

# Are psychosocial interventions effective in reducing antipsychotic use for dementia in care home residents? Current evidence and future perspectives

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## SUMMARY

Antipsychotics are commonly prescribed to manage the behavioural and psychological symptoms of dementia (BPSD) despite their modest efficacy and significant adverse effects. Psychosocial interventions are recommended as the first-line approach in treating BPSD before considering pharmacological options. A Cochrane Review by Lühnen et al (2023) evaluated the effects of psychosocial interventions on reducing antipsychotic prescription in care homes, and found that no generalisable recommendations can be made based on the currently available evidence. This commentary attempts to critically appraise and add context to the review.

## KEYWORDS

Dementias/neurodegenerative diseases; antipsychotics; psychosocial interventions; carers; qualitative research.

2019). However, they have been found to have only moderate efficacy and are associated with substantial adverse effects, such as sedation, increased risk of falls, cardiovascular events, extrapyramidal movement disorders and anticholinergic symptoms (Mühlbauer 2021). Guidelines therefore recommend that psychotropic use is minimised and psychosocial interventions are offered as first-line management of BPSD (NICE 2018; Ma 2022). Despite this, antipsychotic prescription rates in care homes remain high, with 30% of care home residents with dementia receiving them (NICE 2019), and it has been reported that often their prescription is not justified (van der Spek 2016).

The Cochrane review by Lühnen and colleagues (2023) aimed to evaluate the benefits and harm of psychosocial interventions designed to reduce antipsychotic use compared with usual care in care homes. The objectives of this commentary are to critically appraise the systematic review, and to add clinical context to its design and findings.

## Summary of the review

Over 2500 records were identified and screened, and five cluster randomised controlled trials (RCTs) (Box 1) were included in the review. These involved a total of 120 randomised clusters and 8342 participants. Details of the search strategy and design can be found on pages 8–10 of the review (Lühnen 2023).

The overarching inclusion criterion for participants was long-term residency in a care home, irrespective of cognitive status.

Psychosocial interventions were defined as those that involved direct contact with either the residents or their care providers. All five studies included an educational component on topics

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Worldwide, 55 million people are living with dementia, many of whom live in care homes (World Health Organization 2023). People who reside in care homes usually have more severe dementia, including behavioural and psychological symptoms of dementia (BPSD) (Wittenberg 2019). BPSD include symptoms such as restlessness, agitation, aggression, shouting, wandering and psychosis. They affect 90% of people with dementia at some point during their disease and cause significant distress both to the patient and the people around them (Corbett 2012).

Antipsychotics, along with other psychotropic medications (which include classes of drugs such as sedatives, hypnotics and anxiolytics), are frequently prescribed to manage BPSD (National Institute for Health and Care Excellence (NICE)

### BOX 1 Cluster randomised controlled trials

In randomised controlled trials (RCTs), each participant of the trial is randomly allocated to one intervention or another. In cluster RCTs, the pre-existing group or 'cluster' that the participants belong to is randomised rather than each individual participant.

For the studies included in this review, the unit of randomisation was each care home.

This means that participants from the same care home all received the same intervention. Comparison of the baseline characteristics between each cluster is especially important in the context of care homes being a cluster, because the standards of care provided at each care home can vary at baseline.

such as person-centred care, reminiscence and behavioural management techniques. This component targeted different groups of professionals, including care home staff, physicians and managers who were responsible for training other staff. One study assessed the respective effect of medication review, pleasant social activities and physical exercises in addition to staff education.

The interventions were compared with regular care, optimised regular care or, for the study that adopted a factorial design (Box 2), other psychosocial interventions.

The primary outcomes of the review were the rate of regularly prescribed antipsychotic medication and adverse events. Secondary outcomes were incorporated from those investigated in each study. The results were synthesised qualitatively (Box 3) rather than quantitatively, owing to the clinical heterogeneity (Box 4) of the eligible studies. The participants, intervention, comparison and outcomes of the review are illustrated on pages 11–23 of the review (Lühnen 2023).

In summary, comparing the intervention and control groups showed inconsistent and generally little to no difference in the rates of antipsychotic prescription, adverse events, BPSD, quality of life and the use of other psychotropic medications.

### BOX 2 Factorial design

Factorial design is used when researchers want to examine the effect of delivering multiple interventions together, compared with delivering them separately. It was utilised by Ballard et al (2016) in this review: three interventions were examined: medication review, social interaction and exercise. Each cluster could either receive or not receive each of the three interventions. This yields  $2 \times 2 \times 2 = 8$  possible combinations. Specifically, 1

combination for which none of the interventions are allocated, 3 combinations for one of three interventions to be allocated, 3 combinations for two of three interventions to be allocated, and 1 combination for all three interventions to be allocated. In the study two clusters were randomised to each combination. Hence it was described as a  $2 \times 2 \times 2$  factorial cluster randomised design.

## Discussion

### *What the review informs us*

Equivocal conclusion was drawn from the results. As unsatisfying as this may seem, the review presented comprehensively the existing evidence, or the lack thereof, on the efficacy of psychosocial interventions in reducing antipsychotic prescriptions in care homes.

The reviewers conducted an extensive search to identify eligible studies, screening all non-pharmacological RCTs in the Cochrane Dementia and Cognitive Improvement Group's Specialised Register, and actively searching for unpublished and ongoing studies, to minimise publication bias. The review was compared with other reviews, such as those that included other study types (Nishtala 2008; Forsetlund 2011; Thompson 2014) and those that investigated other psychotropic medications (Birkenhager-Gillesse 2018; Hoyle 2018), which all found mixed and generally non-significant results on the impact of non-pharmacological interventions on psychotropic prescription rates.

Although it is apparent that the review (the team's second on the subject) has made every effort to capture as many relevant studies as possible, one could argue that the update of its inclusion criteria for the primary outcome, limiting it to studies that look at antipsychotic use only, has restricted its findings. Two studies that were included in the previous version of the review (Richter 2012) have been excluded, as they looked at psychotropic use in general. One of these two studies reported on antipsychotic prescription rates separately in its results section (Avorn 1992), and perhaps this could have been incorporated in the current review without compromising the review's specificity. There is a possibility that other excluded studies may have also contained data about these relevant primary outcomes.

In contrast to the narrow inclusion criteria for the primary outcome, the inclusion criteria for the participants were considerably wider. All care home residents were eligible regardless of their cognitive status, and the participant characteristics of the included studies were varied: some only invited those with cognitive impairment (Ballard 2016), or included care homes that were registered to admit mentally impaired elderly people (Fossey 2006), whereas others recruited care homes with no specialisation in psychiatric or skilled nursing and invited all residents (Meador 1997).

Having a wide window for participants could be considered a strength of the review, because it allows for antipsychotic prescription in those who may have undiagnosed memory impairment to be identified. And this is potentially a large group of

**BOX 3 Qualitative synthesis**

A robust qualitative synthesis not only informs about the results of each study but assesses the methodological quality, replicability of the interventions and certainty of evidence.

The likelihood of various biases is examined to determine the methodological quality of a study. For instance, selection bias can be minimised with random sequence generation and concealment of allocation; attrition bias (selection bias due to the way in which participants are lost from each group) can be identified from incomplete outcome data; performance bias is reduced with masking

(‘blinding’) of participants; and detection bias through masking of assessors.

The characteristics of the interventions in this review were extracted using the Template for Intervention Description and Replication (TIDieR) checklist, and were represented graphically according to how many criteria each study has fulfilled.

The certainty of evidence can be reported using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach, which rates a piece of evidence using four-tier system: high, moderate, low, and very low. Evidence

from randomised controlled trials starts at high quality and for each risk of bias, imprecision, inconsistency, indirectness and publication bias, the level of certainty is reduced by one or two levels (Guyatt 2008). Evidence related to most outcomes evaluated in this review had low to moderate certainty owing to inconsistency and imprecision. High-certainty evidence was found only related to adverse events, that psychosocial interventions result in little to no difference in the number of falls, non-elective hospital admissions or unplanned emergency department visits.

people, as it is estimated that 75% of people with dementia are undiagnosed globally (albeit this is a general figure not limited to care home residents) (Gauthier 2022).

The drawback of such leniency is that the results could include care home residents who require regular antipsychotics for other indications, such as psychotic illness, mood disorders and anxiety (Chen 2010). For those who do have an established diagnosis of dementia, it is also relevant to identify the type of dementia they have, as antipsychotics are contraindicated in certain types, such as dementia with Lewy bodies, and could affect the pharmacological management options for BPSD (NICE 2024).

Regardless of the side of the argument, more details about the baseline characteristics of the participants, including their comorbidities and secondary outcomes, looking at the indication for which antipsychotics were prescribed or deprescribed, would add more context to the primary outcome being investigated.

Another aspect that the review has revealed from discussing the studies narratively is that the term ‘regular care’ encompasses a wide variety of

standards and that their details are not being described. There is likely a disparity between the care homes recruited within a single study, let alone in different studies conducted in four countries with different social and healthcare systems. At the same time, all five studies were conducted in either Western Europe or North America, and therefore it is difficult to extrapolate the results beyond the Western socioeconomic and cultural landscape.

Similarly, this review and others have pointed out that the interventions are also poorly characterised and so are difficult to replicate (Nishtala 2008; Lühnen 2023).

Overall, the review has highlighted the general lack in the quantity of RCTs and lack of details about the participants, interventions and their comparisons in the existing RCTs for generalisable comments to be made about whether psychosocial interventions reduce antipsychotic use in care homes. There might have been some value in screening the full text of the studies that were excluded for not focusing solely on antipsychotic prescription, since they could include relevant results.

A minor side note to be pointed out is that the review seems to have misrepresented the results of

**BOX 4 Heterogeneity**

Heterogeneity refers to the difference between data.

In quantitative meta-analysis, a set of results are considered homogeneous if there is a point of overlap between the results of all studies, including their confidence intervals. This means that on a forest plot, a straight line perpendicular to the *x*-axis can be drawn intersecting the confidence intervals of all studies

demonstrated. If such straight line cannot be drawn, meaning that there are studies whose confidence intervals do not overlap at all, then their results are said to be heterogeneous.

Heterogeneity in this review refers to clinical heterogeneity rather than the statistical heterogeneity described above. This is a qualitative entity, describing the differences in

participants, interventions or outcome characteristics. There is no point examining whether the confidence intervals of the results of each study overlap if the clinical characteristics are completely different, as they are not comparable. This was the case for the studies in this review, and no quantitative analysis was carried out for this reason.

the study by Ballard et al (2016). The review states that BPSD were found to be increased in both the medication review and the social interaction groups (and groups with both combined), whereas the study reported that BPSD increased only in groups that had medication review alone, and that the difference disappeared when both medication review and social interaction were delivered together (Ballard 2016).

### Further perspectives

The review gives rise to numerous questions that call for further exploration.

First, the authors of the review have suggested that the use of other psychotropic medications should be assessed: benzodiazepines in particular are frequently prescribed to manage BPSD (Lühnen 2023).

Second, the transferability to real life of the psychosocial interventions, or even the support provided to the control group, should be considered. For example, one study (Richter 2019) offered both groups 3-monthly medication review by a consultant old age psychiatrist and a senior nurse, which seems far from achievable in the UK at present, given the cost and resources that it would require. Ironically this was the only study that had considered the element of cost in its method, but did not proceed with the analysis as the prevalence of antipsychotic prescription reduced in the control group rather than the intervention group (Lühnen 2023). (The reviewers have suggested the possibility of contamination bias, whereby efforts were made to reduce antipsychotic use in control groups as well, since masking was not possible for the people delivering them due to the nature of the interventions (Box 5).)

Third, none of the studies included in the review (nor those that were excluded after screening the full text, for that matter) were conducted after the COVID-19 pandemic. Antipsychotic prescribing in

care homes significantly increased during the pandemic (Howard 2020; McDermid 2023) and did not decrease to pre-pandemic levels after the acute phase of the pandemic had ended (Luo 2023). Living in the post-pandemic era, it is essential to assess whether the psychosocial interventions discussed in the review are still applicable, whether they could be adapted for delivery with minimal physical contact and whether there are alternatives.

Finally, blindly stopping antipsychotics should be cautioned against as well. Insights from an antipsychotics deprescribing trial suggest that 19% of the participants had their antipsychotics re-prescribed following the cessation because they suffered increased agitation and aggression (Aerts 2019). It is also being pointed out that the outcomes measured are often medication-related rather than patient-centred (Swan 2021).

The comprehensive qualitative synthesis of this review has demonstrated the need for continued rigorous research into psychosocial interventions and their impact on antipsychotic use for dementia in care homes. Dementia care is rapidly transforming with emergence of new concepts, such as material citizenship, which is described in the World Alzheimer Report 2022 (Gauthier 2022). Considering that three of the five studies presented in the review were based on the same collection of underlying theories established by the early 2000s, further research into the newer approaches is welcomed and much required.

### Data availability

Data availability is not applicable to this article as no new data were created or analysed in this study.

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### Declaration of interest

None.

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### BOX 5 Challenges of masking in trials for psychosocial interventions

Masking ('blinding') can be used at different stages of a clinical trial: during allocation of the participants, during conduct of the trial, during outcome assessment and during data analysis. These measures are useful in reducing various biases, as discussed in Box 3. It is extremely difficult to involve masking during the conduct of a trial when the interventions are psychosocial. If the intervention is a medicine, then placebo tablets/formulations that look identical can be made. If the intervention is a surgery, then participants can be

consented for both the intervention and comparison procedures and an identical dressing can conceal the procedure from the participants and the healthcare professionals who are involved post-operatively. However, by their very nature psychosocial interventions involve engagement between the provider and the recipient of the intervention, and so the intervention cannot be actualised without both parties knowing what it is. This leads to potential biases such as performance bias and contamination bias.

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