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Use of Therapeutic Pets in Elderly Care

A Descriptive Literature Review

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<p>Pet therapy, first discovered by Florence Nightingale in the 1800s, uses animals for anxiety and relaxation. It includes animal-assisted therapy and exercise, benefiting the elderly by reducing loneliness and increasing physical activity which also explores the health benefits of therapy pets.</p> <p>This bachelor's thesis described the utilization of therapeutic pets and the associated benefits in elderly care. The aim of this study is to produce a new knowledge in understanding the use of therapeutic pets and its benefits that can be utilized in nursing practice. All articles were synthesized from the reliable databases CINAHL and MEDLINE. A total of 12 academic articles were utilized including 4 qualitative and 8 quantitative articles. The articles included were published from 2013-2021. This bachelor's thesis utilized narrative review as its method and data were analyzed using inductive content analysis.</p> <p>The results will show that the use of therapeutic pets in elderly care can promote social interaction and improve emotional and psychological well-being. AAT can also improve the social relationships and mental health of elderly individuals with dementia by reducing symptoms of depression and improving social behavior. Therapeutic pets provide emotional benefits by relieving loneliness and enhancing mood. The study reveals that therapy pets in elderly care enhances the overall well-being of the elderly, focusing on social relationships and emotional, physical, and mental aspects. AAT can be a valuable tool in the care of elderly people, reducing loneliness, anxiety, and sadness while increasing self-esteem and motivation.</p> <p>"The authenticity of this thesis has been verified using the Turnitin program, which produced a similarity percentage within acceptable limits."</p>	
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1 Introduction

The aging population globally increases the number of elderly people in need of long-term care. It is widely accepted, and in some countries, even standard practice, to have animals available for interaction with the institutionalized aged population. In the UK, the total number of elderly populations aged 65 and over has been doubled as of the year 2020. In the USA, over 1.3 million elderly individuals living in long term care and similar rises seen throughout Europe. (Orr et al. 2023: 2.) As the population arises, the demand for services for older people with dementia or cognitive impairment increases. Since there is no treatment for dementia, recent innovative methods to complement standard medical care needs to be developed. (Olsen et al. 2016: 1313.)

In the Netherlands, health care institutions are accountable for providing the basic necessities of a room in a nursing home. Elderly people who live in nursing homes no longer live in their so-called "own homes." Because a nursing home serves as both an institution and a home, a lot of healthcare organizations aim to create living conditions that emphasize what they call "the good life" and foster the development of an atmosphere that feels more like a home to its residents than a health care facility in which they reside. The demand for nursing home care will increase in the near future as many elderly individuals deal with the effects of dementia or severe physical impairments. (Rijinard et al. 2016: 1–2.)

In addition to a variety of physical and cognitive limitations and functional impairments, the elderly population is more likely to experience social isolation, loneliness, and depression (Stewart et al. 2014: 565; Thodberg et al. 2021(b): 2). Loneliness has a wide range of definitions. According to the majority of definitions, it is an uncomfortable emotional and motivational state caused by the inability to fulfil the need for affection and belonging. Loneliness is known to negatively correlate with self-actualization, self-worth, and satisfaction. Individuals who are living alone or isolated often find comfort in companion animals and perceive them as compassionate listeners, so having the companionship of therapy animals may be a catalyst for strengthening communication, both verbal and nonverbal skills in those who are in nursing homes. (Vrbanac et al. 2013: 973.)

It has been discovered that having a therapy animal has a substantial impact on the relationship between social support and psychological well-being. While therapy animals have been demonstrated to help older patients maintain or somewhat improve their

daily living activities, their impact on overall well-being is more challenging. These animals are widely utilized to improve the well-being of patients in nursing homes and rehabilitation institutions. Trained volunteers serve as specialist handlers, supporting patients in a variety of ways. It has been discovered that exposure to therapy animals reduces anxiety, promotes relaxation, reduces loneliness, and increases mental stimulation, opening new income potential for volunteers who work with therapy animals. (Toshihide et al. 2019: 620–624.)

2 Animal-assisted therapy

The use of therapeutic pets in elderly care has a long history, looking back to an understanding of the emotional and physical benefits that animals offer. Visitation therapy involving the introduction of pets to healthcare facilities and whereas animal-assisted therapy incorporates professionally trained animals into therapies. Animals determined for their ability to establish relationships with older people for focused therapy experiences are referred to as pets or elderly. Animal-assisted activity (AAA) as a broader idea promotes well-being and socializing in the elderly. Extensive research suggests that associating with therapeutic pets has numerous health benefits for the elderly, including improved mood, stress reduction, increased socializing, and improved physical well-being. These findings highlight the significance of adding pet therapy programs into elderly care to promote general health and well-being in the elderly.

2.1 History of pets and animal-assisted therapy

In nursing homes, animals are used to create a cozy environment, to entertain, to serve as social catalysts, or to enhance therapeutic benefits (Thodberg et al. 2016(a): 289). During the 17th century, domesticated animals were employed as food scavengers, and sources of affection and love. Some animals were viewed as noble and given high positions, like house guard and soldier. (Ernst 2014: 27.) Dogs in particular, can read an individual's body expressions and language despite of a person's incapacities without making judgments. Dogs that engage in AAT visits with individuals suffering from dementia influence the individuals' social interactions and behaviour. In Sweden, dogs are being trained and handlers are educated at therapy dog schools to create therapy dog teams. (Swall, Ebbeskog, Lundh-Hagelin and Fagerberg 2016: 2224.) Therefore, it appears that therapy dogs improved the quality of life (Bernabe et al. 2013: 769).

Florence Nightingale, known as the "Founder of Modern Nursing," first recognized the therapeutic potential of animals in the late 1800s. She learned that having small pets in

psychiatric institutions helped reduce anxiety in children and adults, and she wrote in her book *Notes on Nursing* that being around with small animals helps patients recover. As a result, AAT grew in popularity as a treatment for anxiety and as a method of relaxation. In the early 1930s, Sigmund Freud recognized the importance of the link between humans and animals because he felt that dogs had a special sense and could sense a patient's level of tension by how closely they stayed with them; he relied on his own dog, Jofi, in psychotherapy sessions. (Ernst 2014: 27.)

Boris Levinson, an American child psychiatrist, pioneered pet-facilitated therapy as a means of treating a variety of disorders in the 1960s. Not every animal is appropriate for therapy, and each case requires a unique approach. (Vrbanac et al. 2013: 973.)

According to Ernst (2014), the Delta Society was founded in 1989. It is the first organization that focused mainly on how animals affect the wellbeing and health of individuals in general. The AAT principles of the organization are still used as a therapeutic intervention guideline today, and several AAT certification programs are now available around the world. As a result, AAT has developed into a valued therapy that is now offered by numerous healthcare facilities, such as hospitals, rehabilitation centers, and nursing homes. It has proven to have numerous advantages in these settings. (Ernst 2014: 27.)

2.2 Types of pet therapy

Based on the various types of pet therapy used in elder care, two categories have been established. There were two types of therapy: visitation therapy and animal-assisted therapy (AAT). In this section, a more detailed introduction was provided to them.

2.2.1 Visitation therapy

Dog visits provide an opportunity to create a variety of activities, such as ones that do not only depend on person-to-person bonds and interactions. Additionally, requiring residents to participate in certain activities with a dog may heighten the level of interaction. A better understanding of the possible long-term effects may be obtained from observing how the residents interact with dogs when they are visiting. When a dog visits a nursing home, as compared to a stuffed toy animal, the residents are more likely to establish eye contact, engage in conversation, as well as participate in physical interaction with the visiting animals. (Thodberg et al. 2021(b): 2–3.)

In a study of the impact of dog visits on sleep duration in nursing homes, researchers found that the effects of the visits were only temporary during the first part of the 6-week visit period. However, they noted that these short-term effects appeared sufficient to justify the utilization of dog visits as an alternative to pharmacological interventions in nursing facilities. While the study did not find that the visits had a lasting impact on sleep duration, it suggests that bringing dogs into nursing homes could still be a valuable way to improve the well-being of residents, particularly in the short term. Future research may help to identify additional benefits of these types of visits, further supporting their use in this setting. (Thodberg et al. 2015(a): 5–8.)

Therapy dogs have been proven to have positive effects on individuals when used in social and healthcare facilities. These dogs bring pleasure and comfort to nursing homes, retirement homes, and households where home hospice is being provided. The presence of a therapy dog in these facilities makes them more pleasant and creates a friendlier, less formal atmosphere. The inclusion of animal-assisted therapy in a healthcare or social setting can positively impact the well-being of the individuals who reside or receive care in these facilities. Overall, incorporating therapy dogs into healthcare and social facilities can improve the quality of life for those in need. (Machova et al. 2020: 3–14.)

2.2.2 Animal-assisted therapy

Animal-assisted therapy involves the elderly individuals in interacting with the animal during a clinic visitation programme (Vrbanac et. al. 2013: 973). Known also as companion animal visits or pet visitation therapy, this is a scheduled activity with a certified treatment team that includes an animal and its handler with the goal of supporting or enhancing patients' social, emotional, physical, or cognitive functioning. Using animals in therapy regardless of the animal involved, AAT offers a person-centered experience that can improve health and well-being by lowering anxiety, reducing loneliness, and improving mental outlook and quality of life. Domesticated pets like dogs and cats are the most commonly used types of pets. One person and one animal or several people interacting in a group environment may be involved in the pet visit. These exchanges could happen as part of a routine visit to an aged care center or nursing home. (Ernst 2014: 1.)

In Korea, a study using of live animals specifically dogs as their familiar domestic pet in animal-assisted therapy (AAT) programme reportedly appears to be useful and efficient in improving quality of life of the elderly especially individuals with dementia focusing

on their emotional state, cognitive abilities, problematic behaviours, and daily living activities (Baek, Lee, and Sohng 2020: 645–646). Problematic behaviours among individuals with dementia such as agitation, aggression, depression and apathy may be caused by unmet needs, which non-pharmacological interventions may help to alleviate in some cases (Swall et al. 2016: 2224).

2.3 Terminologies in animal-assisted therapy

Using animal-assisted therapy terminology, four categories were identified. Pets, the elderly, animal-assisted activities, and the health benefits of interacting with a therapeutic pet in the elderly fall into these categories. A detailed scale of their characteristics was provided in this section.

2.3.1 Pets

As defined in the Merriam-Webster dictionary, Pets are domesticated animals kept for pleasure rather than utility and defined in the Collins dictionary as an animal kept at home to give company and happiness (Merriam-webster dictionary 2023; Collins dictionary 2023).

2.3.2 Elderly

As defined by Merriam-Webster, old age can be described as either a) advanced in age, or b) having reached a certain age typical of old age; having acquired a desirable quality or changed in an expected and desirable way as a result of aging. Elderly refers to an old person or one who is of a relatively old age and is in their later years or considered to be elderly. (Merriam-webster Dictionary 2023.)

2.3.3 Animal-assisted activity

Animal-assisted activity entails an elderly person passively watching the animal (Vrbanac et al. 2013: 973). Activities with animals are activities that make use of animals that have specified characteristics and possibilities to improve one's quality of life. Properly trained professionals, paraprofessionals, or volunteers conduct the activities in various situations. Animal-assisted activity sessions do not have explicit therapeutic goals. The service can be provided by a volunteer, and the process does not have to be legally documented. The visits can be spontaneous and as long or as short as necessary. A group of volunteers, for example, might bring their dogs or cats to the local

nursing home once a month to visit the residents. It is crucial to emphasize that these interactions do not aim to attain specific outcomes. (Ernst 2014: 3).

2.3.4 Health benefits of interacting with a therapeutic pets in the elderly

Pets have been demonstrated to reduce loneliness, lower blood pressure, and often provide opportunities to meet new individuals, as well as improve trust and empathy (Swall et al. 2016: 2224). Elder individual responses to interactions with animals during visitation programs have included smiles, laughter, and joyful recollections of previous pets and may help elderly with cardiovascular problems to sustain regular physical activity and improving physical capacity. In patients with heart failure, AAT improves cardiopulmonary pressures, neurohormone levels, and anxiety. Additionally, prior studies have demonstrated that dog-assisted socialization helps apathetic residents of nursing homes. (Holt et al. 2015: 269; Vrbancic et al. 2013: 973.)

An objective measure of well-being is the quality of sleep. Research has shown that the circadian rhythm alters and the quality of sleep declines with advancing age and cognitive decline. The probable cause of this could be the decline of the suprachiasmatic nucleus, which is in the hypothalamus and is accountable for preserving the circadian rhythm. Elderly persons seem to sleep less soundly and with shorter sleep durations than young people; these changes become worse in those with cognitive problems like Alzheimer's disease. (Thodberg et al. 2015(a): 290.) The experience of receiving animal-assisted therapy has reportedly been enjoyable, improving sleep cycles, boosting feelings of self-worth, and relieving stress. Interaction with a dog has been shown to cause significant elevation in oxytocin, prolactin, beta endorphin, and phenylethylamine. These physiological reactions have been recognized as promoting a sense of well-being and happiness. A short conversation with a dog resulted in lower cortisol levels. When considered collectively, these results imply that AAA might promote relaxation and a sense of well-being through physiological processes. (Holt et. al. 2015: 270.)

Therapy dogs interact with patients during animal-assisted interventions in animal-assisted therapy (AAT), which promotes therapeutic activities and wellbeing including client physical, cognitive, behavioural, and social and emotional well-being. Human clients perceive the behaviour of properly trained therapy dogs as pleasant and welcoming. Due to their warmth and capacity for joyful engagement, dogs were surprisingly discovered to be the animals used the most frequently. (Smith et al 2020: 905–906).

2.4 Experiences of the elderly in pet therapy

Studies on the effects of AAI in a care facility have revealed a variety of benefits on wellbeing, including increased psychosocial and physiological functioning and a decrease in anxiety, depressive disorders, stress, and fatigue associated with compassion in carers (Jain et al. 2021: 1451). Older people expressed excitement about the program and reported feeling happier. They called out the names of the therapy dogs and inquired as to when they would return. (Baek et al. 2020: 651).

In a study conducted by Jain et al. (2020), the experiences of elderly individuals living in a nursing facility has been explored. Cognitive and psychological stimulation, as well as recollection of past lives were visible effects and benefits of dog-assisted interventions (DAI) for residents. An extract from the observation notes on the study states:

“A female resident who is visually impaired and uses a wheelchair was encouraged by the volunteer and care staff to put her hand out to touch the dog's nose. She called out in surprise ‘oh it's a dog’ and immediately came to life laughing saying repeatedly, ‘is it really a dog’? (OBS, CH4).” (Jain et al. 2020: 1453.)

The presence of the dog served as an instrument or mediator for conversation, allowing social engagement that would not have occurred or been emphasized otherwise. The dogs' intuitive nature encouraged connection or activities between individuals, especially for residents with severe dementia or physical impairments who did not usually initiate interaction. By lying down beside or leaning on residents who have incapability of moving, less active, or interactive, the dog was observed to tune in to their needs. Individuals who suffered from dementia and sensory impairments were among the most fortunate to receive the positive effects on emotional well-being from the dog visits. DAI provided an opportunity for the resident to reflect on past events or memories, usually pertaining to recollections of owned pets and animals. DAI provided possibilities for the development of new social networks and strengthened connections within social groups, reducing barriers between caregivers and the people they support and supplying new perspectives. Through DAI, some dementia patients who experienced sensory loss have been improved allowing them to reminisce memories, and emotions intensely that they may not otherwise be able to experience and allowing them to be more naturally and spontaneously shared with compassionate volunteers, other residents, loved ones, and care providers. (Jain et al. 2020: 1456-1457.)

3 Purpose, aims and research questions

The purpose of this bachelor's thesis is to describe the utilization of therapeutic pets and the associated benefits in elderly care. The aim of this study is to produce new knowledge for future research of understanding the use of therapeutic pets and its benefits that can be utilized in nursing practice.

These are the research questions developed:

1. How are therapeutic pets used in elderly care?
2. What are the benefits of using therapeutic pets in elderly care?

4 Methodology and methods

This study used a narrative review as its method. This is to better understand how therapeutic animals can be used to care for the elderly. This method enables a greater understanding of the topic because it captures and generates new knowledge that might be applied to improving safety and developing care for the elderly. In order to successfully perform this literature review, the following criteria must be observed. Firstly, a definite research question is needed to be posed. To identify relevant academic articles related to the topic, the keywords and databases selected are required to be logical, coherent, and limited. Additionally, the suitable research strategy must be developed which then can be applied to explore through the review of existing literature. Moreover, the required literature needs to be included in the study considering that it is necessary and significant. This involves reading and extracting information from selected relevant sources.

4.1 Data collection and study selection

CINAHL and Medline databases were selected for data gathering as they contain articles from nursing academic journals and health care science. The databases were in the LibGuides at Metropolia University of Applied Science. As standard nursing scientific resources, CINAHL and Medline are appropriate for this study. Research articles found were limited to English language. Considering the phenomena is still relatively new, specific years were used as a limitation or exclusion criteria. To find the best search phrases, Metropolia's informatics experts were also consulted. Additionally, Table 1 Data Search presents the search phrases and the Boolean connectors "OR" and

"AND" that were utilized to get results from the databases and Table 2 presents the PICO or the Population, Intervention and Context. After carefully reviewing the titles and abstracts in each database, all items deemed irrelevant based on the selection criteria were eliminated before conducting the initial search. The complete texts of potential pertinent articles were reviewed by independent writers.

Table 1. Data search.

Database/ Date/Limits	Search Phrase	Total number of hits/ citations	Papers/records included based on title	Papers/records included based on the abstract	Papers/records included based on full text
CINAHL/ 15TH September 2023 Limits: 2013-2023	(Use of therapeutic pets OR animal-assisted therapy) AND (Elderly OR Older adults OR Senior OR Geriatric OR aged +) AND (Healthcare OR well-being OR nursing)	62	31	25	12
MEDLINE/ 15TH September 2023 Limits: 2013-2023	(Use of therapeutic pets OR animal-assisted therapy) AND (Elderly OR Older adults OR Senior OR Geriatric OR aged +) AND (Healthcare OR well-being OR nursing)	89	40	32	8
Records in total		151	71	57	20
Records after duplicates removed			47	37	20
Total number of included studies					12

The PICO framework was utilized to discover relevant studies in this thesis study by establishing the research questions (Munn et al. 2018). PICO is an acronym that stands for Population, Interest, and Context. Using PICO helped in the formation of keywords that were relevant to the objectives of the descriptive literature review. PICO further helped in the selection of articles that were directly related to the research issues. See Table 2 Population Intervention Context Framework.

Table 2. Population Intervention Context Framework.

POPULATION	INTERVENTION	CONTEXT
Elderly	Use of therapeutic pets	Healthcare
Or	Or	Or
Older Adults	Animal-assisted therapy	Well-being
Or		Or
Geriatric		Nursing
Or		
Senior		
Or		
Aged +		

Articles and journals were initially identified using the Ebsco eBook Collection, a component of University of Metropolia Applied Sciences LibGuides. We have made use of MEDLINE and CINAHL through Ebsco eBook Collection, a component of University of Metropolia Applied Sciences LibGuides that offers academic libraries access to research databases, e-journals, magazine subscriptions, ebooks, and discovery services. From CINAHL use of therapeutic pets, assisted animal therapy, elderly, older adults, senior, geriatric, aged +, healthcare, wellbeing and nursing were used as keywords. 62 articles were displayed according to the publication date of the articles was limited between 2013 – 2023 and all are in full text and in abstract. According to MEDLINE database, use of therapeutic pets, assisted animal therapy, elderly, older adults, senior, geriatric, aged +, healthcare, wellbeing, and nursing were used as well with abstract or articles in full text were searched. With year 2013 to 2023, English language and academic journals, eighty-nine (89) articles were found. Through reviewing all the articles revived from the data search, selection was done based on inclusion and exclusion criteria seen in Table 3. Inclusion and exclusion Criteria.

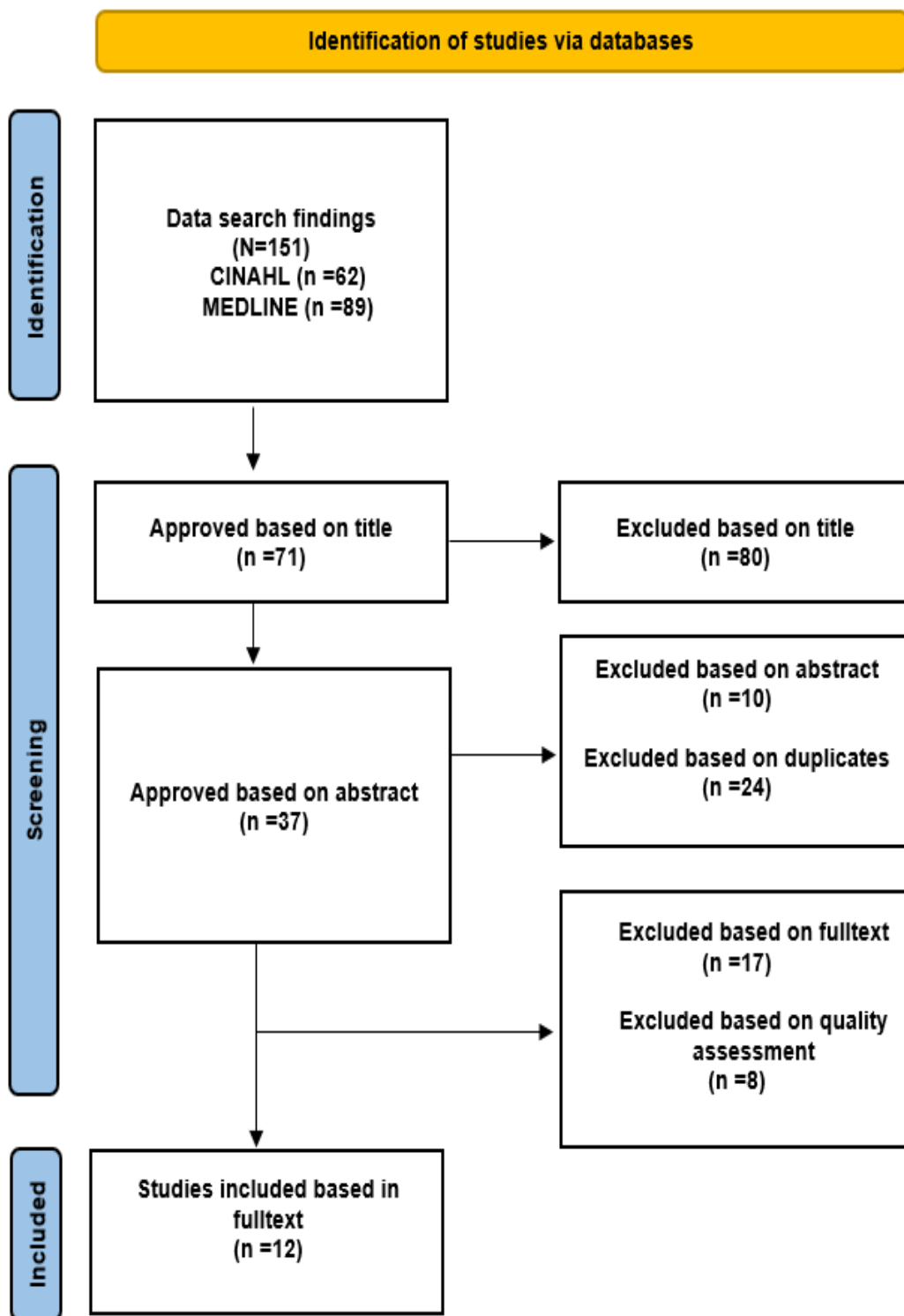
Table 3. Inclusion and exclusion criteria

Inclusion	Exclusion
From 2013 to 2023	Older than 2013
Academic Journals	Other types of articles: periodicals, magazines
Studies published in English language	Studies published in other language than in English
Use of therapeutic pets, assisted animal therapy, elderly, geriatric, older adults, geriatric, senior, aged+, dogs, goats	Articles about robotics, reptiles, Insects, drugs, medications, fish
Studies focused on nursing care, healthcare, wellbeing, using therapeutic pets	Studies not related on nursing care, healthcare, wellbeing, using pets
The setting is based on elderly who are living in-home facility (retirement home or nursing homes)	Acute care setting (e.g. hospital)

Here are the exclusions being made. Articles and journals older than 2013 were excluded as other types of articles like periodicals and magazines. Studies published in other language than English are also excluded. Also, any articles and journals that talk about robotics, reptiles, insects, drugs, medication, and fish. Fish is included in the exclusion criteria because the only article found that focused on fish as pet therapy was written in other language. Additionally, studies that were not related to nursing care, healthcare, wellbeing using pets and acute care settings like in the hospital were not included in the conducted study.

4.2 Data selection process

Figure 1. PRISMA Flow Diagram



Using the search functions of two relevant databases, the results were (62) articles in CINAHL complete and (89) articles in MEDLINE. There are 24 articles that are duplicated in both databases and are therefore excluded. The search commenced on 15th of September 2023.

After further inspection based on the title, (71) articles are considered. After reading the abstract, there are (37) articles that were selected. Exclusion criteria included publications that were not written in English language, articles about robotic and animated pets, pharmacological therapies, and articles that were not relevant to nursing care. Also, the setting of the studies was not considered if the elderly individual was not residing in a care institution or facility such as retirement or nursing home.

From these studies, (20) articles were viewed in full text. Based on these articles the criteria of inclusion and exclusion were rated. To assess further the quality of the articles, the authors used Julkaisuforum (JUFO) which is a Finnish publication forum. A total of twelve (12) articles were viewed and considered for this narrative literature review. An overview of the data selection process was illustrated in Figure 1 PRISMA Flow Diagram.

4.3 Data analysis method

To look deeper into the gathered data, this research study utilized the method of inductive content analysis. This method focuses on figuring out the patterns, themes, and categories that emerge from the data. The data was collected from a reliable search database and analysed initially through data coding to generate codes. Once codes were generated, our group refines and organizes codes into categories and sub-categories, and content interpretation in accordance with the research questions.

There are twelve (12) articles included in this study. They were organized in a five-column format table with the titles of the articles assigned to each column. The first column is the meaning unit which displays the research result findings. The coding was assigned to the second column which displays the associated results of each article. The third and fourth column presents the sub-category and generic category. The fifth column is the main category which displays the study's research questions. The data gathered from this process were consistent with the research questions. An example overview of how the data were analysed was shown in Figure 2 Example of Content Analysis Table.

Figure 2. Example of Content Analysis Table

Meaning Unit	Data Reduction/ Coding	Sub-category	Generic Category	Main Category
<p>Participation in group activities with animals by elderly people suffering from dementia. (Article 12)</p> <p>"Behaviours targeting either the dog or other people had the highest mean percentage times. These behaviours were: Look at dog-activity; Smile or laugh at dog; Conversation; Look at other people; Touch dog; Do activities with dog; Touch people; Smile or laugh at people. Mean values showed that actions towards the dog, such as observing it, smiling, talking to it or petting it, were the behaviours with the longest duration in AAA sessions in both populations"</p> <p>"The results show that in addition to being engaged with the dog, social interaction with the dog handler and other participants also had high durations."</p> <p>"The dog in AAA has previously been reported to have a social catalyst effect, and reviews on AAI on PWD have concluded that this kind of intervention may increase social behaviour and interaction."</p>	<p>Actions directed towards the dog, such as watching it, looking at it, petting it, chatting to it, or petting it, were the behaviors with the longest duration in AAA sessions in both participants.</p> <p>Socialization with the dog handler and other participants had long durations aside from interacting with the dog.</p> <p>This type of intervention may boost social behavior and interaction, and the dog in AAA has been shown to have a social promoter effect</p>	<p>Promote bonds with the pet.</p> <p>More mobility to the patients</p> <p>Enhance social interaction with the dog handler.</p> <p>Improved social behavior and social skills</p>	<p>-social relationship/bonds</p> <p>-physical benefits</p> <p>-Social Relationship</p> <p>-Mental benefits</p>	<p>"How are therapeutic pets used in elderly care?"</p> <p>"What are the benefits of using therapeutic pets in elderly care?"</p>

During the data analysis, all the twelve (12) research articles selected for the final analysis were read through and the data were categorized into two main categories which are the "use of therapeutic pets in elderly care" and "benefits of therapeutic pets in

elderly care”. The results from the use of therapeutic pets in elderly care analysis table were further divided into Social Relationship/bonds and Holistic well-being of the elderly with the help of the inductive content analysis. Both “use of therapeutic pets in elderly care” and “benefits of therapeutic pets in elderly care” were found in 12 out of 12 selected articles. Social relationship/bonds only were found in 8 articles and holistic well-being of the elderly were found in 7 of the articles. The results from the benefits of therapeutic pets in elderly care were dissected into 3 separated categories. These categories are emotional benefits, physical benefits and mental benefits. Emotional benefits were found in 8 articles. Physical benefits only were found in 6 articles whereas mental benefits were mostly found in 9 of the articles. See Table 4 The main categories and generic categories.

Table 4. The main categories and generic categories

Main categories (Themes)	Generic Categories
Use of therapeutic pets in elderly care	Social Relationship/ bonds
	Holistic well-being of the elderly
Benefits of therapeutic pets in elderly care	Emotional Benefits
	Physical Benefits
	Mental Benefits

Subsequently, the researcher examines the coded data in further detail. Subcategories should not be interpreted too strictly in this phase. The researcher must compare and sort all these fine sub-categories in which generic categories they would be fit in. Certain subcategories may be too similar to be merged into one. Some data, however, will differ so much from one another that they ought to stay as distinct subcategories (Vears and Gillam 2022). It is crucial to keep in mind that creating codes is a continual procedure whereby subcategories can be combined and divided to best accommodate the variety and complexity of the data without being too cluttered into too many small categories that lose their intended significance. The generic categories and subcategories are then created as interpretation of the text as shown in Table 5.

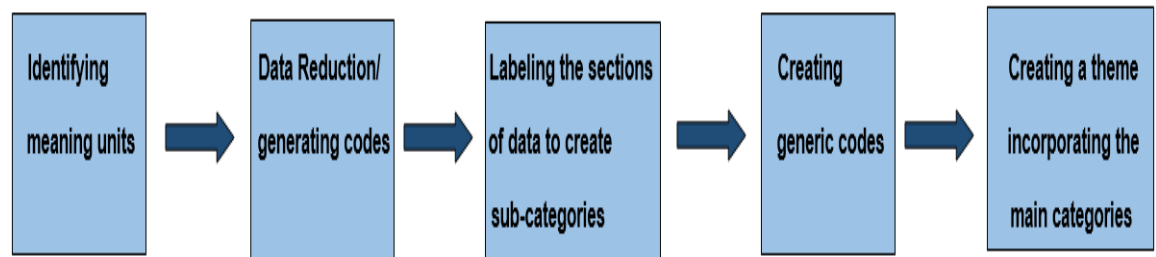
Table 5. The generic categories and sub-categories.

Generic Categories:	Holistic well-being of the elderly	Social relationship/bonds	Emotional Benefits	Physical Benefits	Mental Benefits
Sub-categories:	Subcategory 1: Rediscovering abilities and feelings Subcategory 2: To improve physical and mental well-being through reminiscing previous experiences with pets Subcategory 3: Alternative as a non-pharmacological intervention (e.g. lesser doctor's visits and medications) Subcategory 4: To improve QOL Subcategory 5: Help define responsibilities on partners owning dogs and improve sense of purpose and meaning Subcategory 6: Enhancing the environment Subcategory 7: Enhance self-esteem and develops motivation	Subcategory 1: Promote animal relationship Subcategory 2: Develops special human to animal bonds through animal visits Subcategory 3: Increased social interaction by creating conversations Subcategory 4: Reduce social pressure.	Subcategory 1: Develop sense of emotional attachment to animal visitors and closer relationship Subcategory 2: Reduce loneliness and anxiety Subcategory 3: to overcome fear and discomfort Subcategory 4: Reduce perception of pain Subcategory 5: Restoration of emotions Subcategory 6: Better's patient's mood	Subcategory 1: Promote longer and quality sleep Subcategory 2: Increased level of exercise and physical activity (e.g. walking, petting, combing, grooming) Subcategory 3: More mobility by means of meaningful activities Subcategory 4: Aide to recover from injury Subcategory 5: Alleviate suffering	Subcategory 1: Reduce depression Subcategory 2: Improved psychological behavior Subcategory 3: Enhance social skills Subcategory 4: Improve mental health Subcategory 5: Improve mood behaviours Subcategory 6: Enhance cognitive functions: strengthened ability to plan for pet care , memory stimulation Subcategory 7: Calming negative behaviors with dementia and decrease depressive symptoms Subcategory 8: Improve conversation and socialization

An overview of the inductive analysis coding process is shown in Figure 3. After completing inductive content analysis, it is crucial to ensure the accuracy and of the analysed data and with the inclusion of main categories, generic categories, and subcategories, the interpreted data were ready for reporting. as shown in Table 6 Units of Analysis based on the selected articles. Overall, the researcher extracted nineteen (n=19) original text from the selected articles. A total of thirty (30) sub-categories are

produced, whereas five (5) generic categories were generated from the sub-category column and a total of two (2) main categories.

Figure 3. Inductive analysis coding process.



Main Categories	Use of therapeutic pets in elderly care		Benefits of therapeutic pets in elderly care		
Generic Categories	Holistic well-being of the elderly	Social relationship/bonds	Emotional Benefits	Physical Benefits	Mental Benefits
Sub-categories	<ul style="list-style-type: none"> Rediscovering abilities and feelings To improve physical and mental well-being through reminiscing previous experiences with pets Alternative as a non-pharmacological intervention (e.g. lesser doctor's visits and medications) To improve QOL Help define responsibilities on partners owning dogs and improve sense of purpose and meaning Enhancing the environment Enhance self-esteem and develops motivation 	<ul style="list-style-type: none"> Promote animal relationship Develops special human to animal bonds through animal visits Increased social interaction by creating conversations Reduce social pressure 	<ul style="list-style-type: none"> Develop sense of emotional attachment to animal visitors and closer relationship Reduce loneliness and anxiety Reduce perception of pain Restoration of emotions Bettters' patient's mood 	<ul style="list-style-type: none"> Promote longer and quality sleep Increased level of exercise and physical activity (e.g. walking, petting, combing, grooming) More mobility by means of meaningful activities Aide to recover from injury Alleviate suffering 	<ul style="list-style-type: none"> Reduce depression Improved psychological behavior Enhance social skills Improve mental health Improve mood behaviours Enhance cognitive functions: strengthened ability to plan for pet care , memory stimulation Calming negative behaviors with dementia and decrease depressive symptoms Improve conversation and socialization
Units of Analysis (Selected Articles)	1,5,6,7,8,9,10	2,3,4,5,6,7,11,12	1,3,5,6,7,9,10,11	1,2,4,5,11,12	1,2,5,7,8,9,10,11,12

Table 6. Unit of analysis from selected article.

5 Results

A summary of the collected data on therapeutic pets was prepared focusing on social relationships/bonds with the elderly and their holistic well-being. Elderly care also emphasizes the mental, emotional, and physical benefits of therapy pets.

It has been demonstrated that therapeutic pets have a positive effect on social bonds and relationships between the elderly and their animals. A significant role played by these therapeutic pets in enhancing the holistic well-being of the elderly has been proven. Therapeutic pets are proving to yield significant physical benefits in elderly care settings. Among these benefits are increased physical activity and reduced blood pressure. Additionally, therapeutic pets have been found to have a profound impact on the emotional well-being of elderly people. Having pets as companions reduces loneliness, promotes a sense of purpose, and fosters feelings of companionship. In addition, therapeutic pets can help elderly people reduce their symptoms of depression and anxiety, which promotes mental well-being. Overall, the use of therapeutic pets in elder care offers an effective way to address a variety of issues related to health, including mental, emotional, and physical, improving the quality of life for the elderly.

5.1 Summary of the collected data

Comprehensive data search and selection process yielded twelve (12) articles. Both qualitative and quantitative research were included in the selection of the study.

There are four (4) articles in all that utilised qualitative research in this study. These studies have been published in the United Kingdom (Jain et al. 2020), Sweden (Swall et al. 2016), the United States of America (Holt et al. 2015) and Canada (Maharaj et al. 2015). Moreover, quantitative research is used in a total of eight articles. A few articles with the same authors were published in Denmark (Thodberg et al. 2015 and 2021) and Norway (Olsen et al. 2016), the Czech Republic (Machova et al. 2020), Croatia (Vrbanac et al. 2013), South Korea (Baek, Lee & Sohng 2020), and the United States of America (Dunlap et al. 2021). See Table 7 Data Findings.

Table 7. Data Findings

Journal/ Source name	Methods	Year of Publication	Study Location
Psychogeriatrics, the Official Journal of the Japanese Psychogeriatric Society (2)	Qualitative Research (4) Quantitative Research (8)	2013 (1)	Canada (1)
Journal of Spirituality in Mental Health (1)		2015 (3)	Croatia (1)
Active adaptation & aging: the Journal of Activities management (1)		2016 (3)	Czech Republic (1)
International Medical Journal (3)		2020 (3)	Denmark (2)
International Journal of Environmental Research & Public Health (1)		2021 (2)	Norway (2)
Journal of Clinical Nursing (1)			Sweden (1)
Collegium Antropologicum (1)			South Korea (1)
Health & Social Care in the Community (1)			United Kingdom (1)
Therapeutic Society Recreation Journal (1)			United States (2)

The results provide information to answer the two specific research questions: How are therapeutic pets used in elderly care? and what are the benefits of using therapeutic pets in elderly care? The inductive content analysis was utilized for categorizing two main categories which are the uses and benefits of therapeutic pets in elderly care. Then, it was dissected further into generic categories that the use of therapeutic pets in elderly care brings along. Those generic categories are: Social Relationship/Bonds, Holistic well-being of the elderly, emotional benefits, physical benefits, and mental benefits.

The selected studies were done in different study locations around the globe. Two studies were conducted in the United States of America. Holt et al. (2015) studied 13 residents in a nursing home. Those older adults formed bonds with visitor animals in an AAA (Animal-assisted activity) program. Dunlap et al. (2021) studied 123 CTRSs (Certified Therapeutic Recreation Specialists). Two American research sites were used for these investigations. The studies were carried out in eight (8) European countries. Nordic regions were the site of five of these research. These two studies shared the same author and publication year and originated in Norway. 21 participants were from a nursing home and 28 participants came from a day care center in the study conducted by Olsen et al. (2016) on 49 older individuals with impairments. Olsen et al. (2016)

conducted a study in which the author examined 58 nursing home residents who had dementia. Sweden was the second Nordic nation. Swall et al. (2016) investigated nine dog handlers who had prior experience taking therapy dogs to elderly patients suffering from dementia. The third Nordic country was Denmark. There were two studies came from Denmark and also had the same author Thodberg et al. (2015) studied a total of 100 residents from four nursing homes. Another study by Thodberg et al. was published in the year 2021 wherein the author studied 151 residents in nursing homes. The last three European countries were Czech Republic, Croatia, and the United Kingdom: Machova et al. (2020) included a total of 214 respondents in which 32 were AAI clients, 146 were family members and 36 were healthcare and social workers, Vrbanac et al. (2013) studied 21 residents in a geriatric nursing home demonstrating the effect of AAT in reducing the perception of loneliness, and Jain et al. (2020) studied 54 older adult residents across four participating care homes. One of the studies was conducted in Canada: Maharaj et al. (2015) had studied 27 dog owner volunteers. Lastly, one of the studies from Asia was conducted in South Korea: Baek, Lee & Sohng, (2020) studied 28 adults older than 65 years of age and had been diagnosed with dementia. See Appendix 1 List of Included Articles.

5.2 Use of therapeutic pets in elderly care

Based on the inductive analysis of the data, two generic categories were formed concerning the use of therapeutic pets in elderly care. The two generic categories were: holistic wellbeing of the elderly and Social Relationship/ Bonds (Table 8. Use of Therapeutic Pets in Elderly Care). In this chapter they were introduced in more depth.

Table 8. Use of Therapeutic Pets in Elderly Care

Use of Therapeutic Pets in Elderly Care	
Holistic well-being of the elderly	Social Relationship/ Bonds
<ul style="list-style-type: none"> considered an alternative to pharmacological interventions (Swall et al 2016. Sweden) improving quality of life by increasing tactile and visual contact and communication with the animals during visits (Thodberg et al 2015, Denmark) 	<ul style="list-style-type: none"> Improving interpersonal relationships (Machova et al 2020. Czech Republic) developing a special kind of bond "more human-animal bond" (Maharaj et al 2015, Canada)

5.2.1 Social relationship/ bonds

According to recent studies, older people's engagement in animal-related activities and their ability to form strong bonds with therapy animals were positively correlated (Holt et al. 2015: 11). These kinds of interactions are predicated on deference to the animals in question, unconditional acceptance, and respect. According to earlier research, older people may benefit from these visits since they give them a platform to communicate and feel their love and attachment (Maharaj et al. 2015: 17). Dogs can improve people's moods and general well-being, which is one reason why animal-assisted treatment may be advantageous (Machova et al. 2020: 18). Further investigation into the impacts of animal-assisted treatment is necessary due to the potential benefits.

Pets, especially dogs, have been known to have a positive impact on human psychological and physical health. Research studies have highlighted the significance of dogs in improving interpersonal relationships, subjective well-being, and overall health. (Maharaj et al. 2015: 7.) In this context, animal-assisted activity has been identified as a useful therapeutic intervention in mitigating relocation stress syndrome (Holt et al. 2015: 12). Animal-assisted intervention has also been shown to bring pleasure and improve the perception of social-health facilities. Apart from its therapeutic effects, dogs have been found to alleviate feelings of loneliness and promote positive social and mental effects in individuals receiving animal-assisted intervention. (Machova et al. 2020:16). In light of these findings, there were a growing consensus among healthcare professionals regarding the adoption of animal-assisted therapy as a complementary approach in the treatment of various psychological and health-related conditions.

5.2.2 Holistic well-being of the elderly

The versatility of dogs' challenges conventional family norms. Dogs and human have a "more-than-human" relationship where they could perform multiple tasks (Maharaj et al. 2015: 14). Therapy dog teams can be considered an alternative to pharmacological interventions. In addition, behavioral and psychological effects of dementia can be reduced both upon nonpharmacological treatments and positive relationship of dogs and the patient. By fostering a positive environment, these therapies help patients enhance their well-being. (Swall et al. 2016: 7.) Animal-assisted interventions enhance therapy outcomes by creating an atmosphere that promotes communication, boosts motivation, and improves the mood of patients (Machova et al. 2020: 18).

Research has demonstrated that nonpharmacological interventions have proven to be effective in bolstering the identity of individuals suffering from dementia. Such interventions could also involve employing a person-centred approach. According to Swall et al. (2016), quality of life may gradually decline in individuals transitioning from an independent lifestyle to one that requires greater assistance from family members. (Swall et al. 2016: 7.) Animal-assisted activities are one type of nonpharmacological intervention that helps people feel less lonely. Participants in these programs laugh, smile, and have joyful recollections of previous pets as a result of their contact with the animals during visitation programs (Holt et al. 2015: 4.)

Studies have reported on the positive social and mental effects of animal-assisted intervention (AAI) on individuals experiencing loneliness, such as the positive effects of dogs on AAI recipients (Machova et al. 2020: 16). These effects were found to alleviate feelings of loneliness and enhance the quality of life for the residents, as demonstrated by increased tactile and visual contact and communication with the animals during visits (Thodberg et al. 2015: 7.) By satisfying the need for communication and tactile stimulation through dog visits, this form of AAI shows promising potential for improving the well-being of individuals experiencing loneliness.

5.3 Benefits of using therapeutic pets in elderly care

Benefits of using therapeutic pets in elderly care – main category along with generic categories and subcategories were introduced in more detail in this chapter. The generic categories were physical benefits, emotional benefits, and mental benefits is presented (see table 9).

Table 9. Benefits of therapeutic pets in elderly care

Benefits of Therapeutic Pets in Elderly care		
Physical Benefits	Emotional Benefits	Mental Benefits
Lowering the heart rate and reducing the blood pressure, helped to recover from an injury (Maharaj and Haney 2014, Canada)	Alleviate feeling of loneliness, helped in reducing stress, boosts the mood (Machova et al, 2020, Czech Republic, Olsen et al 2016, Norway, Vrbanac, et al 2013, Croatia, Holt et al 2015, Sweden, Jain et al 2020, UK and Baek et al 2020, South Korea)	Reduced symptoms of depression, increase social behaviour, improved social interaction and conversation
Increase in physical functioning (Baek et al 2020, South Korea and Holt et al 2015, Sweden)		

5.3.1 Physical benefits

Pets in particular were often considered members of the family, offering comfort and security (Baek et al. 2020: 646). It has been demonstrated that having companion animals improves physiological health by considerably lowering blood pressure and heart rate (Maharaj and Haney 2014: 1176). According to the experimental study of Baek et al. (2020) carried out in South Korea, dogs as a familiar domestic pet at improving cognitive function, emotional state and ADL was utilized. AAT has been beneficial for older adults in terms of physiological aspect. Activities of daily living was used in the intervention group of the study which result to an increase in physical functioning such as walking the dogs, grooming, combing, hugging, and feeding. (Baek et al. 2020: 651.)

In a qualitative study done in Canada by Maharaj and Haney (2014), states that dogs are “natural healers”. As a mindful creature, dogs played a big part in relieving physical, emotional and mental distress. The participants in the study reported that their dogs helped them to recover from an injury. Alongside with, dogs provided support to them when they feel upset through meaningful ways like licking and nuzzling which led to calming effect. Highlighting that dogs were playful in nature, it appears to promote more physical activities and interactions. (Maharaj and Haney, 2014: 1186-1188.) Engagement to animal-assisted activity were also emphasised in the study of Holt et al. (2015), that AAA provided a creative outlet for older adults and encourage social engagement which led to increased sense of functioning and happiness. The result of this study showed therapeutic activities involving animals in older adults have better physical functioning, life satisfaction and developed a greater level of confidence. Furthermore, participation in AAA may be beneficial to older adults who are facing aging-related challenges, such as transitioning into a nursing home. (Holt et al. 2015: 269.)

5.3.2 Emotional benefits

Improving mood and reducing feelings of loneliness are two of the many important emotional advantages of utilizing therapy animals. It has been demonstrated that interacting with these animals—dogs or goats, for example—can foster a sense of bonding and help people break free from social isolation, particularly those who live on their own or in institutions. As a result, the presence of therapeutic pets has been shown to promote emotions of happiness and well-being, interacting with them can considerably improve one's mood.

5.3.2.1 *Relief from loneliness*

A definition of animal-assisted therapy is an intervention that offers meaning in the care of the elderly while also facilitating social and physical close contact between a person and an animal (Swall et al. 2016: 2224). According to an experimental study of Machova et al. (2020) carried out in Czech Republic, hundred percent of the respondents stated that therapy dogs bring pleasure in terms of social and healthcare facilities. Majority of the respondents believe that the feeling of loneliness is significantly alleviated with the presence of a therapeutic dog and see it as an opportunity for relaxation and socialization. (Machova et al. 2020:13-16.)

The effects of AAI on depression, agitation, and quality of life in residents of cognitively impaired nursing homes in Norway were examined in an experimental study by Olsen et al. (2016). The results showed a significant improvement in AAI in the residents' quality of life, with increased social interaction and decreased loneliness (Olsen et al. 2016: 1318). On the other hand, the relief of loneliness as an emotional benefit of therapeutic pets in elderly care was highly emphasized in the experimental study of Vrbanac et al. (2013) conducted in Croatia, of all the participants involved in the study showed that during the therapy time sessions, the feeling of loneliness was reduced. The participants in the study showed an increased in physical activities and interaction in AAT and considered taking care of the therapeutic animals while enjoyed spending time with them. (Vrbanac et al. 2013: 975-976.)

In a qualitative study by Holt et al. (2015) conducted in Missouri, United States of America, the quality of life begins to deteriorate when changes in life occur as greater assistance may be needed to sustain the activities of daily living. During animal-assisted interactions in visitation programmes, the residents showed decreased feelings of loneliness and brought positive emotions including frequent smiling, laughing, and reminiscing happy memories of previous pets. The participants showed more time smiling and interacting during animal-assisted therapy than with carer interactions. Furthermore, AAA has been regarded as a means of relieving stress, allowing participants to take a break from their regular routine. (Holt et al. 2015: 269-270.)

5.3.2.2 *Improvement in mood*

Pet, especially dog is a stimulant that reveals the person's innermost feelings. In AAT, involves improvement of a patient's state of mind and behaviour (Swall et al. 2016: 226.) An experimental study carried out in Czech Republic by Machova et al. (2020) stated that conducting AAT affects the mood of the people. In this study, it has been reported that AAI helped the respondents in reducing stress. It is also stated that the respondents felt active, motivated and in a better mood. Hundred percent of the staff as participants agreed that AAI enhances the environment, boosts the moods of the clients, inspires them, and fosters better communication. Moreover, seventy-five percent (75%) of the clients stated that the presence of a dog has a positive impact with regards to their mood. (Machova et al. 2020: 16-18.)

According to the experimental study by Jain et al. (2020) conducted in the United Kingdom, dogs acted as a "bridge" or a mediator to reveal the inner world of a person. DAI provides opportunity to residents, carers and dog handlers to connect emotionally and allows expressing of emotions and affection as described by the participants as an uplifting effect that leads to an increase in a good mood. (Jain et al. 2020: 1454-1455.)

In a Korean study made by Baek et al. (2020) carried out in South Korea, mood states can be measured through the Faces Rating Scale developed by Wong and Baker. The scale consists of six facial figure expressions from a smiling face to a crying face and ranges from 0 to 5. The smiling face means the most comfortable face ranging from 0 tells "I am feeling good" whereas the crying face scores 5 as the highest point which means the most uncomfortable face or "I am not feeling good". The lowest score indicates a better mood state. During the animal-assisted therapy sessions, most of the participants showed improved mood state by choosing the cards for 'happy' and 'I love you'. In this study, AAT is considered as an effective therapy in terms of improving the mood state of the elderly and enhancing the emotional status of the residents with dementia. As observed, most participants grinned, gave the therapy dogs hugs, and even burst into laughter when the dogs obeyed commands to sit and shake hands. (Baek et al. 2020: 647-651.)

5.3.3 *Mental benefits*

The presence of dogs can have a positive impact on the mental health of people with dementia, helping them to overcome their fears and discomfort. A study by Swall et al. (2016), highlighted how dog handlers can make a difference in improving a person's

state of mind and behaviour. However, it is important to acknowledge that symptoms of the illness can return after the visits have stopped. Additionally, there may be conflicts and aggression towards the dog when several people on the ward wish to interact with the dog at the same time. (Swall et al. 2016: 4.)

Furthermore, in the study conducted by Maharaj and Haney (2015) found that engaging in meaningful activities with dogs was essential for dog owners to feel a sense of happiness and satisfaction. This finding further supports the idea that dogs have a positive impact on mental health and well-being. Overall, it is crucial to consider the benefits of using dogs in improving mental health, but also to be aware of the potential challenges and limitations of using them in specific settings. (Maharaj and Haney 2015:180.)

5.3.3.1 *Reduce depression*

In a study in Norway by Olsen et al. (2016), found out that there is a growing number of depressions among recently admitted long-term care patients. Depression is a common neuropsychiatric symptom that can be seen in patients with dementia. The main finding in the study showed that AAI has been utilized that there is a significant improvement in symptoms of depression and has a positive effect on the quality of life of patients with severe dementia. It has been emphasized that AAI has contributed to improving social interaction between the patients and staff. Furthermore, AAI is influenced to the increase social behaviour, improve conversation, and reduce loneliness in patients with dementia. (Olsen et al. 2016: 1313-1319.)

According to the study by Baek et al. (2020), found that an AAT program significantly reduced depressed symptoms in older dementia patients, even on unscheduled days, and that participants showed increased interest in the program. Therapy dogs were believed to reduce depression by quickly understanding participants' body language and providing a fun experience, building a bond through appropriate reactions. AAT programs plan to improve the quality of life of older people by lowering anxiety and depression, which are common in dementia-prone older adults. (Baek et al. 2020: 651.)

These two studies from Olsen et al. (2016) and Baek et al. (2020) used the same scale in measuring depression. In the study by Olsen et al. (2016) conducted in Norway, the Cornell Scale for Depression in Dementia (CSDD) was validated in Norwegian version whereas the study of Baek et al. (2020) done in South Korea was translated in Korean by the Korean Association of Dementia. The scale contains 19 items which labelled as

the symptoms of depression. Each item was rated on a 3-point Likert scale generating a sum score ranging from 0 to 38. A total score of below 6 indicates an absence of depression and scores of 8 or higher indicate a depressive state and scores above 18 are indicative of definite severe depression. (Baek et al. 2020: 648; Olsen et al. 2016: 1315.)

5.3.3.2 *Improved social skills*

AAA serves as a vehicle for social engagement which is an important component of graceful aging. Socialization is essential for lowering feelings of isolation and loneliness. In the study conducted in the USA (Holt et al. 2015), elderly individuals who participated in animal visits increased their social contacts and interactions with other residents and nursing staff. Participants in Animal Assistance Activities showed improvements in their physical health, quality of life, functional independence, and memories. Furthermore, improved sociability among AAA participants resulted in a reduced sense of depression. (Holt et al. 2015: 270.) On the other hand, a study by Olsen et al. (2016) carried out in Norway, emphasized that the dog in AAA serves as a mediator in social interaction. Therefore, improved social behaviours and the quality of life in patients with dementia. (Olsen et al. 2016: 1319.)

According to the study done Vrbanac et al. (2013) in Croatia, pointed that aside from the result that animals reduce the feeling of loneliness in AAT, it improves psychosocial condition of the participants as there is a stated increase in social behaviour (Vrbanac et al. 2013: 975). The study performed by Jain et al. (2020) in the United Kingdom also emphasized that DAI is utilized in fostering new social relationships and increasing connection within groups improving social functioning and loosening boundaries among nursing home residents and staffs (Jain et al. 2020: 1456-1457). In a quantitative study by Dunlap et al. (2021) done in the United States, the use of AAI in recreational therapy reported minimum to maximum changes into patient's goals including improved social interactions, increased client rapport, increased motivation, and a decrease in agitation (Dunlap et al. 2021: 396). Additionally, a Norwegian study by Olsen et al. (2016), in AAA, participating voluntarily to the activities is a key factor that can influence the development of a meaningful and effective activity among the participants. The study findings show that group activities foster a sense of belonging among participants and the group itself serves as a safe haven that fosters inspiration, strength, and happiness and have concluded that this kind of intervention significantly improve social behaviour and increase social interactions. (Olsen et al. 2016: 16.)

6 Discussion

The study's results section highlights the use of therapeutic pets with the elderly and provides an in-depth look of ethics and validity. The topic's ethical issues are looked at and discussed in detail. This part thoroughly evaluates and records the results' validity. The results are further expanded upon and examined in regard to the effectiveness of therapeutic pet use in the elderly population.

6.1 Ethics

The guidelines for responsible research conduct (RCR) have been developed by the Finnish Advisory Board on Research Integrity (TENK) in Finland. In order to guarantee ethical dependability and credibility, the Responsible Conduct of Research Guidelines have been strictly adhered to in this review of the literature. Adhering to responsible research methodology strengthens the ethical framework for this thesis. The fundamental principles of ethical research, including truthfulness, precision in all stages (comparing various studies, highlighting, and documenting findings), and overall attention to detail, were attained. The research and data collection techniques utilized have been accepted and ethically validated. Throughout the entire process, the value of other authors' work was maintained by showing proper acknowledgment and references for their work. Trustworthiness, reliability and transparency has been maintained on the entire process. (TENK 2012: 30-32.)

The use of therapeutic pets in senior care poses ethical concerns, such as animal welfare, consent, autonomy, and the necessity for qualified experts to ensure safety and well-being. Animal therapy must be done safely and ethically, and veterinary care should always be available. The use of therapy animals should take into account the specific preferences and sensitivities of older patients, and their agreement should always be sought. The study was carried out ethically, with proper protocols and safety precautions to safeguard both the animals and the elderly. A meeting with a library technician had been scheduled during the thesis' planning phase to improve the quality of the descriptive literature review. The data search methods were tested with two different databases throughout the meeting. The meeting with library informatics also added validity to the descriptive literature review by verifying that the data search was reliable. Citations and references were conducted according to the guidelines provided by Metropolia University of Applied Sciences (Metropolia 2023). Furthermore, the

Turnitin programme was utilized to ensure that no plagiarism occurred during the thesis execution process.

6.2 Validity

Appraising the validity of the literature review entails investigating all aspects of the research. The developed research questions, theoretical background, research design, methodology and methods, population and sample, and analysis of data are the main elements. (Moorley and Cathala 2018: 13.) Research questions played an important role in guiding the entire study, which is why they were selected thoroughly for the research's validity. Furthermore, the theoretical background should be relevant and meaningful. Transparent and honest reporting of all phases and components of the research process was one of the key elements in achieving a good validity.

The principles of qualitative study in this bachelor's thesis wherein the use of therapeutic pets in the elderly involved exploring the life experiences of elderly people through in-depth interviews, findings, and surveys. Studies were focused on capturing detailed and contextualized information in an in-depth understanding of the experiences and perceptions of both elderly individuals and the use of animal-assisted therapy (AAT). The study conducted by Baek et al. (2020) ensured that all procedures involving human participants were in line with the ethical standards set by the institutional and national research committee which is (XC17QEDI0080) and adhered to the principles outlined in the 1964 Declaration of Helsinki and its subsequent revisions. Similarly, Swall et al. (2016) obtained approval for their study (2010/220-31/1) from the Regional Board of Research Ethics. As a result, the findings presented were clear and comprehensive, ensuring transparency and adherence to ethical guidelines. These principles provide a comprehensive understanding of the impact and effectiveness of therapeutic pets in improving the well-being of elderly individuals.

Databases used in this review were considered reliable and recommended by the library of Metropolia University of Applied Sciences, the use of relevant databases containing articles from nursing academic journals and health care science strengthens the study's validity. With this thesis work, two research questions were formulated with the help of the PICO framework as selection of articles that were directly related to the research issues. Data was collected from reliable databases, such as CINAHL and MEDLINE. Data selection took into consideration that study participants were elderly individuals or residents and authors of the study were in the nursing profession. Quality of the study journals was checked by utilising Publication Forum (JUFO). The review

approach used in this study, a narrative review, can provide a better grasp of the topic by creating new knowledge that can be applied to enhancing safety and developing care for the elderly. The data collection and content analysis processes were well explained and illustrated in the form of tables, such as the database search table (Table 1), the analysis table (Appendix 2), and the PRISMA Flow Diagram (Figure 1). The fact that the data and interpretations were extracted solely from the original sources increased the thesis's validity and reliability.

The exclusion criteria specified may have excluded significant studies that could have provided important insights into the subject under investigation, limiting the validity. Additionally, the studies evaluated in this research may have limitations in terms of sample size, methodology, and biases, which should be considered when taking inferences from the findings. However, the study's findings are beneficial for anybody interested in learning more about the use of therapeutic pets and their benefits in nursing practice, and additional research in this area is needed. Furthermore, the originality and validity of the text were ensured during the thesis writing process by using Turnitin, a plagiarism checker.

6.3 Discussion of the results

The purpose of this thesis was to describe the utilization of therapeutic pets and the associated benefits in elderly care. The chosen studies provided use of therapeutic pets in elderly care that divided into two main categories which were the use of therapeutic pets in elderly care and benefits of therapeutic pets in elderly care. This thesis aimed to answer two specific research questions: "How are therapeutic pets used in elderly care?" Also, "What are the benefits of using therapeutic pets in elderly care?". To the best of the author's knowledge, there are various uses and benefits of therapeutic pets in elderly care as stated in most of the study's selected articles. The results showed positive uses of therapeutic pets in terms of the holistic wellbeing and social relationship of the elderly individuals by improved the quality of life, improved health and wellbeing, developed human to animal bonds, increased social interaction and reduced social pressure. Also, the result showed that therapeutic animals have a huge impact on the emotional, physical and mental aspects of an elderly individual. It recommends that medical practitioners treat a variety of physical and psychological conditions in the elderly with animal-assisted therapy as an additional method.

Therapeutic pets, dogs in particular, serve as a conduit to social interaction which serves as a catalyst and anchor to facilitate connections or communication (Jain et al.

2020: 1457). In adults, taking care of an animal is related to taking care of oneself with respect to daily activity, expressing emotions and communication. Animal care contributes to improvement of emotional and psychological well-being of nursing-home residents in a quantitatively measurable way. (Vrbanac et al. 2013: 975.) This study highlighted that therapeutic pets have different uses and benefits in caring for the elderly. Based on the findings, AAT is efficient in improving the overall wellbeing, social relationships, emotional, physical and mental aspects of the elderly.

First, when using AAT for improving the holistic wellbeing of the elderly, longer therapy is necessary. According to Machova et al. (2020), AAI enhances therapy outcomes by creating an atmosphere that promotes communication, enhances motivation, and improves mood state of the patient. It serves as a non-pharmacological intervention in decreasing anxiety and depression in dementia patients which leads to improving the quality of life as positive emotions are elicited such as laughter, smiling and reminiscing happy memories. (Swall et al. 2016; Holt et al. 2015.)

Second, AAT is considered for improving social relationships and developing social bonds. In a study by Holt et al. (2015), strong bonds are formed during the older people's engagement in animal related activities. According to two studies in Canada and Czech Republic, it is highlighted that interactions with pets plays a big role in improving interpersonal relationship that affects the health and wellbeing, mood and attachment of the elderly. (Maharaj and Haney 2015; Machova et al. 2015.)

Third, using AAT provides physical benefits for elderly individuals. Pets, specifically dogs, are dubbed to be "natural healers". Therapeutic animals have a positive impact on patient's physiological health. A result of a study in Canada, showed significant physiologic health benefits including lowering heart rate and reducing blood pressure. Not only does that pet have a positive impact in maintaining cardiovascular state but it is also reported that dogs helped to recover from injuries (Maharaj and Haney, 2015.) Dogs, as playful in nature, appear to promote more physical activities and interactions which lead to increased physical functioning, life satisfaction and happiness. (Maharaj and Haney 2015; Holt et al. 2015.)

Moreover, physical benefits of AAT have been contemplated in a study in South Korea done by Baek et al. (2020), that dogs helped in improving ADL which resulted in increased physical mobility such as walking the dogs, grooming, combing, hugging, and feeding.

Fourth, AAT provided emotional benefits for elderly individuals. In a study completed in Czech Republic by Machova et al. (2020), showed that the presence of a therapeutic dog in a nursing care facility serves as an opportunity for relaxation and socialization. Through socializing with the therapeutic dogs and other participants, it helped in enhancing the environment, motivated the residents and fostered better communication. The significant emotional benefit of therapeutic pets in elderly care including alleviating the feeling of loneliness and improving the mood state of the resident was supported by previous studies conducted in Croatia, Norway and USA reporting that there is an increased in physical activities and interactions that the resident enjoyed while spending time with the therapeutic animals bringing positive emotions including frequent smiling, laughing and talking about previous pets happily. (Vrbanac et al. 2013; Holt et al. 2015; Olsen et al. 2016.) Furthermore, in recent studies in the UK and South Korea, reported that AAI provided residents the opportunity to express feelings and emotions and even displayed affection to the therapeutic pets which led to uplifting emotional state as residents are observed hugging, smiling, and even burst into laughter (Jain et al. 2020; Baek et al. 2020).

Lastly, AAT is considered for enhancing the mental state of the elderly individuals with dementia. The findings of the studies done in Norway and Korea reporting that using AAT, there was a significant improvement in symptoms of depression emphasizing that there is an increased in social behavior minimizing behavioral problems, agitation, and irritability. Thus, residents are observed to be interested in AAT and improved in communicating to staff and other residents. (Olsen et al. 2016; Baek et al. 2020.) This statement was supported by the studies conducted in the USA, UK, and Croatia reporting that the psychosocial conditions of the residents are improved with DAI as there are observed improvements in terms of social functioning, establishing connections within the nursing facility, dog handlers and therapeutic pets resulting in increased rapport with the resident, increased motivation and decreased in agitation. (Vrbanac et al. 2013; Holt et al. 2015; Jain et al. 2020; Dunlap et al. 2021.)

7 Conclusion

The study reveals that therapy pets in elderly care enhances the overall well-being of the elderly, focusing on social relationships and emotional, physical, and mental aspects. Animal-assisted activity and therapy (AAA) and AAT help reduce loneliness, anxiety, and sadness, while increasing self-esteem and motivation. Additionally, increased physical activity, mobility, and sleep quality benefit the aged. Therapeutic

animal interventions significantly improve the quality of life for elderly people in home care settings like nursing homes and retirement homes. It is recommended that these non-pharmacological therapies be included in the services offered by healthcare and social establishments.

Animal-assisted therapy (AAT) is a growing field that has been proven to be effective in the treatment of a wide range of conditions, including depression, anxiety, and post-traumatic stress disorder. In recent years, it has become increasingly popular to incorporate AAT into the care of elderly people, many of whom suffer from loneliness, isolation, and age-related physical and mental health issues. Studies have shown that AAT can help reduce anxiety and depression, increase social interaction and communication, and even lead to improvements in physical health. Furthermore, AAT can be used in a variety of settings, including nursing homes, hospitals, and community centres, and can involve a range of different animals, including dogs, cats, and even goats.

Despite the many benefits of AAT, there are some potential risks and limitations to consider. For example, not all elderly people may be comfortable around animals, and some may have allergies or other physical limitations that make it difficult to interact with them. Additionally, there are concerns about the cleanliness and safety of animals in home care settings, and it is important to ensure that appropriate hygiene and infection control measures are in place. Finally, while AAT can be a valuable tool in the care of elderly people, it should not be viewed as a replacement for other forms of therapy or non-pharmacological treatment. Rather, it should be used in conjunction with other interventions as part of a holistic approach to care.

8 Recommendation

The use of therapeutic pets in elderly care is a relatively new field that requires further investigation. While current studies have shown promising results, more research is needed to fully understand the effectiveness of this approach. Therapeutic pets offer a non-pharmacological alternative for addressing the emotional and mental needs of elderly individuals. The development of an animal-to-human bond contributes to a sense of companionship and can help alleviate feelings of loneliness and depression commonly experienced by the elderly which forms deeper relationships and bonds.

Data indicates that therapeutic pets can have significant emotional and mental benefits for elderly individuals. With the progress of the study, it becomes increasingly apparent that the presence of a pet can improve the overall mood and well-being of older adults.

This non-pharmacological intervention provides a holistic approach to elderly care, addressing not only the physical needs but also the psychological and emotional aspects of their well-being. The relationship between humans and animals has been shown to be mutually beneficial, with pets offering unconditional love, companionship, and a source of comfort. Thus, research in this field is necessary to better understand the potential benefits and limitations of therapeutic pets in elderly care and to develop guidelines for their effective implementation.

In recommendation, the use of therapeutic pets in elderly care is still in its early stages and requires further investigation. Although initial findings suggest that these non-pharmacological interventions have the potential to promote emotional and mental well-being, more studies are needed to confirm their effectiveness. By establishing an animal-to-human bond, therapeutic pets can provide companionship and reduce feelings of loneliness and depression in the elderly population. Furthermore, the holistic approach of incorporating pets into the animal-assisted therapy process acknowledges the interconnectedness of physical, psychological, and emotional aspects of well-being in elderly individuals. Therefore, continued research efforts should be pursued to expand our knowledge about the benefits and limitations of therapeutic pets, ultimately guiding their incorporation into elderly care practices.

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Appendix 1. List of Included Articles

Author(s), year, Country	Topic/Title	Methodology & Methods	Participants	Main Outcomes	Limitations	Journal	Level
1. Thodberg K, et al. 2015, Denmark	The benefits of dog visits in assisted living facilities for the elderly	The study was a randomized complete block design. Each nursing home was a block, and the participants were assigned randomly to one of three visit types after informed consent had been given.	A total of 100 residents from four nursing homes were randomly assigned (N=100)	Comparison of the findings is challenging due to the differences in study size and technique. When it came to the type of visit and duration of the study period, two of the studies did not find any correlation between visits with dogs and a decrease in depression symptoms. Research reveals that on the test night in week three, individuals who had visits from dogs slept longer. Because sleep was a feature used to evaluate AAT, this result suggests that visits with dogs may be more beneficial than other visits. However, due to the intermittent nature of the results, this conclusion should be interpreted cautiously. It is recommended that more research be done with actigraphy technology	One limitation to the study is the relatively short visit duration of 10 minutes. 10 min was based on pilot visits in which we observed that severely demented residents, in particular, were often unable to maintain their attention for much longer	Psychogeriatrics the Official Journal of the Japanese Psychogeriatric Society	I

				before any conclusions are made regarding the suitability and efficacy of sleep quality as a measure in this situation.			
2. Maharaj N, et al. 2015, Canada	A Qualitative Study Examining the Importance of Pet Dogs	Used qualitative content analysis. Used a descriptive method of analysis to code the data and interpret the frequency of reported comments	Twenty-seven dog owners volunteered to participate (N=27)	Three themes about the value of companion dogs were found: (a) how dogs affect interactions with other people, (b) dogs as subjective creatures, and (c) the psychological and health advantages of dogs.		Journal of Spirituality in Mental Health	I
3. Holt, S. et al. 2015, Missouri, USA	The pawsitive visits program is an animal-assisted activity for residents of retirement homes for the elderly.	A descriptive statistic was used	(N=13 residents)	In an AAA (animal-assisted activity) program, older persons developed ties with visiting animals that manifested as attachment to the animals, reciprocity, and unconditional acceptance. Previous research has shown that AAA visits are beneficial to residents of nursing homes. According to anecdotal findings made during the PAWSitive Visits AAA program, the sessions could promote intergenerational engagement because animals are a topic of conversation that transcends		Active adaptation & aging: the journal of activities management	I

				generational boundaries in language or popular topics. While individuals in our program possessed intact cognitive capacities, other reports suggest that similar AAA programs could be advantageous for those with a range of mental and cognitive impairments.			
4. Thodberg K, et al. 2021, Denmark	Should dog visits at assisted living facilities be more complicated or kept simpler? A controlled, randomised study	The study was designed using a stratified and randomized complete block design.	N=151 residents	Visits without specific activities stimulated residents to interact with the dog, whereas increasing the complexity of dog visits by adding activities resulted in less interaction with the dog for severely impaired residents. The optimal dog visit for the less cognitively impaired residents could include activities and thereby a possibility to interact with the dog in different ways, whereas for severely impaired residents, just being with the dog seems more appropriate.		International Medical Journal	I

5. Olsen C, et al 2016, Norway	A cluster randomized controlled trial examined the effects of animal-assisted therapies on agitation, sadness, and quality of life in elderly patients with dementia or cognitive impairment.	A prospective, cluster-randomized multicenter study.	N=58 residents	The main finding in the study was significant statistical and clinical improvement in symptoms of depression from baseline (T0) to follow-up 12weeks after end of the intervention (T2) in the AAA group compared with the control group. The intervention effect on depression was found to be associated with severe dementia. For patients with severe dementia, the intervention also showed significant effects on QoL.		International Medical Journal	I
6. Machova, K. et al. 2020, Czech Republic	Elderly clients, family, members, and staff's perceptions on the acceptability of AAI: a pilot study	214 respondents participated in the study. Out of 214 respondents, 98 (46%) were men and 116 (54%) were women. Of these respondents, 32 (15%) were AAI clients (20 males and 12 females), 146 (68%) were family members (74 males and 72 females), and 36	Respondents: 32- AAI clients, 146- family members, 36- Healthcare and social care workers (N=214)	The results show that AAI is generally very well received, with over 90% of respondents considering AAI to be beneficial. The perception of AAI and trusting the handler with their dog was evaluated very positively, as well as possible concerns about hygiene. The results were in many cases affected by demographic factors of the respondents (age, gender, role in AAI, education,		International Journal of Environmental Research and Public Health	I

		(17%) were healthcare and social care workers (3 males and 33 females).		and size of settlement). It seems appropriate in future studies to focus on the attitude of individual groups, and thus advance the methodology of implementing AAI.			
7.Swall, A. et, al 2016, Stockholm, Sweden	Dog handlers' experiences visiting elderly patients with dementia in the company of a therapy dog: providing respite from the burden of illness	Open-ended interviews	Dog handlers (N=9)	A person with dementia can be seen as an act of caring, providing temporary respite from their illness, and creating a special relationship between the handler and the patient. A therapy dog visit can represent a moment of communion between the handler and the person with dementia.		Journal of Clinical Nursing	Ills
8.Vrbanac, Z. et al. 2013, Croatia	Geriatric nursing home residents' perceptions of loneliness and the use of animals in therapy	Questionnaire	N=21 residents	The psychological effects of visiting dogs in a geriatric nursing home resident population, demonstrating an effect of AAT on reducing the perception of loneliness		Collegium Antropologicum	I

9. Jain B, et al. 2020, United Kingdom	A qualitative investigation of the type, significance, and effects of interactions for older people in care facilities with dogs as assistance.	Qualitative study design and a brief questionnaire to capture the views of residents themselves	older adult residents across four participating care homes (N=54)	Participants with dementia and sensory impairments were among those to benefit most from the dog visits 'at the moment and experienced some of the most positive effects on emotional wellbeing. DAI provided a vehicle for reminiscence on experiences – typically related to memories of animals and pets owned.		Health and Social care in the community	II
10. Baek, S., Lee, Y., Sohng, K. 2020, Seoul, South Korea	Impact of animal-assisted therapy on the behavioral and psychological aspects of dementia in older Korean people	RCT	N=28 adults older than 65 years of age and had been diagnosed with dementia	This study assessed the efficacy of an 8-week AAT programme at improving cognitive function, emotional state, ADL, and problematic behaviour in older adults with dementia. Based on the study findings, four suggestions were made for clinical practice.		Psychogeriatrics the Official Journal of the Japanese Psychogeriatric society	I

11. Dunlap K, et al. 2021 United Stated	The techniques, expertise, and viewpoints of recreational therapists on animal-assisted therapy.	To determine the prevalence of animal-assisted activities and animal-assisted therapy implemented by recreational therapists, and (b) understand the knowledge and barriers that exist for recreational therapists in implementing AAA and AAT. Used survey questionnaire that are close ended.	randomly selected a sample of 2,000 active CTRSs from their email database after approval from a NCTRC research study application. Total of 123 CTRSs respondent to the survey. (N=123)	Education and training efforts may increase the number of practitioners who utilize AAT as well as potentially improve their knowledge of the difference between AAA and AAT. For those wanting to start or strengthen an AAT program, it is suggested that they use one of the two standards of practice (AAll or Pet Partners) to structure their programs.	The first limitation of this study was the low response rate. The sample included 2,000 randomly selected CTRSs. The second limitation involves the current pandemic's impact on how participants responded to questions.	Therapeutic Recreation Journal	I
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12. Olsen C, et al 2016, Norway	Participation in group activities with animals by elderly people suffering from dementia	The study used was Randomized Controlled Trial (RCT)	N=49 participants (21- PWD's in nursing home, 28 PWD's in day care center)	Engagement in activities beyond routine care is an important indicator of QoL in nursing homes. Having the possibility to participate in activities and activities that amount to something is important for increasing a sense of independence and positive self-image in nursing home.	Limitation to the study is that we had limited knowledge on comorbid somatic diagnosis, which may affect behaviour. Furthermore, no information on behavioural and psychiatric symptoms, such as agitation and depression among DCC participants. It is reasonable to assume that the nursing homes residents had poorer health in general, as indicated by the significant differences between the groups in psychotropic medication and use of walking aids, and the few differences in behaviour reported may be due to this. It could be that the groups of participants should be more	International Medical Journal	I
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					homogenous regarding gender, age, physical and cognitive function, for the animal-assisted activity to be better suited for all participants in the group. Or it may be that severe dementia patients would benefit more from individually based animal-assisted activity, as one-on-one socialising is found to give the highest ranking for duration, attention and/or attitude towards a stimulus (J. Cohen-Mansfield, M. S. Marx, et al., 2010). The significant standard deviation found for time spent on the different behaviours within the two populations could also indicate that AAA needs to be tailored to the individual		
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					patients. However, the few differences in behaviour seem to indicate that the group AAA created engagement in both groups.		
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