

**TITLE:**

**Assessing The Effectiveness Of Psychological  
Interventions Against Dementia**

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## Abstract

**Background:** Depression and anxiety are prevalent and severe among people living with dementia (PLWD). Evaluating the effectiveness of psychological interventions in treating these symptoms can yield beneficial outcomes for the affected group's trajectory and quality of life.

**Aims:** The study aimed to review the effectiveness of psychological interventions in treating depression and anxiety among PLWD, as well as their association with developing dementia.

**Methods:** The study was conducted using a systematic review design where ten articles were searched in PubMed database using a defined inclusion and exclusion criteria and PRISMA flow chart .

**Results:** Psychological counseling significantly contributed to reduced depression and anxiety symptoms among PLWD, although the outcomes were heterogeneous when compared to patients who had not been diagnosed with the condition. Moreover, a decrease in depressive symptomatology reduced dementia incidence, especially vascular dementia, in PLWD. Additionally, psychotherapeutic methodologies also led to less caregiver distress.

**Conclusion:** Psychological interventions can bring transformative change for PLWD experiencing depression and anxiety and may contribute to limiting the incidence of dementia. Customised interventions for PLWD and their caregivers are critical in improving their quality of life and managing dementia-accompanying symptoms

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## Non-Technical Impact Summary

### Introduction

The importance of psychological interventions for dementia is not limited to patients, whose lives are significantly affected by the diagnosis. Combined with lifestyle modification, they are vital for the relatives and the entire system of healthcare. Psychological interventions for dementia are utilised to influence the symptoms and alleviate the life quality of people with dementia and their caregivers by applying special therapeutic approaches dedicated to their individual needs.

### Economic Impact

These studies suggest that psychological interventions can be temporary and cost-effective. Moreover, specialised interventions such as problem-solving and individual behavior management are likely to yield even greater benefits as they have been consistently found to be effective in reducing admission and length of stay in hospitals and achieving substantial cost savings (Richardset al., 2017). Finally, structured interventions such as music therapy and communication skills and person-centred training for carers are relatively inexpensive and have decreased clinically significant agitation in care home residents. These investments reduce longer-term healthcare costs.

### Societal Impact

The societal value of psychological interventions cannot be underestimated. Properly managing the symptoms of dementia substantially improves the daily life of people with dementia and their relatives, reducing stress, depression, and general caregiver burden (van Agteren et al., 2021). Well-conducted interventions are also associated with better patient outcomes and preserve the dignity and independence of people with dementia for longer, facilitating a higher general quality of life. Thus, the integration of psychological interventions as one of the components of comprehensive dementia care is well-supported. Taking potential economic benefits into account psychologists can provide, as well as the improvements in the quality of care and burden on caregivers, it is possible to conclude that the case for their development and implementation in the sphere is stron

## 1 Introduction

### 1.1 Background: The Prevalence and Impact of Dementia

Dementia remains one of the most serious health-related issues in the UK, impacting a large proportion of the older demographic (Guidi, 2018). According to Alzheimer's Society(2021), there are approximately 900,000 people living with dementia in the UK, and these numbers are anticipated to rise beyond 1.6 million by 2040 on account of a significantly aging population (Alzheimer's Society, 2021). The rising prevalence of dementia not only has a significant impact on the lives of individuals and their families but also puts a substantial strain on healthcare and social systems. As illustrated by current statistics and trends, dementia is more prevalent in elderly people, with the likelihood of developing this disease significantly increasing with age. For instance, the prevalence of early-onset dementia was estimated at 54 per 100,000 for people under the age of 65 (Wittenberget *al.*, 2019).

Furthermore, multiple studies from different countries around the world have reported stable or declining dementia incidence (Doneganet *al.*, 2017). As a result, despite the increasing number of individuals affected by dementia due to demographic factors, the age-specific risk may be moderating (Blakemoreet *al.*, 2018). This might indicate the potential outcomes from the increased focus on public health interventions and the overall better risk factor management worldwide. Nevertheless, the actual impact of dementia still remains extensive, with a growing toll of mortality and morbidity associated with the disease (Wilkinsonet *al.*, 2019). Consequently, the burden of disability-adjusted life years also demonstrated the extending impact of the disease on the global health (Wittenberget *al.*, 2019). Therefore, these illustrate the importance of addressing dementia not only via medical interventions but also through various therapeutic and psychological approaches to reducing the effect on people and societies. This study adopted a systematic review methodology to critically appraise current literature on this topic to evaluate effectiveness of psychological interventions in dementia.

### 1.2 Study Rationale

Dementia, is a neurodegenerative disease, meaning that while nursing interventions may be essential to address it, a person will have to live with it for the rest

of their lives (Gilhooly *et al.*, 2016). Due to the potential for limited efficacy and harm, a shift in the management of dementia symptoms and the quality of life of patients and their families is increasingly focusing on non-pharmacological modalities (Fleiner *et al.*, 2017). Therefore, research into psychological interventions for dementia has the potential to significantly improve patient treatment and support for families and other carers.

Psychological interventions, including psychoeducation, cognitive-behavioural treatments, and custom interventions for families and carers, have the potential to assist in addressing behavioural and psychological symptoms of dementia (BPSD) and improving outcomes (Dickinson *et al.*, 2017). According to Poon (2022), there is indeed a small but discernible improvement in BPSD demonstrated with non-pharmaceutical measures, especially when focused on studying families and carers. Furthermore, custom interventions are more effective than standard ones, which are mainly associated with lowered BPSD release (Bessey & Walaszek, 2019). Additionally, psychoeducation has been shown to be successful in lowering carer strain while improving carer mental health complement. Psychoeducation is essential for assisting carers in learning about dementia, developing better problem-solving styles and providing subsequent social and emotional support. Thus, this topic will add to the current evidence on innovative strategies to manage dementia.

## 2 Literature Review

Psychological interventions have demonstrated promising impacts in controlling behavioural and psychological symptoms of dementia (BPSD). For instance, Chen *et al.* (2019) report that non-pharmacological interventions designed for caregivers are powerful in reducing the risk of BPSD in patients and mitigating the distress of their caregivers. Such findings are crucial because they suggest that psychoeducating the caregiver does not only reduce the signs but also improve the emotional influence. Additionally, music therapy and behavioural treatments have been administered to minimise the incidence of anxiety, thus improving the quality of life among people with dementia.

As stated by Farrandet *al.* (2016), some interventions avoid pharmacological symptoms and are common adverse effects. Regarding the frequency of adverse effects and the geriatric population's vulnerability, non-pharmacological interventions are more appropriate. Despite these findings, the research area reveals significant shortcomings. A major problem is that most research presents several diverse outcomes. In many cases, there are no baseline variations or the variations are minor. This fact suggests that there is no standardised method for determining the success of psychotherapeutic treatment, which complicates the generalisation of the findings, making it challenging to recommend a particular intervention.

Dyeret *al.* (2018) argue that there is a substantial gap in the absence of long-term research on the prolonged effects of the implementation of interventions for dementia. Dementia is a progressive disease, and short-term studies do not demonstrate the potential benefits or drawbacks of psychological interventions over the long run. Thus, many longitudinal studies are highly required to establish a better understanding of the actual long-term efficacy of these treatment avenues. The heterogeneity of the disease makes it incredibly challenging to address a generalised approach towards psychological interventions. With the creation of specific interventions in mind, overall quality of care would likely be significantly increased, benefiting the patients and their families alike. Overall, psychological interventions are a promising avenue for improvement in the field, but additional research using more standardised protocols is necessary. Closing the current gaps in research would allow for the creation of patient-specific interventions.

### 3 Methodology

#### 3.1 Research Design

This study adopted a systematic review design. This method is widely considered the most methodologically rigorous approach to amalgamating the findings from research studies (Pati&Lorusso, 2018). Within healthcare, systematic reviews play a vital role in

their ability to compile data from several studies on related topics and present a unified image of the topic area, frequently influencing clinical practice and decision-making (Moraet al., 2017). The justification for selecting such a method is that it allows nurses to collate a broader literature which can be used in informing clinical practice.

### 3.2 Inclusion and Exclusion Criteria

Table 1.0 illustrates the criteria used in articles selection. The inclusion criteria was adopted to obtain the most relevant literature on this topic. This included articles which were peer-reviewed, published within the last 10 years, published in English and were primary studies focusing on the study topic. This inclusion was essential as dementia care approaches and guidelines change with literature updates.

Criteria	Inclusion	Exclusion
<b>Review Status</b>	Peer-reviewed articles	Non-peer-reviewed articles
<b>Publication Date</b>	Published within the last 10 years	Articles older than 10 years
<b>Language</b>	Published in English	Articles published in languages other than English
<b>Study Focus</b>	Primary studies focusing on the topic of psychological interventions against dementia	Studies not directly focusing on the topic

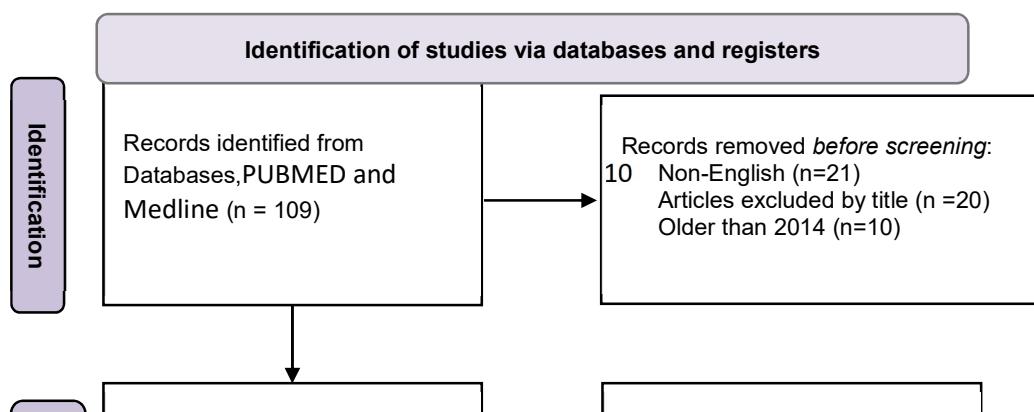
Table 1: Inclusion and Exclusion Criteria

A more recent study is more likely to include the state of practice and recent advancements in psychological interventions (Wanyama, McQuaid & Kittler, 2022). Additionally, the peer-reviewed source were included as they validate the study claims and ensures the quality of the research. The criterion assures the integrity of the results and conclusion is based on scientific studies.

### 3.3 Selection Process

The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) was used to screen the initial articles obtained. Initially, 109 articles were obtained through the database search. Subsequently, the strict inclusion and exclusion criteria used during screening reduced the retrieved studies to 10 articles that were finally used for the critical appraisal. Using PRISMA improves the methodological transparency of a given study (Mohamed, Ghazali& Samsudin, 2020). Methodical reduction of the pool ensures that the relevant and specific studies are included for analysis, hence improving the quality and pertinency of the review.

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The literature search was conducted utilising PubMed because asit includes a wide range of peer-reviewed medical and psychological articles (AlRyalat, Malkawi& Momani, 2019). This relevance is essential for systematic review because it permits drawing together a vast amount of pertinent literature, allowing one to consider every probable study for the review from the specific defined range of the study at least in the title and abstract. Therefore, it is expected that the results obtained will be grounded in evidence and reflect the contemporary paradigm orientations in this field. The search process yielded 10 articles which are critically synthesised in the following section.

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#### **4 Results**

A common finding from these studies is that psychological interventions are effective in reducing symptoms of depression and anxiety in PLWD. For example, Bell et al. (2022) observed significant improvements in depression and anxiety symptoms after undergoing psychological therapy. They note that PLWD are less likely than those without dementia to show reliable improvement or recovery, pointing to the need for adapted therapeutic approaches for this group. Similarly, John et al. (2023) found

that improvements in depression following psychological therapies were linked to a reduced incidence of dementia later, particularly vascular dementia.

Conversely, the study by Prick et al. (2015) showed no improvement over time in mood, burden, or health of caregivers, demonstrating variability in intervention outcomes. This can be linked to a critical aspect observed by Cheng et al. (2019), who noted that psychotherapeutic strategies are crucial in reducing caregiver distress. However, some interventions may not yield significant changes due to factors like adaptation and delivery method.

The role of caregivers and the impact of interventions on them was also significant. For example, the dyadic exercise intervention studied by Lowery et al. (2014) had no effect on the behavioral and psychological symptoms of dementia (BPSD) in PLWD but significantly reduced caregiver burden. This aligns with the approach discussed by Cheng et al. (2019), who noted effective reduction of caregiver distress through packaged cognitive-behavioral therapy (CBT) techniques, highlighting the dual need to address both PLWD and their caregivers in intervention designs.

The literature reviewed highlighted promising tools such as technological aids and non-pharmacological interventions, including psychosocial activities and counseling, to improve the quality of life for PLWD. These results indicate a shift towards more accessible and person-centered care models, which can be tailored to individual needs and preferences, potentially enhancing the effectiveness of interventions.

There was considerable methodological variability among the studies, which could explain the divergent outcomes. For example, the systematic review by Martini de Oliveira et al. (2015) and the assessment by Kales, Gitlin, & Lyketsos (2015) outlined that intervention effects might be mediated by factors such as the specific symptoms targeted, the stage of disease, comorbidities, and individual patient factors. This supports the notion that effective management of anxiety could reduce the risk of dementia, endorsing a multifactorial and tailored approach to treatment.

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## 5 Discussion

### 5.1 Articles Summary

Authors and Year	Aims	Methods	Results	Conclusion
Bell et al. (2022)	Investigate the effectiveness of primary care psychological therapy for PLWD on symptoms of depression and anxiety.	Analysis of national healthcare records in England for PLWD who completed therapy from 2012-2019.	PLWD showed improvement in symptoms, but less likely to reliably improve or recover compared to those without dementia.	Psychological therapy can help PLWD with depression or anxiety, but effectiveness is less compared to non-dementia patients.

John et al. (2023)	Examine if treating depression through psychological therapies reduces subsequent dementia incidence.	Linked national psychological therapy data with hospital records of dementia diagnosis; Cox proportional hazards models used.	Improvement in depression associated with reduced dementia incidence, especially for vascular dementia.	Treating depression may help reduce dementia risk, but more research is needed to optimize therapy for older people.
Prick et al. (2015)	Assess the effects of a multi-component dyadic intervention on the psychological distress of caregivers.	RCT with 111 dyads; experimental group received home visits and support over three months.	No significant benefits on any outcomes over time for caregivers.	The intervention may require adaptation to be effective; future research should consider local healthcare context and participant needs.
Cheng et al. (2019)	Review psychological interventions for dementia caregivers and their effectiveness.	Primary study of evidence-based intervention programs.	Psychotherapeutic techniques and CBT, often delivered digitally or in group format, found effective in reducing caregiver distress.	Effective use of psychotherapeutic techniques can assist caregivers, and more research is needed on the mechanisms of these interventions.
Birtwell & Dubrow-Marshall (2018)	Explore attitudes towards and acceptability of psychological support for PLWD.	Semi-structured interviews with five people with mild dementia from secondary care services.	Identified themes of loss, coping mechanisms, and support; participants valued person-centered support.	Psychosocial interventions are acceptable and can support PLWD to live well.
Stott et al. (2023)	Determine if treating anxiety disorders through psychological intervention lowers the incidence of dementia.	Prospective cohort study using data from psychological therapy services linked to medical records.	Reliable improvement in anxiety associated with reduced incidence of all-cause dementia.	Treating anxiety may lower dementia risk, but further research is required to explore underlying mechanisms.
Whitaker et al. (2014)	Evaluate the effectiveness of the WHELD intervention on improving well-being and health in dementia care homes.	RCT across 80 UK care homes with a comprehensive staff training intervention.	Study shows training improves care quality compared to usual care.	Demonstrate that comprehensive staff training can enhance care quality in dementia care homes.
Lowery et al. (2014)	Assess the impact of a dyadic exercise regimen on dementia symptoms.	RCT of a tailored walking regimen for 131 dyads, evaluated over 12 weeks.	No improvement in dementia symptoms but reduced caregiver burden.	Exercise may not improve dementia symptoms directly but can reduce caregiver stress. Further studies

				needed to enhance participation.
Martini de Oliveira et al. (2015)	Review nonpharmacological interventions for reducing BPSD symptoms.	Systematic review of primary studies on nonpharmacological interventions published in the last 10 years.	Programs like activity scheduling found effective against agitation, showing significant symptom reduction.	Nonpharmacological interventions are effective in reducing BPSD, emphasizing tailored, patient-centric approaches.
Kales, Gitlin, & Lyketsos (2015)	Discuss the assessment and management of BPSD.	Review of the evidence base for non-pharmacologic and pharmacologic treatments.	Non-pharmacologic approaches should be first-line; antipsychotics have evidence but risks.	Tailored approaches are necessary for managing BPSD, combining caregiver interventions and, if needed, careful use of medications.

The aim of this study was to assess the effectiveness of non-pharmacological interventions for depression. This study was informed by the increased drug resistance of and failure of pharmacological interventions to provide sustainable health outcomes. When examining the appropriateness of the psychological interventions against dementia, it is critical to analyse the design of the studies selected for the current synthesis. The consideration of methodological rigor aids in evaluating the studies' findings' robustness and applicability. For instance, Bell *et al.* (2022) used national healthcare records from the Improving Access to Psychological Therapies (IAPT) service in England to investigate the efficacy of psychological therapies among PLWD presenting anxiety and depression. The authors used a propensity score-matched control design well, which means that they matched PLWD with and without dementia based on characteristics known to be associated with the outcome measures. Such a design enhances the study's internal validity by minimising selection bias and confounding factors (Ekinciet *et al.*, 2023). However, the data were sourced from the routinely collected measures, which may introduce bias due to errors in registration and missing data. Although the large sample size (1,549 PLWD) increased the study's statistical power, the findings' external validity could be limited because the studies were conducted within the NHS structure and functioning (Kang, 2021).

John *et al.* (2023) used data from IAPT services linked with hospital records to study the question of whether improvements in depression via psychological therapy can influence the incidence of dementia. To investigate this question, the article used Cox proportional hazards models, selected for analysing time-to-event data. This approach is due to the fact that the event of interest is the diagnosis of dementia. An advantage of this methodology is that it allows the use of data of varying lengths of follow-up time; thus, the number of individuals that remain at the study's dissemination may vary because older individuals who have been followed for longer are more prone to experience the studied event. However, another peculiarity of this method is that, being observational, it is subject to the effect of residual confounding, as not every relevant variable can be controlled or measured (Boorsma *et al.*, 2019). In addition, the fact that the sample size was large also adds to the reliability of the study's findings. Precisely, over 119,000 participants took part in the study. However, it must also be considered that the precise setting of the IAPT services may not allow one to generalise the results to larger healthcare systems.

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Martini de Oliveira *et al.* (2015) presented a compilation of studies on non-pharmacological interventions for behavioral and psychological symptoms of dementia. It is known that systematic reviews are among the most reliable literature sources, as they provide quote-inspiring evidence (Gupta *et al.*, 2018). However, the aggregated studies differ in the type of intervention, measures used, study design, and pronounced differences, making it difficult to draw a conclusion about the effectiveness of some of the types. Moreover, as with any compilation aggregate type of research, reporting bias is possible, considering that studies with insignificant results may not be published. The review of pharmacological and non-pharmacological treatments by Kales *et al.* (2015) also gathered a variety of information; however, this type is narrative and thus allows a more interpretive framework. Narrative reviews are more beneficial as the spectrum of studies in the field of this study is wide (Byrne, 2016). However, this type of review also has a downside of selective reporting and the limited quality score.

The prospective cohort study by Stott *et al.* (2023) examined the link between psychological interventions for anxiety disorders and the onset of dementia. As revealed by multiple recent bodies of evidence, prospective cohort studies are effective at analysing outcomes over a long period, and, thus, yield strong evidence with respect to temporal sequences of cause and effect (Baumet *et al.*, 2020). At the same time, it is possible to notice that the study is prone to confounding factors due to the influence of anxiety on current and future health and psychological conditions of the patients who can never be controlled or identified in advance, thus affecting the risk of developing dementia. However, opportunistically, the authors try to address this issue by establishing strict selection criteria and using multivariable adjustments in order to increase the internal validity of the research.

Prick *et al.* (2015) used an RCT research design to examine the effect of a multi-component dyadic intervention on the psychological distress of caregivers. Despite this, the RCT reported no beneficial effect of the intervention, and this can be explained by the fact that in this particular case, an existing intervention was adapted and understated for a new population (Colombo *et al.*, 2017). The recent literature also suggests that the efficacy of psychological interventions is largely dependent on cultural appropriateness and the fidelity of the intervention adaptation.

An RCT was used by Lowery *et al.* (2014) to study the effects of a dyadic exercise routine targeting dementia symptoms, and the results showed no significant difference in terms of behavioral and psychological symptoms, although the burden of the caregiver was reduced. Despite the strong evidence base of RCT, the home setting and the choice of the exercise intervention limits applicability of findings due to the low intensity and inconsistency of the effect (Huiskes *et al.*, 2017). At the same time, the latter effect reveals indirect benefits, which is still important, even if the direct ones are insignificant.

Finally, the narrative review by Whitaker *et al.* (2014) provides a general overview of non-pharmacological approaches to tackle Behavioral and Psychological Symptoms of Dementia (BPSD). Although narrative reviews are a useful tool to summarise a broad topic, systematic reviews are more comprehensive because the former may only include the literature that has been found relevant by the authors. As a result, there is also a risk

of internal bias. Hence, the conclusions about the effectiveness of the interventions presented in the reviewed studies may not be applicable to a broader population.

## 5.2 Themes Arising

### 5.2.1 Effectiveness of Psychological Interventions

One of the themes arising from the studies is the effectiveness of psychological interventions on individuals with dementia. This theme was identified in several studies including Bell *et al.* (2022) and John *et al.* (2023) about improved depressive and anxiety symptoms management for persons with dementia. Hence, it is proper to contend that the role of psychological interventions contributes to improved mental health outcomes considering the prevalence of depression and anxiety disorders.

Nonetheless, although all the analysed articles demonstrate potential positive outcomes, others show that there are some problems with the effectiveness of psychological interventions for dementia. For instance, Bell *et al.* (2022) report that people with dementia were not as likely to experience reliable improvement or recovery following therapy, whereas symptoms of depression and anxiety did improve. Similarly, the study by Prick *et al.* (2015) showed that a multi-component dyadic intervention did not have any significant benefit on the psychological distress of family caregivers of persons with dementia. Furthermore, one must also consider the possibility that psychological interventions may have different targets and, thus, different mechanisms depending on the type of dementia in question. Research by John *et al.* (2023), for instance, proved that a reduction in the rate of timely depression following treatment is also likely to be linked to a decrease in a subsequent diagnosis of dementia, although the results were different for different types of dementia. Thus, the studies illustrate the need for further research focusing on how psychological interventions for dementia may work. Cheng *et al.* (2019), notes that one of the keys to the future development of intervention programs for the caregivers of people with dementia is an exploration of the mechanisms of change associated with different sequences of psychotherapeutic techniques. Stott *et al.* (2023) pose the same question, emphasising that more work is required to disentangle the relationship between reliable improvement in anxiety following psychological therapy and the decreased future incidence of dementia.

### 5.2.2 Role of Non-Pharmacological Approaches

Non-pharmacological approaches are critical in addressing BPSD to improve the quality of life for persons with dementia and their caregivers. The articles provide evidence of the efficacy of non-pharmacological approaches, including psychological therapy, exercise regimens, as well as caregiver support programs. Nevertheless, a more in-depth study provides insight into multiple strengths and limitations of implementation and outcomes. For example, psychological therapy is a promising intervention for persons with dementia who suffer from depression and anxiety. Bell *et al.* (2022) present evidence on the reduced symptoms of depression and anxiety in people living with dementia treated with psychological therapy. However, the authors found that about kernel complete cases were analysed, and even fewer recovered or reliably improved, which likely indicates that psychological therapies may not directly respond to the needs or obstacles of dementia.

Likewise, caregiver support programs that Cheng *et al.* (2019) and Prick *et al.* (2015) analyse offer essential psychosocial interventions to reduce caregiver distress and improve the mechanisms of coping. Such programs equate to cognitive-behavioral therapy techniques and psychoeducation and have a positive impact on reducing caregiver burden and enhancing emotional well-being. Nevertheless, based on the results obtained by Prick *et al.* (2015), the researchers prove uncertainty, indicating that interventions from other locations that have been translated or adapted cannot be implemented blindly, and experiences are necessary for drivers with specific social and cultural contexts

Exercise regimens are another non-pharmacological approach that has the potential to reduce caregiver burden, as evidenced by Lowery *et al.* (2014). The authors did not find a significant improvement in BPSD among dementia patients in their study. However, they discovered a positive effect of regular physical activity on the psychological state of the caregivers. These findings suggest indirect efficacy of non-pharmacological interventions that can extend beyond directly targeting the symptoms of dementia. At the same time, the results of the work also point to the need for future research to increase

the levels of exercise adoption, and, as a result, to maximise the impact of the intervention.

In spite of the promise of non-pharmacological therapies, there are certain challenges associated with their implementation and standardisation. For example, the diversity of the components of non-pharmacological therapies and their delivery methods, along with the heterogeneity of the populations of the studies mentioned in this review, makes it difficult to compare the effects and to create guidelines. Moreover, some interventions are largely not scalable, which can limit their usefulness in the delivery of routine clinical care.

### 5.2.3 Association with Reduced Dementia Incidence

This theme is complex and influences several studies presented in the systematic review. The results indicate a possible link between psychological therapy and a reduced relative risk of developing dementia; however, the exact nature of this association is not fully understood. Several of the studies assessed, including John *et al.* (2023) and Stott *et al.* (2023), provide evidence that therapy reduces psychological symptoms subsequently associated with dementia, such as depression and anxiety, leading to lower dementia development. For example, John *et al.* (2023) concluded that improvement in depression symptoms is associated with a lower incidence of dementia, reporting that “a reliable improvement significantly reduces the likelihood of subsequent dementia.”. Similarly, Stott *et al.* (2023) have concluded in their discussion, “Our study, however, raises the question of dementia associated with anxiety, and people making a reliable improvement in their anxiety levels were less likely to subsequently receive a diagnosis of dementia”.

However, it is important to understand the possible implications and limitations of studies finding these associations. First, while these studies indicate an association, they do not confirm causation. Second, these papers use different designs and populations, such as John *et al.* conducted a cohort study, and Stott *et al.* presented their results using routinely collectible health data, resulting in instance and potential biases. Finally, the exact mechanism of their association is yet unclear. Although John *et al.* proposed the

possible mechanism in their discussion on neuroprotective effects of psychological therapy, Stott *et al.* agrees with the necessity but not proposed the mechanism. Additionally, the confounding factors such as comorbidities or socioeconomic status effect finally lead to the association between psychological intervention and the risk of developing dementia.

Moreover, yet another challenge is the diversity of interventions studied. For example, while certain research themes were the implementation of therapy for people affected by dementia, there were also those that focused on programs for caregivers or interventions for the general population. The key factor that may have influenced the results is the difference such as the degree of dementia, the kind of therapy performed, or the duration of intervention. Additionally, the results may not be directly applicable since the data presented in the studies may be lacking generalisability. Data may be limited due to differences in samples or locations, as well as in the nature of healthcare systems. As an example, all such solutions can be viewed as samples, regardless of where they were accomplished.

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#### **5.2.4 Challenges and Limitations of Current Interventions**

The reviewed articles discussed several issues that hinder the efficacy of psychological interventions, including methodological difficulties and practical implementation barriers. One of the most significant challenges identified in the scientific literature is the complication of the dementia diagnosis. It comprises numerous symptoms, both cognitive and behavioral, making it inherently difficult to treat with one standard psychological intervention. For example, the study by Bell *et al.* (2022) found that people living with dementia are unable to significantly reduce their depressive and anxious symptoms through psychological therapy. This conclusion suggests that the underlying neuropathological changes associated with dementia preclude effective psychological intervention and hence require tailored approaches.

Moreover, the etiology and progression of dementia are profoundly heterogeneous, complicating the assessment of intervention influences. For instance, John *et al.* (2023) found that patient improvement associated with reduced dementia incidence is due to

improved depressive symptoms after psychological therapy. Thus, one may argue that reduced incidence is linked to better psychological well-being. Nonetheless, the causal relationship between reducing psychological symptoms and dementia incidence is difficult to ascertain due to numerous confounders and multifactorial dementia etiology. Hence, more longitudinal studies with more robust methodology are necessary to establish aid and inform practice.

Another critical limitation of psychological therapy relates to the limited representation of older adults with dementia. Stott *et al.* (2023) demonstrated that anxiety disorders in older adults are a risk factor for dementia. Administration of interventions has protective properties, although it is seldomly used by the target population, and thus underachieving its potential for dementia prevention and management. These barriers, including stigma, geographic accessibility, and lack of intervention power, contribute to the disparity in service provision to this population. Overall, psychological interventions must be accessible to persons living with dementia, funded through dedicated outreach programs.

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Contextual factors related to dementia care also form a barrier to intervention. For instance, Prick *et al.* (2015) examined a fully powered randomised controlled trial of a dyadic intervention for dementia caregivers and found no effect on the caregivers' mood and burden. It was hard to see how a single intervention would meet the needs of people living with dementia and without dementia, given the nature of the intervention and its broad service area. Interventions should be culturally tailored to socioeconomic factors.

### 5.3 Summary

In conclusion, these studies have shown a significant role that psychological interventions play in managing dementia. Various studies have demonstrated valuable avenues for individuals living with the condition and their caregivers. It is evident that psychological therapy reduces depressive and anxiety symptoms among people living with dementia. However, the reductions in both cases may not match the outcomes of those without the condition. This may necessitate the importance of further research in the field for specific people living with dementia to make the interventions more accessible to the population. The association between the reduction in depressive symptoms and a

lower incidence of dementia reveals that psychological interventions may be preventive. The studies have also shown that it is essential to provide psychological support to the caregivers. There are different psychotherapeutic techniques that have proven effective in reducing distress among caregivers. Psychological support can also be provided in conjunction with technological aids that enable the intervention to reach a wider population. In conclusion, the studies indicate that psychological interventions are essential in enhancing the mental well-being of people affected by dementia and their caregivers. However, it indicates the need for ongoing research in this particular field.

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## 7 Appendixes

### 7.1 Author Autobiography

The main author of the current study was born in Johannesburg, South Africa, and then moved to UK in April 2014. Ever since the author arrived in UK he was interested in the education in medical field and then decided to make this career choice and got an education in the medical field. The author got his Diploma for Higher education in Sciences from the Middlesbrough College in UK and then for further studies he got a certificate of Higher education in Biomedical sciences from the University of Northumbria in UK. The author was interested in further enhancing his skills and becoming a good professional.

Furthermore, the author has developed a compassion while taking care of the people and as such. He is currently enrolled in the Higher Science BSc (Honours) degree in Health Science in the Teesside University UK. The author has seen many ups and down and has never let his spirit break and has always focused on enhancing his skills. As such he has a work history as a bus driver and currently is employed as a healthcare assistant at NHS.

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