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Mortality Patterns Among Underserved Groups: Evidence from Population-wide Administrative Data Linkage in Northern Ireland

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Objectives

Health inequalities among underserved groups (USGs) represent a significant public health concern. However, our understanding of these associations is limited by small sample sizes. This study uses population-wide administrative data linkage to examine mortality patterns across six USGs in Northern Ireland, aiming to inform targeted interventions and reduce health disparities.

Methods

Using the Northern Ireland Mortality Study (NIMS), we linked 2021 Census records to death registrations for 1.5 million individuals aged 16 and over. We examined mortality patterns among ethnic minorities, LGBTQIA+ individuals, religious minorities, Irish Travellers, migrants, and those with limited English language proficiency. Four mortality outcomes were examined: all-cause mortality, avoidable mortality, deaths of despair, and death by suicide. Cox proportional hazards models were used to quantify mortality risk for each USG compared to their respective reference populations, with stepwise adjustment for sociodemographic factors and health status.

Results

Religious minorities (17.9%) and LGBTQIA+ individuals (9.3%) formed the largest USGs in the cohort. Most groups showed significantly lower mortality risks compared to reference populations. In fully adjusted models, protective associations were observed for ethnic minorities (HR 0.59, 95% CI 0.50-0.68), migrants (HR 0.83, 95% CI 0.76-0.90), and religious minorities (HR 0.83, 95% CI 0.79-0.86). Initial elevated risks for LGBTQIA+ individuals were attenuated after adjustment. For deaths of despair, ethnic minorities maintained significantly lower risk after adjustment (HR 0.50, 95% CI 0.27-0.90), while elevated risks for LGBTQIA+ individuals were attenuated. Religious minorities showed initially elevated suicide risk which was attenuated after adjustment.

Conclusion

This population-wide data linkage study demonstrates the value of administrative data in understanding health inequalities. Findings challenge previous research suggesting poorer outcomes among USGs and highlight the importance of adjusting for socioeconomic and health factors when examining mortality risks.

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