

# A One Health Perspective on the Clinical, Behavioural, and Environmental Risks of Chronic Proton Pump Inhibitor Use in the Elderly

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## Background

- One Health integrates human, animal, and environmental health.
- Older adults face elevated risks from chronic illnesses, polypharmacy, and environmental exposure.
- Chronic proton pump inhibitor (PPI) use in older adults is widespread and often unjustified.

## Objectives

- Assess clinical, behavioural, and ecological risks of chronic PPI use in older adults.
- Promote sustainable prescribing aligned with One Health principles.

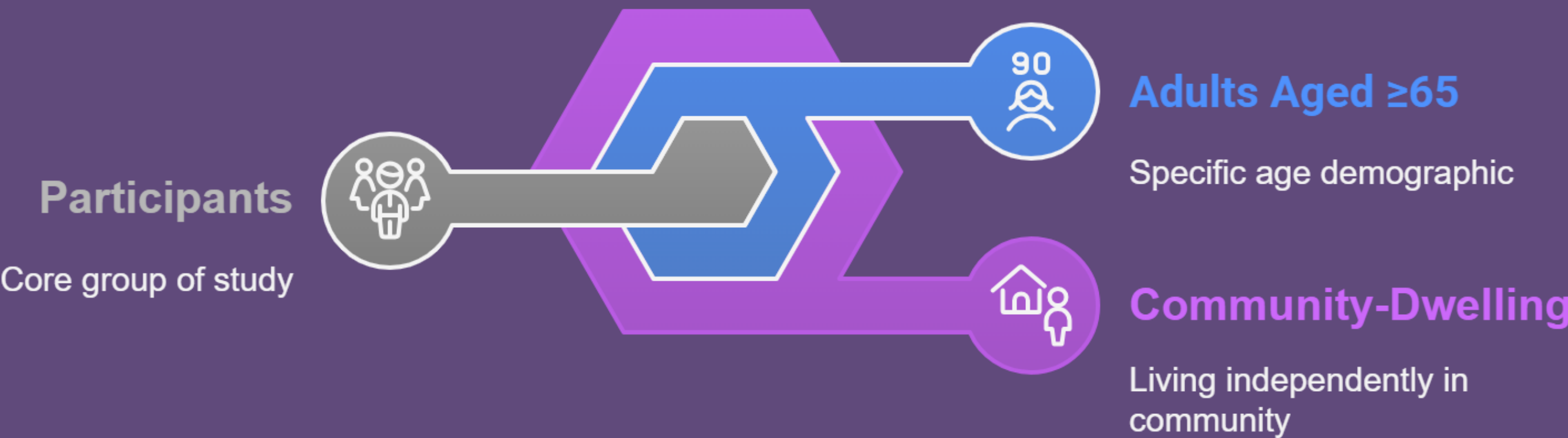
## Methodology

### Design

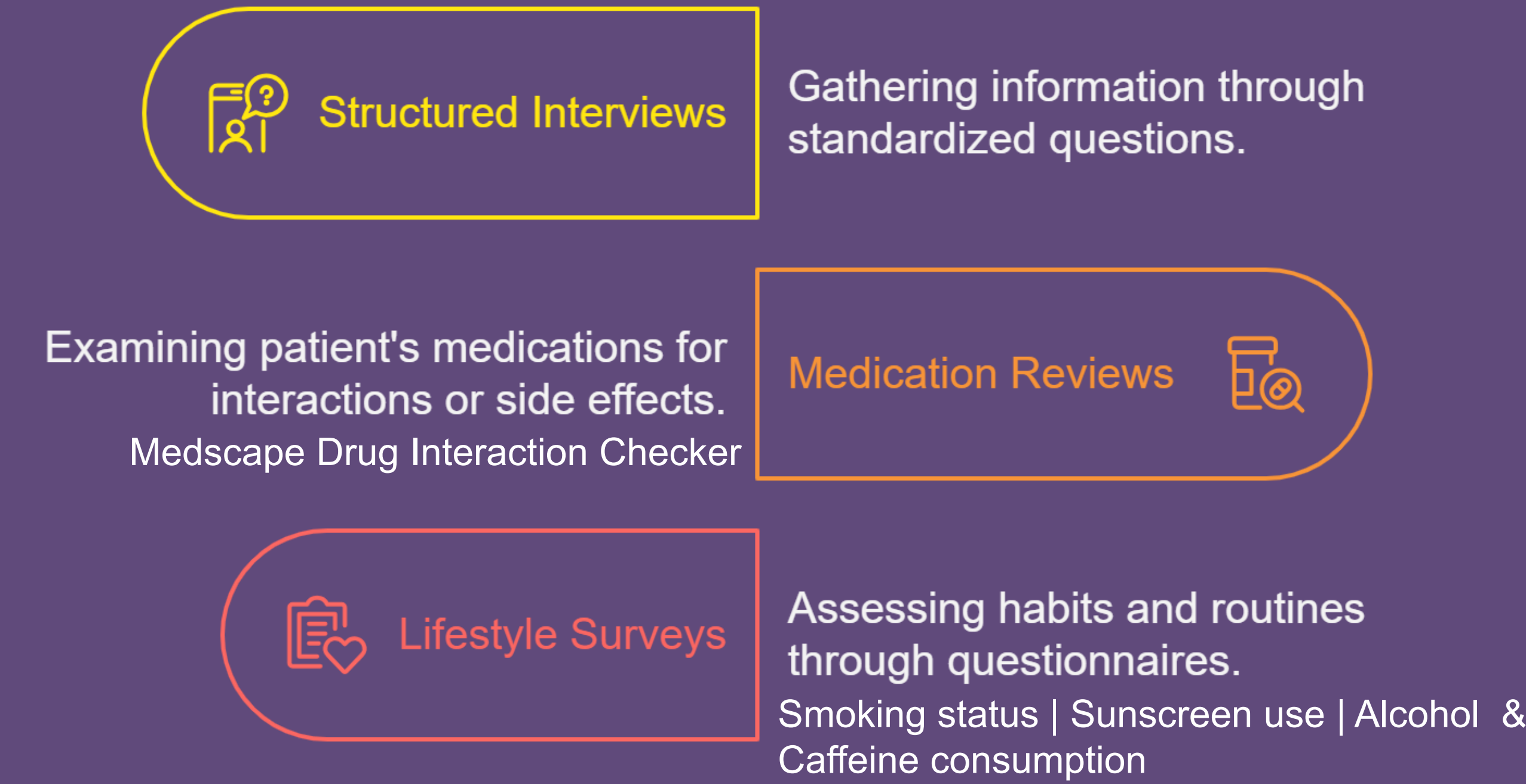
Repeated cross-sectional study (2023–2025) – ESPIEM - Healthy Ageing – Egas Moniz Interdisciplinary Project

### Participants

246 community-dwelling adults aged ≥65.



### Data Collection



### Environmental Review

Literature on PPI transformation products in water systems.

## Results

Table 1. Summary of PPI use, drug interactions, and lifestyle factors among older adults (n = 80).

Category	Number (n)	Percentage (%)
Total PPI users	80	100
Sex distribution (PPI users)		
Women	45	56.2
Men	35	43.8
Long-term PPI use (>6 months)	73	91.3
PPI type (dosage)		
Esomeprazole (20-40 mg)	26	32.5
Pantoprazole (20-40 mg)	24	30.0
Omeprazole (20 mg)	22	27.5
Lansoprazole (15-30 mg)	7	8.8
Rabeprazole (10 mg)	1	1.3
Drug interactions		
Serious <sup>1</sup>	25	31.3
Monitor Closely <sup>1</sup>	56	70
Lifestyle behaviours		
Daily alcohol consumption	43	53.8
Active smoking	5	6.3
Regular coffee intake	47	58.8
Infrequent or no sunscreen use	72	90.0
Healthcare Context		
Has family doctor	67	83.8
Concomitant medications (mean)	7.5	-
Source of the PPI prescription		
Family doctor	47	58.8
Other doctor	32	40.0
Pharmacist	1	1.2

<sup>1</sup> Number of users with ‘serious’ or ‘monitor closely’ interactions.

	Clinical	Behavioural	Environmental
PPI Use	32.5% used PPIs, 91.3% long-term	Alcohol (53.8%) & coffee (58.8%) consumption	PPI transformation products in wastewater
Medication	Avg. 7.5 medications per user	Sunscreen: 90% rarely/never used	Transformation products persist longer than parent drug
Drug Interactions/ Reviews	31.3% had serious interactions	83.8% had a family doctor, limited review	Antimicrobial resistance and aquatic toxicity

## Conclusion

- Chronic PPI use in older adults poses multifaceted risks.
- Deprescribing, patient education, and photoprotection counselling are essential.
- Environmental impact demands eco-conscious prescribing.

## Recommendations

- Integrate environmental considerations into clinical guidelines.
- Equip primary care teams for regular medication reviews.
- Foster interdisciplinary collaboration for sustainable healthcare.

## Acknowledgements

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