

Multisensory Environments for Leisure Promoting Well-being in Nursing Home Residents With Dementia



ABSTRACT

Multisensory environments such as Snoezelen® rooms are becoming increasingly popular in health care facilities for older individuals.

There is limited reliable evidence of the benefits of such innovations, and the effect they have on residents, caregivers, and visitors in these facilities. This two-stage project examined how effective two types of multisensory environments were in improving the well-being of older individuals with dementia. The two multisensory environments were a Snoezelen room and a landscaped garden. These environments were compared to the experience of the normal living environment. The observed response of 24 residents with dementia in a nursing home was measured during time spent in the Snoezelen room, in the garden, and in the living room. In the second part of the project, face-to-face interviews were conducted with six caregivers and six visitors to obtain their responses to the multisensory environments. These interviews identified the components of the environments most used and enjoyed by residents and the ways in which they could be improved to maximize well-being.

比較Snoezelen room、garden、living environments 對於改善身心福祉的效果

Like most first world countries, Australia is an aging society with 12.1% of the population currently age 65 and older. This is expected to rise to 14% by the year 2011 and progressively higher to 23.1% by the year 2051 (Australian Bureau of Statistics, 1997). This creates problems for the responsible caregivers of older individuals because 1 in 10 individuals older than 65, and nearly half of those older than 85, have probable Alzheimer's disease. Further, at least half of nursing home residents have dementia, Alzheimer's disease, or a related disorder (Beck & Shue, 1994). The importance of leisure activities for older individuals is becoming evi-

dent as a means of both increasing quality of life and reducing undesirable behaviors. Dementia is increasing in Australia at a rapid rate and one approach to improving the well-being of older individuals with dementia is the use of multisensory environments (G. Boyle, personal communication, November 15, 1997).

A study was recently conducted at Rice Village, a facility offering three stages of residential care for older individuals in Victoria, Australia. Staff at Rice Village constructed two separate multisensory environments. The first was a Snoezelen® room, a room with white walls, lounge furniture, and a range of equipment designed to stimu-

HELEN COX, RN, PhD, IAN BURNS, RN, MNS, AND SALLY SAVAGE, PhD

late the senses, including a bubble tube, mirror ball, spotlight and color wheel, fiber optic spray strands, aroma diffuser, taped music, solar projector, and liquid wheels that project images onto the white walls. Multiple sensory events often occur simultaneously in the Snoezelen room creating not only an interest in individual components, but also an overall effect.

The second environment was a garden area, which was renovated by local Rotarians to provide safe and interesting outdoor space for residents with dementia. The garden comprised raised garden beds; plants selected for color, texture, and aroma; pathways; nooks and crannies; visiting birds; and a water feature. This project examined the effect of these two additions to the nursing home area of Rice Village. These two environments were available to residents at approximately the same time, which precluded any concerns about differences in familiarity with either environment as a potential problem in this research.

LITERATURE REVIEW

Multisensory Environments

The concept of multisensory environments is based on the assumption that the world is a mixture of light, sound, smells, tastes, and tactile sensations which are accessed through sensory organs (Hulsege & Verheul, 1987). The way in which these stimuli are experienced helps humans understand their environment. Few studies have been devoted to sensory stimulation of older individuals, although some positive outcomes from the use of sensory stimulation with older patients have been reported (Bower, 1967; Loew & Silverstone, 1971; Paire & Karney, 1984). No study was identified that incorporated two distinct multisensory environments. For a thorough review of the literature see Burns, Cox, & Plant (2000) and Chitsey, Haight and Jones (2002) who also conducted a comprehensive literature review subsequent to our own, with similar findings.

Snoezelen

Snoezelen is a contraction of two Dutch words, the equivalent in English being "sniffing and dozing," originally chosen by staff at the Haarendael Institute in Holland (McKenzie, 1995) where the concept began. Snoezelen aims for pleasurable sensory experiences arranged to stimulate the primary senses in an atmosphere of trust and relaxation, without the need for intellectual activity (Hutchinson & Kewin, 1994).

In the past decade, there has been considerable interest in this phenomenon although much has been anecdotally based. A detailed review of the literature on multisensory environments and the Snoezelen phenomenon showed little, if any, well designed published research with outcomes that would explain the degree of interest and support in Snoezelen currently evident (Burns et al., 2000).

Gardens

Perception of nature is multisensory because it involves responding to sounds, smells, and touch as well as to visual content. Gardens provide opportunities for all individuals to experience pleasure. Enjoyment of a garden environment does not require mobility, language proficiency, any particular mental capacities, or previous expertise (McKee, 1995).

Gardens may represent a home-like environment for residents in nursing homes, and may provide connections with the past. Anecdotally, it is accepted that gardens have positive effects on an individual's well-being and are used by residents of nursing homes. However, there is little empirical research on the effect of experiencing a landscaped garden environment on the well-being of elderly individuals with dementia. Taft, Delaney, Seman, and Stansell (1993) stressed the importance of the environment in dementia care. They described enclosed outdoor areas where paths designed in continuous loops allow for safe wandering, and suggest that activity alcoves and rest

areas can divert attention from otherwise exhaustive and repetitive wandering (Taft et al., 1993). Matteson and Linton (1996) observed that safe outdoor areas reduce agitation by allowing confused residents to walk freely.

DESCRIPTION OF THE PROJECT

The aims of this study were primarily to examine the effectiveness of two types of multisensory environments, a Snoezelen room and a landscaped garden, in improving the well-being of older individuals with dementia, and to compare the effect of these environments with their usual living room environment. Second, this study assessed the responses of caregivers and visitors to the multisensory environments. The research comprised two discrete parts: quantitative data obtained in an observation study of residents experiencing the three types of contexts, and qualitative analysis of data obtained from face-to-face interviews with six caregivers and six visitors.

量化分析

質化分析

PART 1: QUANTITATIVE STUDY

Rationale

One problem with previous research has been the tendency to divide participants into groups, with each group participating in a different activity. Thus, individual differences in levels of cognitive impairment, personality characteristics, or behavioral problems, may affect the results. The present study overcame this problem by using a cross-over (within-subjects) design, in which each participant experienced each of three activities: Snoezelen room, landscaped garden, and normal living room activity. Each of the three observed activities involved one-on-one attention from a caregiver to ensure that any changes in affect observed in the multisensory environments were caused by those environments rather than by the presence of the caregiver.

Participants

The sample comprised older individuals with dementia who were resi-

TABLE 1
TOTAL SCORES OBTAINED FOR EACH AFFECT MEASURE IN THE THREE ENVIRONMENTS

	Living Room No. (%)	Garden No. (%)	Snoezelen Room No. (%)	Friedman test χ^2 (Significance)
Anger	1 (< 1)	0 (0)	0 (0)	.00 (not significant)
Anxiety or fear	5 (2)	5 (2)	6 (2)	.00 (not significant)
Sadness	6 (2)	1 (< 1)	0 (0)	8.86 ($p < .05$)
Contentment	72 (25)	87 (30)	88 (31)	4.83 (not significant)
Interest	68 (24)	44 (15)	62 (21)	3.29 (not significant)
Pleasure	132 (46)	122 (43)	110 (38)	1.29 (not significant)
Missing	4 (1)	29 (10)	22 (8)	
Total:	288 (100)	288 (100)	288 (100)	

dents of Rice Village. Each resident's level of dementia was assessed by a registered nurse expert in gerontic nursing and familiar with the residents, using the Validation Therapy Resource and Training Centre Disorientation Assessment Guide (Feil, 1993). Residents not capable of showing some affect response were excluded from the study. Twenty-four residents participated. Twenty-three were women (96%). Using the four stages of Resolution (Feil, 1993), seven participants (29%) were rated as being in Resolution Stage 3 (Repetitive Motion), nine (38%) were at Stage 2 (Time Confusion), and eight (33%) were at Stage 1 (Malorientation).

Instrument

The observation instrument used was the Affect Rating Scale (ARS) (Lawton, Van Haitsma, & Klapper, 1996), because in this study, positive affect categories of pleasure, interest, and contentment are being assumed as visible signs of feelings of well-being. The scale comprises six clearly defined and discrete categories of affect: pleasure, anger, anxiety or fear, sadness, interest, and contentment. Although well-being is essentially a subjective experience, the ARS has proven reliability and validity when used with nursing home residents with Alzheimer's disease (Lawton et al., 1996). The observation of affect is appropriate for populations that cannot be meaningfully interviewed. Two

observers were trained in the use of the ARS by one of the researchers. Inter-rater reliability between the two observers was .82 using the conservative kappa measure.

Procedure

Each participant experienced each of the three activities (living room, garden, Snoezelen room) during three individual 16-minute sessions. There were a total of nine 16-minute observation periods of each resident. When it was time for the garden or Snoezelen room observations, the caregiver accompanied the participant to that environment. Participants were not coerced into entering or remaining in the garden or the Snoezelen room against their wishes. Immediately prior to each session and at 4-minute intervals during each 16-minute session, an observer used the ARS to record the response of the participant. Participants were observed for only one session on any day. All observations were conducted between 10 a.m. and 3 p.m., with a break at resident's usual lunchtime. The order in which participants experienced each activity was balanced to avoid order effects of presentation, and diurnal variation that any resident may experience.

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL) Version 8. Because this was a non-random sample, and the data were not normally distributed, non-parametric

statistics were used. There were a number of observations for which data were missing, particularly from the garden or Snoezelen room environments. This occurred when a participant wished to leave the environment before the 16-minute observation was completed (e.g., because of the weather or a visitor arriving) or when a participant did not wish to enter the environment. These observations have been included in the data as missing. In the analyses, cases with missing data were excluded from individual tests.

Findings

Preliminary analyses using Friedman tests indicated that there were no consistent differences across the four ratings made in each environment during each observation session. All of the ratings obtained for each of the environments were combined giving a total of 288 ratings for each environment (24 participants rated four times on three separate occasions in any one environment). There were no significant differences in the combined ratings for the first, second, or third observation session in each environment. Table 1 presents the frequency and percentage for each affect in each of the environments, and the Friedman test chi-square statistic.

Affect Measures in the Different Environments

As shown in Table 1, overall, there were few ratings for the three negative

TABLE 2

A COMPARISON OF THE RATINGS OF AFFECT OBTAINED BEFORE AND DURING SESSIONS IN THE THREE ENVIRONMENTS IN PERCENTAGES (N = 72)

	Living Room		Garden		Snoezelen Room	
	Before	During (p)	Before	During (p)	Before	During (p)
Anger	0	0	0	0	0	0
Anxiety or fear	14	4*	12	4	8	4
Sadness	6	3	6	1	6	0*
Contentment	67	18***	65	24***	56	26**
Interest	12	31**	17	15	29	25
Pleasure	1	44***	0	47***	0	38***
Missing	0	0	0	8	1	7
Total:	100	100	100	100	100	100

Note: *p < .05; **p < .01; ***p < .001

affect states of sadness, anxiety or fear, and anger. The vast majority of the affect states recorded in any of the three environments were pleasure, interest, or contentment. The only statistically significant difference between the affect ratings recorded in the three environments was for sadness. Significantly more sadness was recorded as the affect in the living room environment compared with the garden or Snoezelen room, although the number of times when sadness was observed was small. An examination of the affect scores obtained by participants at different stages of resolution using a Kruskal-Wallis test indicated significant differences by stage. Briefly, those in Stage 1 were more likely to display pleasure, and those in Stage 3 were more likely to display contentment.

Affect Measures Before and After the Caregiver was Present

The ratings obtained before the caregiver approached the participants, and during the time in each environment, were compared. The second rating taken during each observation session, at 8 minutes, was used as the during observation score. The second rating was selected to avoid any initial effect of the new environment. It was believed to be more appropriate to use a single rating rather than a combined

score for the 4 ratings, as the combination of ratings may be biased in favor of the three environments. For this comparison, the three occasions during which each participant was observed in each environment were combined (24 participants $\times$ 3 occasions = 72 observations). The Wilcoxon signed-rank test was used to examine differences in the scores obtained.

As Table 2 indicates, there were statistically significant differences between the ratings for pleasure before and during time in each of the three environments, with a greater proportion of participants rated as demonstrating pleasure in the living room, garden, and Snoezelen room. There was also a statistically significant difference between the ratings for contentment before and during time in each of the three environments, with a greater proportion of participants rated as demonstrating contentment before they were approached by the caregiver. Although contentment was most frequently observed before sessions commenced, pleasure was most frequently observed during observation sessions in any of the three environments. Participants were rated as showing anxiety or fear more often before being approached by the caregiver compared with during the observation session in the living room, and more sadness before the session com-

pared with during the observation session in the Snoezelen room.

PART 2: QUALITATIVE STUDY **Rationale**

As the role of caregiver is integral to the successful use of the multisensory environments, interviews were conducted with those who had experienced the garden and Snoezelen room in addition to the normal living room environment of the nursing home, and who agreed to participate in the study. Visitors of residents who used either or both of these multisensory environments were also invited to participate. The aims of these interviews were to ascertain opinions related to how the residents experienced the multisensory environments because caregivers and visitors were familiar with the residents and the nuances of their emotional reactions; and to gain an understanding of the role played by the multisensory environments in improving the well-being of caregivers and visitors themselves.

Participants

A total of six caregivers and six visitors gave consent to be interviewed.

Procedure

With participants' permission, interviews were tape recorded and transcribed verbatim. Both groups

were asked the same set of open-ended questions, which included questions about the caregiver's or visitor's own responses to the environments, their impressions of the residents' responses to the environments, and questions about aspects of each environment which were enjoyed by themselves or the residents.

Transcripts of the qualitative data were reviewed systematically to manually sort and classify data into representational themes and patterns. The coding methods advocated by Neuman (2000) were followed. Statements were made regarding the meanings of those themes and patterns relative to the aims of the study. To ensure that the themes were elicited from, rather than imposed on the data, a validity check was applied by using two researchers analyzing independently of each other, both with expertise in qualitative research. The categorizations and interpretations were agreed upon by these researchers.

FINDINGS

The Caregiver Group

The six caregivers interviewed were women whose time of employment at the Village ranged between 18 months and 3 years. Two were registered nurses Division 1, three were registered nurses Division 2 (known also as enrolled or second level nurses), and one was a personal care attendant. Analysis of the data revealed the nine general themes.

First Impressions

When the garden was being constructed, residents spontaneously walked to the garden to watch the activities. No residents entered the Snoezelen room without being taken there by a staff member or visitor. Caregivers commented that not all residents liked the Snoezelen room at first. They realized that the elderly residents had a "respect for electricity" and so were initially reluctant to handle the fiber optic spray for example. After they became familiar with the room and learned from the staff

handling equipment, they relaxed and grew to enjoy the environment.

Something Special

"Doing something completely different, something special," was how one caregiver described the Snoezelen room activity. They spoke of sitting quietly with residents, pointing out things, but mainly sitting watching the responses of pleasure on their faces. The Snoezelen room was described as a "nice place to be" for the caregiver also, but with an extra dimension. One caregiver described it as a special place where she felt "hidden away." People seem to hesitate to come in, to interrupt the mood of peace and meditation within.

Everyone commented on the fresh air, the wind, and the sun in the garden. Also special was the effort that caregivers went to in providing cups of tea in china cups when they sat in the garden with residents. One caregiver said, "The residents would say 'isn't it beautiful, drinking out of a china cup.'" Every caregiver spoke about how, in the garden, residents sat and sipped their tea, looked at colored flowers, touching them, and smelled the perfume. They spoke of the many instances of residents spontaneously taking the hose and watering the garden.

Caregivers spoke of "feeling calmer" and "feeling less stressed" in both environments. Both places were described as "making a difference to the day." One caregiver mentioned that the director of nursing actively encourages staff to use the Snoezelen room as a strategy in coping with often-difficult work. One caregiver said, "I use it to chill out." The garden was referred to by another caregiver as her "thinking spot." She finds it a relaxing, calming place and time spent there leaves her feeling more invigorated and better able to cope.

Changing Patterns

Caregivers took pleasure from the sense they have that these environments make a difference to residents. They placed emphasis on how in the

Snoezelen room, residents who were agitated grew calm, they noted how one woman became animated, started talking and having a conversation when her normal pattern was silence. They noted many instances of pleasure on residents' faces, such as eyes widening; smiling; becoming more responsive; taking notice of the various pieces of equipment and the lights, sounds, and smells. They noted how older adults who slept in their chairs most of the time stayed awake in the Snoezelen room. Their impression was that residents left the room brighter, happier, and that the feeling of happiness stayed with them. One caregiver said a resident "took the feeling with her."

Caregivers said that in the Snoezelen room, their usual way of being with a resident changed. Frequently the caregivers did not need to point things out or "take the lead" as one said. Another said,

In the living room I say "look at this" or try and get them interested in something, but in the Snoezelen room they go their own way and I can see how long they look at something. You are not giving them any push, whereas in the house, we tend to do that.

What Gets in the Way

Some final comments from the group of caregivers were important though a little sad. One said,

The Snoezelen room and garden aren't used to the benefit of the residents as much as they are supposed to, or should be, or even as much as they are presumed to be by the people at the top. It's a staffing thing.

This referred to the high level of care needed and the general busyness of the caregivers. Another caregiver commented on the research project itself and said:

I'm sad that it is finished. I think it is sad for those residents because it really proved to me that they all need that special time with someone else. With all the day to day things that go on, there isn't time...we don't make time for them. ...comments [residents

made] like “How lovely for you to be spending time with all us old people.” All of a sudden, the intensity of the activity with one-to-one carers, cups of tea in china cups, and so on stopped.

The Relative/Visitor Group

Six individuals, relatives or long-time friends, were interviewed in this category and several important issues arose.

Changing the Patterns

The visitors loved the relaxation of the garden and how it altered the usual pattern of visiting. Rather than sitting indoors, they could wander around, pick flowers, and hose the garden together. The opportunity for residents to actually pick flowers was found to be important. When they picked lavender, for example, the resident usually held it and continued to smell it for the rest of the day. In respect of the hosing, there were touching stories. In the first, the visitor described how “fabulous” it was for her friend, “she could actually stand there and hose...watering is one thing she loved to do. It was an automatic thing; as soon as she saw the hose, she went for it. Then she started to pull dead flower heads off.” The visitor went on to describe her friend’s background “She came from a farm where water was really precious. In her own house it was the opposite, she drowned everything but it was almost like she had to do it before it all disappears.” That is also how it was at the nursing home—demonstrating the therapeutic effect of watering a garden. She noticed that her friend interacted much more with her when they were in the garden. This, too, was a pattern change from one in which she would initiate conversation. In the garden, her friend did what she wanted to do.

The second story involves a resident who was a nun watering the garden. The visitor spoke of her friend who had since died. She said,

She was a great intellectual, a wonderful lady. I am sure she’s never had a hose in her hand before. And to see her

out there that day. I was very amused that she really enjoyed it...she was hosing. She was in a wheelchair and hosing. I’ve got that picture of her.

All said the most attention-grabbing aspect of the garden was color. One visitor who loved the garden said, “I enjoyed it when the umbrellas were up. It was very inviting...like you were in a different place. I could have been anywhere, on a beach, you know...it was a feeling of not being in a nursing home.”

Feeling Sad About the Medication

Two visitors spoke strongly about how medication seems to be used where other forms of therapies might be just as effective. One said of her friend,

Everyone has to live in harmony in a small space. She has always been a strong stubborn woman...she’s stood on lots of toes in her time. In a situation like this it becomes a problem.

She laments the fact that her friend appears to be medicated to make life better for everyone else, and the medication she feels is too strong. “There are other ways,” she kept saying.

Another said of the Snoezelen room, “This is better than pills. She reacts badly to the pills. I feel personally if she is stressed out she should come in here [to the Snoezelen room] for an hour or so.”

Privacy and Meditation

One visitor felt that her friend, the strong, stubborn woman, reacted positively to the privacy and solitude of the Snoezelen room. She spoke of how her friend had always lived alone, had always taken separate paths than others in her life. She said, “Imagining her life here, where there’s no privacy, even with her dementia...when she came in [to the Snoezelen room] she would be more relaxed.” When her friend was distressed, the only place that she could let it out and cry was in that room. In every other environment she would push that emotion away. It was as if the room allowed her to vent a feeling that could only be acceptably vented in privacy.

Fascination

This was a word used often to describe reactions to the Snoezelen room. Visitors loved it and felt that their friends or relatives who were residents in the home enjoyed it also. Some watched their friends or relatives playing with the fiber optics, mesmerized. One thought her friend seemed more positive. She said it was subtle, but she was quite sure. Another visitor spoke positively about the mirror ball. She said:

When she saw that she went into another world. She used to be a dancer; they use them in dance places...I hadn’t thought of that. I held her hand and I was fascinated looking at her. And I felt myself relax you know. I felt a bit better too. Seeing her like that made me feel I’d like to stay here all week.

DISCUSSION

In the quantitative study, overall, there were few negative affect ratings recorded in any of the environments. This is consistent with data presented by Lawton et al. (1996) who found that the three negative affects were among the least often displayed affects, using the ARS with a sample of individuals with dementia. Because of the few negative affect ratings, it is not possible to comment on the value of the Snoezelen room, the garden, or the living room with one-on-one care in terms of reducing agitation or negative affect. There is, however, evidence of both the Snoezelen room and the garden environment increasing the pleasure or well-being of participants.

When the affect ratings recorded before the caregiver approached participants were compared with those recorded during the 16-minute observation period, the ratings of pleasure increased significantly after the caregiver took the participant to the Snoezelen room or to the garden. It must be noted, however, that the ratings of pleasure also significantly increased when comparing the time before the caregiver approached participants, to during the observation period in the living room when one-

on-one care was given. Contentment significantly decreased from before to after the caregiver was with the participant, again, in each of the three environments. It would appear that the presence of the caregiver moves the observed affect of participants from contentment to pleasure. This suggests a consistent effect of having one-on-one care in every environment.

The finding that pleasure or well-being increased when in the Snoezelen room is consistent with earlier research (Moffat, Barker, Pinkney, Garside, & Freeman, 1993). The increase in pleasure or well-being observed while in the garden is a new finding, and provides evidence of the positive value of using a garden environment for older individuals with dementia.

In terms of the relative effectiveness of each environment in improving the well-being of participants, the quantitative data indicate few differences between them. Dowling, Baker, Wareing, and Assey (1997) also reported no differences in the short term effects of the Snoezelen room and other activity sessions when one-on-one care was received in both Snoezelen and other activity sessions.

Whereas the quantitative data has clearly shown no difference between the environments, the qualitative data indicates that the perceptions of the caregivers and visitors were that the new environments evoke a more positive affect in residents. The positive affect change is different in each environment, and for quite different reasons. The garden tends more to animate and engage residents, whereas the Snoezelen room tends to calm and relax them. The garden gives caregivers and visitors a sense of well-being, whereas the Snoezelen room is more like a retreat or haven. It is possible that the positive responses of caregivers and visitors to the environments affected their perception of the effect on residents.

It is clear that the residents need careful introduction to the Snoezelen room and the equipment inside. A

number of residents, who rejected the room in the first instance, eventually experienced great pleasure there. Judgments about the usefulness of the room should be suspended until the resident has had the opportunity to become familiar with the space and grow comfortable there. As was found by Moffat et al. (1993), staff also experience pleasure in the Snoezelen environment and speak of its power for stress reduction. In the current study, however, it was not so much the mesmerizing effect of individual pieces of equipment, but rather a more unified effect of the whole environment, which caused this impression.

The garden, on the other hand, is a more enlivened place—a place of activity. As described by Taft et al. (1993), outdoor areas for safe wandering are important aspects of the environment for older adults with dementia. They liked to wander, pick flowers, hose the garden, drink tea, and talk. The hosing was a particularly interesting finding, in which individuals, without prompting, walked to the hose, picked it up, and started watering. Reverting to some old gardening expertise, such as deadheading, was common. Therapeutic effects of water are present in literature that focuses on gardens and older individuals with dementia (Beckwith & Gilster, 1997), but it is generally in terms of fountains, streams, or dipping one's hand into cool water. The effect of hosing in this spontaneous manner is not evident in the literature.

Staff and caregivers also loved the times they could spend in the garden. It was held as a place of well-being. The umbrellas, the color, and the location all added to its sense of otherness—other than a nursing home.

An important finding was the way in which the study reconnected staff to their values and beliefs. These caregivers who work with older adults with dementia valued the luxury of quality time spent with the residents. No matter which of the three environments was being spoken of, it was the opportunities of a one-to-one

relationship, quality time, and time to feel closer, that was valued and discussed. This mirrors the findings of Pinkney and Barker (1994) who argue that the one-on-one caring that occurs in places such as the Snoezelen room aids the development of a therapeutic relationship between the resident and the caregiver. Caregivers in this current study spoke of how this activity individualized care, and they identified this as a demonstrable value of the executive of the Rice Village who had agreed to fund the installation of these two environments.

The notion of cost-effectiveness was not particularly addressed in this study. Cost-effectiveness is difficult to gauge in monetary terms. Establishment costs of both the garden and the Snoezelen room are easily calculated, but the benefits obtained are not readily amenable to fiscal evaluation. The measure of quality of life in monetary terms would be a major enquiry in itself.

IMPLICATIONS FOR NURSING

The findings from this study indicate that multisensory environments, properly introduced and used, had a positive effect on the well-being of elderly adults with dementia, and also on relatives and visitors who came to the facility. The additions and improvements to the environment also had a positive effect on staff. A number of implications for nursing arise from the study. Nurses are concerned about the well-being of residents in their care, but when they are constantly present in the caring environment, they may, simply through familiarity, forget the ways in which the environment may negatively affect residents. They also may not consider that even if the effect is not negative, it is not necessarily positive, and residents may not be stimulated by their environment at all, they are simply in it.

Paying particular attention to the environment will help nurses identify what aspects create pleasure and interest for residents and what can be done to enhance such feelings. Considering ways in which the environment may

be enhanced to stimulate the senses is a project nurses can lead. Friends and relatives could also be involved, providing a tangible way for them to contribute to the well-being of the residents. Environmental enhancements may be simple and inexpensive, considering color and sound for example, or they may be larger projects, such as was done at Rice Village.

Nurses could encourage nursing home owners and managers to consider Snoezelen environments and encourage the use of the environment by visitors and staff as well as by residents. Where Snoezelen is introduced, staff need to be carefully educated in the appropriate use of the environment and equipment. Staff should know that residents need a slow introduction to this new environment. They need to allow time for individuals to become familiar with the equipment, and understand that older adults have a deep respect for the dangers of electricity. An initial negative reaction does not mean that Snoezelen is not useful.

Outdoor program

Nurses may also encourage owners and managers of nursing homes to consider ways in which they could incorporate gardens that are “resident friendly,” that is, gardens that can be more than just viewed. This study clearly indicated the pleasure that residents derived from digging, hosing, and being engaged in some way with the garden. Nurses working in such environments need to encourage such engagement by residents.

The most important implication for nurses is the need to consider the culture of the caring environment. Facilities that include Snoezelen rooms and garden areas are important because they have the potential to add quality to residents’ day-to-day lives. There is a need for nurses to remember that, despite the busyness of the day and the focus on tasks, quality of life is important and enhancing quality of residents’ lives is a value that drives nurses’ caring work. Anything that helps nurses connect to that value is critical.

The overwhelming finding of this study is that although the environments were experienced positively, the greatest influence on positive affect was the one-to-one attention of the nurse. The risk is that if busyness and tasks dominate and nurses are not motivated to spend non-task, quality time with residents, any environmental enhancements—however well-intentioned—will simply lie idle.

LIMITATIONS

There have been a number of studies conducted related to the use of Snoezelen environments. Most have been unable to conclude with any certainty that they made a difference because of inherent limitations. This study has attempted to overcome such limitations. The study also incorporated the preparation and use of a landscaped garden. In what is described in some literature as horticulture therapy (Ackley & Cole, 1987), gardens have become popular in residential care. Studies examining the use of gardens for leisure activities for individuals with dementia are less common.

The study was limited in a number of ways. First, this is a single-site study and although it was quite complex and resulted in a large number of observations, it is limited in its generalizability. In addition, almost all of the participants were women. A potential limitation is that the ARS used had no category for what might be called a neutral affect, such as sleeping or dozing. Any affect that was not sadness, anxiety or fear, or anger was categorized as contentment, which may give a false picture of a positive affect.

CONCLUSION

The findings of this research highlight the value of combining a qualitative methodology with quantitative methods. While the quantitative data indicates that the garden and the Snoezelen room were associated with an increase in the ratings of pleasure, they do not suggest any benefit of these two environments over that of

the living room when one-on-one care is given. The interviews with the caregivers and visitors, however, reveal the depth of pleasure experienced by participants in the garden and Snoezelen room and emphasize the benefits of some activities or equipment in those environments.

In this study, there was no evidence that one environment was better than any other, but that all improved affect. Differences were found between the qualitative and quantitative components of the study, however, with the qualitative data showing that the garden and Snoezelen room both improve affect in different ways and for different reasons. The qualitative data also gave clear indication that the Snoezelen and garden environments were enjoyed by the caregivers and visitors as much as the residents.

From this study, it is evident that the importance of adequate nurse-patient ratios for the well-being of both staff and residents cannot be disregarded. Quality time with residents enables staff to reconnect with their beliefs and values and reconfirms the underlying importance of therapeutic relationships. Nurses must advocate for the recognition of the leisure needs of older individuals as part of their important role in promoting the culture of care.

Subsequent to the completion of this study, the authors were pleased to note an edition of the *Journal of Gerontological Nursing* devoted to Nursing Home Environments (Vol. 28, No. 3). Among the articles published were some that reinforce the findings of this study. Attention is currently being paid to the connections between humans and the natural environment. The resurgence of interest in bringing nature closer to people in residential care and the rise of theoretical frameworks such as “thriving” (Haight, Barba, Tesh, & Courts, 2002) and “the biophilia hypothesis” (Jones & Haight, 2002), and innovations such as the Eden Alternative (Hamilton & Tesh, 2002; Tesh & McNutt, 2002) are indications of the scholarship that

continues in this area. The research conducted by Tesh and McNutt (2002), in particular, indicates a widespread interest in transforming nursing home facilities into more desirable places to live. There is reason, then, to feel hopeful for the future of aged care.

REFERENCES

- Ackley, D., & Cole, L. (1987). The effect of a horticultural therapy program on children with cerebral palsy. *Journal of Rehabilitation*, 53(4), 70-73.
- Australian Bureau of Statistics. (1997). *Australian social trends*. Canberra, Australia: Australian Government Publication Service.
- Beck, C.K., & Shue, V.M. (1994). Interventions for treating disruptive behaviour in demented elderly people. *Nursing Clinics of North America*, 29(1), 143-155.
- Beckwith, M., & Gilster, S. (1997). The paradise garden: A model garden design for those with Alzheimer's disease. *Activities, Adaptation and Ageing*, 22(1/2), 3-16.
- Bower, H.M. (1967). Sensory stimulation and the treatment of senile dementia. *The Medical Journal of Australia*, 1(22), 1113-1119.
- Burns, I., Cox, H., & Plant, H. (2000). Leisure or therapeutics? Snoezelen and the care of older persons with dementia. *International Journal of Nursing Practice*, 6, 118-126.
- Chitsey, A.M., Haigh, B.K., & Jones, M.M. (2002). Snoezelen: A multisensory environmental intervention. *The Journal of Gerontological Nursing*, 28(3), 41-49.
- Dowling, Z., Baker, R., Wareing, L.A., & Assey, J. (1997). Lights, sound and special effects. *Journal of Dementia Care*, 5(1), 16-18.
- Feil, N. (1993). *The validation breakthrough*. Sydney, Australia: MacLennan & Petty.
- Haight, B.K., Barba, B.E., Tesh, A.S., & Courts, N.F. (2002). Thriving: A life span theory. *Journal of Gerontological Nursing*, 28(3), 14-22.
- Hamilton, N., & Tesh, A.S. (2002). The North Carolina Eden Coalition: Facilitating environmental transformation. *The Journal of Gerontological Nursing*, 28(3), 35-40.
- Hulsegge, J., & Verheul, A. (1987). *Snoezelen: Another world*. Chesterfield, United Kingdom: Rompa.
- Hutchinson, R., & Kewin, J. (Eds.). (1994). *Sensations and disability: Sensory environments for leisure, Snoezelen, education and therapy*. Chesterfield, United Kingdom: Rompa.
- Jones, M.M., & Haight, B.K. (2002). Environmental transformations: An integrative review. *The Journal of Gerontological Nursing*, 28(3), 23-27.
- Lawton, M.P., Van Haitsma, K., & Klapper, J. (1996). Observed affect in nursing home residents with Alzheimer's disease. *Journal of Gerontology: Psychosocial Sciences, Social Sciences*, 51B, 3-14.
- Loew, C.A., & Silverstone, B.M. (1971). A program of intensified stimulation and



KEYPOINTS

MULTISENSORY ENVIRONMENTS

Cox, H., Burns, I., & Savage, S. **Multisensory Environments for Leisure: Promoting Well-being in Nursing Home Residents With Dementia.** *Journal of Gerontological Nursing*, 2004, 30(2): 37-45.

- 1 Multisensory environments are becoming popular in health care. Snoezelen® is the name of a multi-sensory environment increasingly being used in nursing homes, despite limited evidence regarding its effectiveness.
- 2 A newly constructed garden and Snoezelen room in an aged care facility were tested for how they influence affect compared to the normal living room environment, using quantitative methods with residents and qualitative methods with visitors and caregivers.
- 3 The visitors and caregivers found both the garden and Snoezelen room created a sense of well-being. The garden animated and engaged whereas the Snoezelen room relaxed and calmed.
- 4 All three environments improved affect, but what created the change to a positive affect of pleasure and interest for the residents was the one-to-one attention from the caregivers.

- response facilitation for the senile aged. *The Gerontologist*, 11(4), 341-347.
- Matteson, M., & Linton, A. (1996). Wandering behaviors in institutionalized persons with dementia. *Journal of Gerontological Nursing*, 22(9), 39-46.
- McKee, P. (1995). Gardening—An equal opportunity joy. *Activities, Adaptation and Ageing*, 20(1), 71-79.
- McKenzie, C. (1995). Brightening the lives of elderly through Snoezelen. *Elderly Care*, 7(5), 1.
- Moffat, N., Barker, P., Pinkney, L., Garside, M., & Freeman, C. (1993). *Snoezelen: An experience for older people with dementia*. Chesterfield, United Kingdom: Rompa.
- Neuman, W.L. (2000). *Social research methods—Qualitative and quantitative approaches* (4th ed.). Boston, MA: Allyn and Bacon.
- Paire, J., & Karney, R. (1984). The effectiveness of sensory stimulation for geropsychiatric inpatients. *The American Journal of Occupational Therapy*, 21(8), 505-509.
- Pinkney, L., & Barker, P. (1994). Snoezelen—An evaluation of an environment used by people who are elderly and confused. In R. Hutchinson, & J. Kewin (Eds.), *Sensations and disability: Sensory environments for leisure, Snoezelen, education and therapy* (pp. 172-183). Chesterfield, United Kingdom: Rompa.
- Taft, L., Delaney, K., Seman, D., & Stansell, J. (1993). Dementia care: Creating a therapeutic milieu. *Journal of Gerontological Nursing*, 19(10), 30-39.
- Tesh, A.S., & McNutt, K. (2002). Character-

istics of nursing homes: Adopting environmental transformations. *The Journal of Gerontological Nursing*, 28(3), 28-34.

ABOUT THE AUTHORS

Dr. Cox is Professor, Director, Centre for Research in Chronic Illness, Ageing and Health, Deakin University, Melbourne Campus, Burwood, Victoria, Australia. Mr. Burns and Dr. Savage are Research Fellows, Deakin University, Waterfront Campus, Geelong, Victoria, Australia.

This study was supported by a grant from the Alzheimer's and Associated Diseases Association of Australia. The research team thanks the residents of Rice Village who participated in this research along with their relatives and friends. They also thank the staff members who persevered with care despite the disruption caused by the study over some months. They particularly thank those staff members who gave generously of their time and participated in the care and observation periods intrinsic to this research. The study would not have been possible without their dedication, their humor, and their ability to "think on their feet."

Address correspondence to Helen Cox, RN, PhD, Professor, School of Nursing, Deakin University, 221 Burwood Highway, Burwood, Victoria 3125, Australia.

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