COVID-19 Patients' age influenced the patients' recovery rate, most of the patients are adults, and adults are more expose and susceptible to adopt the said disease/virus for the reason that they are getting started weak when it comes to physical health [13]. Besides because of the weak body and has these underlying conditions particularly in lungs they can't certainly recover in some illnesses and diseases that they get and obtained practically the communicable disease that is tackled and discussed in this study.

The association between the two variables and consider the foundation of the research theory. The children are innocent bystanders there have limited activities such like playing, study in school and helping in the housework's unlike in adults that having a lot and complexity of the task, works and activities, definitely they are the one who exposes in the outside environment [14]. That's one of the factors to be accepted why there

are few numbers of young cases of COVID-19, especially in the Philippines. For instance, young patients can easily recover for the said virus/communicable disease for some reason that their body is rapidly developing and illness free [16] it is also stated that this disease triggered and attack the lungs e.i, the respiratory system of the body. [17]

Moreover, predominantly adults are the typical host and carrier of this pandemic; the main concern is Patients' age plays a role in the level of recovery towards underlying severe conditions, mainly the adults and seniors [18]. Also based on the result and findings it shows there's a correlation between the variable but moderately positive that means, COVID-19 Patient's age does statistically influence the total recovery rate.

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