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Sensory corner for the elderly in a nursing home facility

THESIS

DEGREE PROGRAMME IN NURSING
2025

ABSTRACT

Habbiche Hadjer, Roy Julien: Sensory corner for the elderly in a nursing home facility
Bachelor's thesis
Degree programme in nursing
June 2025
32 pages

This thesis investigates the implementation of a sensory corner designed for elderly residents with dementia in a nursing home facility.
The purpose is to create and implement a sensory space, in an already furnished living room. Each resident will be able to access this space with their personal care giver. The objective is to benefit all residents, including all pathologies, by offering the calming effect of sensory stimulation by lowering aggressivity and restlessness, improving mood.

Previous research shows significant benefits in providing stimulation of at least two senses, with active participation for at least twenty minutes to improve or alleviate the symptoms linked to dementia. It also guided the authors in the choice of tools: essential oils for smell, optic fibre lights and vintage photo albums for sight, massage tools and soft cushions for touch, kalimba music instrument for hearing.

Daily sessions were planned to coincide with residents' natural circadian rhythms and behavioural patterns, maximising engagement and calming benefits. Each session lasted at least 20 minutes and stimulated at least two senses

The results are compatible with previous research. It shows that active participation gives good results, which is the case where hands are stimulated with touch or musical instrument. Aromatherapy also showed positive outcomes, in accordance with the literature.

Keywords: older people, nursing home facility, dementia, senses, sensory room

CONTENTS

1 INTRODUCTION

The population in nursing home is facing specific challenges. Diminishing daily both physical and cognitive activity leads to sarcopenia and neurocognitive disorders. The simple fact of too much inactivity in bed produces brain function modifications and cognitive degradation. It also increase catabolism in muscle mass and is a starting point for sarcopenia (Šlosar, 2023, p. 2).

Multisensory stimulation (MSS) interventions are a modality known as non-physical rehabilitation, different from physiotherapy or physical exercise. MSS has been evaluated and has important potential benefits as a first intention intervention or coupled with pharmacological treatment for major neurocognitive diseases. MSS has become popular in the treatment of dementia, especially with disease progression (Cheng, 2019). MSS can take multiple form. Some settings like the Snoezelen room, Dutch word meaning “snooze” and “snuffle”, provide music, optic fibre and water column, affected favourably apathy, agitation, behaviour and mood.

For residents with moderate to severe dementia, daily functioning was improved (Cheng, 2019). Virtual reality devices show potential for cognitive and motor skill improvement through exposure to enriched environment (Šlosar, 2023). Although some session types require high staff needs, or specific training, which can be a challenge for the limited resource of ward, one Brazilian study showed that implementing a MSS room was possible for a low cost (Machado, 2022).

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The objective is to benefit all residents, including all pathologies, by offering the calming effect of sensory stimulation by lowering aggressivity and restlessness, improving mood.

The client for this project is a nursing home facility, offering 24/7 services. New technologies are used onsite, such as dynamic lighting to help with the care of people with dementia, by helping to synchronize circadian rhythm, and digital services.

2 THEORETICAL BACKGROUND

2.1 Key concepts

There are five key concepts: older people, nursing home facility, dementia, senses, sensory room.

2.1.1 Older people

Older people are linked to the concept of home care. To match the social reality of Finland, 65 years old and above were selected because it is the retirement age for pension eligibility. (Old-Age Pension, 2024.)
Like many western countries, Finland is facing a rapid ageing of the population. currently, People over 65 represent 22% of the total population and the number will increase to 26% by 2030 and 29% by 2060. The policies and governmental programs are supporting independent living as much as possible, while providing 24h service housing for people unable to manage even with home support. (THL, 2023.) The table 1 is illustrating this tendency.

Table1. Proportion of 75-year-old and older population in older people services

Service type / 75+ year old population (%)	2015	2016	2017	2018	2019	2020	2021	Target
Living at home	90,6	90,9	91,1	91,3	93,0*	91,9	92,6	92,0
Standard-home care	11,8	11,3	11,3	17,0**	16,5	15,9	15,7	13,0
Informal care support	4,7	4,7	4,8	4,8	4,8	4,6	4,6	5,5
24h care and service housing	7,1	7,3	7,5	7,6	7,3	7,3	6,7	7,0
Institutional care	2,1	1,7	1,5	1,3	1,0	0,7	0,5	< 2,0

2.1.2 Nursing home facility

In Finland, home care setting describes the institutions providing 24/7 assisted living services, for individuals who are unable to manage living at home even with extensive support. (THL, 2024.) Those facilities are also called nursing homes or long-term care facilities. Residents living in these premises do not need hospitalization but due to chronic diseases and/or disabilities, they require daily support. The care includes help for daily tasks, according to resident's need and functional ability (hygiene, meals, dressing, mobility, communication), administering medications, leisure activities. (Kibitok, 2022.)

When reaching a certain stage of dependence, residents feel safer than at home, because of the immediate proximity of caregivers. They are reachable from the resident's own room via devices which relieves the potential stress of any emergency situation, or perceived as such. (Kariuki, 2019.)

As of 2025, for budget reasons, the Finnish government is trying to encourage people to stay in their own home as long as possible, with the support of home care. However, due to the recent nature of these decisions, no data is yet available to show the benefits of such policies. (BMI Fitch Solutions Company, 2024.)

2.1.3 Dementia

According to WHO (World Health Organization) (2024), dementia is a generic term regrouping diseases affecting memory, cognitive abilities and behaviour. Daily activities are impacted. The disease has 3 stages, from mild to severe. Individuals in the mild stage may exhibit forgetfulness, difficulty finding words, and losing sense of time while continuing to manage their daily lives independently. Symptoms grow more pronounced in the moderate stage, such as increased confusion, communication difficulties, and a decreased ability to accomplish ordinary chores without assistance (Alzheimer's Society, 2021). In the severe stage, consequences are also a decrease in senses, particularly vision and hearing (Machado, 2022).

One concrete consequence for carers is the circadian rhythm disruption. It leads to sleep disruptions and agitated behaviour at night. For example, a patient will refuse to go to bed because they feel energized and not tired. The bright light therapy is commonly used to re-synchronize the biological clock with brightness in the morning and dimed light in the evening (Alzheimer's Society, 2021).

Other common changes in behaviour, especially with moderate to severe cases are: pattern of repetition for questions and actions, agitation and walking along the same way, following carer or family member without rest, apathy and a loss of interest in daily activities (Coping with Dementia Behaviour Changes, 2023).

Dementia care is especially important for Finland because it has the highest death rate for this disease in the world. It is caused by a mix of environmental factors. Mold in housing because of cold and humidity, neurotoxic mycotoxin present in the gulf of Finland and lakes, presence of mercury and lack of selenium in the soil. (Eiser, 2017.)

2.1.4 Senses

The five senses, hearing, vision, touch, smell and taste tend to decline with age.
Age-related vision and hearing loss is common among older people, and has been associated with social isolation, depression and rapid cognitive decline. Studies show that those older adult with hearing impairments have a higher risk of dementia than people with normal hearing. (Maharani et al., 2018.)

Age-related declines also in olfactory and gustatory functioning can signal neurodegenerative disorders. Loss of scent has been linked to an increased risk of Alzheimer's. According to research published in the journal Molecular Neurodegeneration, olfactory impairment may precede cognitive symptoms in Alzheimer's patients. (Hong et al., 2024.)

Many people with dementia retain a sensation of touch, tactile stimulation can be an effective treatment technique. Hand massages and the usage of textured materials can help to relieve agitation. Research shows that sensory stimulation, particularly touch, can improve communication and emotional well-being in dementia patients. (Alzheimer society, 2019.)

Importantly, having more than one sensory change at the same time almost double the risk to develop dementia (NIH, 2023).

Moreover, while the loss of senses can lead to cognitive decline, dementia itself also influences the senses and perception. Hallucinations, delusions, and time-shifting are common symptoms that can make the person less confident, independent and frustrated. The care giver has to reassure the person and not deny the symptoms. (Alzheimer Society, 2022.)

2.1.5 Sensory room

Sensory room is a space where multisensory simulation activities are performed, as stated in the introduction. Those therapeutic spaces started to be developed in the 1960s for mental health issues and learning disabilities. Nowadays, it is used in schools, psychiatric wards and for dementia. Sensory interventions may include activities stimulating the senses, environment modifications and support for self-managing daily stressors (Barbic et al., 2019, p. 2).

Sensory rooms can take many forms, from Snoezelen pre-designed room to more basic “self-built” implementation. Cost, staff and training will be the three main parameters to make a difference in the choice of the setting.

A guide published at Kingston University offers practical advice on constructing sensory rooms for persons living with dementia, emphasising that such spaces may be established using existing resources and with little cost.
It can be as simple as a quiet space outfitted with soft furnishings, adjustable lighting, music players, aromatherapy diffusers, and tactile cushions (Jakob & Collier, 2014).

2.2 Project methodology

The method used for this project is the “waterfall”. This is a linear method, well adapted to the situation. In project management, stages are: initiating, charter which correspond to thesis plan, planning, executing with progress report, delivery and documentation which is the thesis report (Wells & Kloppenborg, 2015, p. 6). One stage will follow the other successively, like water flowing from a mountain, it cannot go backwards. Another justification for the authors choice is that waterfall is a plan driven method (Cobb, 2015).

The project here has been thought and planned with a document called thesis plan. Each stage depends on the other, and one has to be completed to switch to the next one. The requirement phase is the most time-consuming stage, as it requires acquiring project information. By the end of this phase, the project's stages, resources, and timetable should be well defined. Following that, the design phase will specify the essential equipment and establish the plan of action. During the implementation phase, the plan will be put into action, however it may require additional development as needed. The solution will then be implemented during the testing and deployment phase, with clients offering feedback to address and enhance practical concerns. Finally, in the maintenance phase, after incorporating comments, the project will become operational, and the team will stay available for any enquiries, modifications, or enhancements (Asana).

2.3 Previous research on MSS for dementia care

There is ongoing study into how dementia affects not only cognition but also behaviour and sensory processing. Behavioural issues are a common side effect of dementia. These difficulties may be related to a sensory imbalance between stimulation and calming activities. The lack of balance can be the consequence of circadian rhythm disruption, neurologic decline, or environment. Excessive stimulation may push a resident beyond own’s threshold while insufficient stimulation will lead to sensory deprivation. Therefore, a balance must be found to challenge the senses without overstimulation. Literature

suggests that, although senses are declining with age, stimulating at least two senses promotes sensory integration and capability. (Cheng, 2019.)

MSS resolve this balance issue among residents with moderate to severe dementia by enabling sensory integration while minimizing sensory overload. In this way, mood, anxiety and behaviour are immediately and positively influenced. (Machado, 2022.)

Concerning duration, it appears that there is a consensus for 30 minutes sessions. If the abilities of the individual are lowered, duration has to be adjusted, in order to avoid the overload phenomenon mentioned earlier. Over the first signs of boredom or behaviour change, the session has to be stopped to produce the positive outcomes related to MSS. Those results favour a patient-centred approach, advocating for the caregiver to be the session provider. They might have a better knowledge of the resident's behaviour on a day to day basis than, for example, a family member. (Garrido-Pedrosa, 2024.)

The implementation of MSS improves markers of aggressivity, anxiety, behaviour and mood (Machado, 2022). Furthermore, it brings significant improvements in certain vital signs, such as a decrease in blood pressure, a reduced heart rate and an increase in oxygen saturation. (Maseda et al., 2018.)

Those findings are particularly important because the pharmacological treatments have shown limitations and side effects for behaviour and mood management. Among those limitations are moderate to marginal efficacy and significant side effects, increasing the risk-benefit ratio. (Cheng, 2019.) On the other hand, non-pharmacological interventions improve treatment outcome, do not present adverse effects and relieve neuropsychiatric symptoms as well as quality of life of caregivers (Maseda et al., 2018).

In addition, interventions enable more social contact and external stimuli, while performing the activities. It offers residents the possibility to become more engaged and active in their participation in daily living, therefore breaking the circle of depression feeding dementia (Goodall, 2019). After the sessions,

those positive changes are amplified: communication and environmental interactions are improved (Machado, 2022).

This lack of social interactions and active participation are the main reasons why MSS interventions have become more popular for the treatment of dementia (Sakamoto et al., 2013).

2.4 Evidence-based sensory Interventions for dementia

Aromatherapy is the most effective sensory stimulation intervention. Research on both combined and individual compositions of essential oils has demonstrated therapeutic benefits, depending on the specific oil used. For example, lavender and chamomile oils have been shown to reduce anxiety, improve sleep quality, and relieve pain. Furthermore, inhaling peppermint essential oil has been found to significantly reduce postoperative nausea and vomiting. Lavender, lemon balm, orange, and rose oils are frequently used to treat dementia-related agitation, with lavender being the most popular due to its strong anxiolytic properties (Ting et al., 2023b).

Additionally, it has been shown that the level of agitation and aggressivity is lowered significantly after just four weeks of aromatherapy intervention (Ting et al., 2023). See figure 1 below.

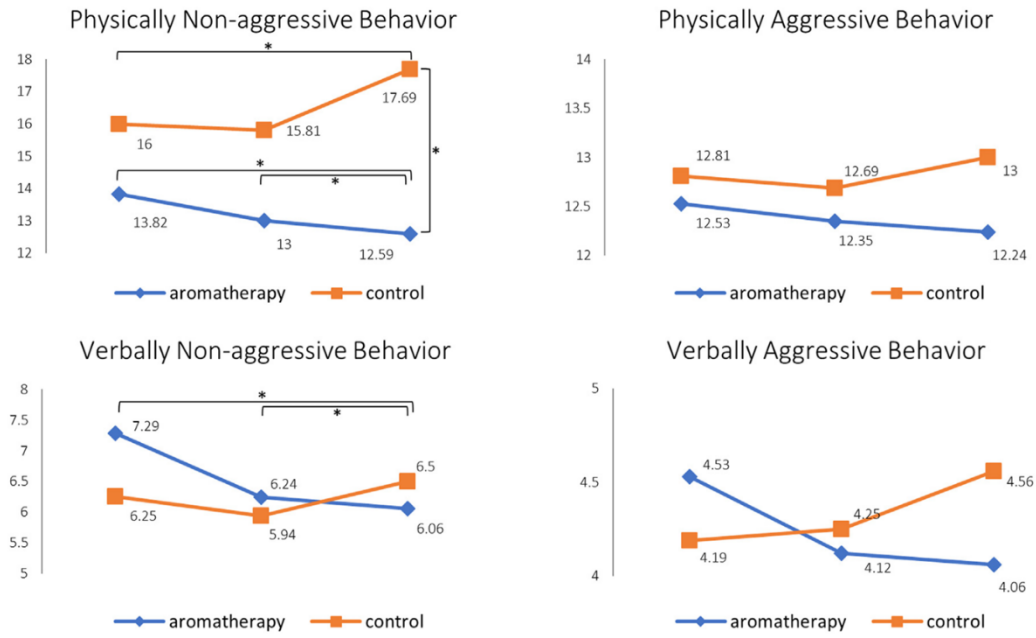

Figure 1. Effect of aromatherapy versus control on behaviour (Ting et al., 2023).

Multisensory stimulation therapies with visual components are critical for producing regulated sensory settings that minimize neuropsychiatric symptoms and improve cognitive performance in older persons with dementia. A recent meta-analysis revealed that multimodal stimulation significantly reduced agitation while increasing overall cognitive performance. (Octary et al., 2025.)

In addition to fibre-optic lights. Which are safe, colour-changing strands that residents may trace with their fingers, plasma balls also produce bright light arcs in reaction to touch, providing rapid visual feedback that engage attention, reduces irritation, and stimulates gentle movement (Alzheimer's Disease Research, 2011).

A vintage photo album with culturally relevant images is also considered as one of the essential tools of both visual stimulation and reminiscence therapy (RT), which has proven to be effective. This method improves hand-eye coordination and activates preserved autobiographical memory networks by encouraging residents to follow the flow of pages and examine meaningful photographs. (Jiang et al., 2021.)

Implementing reminiscence therapy through encouraging elders to discuss past experiences could be practical to healthcare professionals. Professionals in the field could better understand residents' medical histories and cultural backgrounds. This would help creating individualizing care plans and increasing patient satisfaction levels. (Macleod et al., 2021.)

Beyond aromatherapy and visual stimulation, touch-based therapies, which combine proprioceptive and tactile input, have been shown to enhance engagement, lessen agitation, and improve quality of life in dementia patients. Massage therapy greatly reduces behavioural and psychological symptoms by triggering the relaxation response, whether it is given by caregivers or handheld devices. According to a review of the literature, the greatest decreases in stress and agitation were obtained when massage and aromatherapy were combined. (Zhao et al., 2020.)

Massage provides stress relief, whereas the use of plush toys and objects has been found to lower agitation and increase pleasure and engagement (Strøm et al., 2016).

Fidget blankets, also known as sensory training blanket, are becoming more widely acknowledged as effective non-pharmacological treatments for individuals suffering from dementia. To provide sensory stimulation and promote engagement. These blankets are made with a variety of textures, colours, and interactive features like buttons, zippers, and ribbons (Dashwood, 2024).

Weighted blankets greatly enhance older individuals' general health and quality of life. Studies specifically show significant gains in sleep quality, including fewer awakenings during the night. Increased dietary intake, better cognitive function, and a decrease in the need for psychoanaleptic drugs are further advantages. (Hjort Telhede et al., 2022.)

Similar to how tactile stimulation promotes relaxation and emotional health, auditory stimulation through music therapies presents numerous benefits among which decrease in both physical and verbal levels of anxiety,

depression, and agitation (Strøm et al., 2016). The kalimba musical instrument is particularly useful in dementia care due to its gentle and straightforward tones. The instrument provides a sense of accomplishment and serenity to dementia patients, as it sounds well and is easy to play even if musically unskilled. (Holdaway, 2016.)

Music can promote neurotransmitters production that assists mood control and decreases anxiety, such as serotonin and dopamine. Individuals with neurological disorders, this neurological reaction can also improve physical, emotional, and cognitive abilities (Ting et al., 2023).

Gustatory stimulation, which provides controlled sweet, salty, bitter, and sour tastes improves sensory engagement, helps cognitive processing, and can alleviate behavioral and psychological symptoms in dementia patients (Octary, 2025). Enhancing taste and aroma can significantly boost overall food satisfaction and consumption, even if the individual with low cognitive functions (Pouyet et al., 2015).

3 PURPOSE AND OBJECTIVE

The purpose is to create and implement a sensory space, in an already furnished living room. Each resident will be able to access this space with their personal care giver.

The objective is to benefit all residents, including all pathologies, by offering the calming effect of sensory stimulation by lowering aggressivity and restlessness, improving mood.

4 IMPLEMENTATION

4.1 Target group

The residents of this unit are in the 65 to over 96 years old range.
The majority suffer from neuro-degenerative diseases and their consequences such as Alzheimer, Parkinson, dementia. There are also some cases of metabolic diseases like diabetes, cardiac issues, for instance high blood pressure, and cancer. Mobility restrictions are common problems and lead to the use of walkers, wheelchairs, and lifters. Different levels of sight and hearing impairment must be taken into consideration. Because of the prevalence of dementia, aggressive behaviour and agitation are regular occurrences, particularly in the evenings.

4.2 Project’s stages

The project was organised into distinct, consecutive stages using the Waterfall approach. During the requirement and initiating phase, the topic was chosen, and preliminary research into sensory interventions began. Early meeting with the unit's supervisor offered valuable insight into the practical environment and assisted in identifying project potential inside the care setting. During the planning phase, the thesis plan was created by merging theoretical frameworks and prior research. The implementation phase consisted of getting the relevant research permits and continuing the thesis writing process. Investigation was undertaken to discover appropriate sensory tools and equipment within the available budget. The sensory corner was physically established in consultation with the unit supervisor. During the testing and deployment phase, the corner was made available for resident use, and feedback was obtained to assess satisfaction and effectiveness. Finally, during the maintenance and closure period, the thesis was completed and submitted.

4.3 Sensory Tools and Practical Implementation

In this project, the organization asked to set up a “sensory corner” in an already existing living room for residents. This approach supports cost-effective implementation, by using existing furniture, basic materials, and creates a peaceful, stimulating, and accessible atmosphere for all residents, regardless of cognitive status. According to the studies selected, the authors realized that there are no ready-made protocols and/or specific sequences for managing the sensory activities. Therefore, the carer is encouraged to offer the tools according to the client’s wishes and mood, in a non-directive way.

The sensory corner was designed to ensure residents' comfort, safety, and security by offering an intimate, quiet space with minimal noise to reduce stress and increase focus on the activities. A session duration of approximately twenty minutes seemed to be optimal to focus and avoiding boredom. Ideally, at least two senses were to be engaged at the same time during each session. Instructions were made available for the caregivers, under the form of an instruction poster.

In order to engage each of the five senses: sight, touch, hearing, and taste, in a therapeutic and meaningful manner, a carefully selection of sensory tools was chosen. Aromatherapy is one of the most effective sensory stimulation methods, hence essential oils with various fragrances were chosen.

For visual stimulation, fibre-optic lights and plasma ball both of which are safe, colour-changing strands that residents can trace with their fingers, enabling visual tracking and exploratory interaction without sensory overload. A colourful wooden puzzle and a handcrafted antique photo album were also selected to increase visual stimulation and provide a sense of accomplishment during the activities. The authors intended to expand on the concept of the vintage album by including straightforward, open-ended questions with each picture (such as, "What memories does this scene bring back?") in the residents' native language, Finnish.

The aim was to help build narrative reconstruction and improve the flow of conversation with the caregiver. It also targets the promotion of social and emotional interactions.

Tactile stimulation was addressed through the inclusion of a massage tool, stress-free balls, a sensory training blanket, a soft teddy bear, and fluffy fleece pillows. These objects were chosen to provide relaxing tactile input while also increasing comfort and interest. Weighted blankets were also included since they have been shown to improve the physical and emotional health of older in long-term care facilities.

For auditory stimulation, a Kalimba instrument which is recognised for its relaxing tones, along with a vintage Finnish music playlist available on YouTube to elicit personal memories. Although the sense of taste was not directly implemented during the setup, the authors introduced the idea of offering a small variety of sweet, salty, bitter, and sour flavours was presented as a possible activity, to allow residents discover and experience different gustatory sensations.
Pictures of items can be found in appendix 3.

Each resident's carer must actively participate in picking the proper tools and customising the activities based on the individual's daily mood and involvement level. From the authors experience, the day-to-day mood pattern and behaviour can vary considerably, as well as personal motivation. It is crucial to find the good balance between suggesting empathetically and being too directive. In case of resident’s blockage, the caregiver must know when and how to stop.

On implementation day, the authors introduced the sensory corner to the unit manager and demonstrated each item individually. A pre-prepared instruction poster was also provided to explain all the guidelines for using the corner. Furthermore, a feedback form was supplied and thoroughly described. Both sides agreed on the monitoring process and the final feedback date.

5 EVALUATION

5.1 Feedback and communication with stakeholders

After each session of using the sensory corner, both residents and caregivers were asked to share their feelings and impressions. Feedback was collected using forms adapted to their cognitive and communication abilities. Residents were given a simple visual feedback form that included a variety of emotional faces (e.g., pleased, neutral, sad) immediately following each session. This method was chosen to accommodate individuals with dementia or other cognitive impairments, allowing them to express their emotions without the need for spoken explanation. Carers were also requested to fill out a small observation form also following each session. They used a positive (+), or negative (-) scale to record reported changes in the residents' mood, aggressiveness, and restlessness level.

Communication with the unit supervisor was maintained throughout the project to ensure that it ran well and that decisions were made collaboratively. After the project plan was approved, additional communications were undertaken with the manager to assure acceptance of the chosen sensory tools and associated expenditures before proceeding. Furthermore, communication assisted in scheduling appropriate times for the sensory corner sessions and allowing staff to receive clear instructions ahead of time. This continual communication helped to foster a cooperative environment, thereby contributing to the project's overall success.

As Wells and Kloppenborg (2015, pp. 101-102) point out, one of the most significant variables in project success is the ongoing involvement of all key stakeholders throughout the process, a premise that was clearly demonstrated in this project.

5.2 Feedback analysis and results

Twenty-two answers were received through the feedback form. Seven sessions happened in the morning with an average of 2,7 senses stimulated. Fifteen happened in the afternoon with an average of three senses stimulated.

The use of the sensory corner resulted mostly (n = 17) in positive and some (n = 5) neutral outcomes from residents. No negative feelings were mentioned by residents after the MSS sessions.

From the caregiver's point of view, most (n =14) sessions gave improvement in the three categories: aggressivity, mood and restlessness. Two sessions showed worsening in the three categories. Five sessions showed mixed results. One was not filled by caregiver and resident was noted in the neutral category. There were 5 negative outcomes with agitation, 3 negatives with aggressivity and mood.

The sensory overstimulation can have a negative impact (Cheng, 2019). One session showed that after stimulating five senses, one resident's aggressivity and agitation worsened. This might be a consequence of sensory overflow. However, research shows that there is individual variability. It means that the caregiver must pay attention to the resident if more than two senses are used and should not hesitate to reduce the sensory load to improve the outcome.

Combination of sight and touch consistently resulted in positive outcomes. Similarly, auditory stimulations, through the use of the kalimba, showed favourable effects in every instance. Also, hearing gives positive results every time by using the kalimba instrument. Theoretical insight highlight that active participation is crucial for effective results. Using the hands provide this active participation. About the smell stimulation, 16 sessions used it and lead to favourable outcomes (n = 13) in agitation and /or aggressivity. It is compatible with the evidence-based results of research concerning aromatherapy.

Taste was used once, maybe because the authors did not provide ready-made tools. The main reason was about storage, and the initiative was left to the caregivers.

According to the written feedback of the provider, the thesis met their needs, was compatible with working life and therefore provided viable solutions for their residents. The provider was satisfied with the tools provided and specially the souvenir album.

5.3 Methodological reflection

While the waterfall method provided a clear and disciplined foundation for moving forward with the project, its linear character often clashed with the realities of a dynamic care setting. The idea that each phase would be completed before the next could begin proved overly optimistic, particularly when unanticipated delays arose, such as the facility remodelling. In fact, certain processes included revisiting previous decisions or incorporating feedback during execution, which differed from the Waterfall model's strictly sequential character. These findings indicate that, for future projects in comparable situations, a more flexible or “agile-like” project management strategy may provide better adaptation while preserving overall direction.

5.4 Resources and risks

The project has been allocated a space in one existing living room (cupboards and table) to implement the sensory corner. The budget given was 200 euros for buying the necessary tools. In addition to the risks identified previously, and despite the effective execution of the sensory corner, the biggest constraint was the budget of 200 euros, of which only 176 euros were spent. Sourcing high-quality sensory objects proved to be challenging. Balancing cost, durability, and therapeutic benefit was difficult, and some material selection compromises were necessary.

Concerning identified risks, the supervisor warned the authors about the risk of choking. One resident with severe dementia tend to eat and swallow everything in sight. The tools that will be used will follow the actual EU norms made for children for choking hazard and toxicity.

Another potential risk was about feedback. The fact that residents have dementia in different stages can affect the result of feedback questions. To avoid this, the authors plan that the personal caregiver (omahoitaja) will ask residents to give a colour/smiley: green, yellow or red in addition to a smiley (expressing smile, neutral smile or sadness) to evaluate the session's outcome. The caregiver also gave feedback on the form with behavioural observations (see appendix 2)

In the context of this project, the SWOT method emphasises numerous essential considerations. The strengths include a clear methodology, stated objectives, and evidence-based background research, all of which helped to reduce the risk of harm to residents. Furthermore, regular contact with the unit supervisor aided safety and planning. Additionally, an unexpected renovation within the facility caused a one-month delay in the implementation timeframe, and impacted the original project schedule, necessitating changes to the planning and implementation phases. These constraints underscore the necessity of flexibility in real-world project situations, implying that future similar projects should include both contingency planning and stronger financial support.

As an opportunity, the project introduced a new, meaningful activity into participants' daily routines, with the option for continued participation beyond the project duration. However, this increased the possibility of decreased carer participation over time due to conflicting duties. Finally, threats included ongoing changes within the Hyvinvointialue organisation, such as potential budget cuts and structural modifications, which could have an influence on staffing levels and care routine consistency.

5.5 Ethics

In Finland, the authority which takes care of ethical issues is The Finnish National Board on Research Integrity (TENK). It provides guidelines regarding the conduct of research in a responsible manner. Current guidelines were issued in 2022. Their aim is to promote “good and responsible research practices and to prevent violations of research integrity in all academic disciplines” (TENK, *2023*).

It is to be noted that certain areas of research have their own ethical board. For example, National Advisory Board on Social Welfare and Health Care Ethics (ETENE).
Ethical principle of research with human participants are mentioned in TENK guidelines. Of utmost importance is that “researcher respects the dignity and autonomy of human research participants”. And research must avoid causing ”significant risks, damage or harm” (TENK, 2020).

To have critical evaluation, open science is needed. Publicity means gathering and making findings available to other researchers. To guaranty openness, “both freedom of science and freedom of expression, and protection of personal data and privacy” are needed (TENK, 2020). Participants must be informed that data will be opened (need for consent).

Anonymity is about protection of participants privacy. As a rule, it is not acceptable to publish data which could allow participants to be recognized (even if consent was given). If it has to happen, “publication of personal data must be founded on case by case basis and its importance to society” (TENK, 2020).

About anonymity, the nursing home facility supervisor mentioned clearly that patients name and identity must remain confidential. The company’s policy specifies that name of place and identification must not be possible. That is why place’s name, configuration, number of patient or anything enabling someone to recognize the unit are not mentioned in this report.

Failure to ask a research permit is a research misconduct, according to TENK guidelines. Therefore, it is a duty for researcher to “acquire required permits, consent agreements and ethical reviews before starting the collection of data” (TENK, *2023*).

Research permit application (tutkimuslupahakemus) had been provided, filled and submitted after acceptance of the thesis plan.

Fabrication, falsification and plagiarism are considered as research misconduct. Fabrication refers to faking observations, data or findings. Falsification is the deliberate manipulation of data. “Cherry picking” and deleting are also a part of it. Plagiarism is the use of one’s work without any authorisation (copyright of original author).
As for plagiarism, we exerted special care to write with our own words and quote when necessary, using reliable sources, Zotero citation tool and Turnitin for final check.

The sensory corner will be used as one of the unit activities. Therefore, each patient must consent to participate in the activity. Autonomy and self-determination are respected in this manner. The omahoitaja cannot force the resident to take part if not willing to. By the same token, the resident cannot be forced to give a positive or negative feedback. Taking that into consideration, we included a neutral opinion about the session (see appendix 1).

Furthermore, the literature retrieved for our thesis showed clearly that, to be beneficial, those sessions must be enjoyable, and whenever focus or interest decline, the activity must be stopped. Which also highlights that respect for autonomy and self-determination are the best ways to provide beneficial results for these interventions.

6 CONCLUSION

Residents in nursing home facility can experience different pathologies, among which dementia, memory loss, cognitive impairment leading to aggressive behaviour, mood changes and restlessness. The subscriber for this project identified those three topics and asked the authors to create a sensory corner in their institutions. A vast body of research exists and was consulted to find the best solutions and options available for optimal results, while respecting the budget constraint given by the subscriber.

Previous studies (Garrido-Pedrosa, 2024), (Cheng, 2019) showed that short, frequent sessions, 20 minutes daily, engaging at least 2 senses, provide better results. Too much stimulation, too long session, or forcing the will of the subject could lead to counterproductive results. Previous project (Machado, 2022) from Brazil provided the authors with inspiration for the choices of tools and arrangement of the corner.

Cost management was integrated by choosing an online sales platform, enabling a variety of tools within the price limit. Implementation was done by describing and giving oral instructions to the manager of the institution, as well as a poster with written instructions for the caregivers. Twenty-two residents experimented the tools with the help of caregivers. The results, coming back through a feedback form, were coherent with the theoretical background. It came out that both residents and caregivers reported the sessions as producing mostly positive outcomes. The few negative notes can be attributed to individual variability.

The subscriber gave excellent satisfaction feedback and praised the author’s work. Purpose and objective were therefore accomplished successfully.

REFERENCES

Alzheimer Society. (2019). Sensory-Stimulation-2019.pdf. https://alzheimer.mb.ca/wp-content/uploads/2019/07/Sensory-Stimulation-2019.pdf?utm_source=chatgpt.com

Alzheimer's Disease Research. (2021, August 11). Current technology for dementia and Alzheimer's disease. https://www.brightfocus.org/resource/current-technology-for-dementia-and-alzheimers-disease/

Alzheimer's Society. (2022, January 20). How can dementia change a person's perception? https://www.alzheimers.org.uk/about-dementia/symptoms-and-diagnosis/how-dementia-changes-perception

Asana. (2024). Guide to Waterfall methodology: Free template & examples. https://asana.com/resources/waterfall-project-management-methodology

Barbic, S. P., Chan, N., Rangi, A., Bradley, J., Pattison, R., Brockmeyer, K., Leznoff, S., Smolski, Y., Toor, G., Bray, B., Leon, A., Jenkins, M., & Mathias, S. (2019). Health provider and service-user experiences of sensory modulation rooms in an acute inpatient psychiatry setting. PLOS ONE, 14(11), e0225238. https://doi.org/10.1371/journal.pone.0225238

BMI Fitch Solutions Group. (2024, September 17). Finland's public health expenditure growth will outpace private sector growth to 2028. https://www.fitchsolutions.com/bmi/healthcare/finlands-public-health-expenditure-growth-will-outpace-private-sector-growth-2028-17-09-2024

Cheng, C. (2019). Use of multisensory stimulation interventions in the treatment of major neurocognitive disorders. Psychiatry and Clinical Psychopharmacology, 29(4), 916–921. https://doi.org/10.1080/24750573.2019.1699738

Cobb, C. G. (2015). The project manager's guide to mastering agile: Principles and practices for an adaptive approach. John Wiley & Sons. http://ebookcentral.proquest.com/lib/samk/detail.action?docID=1895876

NHS. (2023, August 18). Coping with dementia behaviour changes. https://www.nhs.uk/conditions/dementia/living-with-dementia/behaviour/

Dashwood, A. (2024, December 11). Soothing dementia fidget blanket: A comforting companion. https://caregiversupportnetwork.org/practical-support/dementia-care/dementia-fidget-blanket/

Alzheimer's Society. (2021, February 24). Early-stage signs and symptoms of dementia. https://www.alzheimers.org.uk/about-dementia/symptoms-and-diagnosis/how-dementia-progresses/early-stages-dementia

Eiser, A. R. (2017). Why does Finland have the highest dementia mortality rate? Environmental factors may be generalizable. Brain Research, 1671, 14–17. https://doi.org/10.1016/j.brainres.2017.06.032

Finnish Institute for Health and Welfare (THL). (2023, December 18). Ageing policy. https://thl.fi/en/topics/ageing/ageing-policy

Finnish Institute for Health and Welfare (THL). (2024, November 11). Older people services undergoing a change. https://thl.fi/en/topics/ageing/older-people-services-undergoing-a-change

Finnish Institute for Health and Welfare (THL). (2024, October 30). Old-age pension. https://www.tyoelake.fi/en/claim-your-pension/old-age-pension/

Garrido-Pedrosa, J. (2024). Effectiveness of tailored multisensory stimulation intervention in people with major neurocognitive disorder: A quasi-experimental pilot study. Occupational Therapy International, 2024, Article 7223301. https://doi.org/10.1155/2024/7223301

Goodall, G. (2019). The use of virtual and immersive technology in creating personalized multisensory spaces for people living with dementia (SENSE-GARDEN): Protocol for a multisite before-after trial. JMIR Research Protocols, 8(9), e14096. https://doi.org/10.2196/14096

Hjort Telhede, E., Arvidsson, S., Karlsson, S., & Ivarsson, A. (2022). Weighted blankets' effect on the health of older people living in nursing homes. Geriatrics, 7(4), 79. https://doi.org/10.3390/geriatrics7040079

Holdaway, M. (2016, April 11). How one music therapist uses the pentatonic kalimba. https://www.kalimbamagic.com/blog/item/how-one-music-therapist-uses-the-pentatonic-kalimba

Hong, S., Baek, S.-H., Lai, M. K. P., Arumugam, T. V., & Jo, D.-G. (2024). Aging-associated sensory decline and Alzheimer's disease. Molecular Neurodegeneration, 19(1), 93. https://doi.org/10.1186/s13024-024-00776-y

Jakob, A., & Collier, L. (2014). How to make a sensory room for people living with dementia.

Jiang, L., Siriaraya, P., Choi, D., & Kuwahara, N. (2021). A library of old photos supporting conversation of two generations serving reminiscence therapy. Frontiers in Psychology, 12, 704236. https://doi.org/10.3389/fpsyg.2021.704236

Kariuki, J. W. (2019). Quality of life among the elderly in nursing homes (bachelor's thesis). Theseus. http://www.theseus.fi/handle/10024/172508

Kibitok, W. (2022). Depression among the elderly in the elderly care homes (bachelor's thesis). Theseus. http://www.theseus.fi/handle/10024/779638

Machado, B. M. (2022). Use of multisensory stimulation in institutionalized older adults with moderate or severe dementia. Dementia & Neuropsychologia, 16(2), 202–212. https://doi.org/10.1590/1980-5764-dn-2021-0022

Macleod, F., Storey, L., Rushe, T., & McLaughlin, K. (2021). Towards an increased understanding of reminiscence therapy for people with dementia: A narrative analysis. Dementia, 20(4), 1375–1407. https://doi.org/10.1177/1471301220941275

Maharani, A., Dawes, P., Nazroo, J., Tampubolon, G., Pendleton, N., & Sense-Cog WP1 group. (2018). Visual and hearing impairments are associated with cognitive decline in older people. Age and Ageing, 47(4), 575–581. https://doi.org/10.1093/ageing/afy061

Maseda, A., Cibeira, N., Lorenzo-López, L., González-Abraldes, I., Buján, A., de Labra, C., & Millán-Calenti, J. C. (2018). Multisensory stimulation and individualized music sessions on older adults with severe dementia: Effects on mood, behavior, and biomedical parameters. Journal of Alzheimer's Disease, 63(4), 1415–1425. https://doi.org/10.3233/JAD-180109

National Institute on Aging. (2023, January 10). Take care of your senses: The science behind sensory loss and dementia risk. https://www.nia.nih.gov/news/take-care-your-senses-science-behind-sensory-loss-and-dementia-risk

Octary, T., Fajarini, M., Arifin, H., Chen, R., Sung, C.-M., Chang, L.-F., Wang, C.-H., Banda, K. J., & Chou, K.-R. (2025). Multisensory stimulation reduces neuropsychiatric symptoms and enhances cognitive function in older adults with dementia: A meta-analysis of randomized controlled trials. The Journal of Prevention of Alzheimer's Disease, 12(5), Article 100091. https://doi.org/10.1016/j.tjpad.2025.100091

Pouyet, V., Cuvelier, G., Benattar, L., & Giboreau, A. (2015). Influence of flavour enhancement on food liking and consumption in older adults with poor, moderate or high cognitive status. Food Quality and Preference, 44, 119–129. https://doi.org/10.1016/j.foodqual.2015.04.014

Sakamoto, M., Ando, H., & Tsutou, A. (2013). Comparing the effects of different individualized music interventions for elderly individuals with severe dementia. International Psychogeriatrics, 25(5), 775–784. https://doi.org/10.1017/S1041610212002256

Schubert, A., Laurentius, T., Lange, S., Bertram, J., Bollheimer, L. C., Schweiker, M., & Christoforou, R. (2024). Effects of a daylight intervention in the morning on circadian rhythms and sleep in geriatric patients: A randomized crossover trial. European Geriatric Medicine, 16(1), 281–292. https://doi.org/10.1007/s41999-024-01100-z

Šlosar, L. (2023). Environmental enrichment through virtual reality as multi-sensory stimulation to mitigate the negative effects of prolonged bed rest. Frontiers in Aging Neuroscience, 15, Article 1169683. https://doi.org/10.3389/fnagi.2023.1169683

Strøm, B. S., Ytrehus, S., & Grov, E. (2016). Sensory stimulation for persons with dementia: A review of the literature. Journal of Clinical Nursing, 25(13–14), 1805–1834. https://doi.org/10.1111/jocn.13169

Teoli, D., Sanvictores, T., & An, J. (2024). SWOT analysis. In StatPearls. StatPearls Publishing. Viitattu 4.12.2024. https://www.ncbi.nlm.nih.gov/books/NBK537302/

TENK. (2022). Ethical_review_in_human_sciences_2020.pdf [PDF-dokumentti]. Viitattu 29.11.2024. https://tenk.fi/sites/default/files/2021-01/Ethical_review_in_human_sciences_2020.pdf

TENK. (2023). The Finnish code of conduct for research integrity and procedures for handling alleged violations of research integrity in Finland [PDF-verkkoraportti].

Ting, B., Chen, D. T.-L., Hsu, W.-T., Liang, C.-S., Malau, I. A., Li, W.-C., Lee, S.-L., Jingling, L., & Su, K.-P. (2023). Does music intervention improve anxiety in dementia patients? A systematic review and meta-analysis. Journal of Clinical Medicine, 12(17), 5497. https://doi.org/10.3390/jcm12175497

Ting, Y.-Y., Tien, Y., & Huang, H.-P. (2023). Effects of aromatherapy on agitation in patients with dementia in the community: A quasi-experimental study. Geriatric Nursing, 51, 422–428. https://doi.org/10.1016/j.gerinurse.2023.04.010

Wells, K. N., & Kloppenborg, T. (2015). Project management essentials. Business Expert Press. Viitattu 27.11.2024. http://ebookcentral.proquest.com/lib/samk/detail.action?docID=4009424

Zhao, H., Gu, W., & Zhang, M. (2020). Massage therapy in nursing as non-pharmacological intervention to control agitation and stress in patients with dementia. Alternative Therapies in Health and Medicine, 26(6), 29–33.

APPENDIX 1

Keywords and database search

Data-base/search service	Explanatory note and delimitation	Results	Ac-cepted
Pub Med	(“sensory room” OR “multisensory”) AND “elderly”	644	7
Pub Med	“Sensory room” AND “elderly”	6	1
Google scholar	Sensory room for elderly	9790	2
Cochrane	Sensory room elderly	46	1

APPENDIX 2

Feedback form

Päivämäärä Ja (Aamu/Ilta)	Hoitaja merkitsee **(X)** valittujen aistien kohdalle.					**Asiakas** Miltä sinusta tuntuu tämän hetken jälkeen**?**			**Hoitaja** Vaikuttiko aistikulma asiakkaaseen**?** (**+= hyvä** vaikutus / **- =ei** vaikutusta tai **huono** vaikutus)		
									Aggressi-ivisuus **+/-**	Mielialaa **+/-**	Levotto-muus **+/-**

Huom

+ hyvä vaikutus(**Vähemmän aggressiivistuutta, Parempi mieliala, Vähemmän levottomuutta**)

– Huono vaikutus **/ Ei** vaikutus

APPENDIX 3

List of sensory tools:

- Aromatherapy kit
- Fibre optic light
- Kalimba music instrument
- Sensory touch book
- Massage tool
- Teddy bear
- Plush cushions
- Fidget blanket
- Plasma ball
- Color wooden puzzle
- Stress ball
- Sensory touch bracelet
- Memory book