Comparison of survivorship between males and females pre-1925 vs. post-1975

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Abstract

Showing the survivorship of both males and females before 1925 and after 1975, comparing the differences in deaths to see which gender prevails in its survivorship. The results seem to be that females and males are mostly identical in their survivorship curves Pre-1925, while in Post-1975 females have higher survivorship and age of death. Some further exploration is to find out different causes that might have hindered the male's survivorship. Having collected data at Westview Cemetery in Farmville VA, finding different gravesites to involve in this data from different places around VA would be a better way to make the results well rounded and specific to VA in general and further into all of US cemeteries.

Key words

Survivorship, Demography, Population, Gender, Graveyard, Headstone, Age

Introduction

There have been debates on whether males or females live longer. Many things have to be considered such as: year, deaths, births, diseases, pollution, and so on. Such theories like The developmental-genetic theories discuss how senescence, the deterioration with age, is a fundamental part of development in life (Candore et al. 2006). Some other factors could be the area a person is living. Rural areas that are close to urban areas experience greater mortality than other rural areas (James and Cossman 2017). All these causes could be the difference in results for male and female in deaths. Our hypothesis is that females will show a higher survivorship than males and post-1975 will have higher survivorship than in pre-1925.

Methods

Study site

This study was conducted at the Westview cemetery in Farmville VA September 2017. A class of 16 was split into groups consisting of individuals looking for headstones with dates of pre-1925 and post-1975. Pre meaning individuals that died before 1925 and Post meaning individuals that died after 1975. Each group would then be separated into sections of the cemetery, trying not to overlap sections, and would look for the headstones with people who've died either before 1925 or after 1975.

Life data sheet

Tallies would then be marked on a life table data sheet that was split into 2 sections of male and female. The goal was to find the age at which the people lived. The age started at 0 and went in intervals of 5 all the way up to 116. Sex would be determined by name and age and then tallied at the age the person lived. Thirty minutes was given for the experiment and towards the end, the student then puts themselves into their respective groups according to the era and collectively counted every tally from each person to get further information.

Computerized data

Two excel graphs were comprised of the two sets of data using living years of age, totals of the tallies for each group, and survivorship between male and females in the cemetery.

Statistical analysis

The log-rank test R was used to determine whether the results for survivorship were significant. Probabilities that are less than .05 are significant. Determining the mean will give whether there is a significant different between both males and females or not.

Results

The sample sizes for recorded data were the two totals for pre-1925 (fig.1) and post-1975 (fig.2): female (88) and (86), males (104) and (96). The survivorship for males and females are similar though in post-1975 (Fig.2) females have a higher survivorship, but females and males have a similar pattern of survivorship in pre-1925 (Fig. 1). The results for woman are not significant for pre-1925 having a mean of .48 and males are as well not significant having a mean of .46. For both pre-1925 and post-1975, the results are shown to not be significantly different from male and female survivorship.

Discussion

The hypothesis of females having greater survivorship is confirmed from the results in the graphs. The faults in this experiment are not collecting data from the entirety of the graveyard, the fact that some of the headstones are not legible and certain names that could not be determined to be male or female. These factors, of course, hinder the research by decreasing certainties that the data is 100% accurate. The reasons could include excessive drinking, smoking, and occupational hazards among men (Glei and Horiuchi 2007). The cemetery the data was collected was populated with rich Caucasians to which only gives us data for that race. We have to include the thought of the survivorship being a certain way because the subjects were mainly wealthy and white. For further exploration, there

could be a wider study among cemeteries in Virginia, and different periods of time including various races. The big picture could be to see some of the reasons that one gender might live longer than another. Including cause and effect would make a great difference in the conclusive results for further studies, but nothing can be certain among the ratio of survivorship between male and female until a more exercised experiment.

Acknowledgment

I would like to thank my parents and my grandpa for always being there for me and for also paying half my tuition. I would also like to thank my bed for giving me the best sleep I could ask for.

Literature Cited

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Graphs/tables

Fig. 1 **Survivorship curves of males and females before 1925.** The blue and orange lines represent the proportion of the two genders still alive at the beginning of each age interval. Collecting data from a cemetery in Farmville VA searching for males and females that have died before 1925 or after 1975, leaving out unreadable or missing headstones and children.

Fig. 2 **Survivorship curves of males and females after 1975.** The blue and orange lines represent the proportion of the two genders still alive at the beginning of each age interval. Collecting data from a cemetery in Farmville VA searching for males and females that have died before 1925 or after 1975, leaving out unreadable or missing headstones and children.

Fig. 1

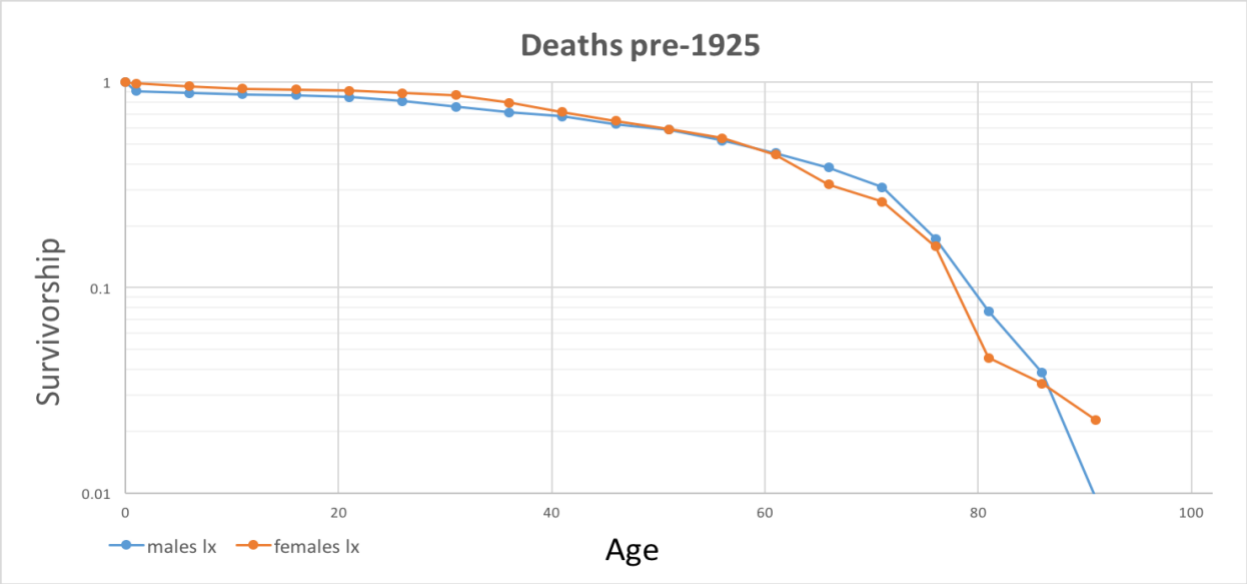
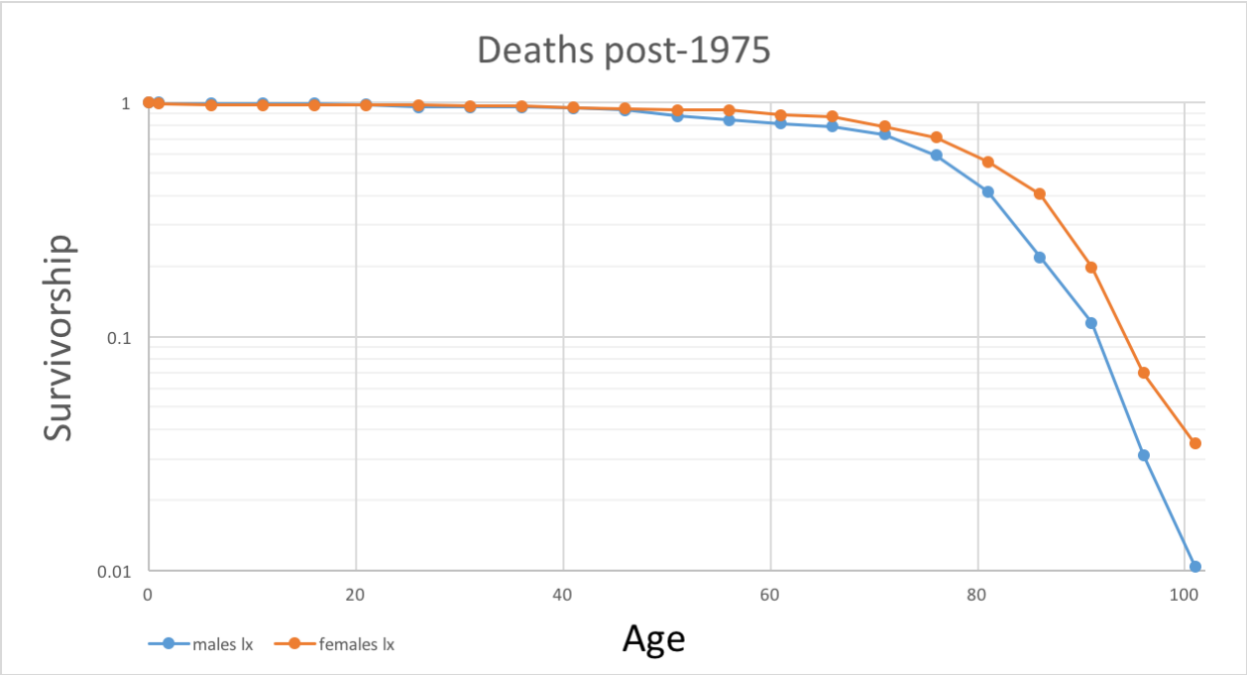

Deaths pre-1925
Survivorship
1
0.1
0.01
0
20
40
60
80
100
Age
males lx
females lx

Fig. 2


Deaths post-1975
Survivorship
1
0.1
0.01
0
20
40
60
80
100
Age
males lx
females lx