



## Review

# A systematic review of staff training interventions to reduce the behavioural and psychological symptoms of dementia

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## ABSTRACT

Behavioural and psychological symptoms of dementia (BPSD) are highly prevalent and problematic in care settings. Given the limited effectiveness of medical treatments, training care staff to understand and manage these symptoms is essential for the safety and quality of life of people with dementia. This review evaluated the effectiveness of staff training interventions for reducing BPSD. A systematic literature search identified 273 studies. Twenty studies, published between 1998 and 2010, were found to meet the inclusion criteria. Overall, there was some evidence that staff training interventions can impact on BPSD: twelve studies resulted in significant symptom reductions, four studies found positive trends and four studies found no impact on symptoms. No links were found between the theoretical orientation of training programmes and their effectiveness. Training was also found to impact on the way staff behaved towards residents. A quality screening, using pre-specified criteria, revealed numerous methodological weaknesses and many studies did not adhere to the recommended guidelines for the conduct of cluster randomised controlled trials. There is an urgent need for more high quality research and evidence-based practice in BPSD.

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## 1. Introduction

### 1.1. Behavioural and psychological symptoms in dementia

There were estimated to be 35.6 million people with dementia worldwide in 2010, with the figure expected to reach 65.7 million by 2030 (World Alzheimer's Report, 2010). In time, the loss of functional ability associated with dementia makes independent living very difficult, resulting in many people being admitted to care homes. The term 'Behavioural and Psychological Symptoms of Dementia' (BPSD) is used to describe the non-cognitive effects of dementia, mainly behavioural problems, depression and anxiety (Finkel et al., 1996). It is estimated that 80% of people with dementia living in residential care homes have BPSD (Margallo-Lana et al., 2001; Zuidema et al., 2007). Although in the past BPSD has frequently been treated with anti-psychotic medication, this approach carries significant risks (e.g. by increasing the risk of cerebrovascular events) and it is not clinically effective (Banerjee,

2009; Ihl et al., 2011). Additionally, two randomised controlled trials have demonstrated the lack of effectiveness of anti-depressants for people with dementia (Banerjee et al., 2011; Lyketsos et al., 2003).

### 1.2. Staff training research

Many care home residents with BPSD have complex needs which are difficult to manage, yet staff often lack basic training in dementia care (Ballard et al., 2001). Training interventions, which provide staff with strategies for managing BPSD, offer a proactive and potentially cost effective strategy (Lawlor, 2002). In the UK, the National Dementia Strategy (Department of Health, 2009) and the National Institute for Clinical Excellence (2007) urge that all care staff should receive access to specialist dementia training, yet there are no guidelines suggesting which training programmes may be the most effective. Past reviews on staff training have had variable findings. For example, Kuske et al. (2007) found that many studies had positive effects on either staff or resident outcomes and Aylward et al. (2003) found evidence for the short term effectiveness of staff training. However, half the studies reviewed by McCabe et al. (2007) did not significantly impact on the behaviour of residents, even when levels of staff knowledge and behaviour management skills improved.

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There has been no review to date which has specifically investigated the effectiveness of training programmes for reducing BPSD. This review addresses the following research questions: (1) Are staff training programmes effective for reducing BPSD in people with dementia living in care homes? (2) Does the effectiveness of training programmes vary according to the theoretical model or the intensity of the training programme? (3) Do staff training programmes have secondary benefits on staff behaviour, attitudes and psychological well-being?

## 2. Method

### 2.1. Literature search

A systematic literature search was conducted using Psych-Info, PubMed, EMBASE, Medline and CINALH. Keywords were entered to fulfil the following criteria: (1) staff training interventions ('staff training'; 'staff education'); (2) involving care staff ('nursing staff'; 'nursing'; 'care'; 'caregivers'; 'staff'; 'care assistants'; 'carers'); (3) within a care home setting ('nursing home'; 'care home'; 'assisted living residence'; 'residential care institution'; 'long-term care'); (4) with people diagnosed with dementia ('dementia'; 'Alzheimer's disease'); (5) evaluating the impact on BPSD ('behavioural problems'; 'psychological symptoms'; 'psychiatric symptoms'; 'agitation'; 'aggression'; 'depression'; 'anxiety'; 'challenging behaviour'). Titles; abstracts and excerpts were reviewed according to the inclusion and exclusion criteria. Reference lists were also reviewed to identify additional publications.

### 2.2. Inclusion criteria

- Randomised controlled trials (RCTs), quasi-experimental designs and patient as own comparison designs. Non-randomised designs, rated as adequate or above using the York Centre for Systematic Reviews quality criteria (University of York, 2009), were included due to the limited number of randomised studies.
- Training interventions designed to help paid care staff manage BPSD in residents living in nursing or residential care homes.
- Studies published in English, in peer-reviewed journals, between 1998 and 2011.
- Resident mood and behaviour evaluated as a primary outcome measure.

### 2.3. Quality rating

The quality of RCTs was rated using Jadad et al.'s (1996) criteria, which provides a rating from 0 to 5. This is based on the quality of randomising procedures, use of blinding and the description of withdrawals and drop-outs. The maximum score (5) requires double blinding, yet only single blinding is possible in psychological research. Therefore studies in this review were able to achieve a maximum score of 4. The CONSORT guidelines (Campbell et al., 2004) were consulted to provide guidance on factors specific to the conduct of Cluster Randomised Trials (CRCTs), such as the determination of sample size and the method of statistical analysis. The quality of non-randomised designs were rated using the York Centre for Systematic Reviews criteria (University of York, 2009). This assessed (i) how adequately participants and the intervention were described, (ii) validity, reliability and appropriateness of measures, (iii) drop-out rate and associated bias, (iv) adequacy of follow up, (v) matching of groups and use of control groups, and (vi) blindness of outcome assessments. The study was rated as good if it met all criteria, adequate if it met more than half, and poor if it met less than half.

## 3. Results and discussion

### 3.1. Included studies

In total, 237 citations were initially identified but 217 were excluded as they failed to meet the inclusion criteria (Fig. 1). Twenty studies were included in the review comprising 13 RCTs and seven non-randomised studies. Table 1 illustrates the design, setting, description of intervention, total numbers, outcomes measures, assessment points, results and quality ratings. Results are presented according to the three research questions.

### 3.2. Are staff training programmes effective for reducing BPSD in people with dementia living in care homes?

Staff training is a potentially valuable method of reducing BPSD in residents with dementia living in care homes. Of the 13 RCTs, only two achieved Jadad scores of 4 and two achieved scores of 3. Out of the seven other studies, only one was rated as 'good' on the York criteria. This highlights the poor quality of the available evidence and inconsistency of the findings in this review (Table 1), making it difficult to draw firm conclusions in agreement with previous reviews (McCabe et al., 2007; Kuske et al., 2007). Seven RCTs found that training interventions were effective for reducing BPSD (Deudon et al., 2009; Teri et al., 2005; Chenoweth et al., 2009; Finnema et al., 2001; McCallion et al., 1999; Proctor et al., 1999; Testad et al., 2010a,b) whilst three RCTs found positive trends despite a lack of significant findings (Davison et al., 2007; Magai et al., 2002; Testad et al., 2005). Three RCTs found no evidence for the benefits of staff training interventions on BPSD (Fossey et al., 2006; Schrijnemaekers et al., 2002; Visser et al., 2008). Five non-randomised designs (Landreville et al., 2005; Wells et al., 2000; Burgio et al., 2002; DeYoung et al., 2002; Lyne et al., 2006) obtained positive findings, one found a positive trend which failed to reach significance (Oh et al., 2005) and one no impact of staff training on BPSD (Moniz-Cook et al., 1998). Sixteen studies included a follow-up assessment and most found that the positive effects of the training intervention were maintained at follow-up. This indicates that once changes to care practices are made, the positive effects can usually be maintained over time.

Most studies assessed the impact of staff training on behaviour problems in dementia. Five studies (Finnema et al., 2005; Lyne et al., 2006; McCallion et al., 1999; Proctor et al., 1999; Teri et al., 2005) looked at the impact on depression, and only one measured the impact on anxiety in dementia (Teri et al., 2005). Four studies achieved a reduction in depression, indicating that depression may be amenable to change through staff training. Beneficial interventions may include the use of care planning (Proctor et al., 1999; Lyne et al., 2006), enhancing communication (McCallion et al., 1999) and introducing pleasant events (Teri et al., 2005).

### 3.3. Does the effectiveness of training programmes vary according to the theoretical model orientation utilised or the intensity of the training programme?

#### 3.3.1. Theoretical model

This review divided the 20 included studies into five categories: *Behavioural-oriented approach* with person-environment fit incorporates ideas from both social learning theory (Bandura, 1978), which states that behaviours are maintained through reinforcement, and 'person-environment fit' (Lawton, 1975), which considers how the demands of the environment must be adapted to suit each individual. These programmes help staff understand and modify the sequence of events which lead to behavioural problems, by identifying activators, behaviours and consequences (ABC's).

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