International Journal of Population Data Science

Journal Website: www.ijpds.org

Spotlight on maternal preconception health inequalities in Northern Ireland: An exploration of 255,177 pregnancies

Emma Cassinelli[1], Lisa Kent[1], Kelly-Ann Eastwood[1,2], Danielle Schoenaker[3,4,5], Tim Gammon[1], and Jack Linaker[1]

[1]Centre for Public Health, School of Medicine, Dentistry and Biomedical Sciences, Queen's University Belfast, Belfast, United Kingdom

[2]University Hospitals Bristol NHS Foundation Trust, Bristol, United Kingdom

[3]School of Human Development and Health, Faculty of Medicine, University of Southampton, Southampton, United Kingdom

[4]MRC Lifecourse Epidemiology Centre, University of Southampton, Southampton, United Kingdom

[5]NIHR Southampton Biomedical Research Centre, University of Southampton and University Hospital Southampton NHS Foundation Trust, Southampton, United Kingdom

Objective

The present study utilises population-based maternity healthcare data recorded during antenatal booking appointments to explore differences in key preconception health indicators by deprivation. These indicators include periconception folic acid supplement use, body mass index (BMI), pregnancy planning, and smoking.

Methods

A retrospective study was conducted on a sample of 255,177 pregnancies recorded in the Northern Ireland MATernity System during 2011-2021. The prevalence of each included preconception health indicator was assessed according to deprivation quintiles, calculated using the Northern Ireland Multiple Deprivation Measure 2017. Multinomial logistic regression models explored the relationship between each indicator and deprivation quintiles. Patient and Public Involvement and Engagement was carried out throughout the research (e.g., prioritisation of indicators, interpretation of findings).

Data for this project were provided by the HSC Honest Broker Service; any views or opinions presented are solely those of the author.

Results

Women living in the least deprived quintile had fewer preconception risk factors than those in the other four deprivation quintiles. Notably, preconception supplement use of 400 µg, the general recommended dose for reproductive-age women, was lower among women in the most deprived quintile (21.4%) than in the least deprived (44.1%). The odds of having obesity, versus a healthy weight, were higher in the most deprived quintile than in the least deprived. For instance, for obesity class III (BMI≥40.00 kg/m2), the model estimated an adjusted Odds Ratio (aOR) of 2.52 (95%CI 2.30-2.75). Women living in the most deprived quintile were more likely to report an unplanned pregnancy than those in the least deprived quintile (aOR 2.18; 95%CI 2.10-2.27) and to report smoking cigarettes (aOR 4.18; 95%CI 3.99-4.38).

Conclusion

This analysis of population-based routinely collected maternity data highlighted stark inequalities regarding women's preconception health in Northern Ireland. These findings can serve as a reference point to inform future interventions, policy, and the ongoing monitoring of preconception health.

https://doi.org/10.23889/ijpds.v10i3.3116