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Effects of non-facilitated meaningful activities for people with dementia in long-term care facilities: A systematic review

Cindy Jones, PhD^a,b,*, Fangli Liu, PhD^b,c, Jenny Murfield, BSc^b,d, Wendy Moyle, PhD, MHS^c,b,d

Abstract

This systematic review sought to evaluate the effectiveness of non-facilitated meaningful activities for older people with dementia in long-term care facilities. Searches were conducted in PubMed; CINAHL; EMBASE; Web of science; PsycINFO; Cochrane; ProQuest; and ClinicalTrials.gov to identify articles published between January 2004 and October 2019. A total of six studies were included. Results implied that current randomised controlled trials or controlled trials about non-facilitated meaningful activities for people with living dementia in long-term care facilities are limited, but those included in this review were of adequate methodological quality. Meaningful non-facilitated activities, such as music, stimulated family presence, animal-like social robot PARO/plush toy and lifelike dolls, may have beneficial effects on agitation, emotional well-being, feelings of pleasure, engagement, and sleep quality. However, there remains a lack of conclusive and robust evidence to support these psychological and physiological effects of non-facilitated meaningful activities for older people with dementia living in long-term care facilities by care staff.

Introduction

The world’s population is ageing rapidly, with it estimated that 1.6 billion people will be aged 65 and over by 2050.1 In developed countries, the proportion of older adults requiring care support has grown in the past decade,^2 either in the form of informal home care or permanent/respite admission to a long-term care (LTC) facility. Despite varied reasons influencing the decision to place an older adult in a LTC facility,^3,4 a diagnosis of dementia consistently emerges as one of the leading cause of placement, and the presence of neuropsychiatric symptoms is a strong influencing factor.5

Neuropsychiatric symptoms, a heterogeneous group of non-cognitive symptoms and behaviours commonly referred to as behavioural and psychological symptoms of dementia (BPSD), can present as agitation, wandering, disinhibition, aggression, vocalisation, sleep disturbance, anxiety, depression, apathy, hallucinations, and delusions.6 For some older adults living with dementia, these symptoms are thought to result from one or more unmet needs due to a disparity in lifelong habits and personality, physical and mental states, and environmental conditions impacting upon social interactions.7,8 Given that LTC residents living with dementia are often unable to seek out and engage in activities independently due to impaired cognition, it is important that LTC facilities actively provide opportunities for psychosocial stimulation and wellbeing. Although LTC facilities provide a range of activities, there is a growing body of research suggesting that these activities are not to the standard needed by residents living with dementia, with many often spending a large proportion of their day alone, doing nothing, and with minimal conversation.9,10

Background

Traditionally, LTC facilities have adopted a biomedical framework for the delivery of care.11 As BPSD can be challenging to manage, causing stress, negatively affecting attitudes, and reducing job satisfaction,12,13 it can result in care staff focusing on residents’ physical deficits and presentation of dementia rather than their less overt psychosocial needs. Recent years, however, have brought with it cultural change that aims to move away from the biomedical model towards more person-centred care in LTC facilities.14 Alongside this comes an increased focus on what constitutes a meaningful activity for residents living with dementia, and how this can be conducted.

For this review, according to previously reported literature15–17 and a systematic review,18 meaningful activities are defined as a wide range
of activities and interventions, which are relevant and enjoyable to the person living with dementia, leading to improvements in either their physical function, emotional well-being, cognitive status, or behavioural problems. Specifically, non-facilitated meaningful activities are considered those that are not delivered or assisted by any individual, such as nursing or care staff, researchers, or others.

Meaningful activities can provide a potential window of opportunity to assist people living with dementia and their caregivers to learn ways to remain engaged in activities, which, in turn, may also help address changes in relationships, mood, and quality of life, as well as slow the rate of cognitive decline.\textsuperscript{19,20} Recent reviews have found that meaningful activities can be beneficial for people living with dementia in LTC.\textsuperscript{18,21} However, most activity interventions for people living with dementia were facilitated by nursing or care staff, researchers, or others (e.g., volunteers, musicians, clowns). While the presence of a facilitator can promote uptake of, and engagement in, meaningful activities by people living with dementia in LTC,\textsuperscript{22} questions have been raised about the effectiveness of the activity interventions being confounded by the social contact with or person-to-person attention received from the facilitator, making it unclear and difficult to determine which element (i.e., the activity or the facilitator) has contributed most to the intervention effect.\textsuperscript{18} This means that it is difficult to delineate the ‘real’ effect of the activity interventions being introduced to people living with dementia, as any positive effect found may either be mediated and/or inflat ed by their interaction with the facilitator. Further, facilitated meaningful activities in LTC for people living with dementia may be neither cost permissive due to the personnel costs\textsuperscript{23} nor sustainable given the shortage of LTC for people living with dementia may be neither cost permissive nor sustainable due to the personnel costs\textsuperscript{23} nor sustainable given the shortage of LTC for people living with dementia may be neither cost permissive nor sustainable given the shortage of LTC for people living with dementia may be neither cost permissive nor sustainable given the shortage of LTC for people living with dementia may be neither cost permissive nor sustainable given the shortage of LTC for people living with dementia may be neither cost permissive nor sustainable given the shortage of LTC for people living with dementia may be neither cost permissive nor sustainable given the shortage of LTC for people living with dementia may be neither cost permissive nor sustainable given the shortage of LTC 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participants’ characteristics (i.e. country, setting, sample size, gender, age and cognition); (c) study characteristics (i.e. design, as well as intervention including type of activity, duration and frequency); as well as (d) outcome measures and results.

Synthesis

A descriptive synthesis of data from included studies was performed to evaluate the effects of non-facilitated meaningful activities for people living with dementia in LTC facilities, identify any knowledge gaps and highlight areas for future research. Results are presented narratively and accompanied by data tables and figures, where appropriate. A meta-analysis of the data was precluded because of the heterogeneity of outcome measures used across studies.

Results

Methodological quality of studies

According to the first two screening questions of the MMAT, all included studies had clear research questions, and appropriate data were collected to address the research questions. One study28 presented insufficient information to determine if appropriate randomisation was performed. Reported findings in two studies22,23 did not allow for the comparison of treatment groups at baseline, as an imbalance between groups could imply randomisation problems. Half of the included studies did not report whether complete outcome data were collected,28, 30,32 which could impact on the analysis of data. Blinding of outcome assessors, which is important to eschew assessor bias, did not occur in the Weise et al.,33 study and was unclear in the studies conducted by Garland et al.28 and Shiltz et al.32 Two of the remaining studies involved video observations/coding, where outcome assessors in the study by Moyle et al.30 were masked to the type of interventions through work allocated to only one group and by separate working locations, while in the other study by Moyle et al.,31 study intent was concealed to outcome assessors. Lastly, intervention bias in terms of participants’ adherence to the intervention or whether the intervention was implemented consistently as intended was also not clearly discussed in both the Garland et al.28 and Janata29 studies. Overall, although the methodological quality of included studies was mixed, all studies were deemed to be of adequate quality for inclusion in this review. A summary of the quality assessment can be found in Table 1.

Study characteristics & participants

Studies included in this review were conducted in Australia (n = 3),28,50,31 USA (n = 2),29,32 and Germany (n = 1).33 A range of study
designs was adopted, including two-groups parallel RCTs,\textsuperscript{29,31–33} three-groups cluster RCTs,\textsuperscript{30} and three-groups cross-over RCTs.\textsuperscript{28} A total of 628 older residents with dementia living in LTC facilities or nursing homes were included in this review. The sample sizes of participants included in each study ranged from 20 to 415. The total number of female and male participants were 455 (72.5\%) and 173 (27.5\%) respectively, with a mean age ranging from 76 to 89.7 years. Participant characteristics of the included studies are presented in Table 2.

### Meaningful non-facilitated activities & control conditions

The meaningful non-facilitated activities provided in the majority of studies were individualised/personalised or preferred music,\textsuperscript{28,29,32,33} that was either streamed to participants’ room or delivered by iPod, MP3 or portable cassette players with headphone. Other meaningful non-facilitated activities were: lifelike dolls\textsuperscript{31}; an animal-like social robot (PARO - Personal Assistance RobOt, shaped like a baby harp seal) and plush toy (i.e. PARO with robotic features disabled) in the Moyle et al.\textsuperscript{30} study; an auditory activity (i.e. stimulated family presence), which is an audiotaped conversation prepared using different instruments in different studies. For example, agitation was assessed using observed frequency of physical and verbal agitation; video observations/coding; and Electronic Medication Administration Record (eMAR) (See Table 3). Not only were different outcomes measured in different studies, but the same outcome was also assessed using different instruments in different studies. For example, agitation was assessed using observed frequency of physical and verbal agitation,\textsuperscript{28} CMAI,\textsuperscript{29,33} CMAI-SF,\textsuperscript{30} and video observations/coding.\textsuperscript{30} Consequently, this makes direct comparisons of studies outcome challenging. Meta-analysis was not conducted as combining results from different instruments even when measuring the same outcome is not appropriate as the responsiveness of instruments

### Key outcome & measures

Studies examined different psychological (i.e., BPSD, mood states, emotional well-being, engagement and social participation) and physiological (i.e., cognition, medication and sleep quality) outcomes using many different measures that included: Neuropsychiatric Inventory (NPI); Cornell Scale for Depression (CSDD); Cohen-Mansfield Agitation Inventory (CMAI); Cohen-Mansfield Agitation Inventory-Short Form (CMAI-SF); Observed Emotions Rating Scale (OERS); Profile of Mood States-Brief (POMS-B); Mini-Mental State Examination (MMSE); single item questions with Visual Analogue Scale (VAS); observed frequency of physical and verbal agitation; video observations/coding; and Electronic Medication Administration Record (eMAR) (See Table 3). Not only were different outcomes measured in different studies, but the same outcome was also assessed using different instruments in different studies. For example, agitation was assessed using observed frequency of physical and verbal agitation.\textsuperscript{28} CMAI,\textsuperscript{29,33} CMAI-SF,\textsuperscript{30–32} and video observations/coding.\textsuperscript{30} Consequently, this makes direct comparisons of studies’ outcome challenging. Meta-analysis was not conducted as combining results from different instruments even when measuring the same outcome is not appropriate as the responsiveness of instruments

| Study                  | Country      | Setting                  | Number of participants | Gender (F/M) | Age (years) | Cognition                                      |
|------------------------|--------------|--------------------------|------------------------|--------------|-------------|------------------------------------------------|
| Moyle et al. (2017)    | Australia    | 28 Long-term care facilities | 415                    | 314/101      | PARO: 84 (8.4)\textsuperscript{b}  
Plush toy: 86 (7.6)\textsuperscript{b}  
Usual care: 85 (7.1)\textsuperscript{b} | Residents with dementia (RUDAS):  
PARO: 6.5 (6.5)\textsuperscript{b}  
Plush toy: 7.1 (6.5)\textsuperscript{b}  
Usual care: 8.3 (7.2)\textsuperscript{b} |
| Moyle et al. (2019)    | Australia    | 5 Long-term care facilities | 33                     | 33/0         | Lifelike dolls: 86.1(8.6)\textsuperscript{b}  
Usual care: 89.7(8.4)\textsuperscript{b} | Residents with dementia (MMSE):  
Lifelike dolls: 4.9 (4.8)\textsuperscript{b}  
Usual care: 5.8 (4.9)\textsuperscript{b} |
| Shiltz et al. (2018)   | USA          | 1 Long-term care facility | 92                     | 48/44        | Music:76 (57-93)\textsuperscript{a}  
Control: 80 (55-96)\textsuperscript{a} | Residents with moderate-to-severe dementia (MMSE)  
(scores are not reported) |
| Weise et al. (2019)    | Germany      | 1 Long-term care facility | 20                     | 16/4         | 85.1 (5.9)\textsuperscript{b} | Residents with mild (10%), moderate (70%) and  
severe (20%) dementia (instrument and scores are not reported) |

Note: * = Mean (Range)  
\* = Mean (Standard Deviation); RUDAS, The Rowland Universal Dementia Assessment Scale: A Multicultural Cognitive Assessment Scale; MMSE, Mini-Mental State Examination.
Table 3
Study characteristics of included studies (n = 6).

| Study          | Design          | Intervention Group                                                                 | Control Group                                                                 | Frequency & Duration          | Outcome Measures                                                                 | Results                                                                                                                                 |
|----------------|-----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Garland et al. (2007) | 3-group cross-over RCT | 15-minutes audiotape of simulated family presence & preferred music | Usual care & placebo tape | Once a day for three days each during weeks 1, 2, 3 & 4 | Frequency of physical agitation (aggressive & non-aggressive) | Simulated family presence (placebo, p = .007; usual care, p = .003) & preferred music (usual care, p = .039) were effective in reducing physically agitated behaviours |
| Janata (2012)   | 2-group parallel RCT | Customised music programs (individualised music list based on music preference) | Usual care (incidentally exposed to music programming in the course of daily living) | 4 times daily (total of several hours) for 12 weeks | BPSD (NPI) & Mood state - depression (CSDD) & Agitation (CMAI) | Reduction in composite scores of NPI, CMAI & CSDD in both groups |
| Moyle et al. (2017) | 3-group cluster-RCT | PARO & plush toy (i.e. PARO with robotic features disabled) | Usual care | 15 minutes per session | Engagement, mood states & agitation (video observations/coding) & Agitation (CMAI-SF) | Video coding |
| Moyle et al. (2019) | 2-group parallel RCT | Lifelike doll introduced using a standardised script and left with participants to interact as they liked | Usual care | 30 minutes per session & agitation (CMAI-SF) | Mood states (OERS) & Agitation (CMAI-SF) | No significant reduction in anxiety, agitation, or aggression between two groups |
| Shlitz et al. (2018) | 2-group parallel RCT | Music: usual care plus personalised music delivered via iPod shuffle with headphones | Usual care | 30 minutes per session | Mood states (POMS-B) & Agitation (CMAI-SF) & Cognition (MMSE) & Medication (Scheduled & PRN via eMAR) & BPSD (CMAI-SF) & Emotional well-being, sleep quality, resistance to care & social participation (Single item questions with VAS) & Agitation decreased for all participants (p = .001) & No significant changes in affect, cognition & psychotropic medication exposure |
| Weise et al. (2019) | 2-group parallel RCT | Personally relevant music playlist delivered via MP3 player with headphones | Waitlist control | 30 minutes every other day for 4 weeks | BFSD (CMAI-SF) | Significant improvements in sleep quality (p = 0.38) along with trends towards improvements in social participation & agitation |

Note: RCT, Randomised Controlled Trial; NPI, Neuropsychiatric Inventory; CSDD, Cornell Scale for Depression; CMAI, Cohen-Mansfield Agitation Inventory; CMAI-SF, Cohen-Mansfield Agitation Inventory-Short Form; PARO, Personal Assistance RobOt; OERS, Observed Emotions Rating Scale; POMS-B, Profile of Mood States-Brief; MMSE, Mini Mental State Examination; PRN, Pro Re Nata; eMAR, Electronic Medication Administration Record; VAS, Visual Analogue Scale.
may differ substantially and lead to important between-study heterogeneity and biased meta-analyses. In addition, studies included in this review examined outcomes at baseline, during and/or post-activity intervention. No studies included follow-up assessments of post-activity intervention.

The effects of non-facilitated meaningful activities on behavioural and psychological symptoms of dementia (BPSD)

Agitation was assessed in all six studies using a variety of different measures. Studies using CMAI and CMAI-SF reported disparate results for agitation. For those using CMAI, no significant treatment effect was found. However, a significant decrease in agitation was reported by Shiltz et al., who assessed CMAI-SF in both music and usual care groups in the Janata study. Additionally, while no treatment effect was detected, Shiltz et al. found a significant decrease in agitation for all participants, as measured by CMAI-SF. However, when assessed via video observations/coding, participants in the PARO group were observed to have significantly less agitated behaviours when compared to those in the usual care group (p < .008).

Garland et al. found that both the simulated family presence (placebo, p = .007; usual care, p = .003) and music (usual care, p = .039) activities were effective in reducing physical agitation occurrences. However, in the music and usual care groups, where a main ‘shift’ effect in BPSD was found, with significantly lower scores found in the morning than in the afternoon (p < .0001).

The effects of non-facilitated meaningful activities on mood states

Five studies reported on mood states, which included feelings of depression, anger/hostility, anxiety/fear, pleasure, sadness, general alertness, and emotional well-being, which were assessed using CSDD, OERS, POMS-B, single item questions with VAS, and video observations/coding. In the study by Janata, music activity had no significant treatment impact on participants’ scores on CSDD, POMS-B depression, anxiety or anger/hostility, and emotional well-being respectively. However, a positive effect via reduced composite scores of CSDD in both music and usual care groups, where a main ‘shift’ effect in depression with significantly lower scores in the morning than in the afternoon (p < .0001), was reported by Janata.

Moyle et al. found that, through video observations/coding, both PARO (p = .022) and plush toy (p = .002) groups significantly reduced neutral affect, and the PARO group had significantly increased pleasure (p = .008) when compared to the usual care group. Life-like doll activities neither reduced feelings of anxiety/fear, anger or sadness, nor increased pleasure or general alertness on OERS when compared to usual care. However, a significant group-by-time group interaction for the outcome of pleasure was detected, whereby the life-like doll group showed greater displays of pleasure at post-intervention compared to baseline than the usual care group (p = .044).

The effects of non-facilitated meaningful activities on engagement

Only two studies examined engagement as an outcome measure. From video observations/coding, the use of PARO was found to significantly increase verbal (p = .011) and visual (p < .0001) engagement when compared to the plush toy. Participants in the music group demonstrated a trend, albeit non-significant, towards improvements in social participation when compared to the waitlist control group.

The effects of non-facilitated meaningful activities on cognition, medication and sleep quality

Shiltz et al. reported no significant changes in cognition via MMSE and psychotropic medication exposure from eMAR between the music and usual care groups. In contrast, Weise et al. found significant improvements in the sleep quality of participants in the music group when compared to the waitlist control group (p = .38).

Discussion

The small number of literature included in this systematic review highlights a continued lack of studies that examine non-facilitated meaningful activities (i.e., relevant with potential for health and well-being benefits and personalised to individual preferences) for people living with dementia in LTC facilities. This finding is consistent with an earlier review that found the majority of meaningful activity interventions for people living with dementia are facilitated by nursing or care staff, researchers, or others (e.g., volunteers, musicians, clowns). To date, it appears that researchers have provided limited attention to understand the facilitator effect when determining the effectiveness of the activity interventions being introduced to people living with dementia in LTC, thus making it challenging to ascertain whether the intervention effect is attributed to the activity or the facilitator. Understanding the effects of non-facilitated meaningful activities for people living with dementia in LTC is important to ascertain whether the activity interventions are truly effective without the person-to-person social interaction. Further, given the reported long periods people with dementia spend alone by themselves in LTC, it is further exacerbated by the shortage of care staff, and projected rising costs of dementia care, there is, therefore, a need for studies on non-facilitated meaningful activities in a bid to identify effective non-facilitated meaningful activities that do not require the involvement of care staff or other personnel. As such, this systematic review evaluated the effects of non-facilitated meaningful activities for older people with dementia living in LTC facilities.

Overall effects of non-facilitated auditory activities (music and stimulated family presence)

First, music has been suggested to be an environmental modifier to mask unpleasant stimuli and reduce neuropsychiatric symptoms, as well as prevent the occurrence of agitation. Unlike other studies of facilitated music activities showing a reduction of agitation in people living with dementia and verbal (stimulated family presence only) agitated behaviours in one study, despite trends of improvements in BPSD and agitation being reported in other music studies, hence, this review did not find robust evidence to support the effectiveness of meaningful non-facilitated auditory activities (music and stimulated family presence) to reduce BPSD and agitation in people living with dementia.

Second, basic emotions can be communicated through music and personal emotions and memories can be induced through familiar and memorable music. The extant literature suggests that people living with dementia can perceive the emotions emitted by music and continue to recognize not only the melodies but also the titles of familiar songs. Some studies of facilitated music activities have allowed to the possibility of an improvement in mood states of people living with dementia. A recent Cochrane review found that music therapy may bring mild to moderate improvement in emotional well-being, depression, and anxiety post-intervention, but had no or little...
sustained effect. An earlier review\(^52\) highlights a continued lack of quality studies and robust evidence showing music activities can reduce depression and anxiety in older people living with dementia. Findings of this review support this notion, as non-facilitated music activities were found to be ineffective in improving mood states or emotional well-being in older people living with dementia.\(^53\,54\) Support for non-facilitated music as a meaningful activity to improve mood states is, therefore, not established in this review.

Third, similar to BPSD, agitation and mood states, non-facilitated music activities neither increase social participation nor improve medication usage and cognition. This finding on cognition is similar to a meta-analysis of thirty-eight trials involving 1,418 participants living with dementia, where no significant difference was found for cognitive function between participants who received interactive or receptive music therapy and those who received usual care.\(^53\) Interestingly, there is preliminary evidence to suggest that non-facilitated music can improve sleep quality in people living with dementia.\(^53\) However, this is unsurprising given that music can have a direct effect on the parasympathetic nervous system, which helps the body relax and prepare for sleep.\(^53\,54\)

### Overall effects of non-facilitated lifelike doll, animal-like social robot (PARO) & plush toy activities

The other forms of meaningful non-facilitated activities included in this review were the introduction of lifelike dolls\(^31\) and animal-like social robot PARO and plush toy (i.e. PARO with robotic features disabled) in the Moyle et al.\(^30\) study. Compared to usual care, the lifelike doll activity was only found to display increased pleasure between post-treatment and baseline.\(^31\) Therefore, there is yet to be any established evidence to support the introduction of a lifelike doll as a meaningful non-facilitated activity to improve agitation, mood states, and engagement. Further research is needed in this area.

Animal-assisted therapy studies are reported to have beneficial effects on people living with dementia.\(^55\,58\) For example, Wesenberg et al.\(^58\) found that an animal-assisted intervention (i.e., a dog) led to significantly longer and more frequent periods of positive emotions (pleasure) and social interaction (touch and body movement). Further, the systematic review by Pu et al.\(^39\) on animal-like social robot activities to enhance the well-being of older people with and without cognitive impairment found that it has the potential to promote health and well-being by increasing perceived emotional support and social interaction. Findings of this review were congruent with the aforementioned studies, where lower agitation and greater pleasure, assessed via video observations/coding, was found in PARO activity when compared to usual care activity. Additionally, video observations/coding revealed that people living with dementia demonstrated increased verbal and visual engagement when they were undertaking PARO than usual care activities. While meaningful non-facilitated animal-like social robot PARO and plush toy activities demonstrated similar outcomes to previous assisted-animal therapy studies, conclusive evidence to support the introduction of meaningful non-facilitated animal-like social robot PARO and plush toy activities to improve agitation, mood states, and engagement is yet to be established.

### Facilitated or non-facilitated meaningful activity — which is more appropriate?

As previously indicated, understanding of the ‘true’ effects of meaningful activities, independent of the facilitator, is beneficial when providing activities for people living with dementia in LTC with limited resources (e.g., personnel) and during virus outbreaks (e.g., coronavirus, COVID-2019) when social distancing may be required. However, reliance on only non-facilitated meaningful activities for people with dementia in LTC is cautioned due to a number of reasons. First, person-to-person social interactions (e.g., via one-on-one or group activities) can contribute positively to the health and wellbeing of people living with dementia,\(^60\) especially for those in LTC where social interactions is often already limited.\(^5\,10\) Second, the value of facilitated meaningful activities should not be overlooked, as the roles of facilitator in (a) the initiation of activity; (b) encouraging and sustaining activity participation (particularly for those with more advanced cognitive impairments); (c) adjusting activities according to observed/assessed response; as well as (d) social interaction, can potentially yield greater benefits than non-facilitated activities alone for people living with dementia.

### Strengths, limitations & future research/considerations

The key strength of this review is the inclusion of only randomised controlled trials which is considered Level II evidence, according to National Health and Medical Research Council Evidence Hierarchy for intervention studies.\(^53\) Further strengths of this review include the use of defined inclusion/exclusion criteria, application of a rigorous search strategy from eight databases and quality assessment of the studies using the validated MMAT tool. However, it should be noted that generalisability of the outcomes from this review may be influenced by the inherent challenges of conducting RCTs/CTs studies in LTC, and the innate difficulties in accommodating participants’ preferences in interventions for a homogeneous effect.\(^52\)

Limitations of this review should be considered when interpreting the findings. First, the small number of studies included in this review reflects the paucity of RCTs/CTs in the research field of non-facilitated meaningful activities for older people living with dementia in LTC facilities. Second, the heterogeneity of activity interventions (i.e., types, duration and frequency), as well as the outcomes being assessed, and the instruments used to measure the outcomes make it unfeasible to conduct further analysis that pools the results of the studies included in this review. Although results from this review offer narrative guidance regarding non-facilitated meaningful activities for older people living with dementia in LTC facilities, they should be interpreted with caution due to the lack of a meta-analysis. Third, language bias should be considered because only studies published in the English language were selected, thereby omitting the possible inclusion of studies published in other languages. Further, the age selection for participants was 65 years old and over, which excludes people with younger onset dementia who may also benefit from non-facilitated meaningful activities. Finally, the small sample sizes in five out of six studies reviewed (i.e., music and lifelike dolls), the gender imbalance across studies (i.e., almost three-quarter of participants were female), the quality shortcomings determined through the reported methodology of included studies (e.g., treatment fidelity), as well as the focus on non-facilitated meaningful activities provided only in LTC setting, warrant caution in the elucidation and generalisability of findings.

By and large, meaningful activities included in this review (i.e., music/stimulated family presence, animal-like social robot PARO/plush toy and lifelike dolls) have shown varying benefits on agitation, emotional well-being, feelings of pleasure, engagement (i.e., verbal and visual), and sleep quality. These benefits are mostly only observed when the activities are taking place (i.e., “in the moment”). For example, improvements in agitation were only noted via video observations/coding and behaviour frequency count when an activity was occurring and not when assessed over a previous two-week period using CMAI/CMAI-SF. Consideration is thus needed as to whether any benefits can realistically be sustained beyond the occurrence of the meaningful activity itself and its resulting influence on the overall quality of life. It should be noted that non-pharmacological interventions, like pharmacological interventions, often need to be provided on a continuous basis for its benefits or effects to be
maintained. Consequently, careful selection of outcome measures for “in the moment” activity effect and associated sustained or longer-term effect (if assessed), as well as the instruments used to measure these outcomes, are needed. Further work is also needed to ascertain if and/or when facilitated or non-facilitated meaningful activities are most appropriate for people living with dementia in LTC.

Conclusions

Non-facilitated meaningful activities provide a promising way for care staff, including nurses, to manage behavioural and psychological symptoms and improve quality of life in older people with dementia in LTC facilities, while also eliminating the need for facilitation involving the limited numbers of available care staff. This systematic review synthesizes evidence from RCTs/CTs of non-facilitated meaningful activities for older people living with dementia in LTC facilities. A total of six studies were included. The results implied that current RCTs/CTs about non-facilitated meaningful activities for people with living dementia in LTC facilities are limited, but those included in this review were of adequate methodological quality. Meaningful non-facilitated activities, such as music, stimulated family presence, animal-like social robot PARO/plush toy and lifelike dolls, may have beneficial effects on agitation, emotional well-being, feelings of pleasure, engagement (i.e., verbal and visual), and sleep quality. However, there remains a lack of conclusive and robust evidence to support these psychological and physiological effects of non-facilitated meaningful activities for older people with dementia living in LTC facilities by care staff. Additional rigorously designed RCT/CT studies with larger sample size are needed to confirm the benefits found in this review. In particular, the potential for meaningful non-facilitated activities to improve mood states, social interaction, cognition, and medication usage requires further investigation.

Declarations of interest

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