

# AUT PARAMEDICINE RESEARCH DAY 2025

## Impact of socioeconomic deprivation on older New Zealanders attended by emergency medical services following a fall.

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### INTRODUCTION

- Falls are a major public health issue and the second leading cause of unintentional injury deaths worldwide.
- Age-related factors (reduced mobility, visual acuity, balance, cognitive deficits) and socioeconomic factors increase fall risk.
- Socioeconomic disparities affect health outcomes, with Māori experiencing greater deprivation and higher fall rates.
- Significant health disparities exist among ethnic groups in New Zealand, highlighting the importance of understanding how socioeconomic deprivation and other factors contribute to falls risk and outcomes.
- Falls are common among New Zealand's aging population, leading to hospital admissions and long-term health impacts.
- The NZ Index of Deprivation (NZDep) assesses socioeconomic deprivation, but more research is needed on its impact on fall risk and outcomes in older adults, especially from an emergency medical service perspective.

### AIMS

This study aimed to investigate the various factors influencing fall risk and outcomes among older adults in New Zealand, with a particular focus on socioeconomic deprivation and demographic variables. The specific aims were to:

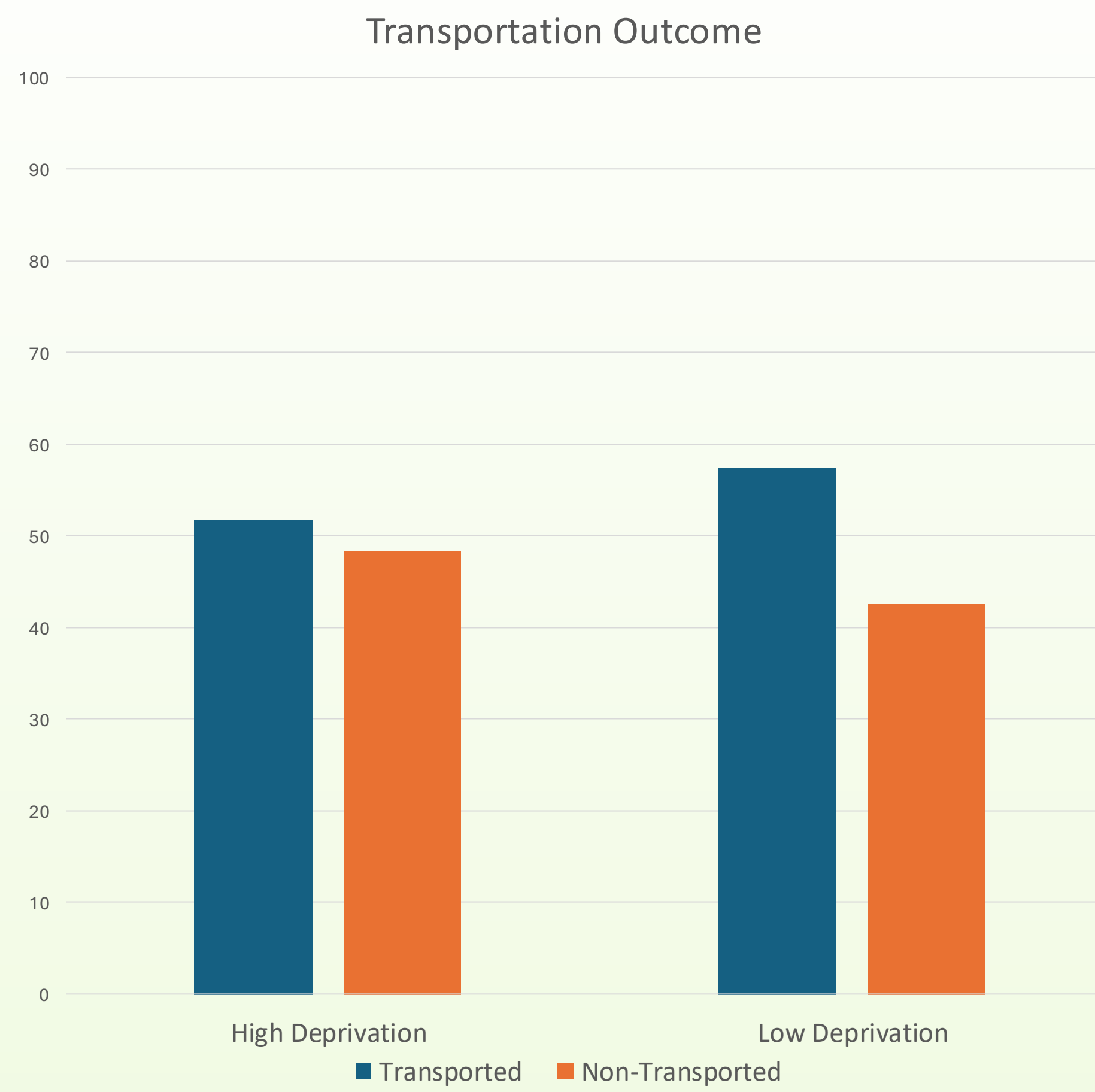
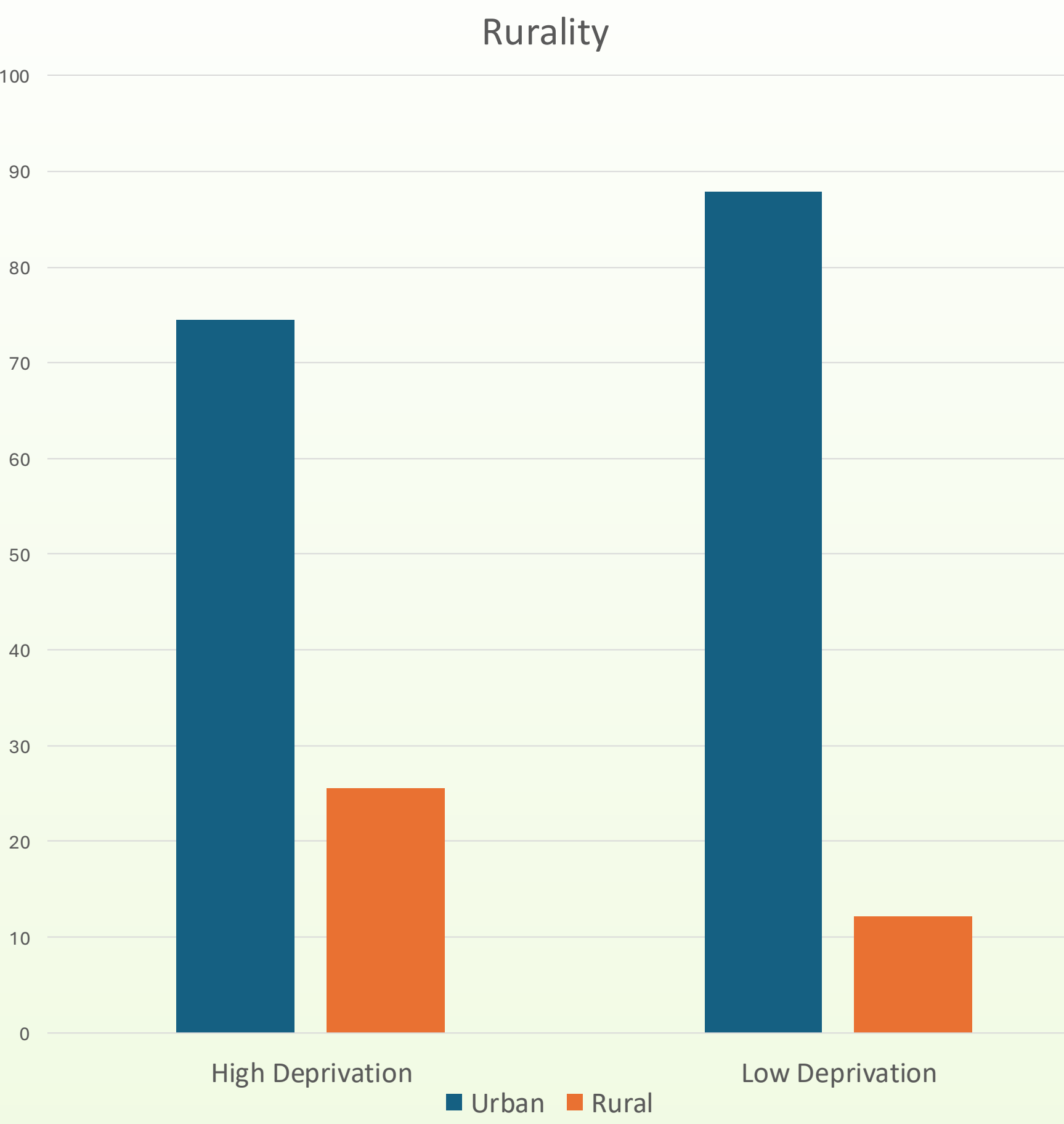
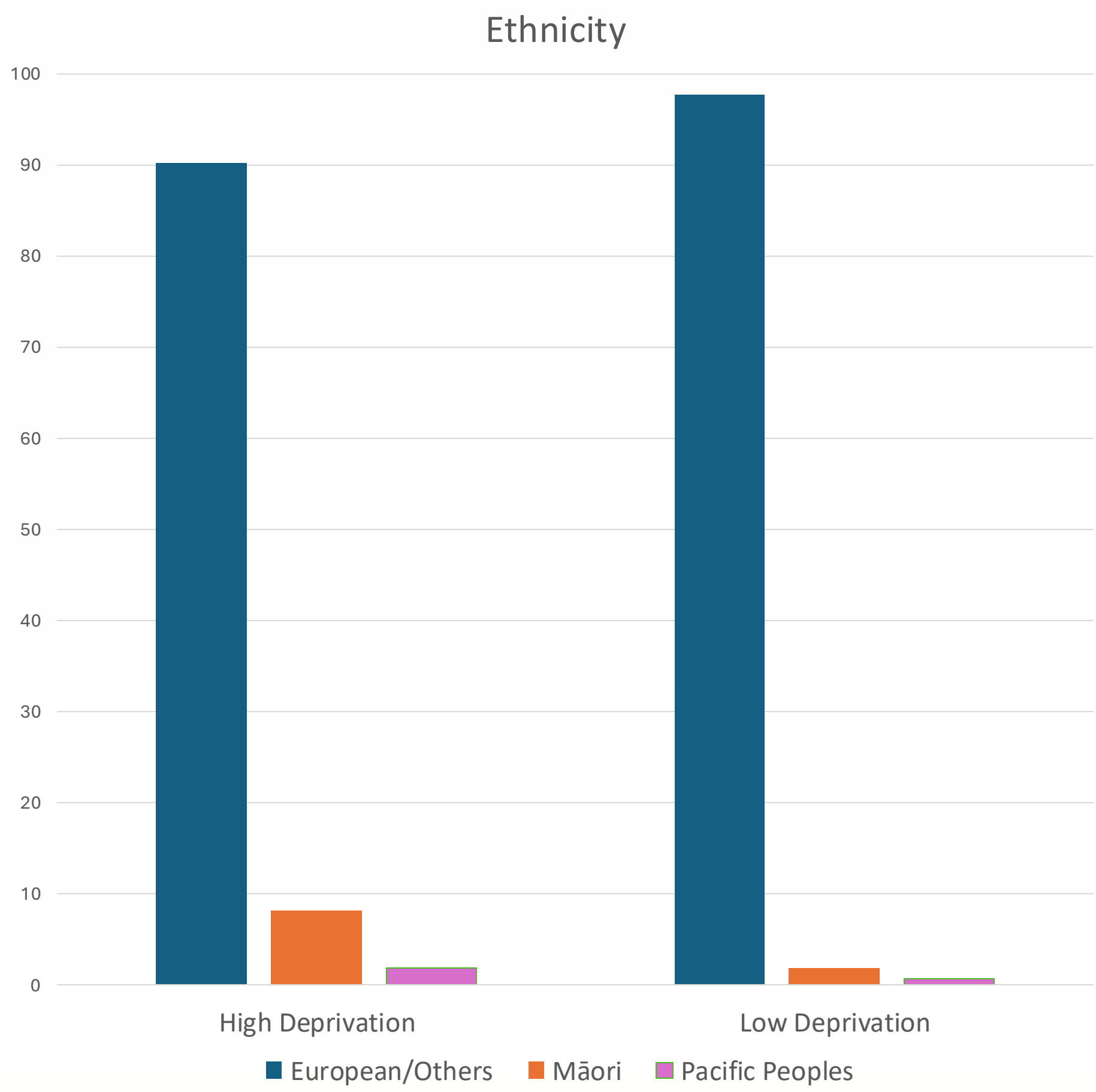
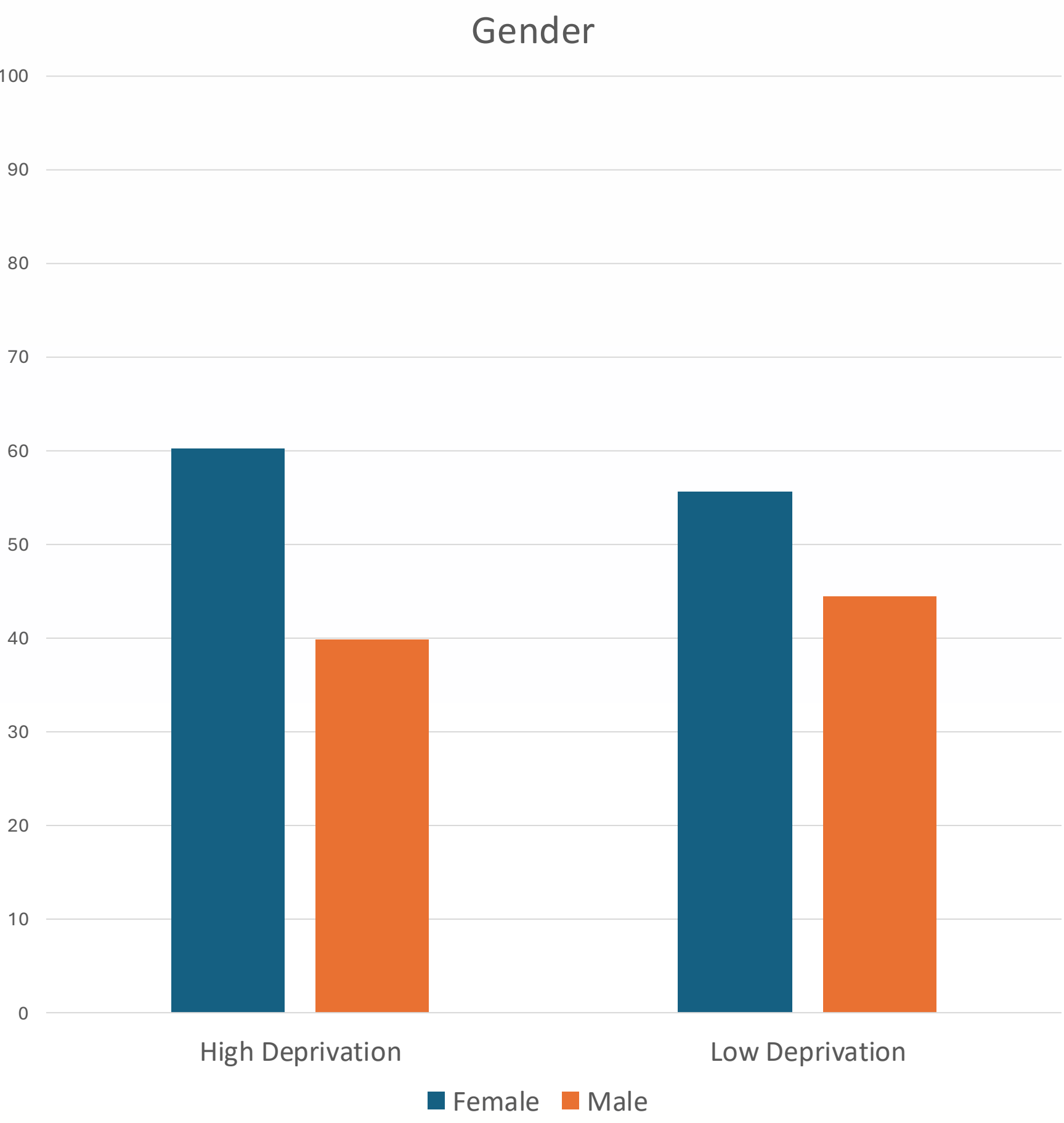
- **Explore Socioeconomic Deprivation's Influence:** Investigated the influence of socioeconomic deprivation on adults aged 65 years or older, who were assessed by emergency medical services in New Zealand following low acuity falls resulting in either minor or no injury. High versus low socioeconomic deprivation was compared to identify disparities in fall risk and outcomes.
- **Evaluate Factors Influencing Fall Risk:** Evaluated factors including age, gender, ethnicity, rurality, and transport outcomes, and considered how these factors related to fall risk and outcomes among older adults in New Zealand.

### ACKNOWLEDGEMENTS

- Acknowledgement to Hato Hone St John for the use of the de-identified clinical data.
- Special recognition to the senior postgraduate lecturers at the Auckland University of Technology Faculty of Health and Environmental Sciences.

### RESULTS

The study identified clear associations between socioeconomic deprivation and gender, ethnicity, rurality, and transportation outcomes among older adults in New Zealand who suffered low-acuity falls and were attended by Hato Hone St John during the study period.



### METHODS

- **Study Design:** Retrospective cohort study comparing older adults with low versus high socioeconomic deprivation scores attended by Hato Hone St John in New Zealand after minor or non-injury falls.
- **Ethics:** Approved by the Northern B Health and Disability Ethics Committee for secondary use of deidentified clinical data without individual consent.
- **Setting:** Patients from across New Zealand (excluding Wellington), serviced by Hato Hone St John, covering 90% of the population, over a nine-month period (1 January to 30 September 2023).
- **Inclusion/Exclusion:** Included patients aged 65+ with minor or non-injury falls; excluded patients without linked deprivation data and from mid-level deprivation areas. The final cohort comprised 14,562 patients.
- **Data Sources:** Utilised electronic patient report forms (ePRF), computer-aided dispatch (CAD) system coordinates, Ministry of Health data, and NZDep2018 scores.
- **Variables:** Included age, gender, ethnicity, deprivation, rurality, clinical status, and patient address meshblock.
- **Statistical Methods:** Data were analysed using Pearson Chi-Squared test ( $\chi^2$ ) with a *P*-value of <0.05 considered statistically significant.

### CONCLUSIONS

This study aimed to identify key factors influencing fall risk and outcomes among older adults in New Zealand, with a particular focus on socioeconomic deprivation and demographic variables. The findings indicated that:

- A higher proportion of low-acuity falls occurred among older adults in socioeconomically deprived areas.
- Falls were associated with factors such as gender, rurality, transport outcomes, and ethnicity.
- Māori experienced higher falls rates in socioeconomically deprived areas.
- Findings underscored the need for targeted falls prevention programs, equitable care, increased awareness, resources, and education tailored to diverse socioeconomic backgrounds and needs.

Does the impact of socioeconomic deprivation on fall outcomes extend beyond older adults to all age groups, warranting further research?

### CONTACT INFORMATION

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