



# Improving the Quality of Life of Elderly with Intellectual Disability: A Literature Review on Environment and Care



**Elizabeth Wiese\***

*University College Roosevelt, Netherlands*

**\*Corresponding author:** Elizabeth Wiese, University College Roosevelt, Lange Noordstraat, Netherlands

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## Introduction

Quality of life (QoL) is a wide-ranging construct, applied to measure the wellbeing of specific Individual situations, as well as groups and society [1]. QoL can be defined “as an individual’s evaluation of their overall life experience (their situation, experiences, states and perceptions) at a given time” [2]. Although the concept was implemented in several fields, it lacks studies into the QoL of elderly individuals with intellectual disabilities (ID). Individuals with ID may be amongst the most vulnerable people in society, due to the complexity of physical, behavioural, and emotional issues [3]. As more people with ID live into old age, major neuro cognitive disorders (APA, 2013), including dementia, occur more frequently, bringing important health care challenges [4]. A large research conducted by [5]. Indicated that the incidence of dementia in ID elderly was up to five times higher than in the general population, In elderly ID individuals, psychosocial, cognitive, sensory, and neuromuscular impairments, are very prevalent [6]. The aim of this literature review is to identify broad aspects of environment and care that can positively influence the QoL of elderly with ID, often in co morbidity with dementia. The investigated aspects were related to: living environment; attitude and engagement of staff; work processes of coaching and organisation; and methods of intervention. The focus of the review was placed upon clients being treated at residential facilities, with the aim of advising care providers to investigate and implement promising findings improving the QoL of elderly with ID.

## Method

A search was conducted in the academic engines Scopus, PubMed, WebCat, PsychINFO, PsychNET and Google Scholar. Several keywords - such as sound, colour, light, environment, home likeness, staff education, training, coaching, care, communication, relationship, nursing home, occupational therapy, diet, food, music therapy, animal-assisted intervention, animal assisted therapy, and cognitive stimulation therapy - were cross-searched with quality of life, social, emotional and cognitive well-being, intellectual disability, elderly, neuro cognitive disorder, and dementia. Relevant

articles, mostly from peer improving QoL of elderly with id and dementia 2 reviewed journals, were selected based on titles, abstracts and publication date, giving priority to recent articles.

## Living environment

Environmental factors play an important role in enhancing or reducing the QoL of elderly with ID. Several indications arise from the literature review on QoL of elderly with ID in response to environmental stimuli. The specific factors that were investigated, in relation to the environmental atmosphere comprised: sound, and interior design, such as colour, light and homelike environment.

Noise and auditory stimulation are leading problems in residential care facilities, where a calm Environment with low level of noise may bring benefits. In care homes for elderly, the noise level guidelines are regularly exceeded determining individuals’ unpleasantness as the frequency of sound levels is raised (Lin et al. 2014), specially background noise (from machinery/equipment), A study by [7]. Associated excessive noise in residential settings with agitation, fear, poor sleep, distraction and reduced ability to perform tasks. Research [8], has shown that even relatively low noise levels (40/50 dB) can significantly worsen the QoL of that population. For ID clients, unanticipated stimuli, abrupt and loud noises and constant sensory auditory and visual stimuli can be disturbing [9]. In relation to environment, a homely and peaceful atmosphere cares about interior design, a study by [10]. Indicated that patients with more severe ID often have low vision, and the colours used in the environment could change the effects of light bringing locomotion difficulties. The inability to clearly recognise aspects in the environment also may lead patients to feel disorientated [11], Indicated that using oak flooring and cream walls, as well as the presence and tactile objects, had a positive effect in increasing the elderly individuals’ interaction with their surroundings. Additionally, staff and patients appeared to like pale yellow and pale blue as colour schemes, and having frames and doors in contrasting colours aided their accessibility and spatial awareness. Moreover, the improvement of illumination may be

successful, as low light levels were correlated with negative mood and increased disorientation [10-12]. Found that, improving QoL of elderly with id and dementia 3 patients in Alzheimer's early-stage, who lived at home and were still active, had their daily reception of high-intensity light about half of that of the control participants. Receiving low intensity light also positively correlated with reported sleep problems. As the study by [13], Indicated, low lighting levels might be responsible for poor sleeping and, in turn, the progression of dementia, suggesting the importance of everyday light intensity.

Research findings have suggested that general environmental features have an impact on elderly with ID. The research by [14], Emphasised the importance of homelike residences, characterised by small scale, resident autonomy, and normalisation of daily life routines, through high level of natural social interaction between residents, staff, and family members. These characteristics could encourage autonomy and higher engagement in activities promoting cognitive and physical benefits. The most frequently mentioned benefit of homelike residences is the enhancement of social wellbeing. A large-scale literature review by [15], suggested that ID patients in small-scale environments had significantly more friends and more frequent family contacts, which were highly associated with social wellbeing and inclusion and community involvement. Regarding wellbeing, studies by [16,17]. assessed the environment and the amount of psychotropic drugs administered to dementia patients' in a residential care facility, indicating that patients in homelike environments had better physical condition, scoring significantly higher on functional status and cognitive performance [16], needing less psychotropic's and experiencing less pain [17]. Finally, [14] concluded that homelike environments could lead to higher emotional contentment in patients with ID, as they profit from more personal interaction with the staff, co-residents, and family members. This, in turn, tended to make ID patients' lives more meaningful, as they felt cared about by others.

### Attitude and engagement of staff

The impact of staff training indicated that education and communication were the main areas that could lead to improvement of QoL for elderly with dementia. Additionally, the levels of confidence among Improving QoL of elderly with id and dementia 4 staff also correlated with perceived QoL [18]. Staff members become more confident and improve their ability to make decisions about care [19-20]. Summed up, "it's a question of information, communication and collaboration" [21], in working individuals with ID [22], studied the expectations of staff behaviour, pointing out that the quality of the relationships was generally considered insufficient, because of the task-focused attitudes of the staff, instead of the focus on interpersonal qualities, friendly attitudes, and normal social communication. [23] Investigated the training needs of direct support and management staff working with ID elderly, concluding that QoL management and person-centred planning (adjusting goals and activities to the client) were the most important considerations [24], Suggested that support needs are affected by the individual's ability and the expectations of others. Person-centred planning, active staff behaviour, and living relatively independently were found to be important for improving

QoL. Staff could receive incentives, education, and good facilities. Communication difficulties and hearing loss in individuals with ID could also negatively influence communication. Communication between staff and individuals with ID was found to be generally low, with around 45% of the communication falling outside of the reported understanding level of patients, often with its complexity not adjusted to the patient's understanding. Besides, the patients' hearing loss was estimated by staff members as less prevalent, which could influence negatively the adjustment of their interaction. In general, it was recommended to address staff perception of communication abilities of patients and their adaptation to the patients' limitations [25]. As better communication, education and training of staff are key factors in improving care for elderly with ID, handing out information booklets (to staff and family) could improve it [26].

### Processes of coaching and organisation

People with ID should keep themselves busy with activities they deem important and meaningful [27], but this population may need guidance (e.g. cooking, engaging in hobbies, etc.), as they often encounter more challenges than the general population [28]. In their study about leisure time for improving QoL of elderly with id and dementia 5 elderly with ID, [29] have shown the importance of perception. Leisure was defined as "the opportunity to freely engage in intrinsically meaningful activities of one's own choosing" (p. 122), indicating that the activities should be categorised as meaningful by the individuals themselves. The researchers found that nurses and family members often engage in infantilising elderly with ID, depriving them from gaining self-determination and making their own decisions, what could optimise their QoL. Focusing on the context in which people with ID engage in activities, research by [30] did not find that substantial differences between activities done in cooperation with people with or without ID. Examining the context [31], Indicated in their study that "active support" from the people taking care of these individuals, could have a positive influence on their engagement in what they deem meaningful activities. Active support was defined as "an approach that consistently and frequently offers service users opportunities to take part in age-appropriate activities at home and in the community, building on and extending their skills and preferences" (p. 344). Research has indicated that, in nursing homes, the implementation of active staff support over a period of three years, significantly enhanced engagement in social activities, comparing to nursing homes that did not provide that support, although the improvements in adaptive behaviour were modest [32]. Nevertheless, the study pointed out that the implementation of active support might face some difficulties, since staffs has to be willing to participate and the focus might be on reporting the changes. As an illustration of the importance of the perception of the activity of elderly with ID, [33] observed that they tended to engage in very little physical activity, even though exercise would be highly beneficial. It is therefore important, not to lose sight of what the elderly deem meaningful activities, and have careful consideration of what aspects of this population's lives are target by caregivers in the improvement of QoL.

## Methods of intervention

The methods of intervention to improve the QoL of ID elderly are various and related to completely Different aspects. In this literature research the focus was given to the following: nutrition, bright light therapy, occupational therapy, music therapy, animal assisted intervention and cognitive stimulation therapy. Improving QoL of elderly with id and dementia 6

### Nutrition

In relation to dietary care, in terms of nutritional value and flavour, the type of food has been proven to be a crucial component, especially within the framework of elderly homes and other healthcare organisations. In that matter it is important to establish nutrition and food habits in the definition of one's QoL, and recognise the variety of psychophysical and social aspects that come into play with regard to food. [34], suggested that the diet should not only be various, healthy, and following the safety standards, but that it also should "respect the individual's preferences and must be culturally appropriate" (p. 9). From the diversity of food intake possibilities, the Mediterranean diet appears to be a viable solution in the dietary plan of elderly with ID. Beyond the pleasantness of it, research has shown that high adherence to the Mediterranean diet is directly related to slower cognitive decline in elderly with ID [34]. Moreover, it must be acknowledged that many and various aspects well beyond food itself play a role when it comes to the food intake. Literature showed how home-like dining environments can encourage higher food intake in the population of the elderly, further supporting the importance of keeping a holistic perspective on the issue. The essentiality of providing an overall dynamic approach to food was also promoted by [35], who underlined the correlation between higher number of dining companions, as well as a higher frequency of menu revisions, and increased food intake.

### Bright light therapy

A diverse type of intervention is related to light. Research [36,37], [13] has shown that relatively simple Bright Light Therapy (BLT), that is easily implementable, can greatly improve sleeping quality and therefore QoL of elderly with ID. A study by [38], concerning BLT in elderly, found that for the group with dementia, the nocturnal and overall sleep time increased significantly, while daytime napping and disordered behaviour dropped significantly. A research by [39], investigated if BLT was efficient at reducing restless behaviour. Even without melatonin intake. This correlates with the results of the study by [39], that investigated the effects of Dawn-Dusk Simulation (DDS) light therapy on circadian rest-activity cycles in elderly with dementia, Improving QoL of elderly with id and dementia 7 Concluding that the amount of continuous sleep and the number of immobile minutes were increased while the need to turn on the lights at night diminished. These behavioural improvements, although very Interesting, have effects that last (only) as long as the therapy is administered [38-40]. Apart from BLT, other interventions, such as sunbathing, may be beneficial [41].

### Occupational therapy

In relation to occupational therapy - OT, although accurate research on the population of the elderly with ID is lacking, the

studies that researched either one population or the other can allow some generalisation on how certain therapies might be beneficial to those who are affected by both impairments. The results of the meta-analysis by [42] encouraged the use of OT to reinforce the client-patient practice and to Support the disabled person's full participation in society. Consistent with these results were the findings of [43], on the positive impact of OT on the daily life activities for people with ID, improving the patients' motor and cognitive abilities [44], highlighted the promising results of Community Occupational Therapy COT Indicating significant improvements both to dementia patients and caregivers. Moreover, they found COT to be highly cost-effective. Contributing to the field, [45] showed that, compared to the natural progression of dementia, the patients treated with OT had significantly less decline on their psychophysical state.

### Music therapy

Another intervention to reduce anxiety in ID elderly is music therapy [46]. In fact, listening to music has proven to bring strong positive effects on people's moods, favouring relaxation levels [47]. A research by [46] indicated that elderly who received a chosen music listening intervention, had significant anxiety reduction, showing that music therapy could be a valuable and straightforward intervention. Another study conducted by [48] showed that active individual music therapy reduced agitation and was consistent with calming effects on patients [47]. Revealed that immediately after intervention "both passive and interactive interventions involving individualised music improving QoL of elderly with id and dementia 8 therapies associated with special memories reduced stress" (p.781) and increased relaxation in individuals with dementia.

### Animal assisted therapy

Another possible intervention to improve the quality of life of elderly With ID is Animal Assisted Therapy - AAT, known as pet-facilitated therapy. ATT involves interaction between patients and a trained animal, along with its handler, with the aim of facilitating patients' progress toward therapeutic goals [49]. In a study by [50], the influence of fish aquariums on nutritional intake in individuals with dementia was measured, as these patients often experience weight loss. The aquarium had positive effects on the nutritional intake of 87% of the participants, increasing body weight and nutritional intake at mealtimes, and decreasing the use of nutritional supplements. One of the explanations of these positive effects was the enlargement of the patient's attention and interest with the aquarium, which resulted on them staying longer at the dining table. The research by [51] investigated the usefulness of AAT in patients with Dementia, through cognitive, physical and Endocrinological evaluations, finding reduced scores for Aggression, anxiety, phobia, and care giving burden [52], focused on evaluating cognitive Function, mood and perceived QoL on elderly inpatients affected by dementia, showing positive effects of Pet therapy on depressive symptoms. Participants reported to find pet therapy enjoyable and interesting, indicating that the animals had a calming effect on them. A qualitative case study, by [2], investigated AAT with a dog, applied to an elderly with vascular dementia. Results did not find major changes in her behavioural

and psychological symptoms, but the patient's walking ability and cooperativeness improved, and her disturbed behaviour and restlessness reduced. A study [53] also researched the efficacy of AAT on symptoms of agitation, aggression and depression, in nursing home residents with dementia, indicating that it helped the patients to prevent developing more severe stages of agitation, aggression and depression.

### Cognitive stimulation therapy

Studies have indicated the importance of Cognitive Stimulation Therapy - CST - in the treatment of elderly [54], showed that there was a significant improving QoL of elderly with id and dementia 9 Improvement on some aspects of the disorder, concluding that "cognitive stimulation appears to improve certain cognitive performances in outpatients suffering from degenerative dementia." (p. 216) [55], investigated the effect of CST for elderly with dementia, focusing on changes in Cognitive function and QoL, indicating significant improvements for both [56], evaluated the effectiveness of weekly maintenance CST for people with dementia, showing continuous significant Improvement in cognitive function for those who received and maintained CST [55] , pointed out that CST had beneficial effects on cognition and QoL, concluding that CST has several advantages, including being cost effective. Another study by [56] indicated that "improvements in spoken language, word-finding, naming and comprehension are all likely to aid communication, conversation and expression, thus positively impacting the person's well-being." (p. 5). Although specific studies using CST in elderly with ID were not found in the literature, it seems possible to adjust the technique to that specific population.

### Discussion

The study of the literature has given a general overview of environmental and care challenges that Influence the QoL of elderly with ID, often in Co morbidity with dementia, such as residential facilities with Loud noises, little contrasting colours and poor light, persons having poor sleeping quality and behavioural disorders, lack of home-like environment, little socially-stimulating strategies, passive staff behaviour, reduced variety and flavour of food and limited activities. This literature review, however, discussed research that produced hopeful answers to these limitations and problems. A balance in sensory stimulation for elderly with ID could be achieved by controlling levels of noise and light, which should be neither excessive nor minimal. Loud noises could be reduced using sound absorbing ceiling tiles, improving the patients' QoL. Carefully chosen surfaces, as soft furnishing, could absorb both noise and light. However, when applied, Bright Light Therapy may bring controlled excess of light. The importance of high lighting levels was described, with the aim of an effective contributory element to decrease sleeping problems in that population.

Improving QoL of elderly with id and dementia 10 Living in home-like settings has a significantly better affect for elderly people, who tend to express less anxiety and fear compared to people living in a more institutionalised setting. Which environment Aspects may bring home-like feelings is dependent on the individual's opinion. So, although high lighting Levels can be stimulating and

contrasting colours can prevent disorientation, they can also strongly reduce the feeling of being home. Home-like environments are strongly associated with improved social wellbeing of dementia and ID patients, although the amount of research investigating this topic is limited. Home-like residences can help to prevent or delay dementia, especially when combined with inclusive and active and socially integrated lifestyle. Very few articles discussed communication between staff, patients and family members and how this could be improved. In general, the studies have shown that smaller facilities with specialised staff foster a higher QoL amongst ID elderly clients. Perceived friendliness, active staff behaviour and person-centred care were main points. By providing staff members with training in effective communication and person centred care, QoL of individuals with ID might be improved. However, there is a lack of statistical evidence and large-scale research to make these findings fully reliable. Regarding the provided food, more various and flavoured food is suggested to improve the intake of elderly with ID.

Although the Mediterranean diet is proven to be a viable option, cultural and personal differences should be taken into account when developing dietary plans. A general positive effect of activities on QoL for ID elderly was suggested by the researched literature; however, this positive affect is not straightforward. The nuance of what constitutes QoL or meaningful activities are very important [29] Physical fitness is not automatically linked to the individuals' sense of QoL [32], indicating that the optimal care for elderly with ID should be attuned to what the individual him/herself regards as meaningful activities. Research has shown positive correlation between music listening intervention therapy and decreasing anxiety, as well as increasing active participation in elderly.

Animal-assisted therapy could also have many positive effects, having none of the mentioned studies reported patients reacting negatively to this Improving QoL of elderly with id and dementia 11 Intervention. Positive results were found ranging from reduced aggressiveness, anxiety and caregiver Burden, as well as improvement in cognitive functions and social interactions. Interest is growing in other treatments that could increase the QoL [57-62] of elderly with dementia, like CST. However, the effect of CST is unknown for elderly with ID. CST requires a form of active engagement in discussion of challenging topics, so it might be more difficult to apply to ID elderly.

### Conclusion

QoL is an important theoretical construct that can be applied, both in research as well as in practical implementation in environmental, care and therapeutic interventions with elderly with intellectual disabilities. Taking into account the complexity of issues and challenges related to the improvement of the quality of life of this specific population, this literature investigation has reviewed meta-analyses as well as field research on the living environment, the attitude and engagement of staff, the work processes of coaching and organisation, and the methods of intervention, bringing relevant contribution for creative and research-based decisions, including the individual's preference and

implementations to improve the wellbeing of elderly individuals with ID.

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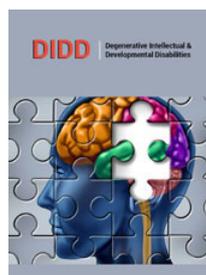
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