

Evidence briefing on non-pharmacological interventions for dementia in care home settings

- Inappropriate prescribing of antipsychotic drugs has a negative impact on the quality of care and quality of life experienced by people with dementia in care home settings.
- Leeds and York Partnership NHS Foundation Trust (LYPFT) has begun implementing a multidisciplinary team approach to reduce inappropriate prescribing of antipsychotic drugs for people with dementia in care homes.
- There is reasonable evidence for a range of non-pharmacological interventions including structured activity, caregiver education and training, and individual assessment and care planning.
- As the LYPFT team have noted, there is a need to identify and initially target those homes with the highest levels of antipsychotic use and to engage with managers of homes to understand context and to encourage support/ involvement for the training delivered by the team.
- A recent systematic review of qualitative studies provides support for this strategy and also emphasises the need to collaborate with staff at all levels and to involve family members for successful implementation of non-pharmacological interventions.
- Barriers to implementation can be considerable, especially at a time of pressure on resources, and need to be identified and addressed at an early stage. The review of qualitative studies provides guidance as to the likely barriers and suggests selecting interventions that allow residents meaningful interactions with others and that can be integrated easily into routine care.
- Given limited resources, the LYPFT team could consider prioritising staff training over individual assessment as less input from specialist staff is required and more residents could potentially benefit more quickly.

This evidence briefing has been produced for the Leeds and York Partnership NHS Foundation Trust (LYPFT) by the Centre for Reviews and Dissemination (CRD) as part of TRiP-LaB. Full details of methods are available on request (paul.wilson@york.ac.uk or duncan.chambers@york.ac.uk).

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Background

Leeds and York Partnership NHS Foundation Trust (LYPFT) have requested an evidence briefing to support the work of the Care Homes Antipsychotic Project Team. The objectives of the project are to reduce inappropriate prescribing of antipsychotic drugs for patients with behavioural and psychological symptoms of dementia (BPSD), thereby improving patient well-being. The adverse effects of antipsychotic drugs are well known and for people with dementia include increased risk of stroke and premature death.^{1,2}

NICE guidelines recommend that antipsychotics should only be prescribed in the first instance to people with BPSD if the person is severely distressed or if there is an immediate risk of harm to the person or others.³ The Banerjee report commissioned by the Department of Health in 2009 called for urgent action to reduce the inappropriate use of antipsychotic drugs in dementia.⁴

Against this background LYPFT have implemented a multidisciplinary team (MDT) approach to improving care for people with dementia in care homes. The team has provided two types of intervention: training for care home staff and individual assessment and care planning for patients currently being prescribed or considered for prescription of antipsychotic medication. A thorough assessment to reach an understanding (formulation) both of the needs of the individual and, of which interventions would be most appropriate for each care home is an integral part of the team's way of working. The MDT approach has been piloted in three care homes. Extension of the project to a larger sample of homes, concentrating on those with over 20% of residents on antipsychotic drugs, is planned. In total LYPFT is responsible for some 180 care homes and antipsychotic prescription rates as high as 32% have been reported although 20% is thought to be a more typical figure (LYPFT, personal communication).

The objective of this evidence briefing is to support the further development of the project by evaluating the evidence base for non-pharmacological interventions for the management of BPSD. We have focused on the types of interventions used by the LYPFT team and considered 'whole home' approaches such as staff training separately from interventions aimed at individual patients or groups of patients.

Methods

This briefing is a rapid appraisal and summary based mainly on existing sources of synthesised and quality-assessed evidence, primarily systematic reviews and economic evaluations. It is not a systematic review and we have not carried out exhaustive literature searches.

Systematic reviews and economic evaluations have been identified by searching the following sources:

- DARE
- Cochrane Database of Systematic Reviews
- NHS HTA Programme Reports
- NHS EED
- HTA database

For the sections on implementation and health equity, we have followed the methods in our published framework,⁵ but these sections are not based on systematic literature searches.

We have also made use of internal documents supplied by LYPFT; the Matrix Evidence economic evaluation⁶ was identified from this source.

Evidence base for effectiveness

A preliminary search of DARE identified a number of potentially relevant systematic reviews.⁷⁻¹¹ However, a recently published review of reviews from *JAMA* (Journal of the American Medical Association) provides a summary of all the relevant reviews (including Cochrane reviews) together with practical information on using non-pharmacological approaches to manage BPSD.¹² We have therefore used this publication as a primary source of synthesised evidence. We have also looked in some depth at a recent systematic review by Seitz et al.¹⁰ This review, apparently published too late to be included in the *JAMA* review, has the advantages that it deals only with interventions in long-term care settings and examines the feasibility of applying interventions as well as the evidence of their efficacy. We have also included two relevant Cochrane reviews not included in the *JAMA* overview (including one published in December 2012).^{13, 14}

Overview of systematic reviews

The *JAMA* article summarised 24 systematic reviews.¹² The overview was primarily focused on community-dwelling patients but studies and reviews from hospitals and long-term care settings were also included. Based on this substantial body of evidence, the authors concluded that effective general approaches include structured activity, caregiver education and skills training and adult day services (the latter not relevant to long-term care). Music interventions were considered promising. Evidence for reminiscence therapy, validation therapy, simulated presence therapy, aroma therapy and light therapy was inconsistent or lacking.

Few of the included systematic reviews conducted a meta-analysis, making it difficult to assess the quantitative effects of the interventions on severity of BPSD. Although not explicitly stated, the reviews appeared to compare non-pharmacological interventions with standard care (i.e. standard care plus non-pharmacological intervention vs. standard care alone) so they provide no evidence on the relative benefits and harms of non-pharmacological interventions and antipsychotic drugs.

*Systematic review of non-pharmacological interventions for BPSD in long-term care*¹⁰

This systematic review evaluated the efficacy and feasibility of non-pharmacological interventions for neuropsychiatric symptoms of dementia in long-term care settings. Randomised controlled trials (RCTs) that compared non-pharmacological interventions with usual care, medication or an alternative non-pharmacological intervention were eligible for inclusion. At least 50% of participants in included studies were required to be receiving long-term care. As flaws in the design, conduct, analysis, and reporting of RCTs can cause intervention effects to be under or overestimated, the authors assessed the risk of bias using a standard method (Cochrane Risk of Bias Tool). The synthesis of the results was very limited as the review authors did not go beyond identifying which trials had demonstrated a statistically and/or clinically significant effect of the intervention being evaluated. The authors' concluded that interventions including staff training, mental health consultation, psychosocial activities and sensory stimulation may improve neuropsychiatric symptoms of dementia although better quality evidence was required. Despite some limitations in the conduct of the review the authors' conclusions appear reliable.

Of 40 trials included in the review, 16 showed a statistically significant beneficial effect of the intervention on some measure of BPSD. The effect was considered to be clinically

significant in only two trials: one of a comprehensive assessment intervention (see below) and one of aromatherapy. Given the limited information reported in the text we have looked more closely at the evidence for the types of interventions being delivered by the LYPFT team. These appear to correspond to ‘nursing and staff training’ and ‘comprehensive assessment’.

Nursing and staff training: Eleven trials of nursing and staff training were included in the systematic review. Overall the trials provided little evidence of a superiority of staff training interventions over standard care. Details of interventions were often poorly reported in the review, possibly reflecting limitations in the reporting of the original trials. In terms of risk of bias most trials were classed as unclear for important features like random sequence generation and allocation concealment. This means that we can’t tell from the information presented the extent of bias that may be affecting the trial results presented.

Comprehensive assessment: Three trials of ‘individualised geriatric mental health assessment or consultation’ (not further defined by the review authors) were identified. These interventions appear similar to the individual assessment and care planning approach offered by the LYPFT team. Two of the three trials showed a statistically significant benefit of the intervention over the comparator and in one of these the difference was considered clinically significant. As with nursing and staff training interventions, only limited details of the interventions were reported. One trial compared ‘activity program, psychotropic drug management and educational rounds’ with standard care; the second compared ‘case management’ and ‘consultation with specialist’ with standard care; and the third evaluated ‘systematic non-pharmacological therapy’. Two of the three trials had adequate randomisation but the same two trials were rated unclear for allocation concealment, making their risk of bias unclear.

Feasibility of interventions: Seitz et al. assessed the feasibility of implementing the intervention evaluated in each study based on requirements for staff time and training, input from specialist staff and purchase of equipment or other capital costs. Feasibility was rated as high, moderate or low in each category based on criteria reported in the review (Table 1). Both staff training and comprehensive assessment require the involvement of specialist staff from outside the long-term care setting, although most staff training interventions were rated medium for this aspect of feasibility. Most staff training interventions required little equipment or capital expenditure and were rated high for feasibility, whereas two of the three comprehensive assessment interventions were rated low. Comprehensive assessment interventions were considered more feasible than staff training interventions in terms of time and training requirements for staff in the long-term care facility, though the small number of studies limits the reliability of this finding.

Table 1: Feasibility of staff training and comprehensive assessment (from Seitz et al.¹⁰)

	Specialist staff	Capital costs	Staff time/training
Nursing and staff training	Low to Medium Feasibility	High Feasibility	Low Feasibility
Comprehensive assessment	Low Feasibility	Low and High Feasibility	High Feasibility

Overall, staff training interventions appeared somewhat more feasible than comprehensive assessment interventions. As the assessment categories were derived from data from Canada and most included trials were done in North America, generalisability of the findings to UK settings is uncertain.

Other interventions: In general the findings of Seitz et al. were similar to those of Gitlin et al., with some but not all trials of psychosocial interventions, exercise, music therapy and sensory stimulation showing statistically significant effects of the intervention. Across the whole review, many trials were limited by failure to specify a primary outcome, reporting of multiple outcomes and small sample sizes (resulting in insufficient power to detect differences between groups where they exist).

Cochrane review of psychosocial interventions to reduce antipsychotic medication use in care homes¹⁴

This recent systematic review included four cluster randomised trials, i.e. care homes rather than individuals were randomly assigned to a psychosocial intervention or control group. Three trials investigated education and training of nursing staff and one evaluated multidisciplinary team meetings. Only one of the trials was of high methodological quality. All four trials reported a decrease in antipsychotic drug prescription in the intervention group, although it was not always reported whether differences between intervention and control groups were statistically significant. Differences between trials meant that it was not possible to perform a meta-analysis so the overall size of the intervention effect was unclear. The authors' conclusion that there is evidence to support the effectiveness of psychosocial interventions, but that the evidence has significant limitations, seems appropriate.

Cochrane review of functional analysis-based interventions for challenging behaviour in dementia¹³

This recently published review evaluated the effectiveness of formulation-led individualised interventions (functional analysis) for dementia across all settings. This is important to LYPFT because the team use formulations to guide their work with both individuals with dementia and care home staff. The review included 18 trials but the majority were done in family care settings and only three were performed in care homes. In most trials, functional analysis was part of a larger multi-component programme of care. This meant that the effect of functional analysis interventions alone could not be evaluated. Most trials of interventions incorporating functional analysis reported positive effects in reducing the frequency of challenging behaviour at the end of the intervention period but these were not sustained at longer-term follow-up. The authors appropriately concluded that functional analysis-based approaches are promising but it is too early to draw firm conclusions.

Prevention

We have found no reviews of the effectiveness of non-pharmacological interventions in preventing the development of BPSD. However, Gitlin et al. ([Link to the article](#); see eBox1 in the Data supplement) present a number of considerations for caregivers to help prevent behavioural symptoms.¹² These strategies would be likely to be incorporated into staff training interventions such as those being delivered by the LYPFT team.

Evidence base for cost-effectiveness

Systematic review of economic evidence

An initial search of NHS EED revealed no relevant economic evaluations of non-pharmacological interventions for BPSD. We have therefore taken evidence from a recent systematic review of cost-effectiveness of prevention, care and treatment strategies for dementia.¹⁵ This review incorporated evidence from 56 literature reviews and 29 single studies. Most of the evidence related to pharmacological therapies for dementia. Non-pharmacological interventions were categorised as interventions for people with dementia, interventions targeted at unpaid carers (not relevant to care home settings) and organisation of care and support.

Interventions aimed at individuals: The review included one UK RCT evaluating cost-effectiveness of group cognitive stimulation therapy for people with mild-to-moderate dementia in care home and day centre settings. The authors concluded that cognitive stimulation therapy had the potential to be more cost-effective than usual care because of its effects on cognition and quality of life. Costs were not significantly higher for cognitive stimulation therapy than for usual care. However, the trial was limited by its small sample size and short follow-up.

The review authors found no economic evidence related to physical activity programmes for people with dementia. Other non-pharmacological interventions mentioned in the review were aimed at people living in the community (tailored activity programmes, occupational therapy) or were diagnostic tests.

Organisation of care and support: The review found no evidence on the economic impacts of direct payments or personal budgets specifically for people with dementia. Evidence on care management related to people with dementia living in the community, while evidence on management of co-morbidity did not relate to any specific intervention.

Summary and critical appraisal of Matrix economic evaluation

One identified economic evaluation compared a behavioural intervention (cognitive stimulation therapy) with antipsychotic medication for people with BPSD.⁶ The study was commissioned by South Tees Hospitals Foundation Trust and undertaken by Matrix Evidence.

The study used a cost-benefit analysis approach, expressing costs and effects in monetary terms. Decision models were developed including estimates of the costs of delivering each intervention to a hypothetical cohort of patients, effects (on falls and stroke) and benefits (reduced incidence of stroke and falls in terms of healthcare cost savings and quality of life gains). The authors concluded that the increased cost (£27.6 million per year at 2010 prices) of the behavioural intervention was offset by nearly £70.4 million in healthcare cost savings through lower incidence of strokes and falls, and quality of life improvements valued monetarily at £12 million per year. Overall, the behavioural intervention was considered to generate a net benefit of over £54 million per year; and represents an efficient use of public resources according to the authors.

Unfortunately, this model lacks rigour. Its major shortcoming is that it incorporates adverse effects of antipsychotic drugs but makes no allowance for any difference in effectiveness between the two interventions. In other words, the way the model is constructed is almost guaranteed to produce a cost-effectiveness benefit for the behavioural intervention over antipsychotic medication. Its value as evidence is therefore questionable.

Evidence base for implementation

A recent systematic review of 35 qualitative studies has sought to shed light on what underlies the successful implementation of psychosocial interventions in care homes.¹⁶ Included studies were conducted in a range of countries and care settings making generalisability an issue. Nevertheless, the authors were able to identify a number of coherent recurring themes emerging from the available literature.

Challenges

Challenges to successful implementation mainly arose from actual or perceived demands for extra work, reallocation of staff time and flexibility. One way of addressing these issues was to use interventions such as music and spending time outdoors that had the potential

to be easily incorporated into routine practice. Many studies reported that staff were able to accept these extra demands and felt that they were justified by the beneficial outcomes of the intervention. However, in a minority of cases staff did not feel that the benefits warranted the extra workload.

A challenge that could be of particular relevance to LYPFT was the sense that staff were being asked to implement psychosocial interventions against a background of falling staff to resident ratios and increasingly complex care needs. This was associated with a focus on 'priority needs' and a general avoidance of any perceived risks. Attitudes of individual members of care home staff could also present barriers to implementation of psychosocial interventions, for example if they were uncomfortable with taking part in the intervention or questioned its value. Finally there was evidence from some studies of resistance to outside interventions of any sort.

Conditions for successful implementation

Given these challenges the authors unsurprisingly identified obtaining the support and involvement of care home staff as a vital factor in successful implementation. They suggested that scepticism about non-pharmacological approaches should be tackled before implementation and that implementation should be collaborative and acknowledge staff perspectives from the outset. The authors also stressed the importance of obtaining the collaboration of relatives to help staff get to know the person with dementia and select interventions appropriate to their needs.

Organisational support was identified as another factor in successful implementation, both to promote changes in practice where necessary and to incorporate psychosocial interventions into routine care. Organisational support also enabled concerns about risk to be addressed and balanced against the benefits of being able to participate in meaningful activities.

Despite limited evidence on the relative effectiveness of different interventions, the synthesis of qualitative studies suggested that some interventions (such as reminiscence sessions) are more likely than others to benefit care home residents by enabling them to interact meaningfully with other people. In terms of formal training for staff, role plays, videos and vignettes were identified as effective teaching methods. Some qualitative studies suggested that participating in psychosocial interventions enabled staff to 'see beyond the symptoms of dementia' and broaden their concept of their role as caregivers.¹⁶ The findings also indicated the importance of encouraging staff to reflect on their practice.

Implications for LYPFT

General

The serious adverse effects and limited benefits of antipsychotic drugs for people with dementia (not addressed in this briefing) suggest a clear need to limit prescription of these drugs. This is supported by NICE guidance and national policy.

There is a substantial evidence base on non-pharmacological interventions for BPSD in long-term care settings. Much of the evidence is limited because of the poor quality and small sample size of many of the included trials. Many trials of non-pharmacological interventions have failed to demonstrate a statistically or clinically significant benefit over usual care. Trials (and hence the systematic reviews that include them) often fail to report interventions in detail which makes it difficult to be sure what is compared and to reliably estimate intervention effects. Evidence for cost-effectiveness is particularly limited.

Despite these limitations, there is reasonable evidence for a range of interventions particularly under the headings of structured activity, caregiver education and training, and individual assessment and care planning.

LYPFT has begun to implement an MDT approach incorporating staff training and individual assessment of people currently being prescribed antipsychotic drugs. Both approaches appear promising for reducing BPSD compared with usual care. Although not explicitly addressed in the systematic reviews it would be expected that antipsychotic prescriptions would also decrease. This was demonstrated in a UK RCT of training nursing home staff to deliver non-pharmacological interventions to manage agitated behaviour.¹⁷

Implementation

The project is at a relatively early stage of implementation. As the LYPFT team have noted, there is a need to identify and initially target those homes with the highest levels of antipsychotic use.

The team will also need to engage with managers of homes to understand context and to encourage senior staff support/ involvement for the training delivered by the team (as identified in interim report).

The systematic review of qualitative studies provides strong support for this strategy and also emphasises the need to collaborate with staff at all levels and to involve family members for successful implementation of non-pharmacological interventions.

The *JAMA* overview could be helpful to the team because it identifies various simple strategies to manage or prevent BPSD and also provides a practical pathway for assessment and development of a treatment plan. [Link to the article](#)

The barriers to implementation are considerable, especially at a time of pressure on resources, and need to be identified and addressed at an early stage. The review of qualitative studies provides guidance as to the likely barriers and ways of addressing them that have been successful in various contexts. Although not mentioned in the review it may be important to reassure care home staff and medical professionals that antipsychotic drugs can still be used where necessary with appropriate review.

There is limited quantitative evidence on the relative effectiveness of different non-pharmacological interventions but the review of qualitative studies suggests that the precise intervention selected may be of secondary importance. What is important is to select interventions that allow residents meaningful interactions with others and that can be integrated easily into routine care.

Given limited resources, the LYPFT team could consider prioritising staff training over individual assessment as less input from specialist staff is required and more residents could potentially benefit more quickly.

Health equity

Given the apparent variation in antipsychotic drug use between care homes, working initially with those with the highest rates will help to reduce unwarranted variations in practice and improve health equity.

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