

Gender Gaps in Bystander Defibrillation

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INTRODUCTION

In Aotearoa New Zealand, over 2,000 people annually are treated for an out-of-hospital cardiac arrest (OHCA). Currently, the survival rate is 11%.

Immediate CPR and early defibrillation can triple survival rates.

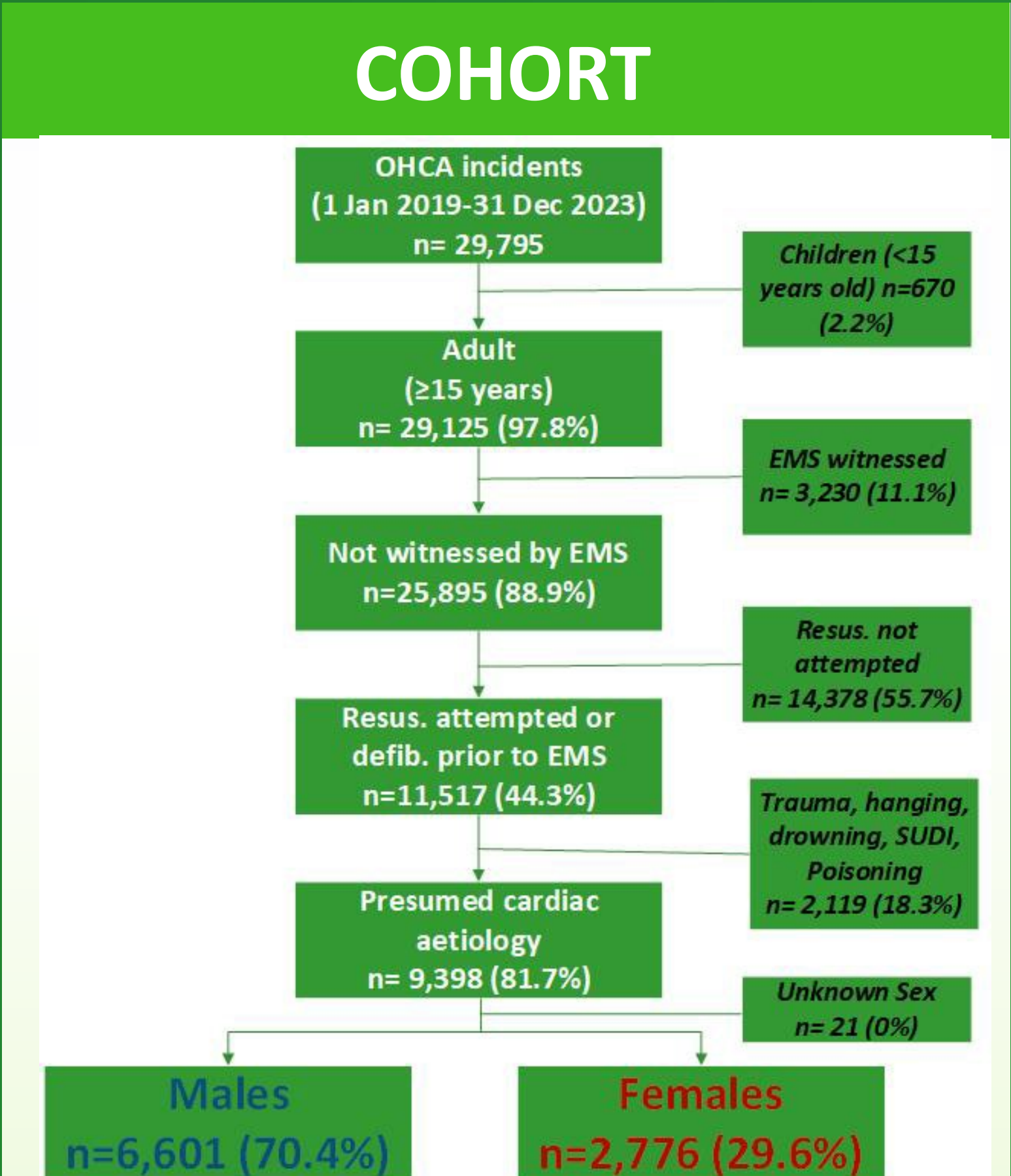
Females have lower rates of bystander CPR and defibrillation, with recent evidence showing a widening gender gap in bystander defibrillation (1).



AIM

The primary aim of this study is to compare the rates of **bystander defibrillation** between **females and males** in Aotearoa New Zealand.

The secondary aim is to identify other patient and event characteristics that are associated with bystander defibrillation rates.



METHOD

- Aotearoa New Zealand OHCA Registry contains data from all road-based Emergency Medical Services (Hato Hone St John and Wellington Free Ambulance)
- 5-year period** (1 January 2019 to 31 December 2023)
- Data collected in line with Utstein criteria
- Included only OHCA cases with presumed **cardiac aetiology**
- Descriptive statistics analysed using chi-square (categorical) and Mann-Whitney U test (continuous)
- Multivariable regression adjustment for age, sex, ethnicity, witnessed status, event location type, rurality, and socioeconomic deprivation were included
- A p-value <.05 was considered significant.
- Ethics approval granted for the Aotearoa New Zealand Paramedic Care Collection (ANZPaCC) from the Northern B Health and Disability Ethics Committee (2022 FULL 13415)

CONCLUSIONS

In total, 9,377 OHCA events were included in the cohort, with 30% (n=2,776) occurring in females.

Females have 40% reduced odds of receiving bystander defibrillation in Aotearoa New Zealand.

There are no significant differences in the odds of females receiving bystander CPR.

Despite higher odds of receiving bystander CPR in Māori and Pacific people patients (17% increased odds; data not shown), there is a potential **trend towards lower defibrillation rates in Māori and Pacific peoples** that warrants further investigation.

Further research is needed to identify and address the barriers to defibrillation in females, with the goal of improving survival rates from OHCA.

CONTACT INFORMATION



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RESULTS

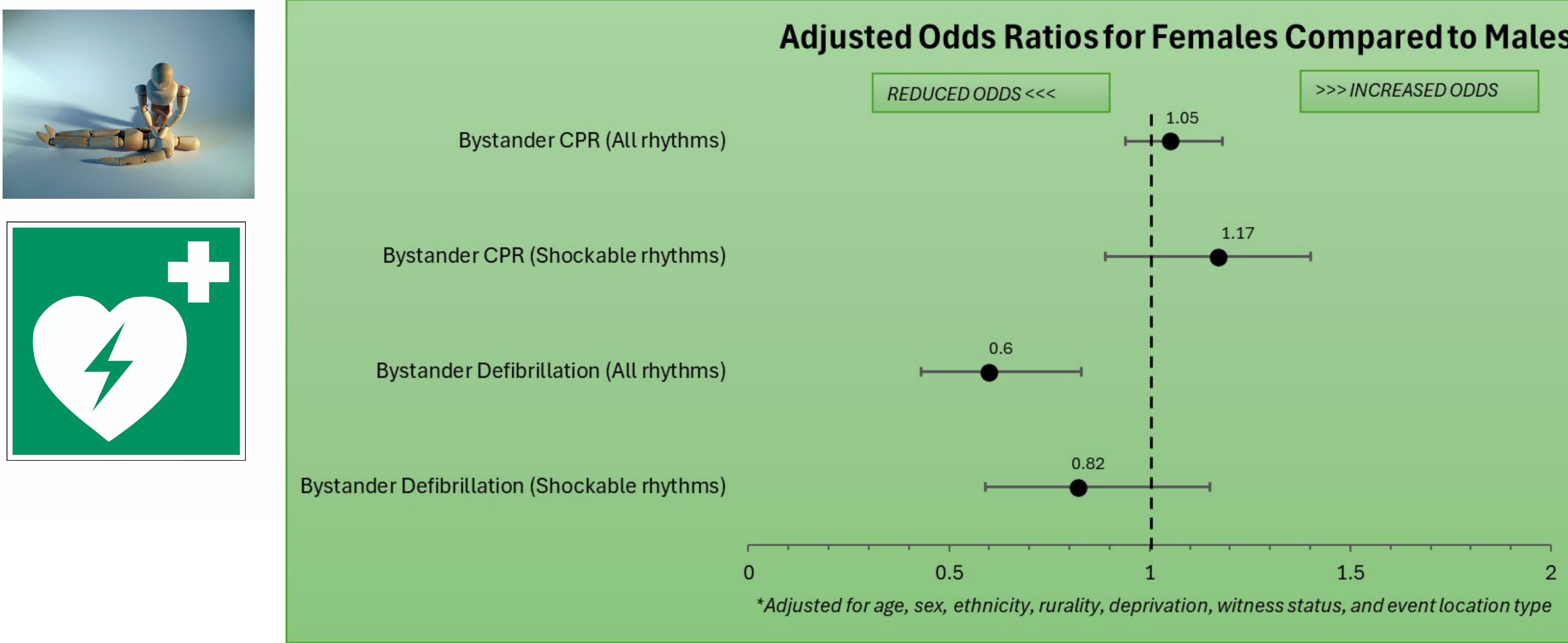


Figure 1. Adjusted Odds Ratios for bystander CPR and defibrillation in females compared to males in patients grouped by All presenting rhythm types (shockable and non-shockable) and Shockable presenting rhythms only. **There is a 40% reduction in the odds of a female receiving bystander defibrillation compared to males (all rhythms).**

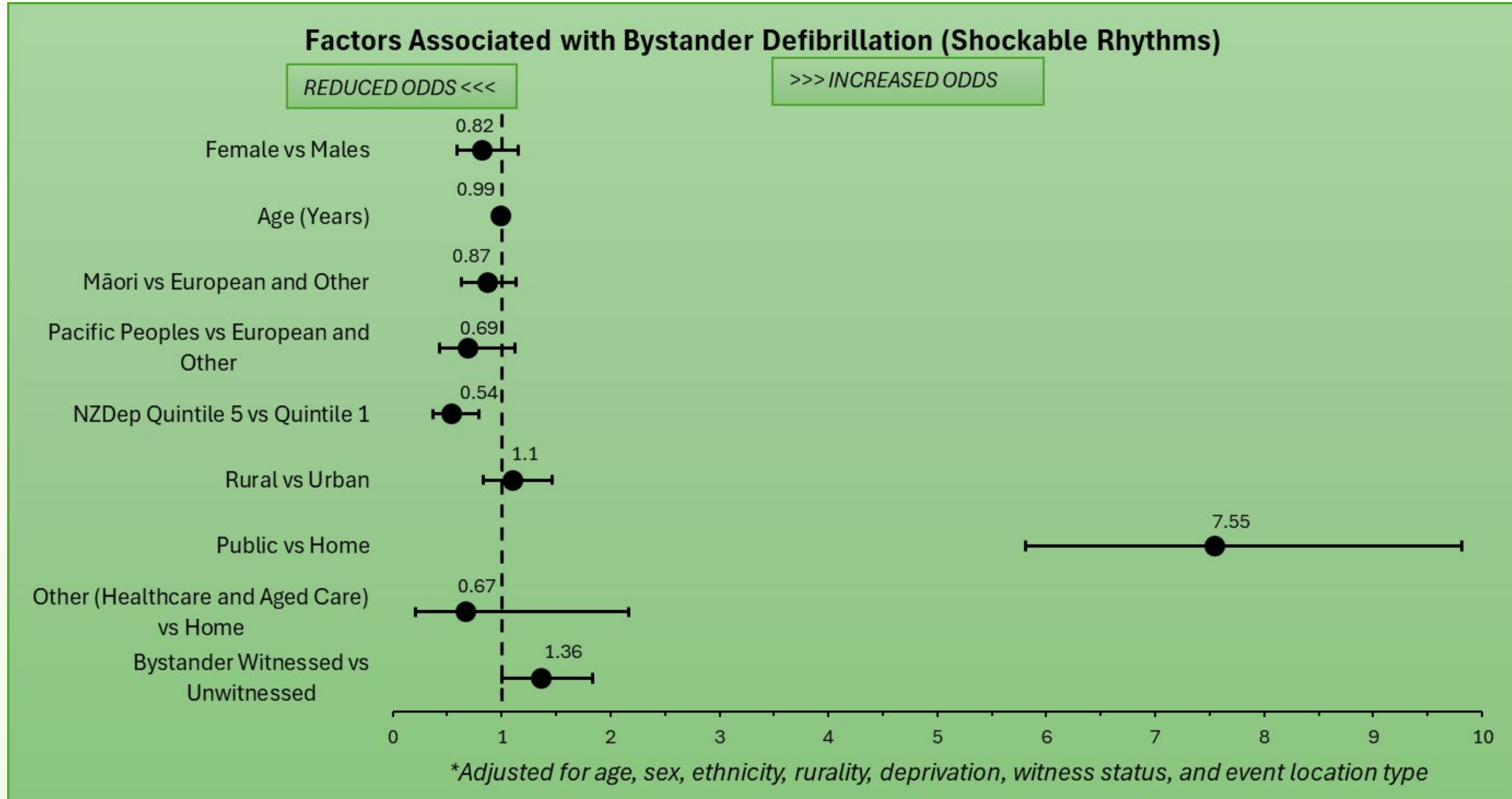


Figure 2. Adjusted Odds Ratios for factors potentially associated with defibrillation including sex, age, ethnicity, deprivation (NZDep where Quintile 5 is high deprivation and Quintile 1 is low deprivation), rurality, event location type (Public, Home, and Other), and witnessed status.

REFERENCES

- Paratz ED, Nehme E, Heriot N, Sundararajan V, Page G, Fahy L, et al. Sex disparities in bystander defibrillation for out-of-hospital cardiac arrest. *Resuscitation Plus*. 2024;17:100532. <https://doi.org/10.1016/j.resplu.2023.100532>. Images from Pixaby.com and generated using Co-Pilot (Microsoft Corp., 2024).