

A Comparative Study on the Number of Deaths Between Males and Females in Different Regions of the Philippines

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Abstract:- This study was conducted to compare the results of the total number of the registered deaths in 2021 by both genders. The research was quantitative research however it was classified as secondary type of research since the data obtained already existed. The data was gathered from the website of PSA in which the number of deaths of both genders was already recorded. After gathering the data, the researchers compared the numbers of deaths and computed for the test of normality using Kolmogorov-Smirnov Test. After the computation, the result showed that the data obtained from the PSA was not normally distributed. This is why the researchers used the Mann-Whitney U Test to compare the data in order to draw conclusions from both genders if which of them could be healthier based on the recorded number of deaths. Upon using the Mann-Whitney U test, results showed that there was no significant difference on the number of deaths between males and females in different regions of the Philippines despite men having a higher record of deaths compared to women in PSA in the year of 2021. The computed level of significant was .053 therefore this study failed to reject the null hypothesis.

Keywords:- Comparative, Deaths, Males, Females.

I. INTRODUCTION

Death is a common phenomenon in human's life. Biologically, it is the cessation of all biological functions that sustains organisms. In psychology, the physical signs of death and its occurrence are being studied in the lens of human behavior as well as their thought leading up to one's own death and of the other. In philosophy, a debate about death and morality are explained in several ways. Plato believed that the soul is immortal and will remain after death when the physical body is no longer existing. He explained that the fear of death is only natural to humans, but death should be viewed as the achievement of life (Hupp, 2017).

Causes of death are always different depending on the situations. But the leading cause of death is illness or morbidity. According to the preliminary data from the Philippine Statistics Authority, the ischemic heart diseases is one of the leading causes of mortality in the Philippines with 77, 173 deaths recorded from January to September 2022. Another factor is heart diseases that accounted for 18.5 % of

total registered deaths. Second is Cerebrovascular diseases that causes stroke with 42,890 deaths. Neoplasms, commonly known as cancer, ranked third with 42,497 recorded cases (Cabico, 2023). Also, in 2021, there were 879,429 total of deaths registered in the Philippines. From 613,936 in 2020, an increase of 43.2 percent was tallied in 2021 that is equivalent to crude death rate of 8.0, or eight deaths per 1,000 population. This corresponds to an average of 2,409 deaths per day, which translates to 100 deaths per hour or about 2 deaths per minute. Based on the given data, a significant increase of death rates has been recorded from 2020 to 2021. Despite having pandemic in 2021, the leading cause of death is still a heart attack.

Surprisingly, the number of deaths between male and female is different. In some aspects of health, men are worse; in some situation, women are worse. The recorded health between genders is inconsistent across historical times. This is the very reason why a study about genders is challenging. The differences between male and female mortality rates changed considerably during the 20th century. Mortality rates have been decreasing steadily for both men and women for more than a century in most countries (Badford, 2006). Male life expectancy is lower than female life expectancy in all countries. But to say that men have good health based on the result of their mortality rate would be a hasty generalization. This paper was designed to compare the number of deaths between males and females based on the recorded deaths in PSA as of 2021 and arrived at a plausible conclusion on whose gender is healthier.

II. LITERATURE REVIEW

According to the result of the study conducted by Rosella et.al (2006), from 2000 onwards, the mortality rates of men with higher income were lower compared to those women with lower income. Relative mortality was greater among men than women for cancer, respiratory problems, and injury-related deaths. There was an absolute decline in circulatory deaths among men, although relative deciles were similar to women. The largest absolute mortality gains were seen among men over the age of 85 years. The previous study is relevant to the present study because it talks about the mortality rates between genders although the difference of the previous study from the present study is that it dealt with the

social status of men and women and its effect on their mortality rates.

Zhao and Crimmins (2022) concluded in their study that although it has been established that male life expectancy is now lower than female life expectancy in all countries, there is a clear variability in the size of differential because of behavioral and epidemiological factors between men and women across regions and time. Over the time, an infectious disease was replaced by chronic disease such as cancers and cardiovascular conditions that change the relative level of mortality rates for men and women becomes closely associated with risk-related behaviors (e.g., obesity, cigarette smoking, alcohol consumption) and management of those conditions.

The previous study is relevant to the present study in a way that it analyzes the life expectancy of both genders based on their morbidity that causes significant increase in their mortality rates. However, the previous study is different from the current study in a way that the previous study is an epidemiological study and identifies all illness while the present study is a comparative study between genders based on their number of deaths.

Based on the collaborative cohort study conducted by Ikeda, et.al (2007), single status was highly associated with risk of mortality compared to married status both men and women. Also, divorce and widowhood were associated with elevated risk for men, but not for women. Thus, the findings suggest that status such as being single, divorce, and widowhood constitute potentially adverse health effects.

The previous study is relevant to the present study in such a way that it talks about both genders and their mortality rates, the only difference is that the previous study talks about the status of both genders being single, married, and widowed or widower.

A. Conceptual Framework

Crimmins et al., (2010) believed that a large body of biological, clinical, as well as epidemiological research point out the important factors that are risk-identified because it could be an early indicator of physiological change in humans. It is as important as determinants of disease, disability, and death. The demographic analysis of health was once limited to the outcome of mortality however the advent of sample surveys 50 years ago have expanded the study of more and additional health indicators. Through this, it expanded to self-reports of functioning problems, diseases, and overall health study. A lot of demographic work incorporated information on morbidity and health focusing on indicators of disability, which is only one dimension of health—and one that may not be the most theoretically relevant in trying to determine how health differs across populations or over time (Freedman et al. 2004; Manton and Gu 2001).

World Health Organization and the Institute of Medicine in the United States conceptualized the process of health change in populations and provided an extensive body of work that is produced by working groups as well as by

individual researchers (see Verbrugge and Jette 1994). Structuring on this work, Crimmins et al. (2010) added that using biologically informed data allows better understanding of what we called “morbidity process.” Figure 1 below shows the Morbidity Process conceptualized by Crimmins et al, (2010).

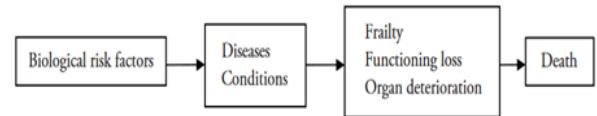


Fig 1. The Morbidity Process

Figure 1 shows that this process begins with physiological changes that is characterized by onset risk factors indicating physiological dysregulation, then proceeds with the onset of disease and functioning loss, and finally enters a frailty state characterized by a loss of organ reserve and severe physiological deterioration (Ferrucci et al. 2002; Fried et al. 2001; Morley, Perry, and Miller 2002). All the indicators can lead to death as what is shown in Figure 1. With numerous biological informed data, it will be easy to capture the process for populations and for individuals. This dimensioning of health contrasts somewhat with the disablement process, which is influenced by the interaction of physical ability and environmental challenge, while the focus of the morbidity process is health change intrinsic to a person (Verbrugge and Jette 1994).

The conceptual framework mentioned above was relevant to the present study since it explains the morbidity process that could happen to an individual that leads to one ultimate phenomenon—death. This study aimed to examine the number of deaths between males and females by comparing their data in which result could testify about which gender could be much healthier in 2021.

B. Research Problems

Different studies have been resurfacing about the general health of both genders. Over the past decades, studies have found that women tend to outlive men. This is due to some behavioral factors such as smoking, eating unhealthy foods, and lack of proper care for themselves. Biological differences help to explain why women lives longer. According to PRB (2001), scientists believe that estrogen in women combats conditions such as heart disease by helping reduce circulatory levels of harmful cholesterol. Women are also thought to have stronger immune systems than men. Researchers have found that the gender gap in life expectancy is smallest for the wealthy and highly educated, suggesting that broadening access to quality health care, diet, and other advantages can help men achieve a level of longevity closer to that of women.

In 2021, PSA recorded a total of 879,429 deaths. The number of male deaths was higher compared to female deaths. With that being said, the researcher would like to compare the number of deaths between genders in different regions of the Philippines. The researcher would like to examine the difference between the number of deaths of both genders and arrive at a conclusion of which gender could be healthier.

C. Hypothesis

There is no significant difference on the number of deaths between males and females in different regions of the Philippines.

D. Definition of Terms

The following terms were obtained from this study and defined operationally:

- **Death.** It is defined as the end of the life of a person or organism. In this research, it refers to the variable being measured.
- **Female.** A gender that can bear offspring. It refers to the gender being compared in this study.
- **Male.** A gender opposing to female. In this study, it refers to the gender being compared with female.
- **Regions.** It is administrative divisions that primarily serve to coordinate planning and organize national government services across multiple local government units (LGUs). In this study, it refers to the places where different cities are located.
- **Philippines.** It refers to a country in Asia. In this study, it refers to the place where the study was conducted.

III. METHODOLOGY

This study was a secondary type of research, it was a research method that involves using data that already existed.

The data used an external source where the said data was obtained outside the organization. This was taken from the PSA website where the number of deaths was recorded. Similarly, this study was quantitative by nature. It used a comparative research design which goal was to compare the results between the number of deaths of both genders in 2021 obtained from the PSA.

Secondary sampling designs were applied after some data or other information had already been obtained. Since this was a secondary type of research, no participants were needed in this study since the data already existed.

A. Data Analysis

According to LeCompte and Schensul, research data analysis is a process used by researchers to reduce data to a story and interpret it to derive insights (Hasan, 2021). This study used the Mann-Whitney U-test as a statistical treatment to compare non-parametrical data. The distribution of data was tested using Kolmogorov-Smirnov Test and results showed that the data was not normally distributed.

B. Ethical Considerations

Since the study was a secondary type of research and the data obtained from the internet was already available and existing, the researchers were not able to secure consent from the organization to use their data for further studies. However, the data adhered to confidentiality and no names and personal details except the number of deaths between males and females were mentioned in the study.

IV. RESULTS AND DISCUSSIONS

This chapter presented the results and discussions of the tabulated data obtained from the PSA.

A. Results

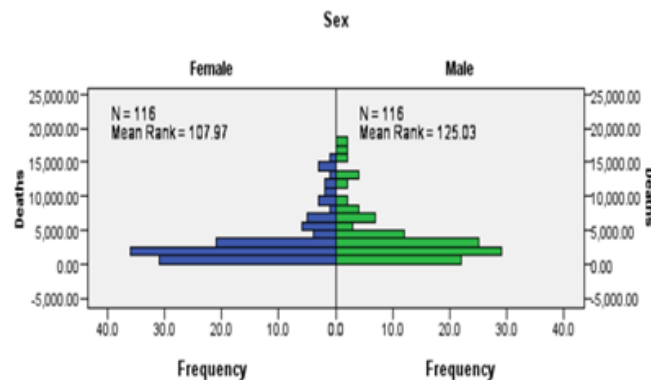


Fig 1. Number of Deaths Between Males and Females as Registered in PSA, Year 2021

Figure 1 showed the number of deaths registered in PSA in the year 2021. The graph clearly showed that the registered death between males and females were different. The graph also showed that males have a higher number of deaths on the said year compared to females. The mean rank for females were 109.07 compared to the mean rank of males which was 125.03, it was almost close to the conclusion that women were healthier compared to men.

Table 1. Results of Computed Independent Samples Mann-Whitney U Test on the Number of Deaths Between Males and Females in Different Regions of the Philippines

Total N	232
Mann-Whitney U	5,738.000
Wilcoxon W	12,524.000
Test Statistics	5,738.000
Standard Error	511.146
Standardized Test Statistics	-1.937
Asymptotic Sig. (2-sided test)	.053

Table 1 showed the results of the computation using the Independent Samples-Mann-Whitney U test. This was used instead of T-test because the data obtained from PSA was not normally distributed. Results showed the total mean of both genders which was 232. The Mann-Whitney U and Test Statistics were both 5,738.000 while the Wilcoxon W was 12,524.000. The computed Standard Error was 511.146 and the Standardized Statistic Test was -1.937.

Table 2. Summary of Values on the Test of the Number of Deaths Between Males and Females in Different Regions of the Philippines

Test	Level of Significance	Decision	Interpretation
Independent Samples Mann-Whitney U Test	.053	(Accept Ho) Retain Null Hypothesis	No Significant Difference

Table 2 showed the summary of values on the test of the numbers of death between males and females in different regions of the Philippines. The computed level of significant was .053 thus this study failed to reject the null hypothesis. Therefore, there was no significant difference on the number of deaths between males and females in different regions of the Philippines.

V. SUMMARY, CONCLUSION, AND RECOMMENDATION

A. Summary of the Study

This study was conducted to compare the results of the total number of registered deaths in 2021 by both genders. The research was quantitative research however it was classified as secondary type of research since the data obtained already existed. The data was gathered from the website of PSA in which the number of deaths of both genders was already recorded. After gathering the data, the researchers compared the numbers of deaths and computed for the test of normality using Kolmogorov-Smirnov Test. After the computation, the result showed that the data obtained from the PSA was not normally distributed. This is why the researchers used the Mann-Whitney U Test to compare the data to draw conclusions from both genders if which of them could be healthier based on the recorded number of deaths.

B. Summary of Results

Upon using the Mann-Whitney U test, results showed that there was no significant difference on the number of deaths between males and females in different regions of the Philippines despite men having a higher record of deaths compared to women in PSA in the year of 2021. The computed level of significant was .053 therefore this study failed to reject the null hypothesis.

C. Limitation of the Study

This study had potential limitations. Since this study was a secondary type of research and all data used in this study were obtained from PSA, the researchers had no time to validate the data. Similarly, this study delimited itself in the year 2021 and the succeeding years were not included knowing that it could also make a good addition to the research study. Results of the study could have been profound if data from succeeding years were included. Additionally, this study is limited to the gender, both males and females with no other factors were included such as the age and reason of death. If death would be classified

with age and reason for deaths, the study could have a better result in terms of comparative research.

D. Conclusions

The following were the conclusions of the study:

- Male had a higher registered number of deaths with a total of 491, 093 compared to females with a total number of 388,376 as recorded in PSA.
- According to the findings of the study, despite males had a higher registered number of deaths in 2021, there was no significant difference on the number of deaths between males and females in different regions of the Philippines.

E. Recommendations

Based on the drawn conclusions of the study, the researchers recommend the following:

- Males should take care of themselves properly and avoid such behavioral factors that could affect their health in general such as smoking or vaping, taking drugs, and engaging to unprotected sex among others.
- Both genders can enroll in a fitness program that offers exercises and watches their dietary meal to maintain a healthy lifestyle and longer life span

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