NUTRITIONAL VULNERABILITIES IN INPATIENT POPULATIONS: A COMPREHENSIVE STUDY ON B12 AND FOLATE DEFICIENCY

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Background

Vitamin B12 and folate, crucial in one-carbon metabolism, play vital roles in DNA synthesis, cellular regulation, and amino acid metabolism. Despite prevalent deficiencies in community-dwelling older Irish adults, research on patient populations remains limited.

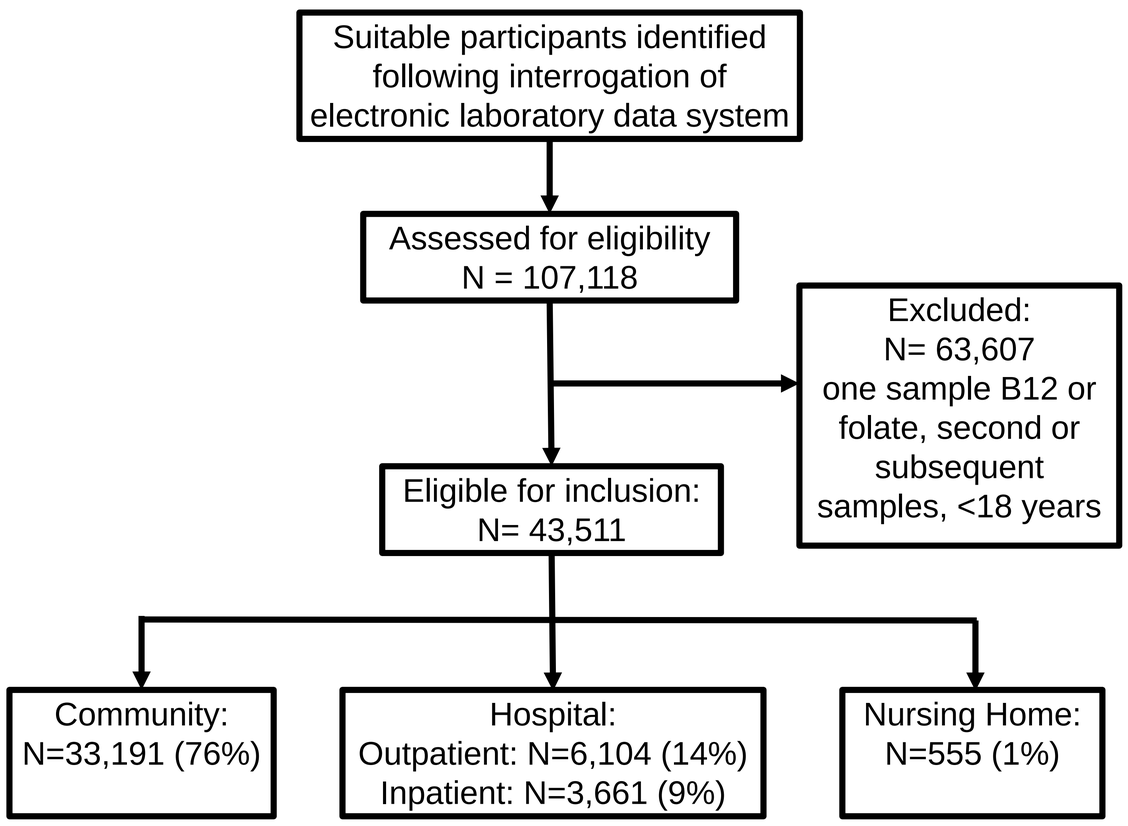
Aim & Objectives

Assess the prevalence of B12 and folate deficiency across diverse patient groups (inpatients, outpatients, GPs, nursing homes). Investigate age, sex, and patient location as predictors for deficiency.

Research Design

A retrospective study at Mater Misericordiae University Hospital, Dublin (September 2022-2023) analysed plasma folate and B12 levels in 43,511 patients, stratifying by age, sex, and location. Statistical methods, including regression analysis, determined deficiency risks.

Figure 1 Recruitment schematic



Results

Inpatients (8%) exhibited a higher B12 deficiency prevalence than community (7%), outpatients (6%), or nursing home residents (5%). Folate deficiency was more common in inpatients (13%) than nursing home residents (9%), community (8%), or outpatients (7%). Regression analysis indicated an 18% increased B12 deficiency risk and a significant 96% increased folate deficiency risk among inpatients compared to GP patients.

Figure 2 Proportion of patients with plasma B12 deficiency (< 211 ng/L; Red), insufficiency (211-350 ng/L; Amber), sufficiency (>350 ng/L; Green)

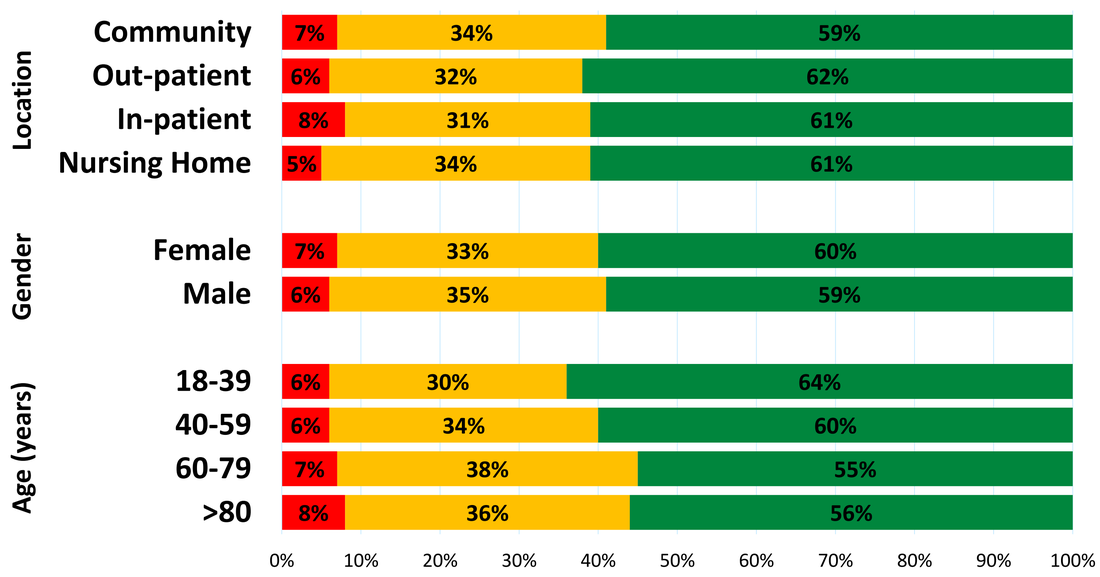
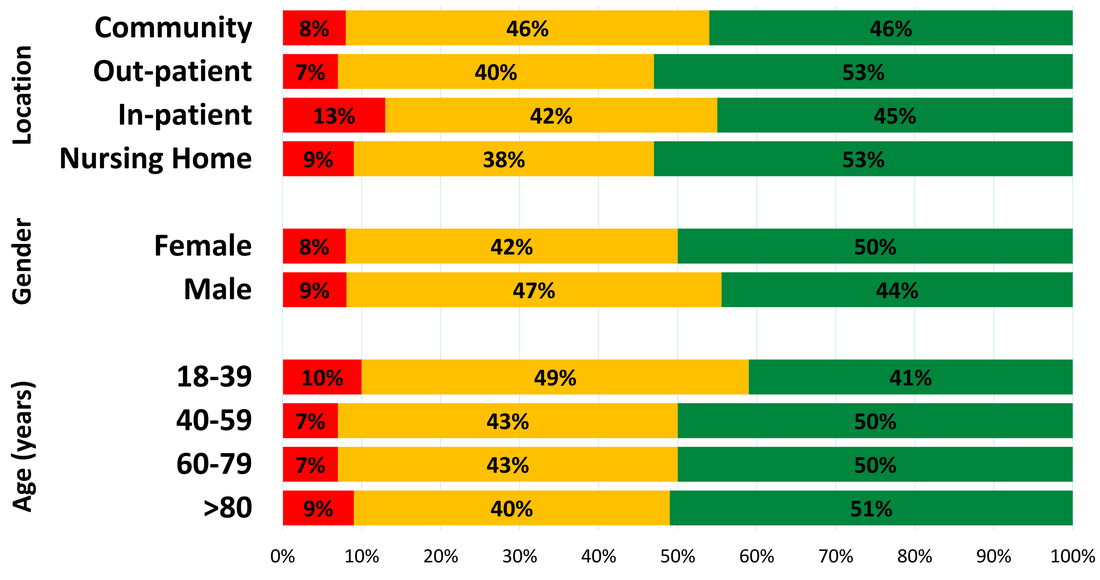


Figure 3 Proportion of patients with plasma folate deficiency (<3.8 µg/L; Red), insufficiency (3.8-8 µg/L; Amber), sufficiency (>8 µg/L; Green)



Conclusion

Inpatient populations show increased vulnerability to B12 and folate deficiencies, necessitating heightened healthcare attention. Addressing these deficiencies is critical for optimising patient outcomes and promoting overall health.