UNIVERSITY of TASMANIA

Clinical outcomes of sedative deprescribing within RedUSe and implications for practice

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2023

ADeN
Australian Deprescribing Network

Background

Background: Prevalence

322,120 long-term care facility residents

Antipsychotic use:

-3 to 0 months: 12.3%

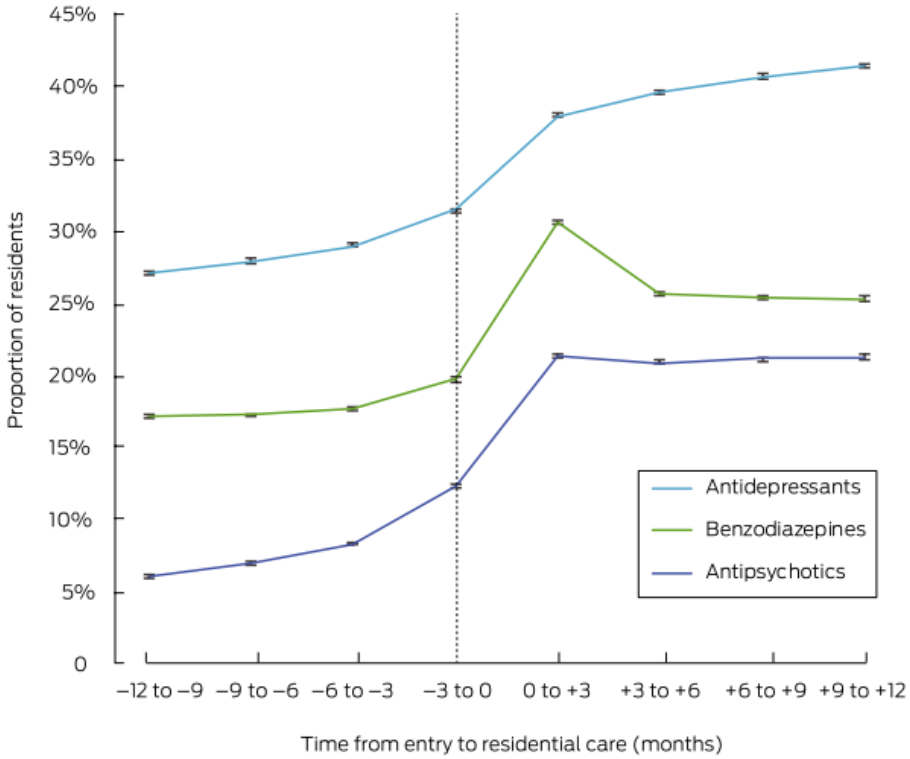
0 to +3 months: 21.3%

Benzodiazepine use:

-3 to 0 months: 19.7%

0 to +3 moths: 30.5%[1]

Increased sedative use leading up to admission has also been reported in Denmark and Canada.[2, 3]



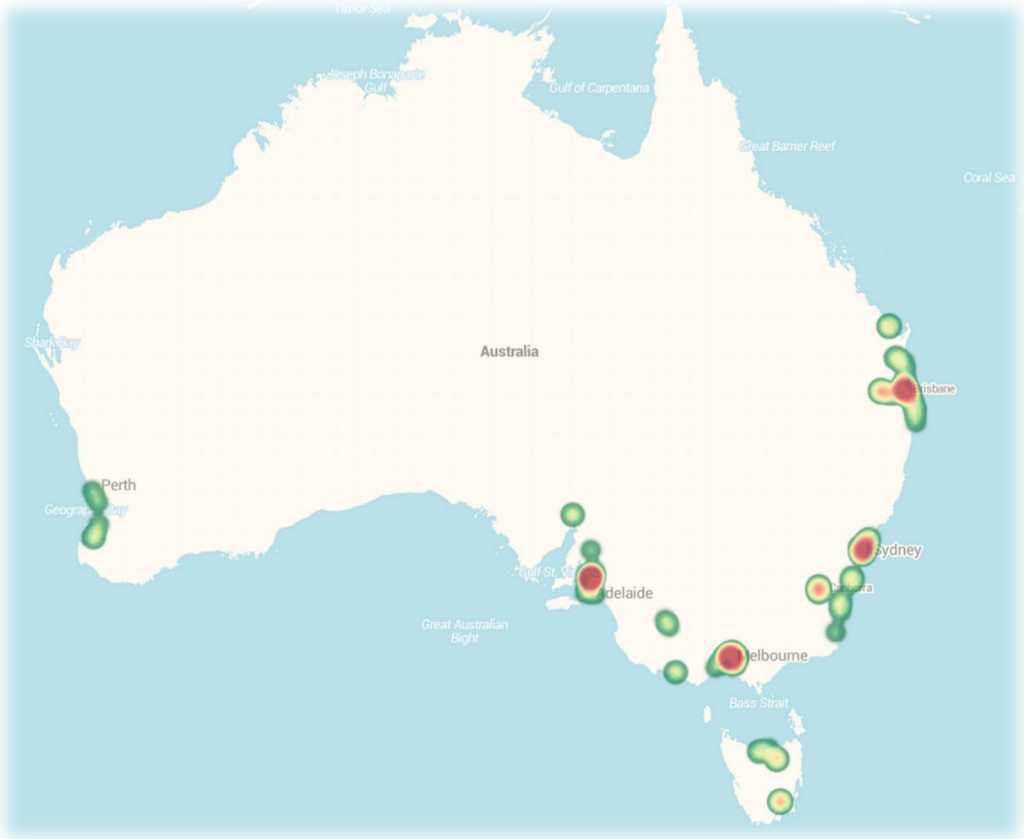
1. Harrison S, et al. Med J Aust 2020;212(7):309-13.
2. Pottegård A, et al. Pharmacoepidemiol Drug Saf. 2021;30(11):1560-5.
3. Maclagan L, et al. J Am Geriatr Soc. 2017;65(10):2205-12.

Background: Prevalence

139 RACFs
11,368 residents

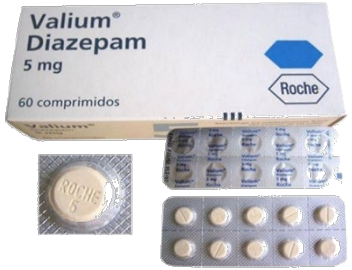
Regularly charted antipsychotics=21.8%

Regularly charted benzodiazepines=21.6%[4]

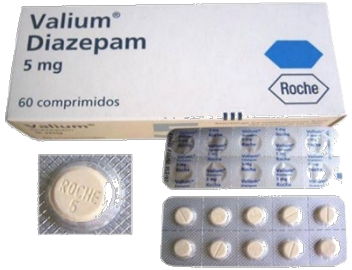


4. Westbury J, et al. Aust N Z J Psychiatry 2019;53(2):136-47.

Background: Indications

Antipsychotics	Benzodiazepines
	
Neuropsychiatric symptoms e.g., aggression, agitation, psychosis	Acute agitation Anxiety Sleep disturbances

Background: Adverse effects

Antipsychotics	Benzodiazepines
	
Falls (~1.5-fold)	Falls (~1.4-fold)
Movement disorders	Confusion
Pneumonia (1.7-2 fold)	Pneumonia (~1.2-fold)
Stroke (up to 3.5-fold)	?Dementia
Death (1.5-1.7 fold)	

Background: Guidelines

Antipsychotics:

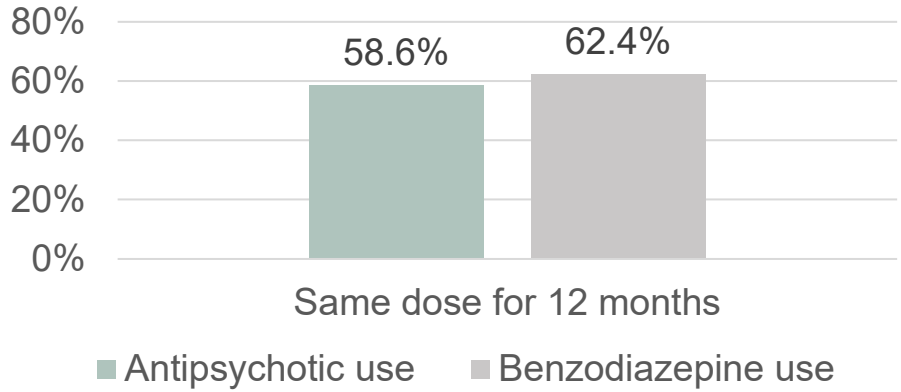
- Reserved for significant agitation, aggression or psychosis that are unresponsive to non-pharmacological therapies or where there is a risk of harm to the resident or others.
- Review the antipsychotic every 12 weeks.

Benzodiazepines:

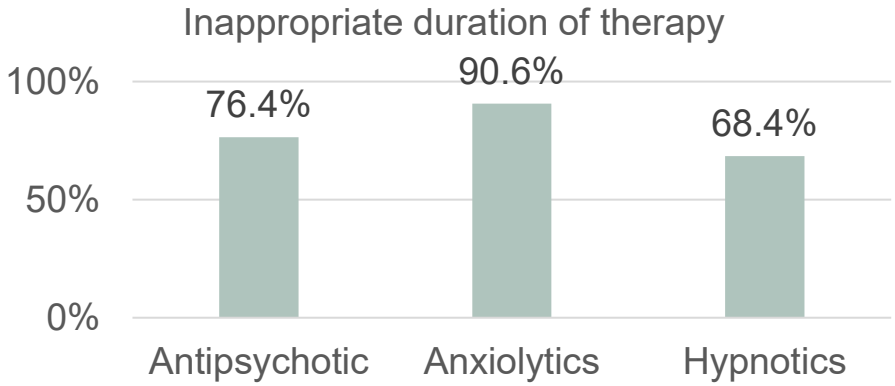
- For insomnia or anxiety unresponsive to non-pharmacological therapies or short-term relief of severe agitation.
- Limit therapy to 2-4 weeks for insomnia.
- Use for 2 weeks in anxiety then gradually reduce over 6 weeks.

Background: Inappropriate use

Westbury et al. (2010)[5]



Van der Spek et al. (2016)[6]



Barriers to reduction:

- Worsening in agitation, sleep disturbances and anxiety.
- Increased workload.
- Deterioration in quality of life.

5. Westbury J, et al. Australas J Ageing 2010;29(2):72-6.
6. van der Spek K, et al. Int Psychogeriatr 2016;28(10):1589-95.

Background: AP and BZ discontinuation

Antipsychotics:

- Low-quality evidence suggests antipsychotics may be successfully discontinued in older people with dementia without increase in symptoms.[7]
- People with psychosis, aggression, or agitation who responded well to antipsychotic therapy and/or had severe symptoms at baseline may benefit from antipsychotic continuation.[7]
- Antipsychotic discontinuation may reduce agitation in those with mild symptoms.[7]

Benzodiazepines:

- Evidence from randomised controlled trials lacking.
- Small (n=38) pilot study of benzodiazepine discontinuation suggests positive effects on sleep quality or midnight awakenings.[8]

7. Van Leeuwen E, et al. Cochrane Database of Systematic Reviews 2018(3).
8. Bourgeois J, et al. Eur J Clin Pharmacol 2014;70(10):1251-60.

Rationale

Drugs & Aging. 2018 Feb; 35(2): 123-134. doi: 10.1007/s40266-018-0518-6

Clinical and Economic Outcomes of Interventions to Reduce Antipsychotic and Benzodiazepine Use Within Nursing Homes: A Systematic Review

Daniel J. Hoyle[1] · Ivan K. Bindoff[1] · Lisa M. Clinnick[2] · Gregory M. Peterson[1] · Juanita L. Westbury[3]

- “There is an urgent need for interventions to report on clinical outcomes”
- 14 of 35 interventions reported on clinical outcomes for the resident

Research questions

1) Is antipsychotic and/or benzodiazepine dose change associated with altered neuropsychiatric symptoms?

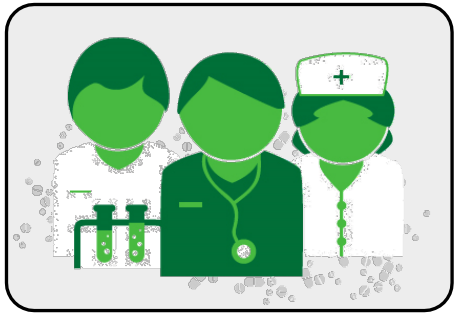
2) Is antipsychotic and/or benzodiazepine dose change associated with altered quality of life?

3) Is antipsychotic and/or benzodiazepine dose change associated with altered social engagement?

Methods

Audit

Education



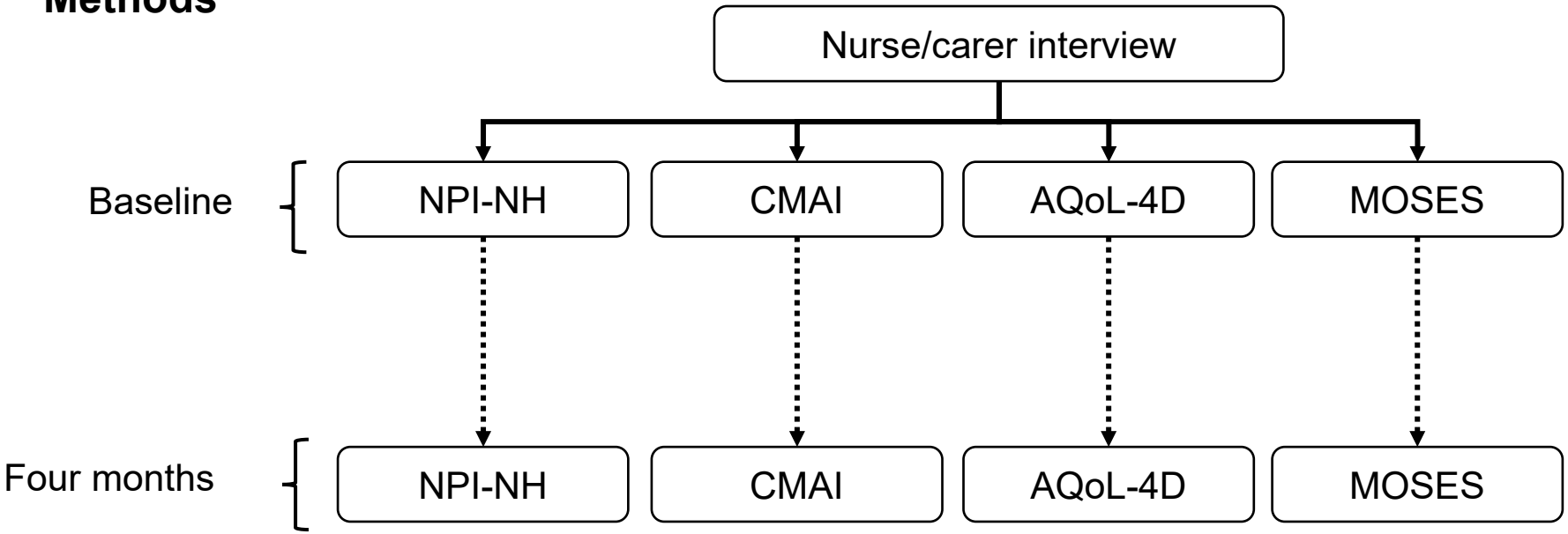
Review

9. Westbury J, et al. Med J Aust 2018;208(9):398-403.

Methods


Timor Sea
Joseph Bonaparte Gulf
Gulf of Carpentaria
Great Barrier Reef
Coral Sea
Shark Bay
Australia
Perth
Brisbane
Sydney
Adelaide
Great Australian Bight
Melbourne

Methods

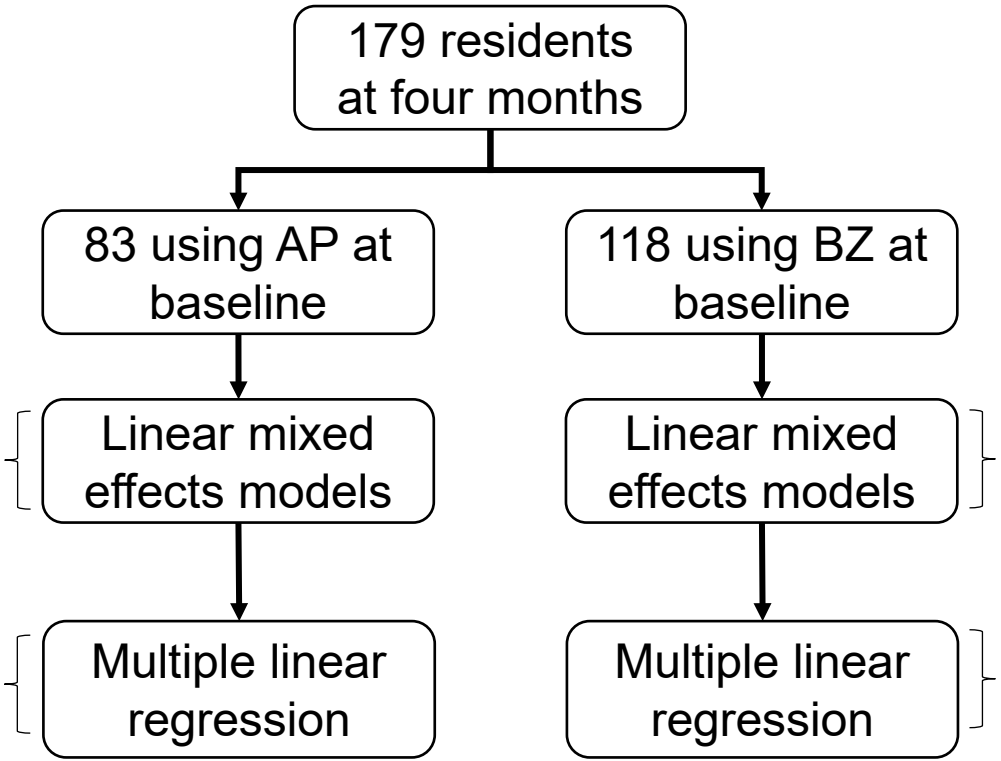


NPI-NH= Neuropsychiatric Inventory- Nursing Home version
CMAI= Cohen Mansfield Agitation Inventory

AQoL-4D= Assessment of Quality of Life-4D
MOSES= Multidimensional Observation Scale for Elderly Subjects

Methods

AP= Antipsychotic
BZ= Benzodiazepine



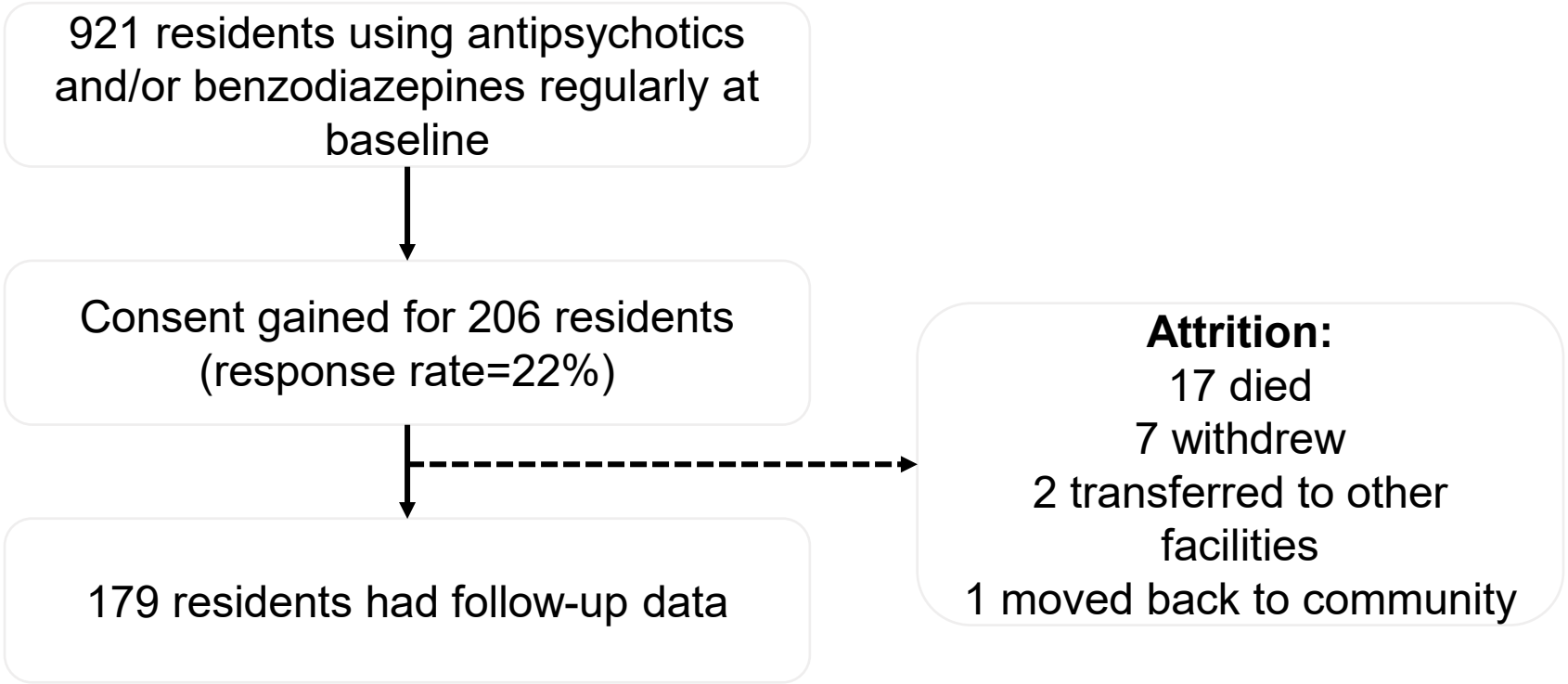
Identification of baseline factors related to dose change

Identification of baseline factors related to dose change

Change in outcome measure related to AP dose change

Change in outcome measure related to BZ dose change

Results: Demographics

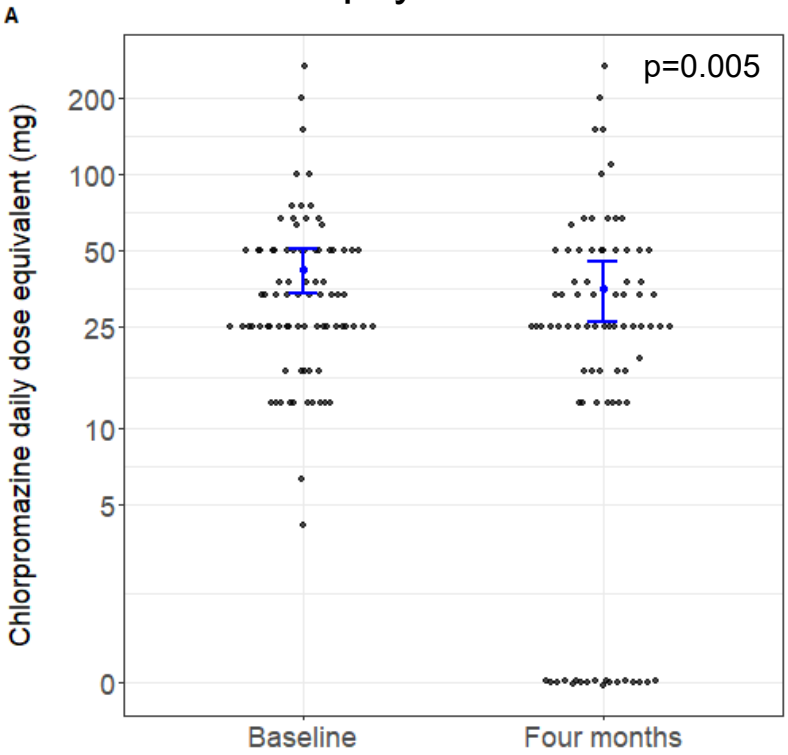


Results: Demographics

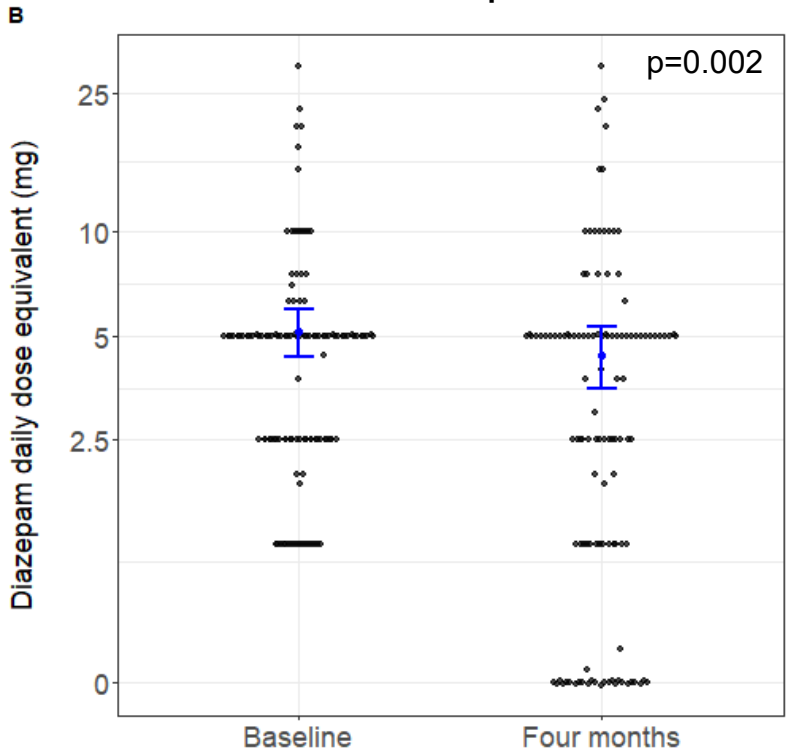
Mean age (SD), years	85.5 (7.84)
Proportion female (%)	72
Proportion with a documented diagnosis of dementia (%)	58
Mean number of regular medications at baseline (SD)	10.4 (3.69)

Results: AP and BZ dose changes

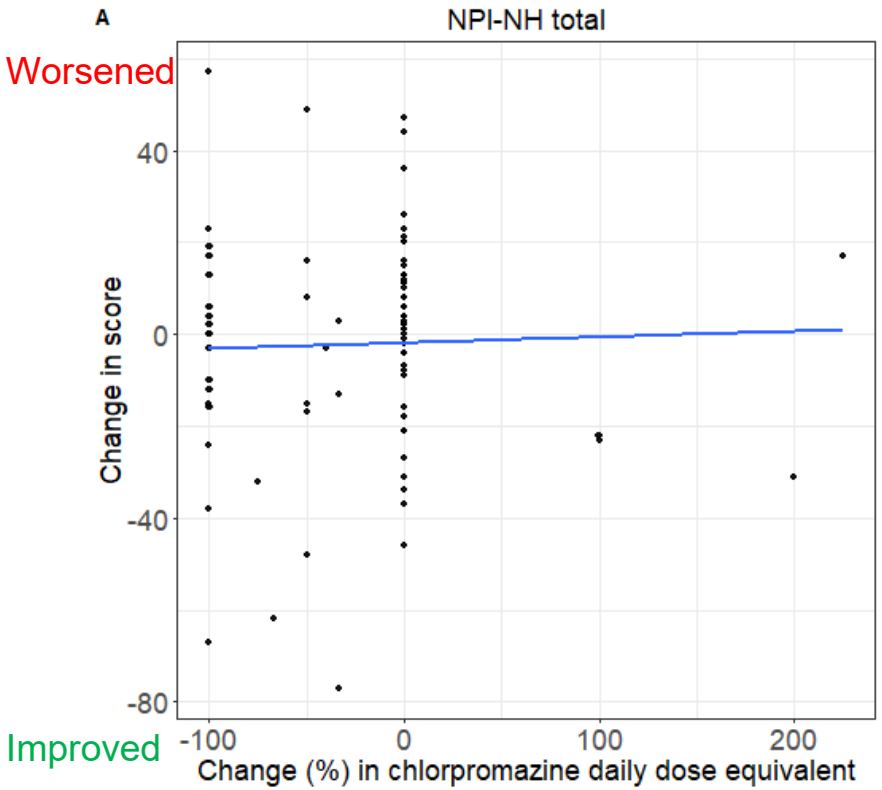
Antipsychotic users

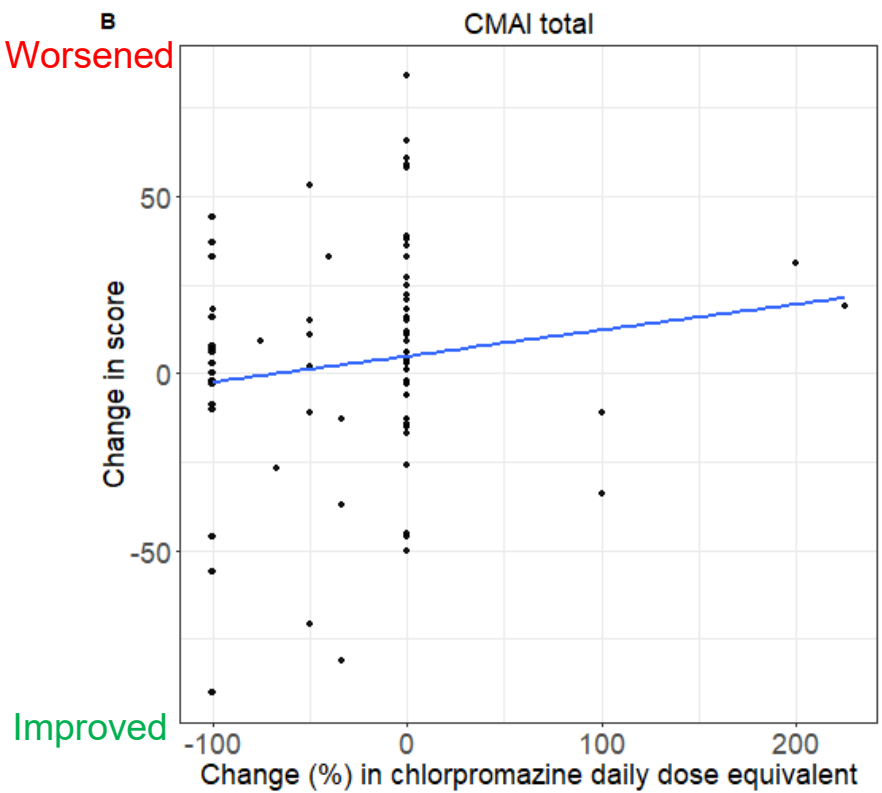


Benzodiazepine users

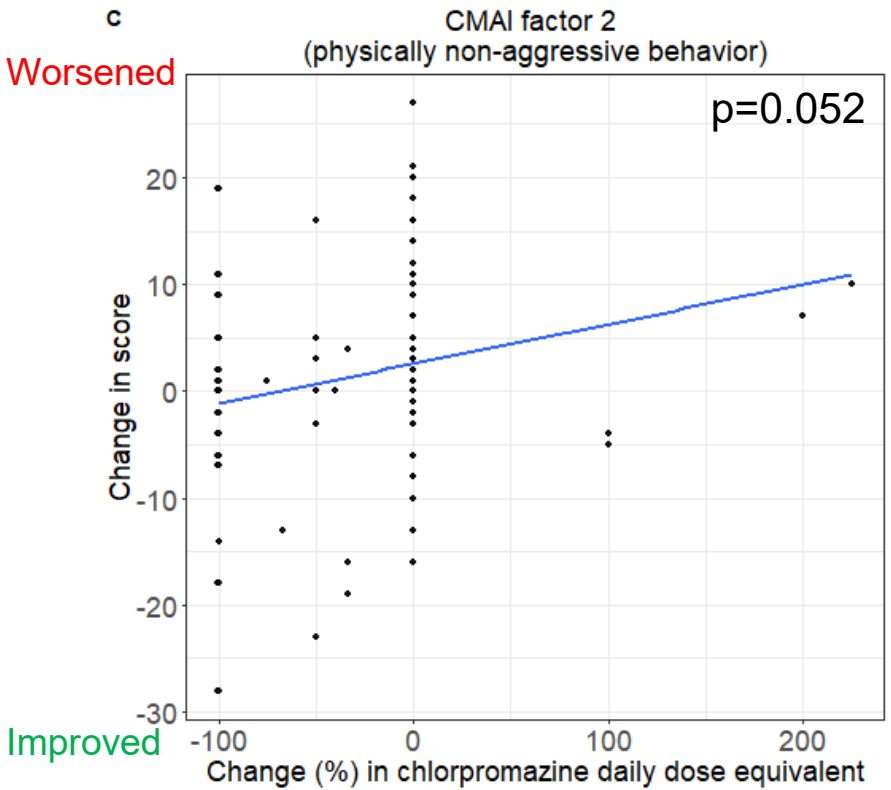


Results: Neuropsychiatric symptoms – AP dose change

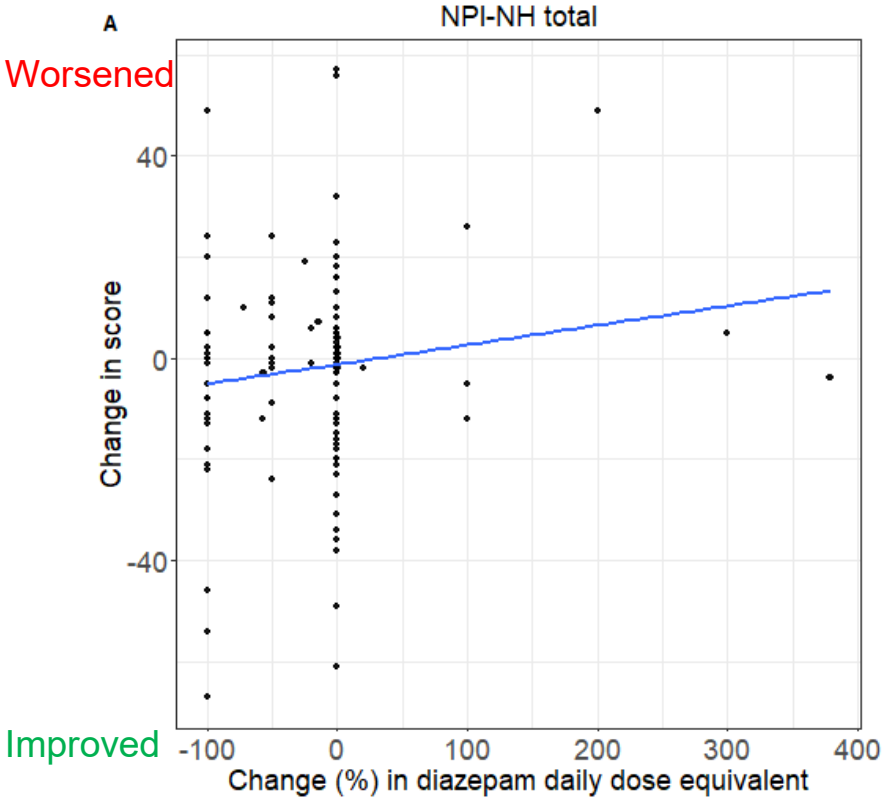


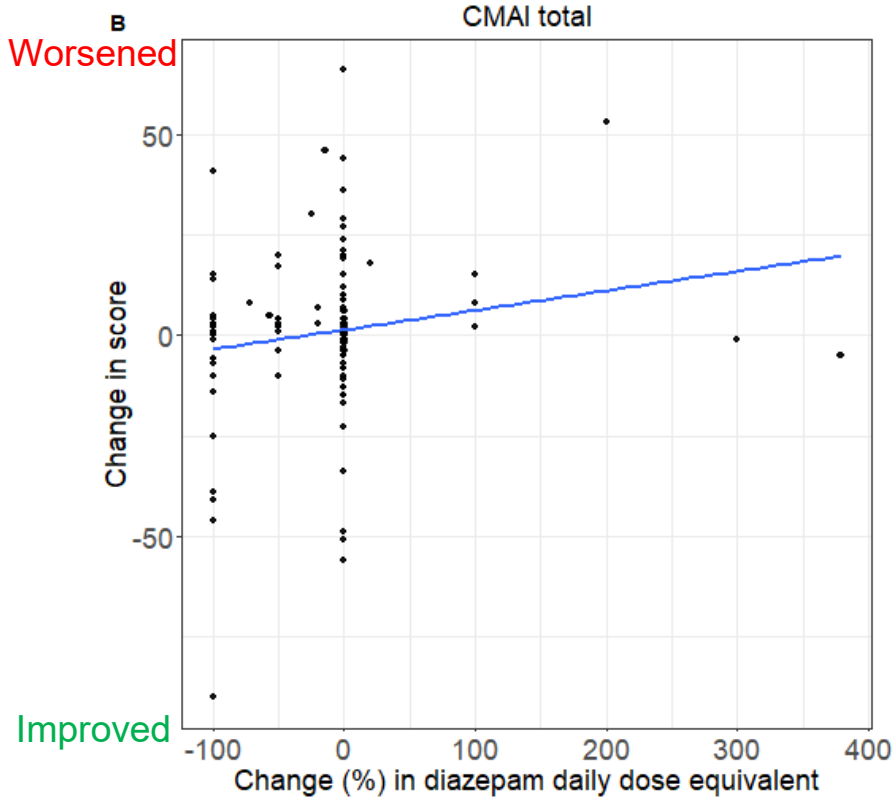


Results: Neuropsychiatric symptoms – AP dose change

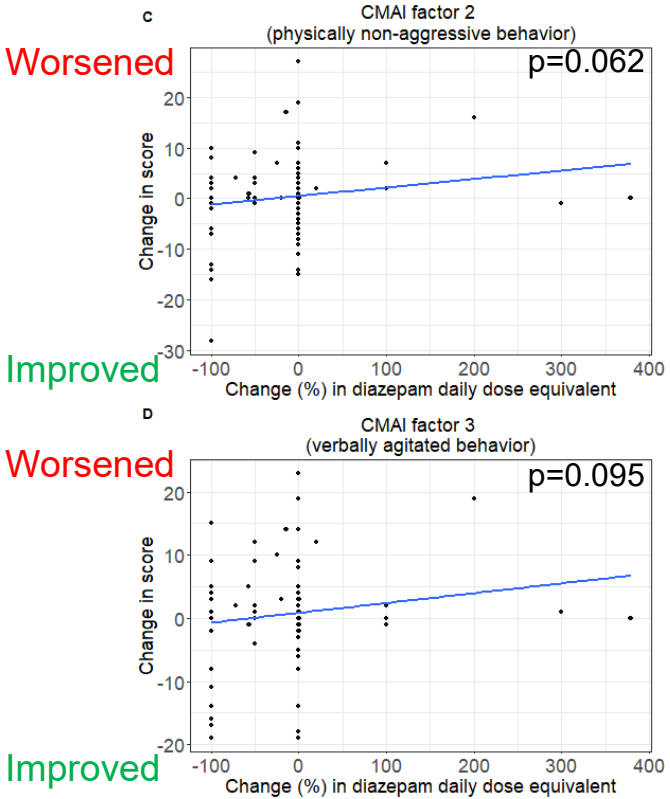


Results: Neuropsychiatric symptoms – BZ dose change



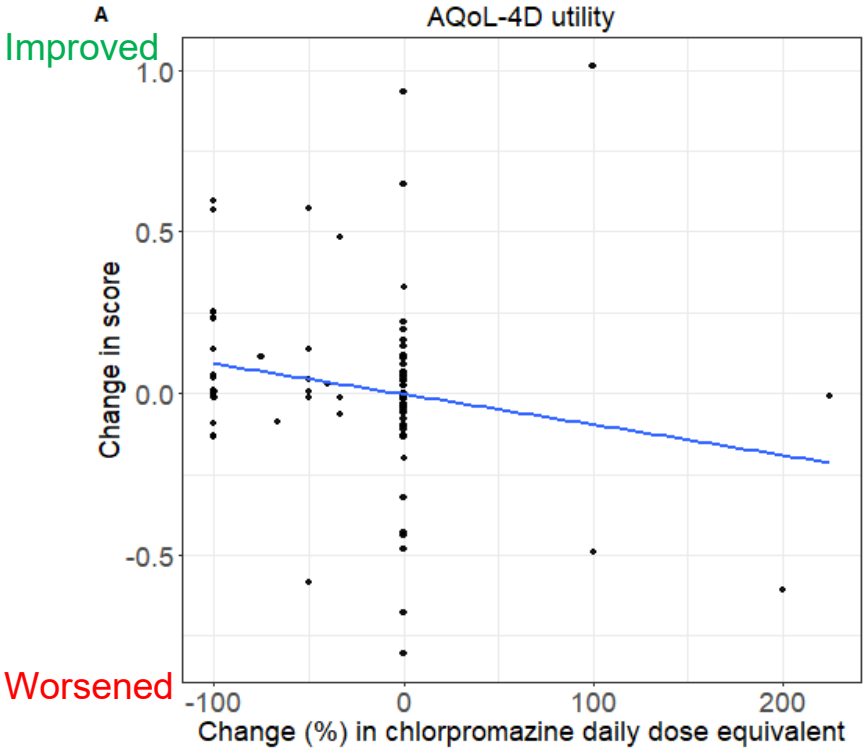


Results: Neuropsychiatric symptoms – BZ dose change

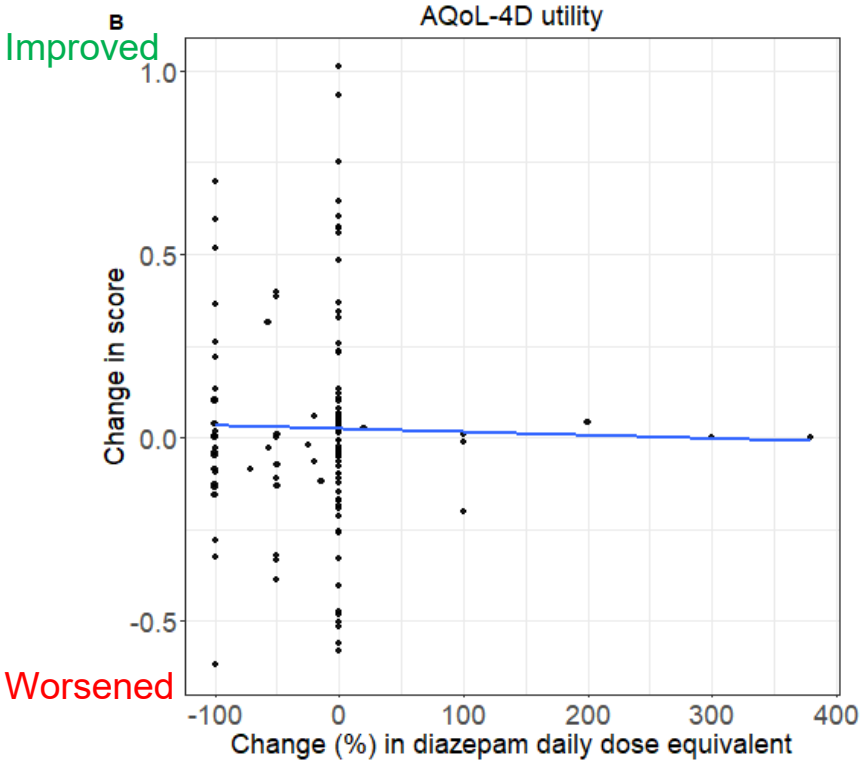


Results: Quality of life

Antipsychotic users

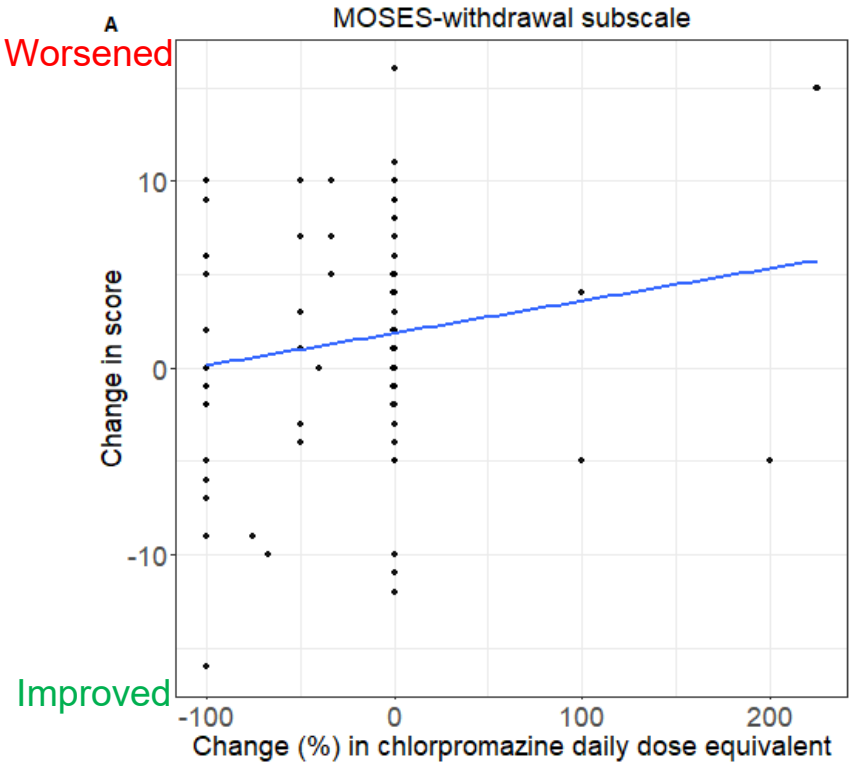


Benzodiazepine users

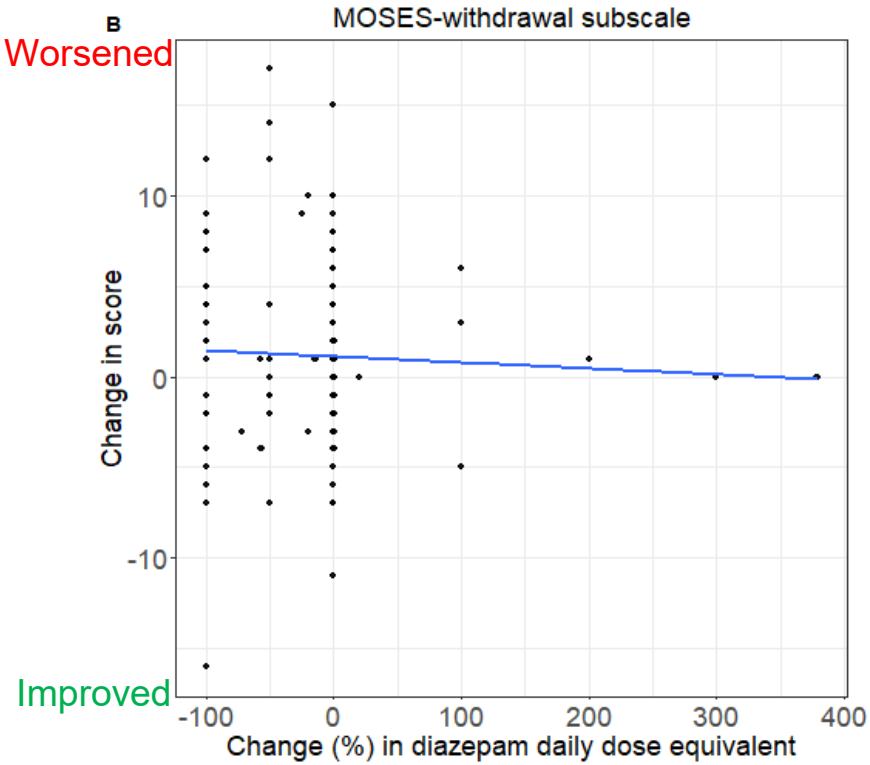


Results: Social withdrawal

Antipsychotic users



Benzodiazepine users



Discussion

Key findings:

Antipsychotic and benzodiazepine dose reduction were **not** associated with worsened *neuropsychiatric symptoms*, *QoL*, or *social engagement*.

Potential benefits (trends of interest):

Antipsychotic reduction:

- ↓ physically non-aggressive behaviour (e.g., restlessness)
- ↑ quality of life
- ↑ social engagement

Benzodiazepine reduction:

- ↓ physically non-aggressive behaviour (e.g., restlessness)
- ↓ verbally agitated behaviour (e.g., calling out)

Discussion

Limitations:

- Absence of a control group
- Small sample size
- Identification of dementia based on documentation
- ?Representativeness
- Lack of blinding

Implications for practice

- Reassurance that antipsychotic and benzodiazepine deprescribing is unlikely to have negative effects for the resident
- Monitor the resident closely during withdrawal
  - Increased risk of relapse with higher levels of baseline neuropsychiatric symptoms[7, 10]
- Potential improvements in neuropsychiatric symptoms may reduce distress and disruption to care staff[11]
- Non-pharmacological strategies that promote person-centered care and social interactions are important, particularly for QoL[11, 12]

7. Van Leeuwen E, et al. Cochrane Database Syst Rev. 2018(3).
10. Patel A, et al. Am J Psychiatry. 2017;174(4):362-9.
11. Almutairi H, et al. Drugs Aging. 2022;39(12):949-58.
12. Ballard C, et al. Int J Geriatr Psychiatry. 2016;173(3):252-62.

Implications for practice

Deprescribing guidelines and algorithms:

- Deprescribing.org (https://deprescribing.org/resources/deprescribing-guidelines-algorithms/)
- Primary Health Tasmania (https://www.primaryhealthtas.com.au/resources/deprescribing-resources/)

International Psychogeriatrics Association (IPA):

- Complete Guides to BPSD (https://www.ipa-online.org/resources/publications/guides-to-bpsd)
- Reduction and prevention of agitation (IPA working group)[13]

Clinical Practice Guidelines for the Appropriate Use of Psychotropic Medications in People Living with Dementia and in Residential Aged Care (pending)

13. Cummings J, et al. Int Psychogeriatr. 2023:1-12.

References

1. Harrison SL, Sluggett JK, Lang C, Whitehead C, Crotty M, Corlis M, et al. The dispensing of psychotropic medicines to older people before and after they enter residential aged care. Med J Aust. 2020;212(7):309-13.
2. Pottegård A, Lundby C, Jarbøl DE, Larsen SP, Hoppe BC, Hoffmann H, et al. Use of sedating medications around nursing home admission in Denmark. Pharmacoepidemiol Drug Saf. 2021;30(11):1560-5.
3. Maclagan LC, Maxwell CJ, Gandhi S, Guan J, Bell CM, Hogan DB, et al. Frailty and Potentially Inappropriate Medication Use at Nursing Home Transition. J Am Geriatr Soc. 2017;65(10):2205-12.
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6. van der Spek K, Gerritsen DL, Smalbrugge M, Nelissen-Vrancken MHJMG, Wetzels RB, Smeets CHW, et al. Only 10% of the psychotropic drug use for neuropsychiatric symptoms in patients with dementia is fully appropriate. The PROPER I-study. Int Psychogeriatr. 2016;28(10):1589-95.
7. Van Leeuwen E, Petrovic M, van Driel ML, De Sutter AIM, Vander Stichele R, Declercq T, et al. Withdrawal versus continuation of long-term antipsychotic drug use for behavioural and psychological symptoms in older people with dementia. Cochrane Database Syst Rev. 2018(3).
8. Bourgeois J, Elseviers MM, Van Bortel L, Petrovic M, Vander Stichele RH. Feasibility of discontinuing chronic benzodiazepine use in nursing home residents: a pilot study. Eur J Clin Pharmacol. 2014;70(10):1251-60.
9. Westbury JL, Gee P, Ling T, Brown DT, Franks KH, Bindoff I, et al. RedUSe: Reducing antipsychotic and benzodiazepine prescribing in residential aged care facilities. Med J Aust. 2018;208(9):398-403.
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11. Almutairi H, Stafford A, Etherton-Beer C, Flicker L. Association of Psychotropic Education with Quality of Life: A Before-After Study in Residential Aged Care Facilities. Drugs Aging. 2022;39(12):949-58.
12. Ballard C, Orrell M, Sun Y, Moniz-Cook E, Stafford J, Whitaker R, et al. Impact of antipsychotic review and non-pharmacological intervention on health-related quality of life in people with dementia living in care homes: WHELD-a factorial cluster randomised controlled trial. Int J Geriatr Psychiatry. 2016;173(3):252-62.
13. Cummings J, Sano M, Auer S, Bergh S, Fischer CE, Gerritsen D, et al. Reduction and prevention of agitation in persons with neurocognitive disorders: an international psychogeriatric association consensus algorithm. Int Psychogeriatr. 2023:1-12.

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- Dr Ivan Bindoff
- Associate Professor Lisa Clinnick
- Professor Gregory Peterson

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Australian Government

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Thank you

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Useful resources

- The following slides provide a brief collection of articles that may be of interest based on the questions from the Q&A.
- Please note that this collection is not comprehensive.

- If you would like further information/resources to guide your practice/research, please feel free to connect:

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https://www.linkedin.com/in/daniel-hoyle-pharmacy/

@DHoylePharm

Useful resources (RedUSe)

- Pilot
  - Westbury J, Jackson S, Gee P, Peterson G. An effective approach to decrease antipsychotic and benzodiazepine use in nursing homes: The RedUSe project. Int Psychogeriatr. 2010;22(1):26-36.
  - Westbury J, Tichelaar L, Peterson G, Gee P, Jackson S. A 12-month follow-up study of "RedUSe": A trial aimed at reducing antipsychotic and benzodiazepine use in nursing homes. Int Psychogeriatr. 2011;23(8):1260-9.

- National expansion
  - Westbury JL, Gee P, Ling T, Brown DT, Franks KH, Bindoff I, et al. RedUSe: Reducing antipsychotic and benzodiazepine prescribing in residential aged care facilities. Med J Aust. 2018;208(9):398-403.
  - Westbury J, Gee P, Ling T, Bindoff I, Brown D, Franks K, et al. Reducing the use of sedative medication in aged care facilities: Implementation of the RedUSe' Project into everyday practice. Department of Health. Hobart: Wicking Dementia Research & Education Centre; 2016.

- Clinical outcomes
  - Hoyle DJ, Peterson GM, Bindoff IK, Clinnick LM, Bindoff AD, Breen JL. Clinical impact of antipsychotic and benzodiazepine reduction: findings from a multicomponent psychotropic reduction program within long-term aged care. Int Psychogeriatr. 2021;33(6):587-99.
  - Hoyle DJ, Bindoff IK, Clinnick LM, Peterson GM, Westbury JL. Clinical and economic outcomes of interventions to reduce antipsychotic and benzodiazepine use within nursing homes: a systematic review. Drugs Aging. 2018;35(2):123-34.

Useful resources (research methodology)

- Outcome reporting is heterogenous = limits comparison and pooling
  - Bayliss EA, Albers K, Gleason K, Pieper LE, Boyd CM, Campbell NL, et al. Recommendations for outcome measurement for deprescribing intervention studies. J Am Geriatr Soc. 2022;70(9):2487-97.
  - Millar AN, Daffu-O'Reilly A, Hughes CM, Alldred DP, Barton G, Bond CM, et al. Development of a core outcome set for effectiveness trials aimed at optimising prescribing in older adults in care homes. Trials. 2017;18(1):175.

- Single-armed implementation projects and observational studies increasingly used without accounting for confounding.
  - Moriarty F, Thompson W, Boland F. Methods for evaluating the benefit and harms of deprescribing in observational research using routinely collected data. Res Social Adm Pharm. 2022;18(2):2269-75.

- Recruitment in aged care is challenging
  - Lacey RJ, Wilkie R, Wynne-Jones G, Jordan JL, Wersocki E, McBeth J. Evidence for strategies that improve recruitment and retention of adults aged 65 years and over in randomised trials and observational studies: a systematic review. Age Ageing. 2017;46(6):895-903.

Useful resources (risk of substitution)

- Harris DA, Maclagan LC, Iaboni A, Austin PC, Rosella LC, Maxwell CJ, et al. Potential Unintended Consequences of Antipsychotic Reduction in Ontario Nursing Homes. J Am Med Dir Assoc. 2022;23(6):1066-72.e7.
- Maust DT, Kim H, Chiang C, Kales HC. Association of the centers for medicare & medicaid services' national partnership to improve dementia care with the use of antipsychotics and other psychotropics in long-term care in the united states from 2009 to 2014. JAMA Intern Med. 2018.
- Olivieri-Mui BL, Devlin JW, Ochoa A, Schenck D, Briesacher B. Perceptions vs. evidence: therapeutic substitutes for antipsychotics in patients with dementia in long-term care. Aging Ment Health. 2017;22(4):544-9.
- Vasudev A, Shariff SZ, Liu K, Burhan AM, Herrmann N, Leonard S, et al. Trends in Psychotropic Dispensing Among Older Adults with Dementia Living in Long-Term Care Facilities: 2004-2013. Am J Geriatr Psychiatry. 2015;23(12):1259-69.
- Pitkala KH, Juola AL, Hosia H, Teramura-Gronblad M, Soini H, Savikko N, et al. Eight-year trends in the use of opioids, other analgesics, and psychotropic medications among institutionalized older people in Finland. J Am Med Dir Assoc. 2015;16(11):973-8.