

Accessible Multisensory Garden and Its Impact on Quality of Life among Elderly Residents of USJ6

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ABSTRACT

Designing a space with health considerations for individuals involves a holistic approach aimed at enhancing overall well-being. Multisensory gardens are specially designed to appeal to the senses of sight, smell, touch, taste, and hearing in order to provide an engaging and restorative environment for individuals with different capacities. An accessible multisensory garden's design prioritizes usability and accessibility for all individuals, including those with impairments. The features of accessible multisensory gardens can greatly influence the quality of life among the residents of a community, especially the elderly. In order to study the impact of the establishment of an accessible multisensory garden, a cross-sectional study was conducted to explore how people of USJ6, Selangor, Malaysia, are able to improve their quality of life. A total of 48 retired elderly people took part in the study. The findings show that quality of life has significant positive associations with usage accessibility ($r = 0.342$, $p = 0.017$), movement accessibility ($r = 0.361$, $p = 0.012$), multisensory experiences ($r = 0.460$, $p = 0.001$), and social engagement ($r = 0.366$, $p = 0.011$). Stepwise multiple linear regression identified multisensory experiences and usage accessibility as significant predictors of quality of life, explaining 26.3% of the variance. The findings underscore the importance of accessible multisensory gardens in enhancing the well-being of community residents. The study, which demonstrates the good influence of these gardens on physical, emotional, and social well-being, is useful for urban planners, healthcare practitioners, and community organisers.

It emphasises the potential of such gardens to promote inclusive, healthy, and dynamic communities, and advocates for their widespread implementation in both urban and suburban contexts.

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INTRODUCTION

Designing spaces that prioritise health involves creating environments that foster holistic and sensory-rich experiences, which is crucial for overall well-being. In many communities, public spaces such as parks and gardens play a vital role in promoting health by encouraging physical activity and providing opportunities for relaxation and socialization (Cohen et al., 2007). Among these, the multisensory gardens are a specialized environment designed to be particularly therapeutic and engaging. Research has consistently shown that access to natural environments is linked to reduced depression, anxiety, and stress, highlighting the therapeutic value of “nature therapy” in enhancing mental health (Bratman et al., 2015; Mitchell & Popham, 2008).

The concept of an accessible multisensory garden takes this further by prioritizing usability for everyone, including individuals with physical or sensory impairments. Among these natural settings, multisensory gardens are designed to engage all five senses: sight, smell, touch, taste, and hearing, creating a restorative environment that benefits individuals with varying abilities, particularly older adults (Souter-Brown et al., 2014). For elderly residents, such features can profoundly influence their quality of life by providing a safe and stimulating space that fosters physical, emotional, and social well-being. These gardens have been shown to improve quality of life and support independence in elderly populations (Souter-Brown et al., 2021). While the benefits of sensory gardens are recognized, particularly for specialized populations like those with dementia, it is essential to understand which specific design elements most effectively contribute to the well-being of the broader elderly population in a community setting.

Therefore, this study aims to address the issue by exploring the impact of an accessible multisensory garden on the quality of life of retired elderly residents in USJ6, Selangor, Malaysia. Using a cross-sectional research design, this study will not only assess the overall impact but also identify the key garden features such as accessibility, sensory experiences, and opportunities for social engagement that are most significant predictors of an enhanced quality of life.

METHODOLOGY

A cross-sectional research design is employed to investigate the relationship between the features of the accessible multisensory garden and quality of life. The study was conducted in the community of USJ6, Selangor, Malaysia. The sample consists of 48 retired elderly residents from USJ6 who participated in the community garden activities.

Data were gathered through a structured questionnaire administered to the participants. The instrument was designed to collect information on several key areas, including aspects of the garden’s usage and movement accessibility, multisensory experiences, structural and tool safety features, and social engagement.

The collected data were subject to several statistical procedures. First, a factor analysis using Principal Component Analysis (PCA) with a Varimax rotation was conducted to group questionnaire items with similar characteristics. The suitability of the data for factor analysis was confirmed through two tests: the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, which was 0.752, and Bartlett’s test of sphericity, which was significant ($\chi^2 = 234.076$, $p < 0.001$).

Next, to assess the relationship between garden features and quality of life, Spearman’s correlation was used, as some variables were not normally distributed. Finally, a stepwise multiple linear regression was performed to identify the most significant predictors of quality of life among the variables studied.

RESULTS AND DISCUSSION

The statistical analysis yielded several key findings regarding the relationship between the accessible multisensory garden’s features and the residents’ quality of life.

Spearman correlation analysis revealed that quality of life had significant positive associations with most of the garden features studied. The results showed that the strongest correlation was with multisensory experiences ($r = 0.460$, $p = 0.001$), as shown in Table 1. Other significant positive correlations included social engagement ($r = 0.366$, $p = 0.011$), movement accessibility ($r = 0.361$, $p = 0.012$), usage accessibility ($r = 0.342$, $p = 0.017$), and structural safety ($r = 0.328$, $p = 0.023$). Tool system safety was the only variable that did not have a statistically significant association with quality of life.

Table 1
Spearman’s correlation coefficients

Variables		r	df	p-value
Quality of Life	Usage Accessibility	0.342	48	0.017
	Movement Accessibility	0.361	48	0.012
	Multisensory	0.460	48	0.001
	Structural Safety	0.328	48	0.023
	Tool System Safety	0.202	48	0.168
	Social Engagement	0.366	48	0.011

A stepwise multiple linear regression was performed to identify the most significant predictors of quality of life. The results for the predictive model are shown in Table 2. The analysis identified multisensory experiences and movement accessibility as key predictors of quality of life. This final model explained 26.3% of the variance in quality of life (adjusted $R^2=0.230$). The regression model met all key assumptions, including normality, linearity, and homoscedasticity.

Table 2
Significant predictors of quality of life from the stepwise regression model

Model	Adjusted R Squared	Variable	p-value
Stepwise	0.230	Multisensory	0.006
		Movement Accessibility	0.027

This study shows that the accessible multisensory garden at USJ6 positively affects the quality of life for its elderly residents. The main finding is that, although several features are important, multisensory experiences and movement accessibility are the most influential factors for well-being. This suggests that for seniors, the garden’s therapeutic benefits depend more on its ability to engage the senses and support safe, independent movement than on its physical design. The role of sensory engagement supports the idea that such activities boost cognitive and emotional health, while easy movement encourages physical activity and independence.

These findings hold practical significance for various professionals. Urban planners and community organizers can utilize this evidence to prioritise barrier-free pathways and develop lush, sensory-rich planting and design schemes, thus enhancing the health benefits of community green spaces. For healthcare providers, recommending time in these gardens provides a non-drug approach to improve the physical and emotional well-being of older adults.

It is important to recognise the limitations of this research. The cross-sectional approach offers a snapshot of associations but cannot prove cause-and-effect relationships. Additionally, with only 48 participants from a single location, the results’ applicability to broader populations is restricted. Future studies should consider longitudinal designs to observe changes in quality of life over time and include larger, more varied samples from various urban and suburban areas to confirm these findings. Nonetheless, despite these constraints, this research strongly supports the widespread adoption of accessible multisensory gardens as a means to foster inclusive, healthy, and vibrant communities.

CONCLUSION

This study examined how an accessible multisensory garden affects the quality of life among elderly residents of USJ6. The results show that the garden positively influenced their well-being, with multisensory experiences and ease of movement being the key factors driving this improvement. These findings emphasise the important role such gardens can play in creating inclusive, engaging, and health-promoting spaces, especially for seniors. Overall, the study strongly supports expanding the use of accessible multisensory gardens in urban and suburban areas as a practical way to boost community well-being.

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