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Dementia training programmes for staff working in general hospital settings – a systematic review of the literature

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Dementia training programmes for staff working in hospital settings – a systematic review of the literature

Abstract:

Objectives: There has been an increased interest in dementia training programmes directed to general hospitals, partly due to the reported lack of staff training that may be contributing to poor quality of care. Although literature describing and evaluating training programmes in hospital settings increased in recent years, there are no reviews that summarise these programmes. This review sought to address this, by collecting the current evidence on dementia training programmes directed to staff working in general hospitals.

Method: Literature from five databases (PubMed, Academic Search Complete, PsychInfo, CINAHL and AgeLine) were searched, based on a number of inclusion criteria. The selected studies were summarised and data was extracted and compared using narrative synthesis based on a set of pre-defined categories. Methodological quality was assessed using Kmet, Lee & Cook (2004) criteria.

Results: Fourteen peer-reviewed studies were identified with the majority being pre-test post-test investigations. No randomised controlled trials were found. Methodological quality was variable with selection bias being the major limitation. There was a great variability in the development and mode of delivery although, interdisciplinary ward based, tailor-made, short sessions using experiential and active learning, were the most utilized approaches. The majority of the studies mainly evaluated learning, with few studies evaluating changes in staff behaviour/practices and patients’ outcomes.
Conclusion: This review indicates that high quality studies are needed that especially evaluate staff behaviours and patient outcomes and their sustainability over time. This review also highlights measures that could be used to develop and deliver training programmes in hospital settings.

Keywords: dementia and cognitive disorders, training and educational programmes, institutional care

Introduction

According to the World Alzheimer Report of 2015 (Prince et al., 2015), 46.8 million people worldwide were living with dementia in 2015. This figure will almost double every 20 years, reaching 74.7 million in 2030 and 131.5 million in 2050. Due to the varying co-morbid conditions, persons with dementia may require the need for referral and admission to an acute hospital. At any time, a quarter of the patients in an acute hospital are persons with dementia or cognitive impairment (Lakey, 2009; Royal College of Psychiatrists, 2011). Moreover, patients with dementia may account to as much as 42% of patients aged over 70 years in acute hospitals (Lyketsos et al., 2000; Sampson, Blanchard, Jones, Tookman & King, 2009).

There is ample evidence that the quality of care of patients with dementia in hospital settings is far from optimal (Zekry et al., 2008) and can be very challenging (Clissett, Davina, Rowan, & John, 2013). The Royal College of Psychiatrists (2011, 2013) carried out two national audits of dementia care in general hospitals in UK and identified ‘disappointing results’ in the first Audit (2011). Although the second National Audit found that positive initiatives were taken, including the development of Dementia Champions and the collection of a life history (personal information) about persons with dementia when in hospital together with the reduction in the use of anti-psychotic medications, more needs to be done. Nevertheless, a number of negative findings were also reported including a dearth of proper assessment for
delirium risk and cognitive function and a general lack of staff awareness of how best to care for these patients, indicating a huge need for better staff training and support. The report showed that person-centred dementia care training was delivered in only 23% of the hospital audited. The need for dementia care training in hospital settings to improve the quality of care of these patients has been highlighted in national dementia strategies such as National Dementia Strategy in England (Department of Health, 2009) and the National Strategy for Dementia in the Maltese Islands (Scerri, 2015) as well as the National Institute of Clinical Excellence guidelines (NICE, 2007).

Most of the studies and reviews on dementia care training programmes were developed to provide nursing and care staff with the necessary skills to reduce challenging behaviours in individuals with dementia in long-term care settings (Moyle, Hsu, Lieff, & Vernooij-Dassen, 2010). Two reviews (McCabe, Davison & George, 2007; Spector, Orrell & Goyder, 2013) concluded that staff training programmes can reduce Behavioural and Psychological Symptoms of Dementia (BPSD) in dementia residents. The training programmes also had a positive impact on the staff in terms of knowledge, perceived ability to manage BPSD, decreased stress and reduced staff turnover. However, both reviews highlighted the methodological weaknesses and low quality of the studies. Similarly, Kuske et al. (2007), in a systematic review of staff training programmes on dementia care, commented that due to these methodological weaknesses and a lack of follow-ups, it was difficult to conclude that these programmes have successfully been able to make a difference in practice.

Irrespective of these limitations, evidence on the effectiveness of dementia care training in long-term care wards is available (Kuske et al., 2007; McCabe et al., 2007). However, there is still limited evidence of whether training sessions have the same impact in hospitals, even though interest in developing these programmes in these settings is increasing. For example, the Royal College of Nursing together with academics and senior nurse managers in nine
NHS trusts providing acute care worked collaboratively to improve the experience of patients with dementia and their family during their hospital stay (Brooker et al., 2014). The majority of the participating trusts developed and implemented a staff training programme on dementia care, showing that this approach was the most favoured intervention. However, although this programme showed positive outcomes, the heterogeneity of interventions and methods of evaluation makes it difficult to ascertain whether the outcomes were the result of the intervention.

Two reviews (Dewing & Dijk, 2014; Moyle et al., 2008) discussed current practices in the care of older persons with dementia in general hospital settings. Dewing & Dijk (2014) summarised descriptive studies, discussing themes such diagnosis, staff knowledge and attitudes, experiences of persons with dementia, family carers and staff. Similarly, Moyle et al. (2008) mainly focused on theoretical literature and identified a number of principles and models of care that are essential for best practice in the care of older people with dementia that can be used in hospital settings. Nevertheless, both reviews did not provide a detailed overview of published studies that developed and evaluated dementia training programmes in hospital settings. Moreover, multi-component interventions make it hard to elucidate what makes the difference in outcome during evaluation. Although, Dewing & Dijk (2014) identified a number of studies in their review, an evaluation of the quality of these studies has never been sought. Consequently, this review will specifically focus on peer-reviewed studies that evaluate staff training programmes in hospital settings where the primary intervention was the training programme.

In summary, with the increased dementia prevalence, more persons with dementia will require hospital care. However, hospital care for persons with dementia is challenging partly because staff are not trained enough. Although, studies that evaluate the effectiveness of staff training programmes in long-term care are available, there is still limited evidence on what is
practical to implement in terms of content, delivery models (Surr, Smith, Crossland & Robins, 2016) and methods used to evaluate training programmes in hospital settings (Dewing & Dijk, 2014). This review sought to address this gap in the literature by critically appraising published training programmes directed to hospital staff, with a focus on their development, content and mode of delivery, as well as levels of evaluation used, in order to direct educators, researchers and hospital administrators interested in developing and evaluating such programmes.

**Aim and objectives**

The study was directed by the following research question:

What is the current evidence on dementia training programmes directed to staff working in general hospital settings?

More specifically, the authors sought the answer the following objectives:

1. What is the quality rating of the selected studies?
2. What are the characteristics of the training programmes in the selected studies?
3. Based on Kirkpatrick’s Evaluation Framework (2009), at which level are these training programmes evaluated?
4. How effective are these training programmes at different levels?
5. What are the challenges and solutions in developing and evaluating dementia training programmes in hospital settings?

**Methods**

*Definition of a general hospital*
In the context of this review, a broad definition of the term ‘general hospital’ was taken, consisting of ‘a hospital not specialising in the treatment of a particular illness or of patients of a particular sex or age group’ (Collins English Dictionary, 2016). Therefore, psychiatric and other specialised hospitals were excluded from this review.

**Search strategy**

Five commonly used databases namely PubMed, Academic Search Complete, PsychInfo, CINAHL with full texts and AgeLine were searched. The Medical Subject Headings (MeSH) ‘dementia’ OR ‘Alzheimer’ AND ‘hospitals’ AND ‘training’ AND ‘education’ AND ‘evaluation’ were inputted in each database (Appendix). Titles and abstracts were initially reviewed to identify potentially relevant articles and reference lists of selected articles were screened.

**Eligibility criteria**

**Inclusion criteria**

Studies with the following criteria were included:

- carried out in general hospital settings/wards as previously defined
- reporting interventions that consisted predominantly of a training/educational programme for staff working in hospital settings
- identified in peer-reviewed journals
- written in English language
- with evaluation designs composed mainly of a quantitative component

**Exclusion criteria**

Studies with the following criteria were excluded:
• carried out in long-term care facilities including residential homes/nursing homes/assisted living settings and day hospitals
• absence of evaluation data
• focusing mainly on the effectiveness of mental health liaison posts or specialist units in hospital settings
• reports or projects from grey literature
• investigating educational/training interventions in undergraduate studies
• investigating educational/training interventions directed to patients, family members or the lay public
• programmes that focus predominantly on staff training on delirium or other geriatric syndromes other than dementia.

**Quality assessment**

Eleven quality criteria from Kmet, Lee & Cook (2004) were used (Table 1). Since none of the identified studies were randomised controlled trials, three out of 14 criteria found on this checklist focusing on randomisation and blinding were excluded. Each study was assigned a score according to whether they fully met the criteria (2 points), partially met the criteria (1 point), or not at all (0 points). Summary scores were obtained by calculating the total sum attained divided by the maximum possible score of 22.

**Analysis**

Owing to the heterogeneity of the training programmes, participants and outcome measures, the quantitative synthesis (meta-analysis) approach was not considered to be appropriate and the guidelines for developing narrative synthesis as suggested by Popay et al. (2006) were used. Kirkpatrick’s four-level training evaluation model was used to guide in the selection of the studies and to contribute to the interpretation of the review findings (Kirkpatrick, 2009).
Moreover, similar reviews were used to identify the theoretical models on which these studies were based upon, that could be equally applied to this study. A preliminary synthesis was developed in a table format that described the studies according to a set of predefined criteria. Eventually, relationships were explored within and between studies and the training programmes and synthesised by using qualitative case descriptions (Light & Pillemer, 1984). The strategies used to develop the programme, the mode of delivery, the duration of the programme and the characteristics of the participants/facilitators was extracted for each programme and compared with one another. In addition, the effectiveness of the training programmes was compared by categorising the studies according to Kirkpatrick’s Evaluation Framework (2009). This model has previously been adopted for appraisal of the evidence for reported training programmes to staff in supporting people with disability (Smidt, Balandin, Sigafoos & Reed, 2009) and in identifying what works in dementia care training (Surr et al., n.d.). The selected studies were then categorised according to four levels of training evaluation that is whether the evaluation of the programme was directed to one or more of these levels (Figure 1). Evidence of the robustness of the synthesis was sought by assessing the methodological quality of the selected studies as discussed above in order to draw conclusions about the strength of the evidence.

The initial search was carried out by AS. A further independent search was carried out by another author (CS) and yielded similar findings. All three authors evaluated the initial suitability of each study. Each selected article was read in full by AS and data extraction and synthesis was carried out by tabulations (Table 1) as suggested by Popay et al. (2006) and reviewed by the other two authors (CS, AI). Data consisted of information related to the development and implementation of the training programmes as well the results obtained from the evaluation. Further data extraction and analysis was done by grouping and critically appraising the data according to the predefined categories as highlighted above.
Results

Results of the search strategy

The initial search retrieved 496 hits. After removing duplicates (53), the titles and abstracts were read. Twenty-eight potentially relevant articles were identified after applying the inclusion/exclusion criteria. These articles were read and further assessed for eligibility. Five articles were excluded as these mostly focused on training intervention in nursing homes/long-term care wards. In six studies, evaluation data was not clearly reported, two studies focused on evaluation of staff learning needs whilst another study was directed to staff/patient experiences. In a further two studies, the training programme was part of a complex intervention (e.g. introduction on specialised care units in acute hospitals) so that staff training constituted only a small part of the intervention.

Fourteen studies were thus selected (Table 2) consisting of 10 training programmes with four studies being a repeat of the original interventions with amendments. Nine studies used a pre-test, post-test design (Banks et al., 2014; Elvish et al., 2015; Elvish et al., 2016; Horner, Watson, Hill & Etherton-Beer, 2013; Galvin et al., 2010; Palmer et al., 2014; Teodorczuk, Mukaeotova-Ladinska, Corbett & Welfare, 2014; Surr et al., 2016; Wesson & Chapman, 2010;), four studies adopted a post-test only design (Crabtree & Mack, 2010; McPhail, Traynor, Wikstrom, Brown, & Quinn, 2009; Nayton et al, 2014; Waugh, Marland, Henderson, Robertson & Wilson, 2011) whilst the remaining was a case-control study (Smythe et al., 2014). Studies were carried out in hospitals in England (6 studies), Scotland (3 studies), Australia (3 studies) and in the United States of America (2 studies).

Quality assessment of selected studies
Table 1 shows the quality rating assessment scores of the selected studies. The median quality score was 0.57, ranging from 0.18 to 0.91 indicating a considerable variability in the quality. Using a similar classification described by Spector, Revolta & Orrell (2016) in which studies were categorised with low (<0.6), medium (0.6–0.8) or high-quality (>0.8) scores, three studies (Elvish et al., 2015; 2016; Surr et al., 2016) were found to be of high quality, four studies were of medium quality (Galvin et al., 2010; Palmer et al., 2014; Banks et al., 2014; Teodorczuk et al., 2014) whilst the remaining studies were of poor quality. In the medium and poor quality studies, it was not clear how the participants were selected to attend the training programmes whilst in others a purposive sample was used leading to selection bias. Moreover, most of studies did not control for any confounding variables such as type of occupation or years of experience of the participants. In addition, population size was not reported in most studies whilst power analysis was conducted in only two studies. Since most of the studies had small sample sizes, the findings obtained may not be generalizable to the population of staff working in hospital settings. Compared to high quality studies, medium and low quality studies also had insufficient detail in the reported results whilst conclusions were not always clearly supported by the results obtained.

**Characteristics of the training programmes**

**Development of the programmes**

Different strategies were adopted in developing the programmes with the most common being a review of the current literature, the use of pre-developed training packages/resources and a training needs analysis of the participants conducted prior to the training. The educational packages and resources used varied widely between programmes, most of which were developed from national experts in dementia care and were mainly focused on best practices and guidelines related to the care of persons with dementia in hospital settings.
Ten of the 14 studies also based their training programmes on needs analysis. This was carried out prior to the implementation of the programme using focus groups with hospital staff (Elvish et al., 2015; Galvin et al., 2010; Smythe et al., 2014), discussions with hospital managers (Sur et al., 2016) or a survey method (Crabtree & Mack, 2010; McPhail et al., 2009). Other stakeholders were consulted including mental health specialists, patients and family carers (Elvish et al., 2015, 2016; Teodorczuck et al., 2014). Nayton et al. (2014) adopted the most comprehensive method to develop the programme consisting of training outcomes obtained from the administration staff, an audit of staff perceived attitudes and environmental review, discussion with daily caregivers, a review of the literature and expert opinion and reflection following the evaluation of each session. Unlike other studies with a fixed content, the same authors also adopted an iterative approach so that the programme could be modified in terms of content and mode of delivery following participant feedback.

Content and theoretical models used in the programme

Content varied widely between programmes with a number taking a more comprehensive overview and including information such as prevalence of dementia and differential diagnosis based on the medical model (Galvin et al., 2010; McPhail et al., 2009; Palmer et al., 2014; Teodorczuk et al., 2014) whilst others focused more on psychosocial areas. Using Spector, Orrell and Goyder (2013) classification of the theoretical models in dementia care training (i.e. behavioural-oriented approaches, communication approaches, person-centred approaches, emotion-oriented approaches and other approaches), it was evident that the most used theoretical approach was the person-centred care model developed by Kitwood (1997) (Burns et al., 2014; Elvish et al., 2015, 2016; Surr et al., 2016) with a focus on the lived experience of persons with dementia and their life history. In many of the programmes there was an attempt not only to provide knowledge and skills but also to empower hospital staff in initiating a number of changes in their workplace by acting as change agents. Thus, although
all programmes had a didactic component, other practice development strategies were employed such as experiential learning using clinical placements in mental health settings (Banks et al., 2014; Crabtree & Mack, 2010; Smythe et al., 2014; Waugh et al., 2011) and action learning using active teaching approaches (Palmer et al., 2014; Teodorczuk et al., 2014; Waugh et al., 2011). For example, drawing from the experience of the previous Dementia Friendly Hospital Initiative Education programme (Galvin et al., 2010), Palmer et al. (2014) included more videos and case studies that encouraged group discussion and reflection whilst reducing the didactic content.

Whilst in the majority of the studies a single level of training was provided for all hospital staff, in two studies (Crabtree et al., 2010; Surr et al., 2016), a two-level training was delivered consisting of an initial awareness raising to all staff and a more advanced programme for selected staff. Compared to the awareness raising programme, the advanced programme in both studies was more exhaustive although different approaches were used – whilst in Surr et al. (2016), the intermediate programme provided more in-depth knowledge, Crabtree’s programme (2010) was more based on experiential learning in mental health settings. This continues to highlight the variability in content and methods used in developing these programmes.

Sustainability of the programme was sought in only two studies. Nayton et al. (2014) used a post-programme workshop whilst participants in Waugh et al. (2011) initiated a dementia awareness group to foster continuing changes in practice.

*Implementation of the training programme*

Delivery of the programmes varied widely between studies. For example, duration varied from 2 hours in Wesson & Chapman (2010) to 12 days (Waugh et al., 2011), although the latter mainly consisted of clinical placement hours in the ‘enhanced’ level of training. Even
though the duration of training varied considerably, there was some congruence in the methods that authors used to improve staff attendance by maintaining some flexibility in the mode of delivery. A commonly used method consisted of delivering repeated sessions of around 30-45 minutes. However, Elvish et al. (2016) preferred a whole day session when the second roll-out was delivered. Nayton et al. (2014) used a combination of the two approaches.

Most of the programmes, consisted of face-to-face classroom based sessions that included a training manual. E-learning was used in Banks et al. (2014) to supplement the materials presented with an online forum in which participants were encouraged to engage prior to each session. The same authors reported that the online experience was challenging to the staff. Similarly, Horner et al. (2013) used a self-directed e-learning programme consisting of three online models even though the uptake of this delivery method was found to be poor. These studies indicate that e-learning may not be feasible in this setting, especially when resources such as the participants’ time and internet access are limited and staff are not familiar with the use of information technology platforms.

*Characteristics of the participants*

All studies except for one (Horner et al., 2013) were targeted to an interdisciplinary audience over a wide range of professions (nurses, physiotherapists, occupational therapists, social workers, doctors and pharmacists) even though the majority of the participants in the study came from the nursing profession. In two studies (Palmer et al., 2014; Wasson & Chapman, 2010), the direct presence of the hospital administrators was encouraged. However, only few studies included ancillary staff such as porters, clerks, health assistants, security staff and pastors. Considering that such staff come in contact with dementia patients on a frequent basis, it is disappointing that these occupations were not targeted more often.
**Characteristics of the facilitators**

Although in the majority of the studies, training was facilitated by the authors, in some programmes other persons were involved. Mental health nurses acted as mentors in the Dementia Champions programme (Banks et al., 2014) whilst a psychiatric liaison team was directly involved in running the sessions in Wesson & Chapman (2010). In Galvin (2010) and Palmer et al. (2014) the sessions were presented by a member of the Alzheimer’s Association or a volunteer dementia expert. In Elvish et al. (2016), researchers initially trained 35 hospital staff who in turn trained their colleagues. This cascading effect was found to be equally effective when compared to the original study during which staff were trained by the authors (Elvish et al., 2015). No considerable differences were reported in whether facilitators were academics, clinical experts from other organisations or fellow colleagues as long as proper training was conducted. Elvish et al. (2016) argued that the professional affiliation may be an important characteristic of the trainers although the variability of facilitators in terms of professional background found in the other studies reviewed, indicated that this was not the case.

**Effectiveness of training programmes according to level of training evaluation**

*Studies that evaluated the participants’ reactions to the programme (Level 1)*

In general, all studies that evaluated staff reactions reported a high degree of satisfaction. According to Galvin et al. (2010), programmes based on experiential and action learning seemed to be favoured by staff compared to didactic teaching sessions. However, few of the studies using traditional methods, evaluated staff reactions and thus it is not possible to determine whether this is true across all studies.

*Studies that evaluated changes in learning (Level 2)*
All selected studies sought to measure the effectiveness of the training programmes with regards to the extent to which learning has occurred (Level 2). Questionnaires were generally used to measure increased participants’ knowledge (Elvish et al., 2015, 2016; Galvin et al., 2010; Palmer et al., 2014; Smythe et al., 2014), changes in their beliefs about challenging behaviours (Elvish et al., 2015, 2016), in self-efficacy (Smythe et al., 2014; Surr et al., 2016), in confidence (Elvish et al., 2015, 2016; Galvin et al., 2010; Palmer et al., 2014; Nayton et al., 2014), in staff burnout (Smythe et al., 2014), in satisfaction with working with dementia patients (Surr et al., 2016) and in attitudes towards persons with dementia (Galvin et al. 2010, Waugh et al., 2011; Horner et al., 2013; Banks et al., 2014; Palmer et al. 2014; Smythe et al., 2014; Teodorczuk et al., 2014; Surr et al, 2016). Most of the studies used validated quantitative tools consisting of standardised questionnaires although some authors developed their own scales (Elvish et al., 2015, Galvin et al., 2010). Whilst Elvish et al. (2015, 2016) sought to measure the psychometric properties of these new scales, Galvin et al. (2010) and Palmer et al. (2014) did not rigorously test them apart from measuring their internal consistency. Other studies opted for a mixed method using qualitative tools to evaluate changes in learning post-training. For example, to assess changes in attitudes, Teodorczuk et al. (2014) evaluated the poster produced by the staff and carried out staff interviews.

In some studies, there was a significant improvement in learning (Level 2) following training (Banks et al., 2014; Elvish et al., 2015, 2016; Galvin et al., 2010; McPhail et al., 2009; Nayton et al., 2014; Palmer et al., 2014; Teodorczuk et al., 2014; Surr et al., 2016 and Waugh et al., 2011). One study reported no significant improvement in any psychometric domain (Smythe et al., 2014). This was attributed to Type II error as a result of a small sample size. Horner et al. (2013) found that in post-training, self-efficacy improved, although there was no significant improvement in staff attitudes and knowledge. Moreover, sustainability of these changes over time was sought in only two studies. Galvin et al. (2010) showed that in one of
the studies, perceived confidence was not sustained in one of the hospitals although a repeat of the same programme (Palmer et al., 2014) showed that learning was maintained after 3 months’ follow-up. However, with a response rate at follow-up of 24%, the results might have been influenced by a loss-to follow-up selection bias. Consequently, relatively little is known on whether these programmes made a sustainable impact over time.

*Studies that evaluated change in staff behaviour and practices (Level 3)*

Only four studies measured changes in behaviour and practices following the programme (Level 3). However, these relied on self-reported data rather than from direct observation of care practices. Galvin et al. (2010) described changes in practices as ‘unanticipated results’ indicating that these changes were not expected and planned for prior to training commencement. Wesson & Chapman (2010) used case notes of patients to evaluate whether documentation improved following the training and as a result seek to evaluate practice change. Conversely, Banks et al. (2014) relied on the self-reported information of change assignments that staff had to present following training to assess whether actions have been (or were planned to be) initiated in their place of work. Crabtree & Mack (2010) used charge nurses’ feedback to evaluate whether the impact of training on the participants’ behaviour and care practices.

*Studies that evaluated patient and family members’ outcomes (Level 4)*

Level 4 evaluation, consisting of assessing training on patient/family members’ outcomes, was rarely conducted. Horner et al. (2013) investigated patients two weeks before, during and two weeks after training in relation to the use of restraints, documentation of diagnosis, use of indwelling catheters, use of psychotropic drugs, length of stay and incidence of falls. However, there was no evidence that these outcomes were compared pre and post training. McPhail et al. (2009) reported a reduction in aggressive behaviour following the training
It is also not clear whether the same patients were assessed before and after training making it hard to draw any significant conclusions. Similarly, Wesson & Chapman (2010) also found a reduction in the use of sedations from 70% to 20% when comparing 10 patients pre-training with 10 patients post-training. Nevertheless, there is no information about the methodology with which these patients were matched in order to exclude selection bias.

**Discussion**

*Summary of findings*

There has been an increased interest in dementia training programmes directed to staff working in general hospitals following recommendations from national guidelines and evidence of little or no specific staff knowledge in caring for patients with dementia. However, a systematic search of peer-reviewed studies yielded only 14 studies that fell within the inclusion criteria. None of the studies consisted of randomised controlled trials, with the majority using pre-test post-test methods. A quality assessment of the selected studies indicated that the there was considerable variability in quality. The major limitations were selection bias of the participants, small sample size and limited measures to control for confounding factors. Training programmes varied considerably between studies, in particular, on how these were developed and delivered. Besides didactic teaching, a clinical component was used in a number of studies whilst others adopted a two-level training method. Learning outcomes and level of evaluation also varied substantially, although the majority opted for evaluating the learning achieved using pre-training and post-training questionnaires. Follow-ups to evaluate sustainability and measures of patient’s outcomes were rarely performed.

*Quality rating and methodological issues*
The quality of the studies selected was variable with half resulting to be of poor quality. This may be attributed to the fact that, similar to residential homes (McCabe et al., 2007), there are practical problems in carrying out similar research studies in hospitals due to high staff turnover, participant bias, degenerative condition of dementia syndromes and the difficulty to maintain the results obtained over time. In addition, within-subject comparison of patients is difficult due to short length of stay making follow-up very challenging. Commenting on long-term care settings, Spector et al. (2013) recommended that future studies need to take into consideration these ‘logistical barriers’ and design high quality, adequately powered, multi-centre studies. Based on the methodological limitations of the studies reviewed, these recommendations equally apply to studies evaluating training programmes in hospital settings. Moreover, this review showed that hospital administrators may need to engage more with mental health settings and collaborate with staff working outside of the hospital such as dementia care specialists, mental health nurses and patient’s associations.

The lack of RCTs may indicate the difficulty in implementing studies that evaluate training programmes in similar settings. However, there is still debate on whether RCTs should be considered as ‘gold standard’ in health education research (Sullivan, 2011; Regehr, 2010). Regehr (2010; 31) argued that in view of the complexity of health care settings there is a need to move away in health education research from ‘finding a proof of simple solutions’ towards a ‘generation of rich understanding of the complex environments’ which characterize hospital settings. This is in line with one of the recommendation proposed in the INTERDEM Manifesto that ‘to ensure that the evidence for what works in dementia care can be used to transform both practice and services, there is a need to develop, implement and evaluate training and education in dementia care by drawing on the literature on diffusion of innovation, studying the obstacles, facilitators and factors that influence decisions associated with use and uptake of psychosocial interventions in practice, and addressing relevant
personal and organisational variables...’ (Moniz-Cook, 2011, p.287). Consequently, methodologies other than RCTs, including quasi-experimental studies and qualitative studies such as action research studies, are needed and may enhance ecological validity. Finally, unlike most of the studies reviewed, there is a need to carry out process evaluations to identify what factors can enhance the effectiveness of these training programmes such as organisational and staff variables and how can these be manipulated to achieve the best results. In this regard, the Medical Research Council guidance can provide a framework to clinicians and stakeholders to develop high-quality training programmes in hospital settings (Craig et al., 2008).

Characteristics of the training programmes

There was a great variability in the development and mode of delivery of the training programmes although interdisciplinary ward based, tailor-made, short sessions using experiential and active learning were the most utilized approaches. This is congruent with recommendations proposed by the Age UK (2012) which encourages the use of these methods of learning. Moreover, there is evidence in aged and dementia care literature of the relevance of incorporating reflection (Chapman & Law, 2009), experiential learning (Chater & Hughes, 2012; Dewar & Nolan, 2013) and action learning (Barry & Davies, 2006) in staff development and training. Further evidence is needed however, of how and to what extent should these learning strategies be incorporated in staff development and training programmes.

Level of training evaluation

All studies that evaluated staff reactions to training (Level 1) found a high level of satisfaction following training programmes delivery (Level 1). This is not at all surprising considering the fact that the need for training is felt by the majority of the hospital staff
especially by nurses (Gandesha, Souza, Chaplin & Hood, 2012), whilst there is evidence that staff preparation at undergraduate level remains inadequate (Alzheimer Society, 2009; Scerri & Scerri, 2013).

Most of the studies sought to evaluate changes in learning following the training programme. (Level 2). Similar to Spector, Revolta & Orrell’s review (2016), there seems to be some evidence that such programmes increase staff confidence, knowledge and attitudes towards persons with dementia. However, only one study sought to measure the effect of the training programme on staff burnout whilst none of the staff evaluated their effect on job satisfaction. Evaluating these domains could be a topic for future studies. Moreover, it is not clear whether these outcomes are sustainable over time considering that most of these studies did not follow-up staff post-intervention.

The review clearly indicates that there is still limited evidence on the effectiveness of training in changing care practices (Level 3) and influencing patient outcomes (Level 4) in hospital settings. Although numerous approaches have been used (e.g. self-reported changes) to show evidence of change in practice, there is a risk of social-desirability bias that could limit the validity of these findings (Nederhof, 1985). Moreover, there is still limited evidence on whether such training programmes impact family members, whilst the impact on patients’ outcomes is characterised by a number of limitations that can considerably limit the reliability and validity of the findings. Besides the ones used in the studies reviewed, the inclusion of additional patient outcomes such as patient experiences, for example by using Dementia Care Mapping (DCM) (Bradford Dementia Group, 2005), could be used in future training programmes.

**Challenges and solutions in developing and evaluating dementia training programmes in hospital settings**
The limited number of studies identified in this review can be due to the recent interest in this particular field of study, as evidenced by the fact that the majority of studies were published in the past five years. Another explanation is the challenges that accompany the development and evaluation of training programmes in hospital settings. Similar to dementia training programmes in long-term care settings (Kuske et al., 2007) organisational support is essential in the development, evaluation and sustainability of the outcomes achieved. In only two studies was continuous reinforcement and support reported. Moreover, this review is suggestive of the lack of knowledge on whether these programmes make a sustainable impact over time since most of the studies lacked a follow-up. As highlighted by some of the studies, maintaining funding and interest in such programmes may be difficult especially in hospital settings where dementia care training may not be considered a major priority. 

Finally, coverage of staff to attend dementia care related training is always a major challenge as also shown in a national audit of UK hospitals (Timmons et al., 2016).

Another major challenge in developing such programmes, that may not be present in long-term care settings, is how to target a diverse group of participants coming from different professions. Different solutions were sought such as carrying a training needs analysis, recruiting facilitators coming from different professions and using group and experiential learning to ensure that all participants are engaged throughout the programme irrespective of their occupation. Moreover, in the majority of the studies, the content presented was specific to the care of persons with dementia in hospital settings, not what is usually presented in long-term care settings. For example, in many of the programmes, participants were instructed on the difference between delirium, dementia and depression – topics of particular relevance within an acute hospital setting. Nonetheless, most of the programmes were framed around psychosocial models, such as Kitwood’s person-centred care (Kitwood, 1997). This indicates that although person-centred dementia care in hospitals may be challenging
(Dewing & Dijk, 2014), attempts are being made to instil this culture of care in these settings, based on the belief that this would translate to improved quality of care of dementia patients, as has been shown in long-term care settings (Chenoweth et al., 2009).

**Limitations**

The review has a number of limitations. Since one of the inclusion criteria was that studies had to use a quantitative component, an appraisal of other practice development studies using other methodologies were not included. Moreover, studies written in languages other than the English language were excluded. The quality of the selected studies was variable partly due to the fact that relevant data in a number of the studies were partially described or reported. The absence of randomised controlled trials required that the quality appraisal tool used by Kmet, Lee & Cook (2004) had to be adapted by excluding three quality criteria. Selection, attrition and response bias were common and reduced the internal validity of the selected studies. Moreover, the tool did not include a scoring guideline to categorise studies as of high or low quality, although a classification similar to Spector, Revolta & Orrell (2016) study was used to facilitate comparison of the quality of the selected studies.

**Conclusion: Implications for research and clinical practice**

Hospital care of patients with dementia is challenging. Therefore, hospital staff need to be better trained to improve their knowledge, confidence and attitudes in order to change behaviours and practice that can lead to better patient outcomes. This review could be helpful to administrators, researchers, educators and clinical specialists who may be interested in developing and deliver similar training programmes in general hospital settings.
Various theoretical models and strategies can be used in the development of the training programme, although staff satisfaction to the programme is better where experiential, reflective and active learning is used and a training need analysis is carried out. Similarly, although there are various methods of delivery that can be used, interdisciplinary ward based, tailor-made, short sessions seem to be the most favoured.

This review also indicates that although some benefits have been reported such as improved knowledge, confidence and better staff attitudes, the effectiveness of these training programmes is limited in relation to changes in staff behaviour and patient outcomes. Besides, the need for further high quality studies with extended follow-ups, it is essential to address the complexity of the factors influencing the effectiveness of these programmes by drawing from other staff development programmes and address organisational factors that can influence successful uptake and sustainability. In conclusion, training programmes need to be tailor made to hospital settings since the content, mode of delivery, outcome measures and methods of evaluation may be different from residential homes.

References:


Gandesha, A., Souza, R., Chaplin, R., & Hood, C. (2012). Adequacy of training in dementia care for acute hospital staff: Aarti Gandesha and colleagues present the results of a national audit to assess how hospital staff from different specialties rated their
awareness of the needs of patients with dementia. *Nursing Older People*, 24(4), 26-31.


**Figure 1.** Kirkpatrick’s four-level training evaluation model (adapted from Kirkpatrick, 2009)
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<th>Question / objective sufficiently described</th>
<th>Study design evident and appropriate</th>
<th>Method of subject/comparison group selection described and appropriate</th>
<th>Subject (and comparison group, if applicable) characteristics sufficiently described</th>
<th>Outcome well defined and robust to measurement bias</th>
<th>Means of assessment reported</th>
<th>Sample size appropriate</th>
<th>Analytic methods described, justified and appropriate</th>
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<th>Conclusions supported by the results</th>
<th>Quality Rating/Total sum over the total possible sum</th>
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<th>Name of Programme and country</th>
<th>Studies adopting the programme</th>
<th>Participants</th>
<th>Development and key components of the programme</th>
<th>Method of evaluation used and outcomes measured</th>
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<th>Lessons learned</th>
<th>Quality score</th>
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<td>Dementia Friendly Hospital Initiative (DFHI)</td>
<td>Galvin et al. (2010)</td>
<td>540 nurses and direct-care staff (social workers, pastoral care, discharge planner and physical therapists in 4 community hospitals</td>
<td>The programme was based on a publication ‘Try this: Best Practices in Nursing Care for Persons with dementia’ by Hartford Institute for Geriatric Nursing and following focus groups with hospital staff. Training was mainly didactic with group learning consisting of 5 modules lasting 7 hours in all.</td>
<td>Pre-test, post-test with follow-up after 120 days - Outcome evaluation: Staff knowledge, confidence, attitudes, and perceived difficulty in working with patients with dementia - One-time process evaluation: Staff perception about whether programme has achieved its objectives</td>
<td>Primary outcome: Significant improvements in knowledge, confidence and attitudes before and at end of the workshop. A decrease in knowledge and confidence in one of the four hospitals after 120 days’ follow-up. Other outcomes: Staff reported more family involvement and the need for better communication skills and environmental adaptations. Activity kids were introduced in one of the hospital. Introduction of volunteers in another hospital.</td>
<td>Sustainability of long-lasting change is dependent on continued in-service training and hospital wide-systematic change</td>
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<td>Dementia Friendly Hospital Initiative (DFHI)</td>
<td>Palmer, McGillick, Armstrong (2014)</td>
<td>355 direct care staff, 62% being nurses, 85% of the participants work in five hospitals</td>
<td>Phase 3 of the DFHI programme developed by Galvin et al with the addition of active learning, use of videos and involvement of administrators. Staff were also asked to sign a pledge to implement what they have learned.</td>
<td>Same as in Galvin et al</td>
<td>Primary outcome: Significant improvement in knowledge, confidence, attitudes and practices as obtained from a pre-post questionnaire. Other outcomes: Staff were highly satisfied with the programme in terms of the practical applicability of the content and learning methods used. However, more interactive activities were suggested.</td>
<td>Collaboration between local NGOs, academics and hospital administrators was fundamental for success. Certification may be provided to participants so that they are duly acknowledged Financial sustainability of such programmes is a major concern</td>
<td>0.68</td>
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<td>Programme</td>
<td>Collaborator(s)</td>
<td>Champions</td>
<td>Number</td>
<td>Description</td>
<td>Change in in the DC’s attitudes and awareness as reported by participants</td>
<td>Collaborative approach of the training team has made the programme sustainable</td>
<td>Need to measure effect on patient’s outcomes and see whether the programme is improving care</td>
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<td>Dementia Champions Programme</td>
<td>Waugh et al. (2011)</td>
<td>35</td>
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<td>The programme was based on the ‘dementia curriculum’ recommended by Pulsford et al. (2003) following a systematic review as well as national clinical guidelines. Content of the programme was developed by a partnership with a carer support group, an NGO, academic researcher and representatives from the acute and mental health NHS service. Key components of the programme consisting of a class based theory and working group, presentations prepared by the DC, carers’ personal experience, day care experience, action learning and clinical practice self-assessment and action planning. Six focused activities over 12 days of training delivered one day every six weeks over 18 months.</td>
<td>A post-test questionnaire and focus groups directed to the DC during the last day of each programme. Response rate of the first 2 cohorts was 75%.</td>
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<td>Dementia Care Champions Programme</td>
<td>Crabtree &amp; Mack (2010)</td>
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<td>Programme based on ‘Caring for People with Dementia in Acute Settings a resource pack developed by the Dementia Services Development Centre (Stirling). The programme was developed following an initial awareness programme directed to all staff in a general community hospital and a training needs analysis measured by a validated dementia attitude scale. 12 weeks’ programme consisted of three clinical placements in mental health settings for older adults with mentors and four supported sessions that used experiential learning of the participants and an NGO organisation.</td>
<td>A post-test questionnaires distributed to Dementia Champions (DC) (response=64%), mentors (response=55%) and charge nurses (response=57%) of the wards within the hospital. The DC questionnaire focused on staff views of the programme whilst the Charge nurses’ feedback looked at whether the champions made an impact in clinical practice.</td>
<td>DCs were very satisfied with the programme whilst charge nurses reported participants trying to teach other staff at the bedside, Fostering collaboration between the acute and mental health settings enables experiential learning of DC that can be used to change practice.</td>
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<table>
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<tr>
<th>Study Title</th>
<th>Authors</th>
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<th>Sample Size</th>
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<tr>
<td>Dementia Champions Programme</td>
<td>Banks et al.</td>
<td>Scotland</td>
<td>113 participants consisting mainly of nurses (74%), allied health care professionals (19%), and the remainder related to staff education delivered at four sites across Scotland</td>
<td>Blended learning programme consisting of 5 study days and a half day spent in a community setting using an Appreciative Inquiry approach. Content of the programme developed as Waugh et al., but an e-learning resource with an online forum was added so that participants were encouraged to access prior each session. Study days consisted of two main sessions consisting of group activities, visits of invited speakers and guests. Participants were required to write three written assignments and attend 80% of the study days to become DCs. Mixed method design using quantitative tools and thematic analysis of participants' assignment. Outcome evaluation: Pre-test, post-test of the Approaches to Dementia Questionnaire (ADQ) (Linter, 1996), analysis of qualitative data obtained from the 3 written assignments. Post-intervention questions to measure the participants' confidence that they could achieve the learning outcomes. Process evaluation: Participants perceived satisfaction with course material and delivery. ADQ scores significantly improved (p=0.014), qualitative analysis of community experience also showed a more positive attitude and confidence. 94% of participants reported that they had or would change practice following the program. Reported confidence to achieve the learning outcomes was high. e-learning experience was challenging for some but helpful. Participants’ satisfaction with study sessions was high (average of 4 out of 5). Reflective assignments enabled identification of action plans that they could implement in their own work practice. Continuous support from within and from outside the hospital is needed for change agents to make a lasting difference. Sharing of knowledge and ideas between participants can transform participants to become change agents.</td>
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<td>‘Getting to know me’</td>
<td>Elvish et al.</td>
<td>England</td>
<td>72 staff working in a general hospital completed the programme consisting of nurses (30%), physiotherapists and occupational therapists (24%), doctors (14%), health assistants (9%)</td>
<td>Designed by existing literature and following a focus group to identify the staff learning needs, the training programme consists of 6-hour programme divided into 4 sessions. The main topics consisted of an introduction to dementia, seeing the whole person, communication, the impact of the hospital environment, knowing the person and a person centred understanding of behaviour that challenges. Pre-test, post-test design – A questionnaire was distributed pre and post questionnaire consisting of 2 new scales, Confidence in Dementia Scale (CODE) and knowledge in Dementia Scale (KIDE) were developed as part of the study and the Controllability Beliefs Scale. This questionnaire was delivered immediately before and immediately after the training has been completed. There was a statistical significant change in all outcomes post-training: The KIDE scores significantly improved (p&lt;0.001), the CODE scores were higher following the training (p&lt;0.001) whilst the Controllability beliefs scale showed that staff had a more person-centred perspectives of challenging behaviours post training (p&lt;0.003) CODE and KIDE scales showed adequate psychometric properties. High attrition rate (37%) attributed to difficulty to release staff to attend lessons. A one-day course may be better than several shorter sessions. Most important topics to cover consist of knowledge and confidence in how to communicate and care of patients with challenging behaviour.</td>
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### Getting to know me

**England**

Elvish et al. (2016)

607 participants completed the programme but 480 questionnaires were collected with half of the participants being nurses.

Programme aimed to address the limitations in Elvish et al. (2015) study by developing a ‘train the trainers’ programme so that academic staff trained hospital staff who in turn trained their own staff.

Same as in Elvish et al. (2015)

As in Elvish (2015), scales maintained good psychometric properties whilst statistical significant change was found between pre-post training in all outcomes measures (CODE: p=0.001, KIDE: p<0.001, Controllability beliefs scale: p=0.001) with moderate to large effect size.

Professional affiliation of the trainers may impact who attends training.

A one-day workshop can be more feasible than small short sessions.

Service user input in the development of the programme was important.

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### Person-centred Care Training for Acute Hospitals (PCTAH)

**England**

Surr et al. (2016)

A convenience sample of 41 acute hospital staff 86% being nurses.

The programme consisted of two levels – a half-day foundation programme (seven 30 minute sessions) a three-day Intermediate level delivered over 3 to 4-month period.

The half day programme covered person-centred care, types and impact of dementia, identification of and meeting people’s emotional needs, effective communication, the impact of the physical environment, identifying and meeting physical health needs and redefining and supporting challenging behaviours.

The intermediate programme provided a more in depth knowledge of the contents covered in the Foundation programme.

The programme was developed by the authors based on knowledge gaps obtained from a literature review and discussion with nurse managers.

A pre-test, post-test questionnaire was distributed immediately before the programme (T1) and repeated after completing the Foundation level (T2) (4-6 weeks’ post-baseline) and after the Intermediate level training at T3 (3-4 months’ post-baseline).

The questionnaire assessed staff attitudes towards persons with dementia using the Approaches to Dementia Questionnaire (ADQ), the staff experience of working with dementia residents’ scale (SEWR) and the Caring Efficacy Scale (CES) to measure the staff ability to develop caring relationships.

The programme produced a significant positive change in all three outcome measure following the intermediate training programme. Staff satisfaction significantly increased between T1 and T3 and between T2 and T3 but not between T1 and T2. Moreover, although ADQ personhood subscale scores improved between T1 and T3 (p<0.001) and between T2 and T3 (p<0.001), there was no significant difference between T1 and T2 (p=0.1). Similarly, self-efficacy Foundation level training may be adequate for awareness raising.

Further training is required to influence staff feelings of caring efficacy and satisfaction.

Length of time since training completion can influence outcomes. Therefore, longer follow-up may be required to measure if the impact have been sustained.

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| Australia | Homer et al. (2013) | 26 nursing staff working in two geriatric medicine wards in a tertiary teaching hospital (43% of all staff in both wards) | A self-directed programme consisted of an engagement phase (ward meeting to introduce and advertise the project), formal education delivery (as three online modules or as a hardcopy format) and a reinforcement phase (provided by an educational officer who offered de-briefing to each staff member who completed the programme)  

    The programme was developed using a pre-developed online educational package that was developed following a study to examine the staff knowledge to the assessment of patients with cognitive impairment in hospital settings (Hare et al, 2008) | Improved self-efficacy was reported by staff.  

    There was no significant difference in staff attitudes, knowledge score or incidence of patient’s falls pre-post intervention.  

    Staff development using e-learning may not be suitable if staff have limited resources to use the Internet.  

    Successfully engaging family members in collecting data may be challenging  

    Finding time by staff to get involved in training is difficult. Therefore, there needs for support by management in order to embed education as part of clinical practice |
| England   | Wesson & Chapman (2010) | 300 hospital staff in an acute trust from housekeepers to managers took part over a year | A 2 hourly session delivered by the psychiatric liaison team covering topics consisting of an overview of dementia, local and national dementia guidelines, pain assessment, palliative care, life story books, general communication tips, the Mental Capacity Act and Carers’ support | Improved documentation especially in gathering information from partners and relatives and the doubling of the use of risk assessment and observation charts. Use of sedative decreased from 70% to 20%  

    High staff turnover makes teaching difficult to co-ordinate and motivate |
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<tr>
<th>Programme</th>
<th>Authors</th>
<th>Participants</th>
<th>Duration</th>
<th>Content</th>
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<td>Dementia education programme, Australia</td>
<td>McPhail et al. (2009)</td>
<td>28 staff members consisting of nurses (60%), physiotherapists (14%), pharmacists (7%), social workers (7%) and others (11%).</td>
<td>10 sessions (one hour every week for 10 weeks) consisting of mainly didactic teaching. Contents included topics related to what is dementia, depression and delirium, Behavioural management using a behaviour log, medications in the elderly, sedation policy, attitudinal change, sexual disinhibition, restraint, Poole’s Algorithm and social management in acute care. Sessions were developed following a learning needs analysis of all staff using a survey.</td>
<td>Post-training questionnaire administered to staff perceptions whether the sessions have helped them to develop the skills to caring for people with dementia using both closed and open ended questions. Impact on dementia knowledge and skills was measured using a post-test survey.</td>
<td>64% of attendees reported the sessions being beneficial for enhancing their skills in caring for patients with dementia in acute care. Awareness of pain and environmental factors contributing to behavioural challenges improved. There was also a reduction in aggressive behaviour 4 months post-training (3 incidents) when compared to incidents pre-training (12 incidents).</td>
</tr>
<tr>
<td>'View From Here: skills in Dementia Care for Acute Settings', Australia</td>
<td>Nayton et al. (2014)</td>
<td>The programme was delivered to 49 participants from two acute wards the majority (45) consisting of nurses.</td>
<td>The programme consisted of an outcome-based, microteaching approach with a theoretical and a practical component. Seven sessions (repeated four times) were developed dwelling on neurobiology and person-centred care, communication strategies, information gathering, approaches to pain assessment, activities for the inpatient setting, behavioural observation and pharmacology and the acute care environment. The programme was developed following expectations' regarding training outcomes, an audit of staff perceived attitudes and knowledge, an environmental review, discussion with caregivers, a review of the literature, expert opinion and reflection and evaluation of each session. An additional 90-minute workshop was attended by the nurses’ unit management, dementia champions identified from the staff attending the programme, the facilitator of the and developer of the sessions, to discuss how to make the changes sustainable.</td>
<td>Each session was evaluated using a 7-point Likert scale to see whether staff had gained confidence to apply what they had thought in practice. A final survey to evaluate the staff overall satisfaction with the sessions was completed after all sessions.</td>
<td>There was an overall satisfaction with the programme (mean=3.77 on a 5 point Likert scale). Moreover, the evaluation after each session indicated that staff confidence was positive (means ranged from 5.6 to 6.3 on a 7 point Likert scale). Feedback from all stakeholders in the development of the content was essential for programme success. Programme tailored to the needs of the participants. Using short microteaching sessions and repeated sessions helped in managing time constraints of participants to attend the sessions. A post-education workshop helped in making the training sessions more sustainable.</td>
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Figure 2. Flowchart of the search strategy
### Appendix: Search trail

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<tr>
<th>Database</th>
<th>Combined keywords</th>
<th>Search Result</th>
<th>Retrieved articles after excluding duplicates</th>
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