**Clusters of psychotropic and health service use in people with dementia living**

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**Introduction.** Psychotropics are commonly used in people with dementia. Health service utilisation is important in managing both dementia-related symptoms and multimorbidity. However, patterns and clusters of psychotropic and health service utilisation among people with dementia remain poorly understood in the Australian context.

**Aims**. To identify prevalence of and factors associated with different clusters of psychotropic and health service use, and assess their association with mortality in Australians with dementia.

**Methods**. This cohort study utilised linked 2021 Census, death registration, Pharmaceutical Benefits Scheme (PBS) and Medicare Benefits Schedule data. People with dementia aged ≥65 years in Australia in 2021 were included in the study. Latent class analysis involving 16 variables, including different classes of psychotropics (antipsychotics, opioids, antidepressants, antiepileptics and benzodiazepines), chronic health service use (such as chronic disease management plans and medication review), mental and physical healthcare (such as allied health and psychiatrist visits). Logistic regression was used to identify factors associated with class assignment. Association with 12-month mortality was assessed using inverse probability of treatment weighting adjusted Kaplan-Meier curves and Cox regression.

**Results.** Overall, 165,655 people with dementia were included. A five-class model was selected using data-driven approach. Groups were described as (1) low-risk psychotropic & high chronic disease management use (35.3%); (2) low-risk psychotropic & low health services use (36.0%); (3) high-risk psychotropic & high chronic disease management use (12.6%); (4) high-risk psychotropic & low health service use (13.2%); and (5) moderate-risk psychotropic & high mental health service use (2.8%). People with dementia residing in remote/regional areas were less likely to be in high health service utilisation classes. Compared to those in the low-risk psychotropic use group, mortality risk was higher among those in high-risk psychotropic use groups (adjusted hazard ratio [aHR]: 1.35, 95% confidence interval [CI] 1.30-1.40). In contrast, those with high mental health services use had a lower mortality risk (aHR: 0.84, 95% CI 0.72-0.97).

**Discussion.** Health services may mitigate mortality risk in individuals with dementia but disparities in access to these services highlight the need for more equitable service delivery across Australia.