

# Demographic and Circumstantial Differences in Maine Completed Suicides Based on Industry of Employment and Rurality

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## Background

In Maine, 227 individuals die by suicide each year. Furthermore, the Maine suicide rate is approximately 20% higher than the national rate. Among Mainers 10 years of age and older, there are 4 suicides for every homicide. (Department of Health and Human Services, 2018). Maine's rurality may contribute to these increased rates of suicide. One study found that geographical factors influence the prevalence of completed suicides, evidenced by rising rates of deaths by suicide in rural areas. Furthermore, Maine has a high population of older adults and suicide rates are high in those who are in late middle age and older adulthood. Because rurality is associated with lack of resources, this certainly extends to available supports for older adults. (Arbore, 2019). Rural areas often include higher numbers of individuals working labor occupations, which are also associated with higher risks of suicide. (Bower & Emerson, 2021). When looking at occupation as a factor, a person's industry of employment may very well contribute to an increased risk of completed suicide. In a study done by Milner et al. (2018) they found the lowest risk of death by suicide was found in managers and clerical workers, while the highest risk of death by suicide was found in laborer's, machine operators, crew persons and other unskilled or semi-skilled occupations. Based on the review of the literature and data from the National Violent Death Reporting System (NVDRS), we believe that Mainers working in labor occupations, such as construction and agriculture, may experience an increased risk for completed suicide. Furthermore, older adults, particularly in rural areas, may also be at risk.

## Research Question/Hypothesis

What Are the Demographic and Circumstantial Differences In Maine Completed Suicide Based on Industry of Employment and Rurality?

## Limitations

- ❖ Notable lack of diversity in Maine's population.
- ❖ Data was collected from 2015-2019, therefore we do not have current data.
- ❖ Data is pre-pandemic
- ❖ NVDRS material is limited based on who provided the information and how long it took to receive it.
- ❖ Some information collected is based on previous records and may not be currently accurate.

## Methodology

- ❖ Our data is collected through the National Violent Death Reporting System (NVDRS), a comprehensive state-based system that centralizes data from sources such as: coroners, medical examiners and law enforcement. This database allows us to link data about the "who, when, where, and how" and to provide insight on "why" the deaths occurred. Access to this data is provided to us through the MCPS.
- ❖ We utilized data previously collected through the NVDRS over the past five years. The MCPC has secure, remote access to data that the OCME enters into the NVDRS case management system.
- ❖ Utilized RUCCA codes to determine if the individual lived in a rural, metro or micro setting.
- ❖ The study consisted of 1,222 individuals in Maine that died by suicide from 2015-2019.
- ❖ SPSS software was for data analysis between the two independent variables of rurality and industry, and the several dependent variables of having any current job problems, age, sex, industry and any job crisis'.
- ❖ Case control design and frequency distributions were used to describe the data in terms of key variables
- ❖ Occupations were coded into ten industry categories – agriculture, manufacturing, retail trades, construction, educational services, healthcare and social services, disabled, student, homemaker and other.

## Results

**TABLE 1: Sex Distributions of Specific Industries Vs All Other Industries**

- ❖ A significantly higher proportion of male decedents (96.6%, n=169) worked in the "Construction" industry, compared to all other industries (76.8%, n=804) ( $\chi^2(1, n=1222)=34.951, p=0.000$ ).
- ❖ A significantly higher proportion of female decedents (64.7%, n=55) worked in the "Healthcare" industry, compared to all other industries (17.1%, n=194) ( $\chi^2(1, n=1222)=107.731, p=0.000$ ).
- ❖ A significantly higher proportion of male decedents (92.9%, n=143) worked in the "Manufacturing" industry, compared to all other industries (77.7%, n=830) ( $\chi^2(1, n=1222)=18.098, p=0.000$ ).

**TABLE 2: Sex Distributions in Healthcare Vs All Other Industries by Rurality**

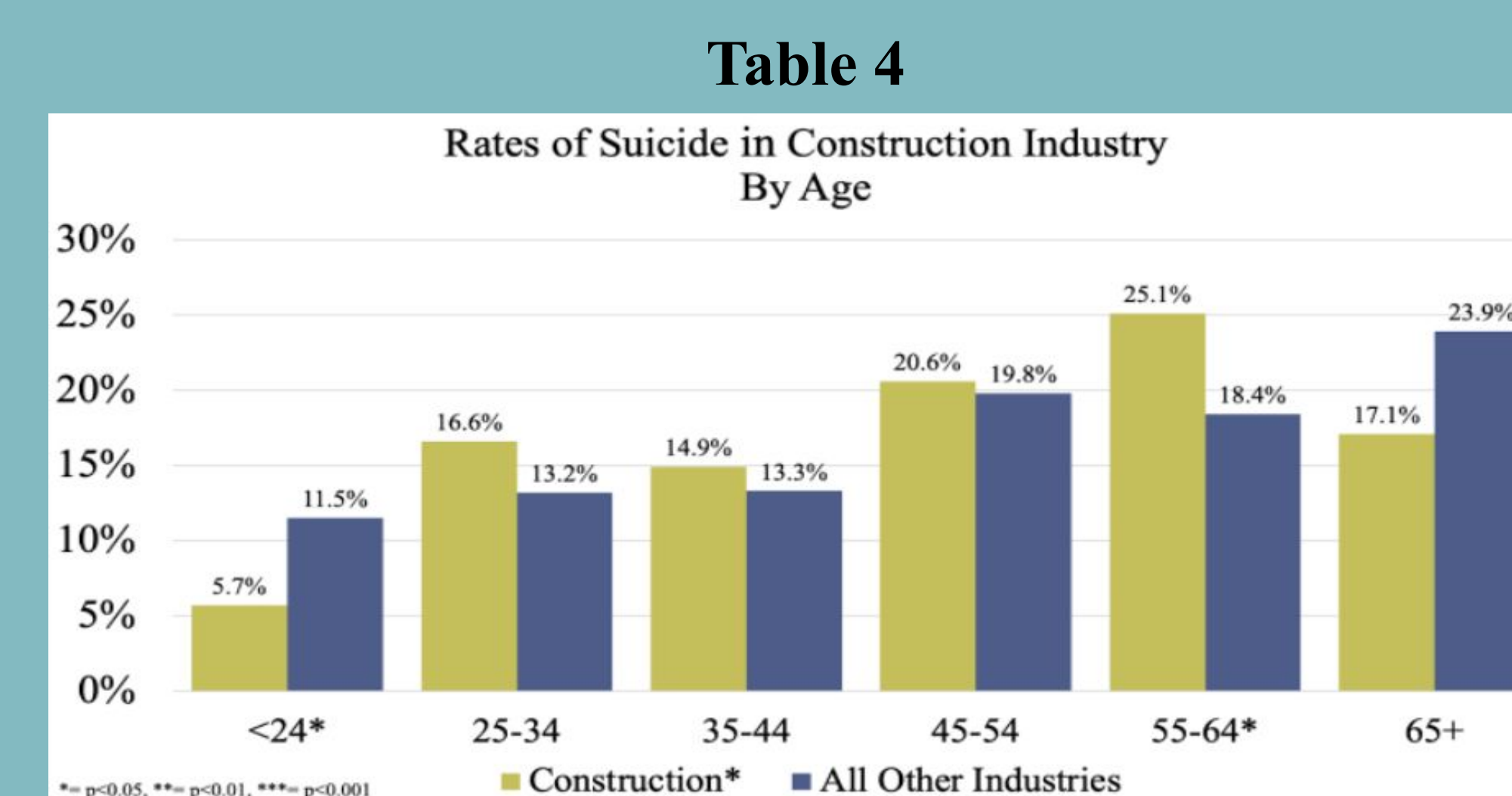
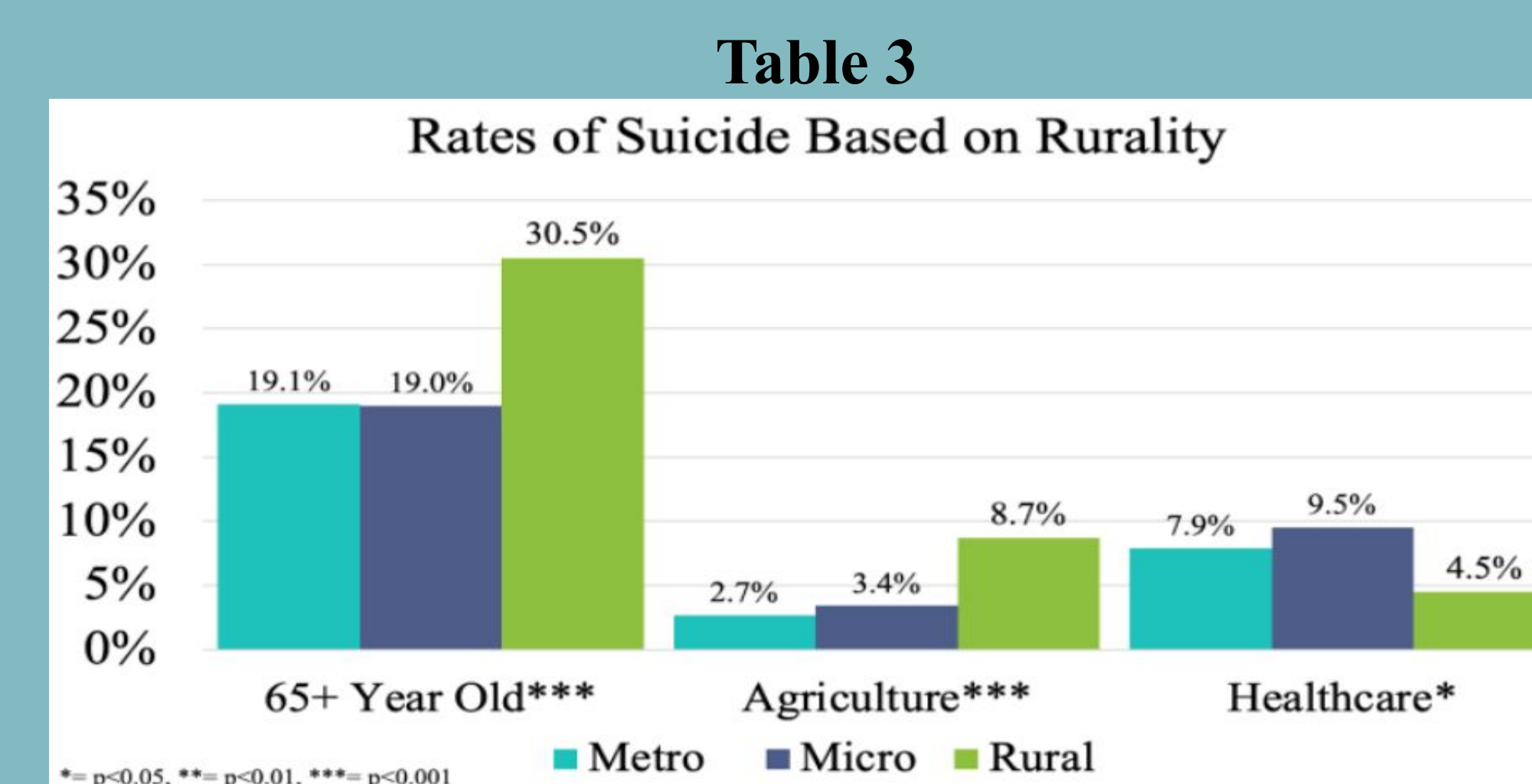
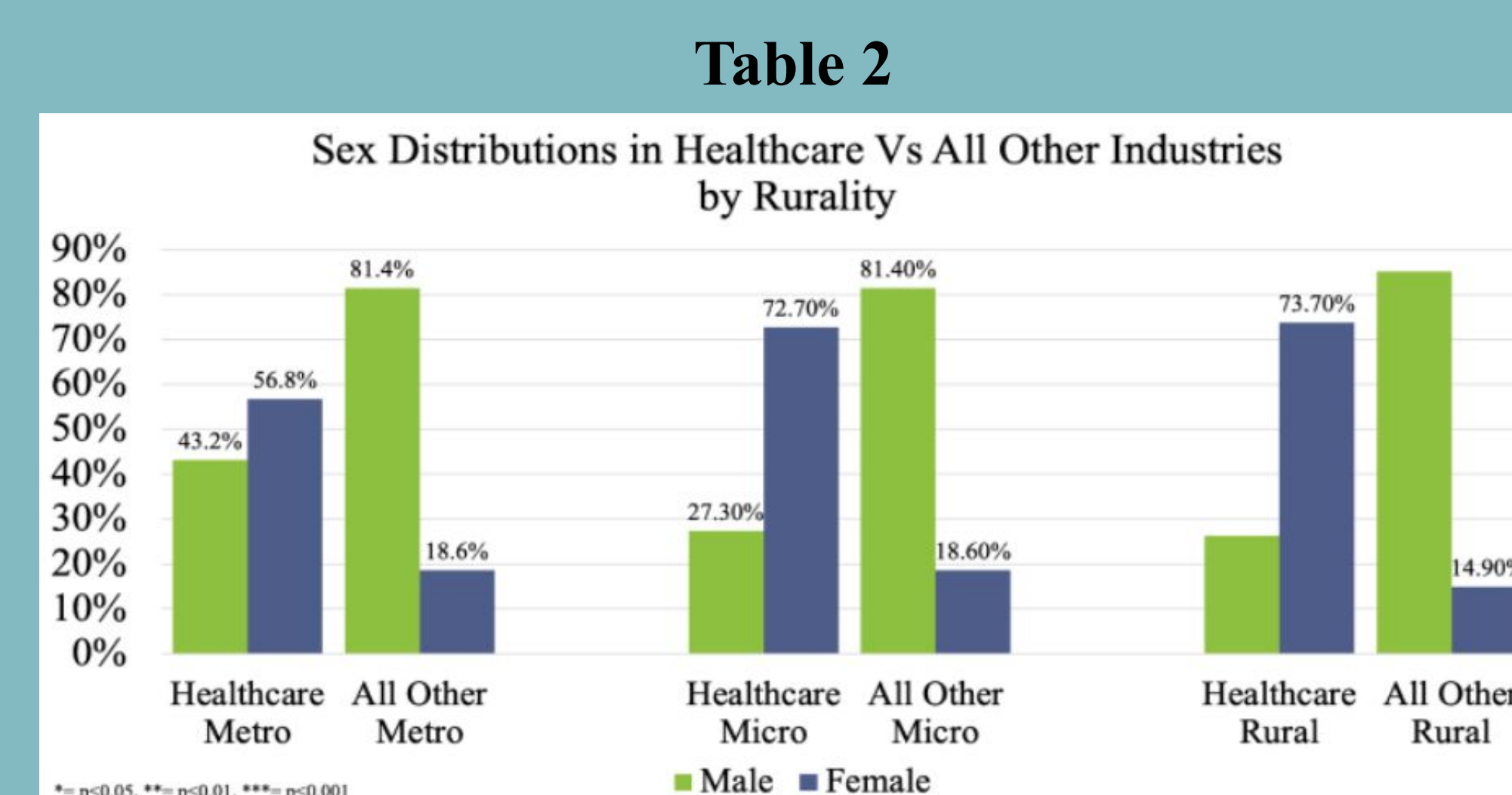
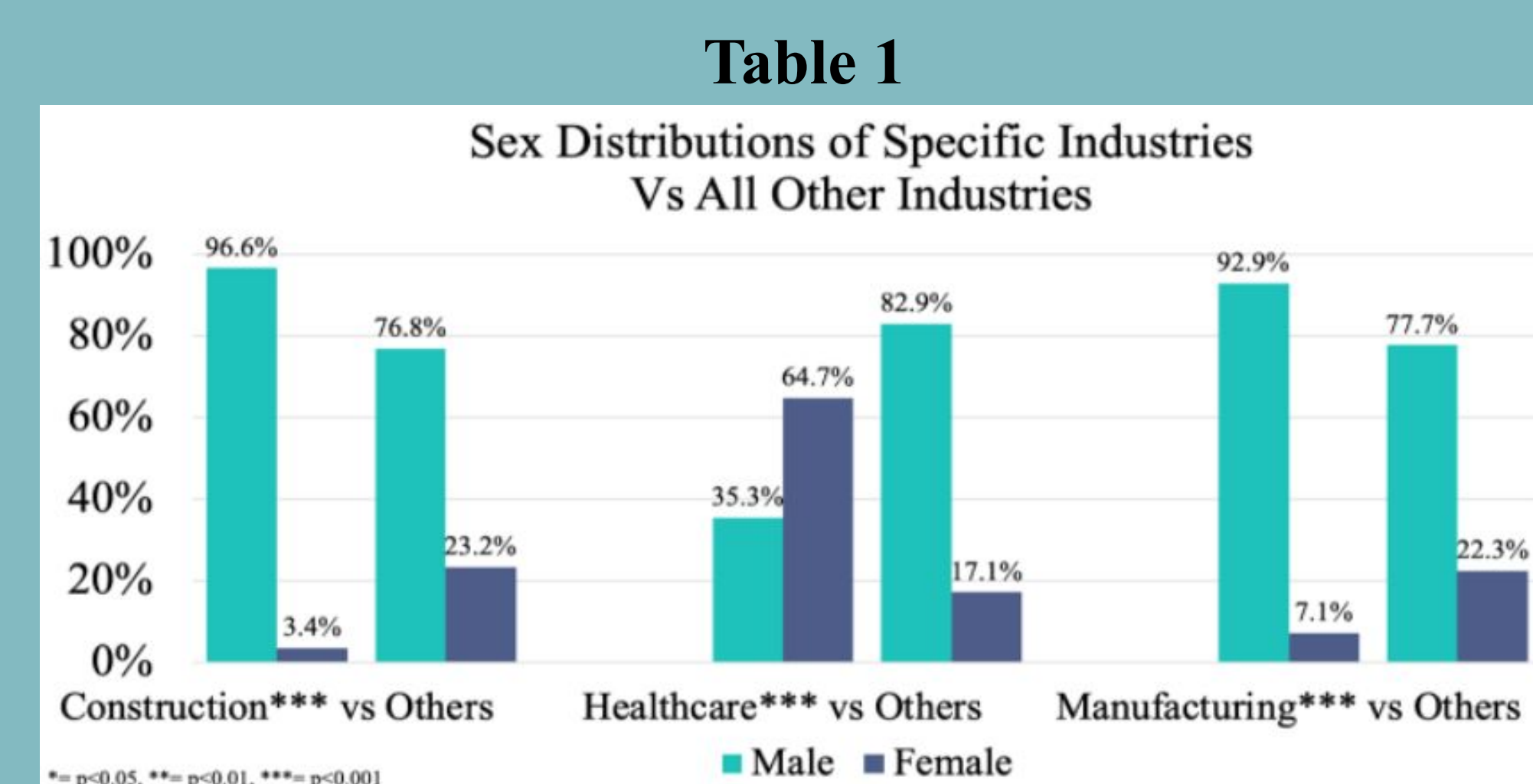
- ❖ In metro areas, there was a significantly higher proportion of females (56.8%, n=25) in the "Healthcare" industry compared to females in all other industries (18.6%, n=95) ( $\chi^2(1, n=555)=32.714, p=0.000$ ). The opposite can be said for males.
- ❖ In micro areas, there was a significantly higher proportion of females (72.7%, n=16) in the "Healthcare" industry, compared to females in all other industries (18.6%, n=39) ( $\chi^2(1, n=232)=29.366, p=0.000$ ). The opposite can be said for males.
- ❖ In rural areas, there was a significantly higher proportion of females (73.7%, n=14) in the "Healthcare" industry compared to females in all other industries (14.9%, n=60) ( $\chi^2(1, n=423)=39.536, p=0.000$ ). The opposite can be said for males.

**TABLE 3: Rates of Suicide Based on Rurality**

- ❖ A significantly higher proportion of 65+ yo decedents (30.5%, n=129) lived in rural areas than lived in micro (19.0%, n=44) or metro (19.1%, n=106) areas ( $\chi^2(2, n=1210)=20.286, p=0.000$ ).
- ❖ A higher proportion of decedents in the "Agriculture" industry lived in rural areas (8.7%, n=37) than lived in micro (3.4%, n=8) or metro (2.7%, n=15) areas. This finding was statistically significant ( $\chi^2(2, n=1210)=19.998, p=0.000$ ).
- ❖ A lower proportion of decedents in the "Healthcare" industry lived in rural areas (4.5%, n=19) than lived in micro (9.5%, n=22) or metro (7.9%, n=44) areas. This finding was statistically significant ( $\chi^2(2, n=1210)=6.995, p=0.030$ ).

**TABLE 4: Rates of Suicide in Construction Industry By Age**

- ❖ A significantly lower proportion of <24 year old decedents (5.7%, n=10) worked in the "Construction" industry, compared to all other industries (11.5%, n=120) ( $\chi^2(1, n=1222)=4.622, p=0.032$ ).
- ❖ A significantly higher proportion of 55-64 year old decedents (25.1%, n=44) worked in the "Construction" industry, compared to all other industries (18.4%, n=193) ( $\chi^2(1, n=1222)=3.899, p=0.048$ ).



## Discussion

### Interpretation of Key Findings

- ❖ Our findings suggest disparities in risk by age within the Construction industry and Healthcare and Social Services industry.
- ❖ Our findings also suggest that rurality may serve as a protective factor for Healthcare and Social Services Industry, whereas it may serve as a risk factor for older adults in the Construction industry.

### Future Research

- ❖ Further research is recommended to explore other demographic and circumstantial variables to determine best preventative procedures that can be incorporated into industry resources.

### Implication for Social Work

- ❖ The need to address the stigmatization of mental health in relation to older adults.
- ❖ In recognition of the projected growth in these industries in the state, there is a need to address this issues now.

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