



**TRANSCULTURAL NURSING APPROACH IN DESIGNING THE
MULTISENSORY ROOM FOR OLDER ADULTS: SENSORY UTILITIES AND
ACTIVITY EXPLORATION**

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ABSTRACT

Multisensory space applies sensory stimulation that helps train cognitive and motor functions through elements that stimulate the senses in the elderly. This concept is identified for people with moderate to severe cognitive decline and neurodegenerative pathologies. Aim: This study aimed to identify sensory utilities and activities in designing a multisensory space with a transcultural nursing approach. Methods: Researchers collected data qualitatively using the Focus Group Discussion (FGD) technique to explore elements related to the function of the multisensory space. The FGD also identified transcultural nursing aspects that could be applied to the room concept. The FGD involved five participants selected according to the research objectives to explore the needs and activities of multisensory stimulation for the elderly. The FGD was conducted for two hours. Participants were the health service officer, geriatric nurses, one Alzheimer's dementia activist, one architect, and one cultural figures. The results of the FGD were analyzed using the Colaizzi method approach by transcribing data from the FGD results, reading the FGD transcripts several times, and analyzing themes using Atlas.ti. Transcripts and meaningful statements were returned to participants to form categories, subthemes, and themes. Results: The themes analyzed were related to elements in the multisensory room which included both equipment and activities that supported sensory stimulation. Discussion: The identification of spatial elements and research partners in the development of multisensory space design supports the fulfillment of the needs of applicable and innovative elderly health services, especially in applying the concept of transcultural nursing for multisensory rooms for the elderly Conclusion: Cultural considerations play a significant role in the effectiveness of sensory elements, as sensory experiences that resonate with an individual's cultural background can evoke positive emotions and memories.

Keywords: multisensory; older adults; transcultural nursing

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INTRODUCTION

The global elderly population continues to grow significantly, and this increase in life expectancy presents new challenges in healthcare, particularly in meeting their sensory and cultural needs in care environments (Crews, 2022; Kemenkes, 2019). One increasingly recognized method to support the well-being of older adults is the use of multisensory rooms. These rooms are designed to stimulate the senses by incorporating elements like light, sound, texture, and aroma, which have been shown to help soothe and improve the quality of life for elderly individuals, especially those with dementia or other cognitive impairments (Carvalho et al., 2024; F A M Mendrofa, 2023). However, there is an urgent need to ensure that these multisensory rooms are designed with cultural considerations in mind so that the interventions provided align with the cultural backgrounds of the elderly.

A transcultural nursing approach is highly relevant in designing multisensory rooms for the elderly, as it focuses on recognizing and understanding cultural differences in healthcare (Nuuyoma et al., 2024; Shahzad et al., 2021). Madeleine Leininger's theory of transcultural nursing emphasizes the importance of understanding the cultural values, beliefs, and practices of patients to provide comprehensive, culturally congruent care (Fabry et al., 2024). In the context of multisensory rooms, this approach requires a deep understanding of patients' cultural preferences when designing sensory elements such as music, lighting, and aroma. Integrating culture into the design of multisensory rooms can not only increase patient comfort but also help create a more meaningful and emotionally relevant experience (Banerjee et al., 2024; Shahzad et al., 2021; You & Cho, 2023).

Various studies indicate that multisensory rooms have great potential to enhance the mental and emotional health of elderly individuals; however, these interventions may not be optimal without adequate cultural adaptation (Jitsuhara et al., 2024). Elderly individuals from different cultural backgrounds may respond differently to sensory stimulation, and elements such as traditional music or culturally familiar aromas can provide deep comfort and reduce stress (de Matos et al., 2025; Safaee & Brodruck, 2023). Moreover, activities designed for multisensory rooms can be tailored to cultural preferences, for example, by using objects or images that hold symbolic meaning for patients. Thus, designing multisensory rooms that apply a transcultural nursing approach can offer interventions that are more culturally appropriate and effective for elderly people from diverse backgrounds.

By applying a transcultural nursing approach, multisensory room designs can focus more on the specific needs of elderly communities, both in terms of sensory stimulation and the activities offered (Purnell, 2014). This is essential, as culturally meaningful sensory experiences can strengthen self-identity, foster a sense of connection, and enrich the quality of life for those in long-term care facilities (Hunter, 2024). Therefore, this study has the potential to enrich nursing practice and create a more inclusive and supportive environment for a culturally diverse elderly population. This study aimed to identify sensory utilities and activities with the transcultural nursing perspective in designing multisensory rooms for elderly.

METHOD

Study design

This study used a descriptive qualitative approach to identify elements of a multisensory environment. This approach is considered suitable as a qualitative approach to explore the utilities and activities that provide multisensory stimulation into an individual perspective. Focus group discussions (FGD) were held to explore ideas among participants based on deeper insights and a comprehensive understanding of participants' experiences, both in caring as professionals and as families or caregivers. The primary ethics approval provided by University of Karya Husada Semarang from the university ethics committees Number 329/KEP/UNKAHA/SLE/VII/2023. Credibility, reliability, confirmability, and transferability were all aspects of data trustworthiness (Polit & Beck, 2014).

Data collection and analysis

The FGDs involved a nurse, two caregivers, an architect, a health officer, and a Javanese culturalist. All the participants signed the informed consent form that were available one day before the discussion inquiring their interest in taking part in the study. The purpose of the study was explained to the participants, who were also assured of complete anonymity. The format of the FGDs guide was created during the study. Open-ended questions were the background of the FGDs, which lasted for 120 minutes. Most of the FGDs were delivered in

Indonesian. The recordings of the FGD results were transcribed and then read repeatedly carefully so that the author could find themes in the manuscripts. The author analyzed qualitatively inductively to organize and code the topics found. The codes were then re-examined based on categories for the frequency of recurring patterns in all manuscripts. The themes and quotations were translated from Indonesian to English. Analysis of the FGDs data used ATLAS.ti software version 23.

RESULT

Descriptive characteristic

This forum group discussion was facilitated by two experts from academy, and enrolled by one health department officer, one geriatric nurse expert, one Javanese cultural expert, one representative of the elderly health observer association as well as elderly caregiver, and one architect. The background characteristics of the experts is given in Table 1.

Table 1.
Background information of experts

Participants	Background
P1	Activist in Dementia Care, caregiver: Yayasan Alzheimer’s Indonesia chapter Semarang
P2	Nurse: Central General Hospital of Dr. Kariadi Semarang
P3	Health Service Officer: Health Department of Semarang City
P4	Culturalist
P5	Architect Consultant

Stimulation Activities in Multisensory Stimulation

Results from the data analysis are presented without providing theoretical interpretation. The information described will be discussed in more detail in the discussion section to better understand the elements which include stimulation activities (Figure 1) and sensory stimulation (Figure 2) needed in multisensory stimulation for the elderly.

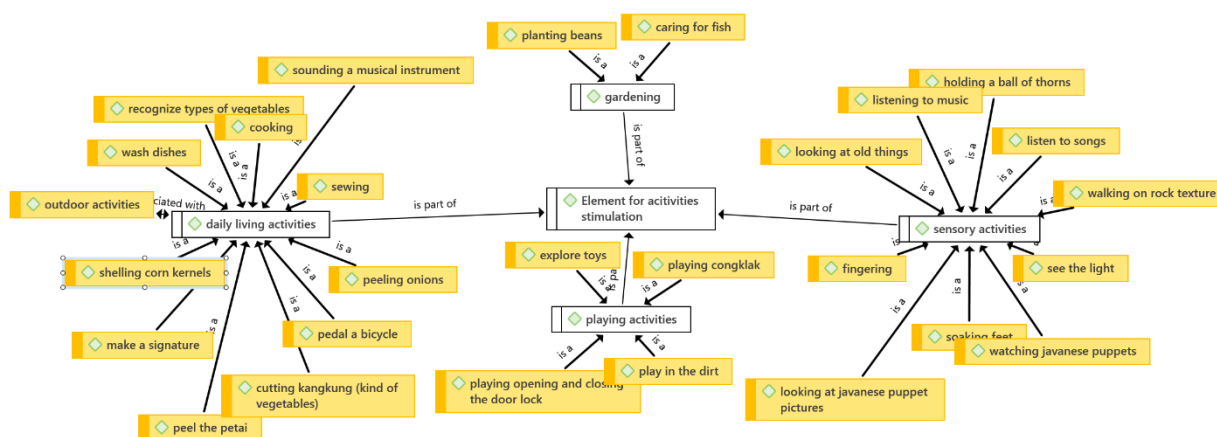


Figure 1. Stimulation Activities in Multisensory Stimulation

The themes that emerged from the qualitative analysis are presented in the model below in Figure 1 and 2. This result shows a study of the need for designing multisensory spaces for the elderly by paying attention to various aspects that are directly related to the elderly and their families or caregivers. The elements for building multisensory rooms for the elderly can be understood from the statements delivered by the FGD participants, which include elements for activities stimulation that include gardening, sensory activities, daily living activities,

playing activities.

"There are elderly people who still like going to church, and they still like cooking. Then there are also those who still like cooking. So their toy is picking water spinach." (P1, P4)

"So the game is to recognize types of vegetables. Meanwhile, Melly's mother is still rolling her hair." (P1)

"they do what used to be their daily activities." (P1,P2,P3,P4, P5)

"don't let the elderly be unemployed, don't let them not think anything" (P4, P5)

"his activity is ripping corn.... Even until she get hurt their hand, but she just enjoys it" (P4)

"I usually play wayang on my cellphone and she loved it" (P4)

Sensory Utilities in Multisensory Stimulation

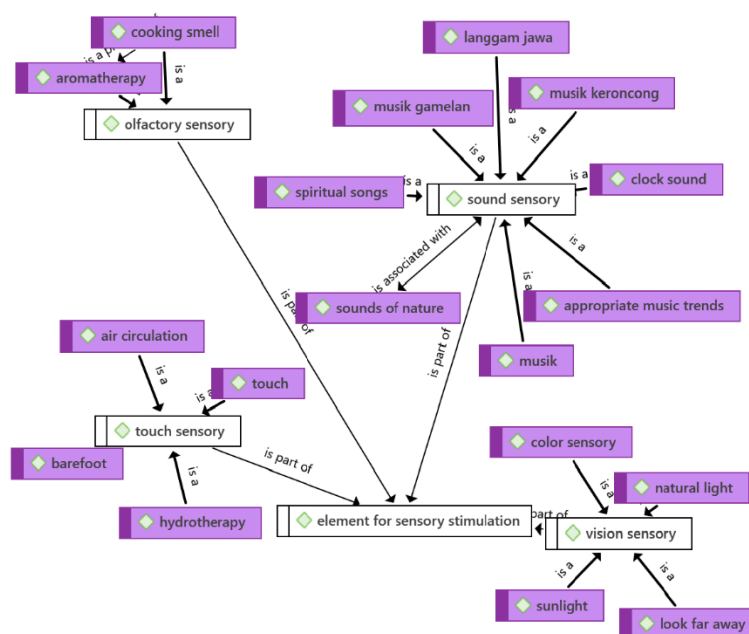


Figure 2. Sensory Utilities in Multisensory Stimulation

The elements for sensory stimulation including sound sensory, vision sensory, olfactory sensory, light stimulation, touch; physical space; and physical objects, each of which has items that can be recommended.

"If we look at antiques, sometimes the old people like it" (P3)

"we use the principle of Javanese culture by playing gamelan music" (P4)

"The dining area uses old accessories, petromax lamps, that also brings back their memories" (P3)

DISCUSSION

Multisensory Stimulation for the Elderly

Multisensory stimulation has shown promising results in improving various aspects of elderly care, particularly for those with dementia and other neurocognitive disorders. The stimulation can help manage behavioral and psychological symptoms of dementia, such as agitation, aggression, and mood disturbances (Fery A.M. Mendrofa et al., 2020). Studies have shown significant improvements in behavior and mood in elderly patients with moderate to severe dementia. While the primary focus has been on behavioral outcomes, some studies have noted cognitive benefits. For instance, multisensory stimulation has been associated with improvements in cognitive function and sustained attention. However, more research is needed to confirm long-term cognitive benefits. Multisensory stimulation also has been linked to reductions in heart rate and diastolic blood pressure, indicating a calming effect on participants. This suggests potential benefits for overall cardiovascular health (Carvalho et al., 2024).

Multisensory stimulation has been compared with other activities, showing superior outcomes in managing neuropsychiatric symptoms and dementia severity (Bento Miguel Machado & Castro, 2022). In conclusion, multisensory stimulation is a valuable non-pharmacological intervention for elderly individuals, particularly those with dementia, offering benefits in behavior, mood, and potentially cognition. Further research is needed to explore its long-term effects and optimize its implementation in various cultural contexts.

Elements for Multisensory Stimulation Activities

The study reveals that carefully designed activities in multisensory rooms play a crucial role in addressing the specific physical and psychological needs of elderly users. Activities such as gardening, daily living skills practice, and playful engagements were consistently mentioned by participants, emphasizing the need for functional yet enjoyable activities that encourage movement, cognitive engagement, and social interaction. These findings align with existing research showing that activities tailored to an individual's interests and abilities can improve mood, increase activity levels, and reduce stress among older adults (Gómez-Soria et al., 2023). Engaging the elderly in these activities within the multisensory room offers dual benefits: it supports physical health through gentle movement and stimulates mental engagement by offering a sense of purpose and achievement. Another important consideration is the cultural relevance of these activities, as transcultural nursing principles suggest that care should honor the unique values, traditions, and preferences of each individual (Nies & McEwen, 2015). For instance, gardening activities can be adapted to reflect culturally specific plants, flowers, or gardening tools, allowing elderly individuals to feel a deeper connection to their past experiences and cultural identity. Including culturally familiar activities may also encourage family involvement, as relatives may feel more comfortable and motivated to join sessions, thus enriching the experience for the elderly. Additionally, these familiar activities can help reduce anxiety and create a sense of belonging, as they provide opportunities for elderly individuals to interact with objects and actions that resonate with their backgrounds (Handley et al., 2015; Leung et al., 2019).

Elements for Multisensory Stimulation Sensories

The findings also underline the importance of thoughtfully selected sensory elements in the design of multisensory rooms. Key sensory components—such as sound, lighting, olfactory, and tactile elements—emerged as essential for creating a therapeutic environment that meets the sensory needs of elderly individuals. The sensory elements were carefully chosen to support relaxation, stimulate positive memories, and encourage engagement without overwhelming the senses, a critical aspect for individuals with cognitive or sensory

impairments. For instance, sound elements might include soothing background music or nature sounds that can promote a sense of calm, while adjustable lighting allows for the creation of either energizing or relaxing atmospheres depending on the desired outcome of the session. Cultural considerations again play a significant role in the effectiveness of sensory elements, as sensory experiences that resonate with an individual's cultural background can evoke positive emotions and memories. Using olfactory elements such as traditional scents familiar to the elderly, or visual stimuli that reflect culturally significant colors or symbols, can deepen the sensory experience and reinforce personal identity (Sun et al., 2021). Furthermore, tactile elements such as textiles with traditional patterns or familiar materials encourage tactile engagement, creating a more immersive and comforting experience. This approach aligns with transcultural nursing principles by respecting the personal and cultural histories of elderly individuals, ultimately enhancing the therapeutic impact of the multisensory environment.

Transcultural Nursing in Multisensory Stimulation for Older Adults

Transcultural nursing in multisensory stimulation for older adults involves integrating cultural elements into sensory environments to enhance cognitive and motor functions, particularly for those with neurodegenerative conditions. A study focused on designing a multisensory room with Javanese cultural elements to cater to older adults' sensory needs, highlighting the importance of cultural relevance in therapeutic environments (F A M Mendrofa, 2023). Multisensory stimulation programs have shown to manage behavioral and psychological symptoms of dementia, such as reducing agitation and improving mood and engagement in older adults (Carvalho et al., 2024; Duchi et al., 2019; B M Machado, 2022). This stimulation can enhance cognitive functions and motor skills, with specific sensory stimuli like color stairs, fiber optic showers, and sound therapy proving beneficial (Duchi et al., 2019). Positive effects on biomedical parameters, such as reduced heart rate and blood pressure, have been observed in older adults undergoing MSS (B M Machado, 2022). Furthermore, multisensory stimulation has been effective in reducing depression and anxiety among nursing home residents, contributing to overall emotional well-being (Moghaddasifar et al., 2019).

Regarding the cultural approach in the therapy, incorporating cultural elements into multisensory stimulation can make the therapy more effective and personalized (F A M Mendrofa, 2023). Designing multisensory stimulation environments that incorporate cultural elements, such as those tailored to Javanese culture, can enhance the effectiveness and relevance of the intervention for specific populations (F A M Mendrofa, 2023). Utilizing specialized rooms equipped with various sensory stimuli tailored to the cultural and sensory preferences of older adults (Duchi et al., 2019)(Santos et al., 2019). This therapy offers a non-pharmacological method to manage neuropsychiatric symptoms, providing a holistic approach to care. In conclusion, integrating cultural competence into MSS for older adults can significantly enhance the effectiveness of these interventions, addressing both cognitive and emotional needs in a culturally sensitive manner. Transcultural nursing in the context of multisensory stimulation for older adults involves several key principles and considerations, as well as challenges and opportunities in healthcare settings. A study aimed at developing a multisensory room tailored with a Javanese cultural approach for older adults highlighted the importance of incorporating cultural elements into the design of multisensory spaces. Cultural considerations are essential in the implementation of multisensory stimulation for older adults, as evidenced by a study conducted in Iran, which demonstrated the positive impact of multisensory stimulation on depression and anxiety in elderly nursing home residents (Goldstein et al., 2023; Kucirkova & Kamola, 2022; Shahzad et al., 2021).

The effectiveness of multisensory stimulation in managing short-term behavior in elderly individuals with moderate to severe dementia has been demonstrated, emphasizing the importance of cultural competence in care delivery. The implementation of Snoezelen, or multisensory stimulation, has been shown to positively impact the quality of nursing assistants' behavior during care, indicating the potential for cultural and sensory integration in care practices (Carvalho et al., 2024; B M Machado & Castro, 2022; Tsai, 2023).

CONCLUSION

Multisensory stimulation programs have been found to help manage behavioral and psychological symptoms of dementia, leading to improvements in behavioral changes, cognition, and physiological parameters in older adults with moderate and severe dementia. The implementation of multisensory stimulation, such as the Snoezelen approach, has been shown to reduce aggressiveness patterns, improve functional abilities, and enhance attention in older adults with neurodegenerative diseases and cognitive impairment. Multisensory stimulation has been associated with long-term positive effects on neuropsychiatric symptoms in older people with dementia, particularly in managing behavioral symptoms such as agitation. Challenges in transcultural nursing experiences include exposure to different cultural practices and beliefs, personal feelings, and coping mechanisms, which are important for nurse educators and clinical mentors to understand and address (Nuuyoma et al., 2024). The application of memory stimulation programs involving multisensory stimulation has been recognized as a dynamic approach to improving cognitive health in older adults, highlighting the potential for innovative care practices in healthcare settings (Simbaña, 2023).

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