Impact of Trained Volunteers' Services in Caring for Older Persons with Dementia: A systematic review

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Running Title: Trained Volunteer in Dementia Care

This manuscript is being submitted to the field of Dementia Care and Epidemiology in Psychogeriatrics.

Abstract: Dementia causes a great burden of disease globally. Volunteers' contribution in caring for older persons with dementia (OPD) are growing. This review aims to evaluate the impact of trained volunteers' involvement in providing care and support for OPD. PubMed, ProQuest, EBSCOHost, and Cochrane Library databases were searched using specific keywords. Inclusion criteria were studies of OPD who received interventions delivered by trained volunteers, which were published between 2018 and 2023. Seven studies were included in the final systematic review, which comprises studies using quantitative and qualitative approaches. A wide range of outcomes was seen in both acute and home/community-based care settings. Improvements in social interaction, loneliness, mood, ability to recall and physical activity of OPD were found. Carers and trained volunteers were also found to benefitted. Trained volunteers' involvement in OPD care plays a very valuable role for the OPD, their caregivers, the volunteers, and in turns to society. This review also emphasizes the importance of person-centred care for OPD.

Keywords: *older adult, dementia, volunteer, training, outcome*

Introduction

Dementia is a term for several diseases that affect memory, cognitive abilities and other behaviours, and it is generally progressive. Alzheimer's disease is the most common type of dementia, capturing 65% of dementia cases, while other types of dementia include vascular dementia, Lewy body dementia, frontotemporal dementia, and young-onset dementia.[1] The diagnosis of dementia is increasing rapidly and it is estimated to increase from 57.4 million cases worldwide in 2019 to 152 million cases in 2050. This reflects both the growing number of older people and developments of risk factors as reported in the Global Burden of Diseases report.[2]

Dementia can significantly impair a person's ability to carry out activities of daily living.[1] The World Health Organisation (WHO) states that dementia is currently the seventh leading cause of death among all diseases and one of the leading causes of disability and dependence in the older population in the world. The physical, psychological, social, and economic impacts of dementia are not only on the persons with dementia but also on their caregivers, families and society.[3] For instance, it is reported that about two out of three informal caregivers are women. They are often forced to play multiple roles as caregivers while still carrying out household and professional responsibilities.[4] Dementia is also reckoned as one of the diseases with the highest costs in society.[3,4]

Volunteering, defined as an activity in which someone gives their time without being paid to benefit another individual, group or organization, has been implemented as part of programs to improve OPD care.[5,6] Assistance from volunteers in handling behavioural and psychological symptoms of OPD could be done in various ways, including by helping

patients perform activities of daily living such as eating, walking and socializing.[5] Based on research by McCall et al (2020), the service delivered by volunteers in the field of dementia care are mostly supporting them in social or recreational activities, organizing events, and visiting or befriending people with dementia.[7]

Volunteering in OPD care has become relatively common and the role of volunteers is considered beneficial for OPD, families, volunteers, and health workers in dementia care.[5] However, the complex needs of OPD often pose a challenge in providing care for them.[7] Volunteers need formal training as they are potentially exposed to difficult situations in caring for OPD.[5] The Global Action Plan on Dementia (2017-2025) targets 75% of the world's countries to provide support and training programs for carers and families of people with dementia, which should be accessible and evidence-based, focusing on upgrading knowledge and skills of care, such as in dealing with the behaviour of people with dementia, how to support people with dementia living in the community, how to prevent stress and health problems for caregivers.[1]

This systematic review aims to evaluate the impact of trained volunteers' involvement in caring for OPD both in acute care settings in hospitals and daily care at home or in the community on OPD.

Material and Methods

Protocol

The protocol of this review was registered with the International Prospective Register of Systematic Reviews (PROSPERO) as CRD42022336128.

Inclusion and Exclusion Criteria

We included studies that assessed the effect of trained volunteer involvement in providing care and support for OPD in both inpatient and outpatient settings on OPD from the last five years (2018-2023) and were available in full text (not editorial or abstract for conferences). Articles were omitted if they were: not presented in English; case reports, case series, systematic reviews, meta-analyses, letters to editor, and book chapters; articles with irrelevant topics.

Literature Search Strategy

The literature searches were conducted on 9 February 2023 using PubMed, ProQuest, EBSCOHost, and Cochrane Library. We used Boolean operators "AND/OR" with keywords/MeSH terms of key concepts: "older adults with dementia", "trained volunteers", and "outcomes". We limit the search for literature published in the last five years to gain the most recent conditions in OPD care hence the result analysed in this review represented current situation of OPD more accurately. Outcomes sought were whether there is improvement in any aspects of OPD's life, such as their cognitive symptoms, functional status, and quality of life, or measure of patient satisfaction toward the care provided by trained volunteers.

Study Selection

The searches yielded 14,289 results. Following the PRISMA guideline 2020[8], we eliminated all duplicates and two reviewers (Y.S.H., A.A.) independently screened the collected articles based on titles and abstracts. Subsequently, the full-text articles were retrieved for further

evaluation according to the inclusion and exclusion criteria. The number of studies finally selected for synthesis was 7 (**Figure 1**). Any disagreements were resolved through discussion between reviewers.

Data Extraction

The data extracted from the selected studies were collected in a Microsoft Excel sheet and included the following information: (i) author and year of publication, (ii) study population and research setting, (iii) study design, (iv) types of interventions, (v) outcome measured and (vi) findings. This format allows the authors to acquire an overview of the articles that have been selected in the initial stage of the systematic review.

Quality Assessment

The Joanna Briggs Institute (JBI) tool was used to assess the quality of all included studies; quasi-experimental, cohort and qualitative studies.[9] The study biases were assessed to be categorized into "low risk of bias" if 70% of questions scored yes, "moderate risk of bias" if there were 50-69% yes, or "high risk of bias" if below 50% questions scored yes. Two reviewers (Y.S.H, A.A.) independently evaluated the quality of each study with any discrepancies resolved through discussion. The JBI tool questionnaire includes nine questions for quasi-experimental studies, ten questions for qualitative research, and eleven questions for cohort studies. These questions expect a yes, no, unclear, and not applicable response. Details of quality assessment for each study could be seen in **Table 1a, 1b**, and **1c.**

Results

Search Results and Study Characteristics

The search yielded a total of 14,289 articles across the four databases. After removal of duplicates, 8,363 articles were screened for inclusion by title and abstract and 8,280 articles were excluded. Five out of 83 records could not be retrieved. Following full text review, 7 out of 78 articles met the inclusion criteria (**Figure 1**). In the full-text review, reasons for unselecting articles included the use of trained volunteers, absence of dementia or dementia in younger people, impact on OPD were not mentioned, no information about the study design and other factors (e.g. studies focusing on technology, the spatial layout of OPD's environment). Of the seven articles included in this systematic review, 4 were qualitative research, 2 were clinical trials and 1 adopted a mixed-method consisting of a prospective cohort and qualitative study design. Two articles studied the impact of trained volunteers' involvement in acute setting care and five articles on the community setting. The sample sizes from the studies varied from eight to 780 people. The research was carried out in various regions ranging from Australia, the United Kingdom, Norway, the United States of America, and Canada. The summary of studies is presented in **Table 2**. The challenge in searching for literature for this study was to find any *trained* volunteers involved in the program; often this was not clearly stated in the text. Two articles did not mention the number of volunteers and three articles did not explain the detail of training that had been given to the volunteers.

Acute Setting

Based on the results from this review, it appears that trained volunteers provided care for OPD in hospitals by supporting them in orientation and interaction with others, engagement in therapeutic activities, promoting the use of visual and hearing aids, assisting with eating and drinking, and encouraging regular walking where it is safe and appropriate.[10] In a trial done in seven acute rural hospitals in Southern New South Wales, Australia, patients' length of stay, specialled (given 1:1 supervision by nurse or security guard) cases, the number of deaths in hospital, discharge to residential care, any behavioural incidents and falls, 28-days readmission events, pressure ulcers area, and medication use were identified as outcomes. The study revealed that patients who received care from trained volunteers had fewer readmission cases within 28 days and a decrease in special monitoring.[10] Person-centred care was implemented in a qualitative study by Preston and Burch (2018) through dementia buddying. This showed positive impacts, such as some patients reported mood improvement and patients' relatives felt they were more able to take a break. However, some ward staff showed a lack of support for person-centred care and one describe the accompaniment from the volunteers as not useful.[11]

Community Setting

At the community level, OPD received care and support from trained volunteers through diverse activities. Sun et al. (2021) assessed whether there were positive, negative or no change at all in OPD and their caregivers after participation in three main volunteer programs of the Alzheimer Society of Durham Region (ASDR), consisting of physical activity, a dementia-friendly café, and caregiver support groups. In this research, OPD and their

caregivers reported positive changes in their confidence, stress level, sleeping pattern, appetite, loneliness, pleasure in life, and social connectedness in the community. It was also stated that the physical and mental well-being of the participants was improved through sensory stimulation related to brain exercises co-facilitated by the community volunteers. ASDR programs supported positive attitudes towards living well with dementia and education to increase awareness about dementia. In addition, volunteers felt rewarded for joining this program as they gave back to the community, and develop knowledge, skills and competencies in dementia care.[12]

A physical activity approach was also conducted in three other studies (Taraldsen et al, 2020; Long et al, 2020; Kohler et al, 2021).[13–15] Taraldsen et al (2020) and Long et al (2020) both used structured group-based exercises with trained volunteers' help and evaluated them after 12 weeks of intervention. Positive impacts were presented from the focus group and individual interviews, predominantly mentioning building relationships, providing support and motivating OPD and carers to participate in activities outside the home.[13] Moreover, study results from Long et al (2020) reported that there were improvements in physical activity levels of the participants by 10% over three months, improvements in the ability to recall, and reductions in loneliness, anxiety and depression using standardised questionnaires or tests as tools.[14] Kohler et al (2021) conducted three seasons of biweekly group-walking tours accompanied by trained volunteers for OPD and their caregivers. Their result showed a steady quality of life over all three consecutive seasons and the burden on their relatives did not worsen significantly.[15]

Hunter et al. (2020) assigned nine community volunteers to deliver Montessori-based Intervention (MBI), an intervention which domain consists of practical, sensorial, cognitive, and sociocultural that emphasise the participation of people with dementia in meaningful activities according to their interests. Before the intervention, volunteers were trained for about 5 hours across three sessions covering knowledge about dementia, MBI, and reviewed residents' profiles of interests and abilities to match. Adherence to MBI and associated moderators was measured by interviews and using Visiting Quality Questionnaire (VQQ), which scored satisfied/good quality visits in the resident subscale and very satisfied/high-quality visits in the volunteer subscale. They also suggested that volunteers working with older people who have late-stage dementia receive additional support, for example preparing them with information about late-stage dementia, training in non-verbal communication and intervention skill modelling.[16]

Risk of Bias

Three studies with quasi-experimental design were classified as (2) low risk and (1) moderate risk of bias **(Table 1a).** Four studies were considered to have a low risk of bias according to the JBI Critical Appraisal Checklist for Qualitative Studies (**Table 1b**). One mixed method study included in our review was assessed twice using the checklist for qualitative studies (**Table 1b**) and checklist for cohort studies (**Table 1c**), with the result of moderate risk of bias according to both JBI Critical Appraisal Checklists (Qualitative Studies and Cohort Studies). Several studies did not have control groups, while most of the qualitative studies lacked a statement locating the researchers culturally or theoretically, the influence of the

researchers on the research and vice-versa. The average percentage of 'yes' scores from all seven studies included is 79.76%.

Discussion

This systematic review explored the role of trained volunteers in both hospital and community settings, the types of activities delivered and their impact on OPD. Trained volunteer involvement in caring for OPD is mostly welcomed and seen as a beneficial role. Two out of the seven studies presented in this review recruited volunteers to be trained and take part in acute setting care for OPD.[10,11] In home or community-based settings, trained volunteers were involved in providing care for OPD through several programs. Both private (Hunter et al,2020) and group-based activities (Sun et al, Taraldsen et al, Kohler et al, Long et al) were performed, using interventions such as physical exercise, walking, and MBI.[12–16]

Overall, psychosocial support is the impact primarily addressed in the studies reviewed. Hall et al (2019) found in their study that by having more social interactions and supports from the volunteers to engage in activities, agitation and restlessness of patients with dementia were reduced and their well-being enhanced.[17] Mutually, the studies in acute setting care highlighted the importance of person-centred care approach in caring for OPD and displayed that it is possible to be provided by trained volunteers.[10,11] Person-centred care interventions could reduce neuropsychiatric symptoms, which usually need psychotropic drugs to treat and control albeit its detrimental side effects, and potentially improves the quality of life of OPD.[18] Being able to spend time and offer one-to-one support for OPD, volunteers' services enable individualised care for OPD; to be tailored to the specific needs

and preferences of patients.[17] Thus, the role of trained volunteers could also be considered as a bridge of information between nurses and OPD and their caregivers.[19]

Yet, one of the studies included (Preston and Burch,2018) stated that the perception of the ward staff about OPD care could affect the implementation of person-centred care for OPD by trained volunteers, whether the staffs are open or resistant to the intervention.[11] Some difficulties also occurred in Hall et al (2019), such as volunteers were not always welcomed at the beginning of the projects, volunteers feeling unsatisfied by staff's responses when they asked for help, and less connectedness between volunteers and the nursing team, although a majority of staff reported enjoyment in the program at the end.[17] A solution needs to be sought for this, such as providing continuous training to educate and hear the volunteers' and ward staff's feedback to develop further practical person-centred care skills.[17,18]

In home or community-based settings, through programs with trained volunteers, patients and their caregivers were encouraged to engage in social activities and enabled to build a relationship with either the volunteers or even with other participants if it was a group program.[12,13,15] Interventions accompanied by trained volunteers were shown to decrease loneliness, and improve mood and social connectedness, moreover affecting the physical and mental well-being of OPD positively.[12,14] Related to psychosocial interventions in dementia care, Chirico et al (2021) found that psychosocial interventions enable people with dementia to maintain their independence and functional ability, reduce behavioural and psychological symptoms, and enrich their quality of life.[20] A meta-analysis by Duan et al (2018) confirmed that psychosocial interventions such as walking program, home-based exercise and art therapy are effective for slowing down the progression of cognitive impairment in patients

with Alzheimer's disease.[21] Studies included in this review showed that such interventions to enrich the care for OPD are feasible to be facilitated by volunteers as non-professionals.[12–16] This result aligns with a previous study by Luger et al (2016) that reported the impact of volunteers conducting home-based physical training, nutritional, and social support for older persons living at home. In addition, the assistance from volunteers could help overcome malnutrition status and frailty and decrease isolation and loneliness in older people.[22]

These findings on the impact of trained volunteers in providing care and support for OPD are aligned with the fulfilment of five psychological needs in dementia defined by Kitwood (1997): (1) comfort, the need for closeness and soothing of pain, sorrow, or anxiety to help them become thoroughly strong; (2) attachment, the need for secure bonds with others to support the ability to function; (3) inclusion, the need to feel accepted and needed within their social surroundings; (4) occupation, the need to be involved in the process of life; and (5) identity, the need to be known by others as the same person to maintain a sense of continuity with the past and present life.[23] The effectiveness of trained volunteers working with OPD in the community has been studied and thus concrete actions with supporting policy are necessary to apply research into practice.[7,24]

Family caregivers of the OPD benefitted from the involvement of trained volunteers as well. Studies by Sun et al (2021) and Long et al (2020) outlined that caregivers were enabled to seek out social support to manage the care difficulties they faced through the programs involving trained volunteers implemented.[12,14] Trained volunteers' assistance allows carers to have more free time and therefore reduces their burden of care.[19] Positive impact on the well-being of family carers was also seen following the improvement in quality

of life of residents with advanced dementia who received multi-dimensional care with sensory, psychosocial and spiritual components, implemented in a study by Stacpoole et al (2017).[25]

In conjunction with the impact of trained volunteers' help in caring for OPD seen from the perspective of OPD and their caregivers, volunteers also gain from their work. People joining as trained volunteers felt rewarded since they could give back to the community.[12] This is supported by Smith et al (2017) whose study showed that volunteers benefitted from their role mutually, particularly seeing positive changes in carers' live brought enjoyment and satisfaction to them.[26] With people's involvement in volunteering and being trained prior to the intervention, it was also shown to increase their knowledge and attitude toward dementia, thus contributing to managing stigma in society.[27] Training also helps the volunteers to be confident in doing their responsibilities and increase their satisfaction with their role.[24] Along with these findings, Malmedal et al (2020) found in their study that the feeling of doing an important job and contributing to helping persons with dementia and their families cope with daily life, gaining friendships and sharing common interests are the motivation fuelling volunteers.[28] It was also reminded that clarification of roles, preparation of prior knowledge through training for volunteers, and peer supports are important when volunteers take part in OPD care.[24,28]

Strengths, limitations, and implications

This synthesis conducted standardised literature searches and quality assessments. This review included studies with both quantitative and qualitative approaches, therefore, allowing a broader perspective from current available research about the role of trained

volunteers in OPD care and its impact. It included a wide range of interventions delivered by trained volunteers in supporting OPD care. However, there are some limitations to be acknowledged. First, the results of some studies included might not portray the condition in the wider population of OPD because of their small sample size. Second, there were three trials without control groups, so research with control groups is needed to improve the validity of the findings. Third, we evaluated the effects of trained volunteers' service broadly in this review as we did not limit them to specific outcomes, such as focusing only on the quality of life of the OPD, the caregiver's burden, or the impact and challenges faced by the trained volunteers separately.

Conclusion

Trained volunteer involvement in providing care for OPD is found to be a supportive source for OPD care. Their assistance has been shown to enhance person-centred care for OPD in acute setting care and support OPD psychosocially, with physical exercise as the most common activity used in community settings in this review. Future studies need to be done to find the most effective method of training for volunteers and the best type of psychosocial intervention delivered by trained volunteers to enhance the role of trained volunteers in the service, and further, improve the well-being of OPD.

Acknowledgements

Author Contributions: The authors confirm contribution to the paper as follows: study conception and design: Y.S.H., E.S.B. A.A.; data collection: Y.S.H., A.A.; analysis and interpretation of results: Y.S.H, A.A., Y.T.; draft manuscript preparation: Y.S.H., E.S.B., A.A., Y.T. All authors reviewed the results and approved the final version of the manuscript.

Funding: No funding or sponsorship was used for the conduct of this study or in the preparation of this article.

Disclosure statement

The authors have no potential conflicts of interest to disclose.

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Figure 1. PRISMA Flow Diagram

Study flow diagram with exclusion criteria. Of the 14,289 studies identified through the database search, only seven were finally included in the analysis.

Table 1a. JBI Critical Appraisal Checklist for Quasi-experimental (Non-randomized Experimental) Studies

Abbreviations: √, Yes; X, No; U, Unclear; NA, not applicable.

Q1. Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)?, Q2. Were the participants included in any comparisons similar?, Q3. Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?, Q4. Was there a control group?, Q5. Were there multiple measurements of the outcome both pre and post the intervention/exposure?, Q6. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?, Q7. Were the outcomes of participants included in any comparisons measured in the same way?, Q8. Were outcomes measured in a reliable way?, Q9. Was appropriate statistical analysis used?.

Table 1b. JBI Critical Appraisal Checklist for Qualitative Researches

Abbreviations: √, Yes; X, No; U, Unclear; NA, not applicable.

Q1. Is there congruity between the stated philosophical perspective and the research methodology?, Q2. Is there congruity between the research methodology and the research question or objectives?, Q3. Is there congruity between the research methodology and the methods used to collect data?, Q4. Is there congruity between the research methodology and the representation and analysis of data?, Q5. Is there congruity between the research methodology and the interpretation of results?, Q6. Is there a statement locating the researcher culturally or theoretically?, Q7. Is the influence of the researcher on the research, and vice-versa, addressed?, Q8. Are participants, and their voices, adequately represented?, Q9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?, Q10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?

Table 1c. JBI Critical Appraisal Checklist for Cohort Studies

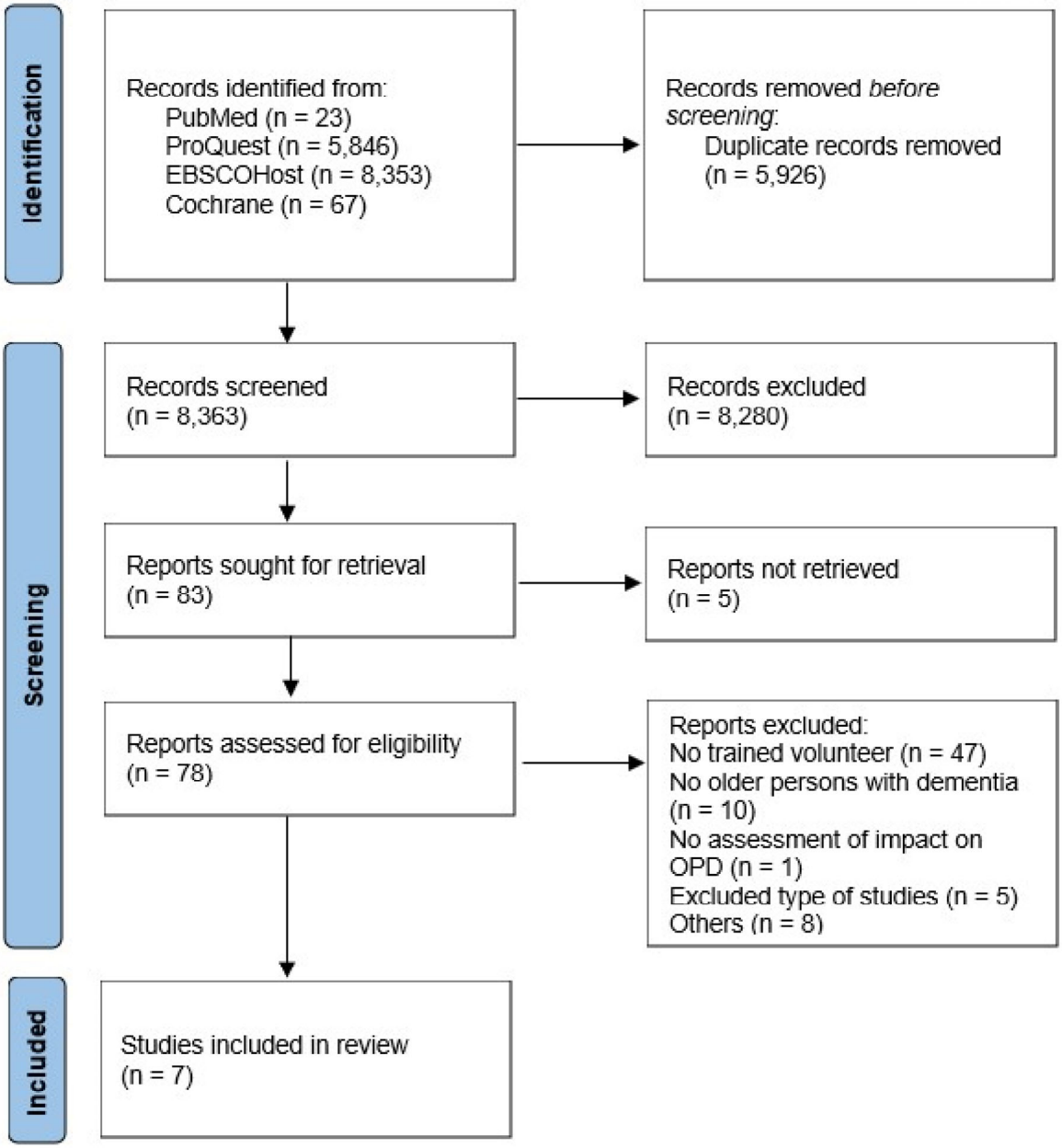
Abbreviations: √, Yes; X, No; U, Unclear; NA, not applicable.

Q1. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?, Q2. Were the exposures measured similarly to assign people to both exposed and unexposed groups?, Q3. Was the exposure measured in a valid and reliable way?, Q4. Were confounding factors identified?, Q5. Were strategies to deal with confounding factors stated?, Q6. Were the groups/participants free of the

outcome at the start of the study (or at the moment of exposure)?, Q7. Were the outcomes measured in a valid and reliable way?, Q8. Was the follow up time reported and sufficient to be long enough for outcomes to occur?, Q9. Was follow up complete, and if not, were the reasons to loss to follow up described and explored?, Q10. Were strategies to address incomplete follow up utilized?, Q11. Was appropriate statistical analysis used?.

Table 2. Summary of Studies

Figure 1. PRISMA Flow Diagram



Supplementary Material 1. Search Strategy

	Concept 1	**Concept 2**	**Concept 3**
Key Concepts	Trained volunteers	Outcomes	Older adults with dementia
Controlled vocabulary terms / Subject terms	"education"[MeSH Terms] AND "volunteers"[MeSH Terms]	“cognition”[MeSH Terms] OR “functional status”[MeSH Terms] OR “quality of life”[MeSH Terms] OR “patient satisfaction”[MeSH Terms]	“Aged” [MeSH Terms] AND "dementia"[MeSH Terms]
Free text terms / natural language terms	("education" [Text Word] OR "training" [Text Word] OR "train"[Text Word] OR "trains"[Text Word] OR "trained"[Text Word]) AND ("volunteered"[Text Word] OR "volunteers "[Text Word] OR "volunteer"[Text Word] OR "volunteering"[Text Word])	“outcome"[Text Word] OR "outcomes"[Text Word] OR “cognitive function”[Text Word] OR “functional status”[Text Word] OR “quality of life”[Text Word] OR “patient satisfaction”[Text Word]	("Aged"[Text Word] OR “Older Adults” [Text Word]) AND ("Dementia"[Text Word])

Each concept will be joined together using AND as search strategy for all databases.

PUBMED (Identified articles: 23)

Search Number	Query	Filters	Results
1	(("education"[MeSH Terms] OR "education" [Text Word] OR "training"[Text Word] OR "train"[Text Word] OR "trained"[Text Word] OR "trains"[Text Word]) AND ("volunteers"[MeSH Terms] OR "volunteers "[Text Word] OR "volunteered"[Text Word] OR "volunteer"[Text Word] OR "volunteering"[Text Word]))	None	20,795
2	"cognition"[MeSH Terms] OR "functional status"[MeSH Terms] OR "quality of life"[MeSH Terms] OR "patient satisfaction"[MeSH Terms] OR "outcome"[Text Word] OR "outcomes"[Text Word] OR "cognitive function"[Text Word] OR "functional status"[Text Word] OR "quality of life"[Text Word] OR "patient satisfaction"[Text Word]	None	3,579,989
3	("aged"[MeSH Terms] OR "aged"[Text Word] OR "older adults" [Text Word]) AND ("dementia"[MeSH Terms] OR "dementia"[Text Word])	None	123,751
4	((((("education"[MeSH Terms] OR "education" [Text Word] OR "training"[Text Word] OR "train"[Text Word] OR "trained"[Text Word] OR "trains"[Text Word]) AND ("volunteers"[MeSH Terms] OR "volunteers "[Text Word] OR "volunteered"[Text Word] OR "volunteer"[Text Word] OR "volunteering"[Text Word]))) AND ("cognition"[MeSH Terms] OR "functional status"[MeSH Terms] OR "quality of life"[MeSH Terms] OR "patient satisfaction"[MeSH Terms] OR "outcome"[Text Word] OR "outcomes"[Text Word] OR "cognitive function"[Text Word] OR "functional status"[Text Word] OR "quality of life"[Text Word] OR "patient satisfaction"[Text Word])) AND (("aged"[MeSH Terms] OR "aged"[Text Word] OR "older adults" [Text Word]) AND ("dementia"[MeSH Terms] OR "dementia"[Text Word]))	None	125
5	((((("education"[MeSH Terms] OR "education" [Text Word] OR "training"[Text Word] OR "train"[Text Word] OR "trained"[Text Word] OR "trains"[Text Word]) AND ("volunteers"[MeSH Terms] OR "volunteers "[Text Word] OR "volunteered"[Text Word] OR "volunteer"[Text Word]	Publication date in the last 5 years (2018-2023), free full text, full text	23

	OR "volunteering"[Text Word])) AND ("cognition"[MeSH Terms] OR "functional status"[MeSH Terms] OR "quality of life"[MeSH Terms] OR "patient satisfaction"[MeSH Terms] OR "outcome"[Text Word] OR "outcomes"[Text Word] OR "cognitive function"[Text Word] OR "functional status"[Text Word] OR "quality of life"[Text Word] OR "patient satisfaction"[Text Word])) AND (("aged"[MeSH Terms] OR "aged"[Text Word] OR "older adults" [Text Word]) AND ("dementia"[MeSH Terms] OR "dementia"[Text Word]))		

ProQuest (Identified Article: 5,846)

Search Number	Query	Filters	Results
1	(MESH(Education) OR ft(Education) OR ft(Training) OR ft(Train) OR ft(Trained) OR ft(Trains)) AND (MESH(Volunteers) OR ft(Volunteers) OR ft(Volunteer) OR ft(Volunteered) OR ft(Volunteering))	None	1,578,859
2	MESH(Cognition) OR MESH(Functional Status) OR MESH(Quality of Life) OR MESH(Patient Satisfaction) OR ft(Outcome) OR ft(Outcomes) OR ft(Cognitive Function) OR ft(Functional Status) OR ft(Quality of Life) OR ft(Patient Satisfaction)	None	17,912,902
3	(MESH(Aged) OR ft(Aged) OR ft(Older Adults)) AND (MESH(Dementia) OR ft(Dementia))	None	209,051
4	S1 AND S2 AND S3	None	30,931
5	S1 AND S2 AND S3	Full text, article, scholarly journals, last 5 years (2018-2023), English	5,846

EBSCOHost (Identified Articles: 8,353)

Search Number	Query	Filters	Results

1	((MM "Education+") OR TX Education OR TX Training OR TX Train OR TX Trained OR TX Trains) AND ((MM "Volunteers+") OR TX Volunteered OR TX Volunteers OR TX Volunteer OR TX Volunteering)	None	749,194
2	(MM "Cognition+") OR (MM "Functional Status+") OR (MM "Quality of Life+") OR (MM "Patient Satisfaction+") OR TX Outcome OR TX Outcomes OR TX Cognitive Function OR TX Functional Status OR TX Quality of Life OR TX Patient Satisfaction	None	15,715,812
3	((MM "Aged+") OR TX Aged OR TX Older Adults) AND ((MM "Dementia+") OR TX Dementia)	None	457,905
4	S1 AND S2 AND S3	None	26,787
5	S1 AND S2 AND S3	Full text, publication date from 2018 to 2023, Academic Journals	8,353

Cochrane Library (Identified Article: 67)

Search Number	Query	Filters	Results
1	MeSH descriptor: [Education] explode all trees	None	40,524
2	MeSH descriptor: [Volunteers] explode all trees	None	5,630
3	Education OR training OR train OR trained R trains	None	224,855
4	Volunteers OR volunteered OR volunteer OR volunteering	None	83,698
5	(#1 OR #3) AND (#2 OR #4)	None	8,333
6	MeSH descriptor: [Cognition] explode all trees	None	13,537
7	MeSH descriptor: [Functional Status] explode all trees	None	119
8	MeSH descriptor: [Quality of Life] explode all trees	None	35,073
9	MeSH descriptor: [Patient Satisfaction] explode all trees	None	13,939
10	Outcome OR outcomes OR cognitive NEXT(function*) OR functional NEXT(status*) OR quality	None	814,121

	NEXT(of life*) OR patient NEXT(satisfaction*)		
11	#6 OR #7 OR #8 OR #9 OR #10	None	820,759
12	MeSH descriptor: [Aged] in all MeSH products	None	242,328
13	MeSH descriptor: [Dementia] explode all trees	None	7,898
14	Aged OR older NEXT(adult*)	None	593,920
15	Dementia	None	28830
16	(#12 OR #14) AND (#13 OR #15)	None	14717
17	#5 AND #11 AND #16	Publication date from Jan 2018 to Jan 2023, Trials	67

Table 1a. JBI Critical Appraisal Checklist for Quasi-experimental (Non-randomized Experimental) Studies

Authors	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Yes score, %	Level of risk
Blair et al., 2018	√	√	√	√	X	√	√	√	√	8/9, 88.89%	Low risk
Kohler et al, 2019	√	NA	NA	X	√	U	NA	√	√	4/6, 66.67%	Moderate risk

Abbreviations: √, Yes; X, No; U, Unclear; NA, not applicable.

Q1. Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)?, Q2. Were the participants included in any comparisons similar?, Q3. Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?, Q4. Was there a control group?, Q5. Were there multiple measurements of the outcome both pre and post the intervention/exposure?, Q6. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?, Q7. Were the outcomes of participants included in any comparisons measured in the same way?, Q8. Were outcomes measured in a reliable way?, Q9. Was appropriate statistical analysis used?.

Table 1b. JBI Critical Appraisal Checklist for Qualitative Researches

Authors	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Q.10	Yes score, %	Level of risk
Preston and Burch, 2018	√	√	√	√	√	√	X	√	√	√	9/10, 90%	Low risk
Sun et al., 2021	√	√	√	√	√	√	√	√	√	√	10/10, 100%	Low risk
Hunter et al.,2020	√	√	√	√	√	√	U	√	√	√	9/10, 90%	Low risk
Taraldsen et al., 2020	√	√	√	√	√	U	U	√	√	√	8/10, 80%	Low risk
Long et al, 2020	√	√	√	√	√	X	X	U	√	X	6/10, 60%	Moderate risk

Abbreviations: √, Yes; X, No; U, Unclear; NA, not applicable.

Q1. Is there congruity between the stated philosophical perspective and the research methodology?, Q2. Is there congruity between the research methodology and the research question or objectives?, Q3. Is there congruity between the research methodology and the methods used to collect data?, Q4. Is there congruity between the research methodology and the representation and analysis of data?, Q5. Is there congruity between the research methodology and the interpretation of results?, Q6. Is there a statement locating the researcher culturally or theoretically?, Q7. Is the influence of the researcher on the research, and vice-versa, addressed?, Q8. Are participants, and their voices, adequately represented?, Q9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?, Q10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?

Table 1c. JBI Critical Appraisal Checklist for Cohort Studies

Authors	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Q.10	Q.11	Yes score, %	Level of risk
Long et al, 2020	NA	NA	√	U	X	X	√	√	√	NA	√	5/8, 62.5%	Moderate risk

Abbreviations: √, Yes; X, No; U, Unclear; NA, not applicable.

Q1. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?, Q2. Were the exposures measured similarly to assign people to both exposed and unexposed groups?, Q3. Was the exposure measured in a valid and reliable way?, Q4. Were confounding factors identified?, Q5. Were strategies to deal with confounding factors stated?, Q6. Were the groups/participants free of the outcome at the start of the study (or at the moment of exposure)?, Q7. Were the outcomes measured in a valid and reliable way?, Q8. Was the follow up time reported and sufficient to be long enough for outcomes to occur?, Q9. Was follow up complete, and if not, were the reasons to loss to follow up described and explored?, Q10. Were strategies to address incomplete follow up utilized?, Q11. Was appropriate statistical analysis used?.

Table 2. Summary of Studies

Author, year	Study design and setting	Study population	Type of volunteer care intervention, number of volunteers	Outcome measured	Findings
Blair et al., 2018 [10]	Non-randomized controlled trial	Patients receiving volunteer care (n=270) and	Trained volunteers provided care over two shifts each weekday (between 8 am–12:30	• Length of stay • Specialled (given 1:1 supervision)	• Fewer cases of readmission within 28 days after hospitalised (8.6%)

	7 acute rural hospitals in Southern NSW Local Health District (SNSWLHD), Australia	historical control patients (n=188), with a mean age in years [SD] 82.44 [8.63]	pm and 3 pm–7 pm), including: (1) Supporting orientation and interaction with others (2) Engagement in therapeutic activities (3) Promoting the use of visual and hearing aids (4) Assisting with eating and drinking (5) Encouraging regular walking, where safe and appropriate.	• Died in hospital • Discharge to residential care • Any behavioural incidents • Any falls • 28-days readmission • Pressure ulcers area • Medication use (overall medication at discharge, psychotropic and analgesic medication)	compared to the control group (17%), p-value=0.006 • Less proportion of patients in the intervention group (4.8% vs 11.2%) required special monitoring, p-value=0.011
Preston and Burch,	Qualitative research	Interviewed participants:	Person-centred care through dementia buddying	• Impact on the patients • Impact on the patients'	• Mood improvement of the patients

2018 [11]	Two mental health hospital wards in England, both 24 beds, mixed-sex wards, had almost identical staffing levels, but with different purposes: a) Summer ward: an assessment unit for older people with dementia b) Spring ward: a continuing care ward for older people	- Clinical and support staff, n=9 - Carers/relatives, n=7	Number of volunteers who were interviewed = 4	relatives • Staff perspectives, whether they buy in person-centred care or not	• Relatives were enabled to take a break as visits from the volunteers substituted them. • Some staff welcomed the volunteers' visit to provide person-centred care for patients on the ward, but some were resistant to the program.

	with specialist mental health needs related to a diagnosis of dementia				
Sun et al., 2021 [12]	Exploratory qualitative descriptive research Alzheimer's Society of Durham Region (ASDR) in Ontario, Canada	Total of 11 people with dementia, mean age in years were 75.73 (66-83) Total of 13 caregivers, mean age in years were 74.35 (63-83)	Three primary programs: (1) Minds in Motion, a community-based social program that incorporates physical activity and cognitive stimulation for people with early to mid-stage dementia and their care partners. (2) Brain Wave Café, a dementia friendly place	Impact related to people with dementia and caregivers: • Level of confidence, stress level, sleeping pattern, appetite, loneliness, and pleasure in life • In-depth interviews to identify whether there were positive, negative or no changes	• Positive changes were seen in aspects of the level of confidence, stress level, sleeping pattern, appetite, loneliness, and pleasure in life. • Themes found from the interviews: (1) Social connectedness in the community; (2) Building a positive attitude toward

			for people with dementia, their families and friends to meet for meaningful conversations, receive peer support and engage in stimulating activities. (3) Caregiver Support Groups, provides opportunities for social interaction for caregivers. Additional programs reported by participants: Singing Choir, Walking Group, Blue Umbrella Programs. Number of volunteers: 7 (age ranged from 24-73 years)	Impact related to volunteers through individual in-depth interviews about rewards of volunteerism.	living well with dementia; (3) Improving physical and mental well-being through sensory stimulation; (4) Increased awareness about dementia and related programs/ services through education. • Volunteers felt rewarded by giving back to the community, developing knowledge, skills and competencies in dementia care, a sense of personal satisfaction), consolidating a sense of community, and raising awareness about

					living well with dementia.
Taraldsen et al., 2020 [13]	Qualitative research Geriatric outpatient clinic, St Olav Hospital, University Hospital of Trondheim, Norway	Older adults with cognitive impairment or dementia who were referred to the clinic, mean age in years 76.75 (70-85), being home-dwelling, able to walk 10 m without aids (n=4) Caregivers (n=4)	Group-based exercise, once a week for 12 weeks, each meeting consists of warm-up (5-15 min), endurance (15-25 min), muscle strength (15-25 min), balance (15-25 min), cooling down. Number of volunteers: 5	Focus group and individual interviews were held to explore the experience of participants and caregivers.	Positive experiences were shown in both participants and caregivers in this group exercise. The topic analysed includes: • Building relationships (sense of belonging, equality, very good atmosphere) • Support and organisation (feeling of safety, common interests, gaining experience and knowledge, providing support and social interaction)

					• Motivation for participation in activities outside home (importance of social time, relief for relatives).
Long et al, 2020 [14]	A mixed method design (prospective, repeated measure cohort study, followed by focus group) David Ross Sports Village (DSRV), University of Nottingham (UoN),	Total of 16 participants (n=8 people with dementia at any stage and n=8 carers)	Exercise classes were led by a registered physiotherapist, with trained volunteer helpers. Each class is an hour long and follows a consistent structure: • 5-min instructor-led warm-up consisting of cardiovascular work • Divided into small groups to complete a six-station circuit	a) Mobility: Berg Balance Scale and the Timed Up and Go (TUG) b) Muscle Strength: hand-held dynamometer c) Cognition: Hopkins Verbal Learning Test (HVLT) d) Physical activity levels: LASA Physical Activity Questionnaire (LAPAQ)	a) Mobility: Berg Balance (/56) mean difference -1.25 [-0.43, 2.93], TUG (secs) mean difference -1.29 [-5.28, 2.69] b) Muscle Strength: Grip Right (kg) mean difference -0.29 [-1.53, 2.11], Grip Left (kg) mean difference 0.89 [-2.98, 1.21] c) Cognition: HVLT Recall

	UK		• 5-min break • 10-min instructor-led balance exercises, including static and dynamic postures Facilities of the DSRV are available for use following the class (e.g. changing room, café), providing additional opportunities for the attendees. Number of volunteers: N/A	e) Independence: Nottingham Extended ADL Scale (NEADL) f) Loneliness: UCLA Loneliness Scale g) Mood: Hospital Anxiety and Depression Scale (HADS) h) Quality of Life: Dementia Quality of Life Scale (DemQoL)	(/36) mean difference 1.13 [-2.74,0.22], HVLT Recognition (/12) mean difference 0.06 [-1.80, 1.67]. d) Physical activity levels: LAPAQ (/MET hrs/wk) mean difference 4.44 [-23.-3, 14.14] e) Independence: NEADL (/22) mean difference =0.75 [-06-1.56] f) UCLA Loneliness Scale (/80) mean difference 1.75 [-1.24,4.74] g) Mood: HADS (/42) mean difference 1.33 [-1.44,

					4.11] h) Quality of Life: DEMQoL (/116) mean difference -1.00 [-4.62, 6.62]
Kohler et al, 2019 [15]	Quasi-experimental, one-group, pretest–posttest trial Urban areas in Switzerland	Total 32 older adults with dementia (mean [SD] age in years 74.5 [7.9])	An easy walking tour lasted for three and a half hours, which included a short rest at a restaurant in the middle of the tour. The walking tempo was adapted to the individual performance by adjusting the walking route between approximately 3 and 7 kilometres. The walk is done biweekly and performed in three consecutive seasons;	Health-related quality of life (assessed by the 36 Item Short Form Survey, SF-36) Ability to perform activities of daily living, independence, mobility, cognition, challenging behaviour and the burden on the caregivers (assessed by WHO Disability Assessment Schedule 2.0 /	• SF-36: the scores of the subscales ″social role functioning″, 73.1 ± 37.2 versus. 75.0 ± 35.2, *p* = .746, and ″emotional role functioning″, 77.1 ± 36.4 versus. 84.0 ± 30.5, *p* = .477, had a statistically non-significant increase. In contrast, the ″physical functioning″, 84.4 ± 15.2 versus. 77.2 ± 22.3, *p* = .003,

			each season had a duration of 28 weeks. Number of volunteers: N/A (it is only stated that each participant was accompanied by one or two trained volunteers)	WHODAS 2.0, IADL, and interviews)	demonstrated a statistically significant decrease. • WHODAS 2.0: 12-item increased statistically significantly, 38.4 ± 22.8 versus. 44.7 ± 23.3, p = .005. • IADL scale showed a statistically significantly higher dependence after the intervention, 3.1 ± 1.9 versus. 2.7 ± 1.9, p = .046. • There was less challenging behaviour in the subscale "withdrawn, apathetic, depressed," no change in the subscale "eating and drinking excessively," and more

					challenging behaviour in all other subscales and in total as well. All changes were statistically non-significant.
Hunter et al.,2020 [16]	Qualitative research A special dementia unit (SDU) in a non-profit LTC facility in Western Canada	49 residents with dementia	Montessori-Based Interventions, a method of activities that emphasized practical, sensorial, cognitive, and sociocultural domains, also matched the activities to the interests and abilities of the participating residents. More than 30 activity kits were prepared, a minimum of 10 scheduled visits and 10 additional visits were held.	Interviews and Visiting Quality Questionnaire (VQQ) were used to assess residents' and volunteers' perceptions of visits	• VQQ Resident Subscale sore: 5.46/7 (satisfied/good quality visit) • VQQ Volunteer Subscale score: 6.12/7 (very satisfied/high-quality visit) • Recognition, acceptance, and engagement as responses of the residents

			Number of volunteers: 18		